 Comp@s

User's Guide

member_AlphaGrp

*Your Power Solutions Partner*

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About this guide

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Overview

* [Architecture and Features](#scroll-bookmark-3)
* [Block Diagram of Energy Systems managed by Comp@s](#scroll-bookmark-4)
* [DC System Overview](#scroll-bookmark-5).

Architecture and Features

Magell@n Comp@s is the product name of our new controller. It consists in a new platform extending the range of applications of a traditional dc-system shelf controller. Comp@s product is a “site” monitoring, allowing the supervision and the control of:

* Environmental issues: temperature, humidity, water detection, etc.
* Access control issues: RFID badge reader, door lock, open door detection, etc.
* Integrity issues: vandalism and traffic accident detection
* Whatever you may need, just ask us.

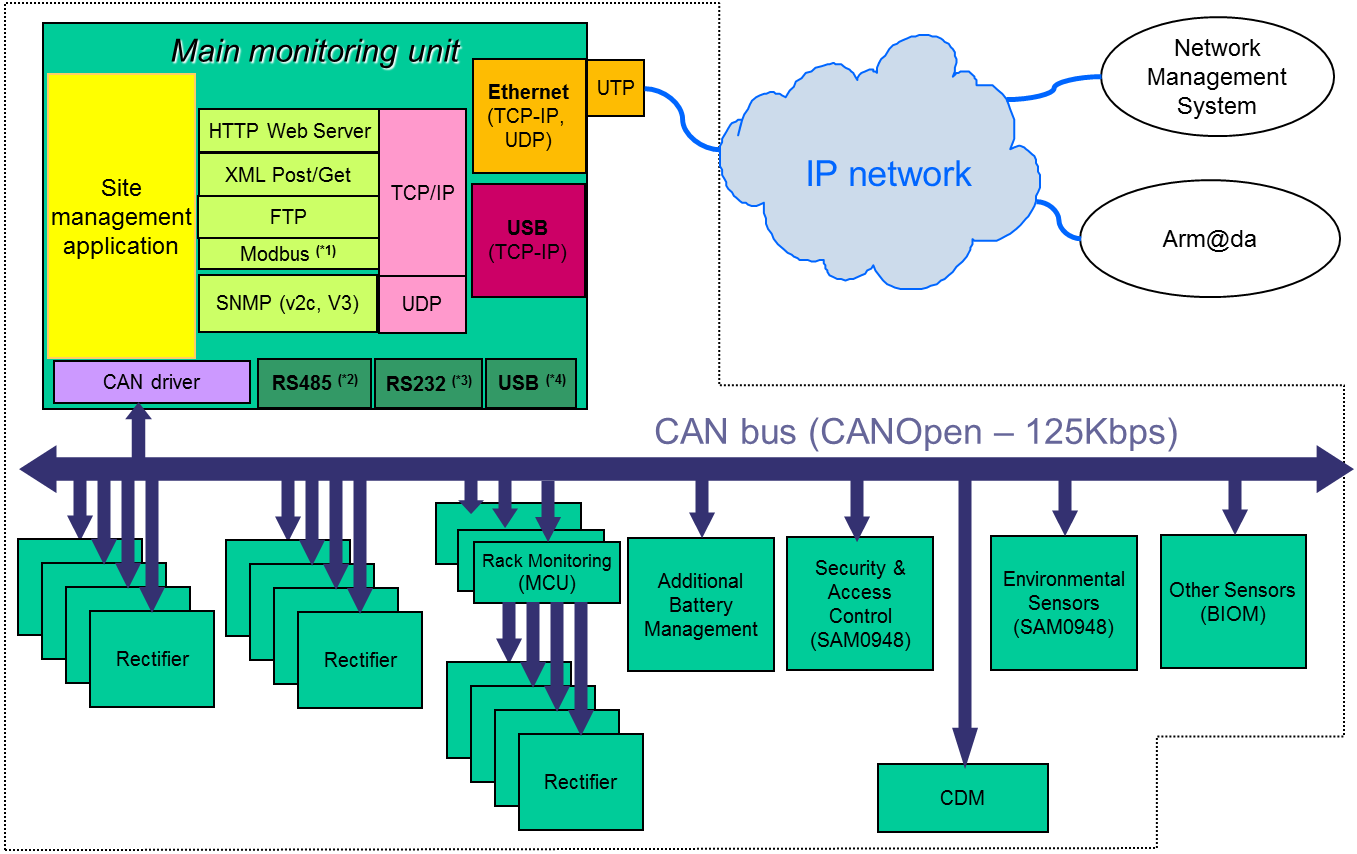
This solution targets large network infrastructure, also with heterogeneous architecture. It is the ideal solution for access networks cabinet monitoring and control. This platform allows customization to satisfy your needs.

Comp@s can be easily integrated in your management system. It supports broad range of standard communication protocols and do not request any proprietary application.

This site monitoring is a powerful tool for OPEX (**OP**erating **EX**penditures) reduction. It lowers energy costs, reduce field interventions and provide data logging and statistics facilities.

Comp@s has a very flexible hardware and software architecture, as shown on the following figure. Thanks to this architecture, our platform is open, scalable and evolvable. All our devices (rectifiers and extensions) are connected to a reliable digital bus (CAN Bus). This allows the main monitoring unit to retrieve information, configure and command the devices. This main monitoring unit is running the site management application. This site management application provides multiple communication interfaces: Web server, XML services and SNMP. These interfaces are available over Ethernet and also over USB for local connection (Rem: SNMP not available over USB). All the interfaces allowing access to the monitoring are secured. One administrator and up to five users can have different access and privileges:

Figure 1 Comp@s Bloc Diagram



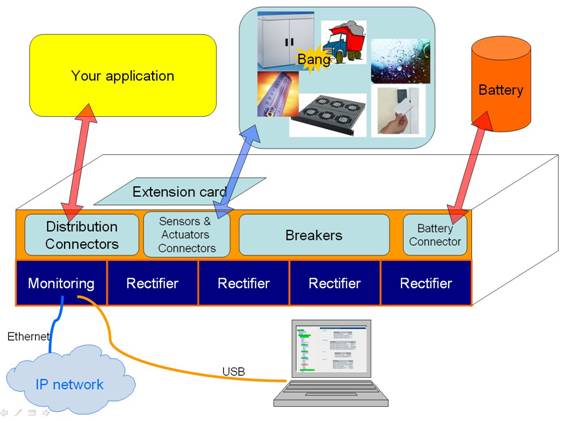
### General Features:

* User Interfaces (Ethernet / USB)
  + Web Interface
  + SNMP V1, V2c, V3
  + XML API - ETSI compliant
  + Modbus
  + FTP
* Field Bus Interfaces : CAN, RS485, USB, RS232
* User Management
* Time Management (NTP)
* Change Traceability
* Translation
* Data Recording (Second, Minute, Hours, Days, Delta)
* Events log
* PLC (Custom Alarms and Data)
* Customizable - Renaming
* Compatible With Arm@da, or any other ETSI compatible NMS.
* Remote Comp@s Upgrade
* Backward compatible on Upgrade
* Factory Configuration
* License Model (You pay what you need)
* Ready for customization on specific projects

Block Diagram of Energy Systems managed by Comp@s

The following figure schematizes a sub-shelf which integrates 4 rectifiers, a controller unit, an extension card to interface multiple sensors/actuators and the distribution, including the breakers. The typical size of such a sub-shelf is 2U height, and 19” wide:

Figure 2 Schematic of the inside of a cabinet



DC System Overview

* [DC Power System Principles](#scroll-bookmark-7)
* [General Information on MCU](#scroll-bookmark-8)
* [Mode Of Operation](#scroll-bookmark-9)
* [Battery Temperature Compensation](#scroll-bookmark-10)
* [Battery Charge Current Control](#scroll-bookmark-11)
* [Battery Low Voltage Disconnect Operation (LVD)](#scroll-bookmark-12)
* [DC System Alarms Overview](#scroll-bookmark-13)
* [Battery Test](#scroll-bookmark-14)
* [Boost Mode](#scroll-bookmark-15)
* [List Of Possible Events](#scroll-bookmark-16).

### DC Power System Principles

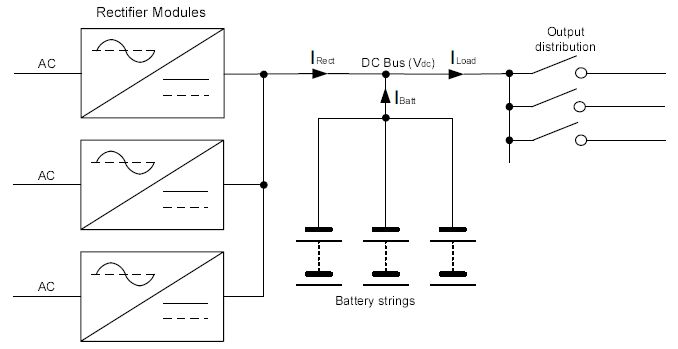
A DC system is a system converting AC power to DC power.

It is composed of:

* Rectifiers
* AC distribution
* DC distribution
* Battery(ies), avoiding application interruption.
* MCU (Monitoring Control Unit).

The following diagram is a classical representation of a DC system:

Figure 3 DC System



The following sub-chapters include a high level description of generic functionalities. More information should be available on the user manual of the specific system you are using.

### General Information on MCU

A Monitoring Control Unit (MCU) is a micro controller-based monitoring system intended for use to monitor DC Systems, including rectifiers, batteries, and other modules.

The MCU has generally a Comp@s card on it, allowing the human and machine to machine interfaces (over Ethernet/USB). It also extends the functionalities.

If Comp@s is not available, the MCU will control the system with the configuration saved in the Flash.

On most of the systems, the controller is a hot-pluggable, hot-swappable unit that fits into the rectifier rack.

There is often the followings Leds on the front plate :

* Status Led (Green) :
  + Steady : Monitoring is OK
  + Quick Blinking (200ms): Comp@s is not present (or starting), the MCU is working in standalone (With the configuration saved inside the MCU - This can be copied from Comp@s with "Save In MCU" function)
  + Slow Blinking (1Hz): Battery test is running
  + 800 ms On, 200 ms Off : System is in boost mode
* LVD OK (Green) : Is steady on when the LVD is closed
* 4 Leds for Alarms (Red): The leds are linked to the dry alarm relays. Each alarm can be mapped to any relay number (1-4). By convention, we use by default the 1 for major alarms, the 2 for Minor alarms, the 3 for battery specific alarms, and the 4 when the system is in AC Failure.

There is often one push-button:

* Pressed for 1-5 sec : Save configuration
* Pressed for 5-10 sec : Start Battery Test
* Pressed for > 10 sec: Force Battery Test
* Pressed during battery test cancel the test.

### Mode Of Operation

The DC system can be in one of the following mode:

* **Float** : the output voltage is set to the float voltage setting. It can be automatically adjusted by the temperature compensation or the current limitation.
* **Boost** : the output voltage is set to the boost voltage setting. It can be automatically adjusted by the temperature compensation or the current limitation.
* **Battery Test** : the battery is being tested. The voltage is going down. Alarm like "Bus Voltage Low" can be generated.
* **Ac Failure** : all the rectifiers are not powered. The battery is discharging.
* **Safe** : the system can go to safe when when there is communication problems or when the voltage/current/temperature sense are not connected correctly.

### Battery Temperature Compensation

* [BTC: General Overview](#scroll-bookmark-17)
* [BTC: Configuration Parameters](#scroll-bookmark-18)
* [Theory Of Battery Temperature Compensation](#scroll-bookmark-19).

#### BTC: General Overview

The controller includes a control loop that compares the bus voltage with a reference value, and pilots on the rectifiers programming voltage accordingly. It also measures the battery temperature through an external temperature probe (NTC 10K). This measurement, together with the “DC Bus Float Voltage at 25°C” and “Battery Temperature Compensation” configuration, determines the reference voltage. The maximum compensation can be configured.

The Battery Temperature Compensation is regulated by the MCU. The configuration is stored in the MCU, and is updated by Comp@s if present.

#### BTC: Configuration Parameters

Here is a non-exhaustive list of the related configuration parameters (see equipment tables for detailed information):

* Temperature Compensation Slope
* Maximum Positive Temperature Compensation
* Maximum Negative Temperature Compensation.

#### Theory Of Battery Temperature Compensation

Battery life expectancy and performance is directly related to battery ambient temperature. The optimum temperature for battery operation is 25°C (77°F). Without compensation, battery life is seriously compromised at temperatures above 25°C, while battery performance is reduced below it.

Adjusting the battery’s float voltage to correspond with temperature fluctuations will ensure maximum battery performance and life expectancy. With the MCU, this may be accomplished by using the software’s built-in automatic temperature compensation function.

This function works by adjusting the system voltage, by step of 0.1V, as the temperature changes, according to the defined parameters.

Temp Comp occurs at standard rates commonly referred to as slope-compensation settings. For maximum performance, it’s important to match the battery slope compensation with the setting recommended by the battery manufacturer. This is not to be confused with slope regulation; which refers to the process of regulating current among a group of parallel-operating rectifiers.

The Temp Comp feature has programmable breakpoints. These are the points at which Temp Comp will cease. Further temperature decreases or increases will NOT increase or decrease the output voltage. This protects the connected load from excessive voltage conditions. As Temp Comp is active in either float or equalize mode, breakpoints should be set with this in mind.

The Temp Comp feature also incorporates fail-safe circuitry to prevent it from driving the rectifier system to a voltage higher than is suitable for the load or battery.

### Battery Charge Current Control

* [BCCC: General Overview](#scroll-bookmark-20)
* [BCCC: Configuration Parameters](#scroll-bookmark-21).

#### BCCC: General Overview

The Battery Monitor feature enhances the controller's capability to provide information about the battery to the User. Charge Current Control will help increase battery longevity by keeping the battery current to within specified limits. Charge current to the battery during recharge will be limited to a value as programmed by the Supervisor. This value will be derived from the battery manufacturer’s specification sheet and entered by the Supervisor.

The controller performs this limitation by lowering the rectifiers programming voltage when needed, through a control loop in the controller program. This limitation is also active in boost mode.

#### BCCC: Configuration Parameters

Here is a non-exhaustive list of the related configuration parameters (see equipment tables for detailed information):

* Battery Charge Current Limit
* Shunt Rating At 60mV.

### Battery Low Voltage Disconnect Operation (LVD)

* [LVD: General Overview](#scroll-bookmark-22)
* [LVD: Configuration Parameters](#scroll-bookmark-23).

#### LVD: General Overview

The purpose of the Low Battery Disconnect mechanism is to prevent permanent damage to the lead acid battery due to excessive deep discharge.

In most of the systems, there is an hardware and a software LVD. The hardware should be lower than the software.

For 54V systems, the hardware is around 42V. The software will be configured around 46V.

When the LVD is opened, and that the system has no AC input power, the application will not be powered anymore.

It is possible to configure a delay before the opening. It allows to absorb peaks of consumptions without opening the LVD and/or to shut down properly the application thanks to the alarm "DC Bus Voltage Extra Low" for instance.

Before opening the LVD, a DC System event is generated :"System Dying".

#### LVD: Configuration Parameters

Here is a non-exhaustive list of the related configuration parameters (see equipment tables for detailed information):

* LVD Disconnect Voltage
* LVD Disconnect Delay
* DC Bus Voltage Extra Low.

### DC System Alarms Overview

* [Alarms Related To DC Output Bus Voltage](#scroll-bookmark-24)
* [Alarms Related To Rectifiers](#scroll-bookmark-25)
* [Alarms Related To The Input AC Power Of The Rectifiers](#scroll-bookmark-26)
* [Alarms Related To Battery](#scroll-bookmark-27)
* [Alarms Related To General Input](#scroll-bookmark-28).

#### Alarms Related To DC Output Bus Voltage

Here are follows the most common alarms name related to DC output bus voltage. More information can be found in the detailed equipment table of this guide:

* *DC Bus Extra Low* : with parameters "DC Bus Voltage Extra Low" and "DC Bus Voltage Extra Low Hysteresis"
* *DC Bus Low :* with parameters "DC Bus Voltage Low" and "DC Bus Voltage Low Hysteresis"
* *DC Bus High :* with parameters "DC Bus Voltage High" and *"*DC Bus Voltage High Hysteresis"
* *DC Bus Extra High :* with parameters "DC Bus Voltage Extra High" and "DC Bus Voltage Extra High Hysteresis"
* *DC Bus Voltage Sense Failure.*

It is only related to the Bus voltage measurement. There are different hystereses to avoid changing alarm state around borders values.

Low and extra low alarms happens when the battery is getting discharged.

High and Extra High should never appear with correct configuration, as there is hardware OVP in the rectifiers.

#### Alarms Related To Rectifiers

The alarms are the following:

* One Rectifier Failure
* More Than One Rectifier Failure
* Missing Rectifiers : with parameter "Minimal Number Of Present Rectifiers".

Note that a rectifier can be considered as in failure when it is not powered, depending of the system configuration. When there is no communication with the rectifier, it is not possible to know if the AC has a problem, or if the rectifier is defect.

#### Alarms Related To The Input AC Power Of The Rectifiers

The alarms are the following:

* Mains Failure
* Mains Partial Failure
* Mains Low (on some systems)
* Mains High (on some systems).

#### Alarms Related To Battery

The alarms are the following:

* Battery Last Test Failed
* Battery On Discharge
* Battery LVD Relay Open
* Battery Temperature Too High : with parameters "Battery Temperature High" and "Battery Temperature Hysteresis"
* Battery Temperature Too Low : with parameters "Battery Temperature Low" and "Battery Temperature Hysteresis"
* Battery Temperature Sensor Fail.

#### Alarms Related To General Input

The alarms are the following:

* Digital Input X
* Battery Breaker Open
* Distribution Breaker Open
* Ambient Temperature Too High
* Ambient Temperature Too Low
* Ambient Temperature Sensor Fail.

These alarms have no consequence on the system regulation by default.

### Battery Test

A battery test can be started periodically, remotely, or when the front plate switch of the MCU is pressed for more than 5 seconds.

* [Principle](#scroll-bookmark-29)
* [Applied Equations](#scroll-bookmark-30)

#### Principle

The test itself consists of programming the required bus voltage down to a low level, which has the effect of discharging the battery into the load. The battery discharge current is then integrated over time, and the integration result is compared to a given Ampere hour value.

During the battery test, the discharge current of the battery is regulated at the configured parameter “Battery Test Discharge Current”. If the output current is greater than the discharge current limit, the rectifiers supply the difference of current. If the output current is too low, according to parameter “Battery Test Minimal Discharge Current”, the test will be canceled.

If the Ampere hour value is reached while the bus voltage is still above the “Battery Test End Voltage”, the battery is considered good and the “Battery Last Test Failed” alarm is not generated.

If the bus voltage reaches the “Battery Test End Voltage” prior to reaching the Ampere hour value, the battery test is considered as failed and the “Battery Last Test Failed” alarm is generated. This alarm remains active until the front panel switch is pressed or reset trough a communication interface.

If the front panel switch is pressed during a test, the test is immediately canceled.

After a battery test (succeeded, failed or canceled), the DC system returns in float or boost mode, according to configuration.

#### Applied Equations

Battery test is based on Peukert's law for discharging a lead-acid battery ([1]), that predicts battery capacity for a given discharge current and discharge time.

Battery String Capacity is the capacity in Ampere-hours given by constructor for a rated discharge time (generally: 10 hours). Peukert Number is a constant comprized between 1.1 and 1.3, according to lead-acid used technology and battery aging.

According to this model, effective current (battery capacity divided by actual time to discharge it) is calculated by: actual current \* (actual current \* rated discharge time / battery capacity) ^ (Peukert - 1).

* If effective current is < 0, battery is discharging.
* If effective currrent is > 0, battery is charging.

Battery remaining capacity equals (in %) to: 100 \* (battery capacity + sum (effective current (minute) ) / 60 ) / battery capacity.

[1] <http://en.wikipedia.org/wiki/Peukert%27s_law>

### Boost Mode

The DC bus voltage can be increased in order to charge the battery faster. This mode can be automatically started after an AC Failure, after a battery test, or remotely. (This mode is recommended only with some kind of battery).

### List Of Possible Events

Here is a non-exhaustive list of DC System's possible events. For each listed event, a possible fix or user action is suggested:

|  |  |  |
| --- | --- | --- |
| Event Name | Description | Fix |
| DC System Started | DC System shelf has been detected by Comp@s and is now monitored | Nothing to do |
| DC System Dying | This event only happens when DC system is using battery. Alarm "DC Bus Extra Low" will be generated just before this event happens (see: [Battery Low Voltage Disconnect Operation (LVD)](#scroll-bookmark-12)). | **Charge battery, or recover AC input voltage** |
| DC Mode Changed : *<new\_mode>* | Mode of operation has been changed (see: [Mode Of Operation](#scroll-bookmark-9)). If critical, an alarm will be generated. | **Check alarm** |
| Alarm Set: <*alarm\_name*> | The corresponding alarm has been set. | **Check alarm** |
| Alarm Clear: <*alarm\_name*> | The corresponding alarm has been cleared. | Nothing to do |

Some Comp@s Compatible Devices and Equipments

### Site Controller

|  |
| --- |
| **UCC** |

### DC Systems

|  |  |
| --- | --- |
| **Captin 300** | **Captin 850BW** |
| **Captin 850FA** | **ACE186** |
| **ACE153** | **ACE094** |

### Remote Power Feeding Systems

|  |  |
| --- | --- |
| **CES48** **(with CEM03)** | **REC006** |
| **RES24** | **RES96** |

### Inverter Systems

|  |  |
| --- | --- |
| **BRAVO** |  |

**Power Meters and other Sensors**

|  |  |
| --- | --- |
| **PM9C** | **IEM3150** |
| **MS-TH** | **1-Wire Interface** |
| **T-SENSE** |  |

Getting Started

* [Connecting the Comp@s Web Server over Ethernet](#scroll-bookmark-37)
* [Connecting the Comp@s Web Server over USB](#scroll-bookmark-38)
* [The Web Interface](#scroll-bookmark-39)
* [The Comp@s SNMP Agent](#scroll-bookmark-40)

Connecting the Comp@s Web Server over Ethernet

The Comp@s monitoring RJ45 female port provides a standard 10/100 MBit Ethernet connection. The default network configuration is:

|  |
| --- |
| **Default Ethernet Configuration**  IP address: **192.168.45.2**  Sub Mask: **255.255.255.0** |

Required material:

* A personal computer with Ethernet capabilities;
* A crossed Ethernet cable if the PC is directly connected to the Comp@s monitoring (Some recent PC have an automatic polarity detection, in this case a straight cable can be used);
* A straight Ethernet cable if the Comp@s monitoring is connected to a switch.

Required software:

* Any operating system with an up to date web browser. It is recommended to use Firefox >= 2.x or Internet Explorer >=7.x.

To connect to the system, the personnel computer has to be configured with a static IP address. You can use the IP 192.168.45.1 for example, with 255.255.255.0 as sub mask.

To do this under Windows XP, Access the Network Connections control panel (**Start -> Control Panel -> Network Connections**). Pick the connection you're using, generally Local Area Connection. Right-click on that connection's icon and pick Properties. Under "this connection uses the following items," scroll down to "Internet Protocol (TCP/IP)" and double-click on that. The "Internet Protocol (TCP/IP) Properties" window will appear:

|  |  |
| --- | --- |
| Figure 4 Network Configuration | Figure 5 TCP/IP Configuration |
| Right now, "Obtain an IP address automatically" is probably selected. Instead, select "Use the following IP address." In the "IP address:" field, enter the address you chose (for example, 192.168.45.1). The subnet mask will automatically become 255.255.255.0, which is correct. Than, click the “OK” button.  You can now start your web browser and browse to the URL [http://192.168.45.2](http://192.168.45.2/) . The Comp@s web server will ask for a login and a password which are:   |  | | --- | | **Default Admin Password**  Login/User Name : **admin**  Password : **compas**  (Please note that login and password are case sensitive) |   You are now connected on the web interface as administrator of the system. For the users : refer to [User Access Management](#scroll-bookmark-41). | Figure 6 Authentication |

Connecting the Comp@s Web Server over USB

The USB Type-B socket provides a standard USB client connection, allowing having a local connection with any computer. Here follows the procedure.

|  |  |
| --- | --- |
| Required material:   * A personal computer with Ethernet capabilities; * A standard Type-B plug to Type-A USB plug. |  |

Required software:

* A Windows XP / Vista / Seven operating system.
* A web browser: it is recommended to use Firefox >= 2.x or Internet Explorer >=7.x.
* The free Microsoft Active Sync application. This application is available on the web:  
  <http://www.microsoft.com/en-us/download/details.aspx?id=15>
* Please note that with Vista, you don’t have to install Active Sync. The “Sync Center” is already installed and is enough. (In this case, you can skip step 2.) With Windows 7, you should download the free Microsoft Mobile Device Center application: <http://www.microsoft.com/download/en/details.aspx?id=14> (32-bit), <http://www.microsoft.com/download/en/details.aspx?id=3182> (64-bit).

**STEP 1:** Do not connect the USB cable yet

**STEP 2:** Install the Active Sync application. A computer reboot may be asked at the end of the installation.

**STEP 3:** Activate the port forwarding over USB. To do this, a small modification in the registry must be done. You can use the windows registry editor “Regedit”, and add the following entry:  
  
In HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows CE Services\ProxyPorts, add the "HTTP PORT FORWARDING" DWORD value, with data: 00000050.

**STEP 4 (facultative):** If you need to redeploy on several client, open a new text file and write the followings 3 lines:

|  |
| --- |
| Windows Registry Editor Version 5.00  [HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows CE Services\ProxyPorts]  "HTTP PORT FORWARDING"=dword:00000050 |

Then, save the file as “Compas.reg” and execute it (double-click).

**STEP 5:** Connect the USB cable between the personal computer and the Comp@s monitoring.

**STEP 6:** Active Sync application should detect the connection and ask to “Set Up a PartnerShip”. Just click on “No” and afterwards on “Next”.

**STEP 7:** It is now possible to browse the Comp@s Flash disk content by going to: Start menu > Computer > Compas, under Windows Vista or Windows 7 (or: Desktop > My Computer > Mobile Device, under Windows XP).

**STEP 8:** Start your Web Browser and enter the URL address [http://127.0.0.1](http://127.0.0.1/) or [http://localhost](http://localhost/) .

**STEP 9:** The Comp@s web server will ask for a login and a password which are:

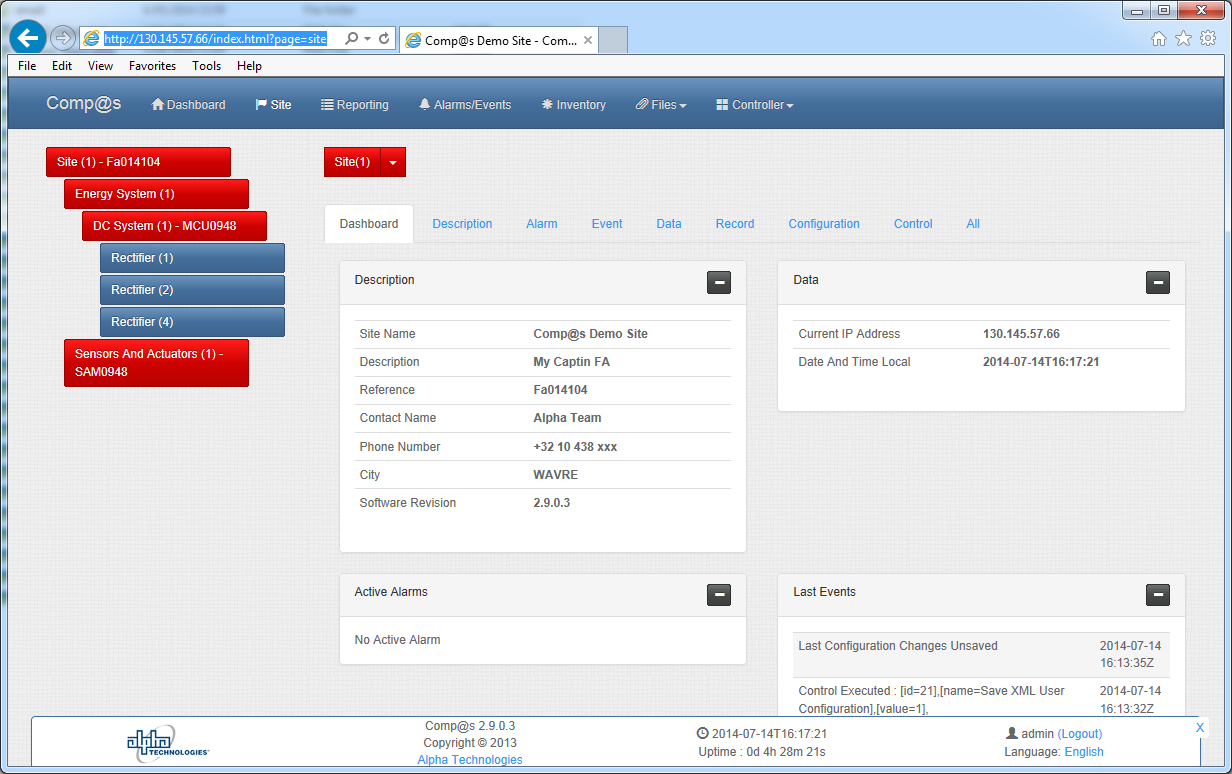
|  |
| --- |
| **Default admin password**  Login/User Name: **admin**  Password: **compas**  (Please note that login and password are case sensitive) |

You are now connected on the web interface as administrator of the system.

The Web Interface

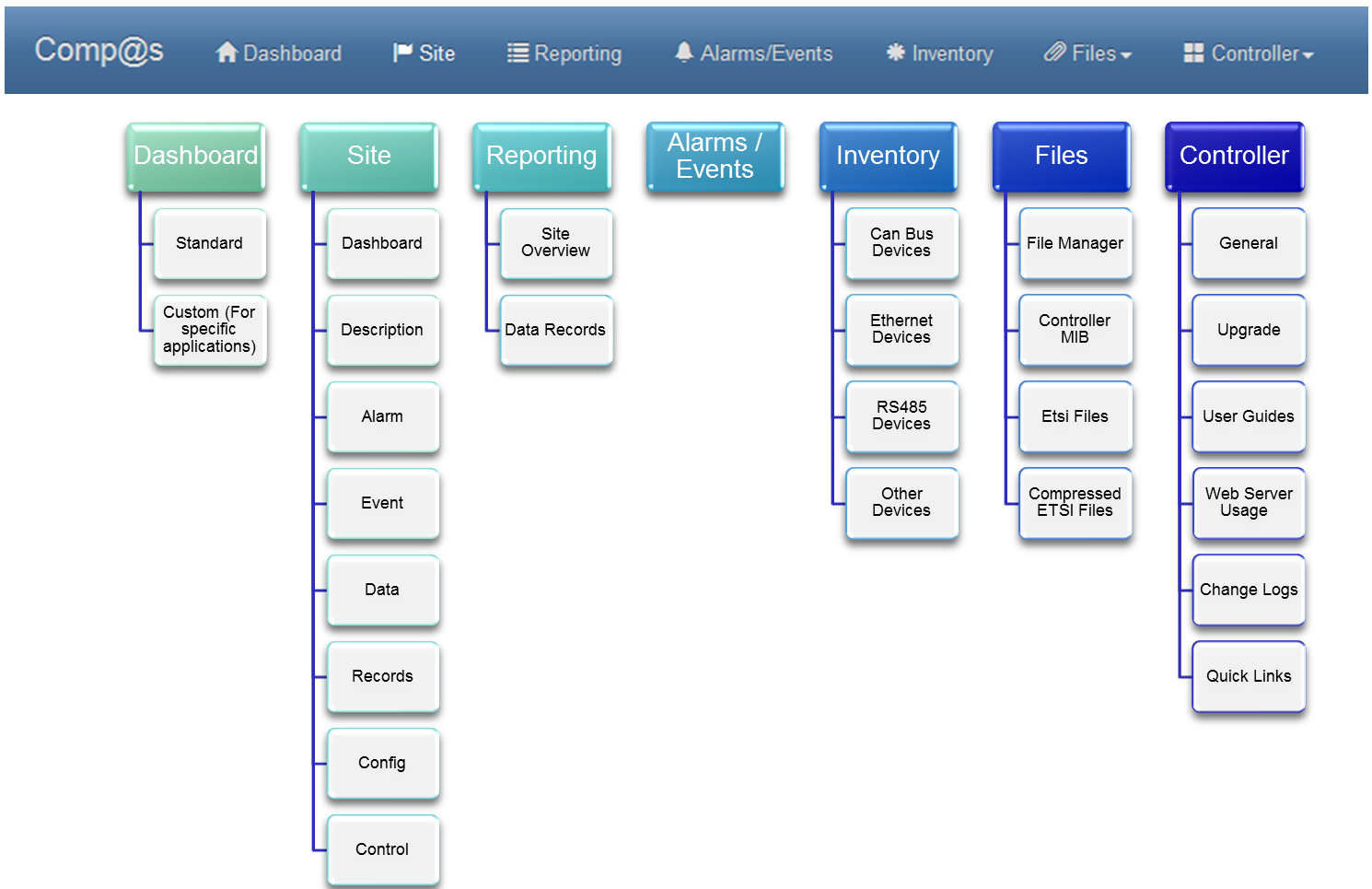
The following figure shows the default initial web page displayed after login (Site):

* The top menu gives access to other pages
* The left part shows the hierarchy of the component of the system (Site, DC System, Rectifier, etc.). If all these tree nodes are in a blue color, no alarm is active. Otherwise, red = major alarm, orange = minor, yellow = warning.
* The main content concerns the description of a site, comprising address, GPS position, etc. One can see the presence of different tabs (Description, Alarms, Events, Data, Records, Configuration), allowing to see corresponding values related to the selected tree node.
* The bottom part displays the date and the time, software information, login information, and language selection



The website is structured as shown if the following diagram:

Figure 7 Initial page displayed (Site by default)

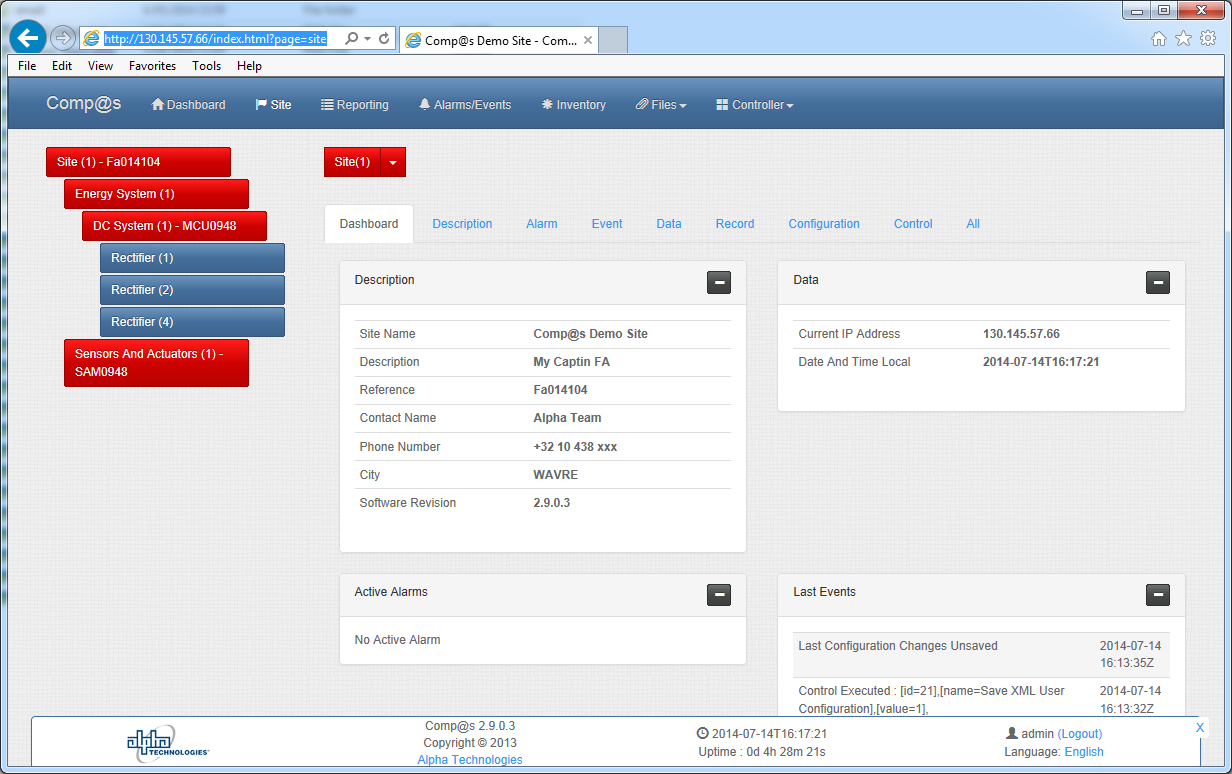


### Site

The following figure shows the default initial web page displayed after login (Site):

* The top menu gives access to other pages
* The left part shows the hierarchy of the component of the system (Site, DC System, Rectifier, etc.). If all these tree nodes are in a blue color, no alarm is active. Otherwise, red = major alarm, orange = minor, yellow = warning.
* The main content concerns the description of a site, comprising address, GPS position, etc. One can see the presence of different tabs (Description, Alarms, Events, Data, Records, Configuration), allowing to see corresponding values related to the selected tree node.
* The bottom part displays the date and the time, software information, login information, and language selection

Figure 8 Initial page displayed

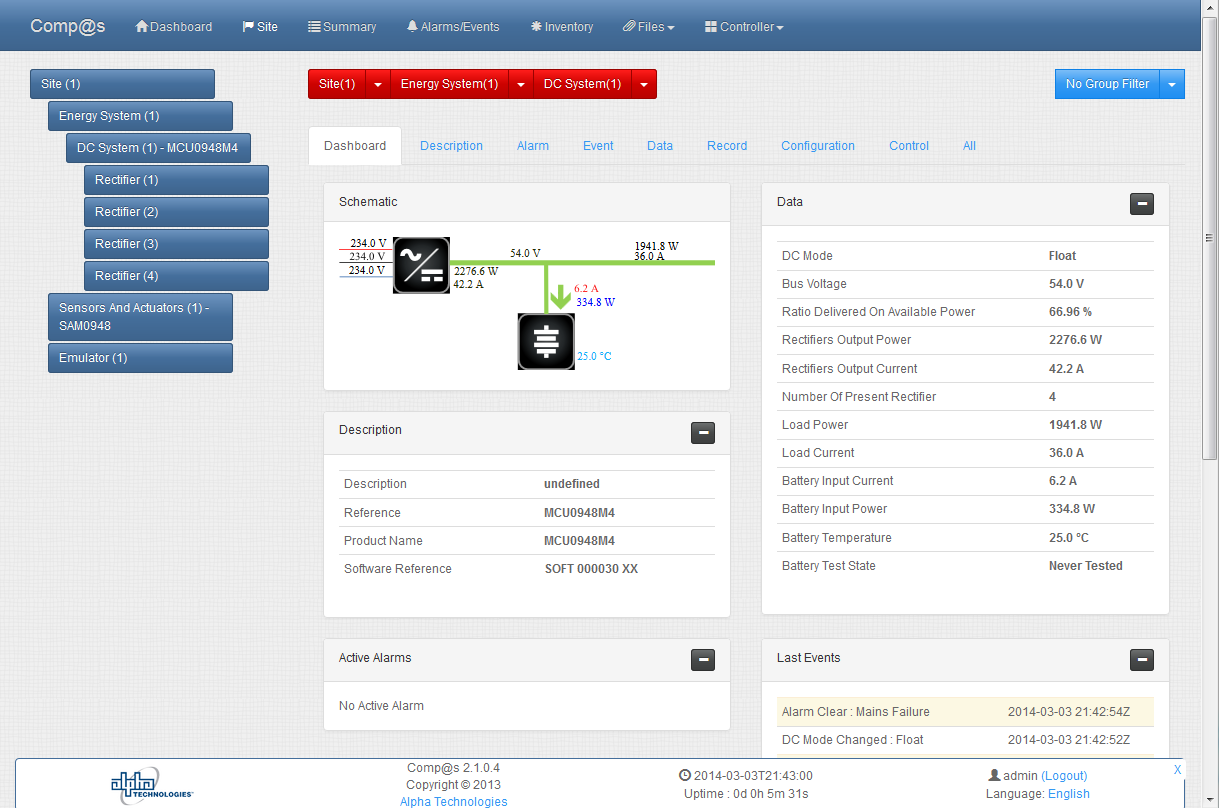


The following tabs are therefore available:

* [Site - Description](#scroll-bookmark-43)
* [Site - Alarm](#scroll-bookmark-44)
* [Site - Event](#scroll-bookmark-45)
* [Site - Data](#scroll-bookmark-46)
* [Site - Record](#scroll-bookmark-47)
* [Site - Configuration](#scroll-bookmark-48)
* [Site - Control](#scroll-bookmark-49).

#### Site - Dashboard

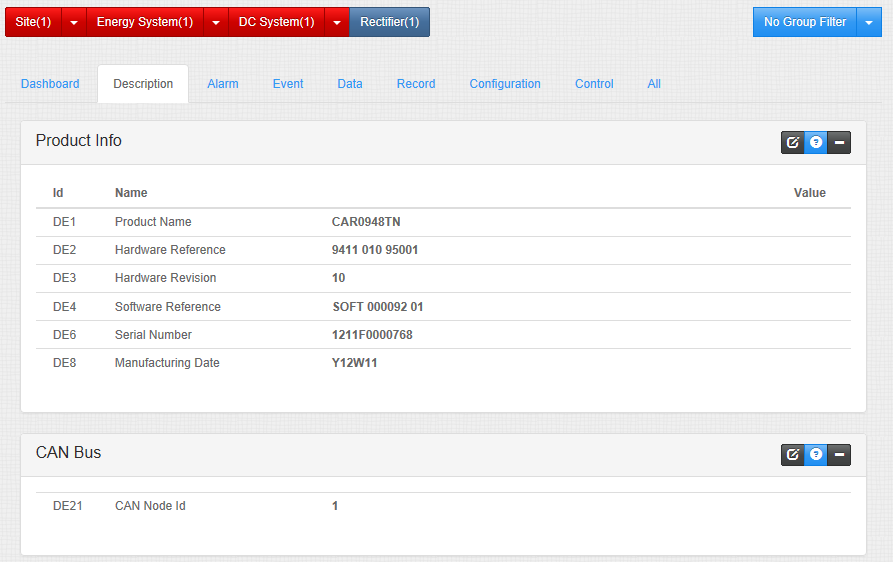
Figure 9 Dc system Dashboard



#### Site - Description

The following screenshot shows an automatic description of a specific rectifier. Some of our rectifiers embed their hardware/software reference and revision, their serial number, manufacturing id, manufacturing date, etc. This allows a powerful traceability of our products in a network of widely spread cabinet:

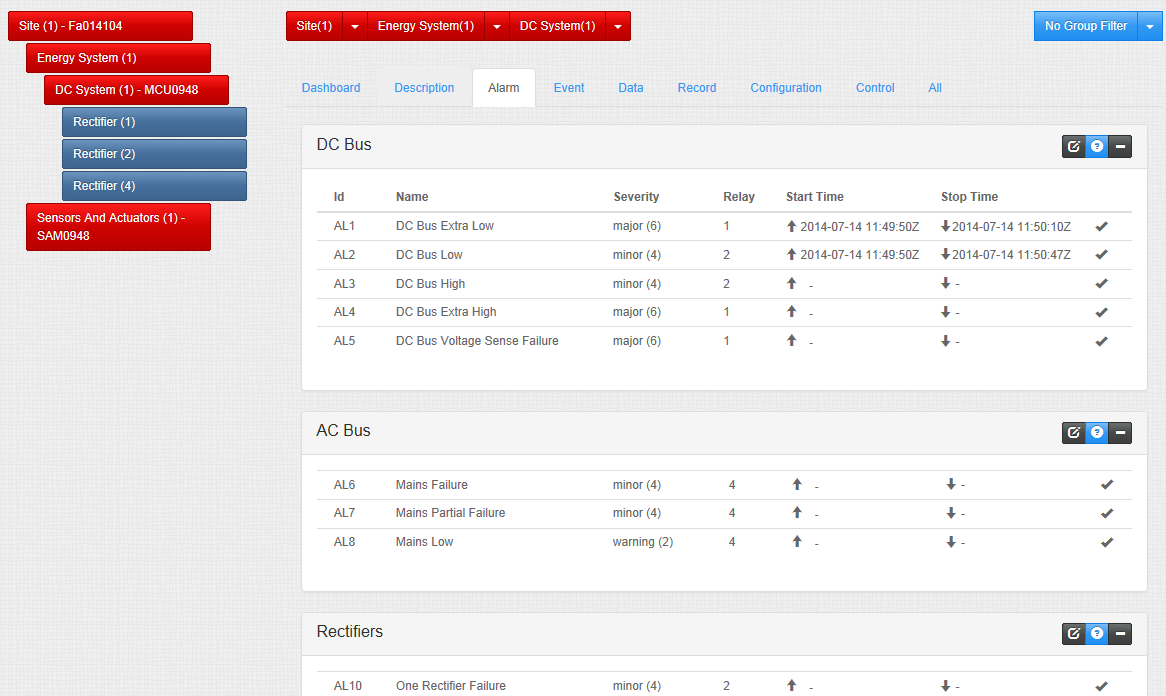
Figure 10 Rectifier Tab



#### Site - Alarm

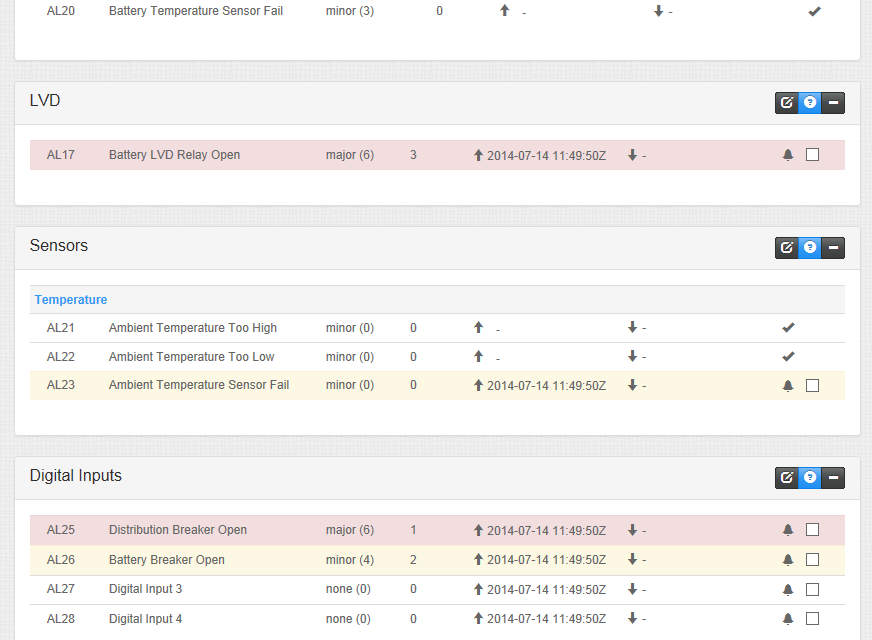
The following figure illustrates how the alarms are displayed. When equipment is in alarm, the left tree menu reflects the situation, allowing to quickly locating a problem:

Figure 11 Alarms at the DC System level



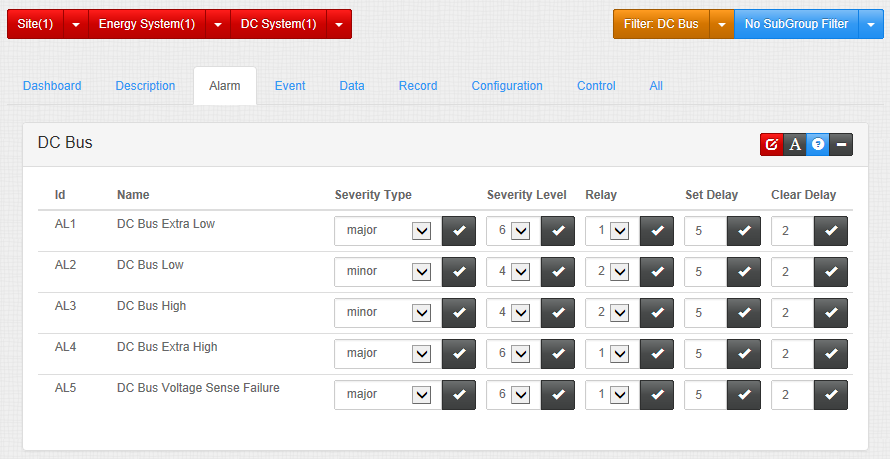
The active alarms are highlighted in a color corresponding to the severity type of the alarm (Red: major, Orange: minor, Yellow: warning). One can see the start time and the stop time of a specific alarm, the associated relay (if dry alarms exist), the severity type and the severity level.

Figure 12 Active alarm at dc system



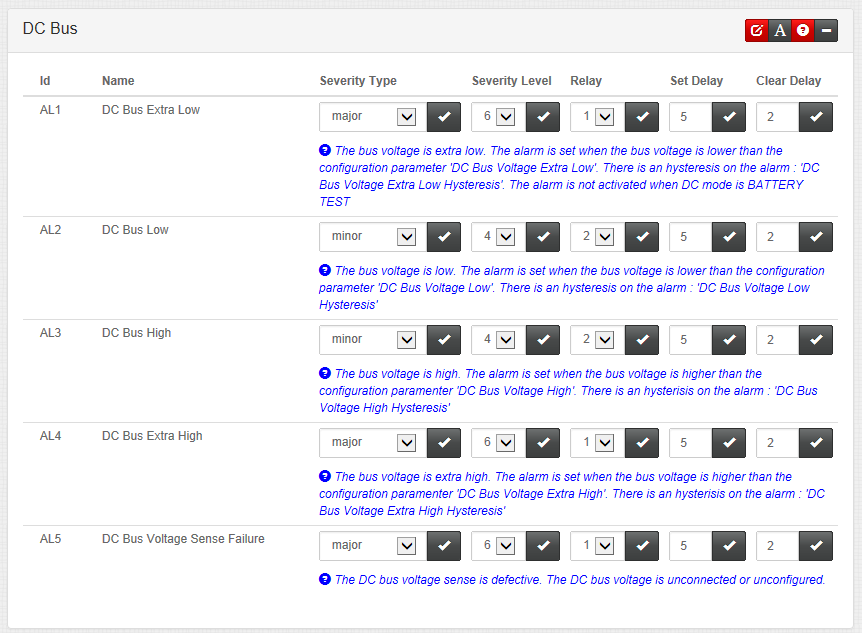
The following figure illustrates how an alarm can be configured. It is possible to change the severity type, the severity level, the associated dry alarm relay, the set delay and the clear delay:

Figure 13 Alarm configuration



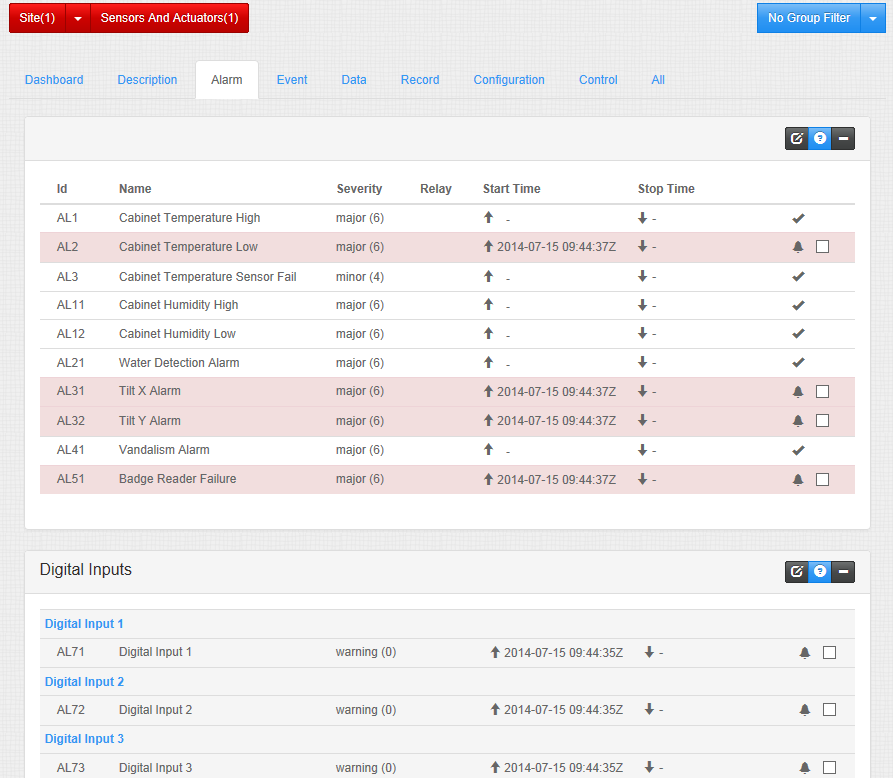
If you need help, you can display it by clicking on the question mark.

Figure 14 Diplaying Help



The following figure shows alarms related to some sensors and actuators connected to an extension module: Vandalism alarm (shock detection), Water Detection, Cabinet Temperature Too High, Cabinet Humidity High, Badge Reader Failure, etc.:

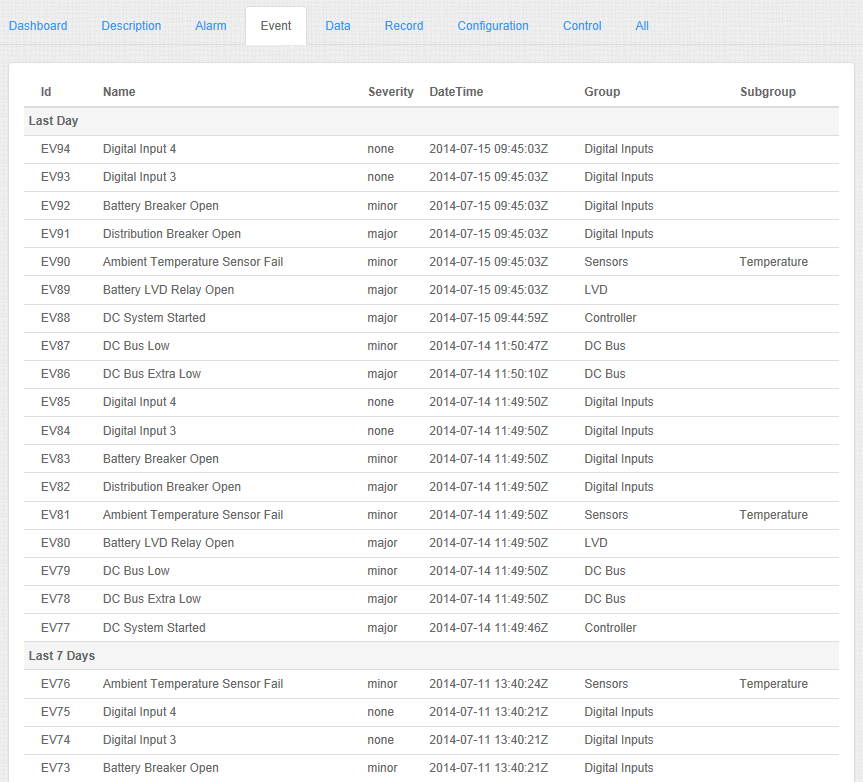
Figure 15 Sensors and Actuators alarms



#### Site - Event

The following figures show a list of events related to a DC System. It is possible to configure the number of events to keep. These events can be sent to multiple servers with SNMP traps or by HTTP post of XML files to a primary and a secondary server:

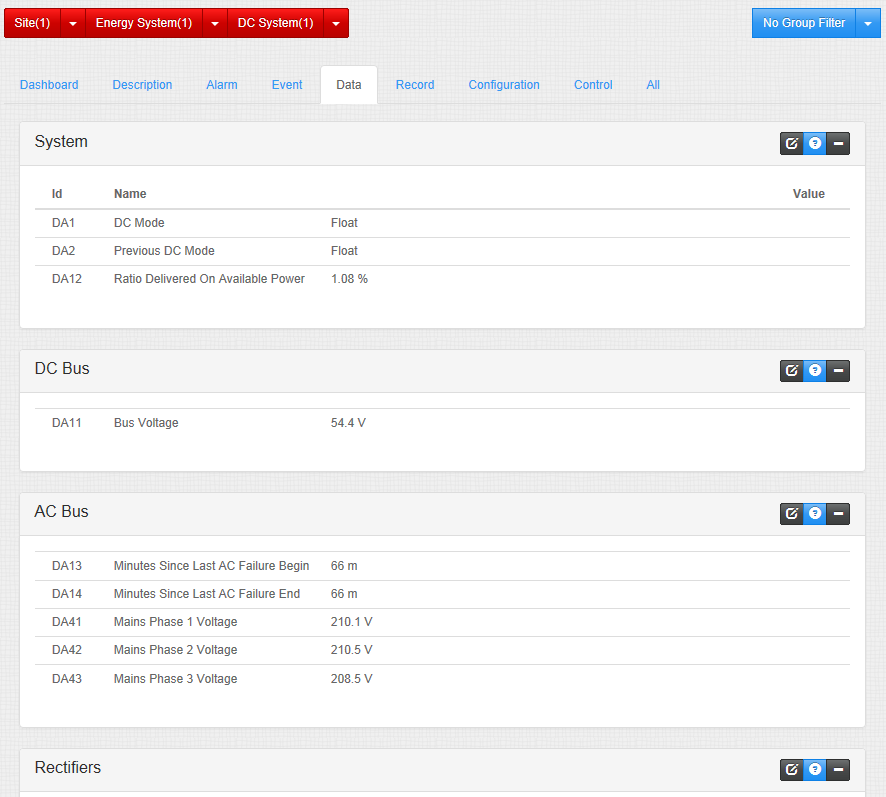
Figure 16 Events related to DC System



#### Site - Data

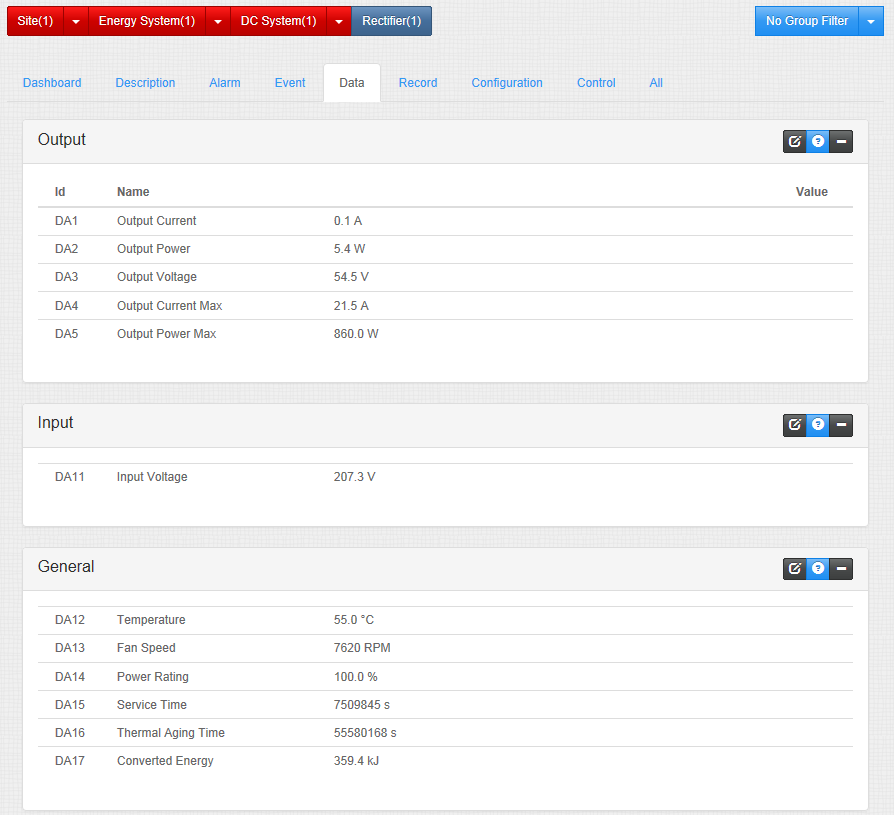
The following figure shows some data related one DC system: bus voltage, number of present rectifier, load power, rectifier output power, etc.:

Figure 17 Data related to DC System



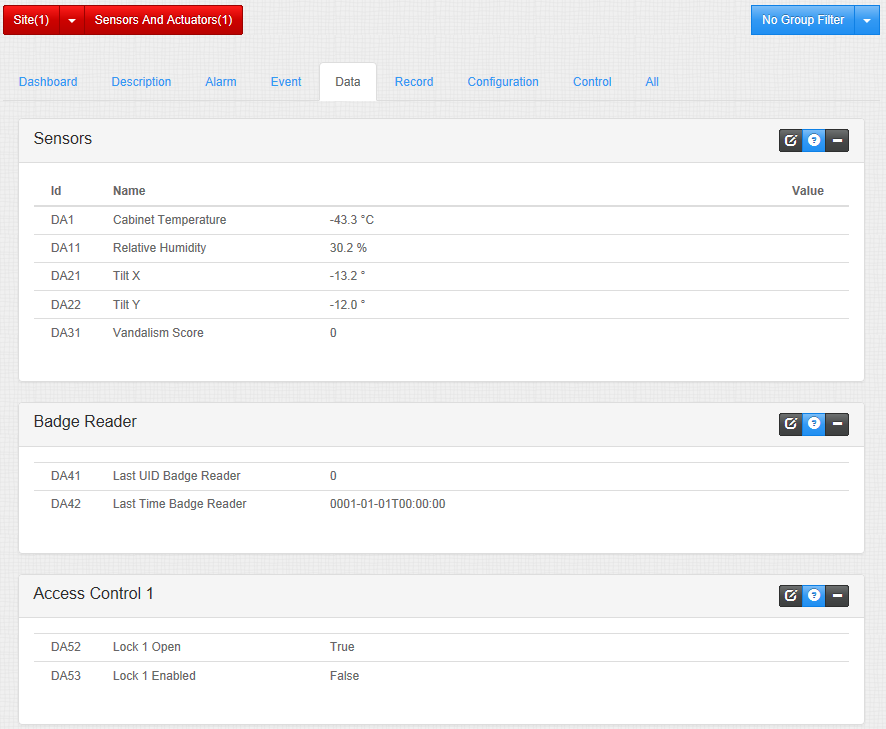
The following screenshot shows detailed data related to a specific rectifier. It is possible to retrieve for example: the power rating, the fan speed, the temperature, the total converted energy, the service time, the input AC voltage, etc. The screenshot is an example for the CAR0948TN rectifier:

Figure 18 Rectifier Data



The following screenshot shows data related to some sensors and actuators connected to an extension card. One can see the cabinet temperature, the relative humidity, the tilt of a cabinet, heat exchanger status, RFID badge reader information, door lock state, etc.:

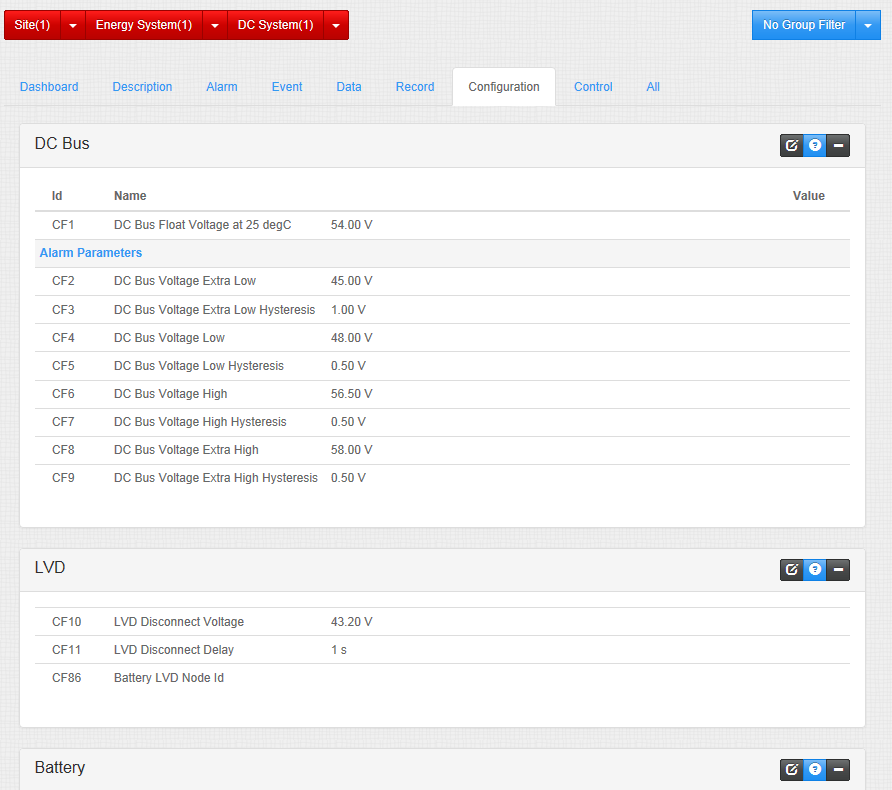
Figure 19 Sensors and Actuators data



#### Site - Configuration

The following screenshot illustrates some configuration elements for a dc system. Battery test, boost, partial load disconnection, opening LVD, battery temperature compensation can be configured it these tabs:

Figure 20 DC System Configuration Tab



The configuration of the site:

Figure 21 Site Configuration

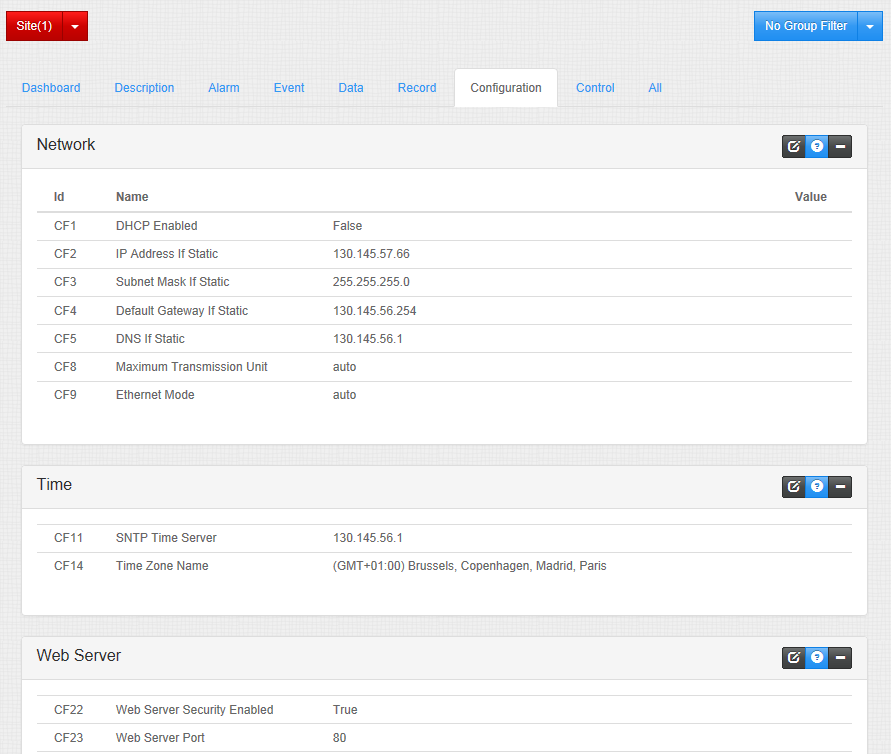
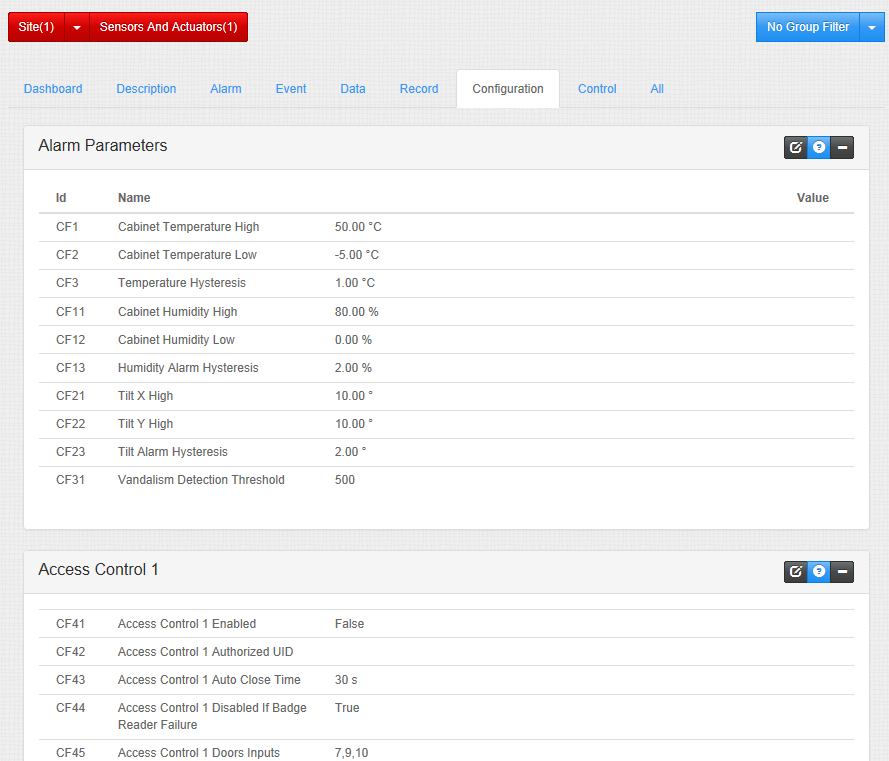


Figure 22 The configuration of an extension card

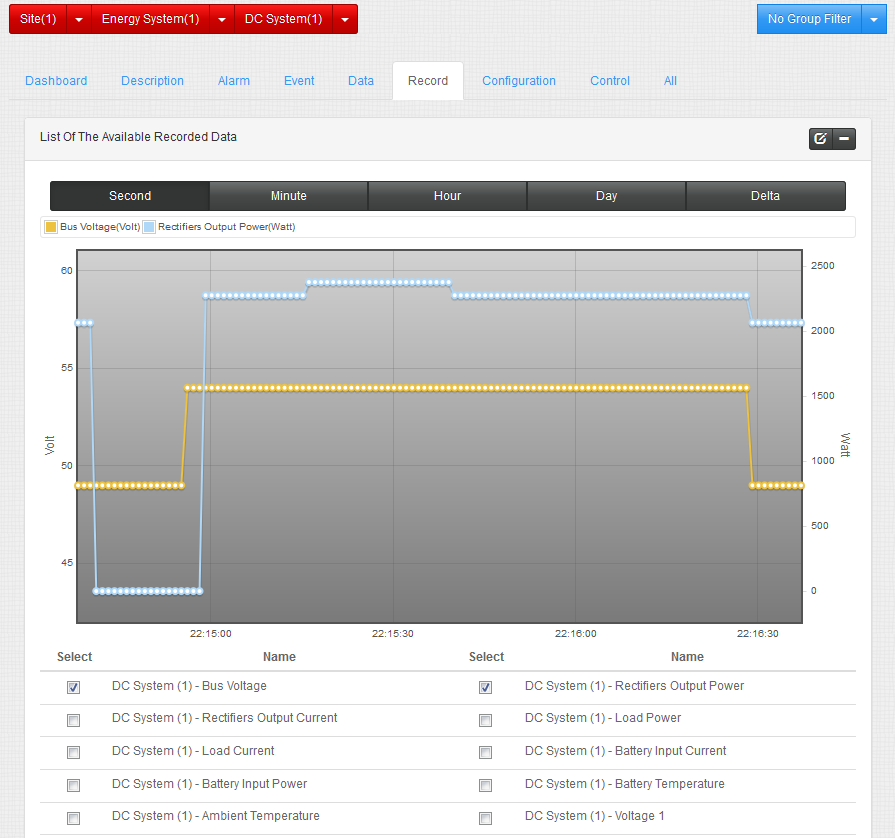


#### Site - Record

The monitoring can keep data records. It can provide the record of the last seconds, last minutes, last hours, last days, and last months. This is a powerful tool to do statistics and optimize many parameters in your systems.

|  |
| --- |
| Note that these records are accessible only if the “asset” license package is present. |

Figure 23 DC System Record Tab



When only one record is selected, for the Minute, Hour and Day resolution, the min and the max is also displayed.

Figure 24 Bus Voltage record of the last minutes



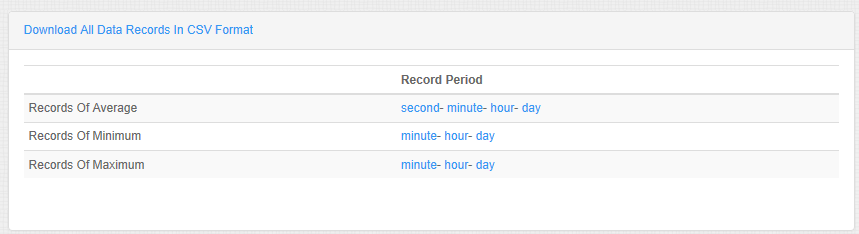
You can zoom in/out with the wheel mouse and pan with the left click. As the chart is refreshed every 5 second, you can pause this behavior.

Figure 25 Zoom and Pan in the chart



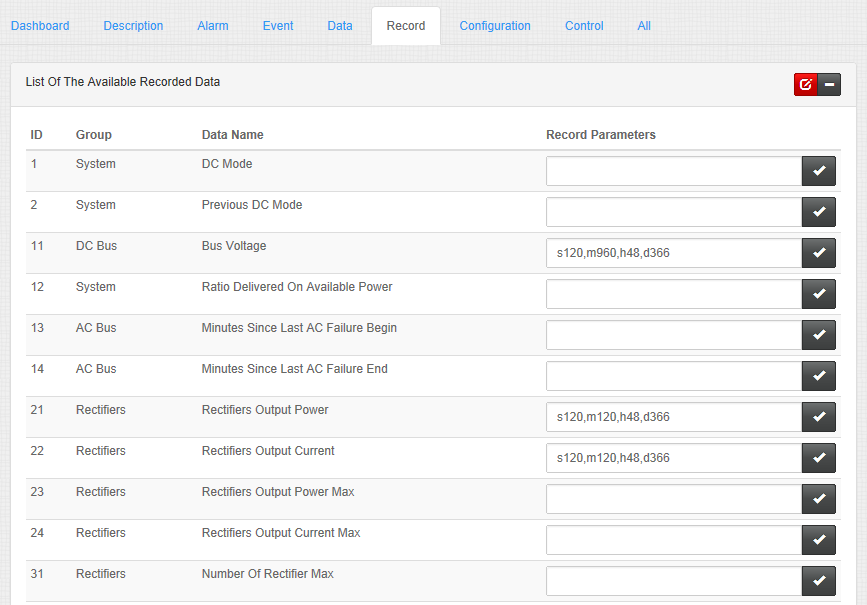
The records can be download in CSV format (Coma Separeted Value). The first line is the data name.

Figure 26 Download in CSV format



In edit mode, any data can be configured with a data record. You can also change the number of record to keep, by data.

Figure 27 Record Configuration



#### Site - Control

A control tab contains elements which can be executed, like starting a battery test, rebooting the monitoring, etc. The control command when the user clicks on the “Execute” button. On some entry, a parameter value is passed when executing the command:

Figure 28 Control Tab at site level

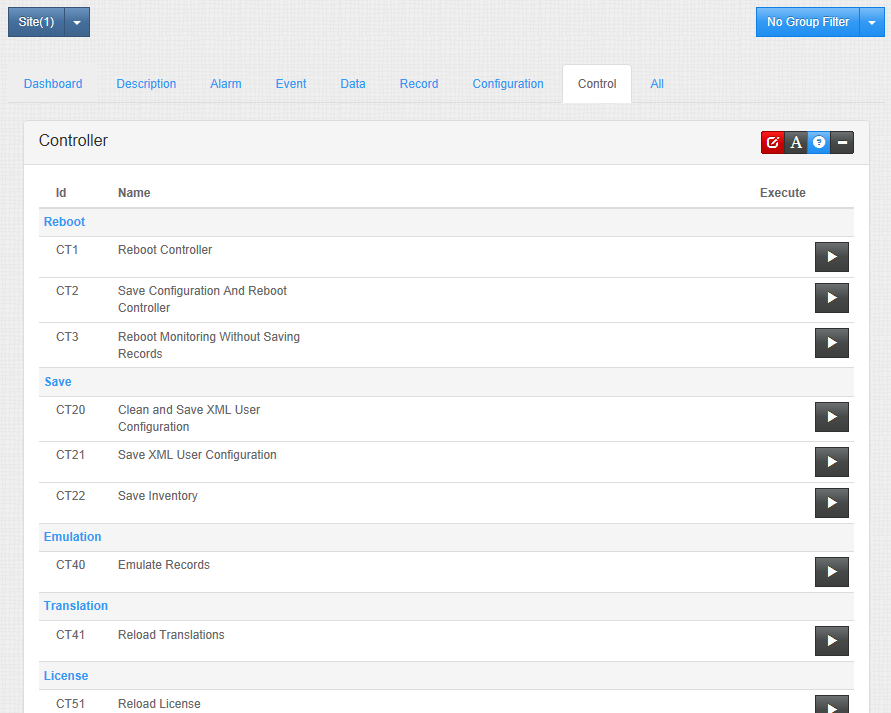
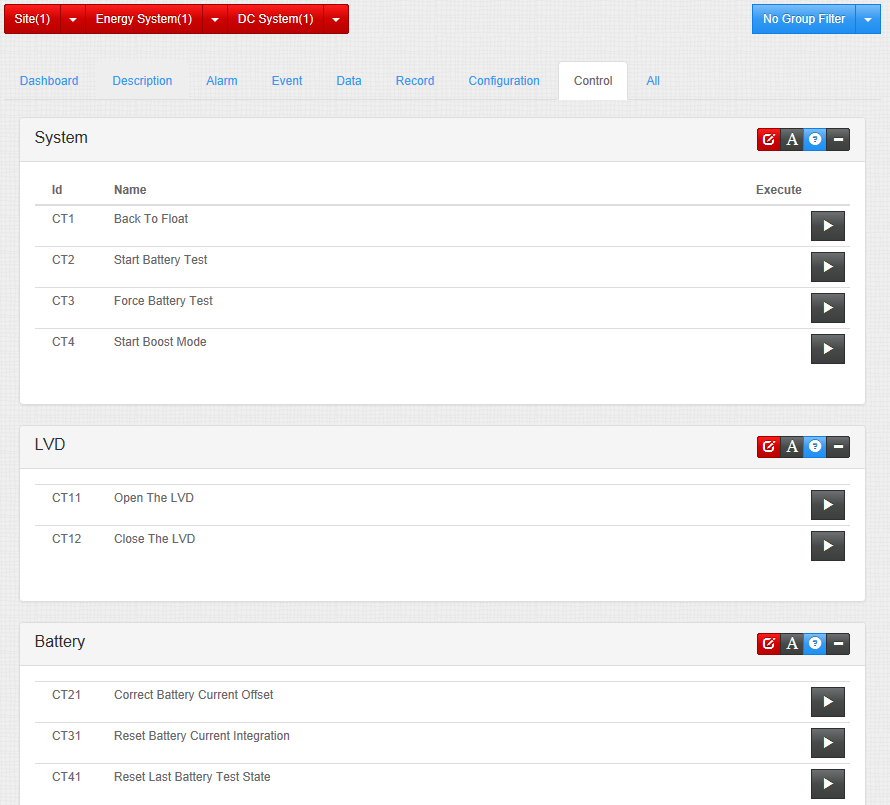


Figure 29 Control Tab at DC System level



#### Filter Concept - Group/Subgroup

Figure 30 Dropbox for grouping

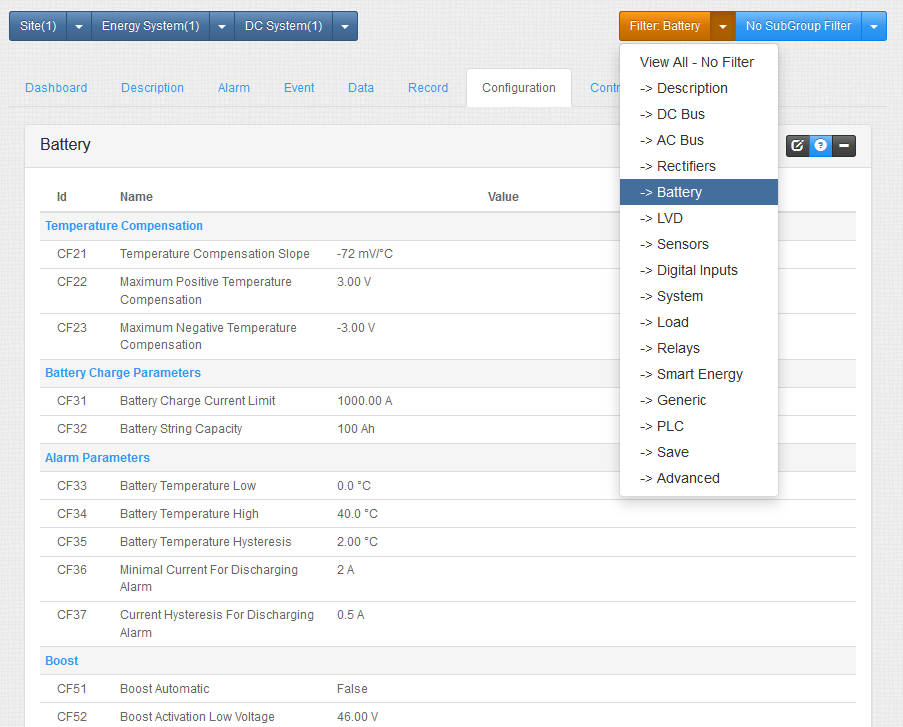
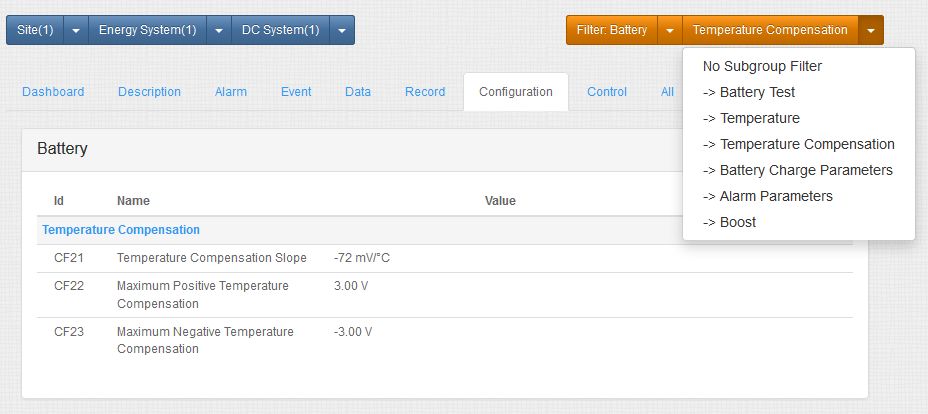


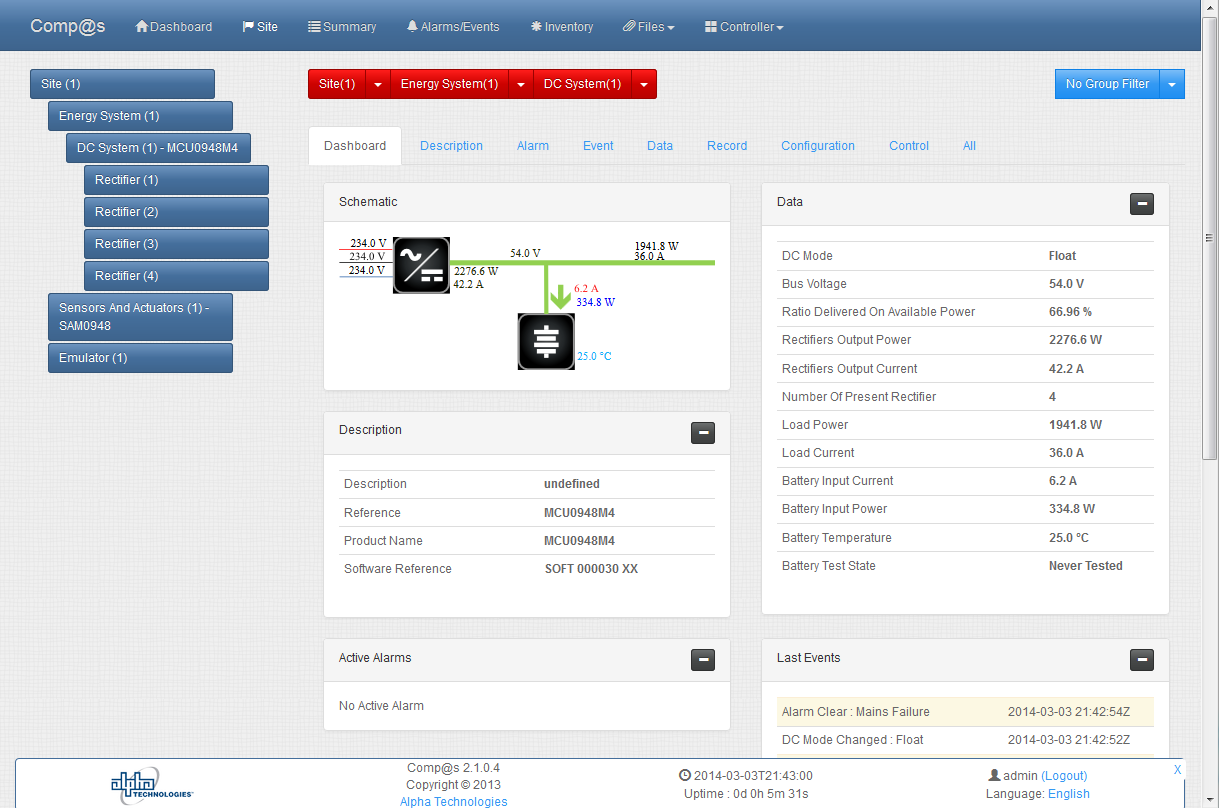
Figure 31 Dropbox subgroup



#### Site - All

### Dashboard

Figure 32 Dashboard



### Reporting

Figure 33 Site Overview

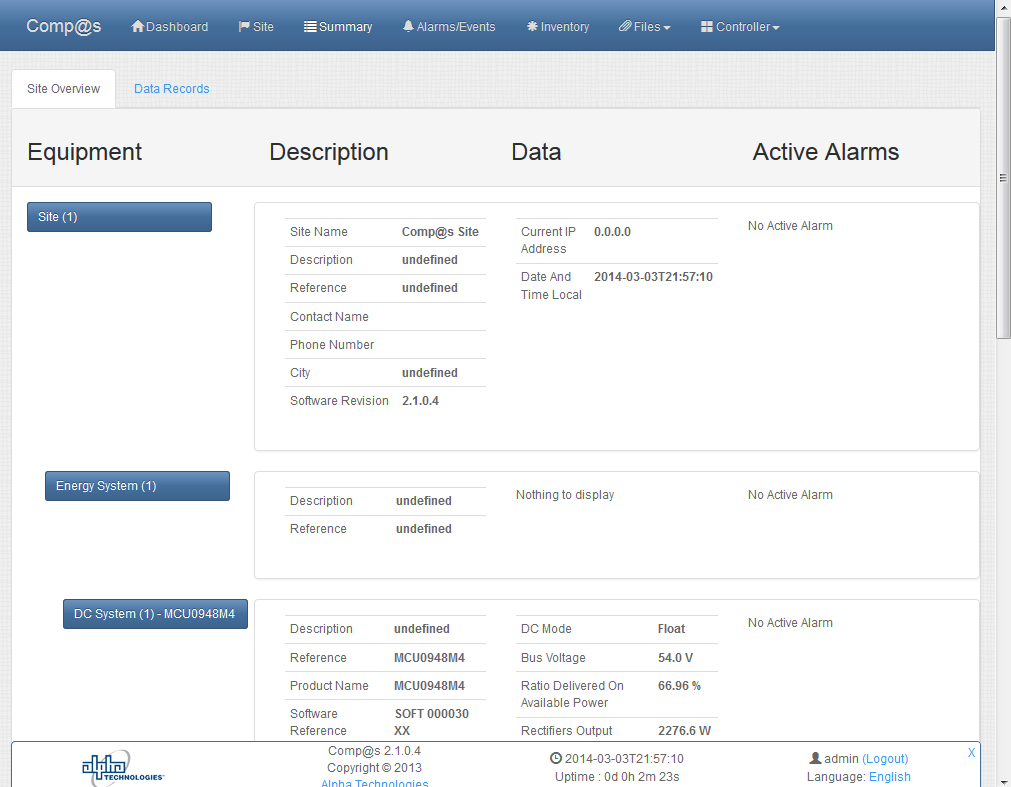
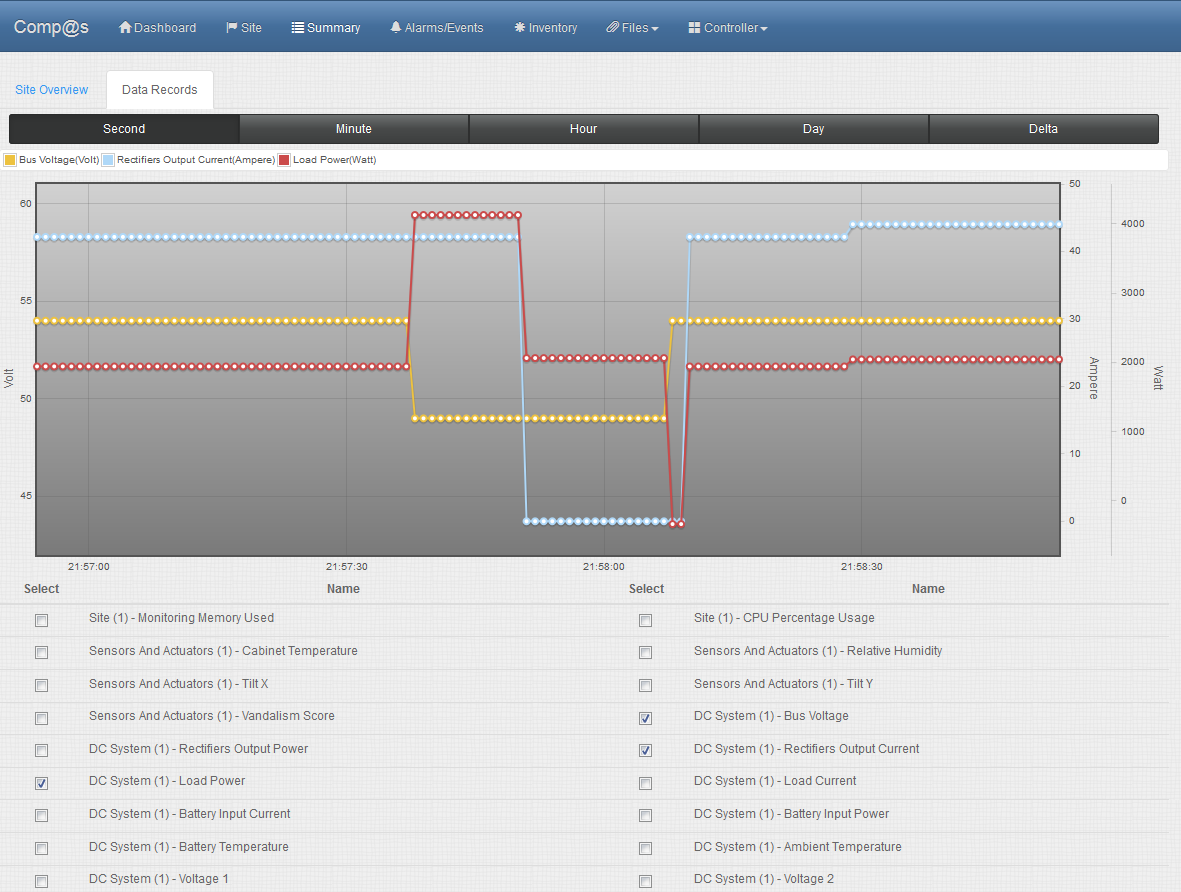
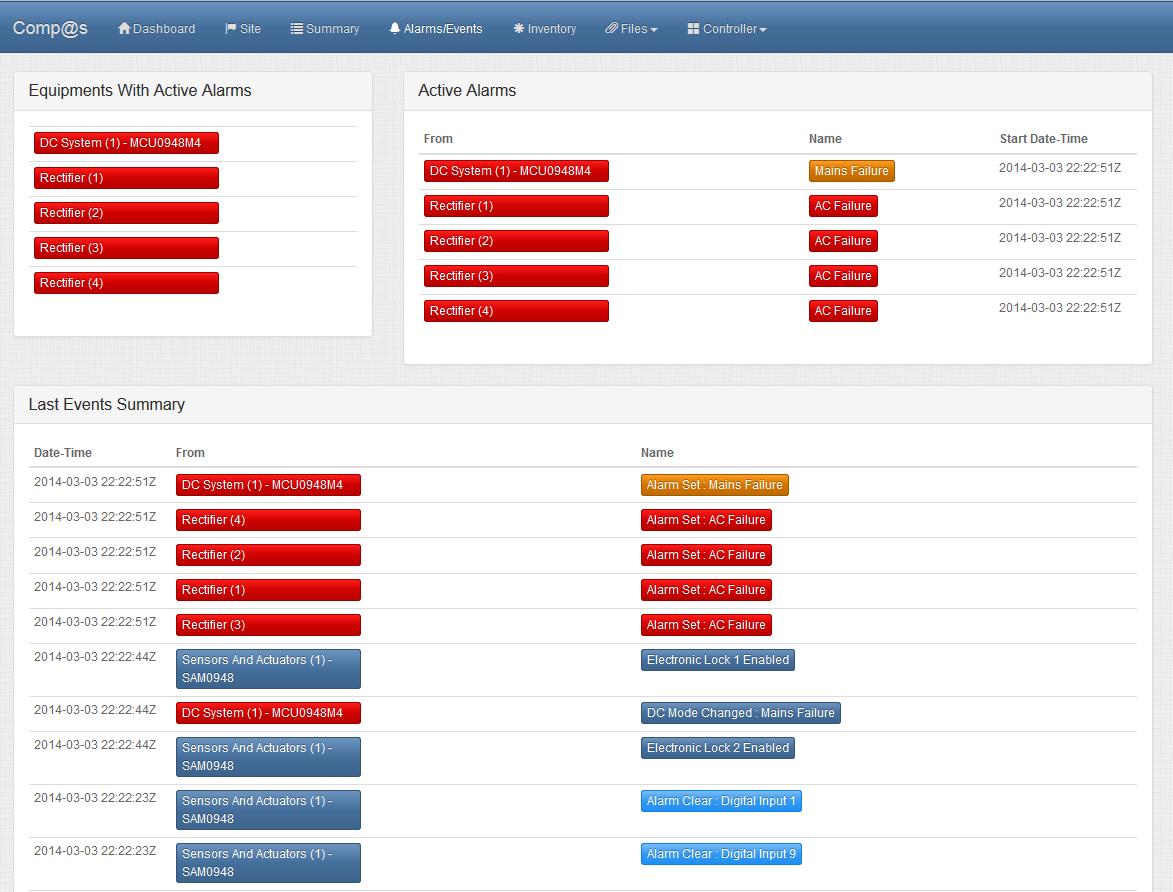


Figure 34 Data Records



### Alarms/Events

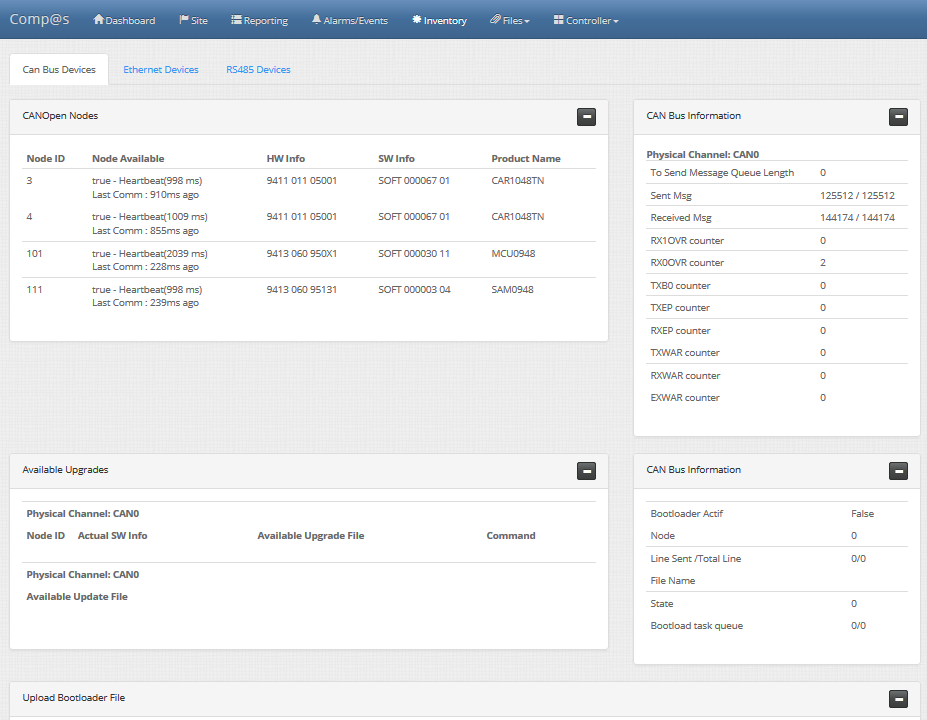
Figure 35 Alarms/Events



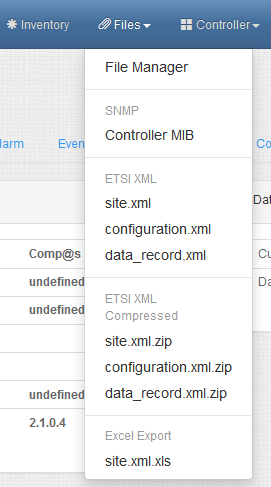
### Inventory

The inventory page is about the device list that Comp@s is managing, over CAN, Ethernet and RS485.

Figure 36 Inventory



### Files



### Controller

Figure 37 General



Figure 38 Upgrade

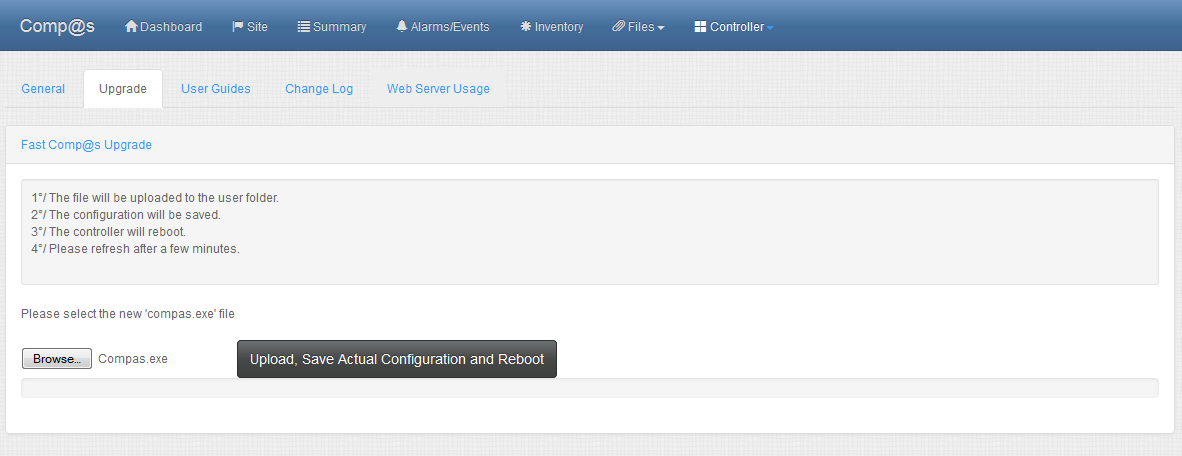


Figure 39 User Guides

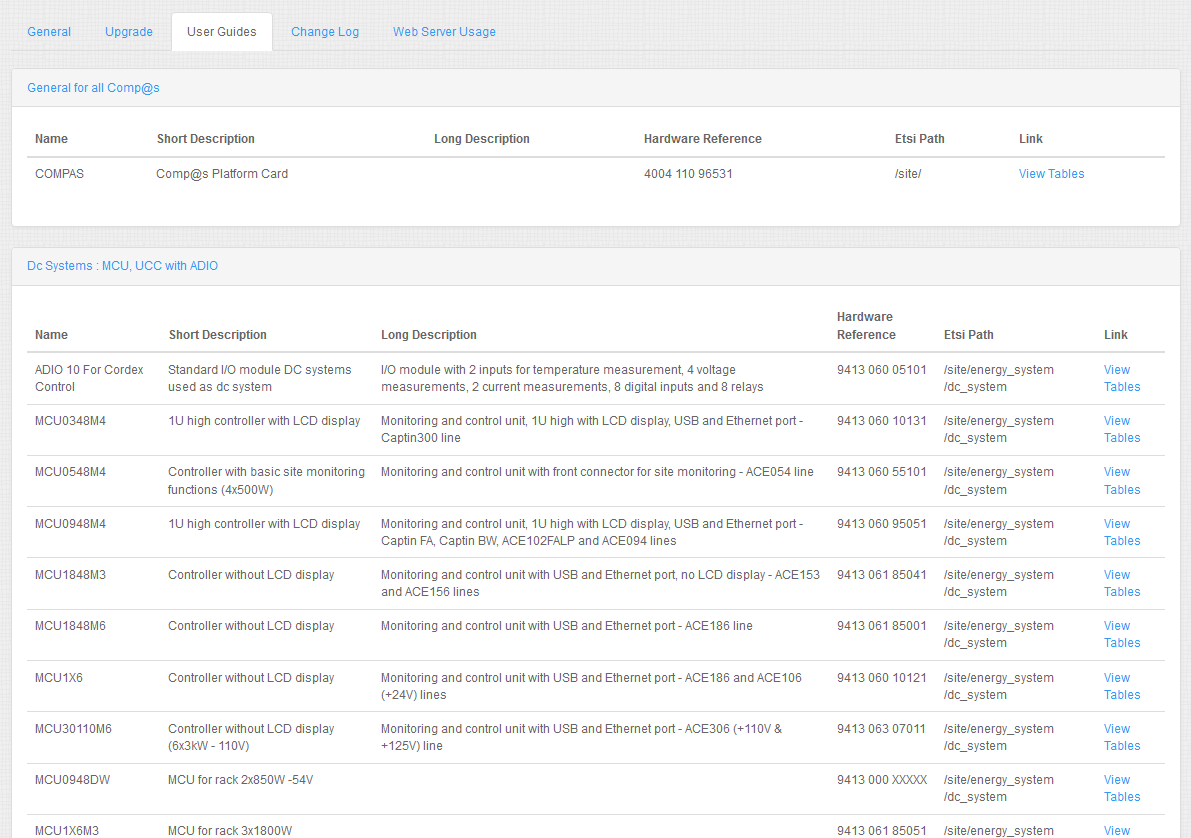


Figure 40 Change Log

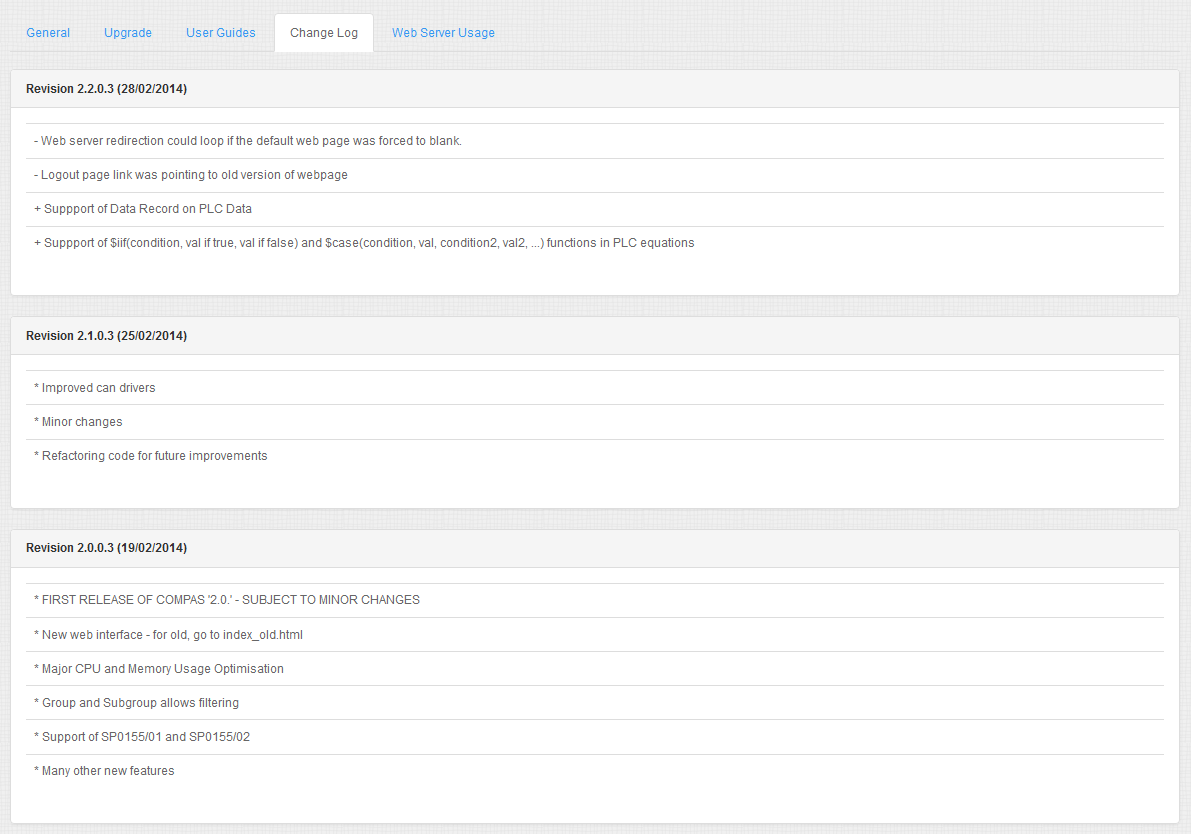


Figure 41 Web Server Usage

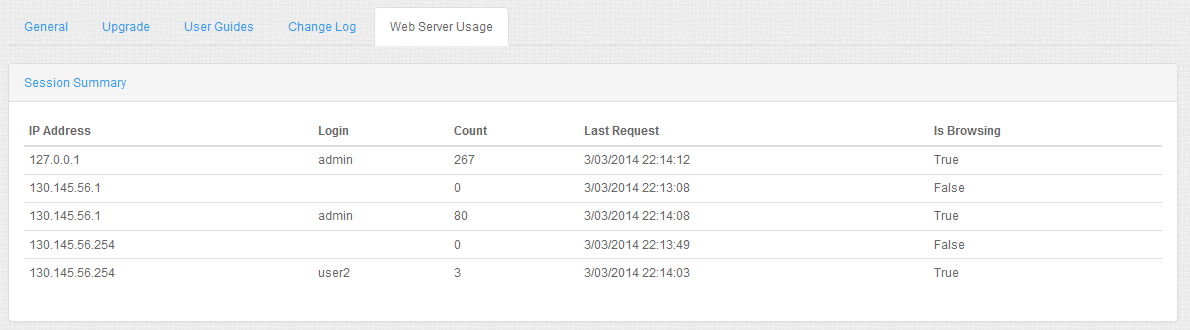
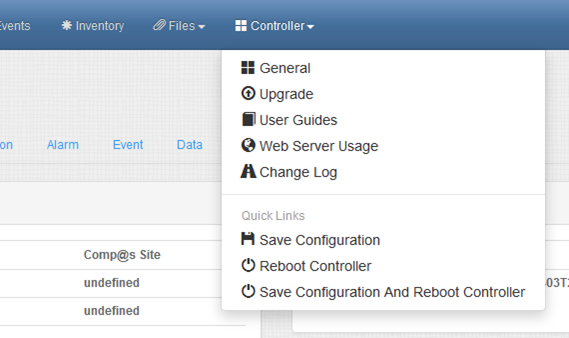


Figure 42 Quick Links



### Modifying values

The following figures illustrate how to change any configurable value. When you click on the button "Modify", all the configurable values become editable. You are now able to change the value.

Figure 43 Edit Mode

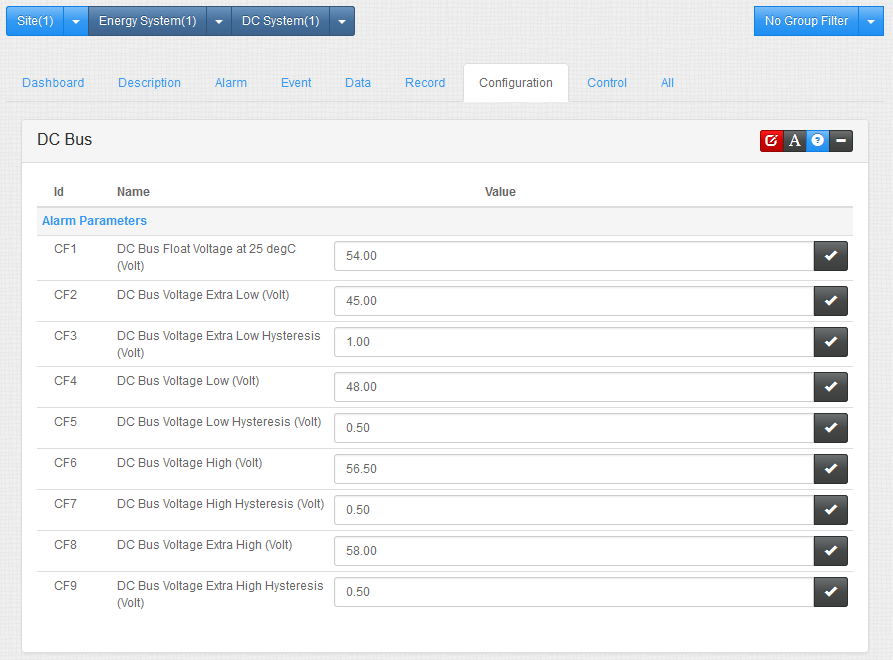
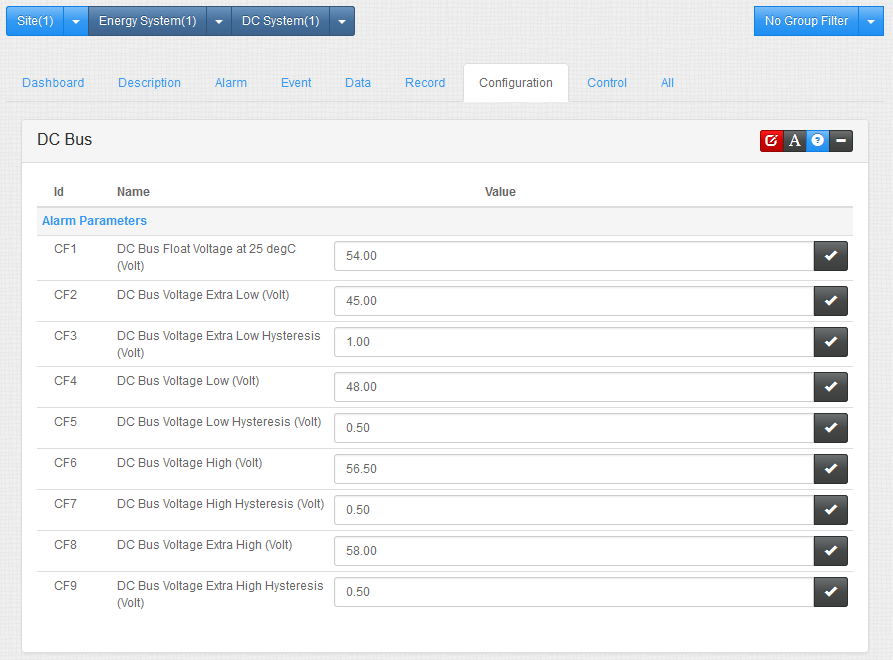


Figure 44 Modifying values



A click on the “Validate (V)” button sends the change to the monitoring. This method is used to change any parameter of the system. If the parameter is wrong, a message is displayed or the previous parameter is reset.

Note that each modification of setting must be confirmed individually by a “click” on the “Modify” button of the concerned parameter or information.

If you reboot the system after parameters change, modification will be lost. You have to save the system configuration after changes, as explained in [Saving The Changes](#scroll-bookmark-60).

### Changing the Network Configuration

|  |  |
| --- | --- |
| **Network configuration steps**  **STEP 1:** Browse to Site --> All, and filter on Network:  The configuration parameters are available in Site -> Configuration. But it is easier to display 'All', filtered with group '**Network**' to see live related data and control at the same time. Detailed Information about these parameters is available in the detailed table of chapter 8.1.:  Figure 45 Network configuration  **STEP 2:** Switch to edit mode and configure. (Help is available by clicking the '?')  Figure 46 Edit Network Configuration  Note that the changes are not applied immediately! You have to apply the changes …  **STEP 3:** To apply the changes, use the control CT6 : 'Apply Network Configuration'   |  | | --- | | **Network configuration steps**  **STEP 1:** Browse to Site --> All, and filter on Network:  The configuration parameters are available in Site -> Configuration. But it is easier to display 'All', filtered with group '**Network**' to see live related data and control at the same time. Detailed Information about these parameters is available in the detailed table of chapter 8.1.:  Figure 47 Network configuration  **STEP 2:** Switch to edit mode and configure. (Help is available by clicking the '?')  Figure 48 Edit Network Configuration  Note that the changes are not applied immediately! You have to apply the changes …  **STEP 3:** To apply the changes, use the control CT6 : 'Apply Network Configuration'  The data DA1 'Current IP Address' should change at that time. If it is empty, it means that there is no network available.  **STEP 4**: If all is ok, save the configuration to make it permanent. Otherwise, it will be lost after a reboot. (Top Menu: Controller --> Save Configuration). | |

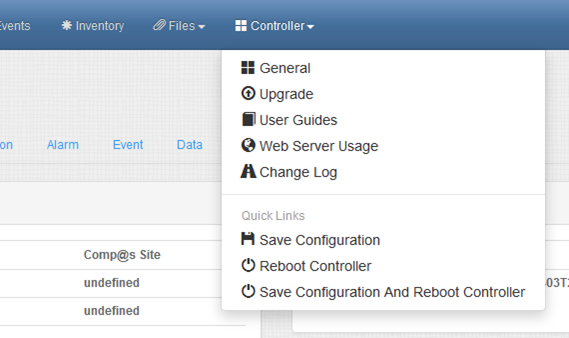
### Saving The Changes

Once settings have been modified, they must be saved in the persistent Comp@s memory. If not, these modifications will be lost on the next reboot.

**2 possibilities :**

* **The fast one:**

In the controller menu, click on 'Save Configuration'.



* **The standard one:**

**STEP 1:** Click on “Site”

**STEP 2:** Browse to “Control” (Most right tab)

**STEP 3:** Click on “Execute” at the entry “Save XML User Configuration” (CT21)



CT20 is used if you removed some equipments and you don't want to keep the configuration for this old equipment.

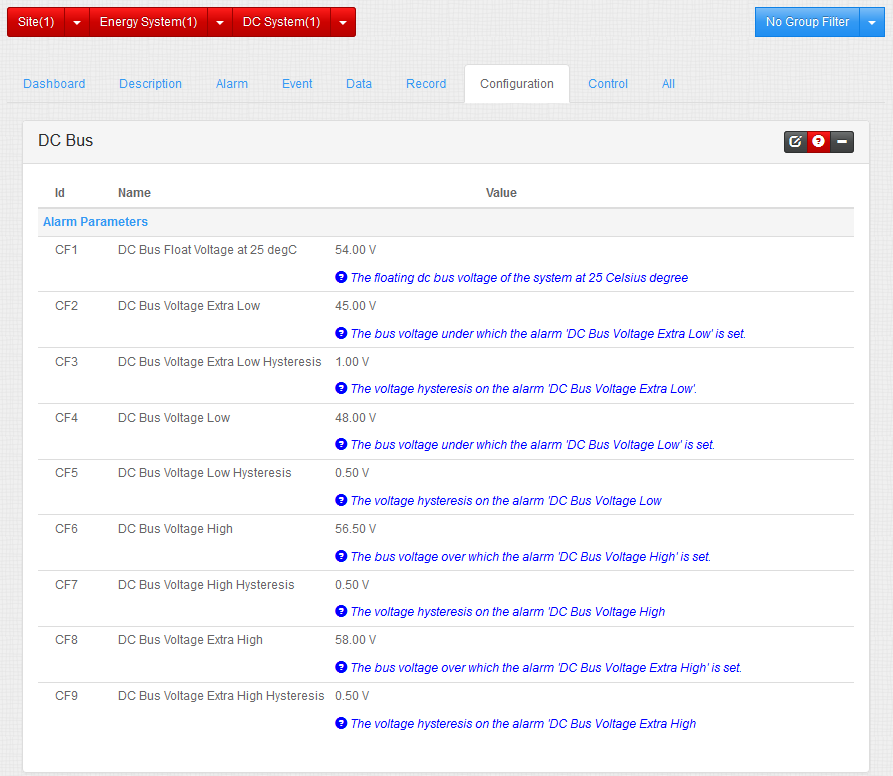
**STEP 4:** The settings are now stored in the Comp@s Persistent Memory:

Please refer to [Copying configuration from a system to another](#scroll-bookmark-62) to load a configuration on a system.

### Getting some help about the elements

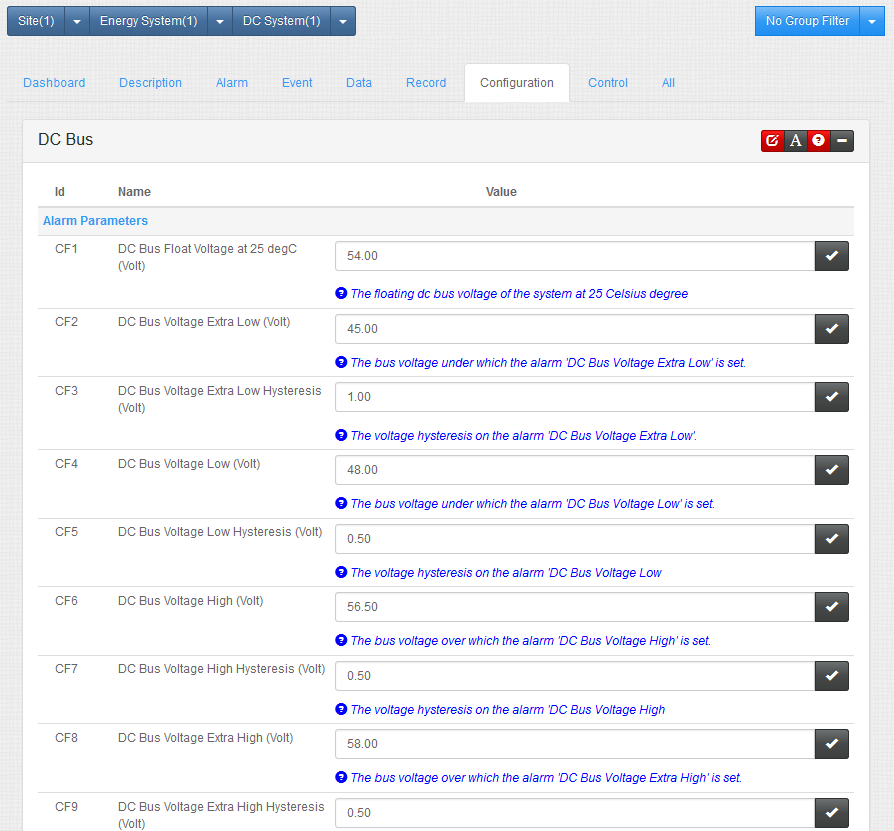
You can get help at any time by clicking on the '?' button.

Figure 49 Element Help



The same behavior in edit mode :

Figure 50 Edit Mode with Help



The Comp@s SNMP Agent

The Simple Network Management Protocol (SNMP) exposes management data in the form of variables on the managed systems, which describe the system configuration. These variables can then be queried and sometimes set by managing applications.

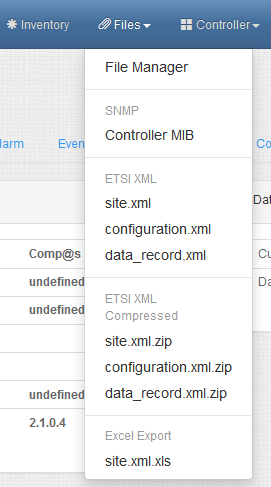
The Comp@s monitoring provides a SNMP v1, v2c and V3 interface.

The Management Information Base (MIB) can be downloaded at the url:

“[http:// \*\*the\_ip\_address\*\* /Compas.mib](http://the_ip/Compas.mib)”

A quick link is available, in Files, to download this "**Controller MIB**".

Figure 51 Download of the SNMP MIB



This MIB is generated dynamically according to the number and the type of the sub-equipments present at the time of the generation:

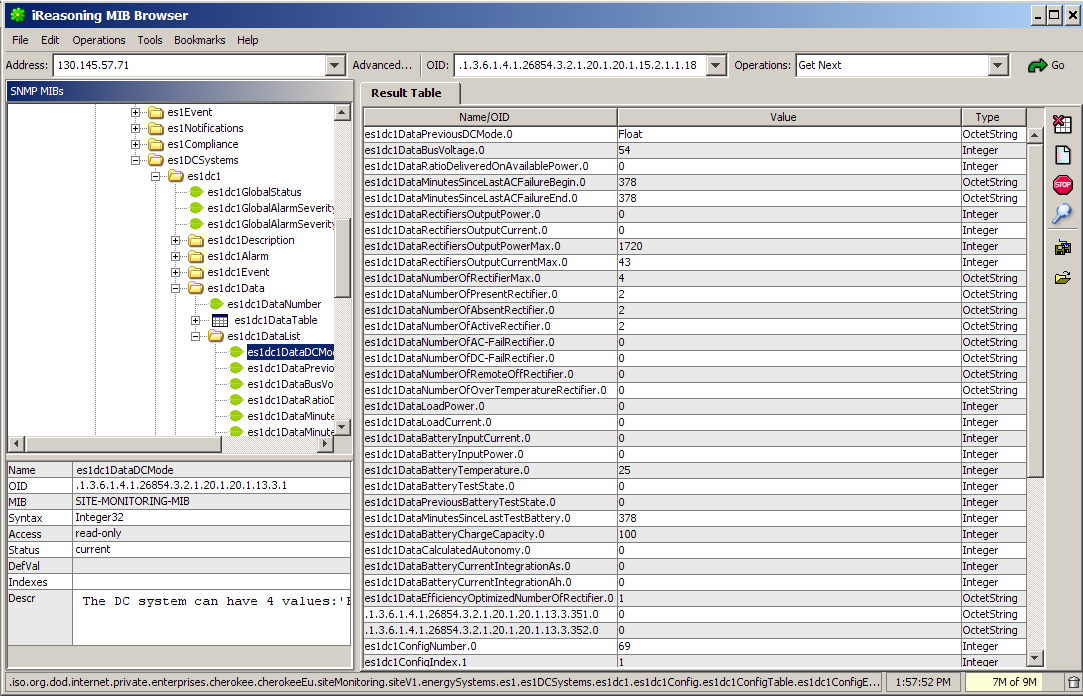
* dc systems
* extension module
* etc.

The default port running the SNMP agent is 161. This can be configured if requested.

When an event happens, a SNMP trap can be sent. Multiple target IP can be configured. These multiple IP must be configured for each sub-equipment to increase the flexibility of the system.

If you want free software to test SNMP, you can download iReasoning MIB Browser from URL: <http://www.ireasoning.com/mibbrowser.shtml>.

Figure 52 Ireasoning MIB Browser

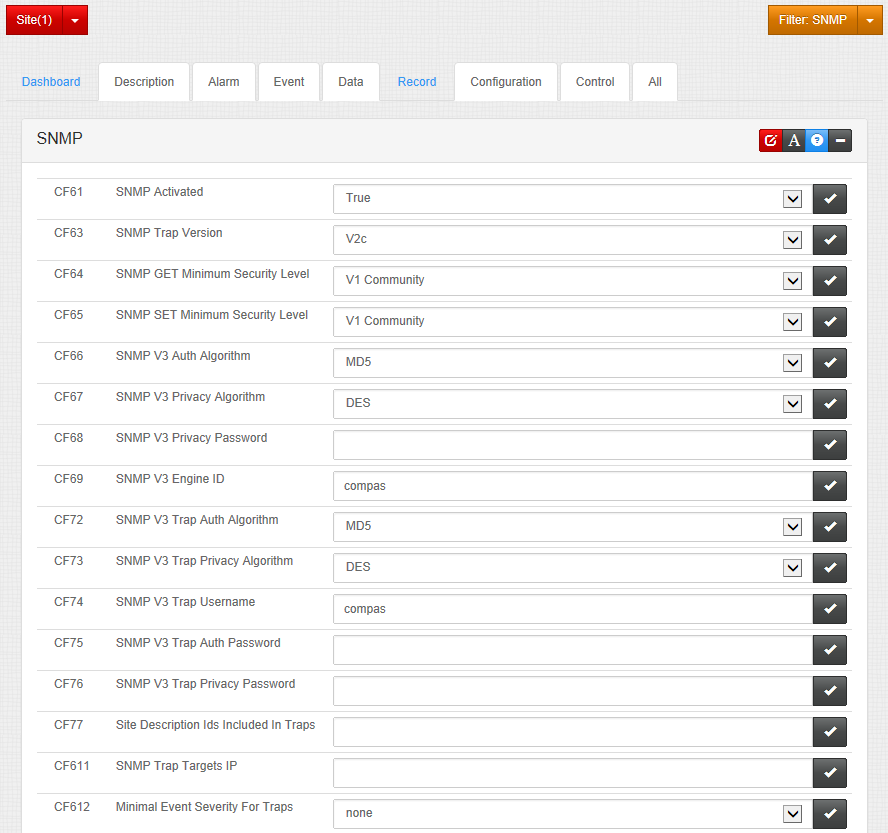


The SNMP agent supports the SNMP v1, v2c and V3 command:

* GET
* SET
* WALK

The SNMP configuration is available at the site -> configuration level, as shown on the following screenshot:

Figure 53 SNMP Configuration Level



**SNMP v2c** uses the mechanism of the SNMP communities (Read and Write). An SNMP community is the group that devices and management stations running SNMP belong to. It helps define where information is sent. The community name is used to identify the group. It will not respond to requests from management stations that do not belong to one of its communities. The login and password are the same as for the web server interface. BUT, as the community is only a string, the syntax is:

|  |
| --- |
| **SNMP authentication syntax**  LOGIN:PASSWORD |

Default login and password are

|  |
| --- |
| **SNMP default login and password**  Read Community -> [admin:compas](http://admincompas)  Write Community -> [admin:compas](http://admincompas) |

**SNMP V3** uses login and passwords. The same accounts are used as in the web interface.

You can define a minimum security level (an SNMP version) for SET and GET operations:

* No Authentication
* V1 Community
* V2c Community
* V3

If you are using SNMP V3, you can set an Auth Algorithm:

* MD5 : Message Digest Algorithm 5 – HMAC-MD5-96
* SHA : Secure Hash Algorithm – HMAC-SHA-96
* Any: Both MD5 and SHA will be tried.

You can also use privacy password with a privacy Algorithm:

* DES: Data Encryption Standard
* AES: Advanced Encryption Standard with key length of 128
* 3DES: Triple Data Encryption Standard.

Functionalities

* [User Access Management](#scroll-bookmark-41)
* [Save / Load configuration](#scroll-bookmark-65)
* [Automatic events saving](#scroll-bookmark-66)
* [Date and Time Management](#scroll-bookmark-67)
* [Software Upgrade Management](#scroll-bookmark-68)
* [Reset Factory Settings](#scroll-bookmark-69)
* [Copying configuration from a system to another](#scroll-bookmark-62)
* [PLC Functionalities](#scroll-bookmark-70)
* [Translating The Web Interface](#scroll-bookmark-71)
* [Replacing a Rectifier in a DC System](#scroll-bookmark-72)
* [Measuring Power and Energy](#scroll-bookmark-73).

User Access Management

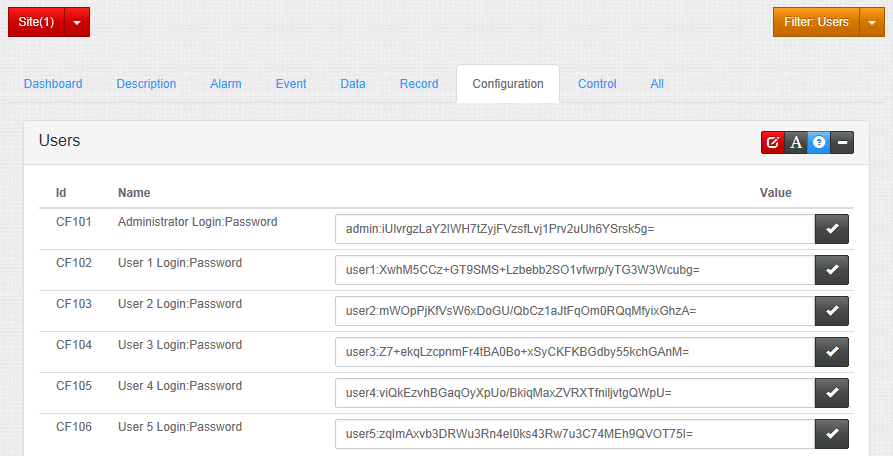
The web server and the SNMP agent are protected by an authentication mechanism based on login/password.

There are by default six users defined: one administrator and 5 users:

|  |  |
| --- | --- |
| Login | Password |
| admin | compas |
| user1 | compas |
| user2 | compas |
| user3 | compas |
| user4 | compas |
| user5 | compas |

All these default login/password can be changed by the help of any interface. The passwords are encrypted in the configuration file, the key also relies on the user name. These parameters are located in Site -> Configuration, as shown on the following figure:

Figure 54 Users login and password configuration



The administrator is allowed to use all the functionalities of the monitoring and to change any configuration parameter.

The 5 users can only access the functionalities they are authorized to. It is possible to define, for each equipment of the site hierarchy, which user has read access and which user has write access. The following figure shows the “Read Access User Numbers” and the “Write Access User Numbers” configuration entries. The value is a list of coma separated values corresponding to the user number allowed to read or write at the Site level. These 2 parameters are also available in each “DC system” and in each “Sensors and Actuators”.

|  |
| --- |
| Please remark that the users which have write access at the Site level are able to change the login and the password of all the other users, including the administrator. |

The procedure to change the login and password of a user is:

**STEP 1:** Browse to Site ->Configuration

**STEP 2:** Click on “Edit Mode”

**STEP 3:** Enter the new login and password in clear for the desired user id. The syntax is:

|  |
| --- |
| **Login and password**  LOGIN:PASSWORD -> [mike:mypassword](http://mikemypassword) |

Figure 55 User login and password change screen



**STEP 4:** Click on “Validate” button. The password is immediately encrypted and the page is refreshed:

Figure 56 User new login and password change screen



**STEP 5:** Do not forget to save the configuration.

Save / Load configuration

See [Saving The Changes](#scroll-bookmark-60).

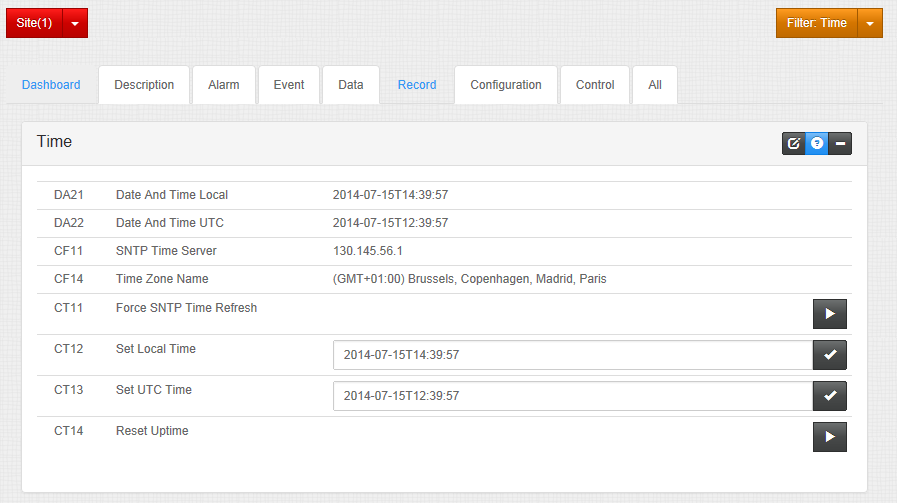
Please refer to [Copying configuration from a system to another](#scroll-bookmark-62) to load a configuration on a system.

Automatic events saving

The system is configured to keep all the events in case of power failure of the monitoring. It is automatically appending the events to a flat file: "events\_flat.xml", in the user folder.

Date and Time Management

Figure 57 Date And Time Configuration



* [Real Time Clock](#scroll-bookmark-74)
* [Time zone and Daylight Saving Time](#scroll-bookmark-75)
* [(S)NTP Time Protocol](#scroll-bookmark-76).

### Real Time Clock

The monitoring embeds a real time clock in order to manage the event time, periodic actions, etc.

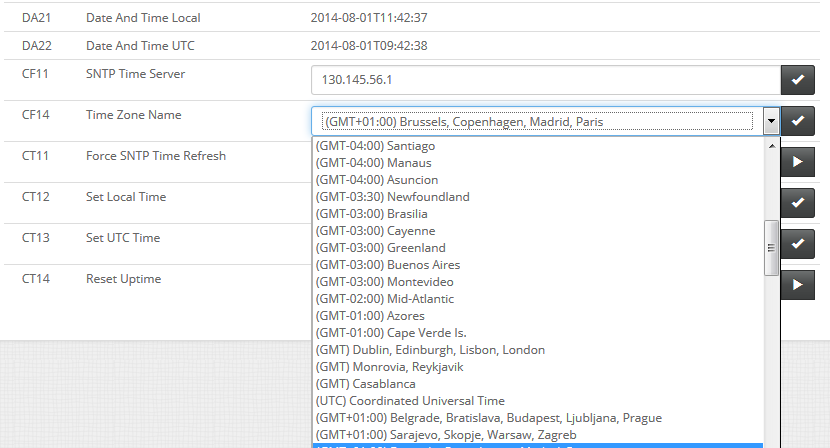
You can change the local or the UTC time in Site -> Control. (CT12 / CT13)

### Time zone and Daylight Saving Time

You can configure the time zone in Site -> Configuration (CF14).

In edit mode, you will see all the available timezone in the drop down list.

Figure 58 List of Available Timezones



All the available time zone can aslo be retrieved at URL: (For API usage)

|  |
| --- |
| **Available time zone**  <http://the_ip/timezones.txt> |

Here follows a screenshot of a part of this list:

Figure 59 Partial Time Zone List



The daylight saving time is activated on the monitoring, the summer and winter time will be automatically adjusted according to the selected time zone.

Note: When a change in time zone has been done, it is necessary to reboot the monitoring to have the changes applied.

### (S)NTP Time Protocol

The time can be automatically synchronized with an UTC time server, implementing the Network Time Protocol (NTP) protocol (or SNTP). This allows having all the monitoring time synchronized with one reference time server.

The configuration parameters are available at Site -> Configuration, as shown above ([Time zone and Daylight Saving Time](#scroll-bookmark-75)).

You can configure SNTP Time Server with an IP address or with a domain (if the DNS is set correctly - swisstime.ethz.ch, for example).

The time is retrieved automatically when the system boot and every week. If it fails, it will automatically retry the next day.

You can force an SNTP time refresh in Site -> Control, as shown above ([Real Time Clock](#scroll-bookmark-74)).

Software Upgrade Management

* [Upgrading the Comp@s Software](#scroll-bookmark-77)
* [Upgrading a Firmware with Comp@s](#scroll-bookmark-78).

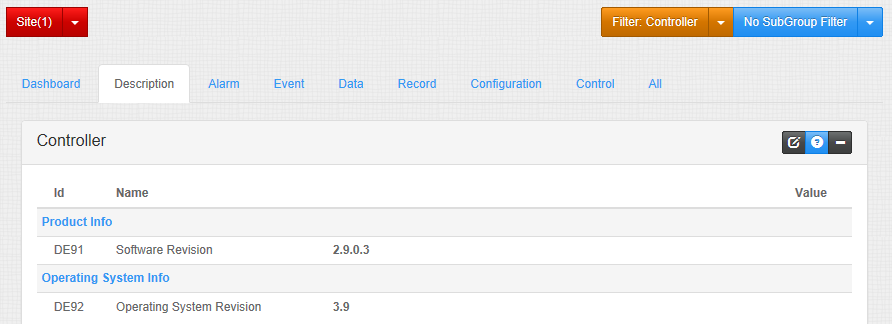
### Upgrading the Comp@s Software

* [Checking Comp@s revision](#scroll-bookmark-79)
* [Upgrading Locally with USB](#scroll-bookmark-80)
* [Upgrading Remotely with Ethernet](#scroll-bookmark-81)

#### Checking Comp@s revision

You can check the running Comp@s software version in Site -> Data -> Software Revision:

Figure 60 Software Revision



It is also displayed at the bottom of all the web pages:

Figure 61 Software Revision at bottom of web pages



To update the Comp@s software, two possibilities are available:

* Upgrading remotely with Ethernet
* Upgrading locally with USB.

#### Upgrading Locally with USB

The upgrade is done trough the USB Active Sync connection.

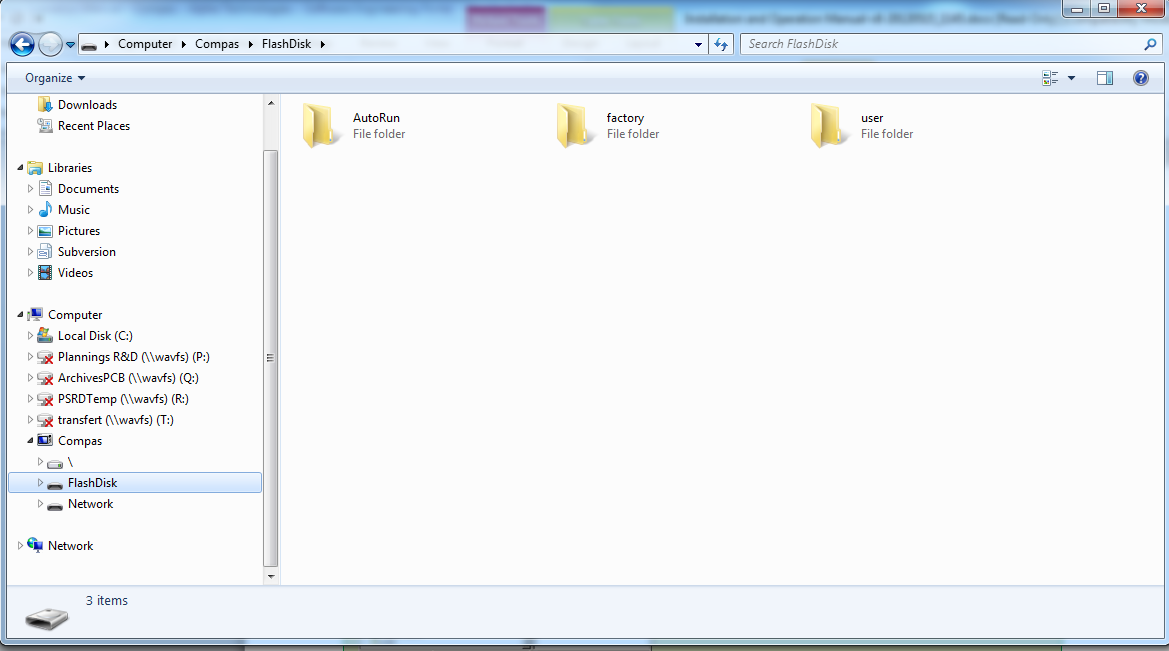
**STEP 1:** Be sure you have ActiveSync correctly installed as described in (Getting Started – Connecting with USB).

**STEP 2:** Connect the USB cable between the Comp@s system and your personal computer.

**STEP 3:** Open the windows explorer and click on “Mobile Device”, under “My Computer”. You should have access to the memory of the Comp@s Monitoring.

**STEP 4:** Browse to “\\FlashDisk\User” (“\\NOR Flash\\User” on some previous release):

Figure 62 Browse to “\FlashDiskUser”



**STEP 5:** Copy the new “Compas.exe” release in that folder.

**STEP 6:** Reboot the monitoring with the Web Interface.

**STEP 7:** You can check that the running software revision has changed.

#### Upgrading Remotely with Ethernet

* [Upgrading with FTP](#scroll-bookmark-82)
* [Upgrading with Web Interface](#scroll-bookmark-83)

##### Upgrading with FTP

The upgrade is done trough FTP connection:

|  |
| --- |
| **Upgrading Comp@s remotely with FTP**  **STEP 1:** Connect the system with your FTP client (See ”Connecting the Comp@s FTP Server”).  **STEP 2:** Browse to the “\user” folder, in the “\\FlashDisk” folder (“\\NOR Flash” on previous software release):  Figure 63 FTP Connection with Filezilla  **STEP 3:** Copy the new “Compas.exe” release in that folder.  **STEP 4:** Reboot the monitoring with the Web Interface (Site -> Control) or with SNMP.  **STEP 5:** You can check that the running software revision has changed. |

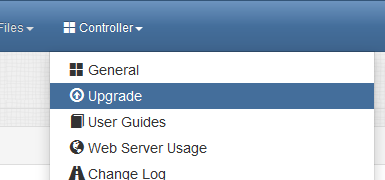
##### Upgrading with Web Interface

There is two possibilities to upgrade with the web interface. A very automated one and a manual.

###### Fast Comp@s Upgrade (recommended)

Click on Controller --> Upgrade.

Figure 64 Controller-Upgrade



Follow the instruction:

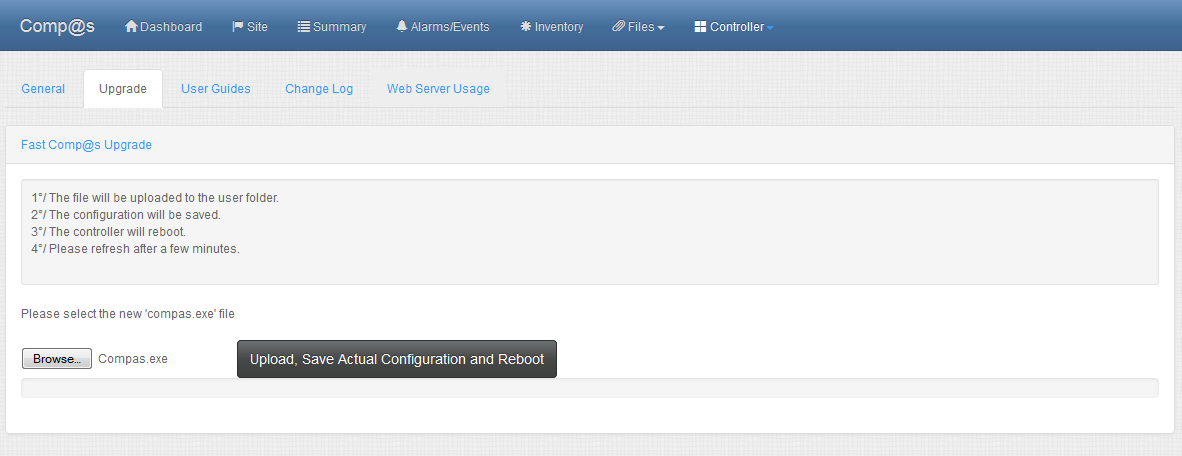
Please select the new 'compas.exe' or compas\*.zip file on your computer and click the Button 'Upload, Save Actual Configuration and Reboot'.

The automated process will:

* If zip: Extract the file (and validate the compas.exe.md5 checksum if available in the zip file)
* move the Compas.exe to the user folder.
* Save the configuration
* Reboot the Controller

After less than 2 minutes, the controller is fully operational.

Figure 65 Fast Comp@s Upgrade



###### Manual Comp@s Uprade

The upgrade is done by using the File Manager : "Files" > "File Manager"

|  |
| --- |
| **Upgrading Comp@s remotely with HTTP POST**  **STEP 1:** Go to **"**File Upload to user-upload Folder". Click "Browse" and select the file to upload to FlashDisk\\user\\upload folder. (If you have a small bandwidth and the file size is large, it can be smart to zip it first.)  Figure 66 Comp@s Manage Files Page  **STEP** **2:** Press "Upload" to upload the file. A message "COMMAND\_EXECUTED" (or "COMMAND ERROR") is displayed. The page is then automatically refresh.  **STEP** **3:** The file appears in "List of Files in user-upload Folder". You can select "Extract File" to uncompress a zip archive, then press "Delete" to erase it from folder. (if Zipped)  **STEP 4:** Press "Replace/Move Compas.exe to user Folder" to move the new compas.exe file to FlashDisk\\user folder.  **STEP 5:** Use the top bar to Save Configuration and Reboot : Controller --> 'Save Configuration and Reboot' |

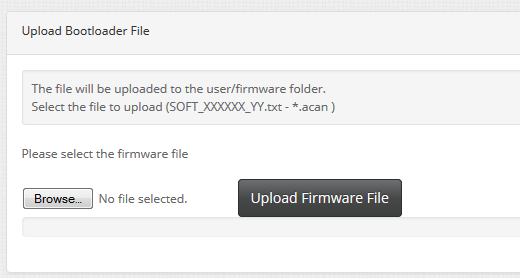
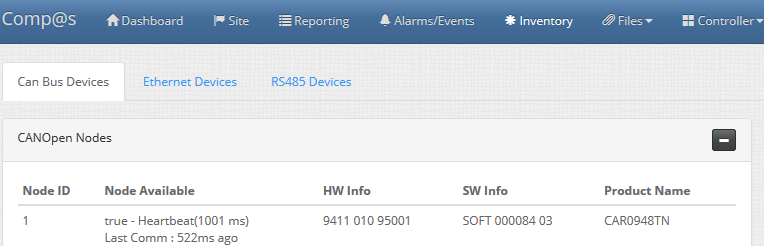
### Upgrading a Firmware with Comp@s

Any software/firmware of any Alpha Technologies equipment connected to the CAN bus can be upgraded remotely thanks to Comp@s.

|  |
| --- |
| WARNING: DO NOT POWER OFF THE EQUIPMENT DURING THE PROCEDURE. |

**STEP 1:** You must first upload the firmware ‘SOFT\_XXXXX\_XX.txt’ or \*.acan file on the comp@s card.

The following screen shots shows the Inventory web page :

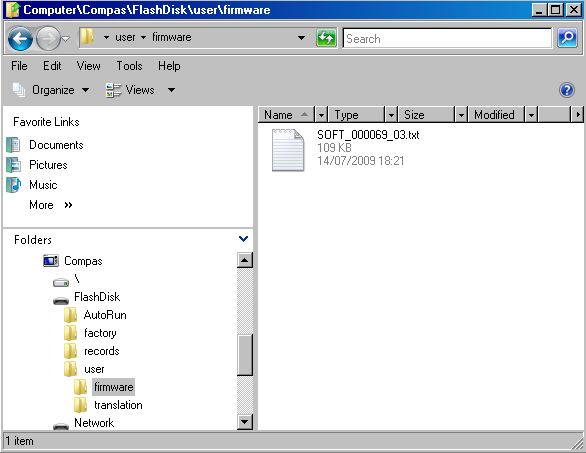


It will upload the file directly to the correct path : “\\FlashDisk\User\Firmware”.

This upload can also be done through FTP or USB.

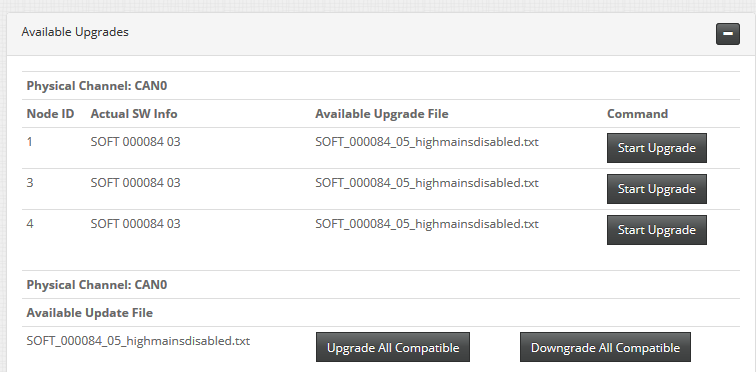
The following screenshot shows the folder with one file, in a Windows Vista environment:

Figure 67 Firmware selection



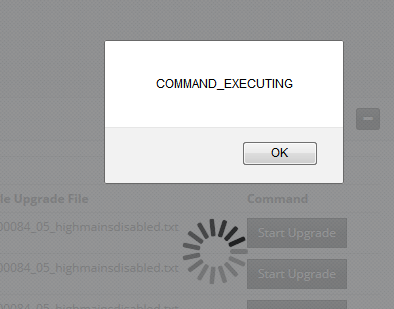
**STEP 2:** On the inventory page, there is a section with the available upgrade, related to the uploaded files.

Figure 68 Comp@s web page Advanced link



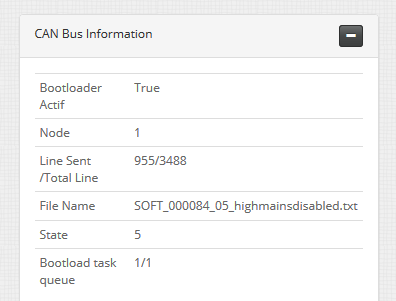
**STEP 3:** You can upgrade only one node at the time, or all the compatible devices.

Figure 69 File decoding



**STEP 4:** Once you received the message “COMMAND\_EXECUTING”, click ‘OK’. After, you can see the progress in 'Can Bus Information'. The Comp@s card is sending the firmware to the device over the CAN Bus (about 2-3 minutes). Your equipment will disappear from the CANopen Nodes list during the upgrade:

Figure 70 Equipment disappearing during upgrade



**STEP 5:** When the progression is finished, the equipment reboot and is detected again by Comp@s. The new firmware is installed. You can see the firmware revisions in the “CANOpen Nodes” section (CAN Bus Nodes – SW 12NC).

Note: From version 2.10.0.4, events are generated to trace all the changes done about firmware.

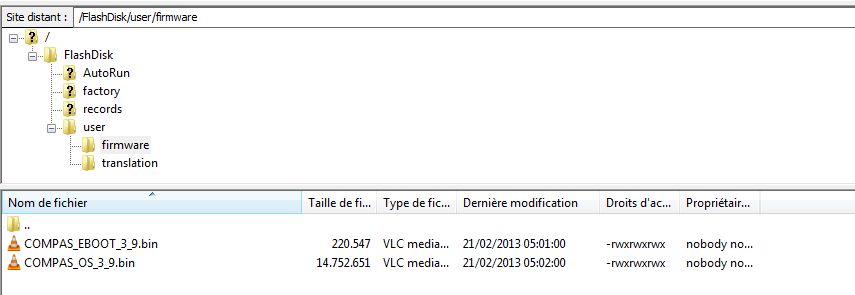
### Upgrading The Operating System

The operating system on which Comp@s is running (Windows CE) can be updated. The operating system is not evolving quickly. Last version is 3.9. You can check you version in Site/Description : "Operating System Revision"

|  |
| --- |
| WARNING: DO NOT POWER OFF THE EQUIPMENT DURING THE PROCEDURE. |

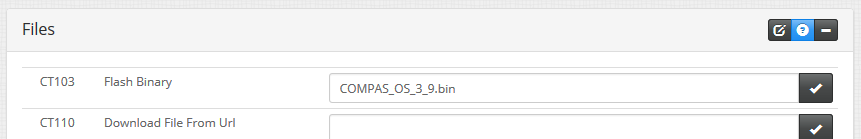
**STEP 1:** You must first upload the files "COMPAS\_EBOOT\_xxx.bin" and "COMPAS\_OS\_xxx.bin" to the the comp@s card. The correct folder is “\\FlashDisk\User\Firmware”. This can be done through FTP or USB. The following screenshot shows the folder inf Filezilla, with both files uploaded.

Figure 71 Upload files



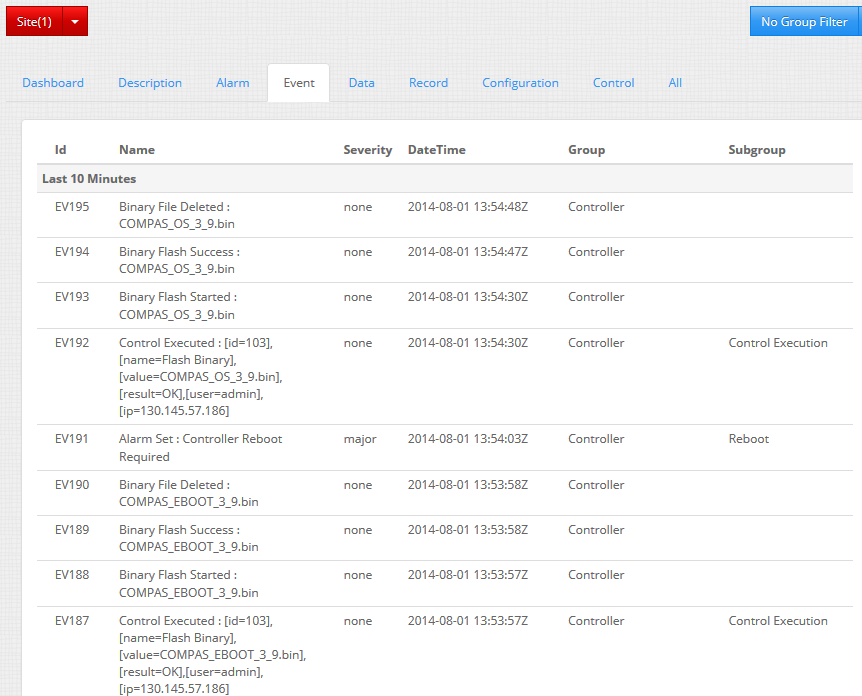
**STEP 2:** Go to site/control (CT103), and type the file name to flash.

Figure 72 Flash Binary



**STEP 3:** You should start to update the EBOOT file (the bootloader), and than the OS. You can follow the progress with the events.

Figure 73 Check Site events



**STEP 4:** Reboot the controller

Reset Factory Settings

It is possible to easily restore all the settings and software installed in our factory. To do this, delete all the files and folders present is the “\\FlashDisk\User” folder. At next reboot, your monitoring is like the first time you get it.

Copying configuration from a system to another

**STEP 1:** Retrieve the configuration of one system. On the web interface, click on “configuration.xml” and save the file as “configuration.xml”.

**STEP 2:** Copy this file (configuration.xml) on the other system, in the “user” folder, with FTP over Ethernet, or locally with ActiveSync over USB.

**STEP 3:** Reboot this other system, the same configuration is applied.

|  |
| --- |
| You copy also the network configuration, including the IP address. Keep in mind that if two systems with the same IP address are present on same network, it will not work! A solution to this is to edit the XML file before copying it and to change the IP address. |

|  |
| --- |
| **Note**  If you want to deploy a configuration as the default configuration for your network, you can put the file in the folder “factory”. This file can be renamed like XXX\_configuration.xml where XXX is free and of any length. This way you can indicate in the file the type of configuration. Make sure to delete the “configuration.xml” in the “user” folder as this last has the priority. Here follows a diagram for better understanding:  Figure 74 Workflow of the load configuration function |

PLC Functionalities

PLC stands for Programmable Logic Controller. It allows to add custom features by using some logical expression. It is very cost effective for regulation where the main loop is not smaller than 1 sec.

Some configuration elements can be filled with a Boolean expression or a mathematical expression. Here follow information about the syntax and some examples of valid expressions:

* [Syntax](#scroll-bookmark-87)
* [Examples of Boolean Conditions](#scroll-bookmark-88)
* [Examples of Mathematical Expressions](#scroll-bookmark-89)
* [PLC License Package](#scroll-bookmark-90).

### Syntax

* [Using Data Entries](#scroll-bookmark-91)
* [Using Alarm Entries](#scroll-bookmark-92)
* [Operators](#scroll-bookmark-93)
* [Time Variables](#scroll-bookmark-94)
* [Other Functions](#scroll-bookmark-95).

#### Using Data Entries

|  |  |
| --- | --- |
| Syntax | Signification |
| @(dataXXX) | The data with id XXX of the relative equipment |
| @(dcY\_dataXXX) | The data with id XXX relative to the dc system with id Y.  Example: @(dc1\_data11) is the bus voltage of the DC System 1. |
| @(saY\_dataXXX) | The data with id XXX relative to the Sensors And Actuators with id Y. |

#### Using Alarm Entries

|  |  |
| --- | --- |
| Syntax | Signification |
| @(alarmXXX) | The data with id XXX of the relative equipment |
| @(dcY\_alarmXXX) | The data with id XXX relative to the dc system with id Y.  Example: @(dc1\_data11) is the bus voltage of the DC System 1. |
| @(saY\_alarmXXX) | The data with id XXX relative to the Sensors And Actuators with id Y. |
| @(severity\_level) | The severity level of the relative equipment (0->9). This can be useful to activate a relay based on the severity level. |
| @(dcY\_ severity\_level) | The severity level relative to the dc system with id Y. |
| @(saY\_severity\_level) | The severity level relative to the Sensors And Actuators with id Y. |

#### Operators

|  |  |
| --- | --- |
| Syntax | Signification |
| ( … ) | Parentheses |
| && | Logical AND |
| || | Logical OR |
| == | Equal |
| != | Not Equal |
| + | Addition |
| - | Subtraction |
| \* | Multiplication |
| / | Division |
| % | Modulo |

#### Time Variables

|  |  |
| --- | --- |
| Syntax | Signification |
| $second() | Second part of the actual time |
| $minute() | Minute part of the actual time |
| $hour() | Hour part of the actual time |
| $day() | Integer indicating the day of the month. |
| $dayofweek() | Integer indicating the day of the week. This integer ranges from zero, indicating Sunday, to six, indicating Saturday |
| $dayofyear() | Integer indicating the day of the year. |
| $month() | Integer indicating the month of the year. |
| $year() | Integer indicating the year. |
| $time() | The time of the day |
| @ts(XXXXX) | Create a time span variable from XXXX string. Example: @ts(11:32) corresponds to 11h32. |

#### Other Functions

|  |  |
| --- | --- |
| Syntax | Signification |
| $abs(XXX) | The absolute value of XXX |
| $sqrt(XXX) | The square root value of XXX |
| $ceil(XXX) | The ceil value of XXX |
| $floor(XXX) | The floor value of XXX |
| $max(X1, X2, X3, …) | The maximum value between X1,X2,X3, etc. |
| $min(X1, X2, X3, …) | The minimum value between X1,X2,X3, etc. |
| $canid(XXX) | Can Id XXX is present |
| $iif(condition, val if true, val if false) | Equivalent to "If then else" |
| $case(condition, val, condition2, val2, ...) | Equivalent to "switch" |

### Examples of Boolean Conditions

|  |  |
| --- | --- |
| Tested Condition | Configuration Element Value |
| The bus voltage is under 47V | @(data11)<47 |
| The rectifier output power is over 2500W | @(data21)>2500 |
| The time of the day is comprised between 10:23 and 11:34 | ($time()>@ts(10:23))&&($time()<@ts(11:34)) |
| The day of the week is sunday | $dayofweek()==0 |
| The alarm with id 17 is active | @(alarm17) ==True |
| The alarm with id 17 and 18 are active | @(alarm17) ==True && @(alarm18) ==True |
| true 5 seconds over 10 | $second()%10<5 |

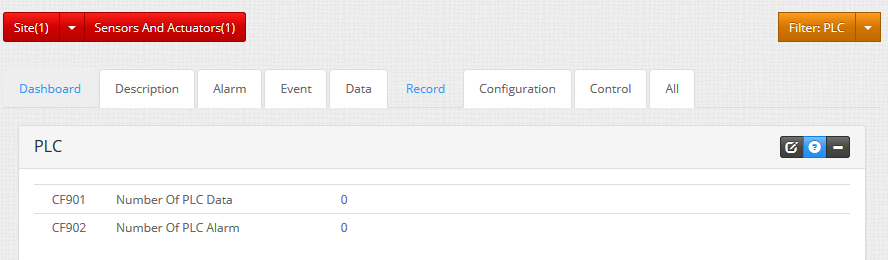
### Examples of Mathematical Expressions

|  |  |
| --- | --- |
| Wanted calculation | Configuration Element Value |
| Voltage on bloc 2 of the battery | @(data161)-@(data162) |

### PLC License Package

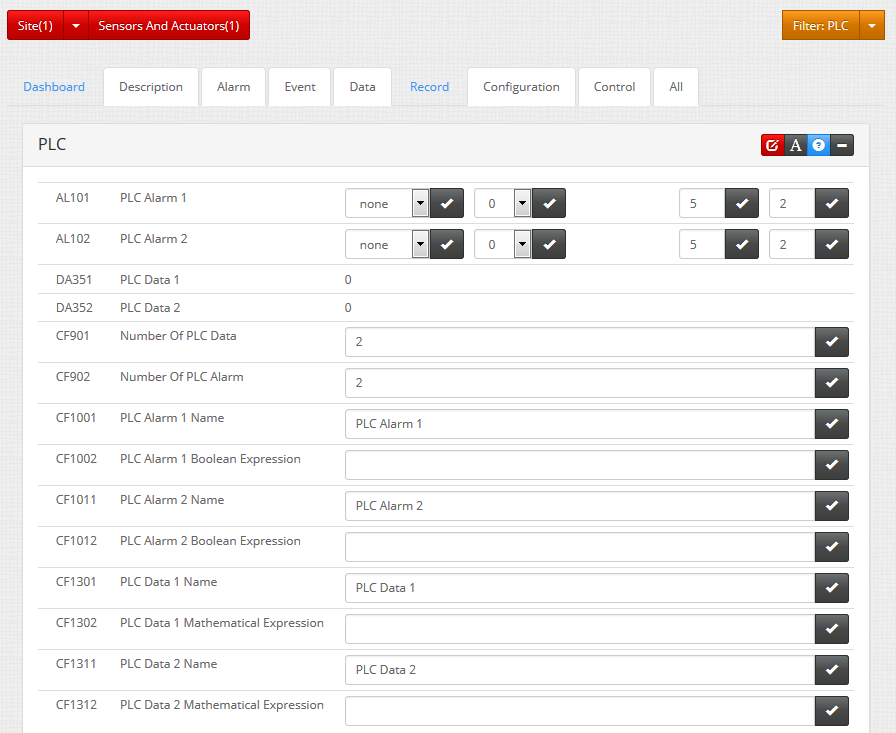
With the PLC License activated, you are able to add custom data and custom alarms. In Site, DC System and “Sensors and Actuators”, in the configuration tab, the following parameters are available:

Figure 75 PLC Number



By default, “Number of PLC Data” and “Number of PLC Alarm” is set to 0. If you increase these numbers, you can access new configuration entries in the same tab:

Figure 76 New configuration entries



You are now able to enter new Boolean expression for the alarms and new Mathematical expression for the data.

These changes are reflected in the data tab and in the alarm tab.

Translating The Web Interface

It is possible to translate the Comp@s Web Interface to satisfy your needs. Here follows the steps:

**STEP 1:** An empty CSV file with the list of the words and sentences used in the Comp@s interface is available at URL: <http://the_compas_ip/translation.csv>

**STEP 2:** This file is encoded in UTF8. After the coma of each line, you can put the wanted translation.

**STEP 3:** The first two lines are:

|  |
| --- |
| **CSV file:**  #LANGUAGE;MYLANGUAGE  #LANG;MYLANG |

**STEP 4:** Replace "MYLANGUAGE" by the equivalent of "ENGLISH".

**STEP 5:** Replace "MYLANG" by the equivalent of "EN".

**STEP 6:** Then, save the file (in UTF8!)? You can choose the name you want, but the extension must be "csv".

**STEP 7:** Copy it to the monitoring with an FTP client to the folder: “/FlashDisk/user/translation/“

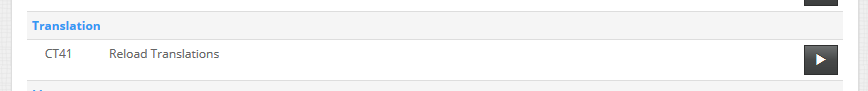
|  |
| --- |
| **Remark**  Excel 2003 is not able to save in CSV UTF8. You can use the free "OpenOffice Calc" to do it. Alternatively, you can use any UTF8-capable text editor like SciTE, Notepad2 or Notepad++. |

|  |
| --- |
| **Remark**  The coma separator is ";" and there is no text delimiter |

**STEP 8:** Browsing to Site -> Control.

**STEP 9:** Reload the Translations as shown on the following figure:

Figure 77 Reload Translations



Replacing a Rectifier in a DC System

When pulling out one of the rectifiers from a DC System shelf, it is **mandatory to wait a minimum time delay** in order that Comp@s detect the removal the CAN Open node. You can check that it was removed in the "Inventory" menu.

The delay is usually **around 15-20 seconds**.

After CAN Open node was removed from the "Advanced" menu, it is possible to insert another rectifier into the DC System shelf. This one will be automatically detected.

Measuring Power and Energy

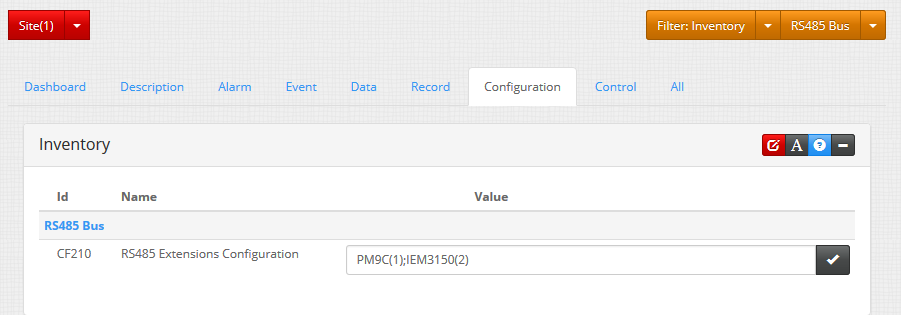
By connecting devices like Schneider PM9C ([1]) or IEM3150 ([2]), it is possible to integrate power and energy metering features into Comp@s.

By default, those devices connect to RS-485 Modbus port, that is present on some Alpha Technologies products.

To configure Comp@s, add for instance the following line to parameter 210 (RS485 Extensions configuration) in Site > Configuration (fields separated by semicolons):

|  |
| --- |
| **RS485 Extensions configuration**  PM9C(1);IEM3150(2) |

Figure 78 Configure Power and Energy Meter

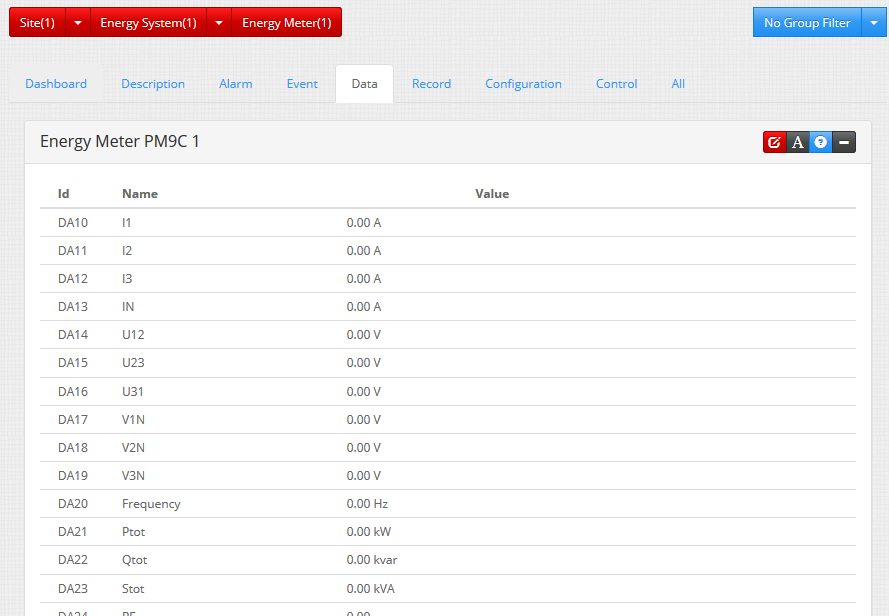
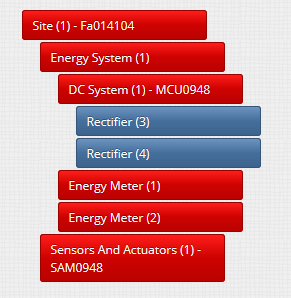


In example above, PM9C device with address 1 is added. Also is added IEM3150 with adress 2. Only addresses from 1 to 10 are currently authorized. The devices will be displayed in Comp@s in the same order as in configuration parameter (in example above: 1, 2).

The measurement devices must be configured with following serial communication parameters:

* Baudrade: 9600
* Data bits: 8
* Parity: Odd
* Stop bits: 1.

Once added, new equipments 'Energy Meter' are created in the site structure:



If 3-phase current is used instead of single-phase, supplementary data will be displayed. In case of IEM3150, device configuration (single-phase, 3-phase) is displayed in Energy System > Description. It is also possible to record data by navigating to Energy System > Records.

[1] <http://www.schneider-electric.com/search/ww/en/relevance/10_1/Product%20Information;;68c72df3-e11c-4867-b873-73310c776a59/all?search_text=pm9c&search_type=new&filters=txt_by_category;;CAT_PRD_DATA>

[2] [http://www.downloads.schneider-electric.com/sites/oreo/ww/document-detail.page?p\_docId=18054169&p\_Conf=i#http://www.downloads.schneider-electric.com](http://www.downloads.schneider-electric.com/sites/oreo/ww/document-detail.page?p_docId=18054169&p_Conf=i#http%3A%2F%2Fwww.downloads.schneider-electric.com).

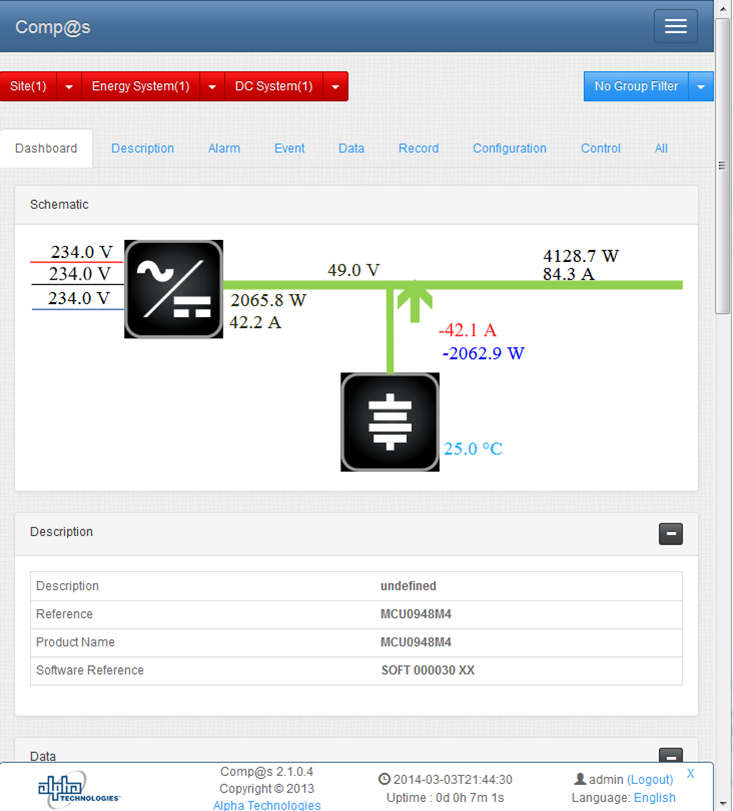
Mobile Compliant

The new Comp@s 2.0. web interface has been designed to support mobile devices like smartphone and tablets.

Table 1 Mobile Compliant

|  |  |
| --- | --- |
|  | * Tested on Android, Iphone, Ipad and Windows Phone. * The content is automatically resized, and the left menu of the site disappears. * A dynamic menu replaces the top menu bar. |

Figure 79 Dashboard Mobile



Alarm Acknowledgement

When an alarm is set, it is possible to acknowledge it. The alarm will stay active, but with an acknowledged status. When the alarm is clear, the status state disappears.

It can be used with Arm@da to differentiate the new alarms and the alarms under investigation by a technician.

When someone acknowledges, an event is generated, with the information about the user and the ip address from which it was done.

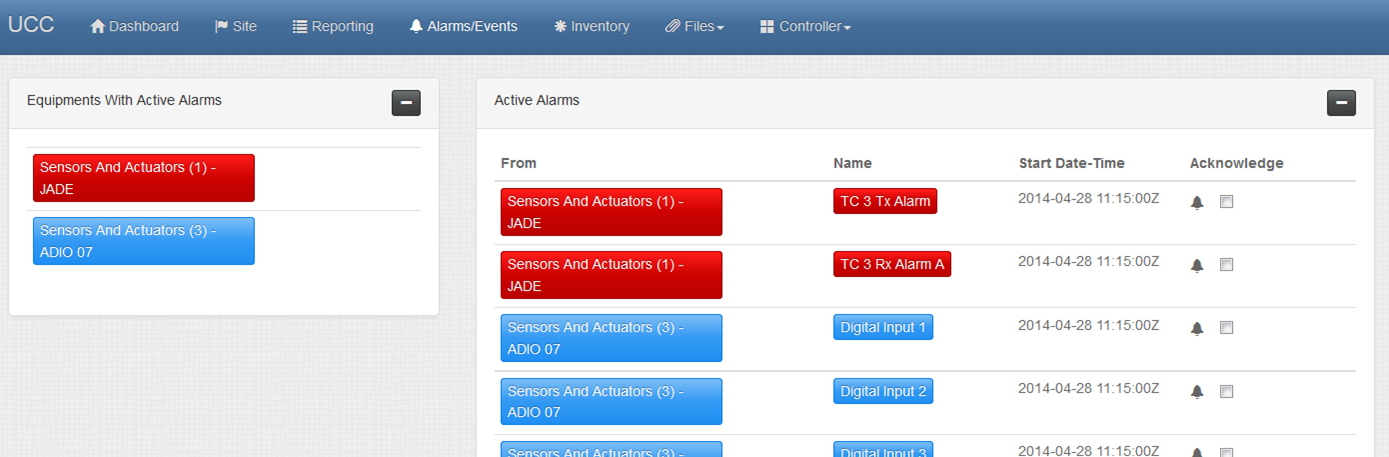
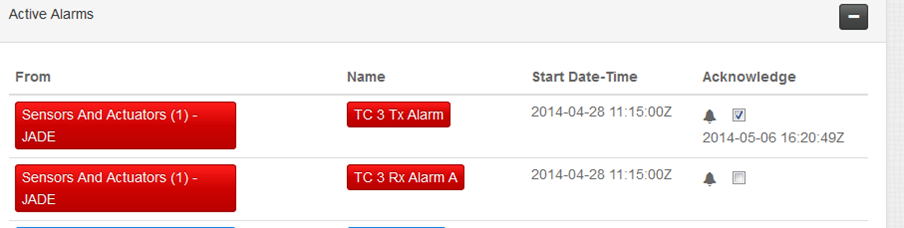


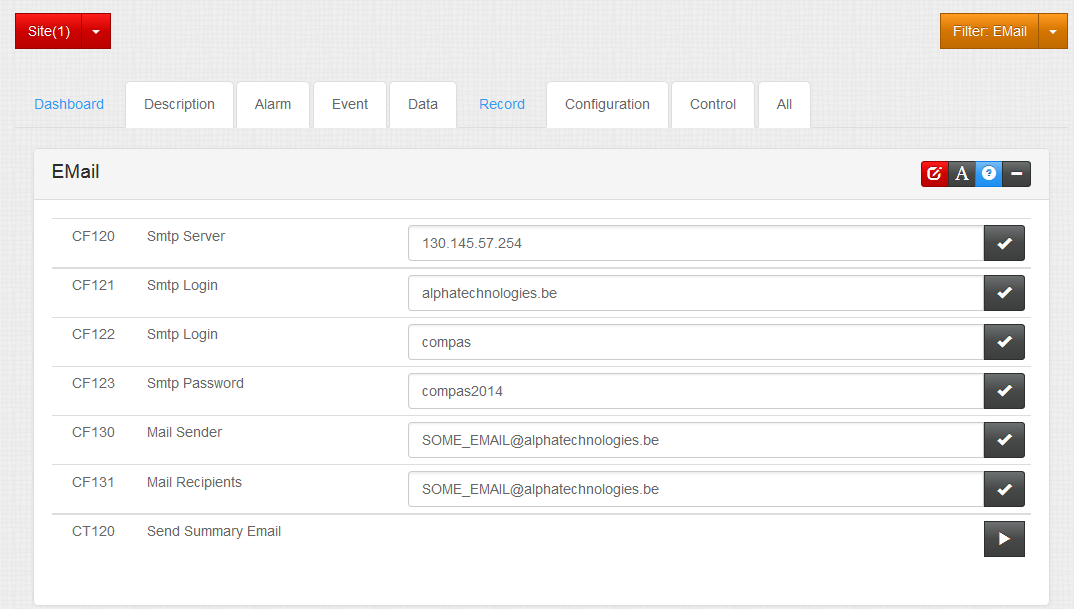
Figure 80 Acknowledgement in Alarms/Events



Email

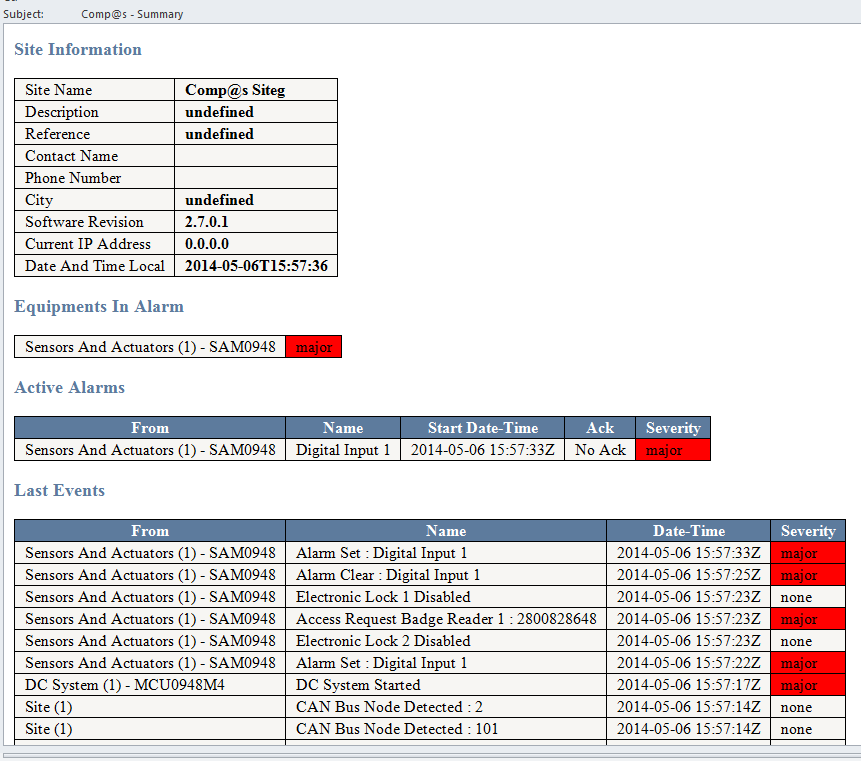
Comp@s can be configured to send email to one or multiple addresses when a event with a minimal severity happens. A correctly configured SMTP server is required.

Figure 81 Email Configuration



Here follows an example of mail :

Figure 82 Email Sample



Software Interfaces

* [Web Server](#scroll-bookmark-100)
* [FTP Server](#scroll-bookmark-101)
* [Modbus Slave](#scroll-bookmark-102)
* [SNMP Agent](#scroll-bookmark-103).

Web Server

* [ETSI Protocol](#scroll-bookmark-104)
* [Retrieving XML files](#scroll-bookmark-105)
* [Retrieving data records in CSV format](#scroll-bookmark-106)
* [HTTP GET of any description, data, configuration, etc.](#scroll-bookmark-107)
* [HTTP POST to configure and control](#scroll-bookmark-108).

### ETSI Protocol

The XML files described in [Retrieving XML files](#scroll-bookmark-105) are compliant with ETSI standard ES 202 336: “Environmental Engineering (EE); Monitoring and Control Interface for Infrastructure Equipment (Power, Cooling and Building Environment Systems used in Telecommunication Networks)”.

This chapter provides a summary about the structure of this file:

* [The Hierarchy of the devices/equipments](#scroll-bookmark-109)
* [Common structure of any system/equipment](#scroll-bookmark-110)
* [The <description\_table> element](#scroll-bookmark-111)
* [The <alarm\_table> element](#scroll-bookmark-112)
* [The <event\_table> element](#scroll-bookmark-113)
* [The <data\_table> element](#scroll-bookmark-114)
* [The <config\_table> element](#scroll-bookmark-115)
* [The <control\_table> element](#scroll-bookmark-116).

#### Common structure of any system/equipment

Any equipment XML node can have the following attributes:

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Description | Datatype | O/M |
| id | The id of the equipment, system or subsystem. | [xs:integer](http://xsinteger/) | M |
| status | "normal" or "alarms" or "unknown". | [xs:string](http://xsstring/) | M |
| severity\_type | If status is "alarms", this attribute gives the more severe "severity type" of the table of alarm.  This attribute shall be present only when the attribute status is "alarms". | [xs:string](http://xsstring/) | M |
| severity\_level | If status is "alarms", this attribute gives the more severe "severity level" of the table of alarm.  This attribute shall be present only when the attribute status is "alarms". | [xs:integer](http://xsinteger/) | M |
| datetime | The datetime attribute can be used to know the date and the time at which the element was refreshed. It is possible to have different datetime in different elements because all the equipment/systems cannot provide the data at the same time. | [xs:datetime](http://xsdatetime/) | O |

For each equipment, system or subsystem, child elements that can be used are described in the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| Child Element | Description | Datatype | O/M |
| <description\_table> | A table with description elements of the equipment/system. | [xs:complexType](http://xscomplextype/) | O |
| <alarm\_table> | The table of alarms related to the equipment/system | [xs:complexType](http://xscomplextype/) | O |
| <event\_table> | A log of events related to the equipment/system | [xs:complexType](http://xscomplextype/) | O |
| <data\_table> | The table of the data (measurements, states and calculated values) related to the equipment/system | [xs:complexType](http://xscomplextype/) | O |
| <data\_record\_table> | Records of the historic of some data present in the data table | [xs:complexType](http://xscomplextype/) | O |
| <config\_table> | The table of configuration of the equipment | [xs:complexType](http://xscomplextype/) | O |
| <control\_table> | The table of control of the equipment | [xs:complexType](http://xscomplextype/) | O |

#### The <alarm\_table> element

This element contains multiple <alarm> elements. It corresponds to the table of all the possible alarms, with the associated severity type and severity level.

The information about the alarm is included in the attributes of the <alarm> element:

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Description | Datatype | O/M |
| id | The identification number of the alarm | [xs:integer](http://xsinteger/) | M |
| active | This value is "true" if the alarm is active or "false" if the alarm is not active. | [xs:boolean](http://xsboolean/) | M |
| name | The name of the alarm | [xs:string](http://xsstring/) | M |
| severity\_type | Can be: critical, major, minor, warning or information | [xs:string](http://xsstring/) | M |
| severity\_level | Value from 0 to 9 | [xs:integer](http://xsinteger/) | M |
| start\_time | The date and time at which the alarm has started | [xs:datetime](http://xsdatetime/) | O |
| stop\_time | The date and time at which the last active alarm has stopped. (When an alarm is active, this attribute cannot be present as it is nonsense). | [xs:datetime](http://xsdatetime/) | O |

#### The <config\_table> element

This child contains multiple <config> elements. Each of these elements is identified by a unique id. The table is specific for each equipment, and describes by itself the entire available configurable element related to this equipment.

The inner text of a <config> element is the value (xs:string) corresponding to the config parameter.

The <config> element has the followings attributes:

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Description | Datatype | O/M |
| id | The unique id of the config element, it corresponds at the key of the table. | [xs:integer](http://xsinteger/) | M |
| name | The English name of the configuration parameter | [xs:string](http://xsstring/) | M |
| group | This attribute provide a way to group config element, like for the <data> elements | [xs:string](http://xsstring/) | O |
| subgroup | This attribute allows to group data under the parent group | [xs:string](http://xsstring/) | O |
| unit | The unit of the config parameter | [xs:string](http://xsstring/) | O |
| info | Short additional information on the config parameter | [xs:string](http://xsstring/) | O |

#### The <control\_table> element

This child contains multiple <control> elements. Each of these elements is identified by a unique id. The table is specific for each equipment/system, and describes by itself the entire available control element related to this equipment.

Writing to a control element is similar to start a function of the equipment. For example it can be used to start a battery test, to reboot an equipment, etc. The target of the write is the inner text of the <config> element.

The inner text of a <control> is always empty in the read xml document, but is used to pass arguments to the control function.

The <config> element has the followings attributes:

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Description | Datatype | O/M |
| id | The unique id of the config element, it corresponds at the key of the table. | [xs:integer](http://xsinteger/) | M |
| name | The English name of control function | [xs:string](http://xsstring/) | M |
| group | This attribute provide a way to group function element, like for the <data> elements | [xs:string](http://xsstring/) | O |
| subgroup | This attribute allows to group data under the parent group | [xs:string](http://xsstring/) | O |
| info | Short information on the control function | [xs:string](http://xsstring/) | O |

#### The <data\_table> element

This child contains multiple <data> elements. Each of these elements is identified by a unique id. The table is specific for each equipment, and describes by itself the all the available data related to this equipment.

The inner text of the <data> element is the value ([xs:string](http://xsstring)) corresponding to the data.

The <data> element has the followings attributes:

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Description | Datatype | O/M |
| name | The English name of the data | [xs:string](http://xsstring/) | M |
| group | This attribute provide a way to group data of a same category when they are displayed. By example, data related to the output of equipment could be grouped with the attribute value "output". All the temperature measurements could be grouped under "temperature". | [xs:string](http://xsstring/) | O |
| subgroup | This attribute allows to group data under the parent group | [xs:string](http://xsstring/) | O |
| type | The type of data, this can be "measurement" or "calculated\_value" | [xs:string](http://xsstring/) | O |
| unit | When a physical data must be represented, it is useful to know the unit of the data.  The units allowed by the present document are the same as the one of the International System Units. | [xs:string](http://xsstring/) | O |
| info | Short additional information on the parameter | [xs:string](http://xsstring/) | O |
| name\_XX | Where XX is correspond to the abbreviation of a language.  By example, name\_FR represents the translation in French of the name attribute. | [xs:string](http://xsstring/) | O |

#### The <description\_table> element

This element contains multiple <description> elements. It corresponds to the the description elements of the system/equipment.

The inner text of the <description> element is the data of the description.

The allowed attributes of the <description> element are:

|  |  |  |
| --- | --- | --- |
| Attribute | Description | Datatype |
| id | The id of the description, it shall be different for all the description, it correspond at the key of the table. | [xs:integer](http://xsinteger/) |
| name | The name in English of the description element | [xs:string](http://xsstring/) |
| group | This attribute provide a way to group descriptions of a same category when they are displayed. By example, description related to the manufacturer of equipment could be grouped with the attribute value "Manufacturer". | [xs:string](http://xsstring/) |
| subgroup | This attribute allows to group data under the parent group | [xs:string](http://xsstring/) |
| unit | When a physical data must be represented, it is useful to know the unit of the data. By example, to describe the maximum output power of a dc system, the value of the attribute unit can be "watt".  The units allowed by the present document are the same as the one of the International System Units. | [xs:string](http://xsstring/) |
| info | Short additional information on the parameter | [xs:string](http://xsstring/) |

#### The <event\_table> element

The <event\_table > element is the parent of <event> elements, described as follows: an <event> element can only exist as a child of an <event\_table>.

The inner text of the <event> element is a string ([xs:string](http://xsstring)) describing the event.

The event element has the followings attributes:

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Description | Datatype | O/M |
| id | The id of the event | [xs:integer](http://xsinteger/) | M |
| type | The type of event, can be: alarm set, alarm clear or information | [xs:string](http://xsstring/) | M |
| datetime | The date and time at which the event has happened | [xs:datetime](http://xsdatetime/) | M |
| severity\_type | This attribute exist if the event concern an alarm. Than, the severity type value is the one of the corresponding alarm. | [xs:string](http://xsstring/) | O/M |
| severity\_level | This attribute exist if the event concern an alarm. Than, the severity level value is the one of the corresponding alarm. | [xs:integer](http://xsinteger/) | O/M |
| alarm\_id | This attribute exist if the event concern an alarm. Than, the alarm\_id value is id of the alarm in the alarm table of the equipment. | [xs:integer](http://xsinteger/) | O/M |
| info | Any additional information | [xs:string](http://xsstring/) | O |

#### The Hierarchy of the devices/equipments

Equipments and devices connected to the monitoring are structured in a hierarchic way. The root level is the site, it corresponds to a cabinet, a building, or any place where is located a system. Each site must have a different id to distinguish the sites from the management office center.

A site can have multiple energy systems. Cabinets usually have only one energy system, but this structure allows flexibility for other complex sites. Sensors and actuators related to the whole site, like access control, will be also reported under the site level.

An energy system comprises one or more dc system. A DC System comprises one or more rectifier.

All these equipment are described with a common XML structure. This common structure allows retrieving information and configuring all the system/equipment in a same way.

### Retrieving XML files

Each Comp@s monitoring can act as a server, holding one or more XML documents. Each existing document is within the HTTP standard referred to as a resource. Each resource is identified by a unique resource identifier known as a URI (Uniform Resource Identifier). An example of URI is “[http://the\_ip/site.xml”](http://the_ip/site.xml%E2%80%9D). The first part of the URI is always the IP address of the site. If hostname are defined, the IP address can be replaced.

A request to such an URI will result in a response message from the server with information about the status of the request and, in applicable cases, the XML document requested.

Parameters can be passed with the URI to retrieve specific parts of the XML file. The following table describes these parameters:

|  |  |  |
| --- | --- | --- |
| Parameter name | Value | Description |
| description (or description\_table) | true/false | Define if the description table must be included in the generated xml document (at each level of hierarchy) |
| alarm (or alarm\_table) | true/false | Define if the alarm be included in the generated xml document (at each level of hierarchy) |
| event (or event\_table) | true/false | Define if the event must be included in the generated xml document (at each level of hierarchy) |
| data (or data\_table) | true/false | Define if the data must be included in the generated xml document (at each level of hierarchy) |
| data\_record (or data\_record\_table) | true/false | Define if the data record must be included in the generated xml document (at each level of hierarchy) |
| configuration (or config\_table) | true/false | Define if the configuration table must be included in the generated xml document (at each level of hierarchy) |
| control (or control\_table) | true/false | Define if the control table must be included in the generated xml document (at each level of hierarchy) |
| level | 0, 1, 2, etc | Define the maximum level of hierarchy. 0 will retrieve only the site level, 1 will retrieve site and energy system level, etc. If this parameter is not specified, you will receive all the level of hierarchy. |
| newEvents | 0, 1, 2 | This option can be used to know which events were not posted yet to a Management Server. If you set this parameter to 1, you will get all the events not posted to the Primary Post Server. If you set this parameter to 2, you will get all the events not posted to the Secondary Post Server. If you set this parameter to 0, you will get all the events. |
| notable | true/false | This is an option to receive no table at all but you can still add some table you want with the corresponding parameters set to true. |

These parameters are passed in the URI. The order of the parameters is free, and none is mandatory.

For example, if we want to retrieve the data table and the alarm table up to the third level of hierarchy, the URI is:

|  |
| --- |
| **URI example**  [http://the\_site\_ip/site.xml?description=false&alarm=true&event=false&data=true&](http://the_site_ip/site.xml?description=false&alarm=true&event=false&data=true&data_record=false&config=false&level=3)  [data\_record=false&config=false&level=3](http://the_site_ip/site.xml?description=false&alarm=true&event=false&data=true&data_record=false&config=false&level=3) |

If no option is set, the whole file is sent, except data record table and control table.

Some other files can also be retrieved, with the same available options:

|  |  |
| --- | --- |
| File Name | Description |
| energy\_system.xml | You get only the energy system XML part |
| dc\_system.xml or dc\_system1.xml | You get only the first dc system XML part |
| dc\_system2.xml | You get only the second dc system XML part |
| configuration.xml | You get the actual user configuration file of the system |

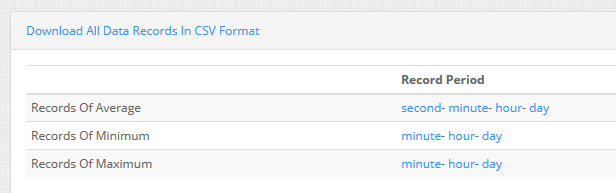
These XML files are compliant with the ETSI ES 202 336 standard, a summary of the relevant parts is available in [ETSI Protocol](#scroll-bookmark-104) .

### Retrieving data records in CSV format

It is possible to download data records in CSV format (Comma-Separated values). This allows using these records in Microsoft Excel for statistical and advanced charting purpose.

These files can be downloaded through the web interface, in the “records” tab of any element. It is possible to download the records of average, minimum and maximum values of data element. The period of time can be a second, a minute, an hour or a day:

Figure 83 CSV data records



|  |
| --- |
| Please note that this function requires the “asset” license. |

### HTTP GET of any description, data, configuration, etc.

It is possible to retrieve easily element values trough a simple HTTP get request. This can be considered as an equivalent of an SNMP get, but over HTTP. The following examples illustrate some requests:

Get local time:

|  |
| --- |
| **Get local time**  [http://<the ip address>/get.txt?path=/site/data\_table/21](http://the_ip/get.txt?path=/site/data_table/21) |

Get dc system 1 bus voltage:

|  |
| --- |
| **Get dc system 1 bus voltage**  [http://](http://130.145.57.71/get.txt?path=/site/energy_system/dc_system/data_table/11)[<the ip address>](http://the_ip/get.txt?path=/site/data_table/21)[/get.txt?path=/site/energy\_system/dc\_system/data\_table/11](http://130.145.57.71/get.txt?path=/site/energy_system/dc_system/data_table/11) |

Get severity type of the alarm 1 of the dc system:

|  |
| --- |
| **Get severity type**  [http://](http://130.145.57.71/get.txt?path=/site/energy_system/dc_system/alarm_table/1/severity_type)[<the ip address>](http://the_ip/get.txt?path=/site/data_table/21)[/get.txt?path=/site/energy\_system/dc\_system/alarm\_table/1/severity\_type](http://130.145.57.71/get.txt?path=/site/energy_system/dc_system/alarm_table/1/severity_type) |

### HTTP POST to configure and control

* [Introduction to HTTP POST and implementation](#scroll-bookmark-117)
* [SetValue.cgi](#scroll-bookmark-118)
* [ProcessXML.cgi](#scroll-bookmark-119).

#### Introduction to HTTP POST and implementation

The Comp@s web server supports some HTTP POST command.

Here follows the source code of a simple c# implementation of the post. You can easily use it with test the code with the free environment [Microsoft C# Express](http://msdn2.microsoft.com/fr-fr/express/aa975050.aspx).

The function takes as parameter:

* the URL of the post
* the data string to send in the body of the post
* the login of an user allowed to change values for this equipment
* the password of this user.

Table 2 C# code

|  |
| --- |
| public string PostMsg(string url, string postdata, string login, string password) {  WebRequest webRequest = WebRequest.Create(url);  webRequest.ContentType = "application/x-www-form-urlencoded";  Encoding asciiEncoding = Encoding.ASCII;  byte[] byteArray = new byte[asciiEncoding.GetByteCount("xxx:xxx")];  byteArray = asciiEncoding.GetBytes(login+":"+password);  webRequest.Headers.Add(HttpRequestHeader.Authorization, "Basic " + Convert.ToBase64String(byteArray));  webRequest.Method = "POST";  byte[] bytes = Encoding.ASCII.GetBytes(postdata);  Stream os = null;  try  { // send the Post  webRequest.ContentLength = bytes.Length; //Count bytes to send  os = webRequest.GetRequestStream();  os.Write(bytes, 0, bytes.Length); //Send it  }  catch (WebException ex)  {  return "error";  }  finally  {  if (os != null)  {  os.Close();  }  }  try  { // get the response  WebResponse webResponse = webRequest.GetResponse();  if (webResponse != null)  {  StreamReader sr = new StreamReader(webResponse.GetResponseStream());  return sr.ReadToEnd().Trim();  }  }  catch { return "error"; }  return "error"; } |

|  |
| --- |
| **C#**  public string PostMsg(string url, string postdata, string login, string password)  {  WebRequest webRequest = WebRequest.Create(url);  webRequest.ContentType = "application/x-www-form-urlencoded";  Encoding asciiEncoding = Encoding.ASCII;  byte[] byteArray = new byte[asciiEncoding.GetByteCount("[xxx:xxx](http://xxxxxx)")];  byteArray = asciiEncoding.GetBytes(login+":"+password);  webRequest.Headers.Add(HttpRequestHeader.Authorization, "Basic " + Convert.ToBase64String(byteArray));  webRequest.Method = "POST";  byte[] bytes = Encoding.ASCII.GetBytes(postdata);  Stream os = null;  try  { // send the Post  webRequest.ContentLength = bytes.Length; //Count bytes to send  os = webRequest.GetRequestStream();  os.Write(bytes, 0, bytes.Length); //Send it  }  catch (WebException ex)  {  return "error";  }  finally  {  if (os != null)  {  os.Close();  }  }  try  { // get the response  WebResponse webResponse = webRequest.GetResponse();  if (webResponse != null)  {  StreamReader sr = new StreamReader(webResponse.GetResponseStream());  return sr.ReadToEnd().Trim();  }  }  catch { return "error"; }  return "error";  } |

#### SetValue.cgi

The arguments to pass in the HTTP POST body are:

* path : this is the path to the parameter to change
* value : this is the new value

Here is an example of code to manually set the local time:

|  |
| --- |
| **C#**  string path = "/site/1/control\_table/control/12";  string value = System.DateTime.Now.ToString("s");  string postdata = "path=" + path + "&value=" + value;  PostMsg("<http://192.168.45.2/SetValue.cgi>", postdata, "admin", "compas"); |

#### ProcessXML.cgi

This function can be used to configure multiple parameters in one command. It is possible to send a full XML structure (like the configuration.xml) in the post data. All the valid elements will be updated with the new value.

This allows to remotely changing multiple config parameters by posting on each IP where a Comp@s monitoring is running.

FTP Server

* [Connecting the Comp@s FTP Server](#scroll-bookmark-120)
* [Changing default login and password](#scroll-bookmark-121).

### Connecting the Comp@s FTP Server

In order to use the FTP functionalities of Comp@s, you need a FTP client installed. We recommend the use of “Filezilla”, a free FTP solution available at <http://filezilla-project.org/>.

The connection parameters are:

|  |  |
| --- | --- |
| IP address / Host | The IP of your system |
| Port | 21 |
| Default login | admin |
| Default password | compas |

### Changing default login and password

The passwords are independent from the main Comp@s application. There are managed in an independent XML file named “Compas\_FTPServer.xml” located in the “user” folder. If this file does no exist, the default login and password are used:

**STEP 1:** Start a text editor like Notepad

**STEP 2:** Copy –Paste the following content:

|  |
| --- |
| **XML**  <ftpserver>  <ftpusers>  <user login="admin" password="compas"/>  </ftpusers>  </ftpserver> |

**STEP 3:** Modify the login and password

**STEP 4:** Save the file as “Compas\_FTPServer.xml”

**STEP 5:** Copy that file in the “\\FlashDisk\\user” (“\\Nor Flash\\user” on previous release).

**STEP 6:** You have to use the new login and password at the next FTP connection.

|  |
| --- |
| **Remark 1**  You can create multiple ftp users by adding more than one <user/> node under the <ftpusers/> node. |

|  |
| --- |
| **Remark 2**  If you want to keep your password more secret, it is possible to provide a hashed version of the password with the following syntax: |

|  |
| --- |
| **XML**  <ftpserver>  <ftpusers>  <user login="admin" passwordHash="1F41C076E8B0C2B69FD36514C54BD86F"/>  </ftpusers>  </ftpserver> |

Modbus Slave

With the Modbus license, a DC system can be monitored with the Modbus over TCP/IP protocol. Here follows the exchange table between the supervisor and the Comp@s monitoring. The Modbus transport layer is Ethernet over TCP/IP. The default used port is 502:

* [Discrete Inputs (Read Only)](#scroll-bookmark-122)
* [Input Registers (Read Only)](#scroll-bookmark-123)
* [Discrete Coils Table (Command)](#scroll-bookmark-124).

If you want to use Modbus to monitor other type of system, please contact us, we will study the business case and make a proposal.

### Discrete Inputs (Read Only)

Each discrete input is associated with an alarm related to the DC System level. This table corresponds to the alarm table in Tables at the DC System level.

|  |  |  |
| --- | --- | --- |
| Index | Name | Help |
| 1 | DC Bus Extra Low | The bus voltage is extra low |
| 2 | DC Bus Low | The bus voltage is low |
| 3 | DC Bus High | The bus voltage is high |
| 4 | DC Bus Extra High | The bus voltage is extra high |
| 5 | DC Bus Voltage Sense Failure | The DC bus voltage sense is defect or unconnected |
| 6 | Mains Failure | All the phases are down |
| 7 | Mains Partial Failure | Some rectifiers are in AC Failure |
| 8 | Mains Low | The main voltage is low on one or more phases |
| 9 | Mains High | The main voltage is high on one or more phases |
| 10 | One Rectifier Failure | One rectifier must be replaced |
| 11 | More Than One Rectifier Failure | More than one rectifier must be replaced |
| 12 | Missing Rectifiers | There is not enough rectifier according to the minimal number of rectifier configuration element |
| 13 | Battery Last Test Failed | The last battery test did not succeed. Maybe the battery should be replaced. |
| 14 | Battery On Discharge | The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure. |
| 17 | Battery LVD Relay Open | The battery Low Voltage Disconnector is open. |
| 18 | Battery Temperature Too High | The temperature of the battery is too high. |
| 19 | Battery Temperature Too Low | The temperature of the battery is too low. |
| 20 | Battery Temperature Sensor Fail | The battery temperature sense (NTC) is not connected or is defect. |
| 21 | Ambient Temperature Too High | The ambient temperature is too high. |
| 22 | Ambient Temperature Too Low | The ambient temperature is too low. |
| 23 | Ambient Temperature Sensor Fail | The ambient temperature sense (NTC) is not connected or is defect |
| 25 | Digital Input 1 | This alarm is related to digital input 1 |
| 26 | Digital Input 2 | This alarm is related to digital input 2 |
| 27 | Digital Input 3 | This alarm is related to digital input 3 |
| 28 | Digital Input 4 | This alarm is related to digital input 4 |
| 29 | Digital Input 5 | This alarm is related to digital input 5 |
| 30 | Digital Input 6 | This alarm is related to digital input 6 |
| 31 | Digital Input 7 | This alarm is related to digital input 7 |
| 32 | Digital Input 8 | This alarm is related to digital input 8 |

If custom alarms are defined with the PLC, they are available starting from index 101.

### Input Registers (Read Only)

These input registers correspond to the main data related to the DC System level. All these values are coded as signed 16 bits:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Index | Name: | Group | Unit | Help |
| 1 | DC Mode | General |  | The DC system can be in 4 possible states:  FLOAT : 0  BOOST : 1  BATTERY\_TEST : 2  AC\_FAILURE : 3 |
| 2 | Previous DC Mode | General |  | The DC system was previously in one of the 4 possible states:  FLOAT : 0  BOOST : 1  BATTERY\_TEST : 2  AC\_FAILURE : 3 |
| 5 | Day | OS |  | Can be used to read the date and time. |
| 6 | Month | OS |  |  |
| 7 | Year | OS |  |  |
| 8 | Hour | OS |  |  |
| 9 | Minute | OS |  |  |
| 10 | Second | OS |  |  |
| 11 | Bus Voltage | General | 0.1 Volt | The DC bus voltage in volt. |
| 12 | Ratio Delivered On Available Power | General | 0.01 % | This is the ratio of the delivered power divided by the installed power, in %. |
| 13 | Hours Since Last AC Failure Begin | General | hour | The number of hours since the last AC Failure begin |
| 14 | Hours Since Last AC Failure End | General | hour | The number of hours since the last AC Failure end |
| 21 | Rectifiers Output Power | Rectifiers | 100 Watt | The sum of the delivered rectifier power |
| 22 | Rectifiers Output Current | Rectifiers | Ampere | The sum of the delivered rectifier current |
| 23 | Rectifiers Output Power Max | Rectifiers | 100 Watt | The sum of the deliverable rectifier power |
| 24 | Rectifiers Output Current Max | Rectifiers | Ampere | The sum of the deliverable rectifier current |
| 31 | Number Of Rectifier Max | Rectifiers |  | The maximum possible number of rectifier in this dc system |
| 32 | Number Of Present Rectifier | Rectifiers |  | The actual number of present rectifier in this dc system |
| 33 | Number Of Absent Rectifier | Rectifiers |  | The actual number of absent rectifier in this dc system |
| 34 | Number Of Active Rectifier | Rectifiers |  | The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. |
| 35 | Number Of AC-Fail Rectifier | Rectifiers |  | The actual number or rectifier in AC Failure. |
| 36 | Number Of DC-Fail Rectifier | Rectifiers |  | The actual number or rectifier with DC Failure. |
| 37 | Number Of Remote Off Rectifier | Rectifiers |  | The actual number or rectifier in remote off. |
| 38 | Number Of Over Temperature Rectifier | Rectifiers |  | The actual number or rectifier in OVer Temperature. |
| 41 | AC Phase 1 Voltage | AC | 0.1 Volt | The voltage on AC phase 1 |
| 42 | AC Phase 2 Voltage | AC | 0.1 Volt | The voltage on AC phase 2 |
| 43 | AC Phase 3 Voltage | AC | 0.1 Volt | The voltage on AC phase 3 |
| 51 | Load Power | Load | 100 Watt | Estimation of the load power consumption |
| 52 | Load Current | Load | Ampere | Estimation of the load current consumption |
| 61 | Battery Input Current | Battery | Ampere | Measurement of the battery input current. A negative value means that the battery is discharging |
| 62 | Battery Input Power | Battery | 100 Watt | Measurement of the battery input power. A negative value means that the battery is discharging |
| 71 | Battery Temperature | Battery | 0.1 °C | The battery temperature |
| 72 | Battery Test State | Battery |  | This is about the result of the last battery test. 9 values are possible :  NEVER\_TESTED : 0  SUCCESS : 1  ON\_GOING : 2  FAILED\_TIMEOUT : 3  FAILED\_VBUS\_TOO\_LOW : 4  FAILED\_LOAD\_TOO\_LOW : 5  FAILED\_AC\_FAILURE : 6  FAILED\_CANCELED : 7  FAILED\_LVD\_OPENED : 8 |
| 73 | Battery Test Discharged Capacity | Battery | 0.01% | This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. |
| 74 | Battery Test Discharged Capacity Ah | Battery | Ah | This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. |
| 75 | Battery Test Final Voltage | Battery | 0.1 Volt | This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. |

### Discrete Coils Table (Command)

These outputs Boolean register correspond to the entries for controlling the DC System. All these commands are also executable with the CDM (Comp@s Display Module).

In order to start the command, a “1” must be written to this entry. The value is directly reset to 0 on the command start.

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Name | Group | Help |
| 1 | Back To Float | DC Mode | The dc system must go back in floating mode. |
| 2 | Start Battery Test | DC Mode | The dc system must start a battery test. |
| 3 | Force Battery Test | DC Mode | The dc system must force a battery test. |
| 4 | Start Boost Mode | DC Mode | The dc system must go in boost mode. |
| 11 | Open The LVD | LVD | The LVD must be opened |
| 12 | Close The LVD | LVD | The LVD must be closed |
| 31 | Reset Battery Current Integration | Battery | Reset the integration of the battery current. |
| 41 | Reset Last Battery Test State | Battery | Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. |

SNMP Agent

* For SNMP Agent: see [The Comp@s SNMP Agent](#scroll-bookmark-40)
* [Using and Configuring SNMP traps](#scroll-bookmark-125).

### Using and Configuring SNMP traps

* [SNMP Comp@s configuration](#scroll-bookmark-126)
* [Sending a testing trap](#scroll-bookmark-127)
* [Receiving traps](#scroll-bookmark-128).

#### SNMP Comp@s configuration

|  |
| --- |
| **STEP 1:** Connect the Comp@s web server  **STEP 2:** Browse to Site -> Configuration  **STEP 3:** Check that SNMP Activated is “True”.  **STEP 4:** Configure the “SNMP” targets IP”, further in the page. This parameter can be filled with multiple IP address separated by coma. Example: “130.145.23.1, 130.23.12.45”.  **STEP 5:** Check that “Minimal Event Severity For Traps” is set to “none”. This is the minimal severity of the event to send a SNMP trap. You can set this parameter to “warning”, “minor”, “major” or “critical”.  **STEP 6:** Repeat STEP 4 and STEP 5 at the DC System level and on the Sensors and Actuators if you have. This allows sending traps to different servers in function of the concerned equipment.  Your system is now configured; each event will be sent by trap. |

#### Sending a testing trap

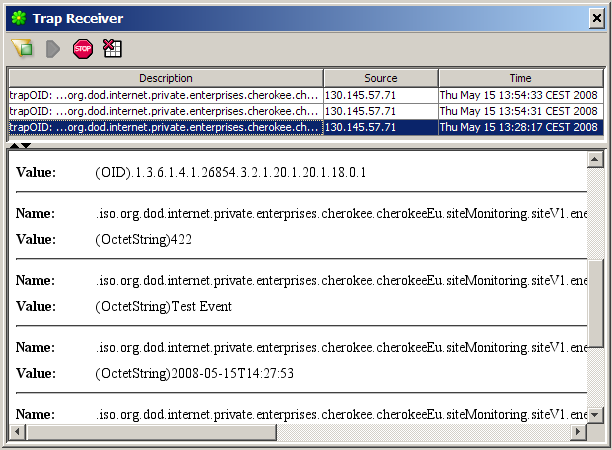
|  |
| --- |
| **STEP 1:** Connect the Comp@s web server  **STEP 2:** Browse to Site -> Control or to DC System -> Control  **STEP 3:** At the bottom of the page, you can enter a text in the field called “Add Event”.  **STEP 4:** Click on the corresponding “Execute” button.  **STEP 5:** An event has been added and was sent trough traps. |

#### Receiving traps

In order to receive traps, you need SNMP software able to receive traps. You can download the free Ireasoning MIB Browser which can do the job. The install file is available at: <http://www.ireasoning.com/mibbrowser.shtml>.

Once you have installed the MIB browser and loaded the MIB. You can use the “Trap Receiver” located in tools:

Figure 84 IReasoning trap receiver



XML Event Posting (ETSI)

The controller can send XML events, in compliance with ETSI standard ES-202-336, part 1.The relevant chapter is 9.4.2 (Alarm and Event Message). The standard is available free of charge on [www.etsi.org](http://www.etsi.org). (<http://pda.etsi.org/pda/queryform.asp> allows to search for ES 202 336).

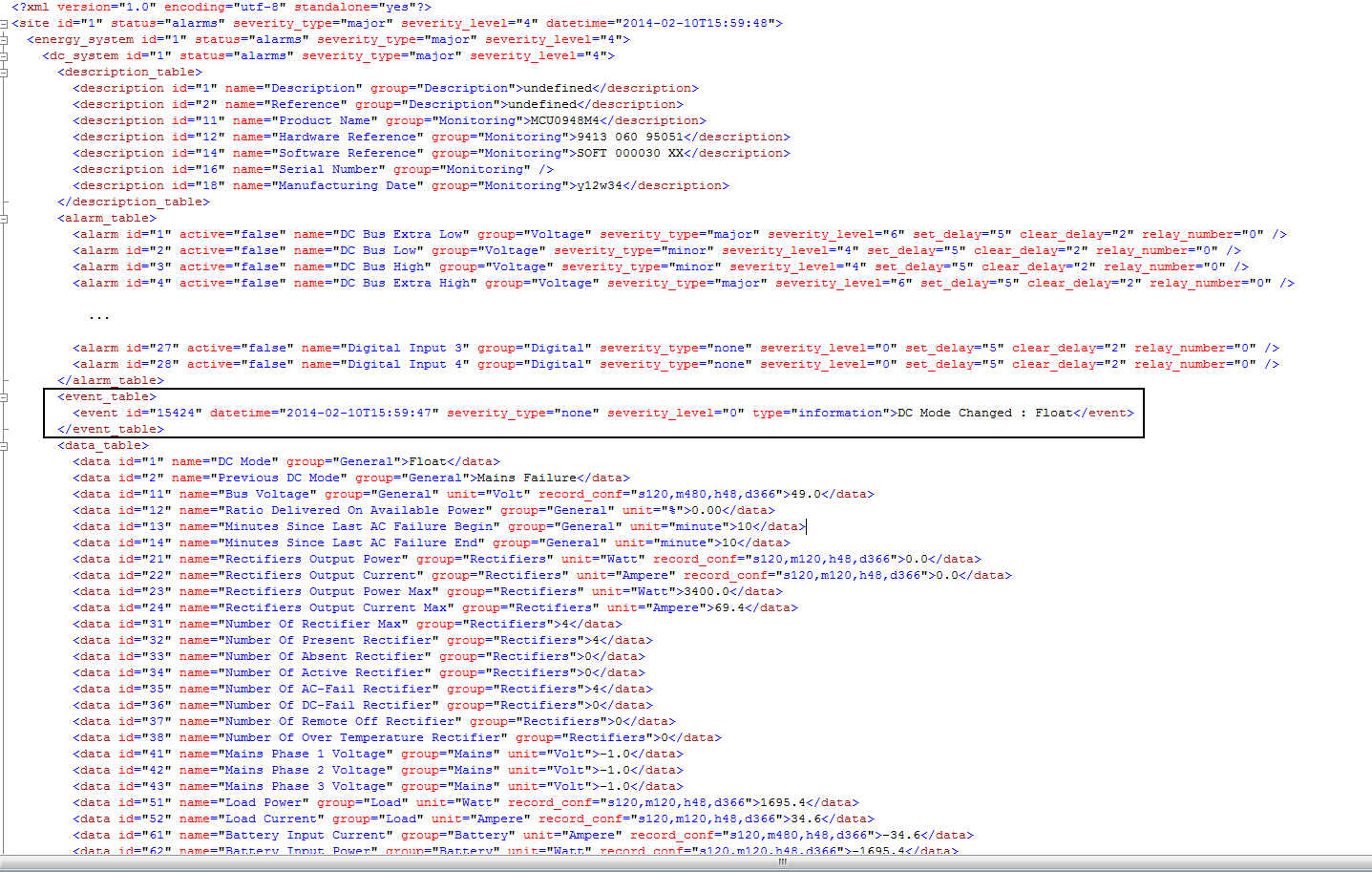
At the site level, in configuration, it is possible to configure what table must be sent in case of event (description, alarm, config, etc.) The following screenshot show some of the configuration elements. Up to 2 servers can be configured to allow redundancy.

|  |
| --- |
|  |
| *Some configuration elements about the XML Event Posting (See site tables for more information.)* |

The following c# code is an example to create an http listener that can receive events.

|  |
| --- |
| using System;  using System.Collections.Generic;  using System.IO; using System.Linq;  using System.Threading;  using System.Net;  using System.Xml; namespace HelpDebugPostXml  {  public class XmlPostListener {     private Thread \_threadServer;   private Thread \_threadDecodeXml;  private Form1 form1;    public XmlPostListener(Form1 form1)   {   this.form1 = form1;   }   public void StartListening()   {   \_threadServer = new Thread(ThreadServer);   \_threadServer.Start();   }  public void StopListning()   {   if (\_httpListener != null && \_httpListener.IsListening)   \_httpListener.Stop();   }  public void Stop()   {   StopListning();   }      private System.Threading.AutoResetEvent listenForNextRequest = new System.Threading.AutoResetEvent(false);   private HttpListener \_httpListener;     private void ThreadServer()   {   try   {   \_httpListener = new HttpListener();   \_httpListener.Prefixes.Clear();   \_httpListener.Prefixes.Add(form1.textBoxPostUrl.Text);  \_httpListener.Start();  System.Threading.ThreadPool.QueueUserWorkItem(Listen);  }   catch (Exception ex)   {   System.Windows.Forms.MessageBox.Show("Error : " + ex.Message);   }  }     // Loop here to begin processing of new requests.   private void Listen(object state)   {   while (\_httpListener.IsListening)   {   \_httpListener.BeginGetContext(new AsyncCallback(ListenerCallback), \_httpListener);   listenForNextRequest.WaitOne();   }   }     private void ListenerCallback(IAsyncResult result)   {   HttpListener listener = result.AsyncState as HttpListener;   HttpListenerContext context = null;    if (listener == null)   return;    try   {   context = listener.EndGetContext(result);   }   catch (Exception ex)   {   System.Windows.Forms.MessageBox.Show("Error : " + ex.Message);   return;   }   finally   {   listenForNextRequest.Set();   }       if (context == null)   return;     ProcessRequest(context);   }   private void ProcessRequest(HttpListenerContext context)   {  string s = "";   HttpListenerRequest request = null;   HttpListenerResponse response = null;    try   {  request = context.Request;   response = context.Response;  response.KeepAlive = false;   response.SendChunked = false;  Stream body = request.InputStream;   var encoding = request.ContentEncoding;   var reader = new StreamReader(body, encoding);    s = reader.ReadToEnd();   body.Close();   reader.Close();    if (request.RemoteEndPoint == null)   {   response.Abort();   return;   }    }   catch (Exception ex)   {   System.Windows.Forms.MessageBox.Show("Error : " + ex.Message);   response.Abort();   return;   }    System.Windows.Forms.MethodInvoker m = delegate   {   form1.richTextBox1.Text += '\n' + s;   };   form1.richTextBox1.BeginInvoke(m);    //We send to the compas that we have received the message  response.StatusCode = (int) HttpStatusCode.OK;   const string responseString = "OK";   byte[] buffer = System.Text.Encoding.UTF8.GetBytes(responseString);   // Get a response stream and write the response to it.   response.ContentLength64 = buffer.Length;     Stream output = response.OutputStream;   output.Write(buffer, 0, buffer.Length);   // You must close the output stream.   output.Close();   response.Close();    }  } } |

Here is an example of event received, when the data and alarms are requested on event :



Arm@da, our server application, is managing all these events, by filling in a mysql database. Please contact your reseller for more information.

CAN Bus related information

* [CAN Bus - The internal field bus](#scroll-bookmark-131)
* [Connecting multiple rectifier shelves together](#scroll-bookmark-132).

CAN Bus - The internal field bus

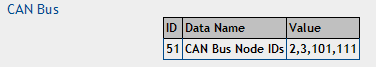
Comp@s systems use the CAN bus to communicate with the equipment. The CAN bus Controller Area Network (CAN) is an ISO approved standard for a low cost real time communication protocol. It is a fault tolerant and robust system. It is commonly used in automobiles, automated robots, airplanes, etc. In our application, the maximal bus length is 500m. The monitoring application is able to detect BUS problems like a short between the lines of the bus or devices which are unreachable.

Each node connected on the CAN Bus has an id. These ids are defined as shown in the following table:

|  |  |  |
| --- | --- | --- |
| Equipment Type | Range | Comments |
| Node Rectifier | [1,100] | Each rectifier with CAN capabilities has an address comprised between 1 and 100. |
| Node MCU Remote Central | [100,1] |  |
| Node MCU | [101,110] | Up to 10 shelves monitoring (MCU) |
| Node Extension | [111,126] | Up to 10 extension card. |
| Node\_CDM | [126] | Comp@s display module |
| Node Comp@s | [127] | The Comp@s node id. (used by CDM) |

To see the list of the nodes connected on a Comp@s System, browse to Site -> Data. There, you can view the "CAN Bus Node IDs" list, as shown on the following figure:

Figure 85 CAN Bus Node IDs



Connecting multiple rectifier shelves together

It is possible to interconnect multiple shelves to increase the system power. If the DC outputs are interconnected, the shelves are working in parallel. If the DC outputs of the shelves are independent, the shelves are independent.

In both situations, the CAN bus has to be connected between the shelves. Each MCU must have a unique CAN Id.

On MCU1848, the DIP Switch use is described in the following table:

|  |  |  |
| --- | --- | --- |
| Switches | Parameter | Description |
| 1-3 | CAN Id | Unique identifier of the MCU on the CAN bus. MCU CAN Id range begins at 101 and switch [1-3] represents a LSB encoded binary value that defines 8 successive Id's from 101 to 109. |
| 4-6 | - | Reserved for future use |
| 7 | Master/Slave | OFF: this MCU behaves as the master of the system ON: this MCU behaves as a slave of master MCU |
| 8 | Termination | OFF: external CAN bus termination must be used ON: CAN bus is internally terminated by a 147Ω resistor |

* [Multiple Shelves working in parallel](#scroll-bookmark-133)
* [Multiple Shelves Independent](#scroll-bookmark-134).

### Multiple Shelves working in parallel

The CAN bus, VPROG and Sharing signals must be interconnected between the shelves. The whole system is seen as only one DC system by Comp@s. Here follows two typical configurations:

Figure 86 Example with a system with 2 shelves of 6x1800W rectifiers

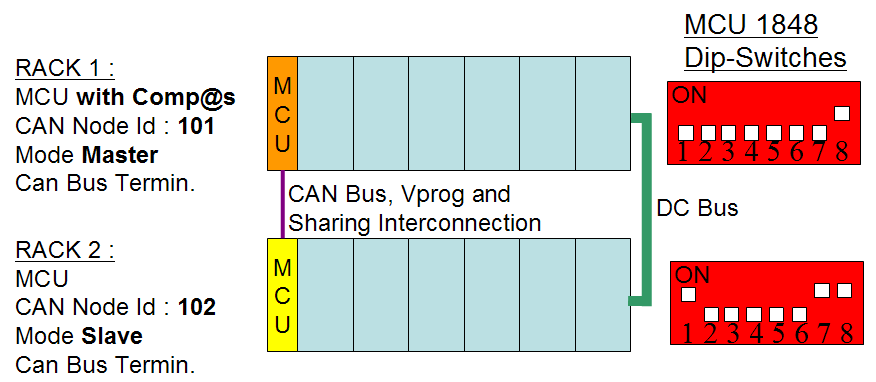
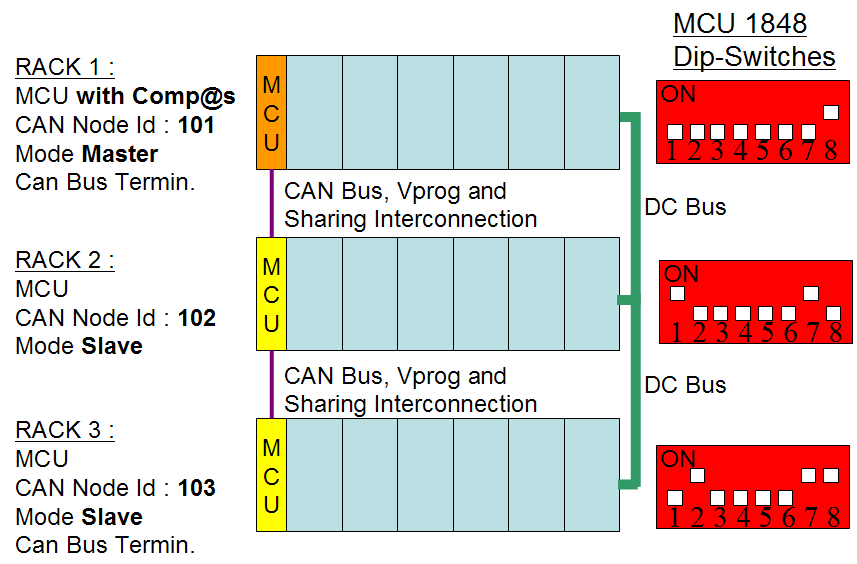


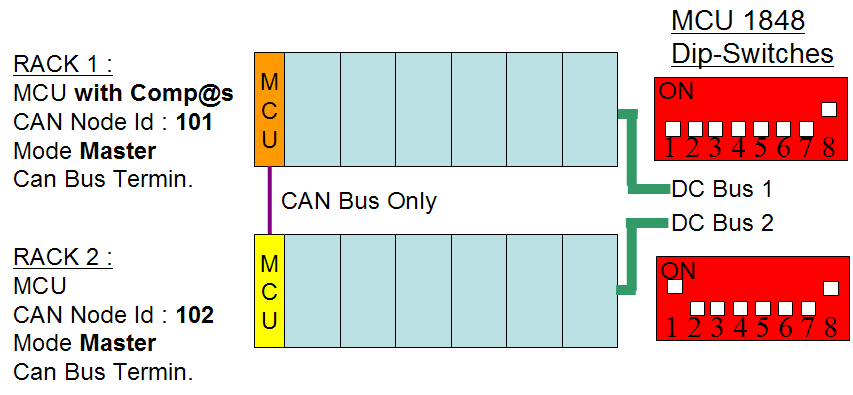
Figure 87 Example with a system of 3 shelves of 6x1800W rectifiers



### Multiple Shelves Independent

An independent shelf will manage the bus voltage, the alarms, the LVD, etc. Multiple DC systems are seen by Comp@s:

Figure 88 Example with a system with 2 shelves of 6x1800W rectifiers



Equipment Tables

The following chapters list the description, data, alarm, configuration and control tables that will be available in Comp@s for most of the supported devices. (Rectifier, MCU, Extension board, etc.)

Site Tables

### COMPAS

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | COMPAS |
| **Short Description** | Comp@s Platform Card |
| **Long Description** |  |
| **Hardware Reference** | 4004 110 96531 |
| **Software Reference** | SOFT 000031 XX |
| **Equipment Type** | General for all Comp@s |
| **ETSI Level** | /site/ |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Site Number** | Description | Site Information | basic |
| The identification number of the site | | | |
| **2** | **Site Name** | Description | Site Information | basic |
| The name of the site | | | |
| **3** | **Short Description** | Description | Site Information | basic |
| A short description of the site | | | |
| **4** | **Info** | Description | Site Information | basic |
| Some more information about the site | | | |
| **5** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **6** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **7** | **Contact Name** | Description | Contact | basic |
| Contact Name | | | |
| **8** | **Phone Number** | Description | Contact | basic |
| Phone Number | | | |
| **11** | **Street** | Description | Address | basic |
| Street part of the site address | | | |
| **12** | **City** | Description | Address | basic |
| City part of the site address | | | |
| **13** | **Province** | Description | Address | basic |
| Province part of the site address | | | |
| **14** | **Postal Code** | Description | Address | basic |
| Postal Code part of the site address | | | |
| **15** | **Region** | Description | Address | basic |
| Region part of the site address | | | |
| **16** | **Country** | Description | Address | basic |
| Country part of the site address | | | |
| **21** | **Group 1** | Description | Clustering | basic |
| Group Level 1 (For Armada Clustering) | | | |
| **22** | **Group 2** | Description | Clustering | basic |
| Group Level 2 (For Armada Clustering) | | | |
| **23** | **Group 3** | Description | Clustering | basic |
| Group Level 3 (For Armada Clustering) | | | |
| **24** | **Group 4** | Description | Clustering | basic |
| Group Level 4 (For Armada Clustering) | | | |
| **25** | **Group 5** | Description | Clustering | basic |
| Group Level 5 (For Armada Clustering) | | | |
| **31** | **Latitude** | Description | GPS Position | asset |
| The latitude of the site | | | |
| **32** | **Longitude** | Description | GPS Position | asset |
| The longitude of the site | | | |
| **33** | **Altitude** | Description | GPS Position | asset |
| The altitude of the site | | | |
| **91** | **Software Revision** | Controller | Product Info | basic |
| The software revision of Comp@s (read only) | | | |
| **92** | **Operating System Revision** | Controller | Operating System Info | basic |
| The operating system of Comp@s (read only) | | | |
| **93** | **CPU** | Controller | Hardware Info | basic |
| Information about the CPU | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **CAN Bus Failure** | Inventory | CAN Bus | major (0) | 5 / 2 |
| This alarm is active when there is a problem with the CAN Bus. | | | | |
| **2** | **CAN Bus Addressing Error** | Inventory | CAN Bus | major (0) | 5 / 2 |
| This alarm is active if 2 devices or more are using the same CAN address. You need to remove the duplication problem et reboot the compas to avoid a possible strange behavior. | | | | |
| **3** | **Missing CAN Bus Node IDs** | Inventory | CAN Bus | major (6) | 10 / 2 |
| This alarm is active if configured node ids are not detected on the bus | | | | |
| **4** | **Running CAN LSS Device Detection** | Inventory | CAN Bus | warning (0) | 5 / 2 |
| This alarm is active when new devices are beeing detected. | | | | |
| **5** | **Running CAN Firmware Upgrade** | Inventory | CAN Bus | warning (0) | 5 / 2 |
| This alarm is active when the bootloader is upgrading a can device, or when the queue of upgrade is not empty | | | | |
| **6** | **RS 485 Bus Failure** | Inventory | RS485 Bus | major (0) | 5 / 2 |
| This alarm is active when there is a problem with the RS 485 bus | | | | |
| **11** | **Controller Reboot Required** | Controller | Reboot | major (0) | 5 / 2 |
| This alarm is active if the system should be rebooted for some reason | | | | |
| **15** | **Last Configuration Changes Unsaved** | Controller | Save | warning (2) | 1 / 2 |
| This alarm is active if the system should be rebooted for some reason | | | | |
| **21** | **XML Heartbeat Post Failure** | XML | XML Event Posting | major (0) | 5 / 2 |
| This alarm is active when the heartbeat is not accepted by the primary or the secondary post server. Please note that this alarm is inactive if the heartbeat mechanism is inactive. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Current IP Address** | Network |  |  | basic |
| This is the actual IP address of the Comp@s platform. If the Ethernet cable is not correctly connected, the address will be 0.0.0.0. | | | | |
| **2** | **Current IP Mask** | Network |  |  | basic |
| This is the actual IP address of the Comp@s platform. If the Ethernet cable is not correctly connected, the address will be 0.0.0.0. | | | | |
| **3** | **Current MAC Address** | Network |  |  | basic |
| This is the MAC address of IP interface. | | | | |
| **11** | **Licensed Options** | Controller | License |  | basic |
| This is the options of the actual license. | | | | |
| **21** | **Date And Time Local** | Time |  |  | basic |
| This is the local time of the monitoring. | | | | |
| **22** | **Date And Time UTC** | Time |  |  | basic |
| This is the UTC time of the monitoring. | | | | |
| **31** | **Monitoring Memory Used** | Controller | Operating System Info | Kb | basic |
| This is actual amount of RAM memory used by the application. | | | | |
| **32** | **CPU Percentage Usage** | Controller | Operating System Info | % | basic |
| This is actual percentage of CPU used | | | | |
| **33** | **Free Flash Memory Space** | Controller | Operating System Info | MBytes | basic |
| This is free flash memory available on the Comp@s card, in Megabytes | | | | |
| **41** | **Total Fifo Size Of Second Records** | Data Records |  |  | basic |
|  | | | | |
| **42** | **Total Fifo Size Of Minute Records** | Data Records |  |  | basic |
|  | | | | |
| **43** | **Total Fifo Size Of Hour Records** | Data Records |  |  | basic |
|  | | | | |
| **44** | **Total Fifo Size Of Day Records** | Data Records |  |  | basic |
|  | | | | |
| **51** | **CAN Bus Node IDs** | Inventory | CAN Bus |  | basic |
| The coma separated list of the node ids present on the CAN bus. | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DHCP Enabled** | Network |  |  | True/False (False) | basic |
| The monitoring will try to get an IP with the DHCP protocol if this parameter is set to True. By default, this parameter is set to False. | | | | | |
| **2** | **IP Address If Static** | Network |  |  | 192.168.45.1 | basic |
| The static IP address of the monitoring. This configuration parameter is not used if the DHCP is enabled. The default IP is 192.168.45.2. | | | | | |
| **3** | **Subnet Mask If Static** | Network |  |  | 255.255.255.0 | basic |
| The static Subnet Mask of the monitoring. This configuration parameter is not used if the DHCP is enabled. The default mask is 255.255.255.0. | | | | | |
| **4** | **Default Gateway If Static** | Network |  |  | 192.168.45.1 | basic |
| The static Default Gateway of the monitoring. This configuration parameter is not used if DHCP is enabled. This is only useful if the monitoring have to use a gateway, this is generally not necessary. The default gateway is 192.168.45.1. | | | | | |
| **5** | **DNS If Static** | Network |  |  | 192.168.45.1 | basic |
| The static DNS of the monitoring. This configuration parameter is used to resolve URI and server name. This is not necessary if you are only IP address as target server. The default DNS server is 192.168.45.1. | | | | | |
| **8** | **Maximum Transmission Unit** | Network |  |  |  | basic |
| Specifies the TCP/IP MTU for the network interface | | | | | |
| **9** | **Ethernet Mode** | Network |  |  | True/False (False) | basic |
| The monitoring will try to get an IP with the DHCP protocol if this parameter is set to True. By default, this parameter is set to False. | | | | | |
| **11** | **SNTP Time Server** | Time |  |  | 192.168.45.1 | basic |
| The address of the server acting as SNTP timer server. If this server is not valid, the monitoring cannot update automatically his time. The default SNTP Time server is 192.168.45.1. | | | | | |
| **14** | **Time Zone Name** | Time |  |  | ((GMT+01:00) Brussels, Copenhagen, Madrid, Paris) | basic |
| The Time Zone of the site | | | | | |
| **22** | **Web Server Security Enabled** | Web Server |  |  | True/False (True) | basic |
| This is a True/False parameter used to activate or deactivate the access control to the web server. | | | | | |
| **23** | **Web Server Port** | Web Server |  |  | 0/65535 (80) | basic |
| This is an unsigned integer parameter used to configure the port at which the web server is accessible. By default, the port is 80. If you change this port, you must be sure that the traffic is allowed by your switches and routers on this port. | | | | | |
| **24** | **Web Authentication Method** | Web Server |  |  |  | basic |
| The web access security can be managed with 2 authentication methods: Basic Access or Digest Access. It is recommended to use the secured Digest access if security is an issue for you. | | | | | |
| **31** | **Default Page** | Web Server |  |  |  | basic |
| The default page displayed on logon (dashboard, site, summary, alarm\_event, ...) | | | | | |
| **41** | **XML Event Posting Activated** | XML | XML Event Posting |  | True/False (True) | basic |
| This is a True/False parameter used to activate or deactivate the XML event posting. | | | | | |
| **42** | **XML Event Posting Refresh Time** | XML | XML Event Posting | second | 1/3600 (2) | basic |
| The minimal time in second between to calculation of the XML events to send. By default, this is done every two seconds. | | | | | |
| **43** | **XML Event Posting Timeout** | XML | XML Event Posting | millisecond | 500/600000 (100000) | basic |
| The timeout in millisecond when trying to post XML data to a Web Server. | | | | | |
| **45** | **XML Event Posting To Secondary Only If Primary Failure** | XML | XML Event Posting |  | True/False (True) | basic |
| If this parameter is set to true, the events will be sent to secondary only if primary server is not available. If this parameter is set to false, all the events will be sent to primary and secondary server | | | | | |
| **46** | **XML Tables To Post On XML Event** | XML | XML Event Posting |  | description, alarm, data, config, control | basic |
| The list of the tables to send when an event is generated. (description,alarm,data,config,control). This allows to have armada database updated on event. | | | | | |
| **51** | **XML Heartbeat Time** | XML | Heartbeat | minute | 0-2880 | basic |
| This is the time between 2 XML Post of heartbeat. If set to 0, no heartbeat. | | | | | |
| **61** | **SNMP Activated** | SNMP |  |  | True/False (True) | basic |
| This is a True/False parameter used to activate or deactivate the SNMP agent. | | | | | |
| **63** | **SNMP Trap Version** | SNMP |  |  |  | basic |
| Traps/Notification can be sent with SNMP V1, V2c or V3 format. | | | | | |
| **64** | **SNMP GET Minimum Security Level** | SNMP |  |  |  | basic |
| 4 choices are available: No Authentication, V1 Community, V2c Community or V3. | | | | | |
| **65** | **SNMP SET Minimum Security Level** | SNMP |  |  |  | basic |
| 4 choices are available: No Authentication, V1 Community, V2c Community or V3. | | | | | |
| **66** | **SNMP V3 Auth Algorithm** | SNMP |  |  |  | basic |
| 3 choices are available: MD5, SHA, Any | | | | | |
| **67** | **SNMP V3 Privacy Algorithm** | SNMP |  |  |  | basic |
| 3 choices are available: DES, AES, 3DES | | | | | |
| **68** | **SNMP V3 Privacy Password** | SNMP |  |  |  | basic |
| The global SNMP V3 Encryption Password. This one is common for all the users to avoid complexity | | | | | |
| **69** | **SNMP V3 Engine ID** | SNMP |  |  |  | basic |
| The SNMP V3 Local Engine ID string | | | | | |
| **72** | **SNMP V3 Trap Auth Algorithm** | SNMP |  |  |  | basic |
| 2 choices are available: MD5, SHA | | | | | |
| **73** | **SNMP V3 Trap Privacy Algorithm** | SNMP |  |  |  | basic |
| 3 choices are available: DES, AES, 3DES | | | | | |
| **74** | **SNMP V3 Trap Username** | SNMP |  |  |  | basic |
| The SNMP V3 Trap UserName used for all the SNMP V3 traps | | | | | |
| **75** | **SNMP V3 Trap Auth Password** | SNMP |  |  |  | basic |
| The SNMP V3 Trap Authentication Password | | | | | |
| **76** | **SNMP V3 Trap Privacy Password** | SNMP |  |  |  | basic |
| The SNMP V3 Trap Privacy Password | | | | | |
| **77** | **Site Description Ids Included In Traps** | SNMP |  |  |  | basic |
| List of site Description Elements to send on traps. (to have the site reference and the city in each trap for example). The list is seperated with ';' | | | | | |
| **81** | **Generate Event On Configuration Changes** | Generic | Events |  | True/False (True) | basic |
| This is a True/False parameter used to activate or deactivate the tracking of configuration changes | | | | | |
| **82** | **Auto Archive Period Data Record** | Data Records |  | hour |  | basic |
| Period in hour to auto save records (when detailled and long duration records are needed). 0 means disabled. | | | | | |
| **83** | **Generate Event On Control Execution** | Generic | Events |  | True/False (True) | basic |
| This is a True/False parameter used to activate or deactivate the tracking of control execution | | | | | |
| **84** | **Generate Event On Alarm Acknowledge** | Generic | Events |  | True/False (True) | basic |
| This is a True/False parameter used to activate or deactivate the tracking of alarm acknowledgment | | | | | |
| **91** | **Required CAN Bus Node IDs** | Inventory | CAN Bus |  |  | basic |
| This is a coma separated list with the required CAN bus node ids | | | | | |
| **92** | **LSS CAN id range** | Inventory | CAN Bus |  |  | basic |
| By default 50-100, means up to 50 Can Nodes like rectifiers with CAN Id 50 to 100. To support up to 100 rectifiers, change it to 1-100. | | | | | |
| **93** | **System Nodes Definition** | Inventory | CAN Bus |  |  | basic |
| dc3(30-100) | | | | | |
| **95** | **LSS CANOpen Saved Configuration** | Inventory | CAN Bus |  |  | basic |
|  | | | | | |
| **101** | **Administrator Login:Password** | Users |  |  | (admin:compas) | basic |
| This is the login and the password of the administrator. It is saved with a special syntax. First the login in clear, followed of 2 points, followed of the MD5 hashed password. If you change the login:password by entering a non hashed password, this last is automatically hashed. | | | | | |
| **102** | **User 1 Login:Password** | Users |  |  | (user1:compas) | basic |
| This is the login and the password of the user number 1. | | | | | |
| **103** | **User 2 Login:Password** | Users |  |  | (user2:compas) | basic |
| This is the login and the password of the user number 2. | | | | | |
| **104** | **User 3 Login:Password** | Users |  |  | (user3:compas) | basic |
| This is the login and the password of the user number 3. | | | | | |
| **105** | **User 4 Login:Password** | Users |  |  | (user4:compas) | basic |
| This is the login and the password of the user number 4. | | | | | |
| **106** | **User 5 Login:Password** | Users |  |  | (user5:compas) | basic |
| This is the login and the password of the user number 5. | | | | | |
| **120** | **Enable Email Feature** | Email |  |  | True/False (False) | asset |
| Enable/Disable the email feature | | | | | |
| **121** | **Smtp Server** | Email |  |  |  | basic |
| Smtp Server. If you are using a domain name, make sure you configured the network Dns (CF5) | | | | | |
| **122** | **Smtp Domain** | Email |  |  |  | basic |
| Smtp Domain. (Required by some servers.) | | | | | |
| **123** | **Smtp User Login:Password** | Email |  |  |  | basic |
| Smtp Login and Password. The password is encrypted. To enter a new login and password, enter login:password and validate, the password will be encrypted. | | | | | |
| **130** | **Mail Sender** | Email |  |  |  | basic |
| Mail Sender (The 'From' of the emails you will receive) | | | | | |
| **131** | **Mail Recipients** | Email |  |  |  | basic |
| Mail Recipients, seperated with semicolon ';' | | | | | |
| **135** | **Minimal Severity Type To Send Mail** | Email |  |  | (minor) | basic |
| This is the minimal severity of the event to send a Summary Mail | | | | | |
| **210** | **RS485 Extensions Configuration** | Inventory | RS485 Bus |  | PM9C(1) | asset |
| The configuration string for RS485 Extensions | | | | | |
| **220** | **Ethernet Extensions Configuration** | Inventory | Ethernet |  | AXS(192.168.45.3) | asset |
| The configuration string for Ethernet Extensions | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **611** | **SNMP Trap Targets IP** | SNMP |  |  | 192.168.45.1 | basic |
| One or multiple target IP to send traps, coma separated. Ex: 130.145.23.1, 130.23.12.45 | | | | | |
| **612** | **Minimal Event Severity For Traps** | SNMP |  |  | (none) | basic |
| This is the minimal severity of the event to send a SNMP trap | | | | | |
| **651** | **XML Events Primary Post URL** | XML | XML Event Posting |  |  | basic |
| This is the first URL at which the events related to this equipment must be posted. The XML ETSI standard is used in the posted data content. | | | | | |
| **652** | **XML Events Primary Post Login** | XML | XML Event Posting |  |  | basic |
| The login which must be used when posting events to the primary server | | | | | |
| **653** | **XML Events Primary Post Password** | XML | XML Event Posting |  |  | basic |
| The password which must be used when posting events to the primary server | | | | | |
| **661** | **XML Events Secondary Post URL** | XML | XML Event Posting |  |  | basic |
| This is the second URL at which the events related to this equipment must be posted. The XML ETSI standard is used in the posted data content. This allows having redundancy with the management server. | | | | | |
| **662** | **XML Events Secondary Post Login** | XML | XML Event Posting |  |  | basic |
| The login which must be used when posting events to the secondary server | | | | | |
| **663** | **XML Events Secondary Post Password** | XML | XML Event Posting |  |  | basic |
| The password which must be used when posting events to the secondary server | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Reboot Controller** | Controller | Reboot | basic |
| Writing a '1' to this control element will reboot the monitoring. Events and Records will be saved. | | | |
| **2** | **Save Configuration And Reboot Controller** | Controller | Reboot | basic |
| Writing a '1' to this control element will first save the actual configuration and will reboot the monitoring after. | | | |
| **3** | **Reboot Monitoring Without Saving Records** | Controller | Reboot | basic |
| Writing a '1' to this control element will reboot the monitoring without saving records | | | |
| **6** | **Apply Network Configuration** | Network |  | basic |
| Writing a '1' to this control element will reconfigure the ethernet according to the Network Configuration. If you change the IP address in the config table without using this command after, the configuration is not applied. | | | |
| **11** | **Force SNTP Time Refresh** | Time |  | basic |
| Writing a '1' to this control element will force the monitoring to try to refresh his time with the configured SNTP Time Server. | | | |
| **12** | **Set Local Time** | Time |  | basic |
| Writing a date and time to this control element allows to manually change the local time of the monitoring. The syntax of the date and the time is: 2007-11-19T13:02:34 | | | |
| **13** | **Set UTC Time** | Time |  | basic |
| Writing a date and time to this control element allows to manually change the UTC time of the monitoring. The syntax of the date and the time is: 2007-11-19T13:02:34 | | | |
| **14** | **Reset Uptime** | Time |  | basic |
| Writing a '1' to this control element will reset the uptime of the monitoring. | | | |
| **20** | **Clean and Save XML User Configuration** | Controller | Save | basic |
| Writing a '1' to this control element will remove the configuration sections related to missing equipments, than save all the configuration of all the connected equipment in a XML format. This file is read when the monitoring is starting in order to configure the monitoring. This file is also accessible trough the FTP server or can be downloaded trough the web interface. | | | |
| **21** | **Save XML User Configuration** | Controller | Save | basic |
| Writing a '1' to this control element will save all the configuration of all the connected (or previously connected) equipment in a XML format. This file is read when the monitoring is starting in order to configure the monitoring. This file is also accessible trough the FTP server or can be downloaded trough the web interface. | | | |
| **22** | **Save Inventory** | Controller | Save | underdev |
| Writing a '1' to this control element will save save the inventory in a XML format. This file is read when the monitoring is starting in order to configure the monitoring. This file is also accessible trough the FTP server or can be downloaded trough the web interface. | | | |
| **33** | **Save Data Records** | Data Records |  | basic |
| Writing a '1' to this control element will force the monitoring to save all the data records. This is useful if you want to unpower the Comp@s monitoring. This function is called automatically everyday. | | | |
| **34** | **Export Data Records in CSV** | Data Records |  | basic |
| Writing a '1' to this control element will force the monitoring to save all the CVS records files. The CSV files are stored in the records folder. | | | |
| **35** | **Archive Data Records** | Data Records |  | basic |
| Writing a '1' to this control element will force the monitoring to save all the data records. This is useful if you want to unpower the Comp@s monitoring. This function is called automatically everyday. | | | |
| **36** | **Delete All Data Records** | Data Records |  | basic |
| Writing a '1' to this control element will force the monitoring to save all the data records. This is useful if you want to unpower the Comp@s monitoring. This function is called automatically everyday. | | | |
| **40** | **Emulate Records** | Controller | Emulation | underdev |
|  | | | |
| **41** | **Reload Translations** | Controller | Translation | basic |
| Writing a '1' to this control element will reload all the csv translation files | | | |
| **51** | **Reload License** | Controller | License | basic |
| Writing a '1' to this control element will reload the license file | | | |
| **61** | **Remove Absent Equipments** | Inventory |  | basic |
|  | | | |
| **81** | **Reset CAN Bus Node** | Inventory | CAN Bus | basic |
| Writing a valid CAN bus node id to this control element will reset the correspondent device. | | | |
| **82** | **Save CANOpen LSS Configuration** | Inventory | CAN Bus | basic |
|  | | | |
| **83** | **Start New Inventory** | Inventory | CAN Bus | basic |
|  | | | |
| **91** | **Upgrade Node Firmware** | Inventory | CAN Bus | basic |
| This control element is used to start the firmware upgrade of a CAN bus Node. You need to upload first the firmware trough ftp in the /user/firmware path. Then you need to write the id number of the CAN Node, followed by a coma, followed by the file name. Example : '101,SOFT\_0000030\_01.txt'. | | | |
| **92** | **Cancel Firmware Upgrade** | Inventory | CAN Bus | basic |
| This control element is used to cancel the runiing firmware upgrade of a CAN bus Node. | | | |
| **103** | **Flash Binary** | Files |  | basic |
| This control element is used to start a binary flash update. You need to upload first the firmware trough ftp in the /user/firmware path. | | | |
| **110** | **Download File From Url** | Files |  | basic |
| This control element is used to download a file wiht HTTP get, the argument is an url. The file is saved in the upload folder | | | |
| **111** | **Delete User Uploaded File** | Files |  | basic |
| This control element is used to delete a file in the user-upload folder. This is riskless as these files are not used, they are temporary files. | | | |
| **112** | **Move User Uploaded File** | Files |  | basic |
| This control element is used to copy a file from the user-upload folder to another one. Be aware of what your are doing ! | | | |
| **113** | **Extract Zip File in user-upload** | Files |  | basic |
| This control element is used to delete a file in the user-upload folder. This is riskless as these files are not used, they are temporary files. | | | |
| **120** | **Send Summary Email** | Email |  | asset |
| This control element is used to force the sending of a summary to the configured mail address | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

DC System Tables

### ADIO 10 For Cordex Control

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | ADIO 10 For Cordex Control |
| **Short Description** | Standard I/O module DC systems used as dc system |
| **Long Description** | I/O module with 2 inputs for temperature measurement, 4 voltage measurements, 2 current measurements, 8 digital inputs and 8 relays |
| **Hardware Reference** | 9413 060 05101 |
| **Software Reference** | SOFT 000099 XX |
| **Equipment Type** | ADIO use as controller for Cordex (UCC) |
| **ETSI Level** | /site/energy\_system/dc\_system |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 4 / 2 |
| The DC bus voltage sense is defect or unconnected | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| All the phases are down | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| Some rectifiers are in AC Failure | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases | | | | |
| **9** | **Mains High** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is high on one or more phases | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 5 / 2 |
| More than one rectifier must be replaced | | | | |
| **12** | **Missing Rectifiers - Comm Lost** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the minimal number of rectifier configuration element. It can also a problem of communication with some rectifiers | | | | |
| **13** | **Battery Last Test Failed** | Battery |  | minor (4) | 5 / 2 |
| The last battery test did not succeed. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 5 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. | | | | |
| **18** | **Battery Temperature Too High** | Battery |  | minor (4) | 5 / 2 |
| The temperature of the battery is too high. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery |  | minor (4) | 5 / 2 |
| The temperature of the battery is too low. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery |  | minor (4) | 5 / 2 |
| The battery temperature sensor (NTC) is not working properly. | | | | |
| **30** | **Digital Input 1** | Adio 1 | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **31** | **Digital Input 2** | Adio 1 | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **32** | **Digital Input 3** | Adio 1 | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **33** | **Digital Input 4** | Adio 1 | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **34** | **Digital Input 5** | Adio 1 | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **35** | **Digital Input 6** | Adio 1 | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **36** | **Digital Input 7** | Adio 1 | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **37** | **Digital Input 8** | Adio 1 | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | General |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST' or 'AC\_FAILURE' | | | | |
| **2** | **Previous DC Mode** | General |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | General |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | General |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | General |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | General |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max Nominal** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier nominal power. | | | | |
| **24** | **Rectifiers Output Current Max Nominal** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable nominal rectifier current. | | | | |
| **25** | **Rectifiers Output Power Max Live** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power, taking into account any rectifier power limitation due to temperature, manual defined limitation, etc. | | | | |
| **26** | **Rectifiers Output Current Max Live** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current. If the system is in battery test, in battery current limitation or in temeperature derating, that value will be lower that the nominal. | | | | |
| **27** | **Average Output Voltage** | Rectifier Output |  | Volt | basic |
| The average output voltage of all communicating and non-failed rectifiers. | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers |  |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers |  |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers |  |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers |  |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers |  |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers |  |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **39** | **Number Of Comm Fail Rectifier** | Rectifiers |  |  | basic |
| The actual number of rectifier with communication failure. | | | | |
| **41** | **Mains Phase 1 Voltage** | Mains |  | Volt | basic |
| The voltage on AC phase 1 | | | | |
| **42** | **Mains Phase 2 Voltage** | Mains |  | Volt | basic |
| The voltage on AC phase 2 | | | | |
| **43** | **Mains Phase 3 Voltage** | Mains |  | Volt | basic |
| The voltage on AC phase 3 | | | | |
| **44** | **Average AC Mains Input Voltage** | Mains |  | Volt | basic |
| The average AC mains input voltage of all communicating and non-failed rectifiers. | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery |  | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery |  |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery |  | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery |  | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery |  | Volt | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery |  |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Days Since Last Test Battery** | Battery |  | day | basic |
| The number of hour since the last battery test ended. 0 means never or running. | | | | |
| **84** | **Next Scheduled Battery Test** | Battery |  |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **Equalize Live Status** | Battery |  |  | basic |
| General status of the Equalize Feature | | | | |
| **102** | **Equalize Remaining Time** | Battery |  | minute | basic |
| Remaining time in equalize mode | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Asset Data |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **201** | **Voltage 1** | Adio 1 | Voltage 1 | Volt | basic |
| Module 1 Voltage Measurement 1 | | | | |
| **202** | **Voltage 2** | Adio 1 | Voltage 2 | Volt | basic |
| Module 1 Voltage Measurement 2 | | | | |
| **203** | **Voltage 3** | Adio 1 | Voltage 3 | Volt | basic |
| Module 1 Voltage Measurement 3 | | | | |
| **204** | **Voltage 4** | Adio 1 | Voltage 4 | Volt | basic |
| Module 1 Voltage Measurement 4 | | | | |
| **205** | **Shunt 1** | Adio 1 | Shunt 1 | Ampere | basic |
| Module 1 Shunt Measurement 1 | | | | |
| **206** | **Shunt 2** | Adio 1 | Shunt 2 | Ampere | basic |
| Module 1 Shunt Measurement 2 | | | | |
| **207** | **Temperature 1** | Adio 1 | Temperature 1 | degree C | basic |
| Module 1 Temperature Measurement 1 | | | | |
| **208** | **Temperature 2** | Adio 1 | Temperature 2 | degree C | basic |
| Module 1 Temperature Measurement 2 | | | | |
| **219** | **Relay 1 State** | Adio 1 | Relay 1 |  | basic |
| Actual state of the Relay | | | | |
| **221** | **Relay 2 State** | Adio 1 | Relay 2 |  | basic |
| Actual state of the Relay | | | | |
| **223** | **Relay 3 State** | Adio 1 | Relay 3 |  | basic |
| Actual state of the Relay | | | | |
| **225** | **Relay 4 State** | Adio 1 | Relay 4 |  | basic |
| Actual state of the Relay | | | | |
| **227** | **Relay 5 State** | Adio 1 | Relay 5 |  | basic |
| Actual state of the Relay | | | | |
| **229** | **Relay 6 State** | Adio 1 | Relay 6 |  | basic |
| Actual state of the Relay | | | | |
| **231** | **Relay 7 State** | Adio 1 | Relay 7 |  | basic |
| Actual state of the Relay | | | | |
| **233** | **Relay 8 State** | Adio 1 | Relay 8 |  | basic |
| Actual state of the Relay | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | Bus Voltage |  | Volt | 47.5/58.2 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | Bus Voltage | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | Bus Voltage | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | Bus Voltage | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | Bus Voltage | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | Bus Voltage | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | Bus Voltage | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | Bus Voltage | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | Bus Voltage | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **21** | **Temperature Compensation Slope** | Temperature Compensation |  | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Temperature Compensation |  | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Temperature Compensation |  | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **24** | **Enable Temperature Compensation In Float Mode** | Temperature Compensation |  |  | True/False (True) | battery |
|  | | | | | |
| **25** | **Enable Temperature Compensation In Equalize Mode** | Temperature Compensation |  |  | True/False (False) | battery |
|  | | | | | |
| **30** | **Number of Battery String** | Battery |  |  | 0/4 (1) | basic |
| This is the number of battery string you want to monitor. If you have a battery, it must be set to at least 1. If not, the battery features like the battery temperature compensation won't be enabled. You are able to specify current limitation globally at the dc system level, and string by string at the battery level. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery |  | Ampere | 0.5/5000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. This limitation applies to the sum of the battery current strings. It is also possible to specify a limitation by string in the Battery Equipment | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/10000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery |  | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery |  | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery |  | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery |  | Ampere | 0/5000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery |  | Ampere | 0/500 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **38** | **Peukert Number** | Battery |  |  | 1/2 (1) | basic |
| The Peukert number relates to the internal resistance of a battery and provides an indication of the excpected capacity. The ideal number is 1. This value can be calculated with the formula: (log(t2)-log(t1))/(log(i1)-log(i2)) where tx is the autonomy in hours at a constant discharge current of ix Amps. Often, we use t1 = 1h and t2 = 10h | | | | | |
| **51** | **Equalize Voltage** | Equalize |  | Volt | 49.8/60.2 (56.4) | battery |
| The Equalize voltage | | | | | |
| **52** | **Equalize Duration** | Equalize |  | minute | 10/240 (120) | battery |
| The timeout in minute after which a system in equalize mode must go back in floating mode. | | | | | |
| **55** | **Enable Periodic Equalize** | Equalize |  |  | False/True (False) | underdev |
| The equalize mode must be started periodically | | | | | |
| **56** | **Periodic Equalize Interval** | Equalize |  | day | 1/1000 (30) | underdev |
| The number of days between two periodic started equalize mode. | | | | | |
| **59** | **Enable Auto Equalize** | Equalize |  |  | False/False (False) | battery |
| The equalize mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Arming Low Voltage'. This allows charging the battery faster. | | | | | |
| **60** | **Equalize Arming Voltage Threshold** | Equalize |  | Volt | 43/50 (46) | battery |
| The voltage under which the equalize mode must be armed. | | | | | |
| **61** | **Equalize Activation Voltage Threshold** | Equalize |  | Volt | 42/60.2 (53) | battery |
| The voltage at which the equalize mode must be started (when armed) | | | | | |
| **64** | **Enable Equalize Battery Current Terminated** | Equalize |  |  | False/True (False) | battery |
| The equalize mode must be stopped based on battery current conditions | | | | | |
| **65** | **Equalize Battery Current Terminated Threshold** | Equalize |  | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode when in equalize. (after some duration) | | | | | |
| **66** | **Equalize Battery Current Terminated Duration** | Equalize |  | minute | 5/1000 (20) | battery |
| The timeout in minute after which a system in equalize mode must go back in floating mode after the Battery Curent Terminated is achieved | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 44/54 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 0/6000 (0) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. If the parameter is set to 0, no regulation will be done | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/200 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Rectifiers | Power Save |  |  | asset |
| This is the boolean condition which allows or not to automatically enable the Power Save feature | | | | | |
| **84** | **Number Of Redundant Rectifiers** | Rectifiers | Power Save |  | 0-100 | asset |
| Specify the number of extra rectifiers to turn on when power save is enabled | | | | | |
| **85** | **Maximum Power Usage** | Rectifiers | Power Save |  | 30-100 | asset |
| Specify the percentage (of maximum power usage) per rectifier module used in the computation of the Power Save feature. | | | | | |
| **91** | **Minimal Number Of Present Rectifiers** | Rectifiers |  |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **92** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifiers must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **101** | **System Start Delay** | Rectifiers |  | second | 0/300 (1) | basic |
|  | | | | | |
| **102** | **Module Start Delay** | Rectifiers |  | second | 0/300 (1) | basic |
|  | | | | | |
| **103** | **Safe Voltage** | Rectifiers |  | Volt | 46/56 (51.4) | basic |
|  | | | | | |
| **141** | **AC Voltage Low** | Mains |  | Volt |  | basic |
| The AC voltage under which the alarm AC Low is set. | | | | | |
| **142** | **AC Voltage High** | Mains |  | Volt |  | basic |
| The AC voltage over which the alarm AC High is set. | | | | | |
| **143** | **AC Voltage Hysteresis** | Mains |  | Volt |  | basic |
| The AC voltage hysteresis on alarms AC High and AC Low. | | | | | |
| **151** | **Bus Voltage Variable Pointer** | Alternate Regulation Pointer Settings |  |  |  | basic |
| PLC Pointer to variable related to Bus Voltage | | | | | |
| **152** | **Battery Temperature Variable Pointer** | Alternate Regulation Pointer Settings |  |  |  | basic |
| PLC Pointer to variable related to Battery Temperature | | | | | |
| **201** | **Shunt 1 Rating At 60mV** | Adio 1 | Shunt 1 | Ampere |  | basic |
| The rating of the shunt 1 at 60mV. | | | | | |
| **202** | **Shunt 2 Rating At 60mV** | Adio 1 | Shunt 2 | Ampere |  | basic |
| The rating of the shunt 2 at 60mV. | | | | | |
| **204** | **Digital Input 1 Name** | Adio 1 | Digital Input 1 |  | Adio 1 | basic |
| The name of the digital input 1. | | | | | |
| **205** | **Digital Input 1 Normally Closed** | Adio 1 | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **206** | **Digital Input 2 Name** | Adio 1 | Digital Input 2 |  | Adio 1 | basic |
| The name of the digital input 2. | | | | | |
| **207** | **Digital Input 2 Normally Closed** | Adio 1 | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **208** | **Digital Input 3 Name** | Adio 1 | Digital Input 3 |  | Adio 1 | basic |
| The name of the digital input 3. | | | | | |
| **209** | **Digital Input 3 Normally Closed** | Adio 1 | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **210** | **Digital Input 4 Name** | Adio 1 | Digital Input 4 |  | Adio 1 | basic |
| The name of the digital input 4. | | | | | |
| **211** | **Digital Input 4 Normally Closed** | Adio 1 | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **212** | **Digital Input 5 Name** | Adio 1 | Digital Input 5 |  | Adio 1 | basic |
| The name of the digital input 5. | | | | | |
| **213** | **Digital Input 5 Normally Closed** | Adio 1 | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **214** | **Digital Input 6 Name** | Adio 1 | Digital Input 6 |  | Adio 1 | basic |
| The name of the digital input 6. | | | | | |
| **215** | **Digital Input 6 Normally Closed** | Adio 1 | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **216** | **Digital Input 7 Name** | Adio 1 | Digital Input 7 |  | Adio 1 | basic |
| The name of the digital input 7. | | | | | |
| **217** | **Digital Input 7 Normally Closed** | Adio 1 | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **218** | **Digital Input 8 Name** | Adio 1 | Digital Input 8 |  | Adio 1 | basic |
| The name of the digital input 8. | | | | | |
| **219** | **Relay 1 Change State Boolan Condition** | Adio 1 | Relay 1 |  | (False) | basic |
| Relay 1 Boolean Condition | | | | | |
| **220** | **Relay 1 Normal State** | Adio 1 | Relay 1 |  | (Energized / De-energized) | basic |
| Relay 1 Normal State | | | | | |
| **221** | **Relay 2 Change State Boolan Condition** | Adio 1 | Relay 2 |  | (False) | basic |
| Relay 2 Boolean Condition | | | | | |
| **222** | **Relay 2 Normal State** | Adio 1 | Relay 2 |  | (Energized / De-energized) | basic |
| Relay 2 Normal State | | | | | |
| **223** | **Relay 3 Change State Boolan Condition** | Adio 1 | Relay 3 |  | (False) | basic |
| Relay 3 Boolean Condition | | | | | |
| **224** | **Relay 3 Normal State** | Adio 1 | Relay 3 |  | (Energized / De-energized) | basic |
| Relay 3 Normal State | | | | | |
| **225** | **Relay 4 Change State Boolan Condition** | Adio 1 | Relay 4 |  | (False) | basic |
| Relay 4 Boolean Condition | | | | | |
| **226** | **Relay 4 Normal State** | Adio 1 | Relay 4 |  | (Energized / De-energized) | basic |
| Relay 4 Normal State | | | | | |
| **227** | **Relay 5 Change State Boolan Condition** | Adio 1 | Relay 5 |  | (False) | basic |
| Relay 5 Boolean Condition | | | | | |
| **228** | **Relay 5 Normal State** | Adio 1 | Relay 5 |  | (Energized / De-energized) | basic |
| Relay 5 Normal State | | | | | |
| **229** | **Relay 6 Change State Boolan Condition** | Adio 1 | Relay 6 |  | (False) | basic |
| Relay 6 Boolean Condition | | | | | |
| **230** | **Relay 6 Normal State** | Adio 1 | Relay 6 |  | (Energized / De-energized) | basic |
| Relay 6 Normal State | | | | | |
| **231** | **Relay 7 Change State Boolan Condition** | Adio 1 | Relay 7 |  | (False) | basic |
| Relay 7 Boolean Condition | | | | | |
| **232** | **Relay 7 Normal State** | Adio 1 | Relay 7 |  | (Energized / De-energized) | basic |
| Relay 7 Normal State | | | | | |
| **233** | **Relay 8 Change State Boolan Condition** | Adio 1 | Relay 8 |  | (False) | basic |
| Relay 8 Boolean Condition | | | | | |
| **234** | **Relay 8 Normal State** | Adio 1 | Relay 8 |  | (Energized / De-energized) | basic |
| Relay 8 Normal State | | | | | |
| **235** | **Default Output Relay Binary Vector** | Adio 1 |  |  | (0b11111111) | basic |
| This configuration is stored inside the module in case of communication failure | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | DC Mode |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | DC Mode |  | battery |
| The dc system must start a battery test. Il will be canceled if the system is not in float mode or if the number of minutes Since Last Ac Fail End is less than the configured minimum time without mains failure | | | |
| **3** | **Force Battery Test** | DC Mode |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Equalize Mode** | DC Mode |  | battery |
| The dc system must go in equalize mode. | | | |
| **21** | **Locate Rectifier Clear** | Locate |  | basic |
|  | | | |
| **22** | **Locate Rectifier On Phase** | Locate |  | basic |
|  | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **201** | **Calibrate V1** | Adio 1 |  | basic |
|  | | | |
| **202** | **Calibrate V2** | Adio 1 |  | basic |
|  | | | |
| **203** | **Calibrate V3** | Adio 1 |  | basic |
|  | | | |
| **204** | **Calibrate V4** | Adio 1 |  | basic |
|  | | | |
| **219** | **Invert Relay 1 State For X Seconds** | Adio 1 | Relay 1 | basic |
| Generate Pulse on relay | | | |
| **221** | **Invert Relay 2 State For X Seconds** | Adio 1 | Relay 2 | basic |
| Generate Pulse on relay | | | |
| **223** | **Invert Relay 3 State For X Seconds** | Adio 1 | Relay 3 | basic |
| Generate Pulse on relay | | | |
| **225** | **Invert Relay 4 State For X Seconds** | Adio 1 | Relay 4 | basic |
| Generate Pulse on relay | | | |
| **227** | **Invert Relay 5 State For X Seconds** | Adio 1 | Relay 5 | basic |
| Generate Pulse on relay | | | |
| **229** | **Invert Relay 6 State For X Seconds** | Adio 1 | Relay 6 | basic |
| Generate Pulse on relay | | | |
| **231** | **Invert Relay 7 State For X Seconds** | Adio 1 | Relay 7 | basic |
| Generate Pulse on relay | | | |
| **233** | **Invert Relay 8 State For X Seconds** | Adio 1 | Relay 8 | basic |
| Generate Pulse on relay | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### ADIO 12 AS MCU

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | ADIO 12 AS MCU |
| **Short Description** | ADIO Module used as MCU for hybrid systems |
| **Long Description** |  |
| **Hardware Reference** | 9413 060 05121 |
| **Software Reference** | SOFT 000121 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **211** | **Battery 1 LVD State** | Battery | Battery 1 |  | basic |
|  | | | | |
| **212** | **Battery 2 LVD State** | Battery | Battery 2 |  | basic |
|  | | | | |
| **213** | **Battery 3 LVD State** | Battery | Battery 3 |  | basic |
|  | | | | |
| **214** | **Battery 4 LVD State** | Battery | Battery 4 |  | basic |
|  | | | | |
| **221** | **Battery 1 Current** | Battery | Battery 1 | Ampere | basic |
|  | | | | |
| **222** | **Battery 2 Current** | Battery | Battery 2 | Ampere | basic |
|  | | | | |
| **223** | **Battery 3 Current** | Battery | Battery 3 | Ampere | basic |
|  | | | | |
| **224** | **Battery 4 Current** | Battery | Battery 4 | Ampere | basic |
|  | | | | |
| **231** | **Battery 1 Capacity** | Battery | Battery 1 | Ah | basic |
|  | | | | |
| **232** | **Battery 2 Capacity** | Battery | Battery 2 | Ah | basic |
|  | | | | |
| **233** | **Battery 3 Capacity** | Battery | Battery 3 | Ah | basic |
|  | | | | |
| **234** | **Battery 4 Capacity** | Battery | Battery 4 | Ah | basic |
|  | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **28** | **Rectifier CAN Node IDs Range** | Rectifiers |  |  |  | basic |
|  | | | | | |
| **29** | **Rectifier Ids Declared** | Rectifiers |  |  |  | basic |
|  | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (2) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (0.5) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **40** | **Number of Battery String** | Battery |  |  | 1-3 | basic |
| The Number of Battery String in the system | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (2) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU1X6

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| --- | --- |
| **Device Information** | |
| **Name** | MCU1X6 |
| **Short Description** | Controller without LCD display |
| **Long Description** | Monitoring and control unit with USB and Ethernet port - ACE186 and ACE106 (+24V) lines |
| **Hardware Reference** | 9413 060 10121 |
| **Software Reference** | SOFT 000069 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | disabled (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | disabled (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **31** | **Digital Input 7** | Digital Inputs |  | disabled (0) | 5 / 2 |
| This alarm is related to digital input 7. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **32** | **Digital Input 8** | Digital Inputs |  | disabled (0) | 5 / 2 |
| This alarm is related to digital input 8. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **41** | **Shunt Rating At 60mV** | Current Sensors | Shunt 1 | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Input 7 | basic |
| The name of the digital input 7 | | | | | |
| **104** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Input 8 | basic |
| The name of the digital input 8 | | | | | |
| **106** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU1X6M3

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| --- | --- |
| **Device Information** | |
| **Name** | MCU1X6M3 |
| **Short Description** | MCU for rack 3x1800W |
| **Long Description** |  |
| **Hardware Reference** | 9413 061 85051 |
| **Software Reference** | SOFT 000082 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU0024

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| --- | --- |
| **Device Information** | |
| **Name** | MCU0024 |
| **Short Description** | MCU for rack 6x1500W +24V |
| **Long Description** |  |
| **Hardware Reference** | 9413 000 XXXX |
| **Software Reference** | SOFT 000042 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **31** | **Digital Input 7** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 7. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **32** | **Digital Input 8** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 8. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **41** | **Mains Phase 1 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 1 | | | | |
| **42** | **Mains Phase 2 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 2 | | | | |
| **43** | **Mains Phase 3 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 3 | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 20/30 (27) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 20/30 (22) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/2 (0) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 20/30 (24) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/2 (0.25) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 20/30 (28.25) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/2 (0.25) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 20/30 (29) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/2 (0.25) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/25 (21.6) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/1000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -500/0 (-36) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/5 (1) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -5/0 (-1) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **41** | **Shunt Rating At 60mV** | Current Sensors | Shunt 1 | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 21/25 (23) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 25/29 (28.2) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 15/30 (23) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Input 7 | basic |
| The name of the digital input 7 | | | | | |
| **104** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Input 8 | basic |
| The name of the digital input 8 | | | | | |
| **106** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU0348LP

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| --- | --- |
| **Device Information** | |
| **Name** | MCU0348LP |
| **Short Description** | Low profile controller (1/2U high) |
| **Long Description** | Low profile monitoring and control unit for CAPTIN300 line |
| **Hardware 12NC** | 9413 060 10141 |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- |
| Description Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **1** | **Description** | Customer | basic |
| A free text zone to write a system description | | |
| **2** | **Reference** | Customer | basic |
| A free text zone to write the customer reference of the system | | |
| **11** | **Product Name** | Monitoring | basic |
| The product name of the DC system monitoring | | |
| **12** | **Hardware Reference** | Monitoring | basic |
| The hardware reference of the DC system monitoring | | |
| **14** | **Software Reference** | Monitoring | asset |
| The serial number of the DC system monitoring | | |
| **16** | **Serial Number** | Monitoring | asset |
| The serial number of the DC system monitoring | | |
| **17** | **Manufacturing ID** | Monitoring | asset |
| The batch id of the DC system monitoring | | |
| **18** | **Manufacturing Date** | Monitoring | asset |
| The production date of the DC system monitoring | | |

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| Alarm Table | | |
| *Id* | *Name* | *Severity Type (Level)* |
| **1** | **DC Bus Extra Low** | major (6) |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | |
| **2** | **DC Bus Low** | minor (4) |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | |
| **3** | **DC Bus High** | minor (4) |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | |
| **4** | **DC Bus Extra High** | major (6) |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | |
| **5** | **DC Bus Voltage Sense Failure** | major (6) |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | |
| **6** | **Mains Failure** | minor (4) |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | |
| **7** | **Mains Partial Failure** | minor (4) |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | |
| **8** | **Mains Low** | warning (2) |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | |
| **10** | **One Rectifier Failure** | minor (4) |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | |
| **11** | **More Than One Rectifier Failure** | major (6) |
| There is no mains failure and number of rectifier failures is greater than 1. | |
| **12** | **Missing Rectifiers** | major (6) |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | |
| **13** | **Battery Last Test Failed** | minor (4) |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | |
| **14** | **Battery On Discharge** | minor (4) |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | |
| **17** | **Battery LVD Relay Open** | major (6) |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | |
| **18** | **Battery Temperature Too High** | minor (4) |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | |
| **19** | **Battery Temperature Too Low** | minor (4) |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | |
| **20** | **Battery Temperature Sensor Fail** | minor (4) |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | |
| **21** | **Ambient Temperature Too High** | minor (4) |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | |
| **22** | **Ambient Temperature Too Low** | minor (4) |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | |
| **23** | **Ambient Temperature Sensor Fail** | minor (4) |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | |
| **25** | **Distribution Breaker Open** | major (6) |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **26** | **Battery Breaker Open** | minor (4) |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **27** | **Digital Input 3** | none (0) |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **28** | **Digital Input 4** | none (0) |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **29** | **Digital Input 5** | none (0) |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **30** | **Digital Input 6** | none (0) |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |

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| --- | --- | --- | --- | --- |
| Data Table | | | | |
| *Id* | *Name* | *Group* | *Unit* | *License* |
| **1** | **DC Mode** | General |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | |
| **2** | **Previous DC Mode** | General |  | basic |
| The previous value of the DC Mode | | | |
| **11** | **Bus Voltage** | General | Volt | basic |
| The DC bus voltage in volt. | | | |
| **12** | **Ratio Delivered On Available Power** | General | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | |
| **13** | **Minutes Since Last AC Failure Begin** | General | minute | basic |
| The number of minute since the last AC Failure begin | | | |
| **14** | **Minutes Since Last AC Failure End** | General | minute | basic |
| The number of minute since the last AC Failure end | | | |
| **21** | **Rectifiers Output Power** | Rectifiers | Watt | basic |
| The sum of the delivered rectifier power | | | |
| **22** | **Rectifiers Output Current** | Rectifiers | Ampere | basic |
| The sum of the delivered rectifier current | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers | Watt | basic |
| The sum of the deliverable rectifier power | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers | Ampere | basic |
| The sum of the deliverable rectifier current | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers |  | basic |
| The maximum possible number of rectifier in this dc system | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers |  | basic |
| The actual number of present rectifier in this dc system | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers |  | basic |
| The actual number of absent rectifier in this dc system | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers |  | basic |
| The actual number or rectifier in AC Failure. | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers |  | basic |
| The actual number or rectifier with DC Failure. | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers |  | basic |
| The actual number or rectifier in remote off. | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | |
| **51** | **Load Power** | Load | Watt | basic |
| Estimation of the load power consumption | | | |
| **52** | **Load Current** | Load | Ampere | basic |
| Estimation of the load current consumption | | | |
| **61** | **Battery Input Current** | Battery | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | |
| **62** | **Battery Input Power** | Battery | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | |
| **71** | **Battery Temperature** | Battery | degree C | basic |
| The battery temperature | | | |
| **72** | **Battery Test State** | Battery |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | |
| **73** | **Battery Test Discharged Capacity** | Battery | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | |
| **74** | **Battery Test Discharged Capacity Ah** | Battery | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | |
| **75** | **Battery Test Final Voltage** | Battery | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | |
| **81** | **Previous Battery Test State** | Battery |  | basic |
| The result of the previous battery test | | | |
| **82** | **Minutes Since Last Test Battery** | Battery |  | basic |
| The number of minute without battery test | | | |
| **91** | **Battery Charge Capacity** | Battery | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | |
| **92** | **Calculated Autonomy** | Battery | minute | basic |
| Calculation of the remaining autonomy | | | |
| **93** | **Battery Current Integration As** | Battery | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | |
| **94** | **Battery Current Integration Ah** | Battery | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | |
| **101** | **LVD State** | LVD |  | basic |
| Actual state of the LVD | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Asset Data |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | |
| **122** | **System Loss Without Optimisation** | Asset Data | Watt | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | |
| **123** | **System Loss With Optimisation** | Asset Data | Watt | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | |
| **151** | **Ambient Temperature** | Sensors | degree C | basic |
| The ambiant temperature (second temperature sense) | | | |
| **204** | **Digital Input 4 Counter** | Sensors |  | basic |
| The counter value of the digital input 4. | | | |

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| Config Table | | | | | |
| *Id* | *Name* | *Group* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | Bus Voltage | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | |
| **2** | **DC Bus Voltage Extra Low** | Bus Voltage | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | Bus Voltage | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | |
| **4** | **DC Bus Voltage Low** | Bus Voltage | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | Bus Voltage | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | |
| **6** | **DC Bus Voltage High** | Bus Voltage | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | Bus Voltage | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | |
| **8** | **DC Bus Voltage Extra High** | Bus Voltage | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | Bus Voltage | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | |
| **10** | **LVD Disconnect Voltage** | Bus Voltage | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | |
| **11** | **LVD Disconnect Delay** | Bus Voltage | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | |
| **21** | **Temperature Compensation Slope** | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  | basic |
| The rectifier model | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | |
| **32** | **Battery String Capacity** | Battery | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | |
| **33** | **Battery Temperature Low** | Battery | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | |
| **34** | **Battery Temperature High** | Battery | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Ampere | 0/1000 (0.5) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Ampere | 0/50 (0.2) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | |
| **51** | **Boost Automatic** | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | |
| **52** | **Boost Activation Low Voltage** | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | |
| **53** | **Boost Termination Voltage** | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | |
| **54** | **Boost Termination Current** | Boost | Ampere | 0/100 (2) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | |
| **55** | **Boost Termination Time** | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | |
| **70** | **Battery Test End Voltage** | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | |
| **72** | **Battery Test Interval** | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | |
| **73** | **Battery Test Discharge Current** | Battery Test | Ampere | 0.5/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery Test | Ampere | 0.2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | |
| **75** | **Battery Test Time Out** | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  | 121-125 | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | |
| **86** | **Battery LVD Node Id** | LVD |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Dry Alarms |  | False | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Dry Alarms |  | False | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Dry Alarms |  | False | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Dry Alarms |  | False | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | |
| **131** | **Ambient Temperature Low** | Sensors | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | |
| **132** | **Ambient Temperature High** | Sensors | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | |
| **521** | **Read Access User Numbers** | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | |
| **522** | **Write Access User Numbers** | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | |
| **601** | **Event Table Length** | Event |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | |
| **611** | **SNMP Trap Targets IP** | Event |  | 192.168.45.1 | basic |
| One or multiple target IP to send traps, coma separated. Ex: 130.145.23.1, 130.23.12.45 | | | | |
| **612** | **Minimal Event Severity For Traps** | Event |  | (none) | basic |
| This is the minimal severity of the event to send a SNMP trap | | | | |
| **651** | **XML Events Primary Post URL** | Event |  |  | basic |
| This is the first URL at which the events related to this equipment must be posted. The XML ETSI standard is used in the posted data content. | | | | |
| **652** | **XML Events Primary Post Login** | Event |  |  | basic |
| The login which must be used when posting events to the primary server | | | | |
| **653** | **XML Events Primary Post Password** | Event |  |  | basic |
| The password which must be used when posting events to the primary server | | | | |
| **661** | **XML Events Secondary Post URL** | Event |  |  | basic |
| This is the second URL at which the events related to this equipment must be posted. The XML ETSI standard is used in the posted data content. This allows having redundancy with the management server. | | | | |
| **662** | **XML Events Secondary Post Login** | Event |  |  | basic |
| The login which must be used when posting events to the secondary server | | | | |
| **663** | **XML Events Secondary Post Password** | Event |  |  | basic |
| The password which must be used when posting events to the secondary server | | | | |
| **901** | **Number Of PLC Data** | PLC |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Control Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **1** | **Back To Float** | DC Mode | basic |
| The dc system must go back in floating mode. | | |
| **2** | **Start Battery Test** | DC Mode | battery |
| The dc system must start a battery test. | | |
| **3** | **Force Battery Test** | DC Mode | battery |
| The dc system must force a battery test. | | |
| **4** | **Start Boost Mode** | DC Mode | battery |
| The dc system must go in boost mode. | | |
| **11** | **Open The LVD** | LVD | basic |
| The LVD must be opened | | |
| **12** | **Close The LVD** | LVD | basic |
| The LVD must be closed | | |
| **21** | **Correct Battery Current Offset** | Battery | basic |
| No information | | |
| **31** | **Reset Battery Current Integration** | Battery | basic |
| Reset the integration of the battery current. | | |
| **41** | **Reset Last Battery Test State** | Battery | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | |
| **51** | **Save Configuration In MCU** | Save | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | |
| **61** | **Set Digital Input 4 Counter Value** | Counters | basic |
| Set Counter Value | | |
| **501** | **Clear My Events** | Event | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | |
| **502** | **Clear All Events** | Event | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | |
| **511** | **Add Event** | Event | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | |
| **512** | **Add Major Event** | Event | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | |
| **521** | **Reset Default Names** | Event | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | |

### MCU0348M4

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| --- | --- |
| **Device Information** | |
| **Name** | MCU0348M4 |
| **Short Description** | 1U high controller with LCD display |
| **Long Description** | Monitoring and control unit, 1U high with LCD display, USB and Ethernet port - Captin300 line |
| **Hardware 12NC** | 9413 060 10131 |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| Description Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **1** | **Description** | Customer | basic |
| A free text zone to write a system description | | |
| **2** | **Reference** | Customer | basic |
| A free text zone to write the customer reference of the system | | |
| **11** | **Product Name** | Monitoring | basic |
| The product name of the DC system monitoring | | |
| **12** | **Hardware Reference** | Monitoring | basic |
| The hardware reference of the DC system monitoring | | |
| **14** | **Software Reference** | Monitoring | asset |
| The serial number of the DC system monitoring | | |
| **16** | **Serial Number** | Monitoring | asset |
| The serial number of the DC system monitoring | | |
| **17** | **Manufacturing ID** | Monitoring | asset |
| The batch id of the DC system monitoring | | |
| **18** | **Manufacturing Date** | Monitoring | asset |
| The production date of the DC system monitoring | | |

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| Alarm Table | | |
| *Id* | *Name* | *Severity Type (Level)* |
| **1** | **DC Bus Extra Low** | major (6) |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | |
| **2** | **DC Bus Low** | minor (4) |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | |
| **3** | **DC Bus High** | minor (4) |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | |
| **4** | **DC Bus Extra High** | major (6) |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | |
| **5** | **DC Bus Voltage Sense Failure** | major (6) |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | |
| **6** | **Mains Failure** | minor (4) |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | |
| **7** | **Mains Partial Failure** | minor (4) |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | |
| **8** | **Mains Low** | warning (2) |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | |
| **10** | **One Rectifier Failure** | minor (4) |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | |
| **11** | **More Than One Rectifier Failure** | major (6) |
| There is no mains failure and number of rectifier failures is greater than 1. | |
| **12** | **Missing Rectifiers** | major (6) |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | |
| **13** | **Battery Last Test Failed** | minor (4) |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | |
| **14** | **Battery On Discharge** | minor (4) |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | |
| **17** | **Battery LVD Relay Open** | major (6) |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | |
| **18** | **Battery Temperature Too High** | minor (4) |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | |
| **19** | **Battery Temperature Too Low** | minor (4) |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | |
| **20** | **Battery Temperature Sensor Fail** | minor (4) |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | |
| **21** | **Ambient Temperature Too High** | minor (4) |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | |
| **22** | **Ambient Temperature Too Low** | minor (4) |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | |
| **23** | **Ambient Temperature Sensor Fail** | minor (4) |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | |
| **25** | **Distribution Breaker Open** | major (6) |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **26** | **Battery Breaker Open** | minor (4) |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **27** | **Digital Input 3** | none (0) |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **28** | **Digital Input 4** | none (0) |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **29** | **Digital Input 5** | none (0) |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |
| **30** | **Digital Input 6** | none (0) |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | |

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| --- | --- | --- | --- | --- |
| Data Table | | | | |
| *Id* | *Name* | *Group* | *Unit* | *License* |
| **1** | **DC Mode** | General |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | |
| **2** | **Previous DC Mode** | General |  | basic |
| The previous value of the DC Mode | | | |
| **11** | **Bus Voltage** | General | Volt | basic |
| The DC bus voltage in volt. | | | |
| **12** | **Ratio Delivered On Available Power** | General | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | |
| **13** | **Minutes Since Last AC Failure Begin** | General | minute | basic |
| The number of minute since the last AC Failure begin | | | |
| **14** | **Minutes Since Last AC Failure End** | General | minute | basic |
| The number of minute since the last AC Failure end | | | |
| **21** | **Rectifiers Output Power** | Rectifiers | Watt | basic |
| The sum of the delivered rectifier power | | | |
| **22** | **Rectifiers Output Current** | Rectifiers | Ampere | basic |
| The sum of the delivered rectifier current | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers | Watt | basic |
| The sum of the deliverable rectifier power | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers | Ampere | basic |
| The sum of the deliverable rectifier current | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers |  | basic |
| The maximum possible number of rectifier in this dc system | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers |  | basic |
| The actual number of present rectifier in this dc system | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers |  | basic |
| The actual number of absent rectifier in this dc system | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers |  | basic |
| The actual number or rectifier in AC Failure. | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers |  | basic |
| The actual number or rectifier with DC Failure. | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers |  | basic |
| The actual number or rectifier in remote off. | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | |
| **51** | **Load Power** | Load | Watt | basic |
| Estimation of the load power consumption | | | |
| **52** | **Load Current** | Load | Ampere | basic |
| Estimation of the load current consumption | | | |
| **61** | **Battery Input Current** | Battery | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | |
| **62** | **Battery Input Power** | Battery | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | |
| **71** | **Battery Temperature** | Battery | degree C | basic |
| The battery temperature | | | |
| **72** | **Battery Test State** | Battery |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | |
| **73** | **Battery Test Discharged Capacity** | Battery | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | |
| **74** | **Battery Test Discharged Capacity Ah** | Battery | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | |
| **75** | **Battery Test Final Voltage** | Battery | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | |
| **81** | **Previous Battery Test State** | Battery |  | basic |
| The result of the previous battery test | | | |
| **82** | **Minutes Since Last Test Battery** | Battery |  | basic |
| The number of minute without battery test | | | |
| **91** | **Battery Charge Capacity** | Battery | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | |
| **92** | **Calculated Autonomy** | Battery | minute | basic |
| Calculation of the remaining autonomy | | | |
| **93** | **Battery Current Integration As** | Battery | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | |
| **94** | **Battery Current Integration Ah** | Battery | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | |
| **101** | **LVD State** | LVD |  | basic |
| Actual state of the LVD | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Asset Data |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | |
| **122** | **System Loss Without Optimisation** | Asset Data | Watt | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | |
| **123** | **System Loss With Optimisation** | Asset Data | Watt | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | |
| **151** | **Ambient Temperature** | Sensors | degree C | basic |
| The ambiant temperature (second temperature sense) | | | |
| **204** | **Digital Input 4 Counter** | Sensors |  | basic |
| The counter value of the digital input 4. | | | |

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| Config Table | | | | | |
| *Id* | *Name* | *Group* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | Bus Voltage | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | |
| **2** | **DC Bus Voltage Extra Low** | Bus Voltage | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | Bus Voltage | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | |
| **4** | **DC Bus Voltage Low** | Bus Voltage | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | Bus Voltage | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | |
| **6** | **DC Bus Voltage High** | Bus Voltage | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | Bus Voltage | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | |
| **8** | **DC Bus Voltage Extra High** | Bus Voltage | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | Bus Voltage | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | |
| **10** | **LVD Disconnect Voltage** | Bus Voltage | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | |
| **11** | **LVD Disconnect Delay** | Bus Voltage | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | |
| **21** | **Temperature Compensation Slope** | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  | basic |
| The rectifier model | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | |
| **32** | **Battery String Capacity** | Battery | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | |
| **33** | **Battery Temperature Low** | Battery | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | |
| **34** | **Battery Temperature High** | Battery | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Ampere | 0/1000 (0.5) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Ampere | 0/50 (0.2) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | |
| **51** | **Boost Automatic** | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | |
| **52** | **Boost Activation Low Voltage** | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | |
| **53** | **Boost Termination Voltage** | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | |
| **54** | **Boost Termination Current** | Boost | Ampere | 0/100 (2) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | |
| **55** | **Boost Termination Time** | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | |
| **70** | **Battery Test End Voltage** | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | |
| **72** | **Battery Test Interval** | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | |
| **73** | **Battery Test Discharge Current** | Battery Test | Ampere | 0.5/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery Test | Ampere | 0.2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | |
| **75** | **Battery Test Time Out** | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  | 121-125 | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | |
| **86** | **Battery LVD Node Id** | LVD |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Dry Alarms |  | False | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Dry Alarms |  | False | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Dry Alarms |  | False | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Dry Alarms |  | False | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | |
| **131** | **Ambient Temperature Low** | Sensors | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | |
| **132** | **Ambient Temperature High** | Sensors | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | |
| **521** | **Read Access User Numbers** | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | |
| **522** | **Write Access User Numbers** | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | |
| **601** | **Event Table Length** | Event |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | |
| **611** | **SNMP Trap Targets IP** | Event |  | 192.168.45.1 | basic |
| One or multiple target IP to send traps, coma separated. Ex: 130.145.23.1, 130.23.12.45 | | | | |
| **612** | **Minimal Event Severity For Traps** | Event |  | (none) | basic |
| This is the minimal severity of the event to send a SNMP trap | | | | |
| **651** | **XML Events Primary Post URL** | Event |  |  | basic |
| This is the first URL at which the events related to this equipment must be posted. The XML ETSI standard is used in the posted data content. | | | | |
| **652** | **XML Events Primary Post Login** | Event |  |  | basic |
| The login which must be used when posting events to the primary server | | | | |
| **653** | **XML Events Primary Post Password** | Event |  |  | basic |
| The password which must be used when posting events to the primary server | | | | |
| **661** | **XML Events Secondary Post URL** | Event |  |  | basic |
| This is the second URL at which the events related to this equipment must be posted. The XML ETSI standard is used in the posted data content. This allows having redundancy with the management server. | | | | |
| **662** | **XML Events Secondary Post Login** | Event |  |  | basic |
| The login which must be used when posting events to the secondary server | | | | |
| **663** | **XML Events Secondary Post Password** | Event |  |  | basic |
| The password which must be used when posting events to the secondary server | | | | |
| **901** | **Number Of PLC Data** | PLC |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | |

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| --- | --- | --- | --- |
| Control Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **1** | **Back To Float** | DC Mode | basic |
| The dc system must go back in floating mode. | | |
| **2** | **Start Battery Test** | DC Mode | battery |
| The dc system must start a battery test. | | |
| **3** | **Force Battery Test** | DC Mode | battery |
| The dc system must force a battery test. | | |
| **4** | **Start Boost Mode** | DC Mode | battery |
| The dc system must go in boost mode. | | |
| **11** | **Open The LVD** | LVD | basic |
| The LVD must be opened | | |
| **12** | **Close The LVD** | LVD | basic |
| The LVD must be closed | | |
| **21** | **Correct Battery Current Offset** | Battery | basic |
| No information | | |
| **31** | **Reset Battery Current Integration** | Battery | basic |
| Reset the integration of the battery current. | | |
| **41** | **Reset Last Battery Test State** | Battery | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | |
| **51** | **Save Configuration In MCU** | Save | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | |
| **61** | **Set Digital Input 4 Counter Value** | Counters | basic |
| Set Counter Value | | |
| **501** | **Clear My Events** | Event | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | |
| **502** | **Clear All Events** | Event | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | |
| **511** | **Add Event** | Event | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | |
| **512** | **Add Major Event** | Event | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | |
| **521** | **Reset Default Names** | Event | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | |

### MCU0348M4 / MCU0348LP

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| --- | --- |
| **Device Information** | |
| **Name** | MCU0348M4 / MCU0348LP |
| **Short Description** | 1U high controller with LCD display / Low profile controller (1/2U high) |
| **Long Description** | Monitoring and control unit, 1U high with LCD display, USB and Ethernet port - Captin300 line / Low profile monitoring and control unit for CAPTIN300 line |
| **Hardware Reference** | 9413 060 10131 / 9413 060 10141 |
| **Software Reference** | SOFT 000081 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (0.5) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (0.2) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (2) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 0.5/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 0.2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU0548M4

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | MCU0548M4 |
| **Short Description** | Controller with basic site monitoring functions (4x500W) |
| **Long Description** | Monitoring and control unit with front connector for site monitoring - ACE054 line |
| **Hardware Reference** | 9413 060 55101 |
| **Software Reference** | SOFT 000080 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **24** | **Humidity Out Of Range** | Sensors | Humidity | major (0) | 5 / 2 |
| The humidity is not comprised between a lower limit, corresponding to configuration parameter 'Humidity Low', and a upper limit, corresponding to configuration parameter 'Humidity High'. There is an hysteresis corresponding to configuration parameter 'Humidity Hysteresis'. This alarm is only active in MCU master types 0548. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **152** | **Relative Humidity** | Sensors | Humidity Sensor | % | basic |
| The relative humidity in the cabinet | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (2) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (0.5) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (2) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **135** | **Cabinet Humidity High** | Sensors | Humidity Sensor | % | 0/100 (80) | basic |
| The relative humidity over which the cabinet humidity is too high | | | | | |
| **136** | **Cabinet Humidity Low** | Sensors | Humidity Sensor | % | 0/100 (0) | basic |
| The relative humidity over which the cabinet humidity is too low | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU0948DW

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| --- | --- |
| **Device Information** | |
| **Name** | MCU0948DW |
| **Short Description** | MCU for rack 2x850W -54V |
| **Long Description** |  |
| **Hardware Reference** | 9413 000 XXXXX |
| **Software Reference** | SOFT 000076 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **31** | **Digital Input 7** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 7. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **32** | **Digital Input 8** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 8. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **41** | **Mains Phase 1 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 1 | | | | |
| **42** | **Mains Phase 2 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 2 | | | | |
| **43** | **Mains Phase 3 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 3 | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (2) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (0.5) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (2) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Input 7 | basic |
| The name of the digital input 7 | | | | | |
| **104** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Input 8 | basic |
| The name of the digital input 8 | | | | | |
| **106** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU0948M4 / MCU0948M4LP

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| **Device Information** | |
| **Name** | MCU0948M4 / MCU0948M4LP |
| **Short Description** | 1U high controller with LCD display / Low profile controller (1/2U high) |
| **Long Description** | Monitoring and control unit, 1U high with LCD display, USB and Ethernet port - Captin FA, Captin BW, ACE102FALP and ACE094 lines / Low profile monitoring and control unit, 0.5U high, USB and Ethernet port - CAPTIN FA, CAPTIN BW lines |
| **Hardware Reference** | 9413 060 95051 / 9413 060 95081 |
| **Software Reference** | SOFT 000030 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **41** | **Mains Phase 1 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 1 | | | | |
| **42** | **Mains Phase 2 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 2 | | | | |
| **43** | **Mains Phase 3 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 3 | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

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| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (2) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (0.5) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (2) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU1848M3 / MCU1848M3D

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| --- | --- |
| **Device Information** | |
| **Name** | MCU1848M3 / MCU1848M3D |
| **Short Description** | Controller without LCD display / Controller with LCD display |
| **Long Description** | Monitoring and control unit with USB and Ethernet port, no LCD display - ACE153 and ACE156 lines / Monitoring and control unit with LCD display, USB and Ethernet port - ACE153 and ACE156 line |
| **Hardware Reference** | 9413 061 85041 / 9413 061 85051 |
| **Software Reference** | SOFT 000066 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU1848M6

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | MCU1848M6 |
| **Short Description** | Controller without LCD display |
| **Long Description** | Monitoring and control unit with USB and Ethernet port - ACE186 line |
| **Hardware Reference** | 9413 061 85001 |
| **Software Reference** | SOFT 000033 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

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| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **41** | **Shunt Rating At 60mV** | Current Sensors | Shunt 1 | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU3048M6

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | MCU3048M6 |
| **Short Description** | MCU3048M6 |
| **Long Description** |  |
| **Hardware Reference** | 9413 063 05001 |
| **Software Reference** | SOFT 000070 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **9** | **Mains High** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. The alarm is only active if MCU master type is 30110, 3096 or 3048M6. Therefore, an hysteresis \_phase123Hysteresis is substracted to the voltage lower limit. | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **31** | **Digital Input 7** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 7. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **32** | **Digital Input 8** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 8. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **41** | **Mains Phase 1 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 1 | | | | |
| **42** | **Mains Phase 2 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 2 | | | | |
| **43** | **Mains Phase 3 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 3 | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **63** | **Battery String 1 Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery 1 input current. A negative value means that the battery is discharging | | | | |
| **64** | **Battery String 2 Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery 2 input current. A negative value means that the battery is discharging | | | | |
| **65** | **Battery String 3 Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery 3 input current. A negative value means that the battery is discharging | | | | |
| **67** | **Voltage Offset For Shunt regulation** | Battery |  | Volt | basic |
|  | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 40/60 (54) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 40/60 (45) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 40/60 (48) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 40/60 (56.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 40/60 (58) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/5 (0.5) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/50 (43.2) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/2000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -1000/0 (-72) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/10 (3) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -10/0 (-3) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **28** | **Rectifier CAN Node IDs Range** | Rectifiers |  |  |  | basic |
|  | | | | | |
| **29** | **Rectifier Ids Declared** | Rectifiers |  |  |  | basic |
|  | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/3250 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/6500 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/5000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/500 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **40** | **Number of Battery String** | Battery |  |  | 1-3 | basic |
| The Number of Battery String in the system | | | | | |
| **41** | **Shunt Rating At 60mV** | Current Sensors | Shunt 1 | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **42** | **Battery 2 Charge Current Limit** | Battery |  | Ampere | 0.5/3250 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **43** | **Battery 2 String Capacity** | Battery |  | Ah | 3/6500 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **44** | **Shunt Rating At 60mV** | Battery |  | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **45** | **Battery 3 Charge Current Limit** | Battery |  | Ampere | 0.5/3250 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **46** | **Battery 3 String Capacity** | Battery |  | Ah | 3/6500 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **47** | **Shunt Rating At 60mV** | Battery |  | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 43/50 (46) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 50/58 (56.4) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 30/60 (46) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/5000 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Input 7 | basic |
| The name of the digital input 7 | | | | | |
| **104** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Input 8 | basic |
| The name of the digital input 8 | | | | | |
| **106** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **141** | **AC Voltage Low** | Mains |  | Volt | 0/240 (180) | basic |
| The AC voltage under which the alarm AC Low is set. | | | | | |
| **142** | **AC Voltage High** | Mains |  | Volt | 80/600 (250) | basic |
| The AC voltage over which the alarm AC High is set. | | | | | |
| **143** | **AC Voltage Hysteresis** | Mains |  | Volt | 0/40 (5) | basic |
| The AC voltage hysteresis on alarms AC High and AC Low. | | | | | |
| **144** | **AC Phase 1 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 1. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **145** | **AC Phase 2 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 2. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **146** | **AC Phase 3 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 3. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **151** | **PLD Conditition** | PLD |  |  |  | basic |
| The PLC conditon to enable the PLD command | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU3096M6

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| --- | --- |
| **Device Information** | |
| **Name** | MCU3096M6 |
| **Short Description** | MCU for rack 6x3000W +96V |
| **Long Description** |  |
| **Hardware Reference** | 9413 063 07041 |
| **Software Reference** | SOFT 000091 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **9** | **Mains High** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. The alarm is only active if MCU master type is 30110, 3096 or 3048M6. Therefore, an hysteresis \_phase123Hysteresis is substracted to the voltage lower limit. | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **31** | **Digital Input 7** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 7. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **32** | **Digital Input 8** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 8. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **41** | **Mains Phase 1 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 1 | | | | |
| **42** | **Mains Phase 2 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 2 | | | | |
| **43** | **Mains Phase 3 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 3 | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

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| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 65/105 (94.5) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 65/105 (78.75) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0.5/10 (2) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 65/105 (84) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0.5/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 70/105 (98.875) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0.5/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 70/105 (101.5) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0.5/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 65/87.5 (75.6) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/4000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -2000/0 (-126) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/20 (6) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -20/0 (-6) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **41** | **Shunt Rating At 60mV** | Current Sensors | Shunt 1 | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 75.25/87.5 (80.5) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 87.5/101.5 (98.7) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 52.5/105 (80.5) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 10/5000 (2000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Input 7 | basic |
| The name of the digital input 7 | | | | | |
| **104** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Input 8 | basic |
| The name of the digital input 8 | | | | | |
| **106** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **141** | **AC Voltage Low** | Mains |  | Volt | 0/240 (180) | basic |
| The AC voltage under which the alarm AC Low is set. | | | | | |
| **142** | **AC Voltage High** | Mains |  | Volt | 80/600 (250) | basic |
| The AC voltage over which the alarm AC High is set. | | | | | |
| **143** | **AC Voltage Hysteresis** | Mains |  | Volt | 0/40 (5) | basic |
| The AC voltage hysteresis on alarms AC High and AC Low. | | | | | |
| **144** | **AC Phase 1 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 1. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **145** | **AC Phase 2 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 2. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **146** | **AC Phase 3 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 3. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU30110M6

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | MCU30110M6 |
| **Short Description** | Controller without LCD display (6x3kW - 110V) |
| **Long Description** | Monitoring and control unit with USB and Ethernet port - ACE306 (+110V & +125V) line |
| **Hardware Reference** | 9413 063 07011 |
| **Software Reference** | SOFT 000040 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

|  |  |  |  |  |  |
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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **9** | **Mains High** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. The alarm is only active if MCU master type is 30110, 3096 or 3048M6. Therefore, an hysteresis \_phase123Hysteresis is substracted to the voltage lower limit. | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **31** | **Digital Input 7** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 7. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **32** | **Digital Input 8** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 8. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **41** | **Mains Phase 1 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 1 | | | | |
| **42** | **Mains Phase 2 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 2 | | | | |
| **43** | **Mains Phase 3 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 3 | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 60/120 (108) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 60/120 (90) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/10 (2) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 60/120 (96) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 60/120 (113) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 60/120 (116) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/100 (86.4) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/4000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -2000/0 (-144) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/20 (6) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -20/0 (-6) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **41** | **Shunt Rating At 60mV** | Current Sensors | Shunt 1 | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 86/100 (92) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 100/116 (112.8) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 60/120 (92) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 10/5000 (2000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Input 7 | basic |
| The name of the digital input 7 | | | | | |
| **104** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Input 8 | basic |
| The name of the digital input 8 | | | | | |
| **106** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **141** | **AC Voltage Low** | Mains |  | Volt | 0/240 (180) | basic |
| The AC voltage under which the alarm AC Low is set. | | | | | |
| **142** | **AC Voltage High** | Mains |  | Volt | 80/600 (250) | basic |
| The AC voltage over which the alarm AC High is set. | | | | | |
| **143** | **AC Voltage Hysteresis** | Mains |  | Volt | 0/40 (5) | basic |
| The AC voltage hysteresis on alarms AC High and AC Low. | | | | | |
| **144** | **AC Phase 1 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 1. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **145** | **AC Phase 2 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 2. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **146** | **AC Phase 3 PLC** | AC Bus |  |  |  | basic |
| This is the mathematical expression of the calculation of AC phase 3. If empty, the rectifiers are used. The syntax for writting mathematical expression is described in the PLC chapter. The PLC data element is the result of the calculation. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### MCU30125M6

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| --- | --- |
| **Device Information** | |
| **Name** | MCU30125M6 |
| **Short Description** | MCU for rack 6x3000W +125V |
| **Long Description** |  |
| **Hardware Reference** | 9413 000 XXXX |
| **Software Reference** | SOFT 000057 XX |
| **Equipment Type** | Monitoring Control Unit |
| **ETSI Level** | /site/energy\_system/dc\_system |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Description | Product Info | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Description | Product Info | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Description | Product Info | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Description | Product Info | asset |
| The production date of the DC system monitoring | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **DC Bus Extra Low** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Extra Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Extra Low Hysteresis'. The alarm is not activated when DC mode is BATTERY TEST | | | | |
| **2** | **DC Bus Low** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is low. The alarm is set when the bus voltage is lower than the configuration parameter 'DC Bus Voltage Low'. There is an hysteresis on the alarm : 'DC Bus Voltage Low Hysteresis' | | | | |
| **3** | **DC Bus High** | DC Bus |  | minor (4) | 5 / 2 |
| The bus voltage is high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage High'. There is an hysterisis on the alarm : 'DC Bus Voltage High Hysteresis' | | | | |
| **4** | **DC Bus Extra High** | DC Bus |  | major (6) | 5 / 2 |
| The bus voltage is extra high. The alarm is set when the bus voltage is higher than the configuration paramenter 'DC Bus Voltage Extra High'. There is an hysterisis on the alarm : 'DC Bus Voltage Extra High Hysteresis' | | | | |
| **5** | **DC Bus Voltage Sense Failure** | DC Bus |  | major (6) | 5 / 2 |
| The DC bus voltage sense is defective. The DC bus voltage is unconnected or unconfigured. | | | | |
| **6** | **Mains Failure** | AC Bus |  | minor (4) | 5 / 2 |
| The number of active rectifiers is equal to 0 and the number of rectifiers in AC failure is greater than 0. | | | | |
| **7** | **Mains Partial Failure** | AC Bus |  | minor (4) | 10 / 2 |
| The number of active rectifiers is greater than 0 and the number of rectifiers in AC failure is greater than 0. Some rectifiers are in AC Failure. It may be caused by an open breaker, a real phase failure, or by a rectifier failure. | | | | |
| **8** | **Mains Low** | AC Bus |  | warning (2) | 10 / 2 |
| The main voltage is low on one or more phases. No rectifier is in AC failure. If MCU master type is 30110, 3096 or 3048M6, an hysteresis \_phase123Hysteresis is added to the voltage lower limit | | | | |
| **10** | **One Rectifier Failure** | Rectifiers |  | minor (4) | 5 / 2 |
| One rectifier must be replaced or is not powered correctly. The DC fail alarm of the rectifier is set. The number of rectifier with DC Failure is higher than 0, there is no mains failure, and the 'More Than One Rectifier Failure alarm is not set.' | | | | |
| **11** | **More Than One Rectifier Failure** | Rectifiers |  | major (6) | 10 / 2 |
| There is no mains failure and number of rectifier failures is greater than 1. | | | | |
| **12** | **Missing Rectifiers** | Rectifiers |  | major (6) | 5 / 2 |
| There is not enough rectifier according to the configuration parameter : 'Minimal Number Of Rectifier' | | | | |
| **13** | **Battery Last Test Failed** | Battery | Battery Test | minor (3) | 5 / 2 |
| The last battery test did not succeed and was not cancelled. Maybe the battery should be replaced. | | | | |
| **14** | **Battery On Discharge** | Battery |  | minor (4) | 10 / 2 |
| The battery is discharging. This means that the load is too high for the installed rectifiers. This alarm is inactive when the system in AC Failure or during a battery test. There is an hysteresis corresponding to battery parameter 'Is discharging current hysteresis'. | | | | |
| **17** | **Battery LVD Relay Open** | LVD |  | major (6) | 5 / 2 |
| The battery Low Voltage Disconnector is open. On Systems without LVD\_Status signal, like MCU 1848 or MCU 1x6, the alarm is present only if the signal LVD\_COM asks to open the LVD | | | | |
| **18** | **Battery Temperature Too High** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too high and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **19** | **Battery Temperature Too Low** | Battery | Temperature | minor (3) | 5 / 2 |
| The temperature of the battery is too low and is greater than -600 units. There is an hysteresis corresponding to battery parameter 'Temperature hysteresis'. | | | | |
| **20** | **Battery Temperature Sensor Fail** | Battery | Temperature | minor (3) | 5 / 2 |
| The battery temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **21** | **Ambient Temperature Too High** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too high and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **22** | **Ambient Temperature Too Low** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambient temperature is too low and is greater than -600 units. There is an hysteresis corresponding to parameter 'Ambiant temperature hysteresis'. This alarm is only activated on MCU master types 30110, 3096, 30125, 0024, 0948, 0548, 0348, 0948 and 3048M6. | | | | |
| **23** | **Ambient Temperature Sensor Fail** | Sensors | Temperature | minor (0) | 5 / 2 |
| The ambiant temperature sensor (NTC) value is inferior to -500 units meaning that it is not connected or defective. | | | | |
| **25** | **Distribution Breaker Open** | Digital Inputs |  | major (6) | 5 / 2 |
| This alarm is related to digital input 1. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **26** | **Battery Breaker Open** | Digital Inputs |  | minor (4) | 5 / 2 |
| This alarm is related to digital input 2. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **27** | **Digital Input 3** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 3. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **28** | **Digital Input 4** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 4. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **29** | **Digital Input 5** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 5. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **30** | **Digital Input 6** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 6. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **31** | **Digital Input 7** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 7. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |
| **32** | **Digital Input 8** | Digital Inputs |  | none (0) | 5 / 2 |
| This alarm is related to digital input 8. This alarm is activated if digital input value is different to configuration parameter 'Digital Input Alarm Value' | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **DC Mode** | System |  |  | basic |
| The DC system can have 4 values: 'FLOAT', 'BOOST', 'BATTERY\_TEST', 'AC\_FAILURE' or SAFE | | | | |
| **2** | **Previous DC Mode** | System |  |  | basic |
| The previous value of the DC Mode | | | | |
| **11** | **Bus Voltage** | DC Bus |  | Volt | basic |
| The DC bus voltage in volt. | | | | |
| **12** | **Ratio Delivered On Available Power** | System |  | % | basic |
| This is the ratio of the delivered power divided by the installed power, in %. | | | | |
| **13** | **Minutes Since Last AC Failure Begin** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure begin | | | | |
| **14** | **Minutes Since Last AC Failure End** | AC Bus |  | minute | basic |
| The number of minute since the last AC Failure end | | | | |
| **21** | **Rectifiers Output Power** | Rectifiers |  | Watt | basic |
| The sum of the delivered rectifier power | | | | |
| **22** | **Rectifiers Output Current** | Rectifiers |  | Ampere | basic |
| The sum of the delivered rectifier current | | | | |
| **23** | **Rectifiers Output Power Max** | Rectifiers |  | Watt | basic |
| The sum of the deliverable rectifier power | | | | |
| **24** | **Rectifiers Output Current Max** | Rectifiers |  | Ampere | basic |
| The sum of the deliverable rectifier current | | | | |
| **31** | **Number Of Rectifier Max** | Rectifiers | Numbers |  | basic |
| The maximum possible number of rectifier in this dc system | | | | |
| **32** | **Number Of Present Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of present rectifier in this dc system | | | | |
| **33** | **Number Of Absent Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of absent rectifier in this dc system | | | | |
| **34** | **Number Of Active Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number of active rectifier in this dc system. An active rectifier is a rectifier which is present, DC OK, AC OK and not in remote off. | | | | |
| **35** | **Number Of AC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in AC Failure. | | | | |
| **36** | **Number Of DC-Fail Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier with DC Failure. | | | | |
| **37** | **Number Of Remote Off Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in remote off. | | | | |
| **38** | **Number Of Over Temperature Rectifier** | Rectifiers | Numbers |  | basic |
| The actual number or rectifier in OVer Temperature. | | | | |
| **41** | **Mains Phase 1 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 1 | | | | |
| **42** | **Mains Phase 2 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 2 | | | | |
| **43** | **Mains Phase 3 Voltage** | AC Bus |  | Volt | basic |
| The voltage on AC phase 3 | | | | |
| **51** | **Load Power** | Load |  | Watt | basic |
| Estimation of the load power consumption | | | | |
| **52** | **Load Current** | Load |  | Ampere | basic |
| Estimation of the load current consumption | | | | |
| **61** | **Battery Input Current** | Battery |  | Ampere | basic |
| Measurement of the battery input current. A negative value means that the battery is discharging | | | | |
| **62** | **Battery Input Power** | Battery |  | Watt | basic |
| Measurement of the battery input power. A negative value means that the battery is discharging | | | | |
| **71** | **Battery Temperature** | Battery | Temperature | degree C | basic |
| The battery temperature | | | | |
| **72** | **Battery Test State** | Battery | Battery Test |  | basic |
| This is about the result of the last battery test. 9 values are possible : NEVER\_TESTED, SUCCESS, ON\_GOING, FAILED\_TIMEOUT, FAILED\_VBUS\_TOO\_LOW, FAILED\_LOAD\_TOO\_LOW, FAILED\_AC\_FAILURE, FAILED\_CANCELED, FAILED\_LVD\_OPENED | | | | |
| **73** | **Battery Test Discharged Capacity Ratio** | Battery | Battery Test | % | basic |
| This is the battery capacity, in percent, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **74** | **Battery Test Discharged Capacity** | Battery | Battery Test | Ah | basic |
| This is the battery capacity, in ampere hour, discharged during the last battery test. This value is updated at the end of the battery test. | | | | |
| **75** | **Battery Test Final Voltage** | Battery | Battery Test | % | basic |
| This is the bus voltage at the end of the last battery test. This value is updated at the end of the battery test. | | | | |
| **81** | **Previous Battery Test State** | Battery | Battery Test |  | basic |
| The result of the previous battery test | | | | |
| **82** | **Minutes Since Last Test Battery** | Battery | Battery Test |  | basic |
| The number of minute without battery test | | | | |
| **84** | **Next Scheduled Battery Test** | Battery | Battery Test |  | basic |
| The date and time of the next time the scheduled battery test will run | | | | |
| **91** | **Battery Charge Capacity** | Battery |  | % | basic |
| The battery charge capacity, calculated by integration of the current. | | | | |
| **92** | **Calculated Autonomy** | Battery |  | minute | basic |
| Calculation of the remaining autonomy | | | | |
| **93** | **Battery Current Integration** | Battery |  | As | basic |
| Actual value of the integration of the current, in Ampere \* second | | | | |
| **94** | **Battery Current Integration** | Battery |  | Ah | basic |
| Actual value of the integration of the current, in Ampere \* hour | | | | |
| **101** | **LVD State** | LVD |  |  | basic |
| Actual state of the LVD | | | | |
| **111** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay 1 | | | | |
| **112** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay 2 | | | | |
| **113** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay 3 | | | | |
| **114** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay 3 | | | | |
| **121** | **Efficiency Optimized Number Of Rectifier** | Smart Energy |  |  | asset |
| The optimal number of ON rectifier for Efficiency Optimization | | | | |
| **122** | **System Loss Without Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses without optimisation | | | | |
| **123** | **System Loss With Optimisation** | Smart Energy |  | Watt | underdev |
| Estimation of the losses with optimisation | | | | |
| **124** | **Rectifier Model Used For Calculation** | Smart Energy |  |  | asset |
| The rectifier model used | | | | |
| **125** | **Smart Energy Savings** | Smart Energy |  | Watt | asset |
| Estimation of the losses with optimisation | | | | |
| **151** | **Ambient Temperature** | Sensors | Temperature | degree C | basic |
| The ambiant temperature (second temperature sense) | | | | |
| **161** | **Voltage 1** | Sensors | Voltage 1 | Volt | basic |
| The voltage measured by the sense 1. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **162** | **Voltage 2** | Sensors | Voltage 2 | Volt | basic |
| The voltage measured by the sense 2. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **163** | **Voltage 3** | Sensors | Voltage 3 | Volt | basic |
| The voltage measured by the sense 3. Can be used for battery symmetry measurement. Calculation can be done with the PLC | | | | |
| **204** | **Pulse Counter 4** | Sensors | Pulse Counter 4 |  | basic |
| The counter value of the digital input 4. | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **DC Bus Float Voltage at 25 degC** | DC Bus |  | Volt | 92/138 (125) | basic |
| The floating dc bus voltage of the system at 25 Celsius degree | | | | | |
| **2** | **DC Bus Voltage Extra Low** | DC Bus | Alarm Parameters | Volt | 92/138 (103.5) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Extra Low' is set. | | | | | |
| **3** | **DC Bus Voltage Extra Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/10 (2) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra Low'. | | | | | |
| **4** | **DC Bus Voltage Low** | DC Bus | Alarm Parameters | Volt | 92/138 (110.4) | basic |
| The bus voltage under which the alarm 'DC Bus Voltage Low' is set. | | | | | |
| **5** | **DC Bus Voltage Low Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Low | | | | | |
| **6** | **DC Bus Voltage High** | DC Bus | Alarm Parameters | Volt | 92/138 (129.95) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage High' is set. | | | | | |
| **7** | **DC Bus Voltage High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage High | | | | | |
| **8** | **DC Bus Voltage Extra High** | DC Bus | Alarm Parameters | Volt | 92/138 (133.4) | basic |
| The bus voltage over which the alarm 'DC Bus Voltage Extra High' is set. | | | | | |
| **9** | **DC Bus Voltage Extra High Hysteresis** | DC Bus | Alarm Parameters | Volt | 0/10 (1) | basic |
| The voltage hysteresis on the alarm 'DC Bus Voltage Extra High | | | | | |
| **10** | **LVD Disconnect Voltage** | LVD |  | Volt | 0/115 (99.36) | basic |
| The dc bus voltage under which the battery must be disconnected of the bus. This allows preserving the battery life. The load will be unpowered. | | | | | |
| **11** | **LVD Disconnect Delay** | LVD |  | second | 1/4000 (1) | basic |
| The delay in second before disconnecting the battery if the dc bus voltage is under the configured disconnected voltage. This avoids disconnection during a low bus transient. | | | | | |
| **21** | **Temperature Compensation Slope** | Battery | Temperature Compensation | mV/degree | -2000/0 (-165) | basic |
| The slope of the battery temperature compensation in mv/degree. For a 48V system, -72mV/degree is often used. | | | | | |
| **22** | **Maximum Positive Temperature Compensation** | Battery | Temperature Compensation | Volt | 0/20 (6) | basic |
| The maximal allowed positive compensation. | | | | | |
| **23** | **Maximum Negative Temperature Compensation** | Battery | Temperature Compensation | Volt | -20/0 (-6) | basic |
| The maximal allowed negative compensation. | | | | | |
| **25** | **Minimal Number Of Present Rectifiers** | Rectifiers | Alarm Parameters |  | 0/100 (0) | basic |
| The minimal number of rectifier which must be present. If there is less present rectifiers, the alarm 'Missing Rectifiers' is set. | | | | | |
| **26** | **Rectifier Model** | Rectifiers |  |  |  | basic |
| The rectifier model | | | | | |
| **27** | **Forced Remote Off Rectifers** | Rectifiers |  |  |  | basic |
| A list of rectifier which are forced in remote off. The id of the rectifier must be coma separated. Ex: 1,3 will maintain rectifier 1 and 3 off. | | | | | |
| **31** | **Battery Charge Current Limit** | Battery | Battery Charge Parameters | Ampere | 0.5/1000 (1000) | basic |
| The maximal battery current when the battery is charging. The monitoring regulates the bus voltage in order to satisfy this condition. This parameter is often equal to the nominal battery capacity divided by 10. | | | | | |
| **32** | **Battery String Capacity** | Battery |  | Ah | 3/1000 (100) | basic |
| The battery capacity in Ah. | | | | | |
| **33** | **Battery Temperature Low** | Battery | Alarm Parameters | degree C | -100/20 (0) | basic |
| The temperature under which the alarm 'Battery Temperature Too Low' must be set. | | | | | |
| **34** | **Battery Temperature High** | Battery | Alarm Parameters | degree C | 5/100 (40) | basic |
| The temperature over which the alarm 'Battery Temperature Too High' must be set. | | | | | |
| **35** | **Battery Temperature Hysteresis** | Battery | Alarm Parameters | degree C | 0/10 (2) | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **36** | **Minimal Current For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/1000 (3) | basic |
| The minimal discharging current to set the 'Battery On Discharge' alarm. | | | | | |
| **37** | **Current Hysteresis For Discharging Alarm** | Battery | Alarm Parameters | Ampere | 0/50 (1) | basic |
| The hysteresis on the 'Battery On Discharge' alarm. | | | | | |
| **41** | **Shunt Rating At 60mV** | Current Sensors | Shunt 1 | Ampere | 25/5000 (250) | basic |
| The rating of the battery shunt at 60mV. | | | | | |
| **51** | **Boost Automatic** | Battery | Boost |  | False/False (False) | battery |
| The boost mode must be automatically after the fact that during a mains failure, the bus voltage went under the configured 'Boost Activation Low Voltage'. This allows charging the battery faster. | | | | | |
| **52** | **Boost Activation Low Voltage** | Battery | Boost | Volt | 86/100 (92) | battery |
| The voltage under which the boost mode can be activated. | | | | | |
| **53** | **Boost Termination Voltage** | Battery | Boost | Volt | 115/133.4 (129.72) | battery |
| The voltage over which the system must go back to floating mode. | | | | | |
| **54** | **Boost Termination Current** | Battery | Boost | Ampere | 0/100 (4) | battery |
| The battery charging current under which the system must go back to floating mode. | | | | | |
| **55** | **Boost Termination Time** | Battery | Boost | minute | 10/240 (120) | battery |
| The time in minute after which the system must go back in floating mode. | | | | | |
| **70** | **Battery Test End Voltage** | Battery | Battery Test | Volt | 69/138 (105.8) | battery |
| The voltage at which any battery test must be stopped. | | | | | |
| **71** | **Battery Test Discharge Ratio** | Battery | Battery Test | % | 0/100 (0) | battery |
| The ratio of the battery capacity to discharge. If 30 is set, 30% of the battery will be discharged during the test | | | | | |
| **72** | **Battery Test Interval** | Battery | Battery Test | day | 0/3000 (0) | battery |
| The number of days between two automatically started battery test. If this parameter is set to 0, the battery test is not started automatically. The user can remotely or locally start or force this test. | | | | | |
| **73** | **Battery Test Discharge Current** | Battery | Battery Test | Ampere | 3/100 (1000) | battery |
| The current at which the battery must be discharged during a battery test. The monitoring regulates the bus voltage in order to satisfy this condition. The load current must be of course higher than this parameter. | | | | | |
| **74** | **Battery Test Minimal Discharge Current** | Battery | Battery Test | Ampere | 2/90 (2) | battery |
| The battery current under which the battery test must be stopped because the load is too low. | | | | | |
| **75** | **Battery Test Time Out** | Battery | Battery Test | minute | 1/5000 (10) | battery |
| The timeout in minute after which the battery test must be stopped. | | | | | |
| **76** | **Battery Test Requested Minutes Without Mains Failure** | Battery | Battery Test | minute | 0/5000 (1440) | battery |
| The minimal time in minute without mains failure in order to allow a battery start. This parameter is not taken into account when the battery test is forced. | | | | | |
| **77** | **Battery Test Scheduler Cron Rule** | Battery | Battery Test |  |  | basic |
|  | | | | | |
| **83** | **Smart Energy Boolean Condition** | Smart Energy |  |  |  | asset |
| This is the boolean condition which allows or not to automatically optimize the number of rectifier in remote off. | | | | | |
| **86** | **Battery LVD Node Id** | LVD |  |  | True/False (False) | basic |
| This is a list of the node id of the Smart Electronic LVDs, coma separated | | | | | |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Distribution Breaker Open | basic |
| The name of the digital input 1 | | | | | |
| **92** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Battery Breaker Open | basic |
| The name of the digital input 2 | | | | | |
| **94** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **96** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **98** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **100** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |
| **102** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Input 7 | basic |
| The name of the digital input 7 | | | | | |
| **104** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Input 8 | basic |
| The name of the digital input 8 | | | | | |
| **106** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Dry Alarm 1 Alternative Boolean Condition** | Relays | Relay 1 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 1. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **112** | **Dry Alarm 2 Alternative Boolean Condition** | Relays | Relay 2 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 2. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **113** | **Dry Alarm 3 Alternative Boolean Condition** | Relays | Relay 3 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 3. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **114** | **Dry Alarm 4 Alternative Boolean Condition** | Relays | Relay 4 |  |  | plc |
| Another Boolean condition to activate the dry alarm relay 4. The way to define boolean condition is detailed in the PLC chapter. | | | | | |
| **131** | **Ambient Temperature Low** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **132** | **Ambient Temperature High** | Sensors | Temperature | degree C |  | basic |
| The temperature under which the alarm 'Ambiant Temperature Too Low' must be set. | | | | | |
| **133** | **Ambient Temperature Hysteresis** | Sensors | Temperature | degree C |  | basic |
| The hysteresis on the 'Battery Temperature Too High' and 'Battery Temperature Too Low' alarms. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **602** | **Event Table Length By Rectifier** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Back To Float** | System |  | basic |
| The dc system must go back in floating mode. | | | |
| **2** | **Start Battery Test** | System |  | battery |
| The dc system must start a battery test. | | | |
| **3** | **Force Battery Test** | System |  | battery |
| The dc system must force a battery test. | | | |
| **4** | **Start Boost Mode** | System |  | battery |
| The dc system must go in boost mode. | | | |
| **11** | **Open The LVD** | LVD |  | basic |
| Try to open the LVD. It could not work if the LVD is electronic, and the request will be canceled after 15 sec. | | | |
| **12** | **Close The LVD** | LVD |  | basic |
| The LVD must be closed | | | |
| **21** | **Correct Battery Current Offset** | Battery |  | basic |
|  | | | |
| **31** | **Reset Battery Current Integration** | Battery |  | basic |
| Reset the integration of the battery current. | | | |
| **41** | **Reset Last Battery Test State** | Battery |  | battery |
| Reset the state of the last battery test. If an alarm 'Battery Last Test Failed' is set, the alarm will be cleared. | | | |
| **51** | **Save Configuration In MCU** | Save |  | basic |
| Save configuration parameters in the MCU microcontroller. If comp@s is not present, the system will be correctly managed. | | | |
| **55** | **Set MCU Specific Configuration Id** | Advanced | Factory | basic |
| This control allows to reconfigure the MCU to support specific hardware configuration, with embedded distribution for example | | | |
| **61** | **Set Digital Input 4 Counter Value** | Digital Inputs | Digital Input 4 | basic |
| Set Counter Value | | | |
| **111** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay 1 | | | |
| **112** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay 2 | | | |
| **113** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay 3 | | | |
| **114** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay 4 | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

Rectifier Tables

### CAR0548TN

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR0548TN |
| **Short Description** | 500W switched mode rectifier |
| **Long Description** | 500W switched mode rectifier, -48Vdc fixed output |
| **Hardware Reference** | 9411 010 55001 |
| **Software Reference** | NO SOFT |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |

### CAR0948TN-1A / CAR0948TN-2A

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR0948TN-1A / CAR0948TN-2A |
| **Short Description** | 850W switched mode rectifier / 850W switched mode rectifier |
| **Long Description** | 850W switched mode rectifier, -48Vdc fixed output / 850W switched mode rectifier, -48Vdc fixed output. - non standard front plate |
| **Hardware Reference** | 9411 010 95001 / 9411 010 95011 |
| **Software Reference** | SOFT 000092 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name (With CAN capable rectifiers) | | | |
| **2** | **Hardware Reference** | Product Info |  | asset |
| The rectifier hardware reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **3** | **Hardware Revision** | Product Info |  | asset |
| The rectifier hardware revision. (With CAN capable Rectifiers) | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **6** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number - Wb (With CAN capable rectifiers) | | | |
| **8** | **Manufacturing Date** | Product Info |  | asset |
| The rectifier production date (With CAN capable rectifiers) | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **AC High** |  |  | minor (0) | 5 / 2 |
| The AC input in too high | | | | |
| **11** | **Short Error** |  |  | major (0) | 5 / 2 |
| A short circuit is present on the bus | | | | |
| **12** | **Fan Error** |  |  | major (0) | 5 / 2 |
| The FAN is defect | | | | |
| **13** | **Derating Error** |  |  | major (0) | 5 / 2 |
| The rectifier is in derating | | | | |
| **14** | **AC Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC derating | | | | |
| **15** | **Thermal Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in thermal derating | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Fan Speed** | General |  | RPM | asset |
| The rectifier FAN Speed in RPM. (For CAN capable rectifiers) | | | | |
| **14** | **Power Rating** | General |  | % | asset |
| The rectifier power rating (For CAN capable rectifiers) | | | | |
| **15** | **Service Time** | General |  | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **16** | **Thermal Aging Time** | General |  | second | asset |
| The rectifier thermal aging time, in second (For CAN capable rectifiers) | | | | |
| **17** | **Converted Energy** | General |  | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

### CAR0948TN-3A

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR0948TN-3A |
| **Short Description** | 850W switched mode rectifier, AC & DC input |
| **Long Description** | 850W switched mode rectifier, -48Vdc fixed output, AC and DC input |
| **Hardware Reference** | 9411 010 95031 |
| **Software Reference** | SOFT 000084 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name (With CAN capable rectifiers) | | | |
| **2** | **Hardware Reference** | Product Info |  | asset |
| The rectifier hardware reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **3** | **Hardware Revision** | Product Info |  | asset |
| The rectifier hardware revision. (With CAN capable Rectifiers) | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **6** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number - Wb (With CAN capable rectifiers) | | | |
| **8** | **Manufacturing Date** | Product Info |  | asset |
| The rectifier production date (With CAN capable rectifiers) | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **AC High** |  |  | minor (0) | 5 / 2 |
| The AC input in too high | | | | |
| **11** | **Short Error** |  |  | major (0) | 5 / 2 |
| A short circuit is present on the bus | | | | |
| **12** | **Fan Error** |  |  | major (0) | 5 / 2 |
| The FAN is defect | | | | |
| **13** | **Derating Error** |  |  | major (0) | 5 / 2 |
| The rectifier is in derating | | | | |
| **14** | **AC Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC derating | | | | |
| **15** | **Thermal Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in thermal derating | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Fan Speed** | General |  | RPM | asset |
| The rectifier FAN Speed in RPM. (For CAN capable rectifiers) | | | | |
| **14** | **Power Rating** | General |  | % | asset |
| The rectifier power rating (For CAN capable rectifiers) | | | | |
| **15** | **Service Time** | General |  | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **16** | **Thermal Aging Time** | General |  | second | asset |
| The rectifier thermal aging time, in second (For CAN capable rectifiers) | | | | |
| **17** | **Converted Energy** | General |  | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

### CAR1024TP

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR1024TP |
| **Short Description** | 1000W switched mode rectifier |
| **Long Description** | 1000W switched mode rectifier, +24Vdc fixed output |
| **Hardware Reference** | 9411 011 02001 |
| **Software Reference** | NO SOFT |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |

### CAR1048TN-1A

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR1048TN-1A |
| **Short Description** | 1000W switched mode rectifier |
| **Long Description** | 1000W switched mode rectifier, -48Vdc fixed output |
| **Hardware Reference** | 9411 011 05001 |
| **Software Reference** | SOFT 000067 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name (With CAN capable rectifiers) | | | |
| **2** | **Hardware Reference** | Product Info |  | asset |
| The rectifier hardware reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **3** | **Hardware Revision** | Product Info |  | asset |
| The rectifier hardware revision. (With CAN capable Rectifiers) | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **6** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number - Wb (With CAN capable rectifiers) | | | |
| **8** | **Manufacturing Date** | Product Info |  | asset |
| The rectifier production date (With CAN capable rectifiers) | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **AC High** |  |  | minor (0) | 5 / 2 |
| The AC input in too high | | | | |
| **11** | **Short Error** |  |  | major (0) | 5 / 2 |
| A short circuit is present on the bus | | | | |
| **12** | **Fan Error** |  |  | major (0) | 5 / 2 |
| The FAN is defect | | | | |
| **13** | **Derating Error** |  |  | major (0) | 5 / 2 |
| The rectifier is in derating | | | | |
| **14** | **AC Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC derating | | | | |
| **15** | **Thermal Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in thermal derating | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Fan Speed** | General |  | RPM | asset |
| The rectifier FAN Speed in RPM. (For CAN capable rectifiers) | | | | |
| **14** | **Power Rating** | General |  | % | asset |
| The rectifier power rating (For CAN capable rectifiers) | | | | |
| **15** | **Service Time** | General |  | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **16** | **Thermal Aging Time** | General |  | second | asset |
| The rectifier thermal aging time, in second (For CAN capable rectifiers) | | | | |
| **17** | **Converted Energy** | General |  | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

### CAR1048TN-2A

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR1048TN-2A |
| **Short Description** | 1000W switched mode rectifier, AC & DC input |
| **Long Description** | 1000W switched mode rectifier, -48Vdc fixed output, AC & DC input |
| **Hardware Reference** | 9411 011 05021 |
| **Software Reference** | SOFT 000083 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name (With CAN capable rectifiers) | | | |
| **2** | **Hardware Reference** | Product Info |  | asset |
| The rectifier hardware reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **3** | **Hardware Revision** | Product Info |  | asset |
| The rectifier hardware revision. (With CAN capable Rectifiers) | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **6** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number - Wb (With CAN capable rectifiers) | | | |
| **8** | **Manufacturing Date** | Product Info |  | asset |
| The rectifier production date (With CAN capable rectifiers) | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **AC High** |  |  | minor (0) | 5 / 2 |
| The AC input in too high | | | | |
| **11** | **Short Error** |  |  | major (0) | 5 / 2 |
| A short circuit is present on the bus | | | | |
| **12** | **Fan Error** |  |  | major (0) | 5 / 2 |
| The FAN is defect | | | | |
| **13** | **Derating Error** |  |  | major (0) | 5 / 2 |
| The rectifier is in derating | | | | |
| **14** | **AC Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC derating | | | | |
| **15** | **Thermal Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in thermal derating | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Fan Speed** | General |  | RPM | asset |
| The rectifier FAN Speed in RPM. (For CAN capable rectifiers) | | | | |
| **14** | **Power Rating** | General |  | % | asset |
| The rectifier power rating (For CAN capable rectifiers) | | | | |
| **15** | **Service Time** | General |  | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **16** | **Thermal Aging Time** | General |  | second | asset |
| The rectifier thermal aging time, in second (For CAN capable rectifiers) | | | | |
| **17** | **Converted Energy** | General |  | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

### CAR1548TN

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR1548TN |
| **Short Description** | 1500W switched mode rectifier |
| **Long Description** | 1500W switched mode rectifier, -48Vdc fixed output |
| **Hardware Reference** | 9411 011 55001 |
| **Software Reference** | NO SOFT |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |

### CAR1848TN-1A

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR1848TN-1A |
| **Short Description** | 1800W switched mode rectifier |
| **Long Description** | 1800W switched mode rectifier, -48Vdc fixed output |
| **Hardware Reference** | 9411 011 85001 |
| **Software Reference** | NO SOFT |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |

### CAR1848TN-2A

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR1848TN-2A |
| **Short Description** | 1800W switched mode rectifier extended input range |
| **Long Description** | 1800W switched mode rectifier, -48Vdc fixed output, 150-280Vac input |
| **Hardware Reference** | 9411 011 85011 |
| **Software Reference** | NO SOFT |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |

### CAR2648TN

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR2648TN |
| **Short Description** | 1800W switched mode rectifier extended input range |
| **Long Description** | 1800W switched mode rectifier, -48Vdc fixed output, 150-280Vac input |
| **Hardware Reference** | 9411 012 65001 |
| **Software Reference** | SOFT 000075 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |

### CAR30110TP

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR30110TP |
| **Short Description** | 3000W +110V switched mode rectifier |
| **Long Description** | 3000W switched mode rectifier, +110Vdc fixed output |
| **Hardware Reference** | 9411 013 07001 |
| **Software Reference** | SOFT 000065 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name (With CAN capable rectifiers) | | | |
| **2** | **Hardware Reference** | Product Info |  | asset |
| The rectifier hardware reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **3** | **Hardware Revision** | Product Info |  | asset |
| The rectifier hardware revision. (With CAN capable Rectifiers) | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **6** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number - Wb (With CAN capable rectifiers) | | | |
| **8** | **Manufacturing Date** | Product Info |  | asset |
| The rectifier production date (With CAN capable rectifiers) | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **AC High** |  |  | minor (0) | 5 / 2 |
| The AC input in too high | | | | |
| **11** | **Short Error** |  |  | major (0) | 5 / 2 |
| A short circuit is present on the bus | | | | |
| **12** | **Fan Error** |  |  | major (0) | 5 / 2 |
| The FAN is defect | | | | |
| **13** | **Derating Error** |  |  | major (0) | 5 / 2 |
| The rectifier is in derating | | | | |
| **14** | **AC Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC derating | | | | |
| **15** | **Thermal Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in thermal derating | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Fan Speed** | General |  | RPM | asset |
| The rectifier FAN Speed in RPM. (For CAN capable rectifiers) | | | | |
| **14** | **Power Rating** | General |  | % | asset |
| The rectifier power rating (For CAN capable rectifiers) | | | | |
| **15** | **Service Time** | General |  | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **16** | **Thermal Aging Time** | General |  | second | asset |
| The rectifier thermal aging time, in second (For CAN capable rectifiers) | | | | |
| **17** | **Converted Energy** | General |  | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

### CAR30125TP

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CAR30125TP |
| **Short Description** | 3000W +125V switched mode rectifier |
| **Long Description** | 3000W switched mode rectifier, +125Vdc fixed output |
| **Hardware Reference** | 9411 013 07011 |
| **Software Reference** | SOFT 000068 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name (With CAN capable rectifiers) | | | |
| **2** | **Hardware Reference** | Product Info |  | asset |
| The rectifier hardware reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **3** | **Hardware Revision** | Product Info |  | asset |
| The rectifier hardware revision. (With CAN capable Rectifiers) | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **6** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number - Wb (With CAN capable rectifiers) | | | |
| **8** | **Manufacturing Date** | Product Info |  | asset |
| The rectifier production date (With CAN capable rectifiers) | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **AC High** |  |  | minor (0) | 5 / 2 |
| The AC input in too high | | | | |
| **11** | **Short Error** |  |  | major (0) | 5 / 2 |
| A short circuit is present on the bus | | | | |
| **12** | **Fan Error** |  |  | major (0) | 5 / 2 |
| The FAN is defect | | | | |
| **13** | **Derating Error** |  |  | major (0) | 5 / 2 |
| The rectifier is in derating | | | | |
| **14** | **AC Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC derating | | | | |
| **15** | **Thermal Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in thermal derating | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Fan Speed** | General |  | RPM | asset |
| The rectifier FAN Speed in RPM. (For CAN capable rectifiers) | | | | |
| **14** | **Power Rating** | General |  | % | asset |
| The rectifier power rating (For CAN capable rectifiers) | | | | |
| **15** | **Service Time** | General |  | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **16** | **Thermal Aging Time** | General |  | second | asset |
| The rectifier thermal aging time, in second (For CAN capable rectifiers) | | | | |
| **17** | **Converted Energy** | General |  | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

### CDC1548TN

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CDC1548TN |
| **Short Description** | 1500W DC/DC converter 110-220Vin/48Vout |
| **Long Description** | 1500W DC/DC converter 110-220Vin/48Vout |
| **Hardware Reference** | 9413 000 88001 |
| **Software Reference** | NO SOFT |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |

### Cordex 2.4KW

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | Cordex 2.4KW |
| **Short Description** |  |
| **Long Description** | Rectifier Cordex 48V 2.4kW |
| **Hardware Reference** | Cordex 2.4KW |
| **Software Reference** |  |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference | | | |
| **5** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **Rectifier Fail** |  |  | major (0) | 10 / 2 |
| The rectifier has at least one fail alarm active and is unable to output any power. It may need to be replaced. | | | | |
| **2** | **Rectifier Minor** |  |  | minor (0) | 10 / 2 |
| The rectifier has at least one minor alarm active and may be unable to output full power. | | | | |
| **3** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **4** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **5** | **Remote Off** |  |  | warning (0) | 10 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **Fan Error** |  |  | major (0) | 5 / 2 |
| One or more fans has stopped working | | | | |
| **11** | **Current Limit** |  |  | warning (0) | 5 / 2 |
| The rectifier output current is at the maximum. | | | | |
| **12** | **Power Limit** |  |  | warning (0) | 5 / 2 |
| The rectifier output power is at the maximum. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **7** | **Power Ratio** | Output |  | % | basic |
| This is the ratio power/available power | | | | |
| **8** | **Rectifier Mode** | Mode |  |  | basic |
| The internal mode of the rectifier | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Phase Number** | General |  |  | basic |
| The rectifier Phase - 0 means unconfigured | | | | |
| **14** | **Service Time** | General |  | minute | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **15** | **Converted Energy** | General |  | kWh | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Locate Rectifier** | Locate |  | basic |
|  | | | |
| **5** | **Change Phase Number** | Phase |  | basic |
|  | | | |

### Cordex 4KW

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | Cordex 4KW |
| **Short Description** |  |
| **Long Description** | Rectifier Cordex 48V 4kW |
| **Hardware Reference** | Cordex 4KW |
| **Software Reference** |  |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference | | | |
| **5** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **Rectifier Fail** |  |  | major (0) | 10 / 2 |
| The rectifier has at least one fail alarm active and is unable to output any power. It may need to be replaced. | | | | |
| **2** | **Rectifier Minor** |  |  | minor (0) | 10 / 2 |
| The rectifier has at least one minor alarm active and may be unable to output full power. | | | | |
| **3** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **4** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **5** | **Remote Off** |  |  | warning (0) | 10 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **Fan Error** |  |  | major (0) | 5 / 2 |
| One or more fans has stopped working | | | | |
| **11** | **Current Limit** |  |  | warning (0) | 5 / 2 |
| The rectifier output current is at the maximum. | | | | |
| **12** | **Power Limit** |  |  | warning (0) | 5 / 2 |
| The rectifier output power is at the maximum. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **7** | **Power Ratio** | Output |  | % | basic |
| This is the ratio power/available power | | | | |
| **8** | **Rectifier Mode** | Mode |  |  | basic |
| The internal mode of the rectifier | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Phase Number** | General |  |  | basic |
| The rectifier Phase - 0 means unconfigured | | | | |
| **14** | **Service Time** | General |  | minute | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **15** | **Converted Energy** | General |  | kWh | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Locate Rectifier** | Locate |  | basic |
|  | | | |
| **5** | **Change Phase Number** | Phase |  | basic |
|  | | | |

### CXRF48-4kW

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CXRF48-4kW |
| **Short Description** | 4kW high efficiency rectifier |
| **Long Description** | Cordex HP 4kW, high efficiency switched mode rectifier, -48Vdc fixed output |
| **Hardware Reference** | D010 623 20040 |
| **Software Reference** | Unknown |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |
| --- | --- | --- | --- |
| Description Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **1** | **Product Name** | Product Info | asset |
| The rectifier product name | | |
| **4** | **Software Reference** | Product Info | asset |
| The rectifier software reference | | |
| **5** | **Serial Number** | Product Info | asset |
| The rectifier serial number | | |
| **21** | **CAN Node Id** | CAN Bus | basic |
| The CAN Bus Node ID | | |

|  |  |  |
| --- | --- | --- |
| Alarm Table | | |
| *Id* | *Name* | *Severity Type (Level)* |
| **1** | **Rectifier Fail** | major (0) |
| The rectifier must be replaced because of a DC Failure. | |
| **2** | **Minor Problem** | minor (0) |
| There is a minor problem. | |
| **3** | **AC Failure** | major (0) |
| The rectifier is in AC Failure. | |
| **4** | **Over Temperature** | major (0) |
| The rectifier is too warm. | |
| **5** | **Remote Off** | warning (0) |
| The rectifier is in remote off. | |
| **7** | **Communication Error** | warning (0) |
| The Communication With the rectifier has been lost. | |
| **10** | **Fan Error** | major (0) |
| The FAN is defect | |
| **11** | **Current Limitation** | warning (0) |
| The rectifier is in current limit | |
| **12** | **Power Limitation** | warning (0) |
| The rectifier is in power limit | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data Table | | | | |
| *Id* | *Name* | *Group* | *Unit* | *License* |
| **1** | **Output Current** | Output | Ampere | basic |
| The current delivered by the rectifier | | | |
| **3** | **Output Voltage** | Output | Volt | basic |
| The output voltage of the rectifier | | | |
| **7** | **Power Ratio** | Output | % | basic |
| This is the ratio power/available power | | | |
| **8** | **Rectifier Mode** | Mode |  | basic |
| The internal mode of the rectifier | | | |
| **11** | **Input Voltage** | Input | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | |
| **12** | **Temperature** | General | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | |
| **13** | **Phase Number** | General |  | basic |
| The rectifier Phase - 0 means unconfigured | | | |
| **14** | **Service Time** | General | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | |
| **15** | **Converted Energy** | General | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Control Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **1** | **Locate Rectifier** | Locate | basic |
| No information | | |
| **5** | **Change Phase Number** | Phase | basic |
| No information | | |

### CXRF 48-300W

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CXRF 48-300W |
| **Short Description** | 300W high efficiency rectifier |
| **Long Description** | Cordex HP 300W, high efficiency switched mode rectifier, -48Vdc fixed output |
| **Hardware Reference** | 9411 010 35011 |
| **Software Reference** | SOFT 000101 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name (With CAN capable rectifiers) | | | |
| **2** | **Hardware Reference** | Product Info |  | asset |
| The rectifier hardware reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **3** | **Hardware Revision** | Product Info |  | asset |
| The rectifier hardware revision. (With CAN capable Rectifiers) | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **6** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number - Wb (With CAN capable rectifiers) | | | |
| **8** | **Manufacturing Date** | Product Info |  | asset |
| The rectifier production date (With CAN capable rectifiers) | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **AC High** |  |  | minor (0) | 5 / 2 |
| The AC input in too high | | | | |
| **11** | **Short Error** |  |  | major (0) | 5 / 2 |
| A short circuit is present on the bus | | | | |
| **12** | **Fan Error** |  |  | major (0) | 5 / 2 |
| The FAN is defect | | | | |
| **13** | **Derating Error** |  |  | major (0) | 5 / 2 |
| The rectifier is in derating | | | | |
| **14** | **AC Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC derating | | | | |
| **15** | **Thermal Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in thermal derating | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Fan Speed** | General |  | RPM | asset |
| The rectifier FAN Speed in RPM. (For CAN capable rectifiers) | | | | |
| **14** | **Power Rating** | General |  | % | asset |
| The rectifier power rating (For CAN capable rectifiers) | | | | |
| **15** | **Service Time** | General |  | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **16** | **Thermal Aging Time** | General |  | second | asset |
| The rectifier thermal aging time, in second (For CAN capable rectifiers) | | | | |
| **17** | **Converted Energy** | General |  | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

### ECOR0348

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | ECOR0348 |
| **Short Description** | Rectifer 300W -54V |
| **Long Description** | Replaced by CXRF 48-300W |
| **Hardware Reference** | 9411 010 35001 |
| **Software Reference** | SOFT 000097 XX |
| **Equipment Type** | Rectifier |
| **ETSI Level** | /site/energy\_system/dc\_system/rectifier |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Product Info |  | asset |
| The rectifier product name (With CAN capable rectifiers) | | | |
| **2** | **Hardware Reference** | Product Info |  | asset |
| The rectifier hardware reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **3** | **Hardware Revision** | Product Info |  | asset |
| The rectifier hardware revision. (With CAN capable Rectifiers) | | | |
| **4** | **Software Reference** | Product Info |  | asset |
| The rectifier software reference. This corresponds to the Mitra 12NC (With CAN capable rectifiers) | | | |
| **6** | **Serial Number** | Product Info |  | asset |
| The rectifier serial number - Wb (With CAN capable rectifiers) | | | |
| **8** | **Manufacturing Date** | Product Info |  | asset |
| The rectifier production date (With CAN capable rectifiers) | | | |
| **21** | **CAN Node Id** | CAN Bus |  | basic |
| The CAN Bus Node ID | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **AC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC Failure. | | | | |
| **2** | **DC Failure** |  |  | major (0) | 5 / 2 |
| The rectifier must be replaced because of a DC Failure. | | | | |
| **3** | **Over Temperature** |  |  | major (0) | 5 / 2 |
| The rectifier is too warm. | | | | |
| **4** | **Remote Off** |  |  | warning (0) | 5 / 2 |
| The rectifier is in remote off. | | | | |
| **7** | **Communication Error** |  |  | warning (0) | 5 / 2 |
| The Communication With the rectifier has been lost. | | | | |
| **10** | **AC High** |  |  | minor (0) | 5 / 2 |
| The AC input in too high | | | | |
| **11** | **Short Error** |  |  | major (0) | 5 / 2 |
| A short circuit is present on the bus | | | | |
| **12** | **Fan Error** |  |  | major (0) | 5 / 2 |
| The FAN is defect | | | | |
| **13** | **Derating Error** |  |  | major (0) | 5 / 2 |
| The rectifier is in derating | | | | |
| **14** | **AC Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in AC derating | | | | |
| **15** | **Thermal Derating** |  |  | major (0) | 5 / 2 |
| The rectifier is in thermal derating | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Current** | Output |  | Ampere | basic |
| The current delivered by the rectifier | | | | |
| **2** | **Output Power** | Output |  | Watt | basic |
| The power delivered by the rectifier | | | | |
| **3** | **Output Voltage** | Output |  | Volt | basic |
| The output voltage of the rectifier | | | | |
| **4** | **Output Current Max** | Output |  | Ampere | basic |
| The maximal current deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **5** | **Output Power Max** | Output |  | Watt | basic |
| The maximal power deliverable by the rectifier. This takes into account the derating for CAN capable rectifiers. | | | | |
| **11** | **Input Voltage** | Input |  | Volt | asset |
| The rectifier AC Input voltage (For CAN capable rectifiers) | | | | |
| **12** | **Temperature** | General |  | degree C | asset |
| The rectifier temperature (For CAN capable rectifiers) | | | | |
| **13** | **Fan Speed** | General |  | RPM | asset |
| The rectifier FAN Speed in RPM. (For CAN capable rectifiers) | | | | |
| **14** | **Power Rating** | General |  | % | asset |
| The rectifier power rating (For CAN capable rectifiers) | | | | |
| **15** | **Service Time** | General |  | second | asset |
| The rectifier total service time, in second (For CAN capable rectifiers) | | | | |
| **16** | **Thermal Aging Time** | General |  | second | asset |
| The rectifier thermal aging time, in second (For CAN capable rectifiers) | | | | |
| **17** | **Converted Energy** | General |  | kJ | asset |
| The total energy converted by the rectifier since the production. (For CAN capable rectifiers) | | | | |

Sensors And Actuators Tables

### ADIO 7

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | ADIO 7 |
| **Short Description** | Standard I/O module D24 T7 |
| **Long Description** | I/O module with 24 digital inputs and 7 inputs for temperature measurement |
| **Hardware Reference** | 9413 060 05071 |
| **Software Reference** | SOFT 000095 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **71** | **Digital Input 1** | Digital Inputs | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **72** | **Digital Input 2** | Digital Inputs | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **73** | **Digital Input 3** | Digital Inputs | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **74** | **Digital Input 4** | Digital Inputs | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **75** | **Digital Input 5** | Digital Inputs | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **76** | **Digital Input 6** | Digital Inputs | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **77** | **Digital Input 7** | Digital Inputs | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **78** | **Digital Input 8** | Digital Inputs | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |
| **79** | **Digital Input 9** | Digital Inputs | Digital Input 9 | warning (0) | 5 / 2 |
| The name of the digital input 9 alarm. | | | | |
| **80** | **Digital Input 10** | Digital Inputs | Digital Input 10 | warning (0) | 5 / 2 |
| The name of the digital input 10 alarm. | | | | |
| **81** | **Digital Input 11** | Digital Inputs | Digital Input 11 | warning (0) | 5 / 2 |
| The name of the digital input 11 alarm. | | | | |
| **82** | **Digital Input 12** | Digital Inputs | Digital Input 12 | warning (0) | 5 / 2 |
| The name of the digital input 12 alarm. | | | | |
| **83** | **Digital Input 13** | Digital Inputs | Digital Input 13 | warning (0) | 5 / 2 |
| The name of the digital input 13 alarm. | | | | |
| **84** | **Digital Input 14** | Digital Inputs | Digital Input 14 | warning (0) | 5 / 2 |
| The name of the digital input 14 alarm. | | | | |
| **85** | **Digital Input 15** | Digital Inputs | Digital Input 15 | warning (0) | 5 / 2 |
| The name of the digital input 15 alarm. | | | | |
| **86** | **Digital Input 16** | Digital Inputs | Digital Input 16 | warning (0) | 5 / 2 |
| The name of the digital input 16 alarm. | | | | |
| **87** | **Digital Input 17** | Digital Inputs | Digital Input 17 | warning (0) | 5 / 2 |
| The name of the digital input 17 alarm. | | | | |
| **88** | **Digital Input 18** | Digital Inputs | Digital Input 18 | warning (0) | 5 / 2 |
| The name of the digital input 18 alarm. | | | | |
| **89** | **Digital Input 19** | Digital Inputs | Digital Input 19 | warning (0) | 5 / 2 |
| The name of the digital input 19 alarm. | | | | |
| **90** | **Digital Input 20** | Digital Inputs | Digital Input 20 | warning (0) | 5 / 2 |
| The name of the digital input 20 alarm. | | | | |
| **91** | **Digital Input 21** | Digital Inputs | Digital Input 21 | warning (0) | 5 / 2 |
| The name of the digital input 21 alarm. | | | | |
| **92** | **Digital Input 22** | Digital Inputs | Digital Input 22 | warning (0) | 5 / 2 |
| The name of the digital input 22 alarm. | | | | |
| **93** | **Digital Input 23** | Digital Inputs | Digital Input 23 | warning (0) | 5 / 2 |
| The name of the digital input 23 alarm. | | | | |
| **94** | **Digital Input 24** | Digital Inputs | Digital Input 24 | warning (0) | 5 / 2 |
| The name of the digital input 24 alarm. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Temperature 1** | Temperature Sensors | Temperature 1 | degree C | basic |
| Temperature Measurement 1 | | | | |
| **2** | **Temperature 2** | Temperature Sensors | Temperature 2 | degree C | basic |
| Temperature Measurement 2 | | | | |
| **3** | **Temperature 3** | Temperature Sensors | Temperature 3 | degree C | basic |
| Temperature Measurement 3 | | | | |
| **4** | **Temperature 4** | Temperature Sensors | Temperature 4 | degree C | basic |
| Temperature Measurement 4 | | | | |
| **5** | **Temperature 5** | Temperature Sensors | Temperature 5 | degree C | basic |
| Temperature Measurement 5 | | | | |
| **6** | **Temperature 6** | Temperature Sensors | Temperature 6 | degree C | basic |
| Temperature Measurement 6 | | | | |
| **7** | **Temperature 7** | Temperature Sensors | Temperature 7 | degree C | basic |
| Temperature Measurement 7 | | | | |
| **8** | **Temperature 8** | Temperature Sensors | Temperature 8 | degree C | basic |
| Temperature Measurement 8 | | | | |
| **71** | **Digital Input 1 State** | Digital Inputs | Digital Input 1 |  | basic |
| The state of the digital input | | | | |
| **72** | **Digital Input 2 State** | Digital Inputs | Digital Input 2 |  | basic |
| The state of the digital input | | | | |
| **73** | **Digital Input 3 State** | Digital Inputs | Digital Input 3 |  | basic |
| The state of the digital input | | | | |
| **74** | **Digital Input 4 State** | Digital Inputs | Digital Input 4 |  | basic |
| The state of the digital input | | | | |
| **75** | **Digital Input 5 State** | Digital Inputs | Digital Input 5 |  | basic |
| The state of the digital input | | | | |
| **76** | **Digital Input 6 State** | Digital Inputs | Digital Input 6 |  | basic |
| The state of the digital input | | | | |
| **77** | **Digital Input 7 State** | Digital Inputs | Digital Input 7 |  | basic |
| The state of the digital input | | | | |
| **78** | **Digital Input 8 State** | Digital Inputs | Digital Input 8 |  | basic |
| The state of the digital input | | | | |
| **79** | **Digital Input 9 State** | Digital Inputs | Digital Input 9 |  | basic |
| The state of the digital input | | | | |
| **80** | **Digital Input 10 State** | Digital Inputs | Digital Input 10 |  | basic |
| The state of the digital input | | | | |
| **81** | **Digital Input 11 State** | Digital Inputs | Digital Input 11 |  | basic |
| The state of the digital input | | | | |
| **82** | **Digital Input 12 State** | Digital Inputs | Digital Input 12 |  | basic |
| The state of the digital input | | | | |
| **83** | **Digital Input 13 State** | Digital Inputs | Digital Input 13 |  | basic |
| The state of the digital input | | | | |
| **84** | **Digital Input 14 State** | Digital Inputs | Digital Input 14 |  | basic |
| The state of the digital input | | | | |
| **85** | **Digital Input 15 State** | Digital Inputs | Digital Input 15 |  | basic |
| The state of the digital input | | | | |
| **86** | **Digital Input 16 State** | Digital Inputs | Digital Input 16 |  | basic |
| The state of the digital input | | | | |
| **87** | **Digital Input 17 State** | Digital Inputs | Digital Input 17 |  | basic |
| The state of the digital input | | | | |
| **88** | **Digital Input 18 State** | Digital Inputs | Digital Input 18 |  | basic |
| The state of the digital input | | | | |
| **89** | **Digital Input 19 State** | Digital Inputs | Digital Input 19 |  | basic |
| The state of the digital input | | | | |
| **90** | **Digital Input 20 State** | Digital Inputs | Digital Input 20 |  | basic |
| The state of the digital input | | | | |
| **91** | **Digital Input 21 State** | Digital Inputs | Digital Input 21 |  | basic |
| The state of the digital input | | | | |
| **92** | **Digital Input 22 State** | Digital Inputs | Digital Input 22 |  | basic |
| The state of the digital input | | | | |
| **93** | **Digital Input 23 State** | Digital Inputs | Digital Input 23 |  | basic |
| The state of the digital input | | | | |
| **94** | **Digital Input 24 State** | Digital Inputs | Digital Input 24 |  | basic |
| The state of the digital input | | | | |
| **131** | **Pulse Counter 1** | Digital Inputs | Digital Input 1 |  | basic |
| Energy Consumption Counter 1 | | | | |
| **132** | **Pulse Counter 2** | Digital Inputs | Digital Input 2 |  | basic |
| Energy Consumption Counter 2 | | | | |
| **133** | **Pulse Counter 3** | Digital Inputs | Digital Input 3 |  | basic |
| Energy Consumption Counter 3 | | | | |
| **134** | **Pulse Counter 4** | Digital Inputs | Digital Input 4 |  | basic |
| Energy Consumption Counter 4 | | | | |
| **135** | **Pulse Counter 5** | Digital Inputs | Digital Input 5 |  | basic |
| Energy Consumption Counter 5 | | | | |
| **136** | **Pulse Counter 6** | Digital Inputs | Digital Input 6 |  | basic |
| Energy Consumption Counter 6 | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **71** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Inputs | basic |
| The name of the digital input 1. | | | | | |
| **72** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **73** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Inputs | basic |
| The name of the digital input 2. | | | | | |
| **74** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **75** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Inputs | basic |
| The name of the digital input 3. | | | | | |
| **76** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **77** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Inputs | basic |
| The name of the digital input 4. | | | | | |
| **78** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **79** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Inputs | basic |
| The name of the digital input 5. | | | | | |
| **80** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **81** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Inputs | basic |
| The name of the digital input 6. | | | | | |
| **82** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **83** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Inputs | basic |
| The name of the digital input 7. | | | | | |
| **84** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **85** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Inputs | basic |
| The name of the digital input 8. | | | | | |
| **86** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **87** | **Digital Input 9 Name** | Digital Inputs | Digital Input 9 |  | Digital Inputs | basic |
| The name of the digital input 9. | | | | | |
| **88** | **Digital Input 9 Normally Closed** | Digital Inputs | Digital Input 9 |  | True/False (True) | basic |
| True/False value defining if the digital input 9 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **89** | **Digital Input 10 Name** | Digital Inputs | Digital Input 10 |  | Digital Inputs | basic |
| The name of the digital input 10. | | | | | |
| **90** | **Digital Input 10 Normally Closed** | Digital Inputs | Digital Input 10 |  | True/False (True) | basic |
| True/False value defining if the digital input 10 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **91** | **Digital Input 11 Name** | Digital Inputs | Digital Input 11 |  | Digital Inputs | basic |
| The name of the digital input 11. | | | | | |
| **92** | **Digital Input 11 Normally Closed** | Digital Inputs | Digital Input 11 |  | True/False (True) | basic |
| True/False value defining if the digital input 11 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 12 Name** | Digital Inputs | Digital Input 12 |  | Digital Inputs | basic |
| The name of the digital input 12. | | | | | |
| **94** | **Digital Input 12 Normally Closed** | Digital Inputs | Digital Input 12 |  | True/False (True) | basic |
| True/False value defining if the digital input 12 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **95** | **Digital Input 13 Name** | Digital Inputs | Digital Input 13 |  | Digital Inputs | basic |
| The name of the digital input 13. | | | | | |
| **96** | **Digital Input 13 Normally Closed** | Digital Inputs | Digital Input 13 |  | True/False (True) | basic |
| True/False value defining if the digital input 13 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **97** | **Digital Input 14 Name** | Digital Inputs | Digital Input 14 |  | Digital Inputs | basic |
| The name of the digital input 14. | | | | | |
| **98** | **Digital Input 14 Normally Closed** | Digital Inputs | Digital Input 14 |  | True/False (True) | basic |
| True/False value defining if the digital input 14 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **99** | **Digital Input 15 Name** | Digital Inputs | Digital Input 15 |  | Digital Inputs | basic |
| The name of the digital input 15. | | | | | |
| **100** | **Digital Input 15 Normally Closed** | Digital Inputs | Digital Input 15 |  | True/False (True) | basic |
| True/False value defining if the digital input 15 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **101** | **Digital Input 16 Name** | Digital Inputs | Digital Input 16 |  | Digital Inputs | basic |
| The name of the digital input 16. | | | | | |
| **102** | **Digital Input 16 Normally Closed** | Digital Inputs | Digital Input 16 |  | True/False (True) | basic |
| True/False value defining if the digital input 16 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 17 Name** | Digital Inputs | Digital Input 17 |  | Digital Inputs | basic |
| The name of the digital input 17. | | | | | |
| **104** | **Digital Input 17 Normally Closed** | Digital Inputs | Digital Input 17 |  | True/False (True) | basic |
| True/False value defining if the digital input 17 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 18 Name** | Digital Inputs | Digital Input 18 |  | Digital Inputs | basic |
| The name of the digital input 18. | | | | | |
| **106** | **Digital Input 18 Normally Closed** | Digital Inputs | Digital Input 18 |  | True/False (True) | basic |
| True/False value defining if the digital input 18 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **107** | **Digital Input 19 Name** | Digital Inputs | Digital Input 19 |  | Digital Inputs | basic |
| The name of the digital input 19. | | | | | |
| **108** | **Digital Input 19 Normally Closed** | Digital Inputs | Digital Input 19 |  | True/False (True) | basic |
| True/False value defining if the digital input 19 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **109** | **Digital Input 20 Name** | Digital Inputs | Digital Input 20 |  | Digital Inputs | basic |
| The name of the digital input 20. | | | | | |
| **110** | **Digital Input 20 Normally Closed** | Digital Inputs | Digital Input 20 |  | True/False (True) | basic |
| True/False value defining if the digital input 20 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Digital Input 21 Name** | Digital Inputs | Digital Input 21 |  | Digital Inputs | basic |
| The name of the digital input 21. | | | | | |
| **112** | **Digital Input 21 Normally Closed** | Digital Inputs | Digital Input 21 |  | True/False (True) | basic |
| True/False value defining if the digital input 21 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **113** | **Digital Input 22 Name** | Digital Inputs | Digital Input 22 |  | Digital Inputs | basic |
| The name of the digital input 22. | | | | | |
| **114** | **Digital Input 22 Normally Closed** | Digital Inputs | Digital Input 22 |  | True/False (True) | basic |
| True/False value defining if the digital input 22 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **115** | **Digital Input 23 Name** | Digital Inputs | Digital Input 23 |  | Digital Inputs | basic |
| The name of the digital input 23. | | | | | |
| **116** | **Digital Input 23 Normally Closed** | Digital Inputs | Digital Input 23 |  | True/False (True) | basic |
| True/False value defining if the digital input 23 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **117** | **Digital Input 24 Name** | Digital Inputs | Digital Input 24 |  | Digital Inputs | basic |
| The name of the digital input 24. | | | | | |
| **118** | **Digital Input 24 Normally Closed** | Digital Inputs | Digital Input 24 |  | True/False (True) | basic |
| True/False value defining if the digital input 24 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **101** | **Set Pulse Counter 1** | Pulse Counter |  | basic |
| Set Counter 1 Value | | | |
| **102** | **Set Pulse Counter 2** | Pulse Counter |  | basic |
| Set Counter 2 Value | | | |
| **103** | **Set Pulse Counter 3** | Pulse Counter |  | basic |
| Set Counter 3 Value | | | |
| **104** | **Set Pulse Counter 4** | Pulse Counter |  | basic |
| Set Counter 4 Value | | | |
| **105** | **Set Pulse Counter 5** | Pulse Counter |  | basic |
| Set Counter 5 Value | | | |
| **106** | **Set Pulse Counter 6** | Pulse Counter |  | basic |
| Set Counter 6 Value | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### ADIO 8

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| --- | --- |
| **Device Information** | |
| **Name** | ADIO 8 |
| **Short Description** | Standard I/O module D9 ACR5 LVD PLD DCR2 |
| **Long Description** | I/O module with 9 digital inputs, 5 relays for AC, Low Voltage Disconnection, Partial Load Disconnection and 2 relays for outputs |
| **Hardware Reference** | 9413 060 05081 |
| **Software Reference** | SOFT 000096 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **71** | **Digital Input 1** | Digital Inputs | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **72** | **Digital Input 2** | Digital Inputs | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **73** | **Digital Input 3** | Digital Inputs | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **74** | **Digital Input 4** | Digital Inputs | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **75** | **Digital Input 5** | Digital Inputs | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **76** | **Digital Input 6** | Digital Inputs | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **77** | **Digital Input 7** | Digital Inputs | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **78** | **Digital Input 8** | Digital Inputs | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |
| **79** | **Digital Input 9** | Digital Inputs | Digital Input 9 | warning (0) | 5 / 2 |
| The name of the digital input 9 alarm. | | | | |
| **80** | **Digital Input 10** | Digital Inputs | Digital Input 10 | warning (0) | 5 / 2 |
| The name of the digital input 10 alarm. | | | | |
| **81** | **Digital Input 11** | Digital Inputs | Digital Input 11 | warning (0) | 5 / 2 |
| The name of the digital input 11 alarm. | | | | |
| **82** | **Digital Input 12** | Digital Inputs | Digital Input 12 | warning (0) | 5 / 2 |
| The name of the digital input 12 alarm. | | | | |

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| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Temperature 1** | Temperature Sensors | Temperature 1 | degree C | basic |
| Temperature Measurement 1 | | | | |
| **71** | **Digital Input 1 State** | Digital Inputs | Digital Input 1 |  | basic |
| The state of the digital input | | | | |
| **72** | **Digital Input 2 State** | Digital Inputs | Digital Input 2 |  | basic |
| The state of the digital input | | | | |
| **73** | **Digital Input 3 State** | Digital Inputs | Digital Input 3 |  | basic |
| The state of the digital input | | | | |
| **74** | **Digital Input 4 State** | Digital Inputs | Digital Input 4 |  | basic |
| The state of the digital input | | | | |
| **75** | **Digital Input 5 State** | Digital Inputs | Digital Input 5 |  | basic |
| The state of the digital input | | | | |
| **76** | **Digital Input 6 State** | Digital Inputs | Digital Input 6 |  | basic |
| The state of the digital input | | | | |
| **77** | **Digital Input 7 State** | Digital Inputs | Digital Input 7 |  | basic |
| The state of the digital input | | | | |
| **78** | **Digital Input 8 State** | Digital Inputs | Digital Input 8 |  | basic |
| The state of the digital input | | | | |
| **79** | **Digital Input 9 State** | Digital Inputs | Digital Input 9 |  | basic |
| The state of the digital input | | | | |
| **80** | **Digital Input 10 State** | Digital Inputs | Digital Input 10 |  | basic |
| The state of the digital input | | | | |
| **81** | **Digital Input 11 State** | Digital Inputs | Digital Input 11 |  | basic |
| The state of the digital input | | | | |
| **82** | **Digital Input 12 State** | Digital Inputs | Digital Input 12 |  | basic |
| The state of the digital input | | | | |
| **101** | **Voltage 5V 1** | Voltage Sensors | Voltage 5V 1 | mVolt | basic |
| Voltage Measurement 5V 1 | | | | |
| **102** | **Voltage 5V 2** | Voltage Sensors | Voltage 5V 2 | mVolt | basic |
| Voltage Measurement 5V 2 | | | | |
| **111** | **Current 4-20mA 1** | Current 4-20mA Sensor | Current 4-20mA 1 | mAmpere | basic |
| Current 4-20mA Sensor 1 | | | | |
| **112** | **Current 4-20mA 2** | Current 4-20mA Sensor | Current 4-20mA 2 | mAmpere | basic |
| Current 4-20mA Sensor 2 | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **71** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Inputs | basic |
| The name of the digital input 1. | | | | | |
| **72** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **73** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Inputs | basic |
| The name of the digital input 2. | | | | | |
| **74** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **75** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Inputs | basic |
| The name of the digital input 3. | | | | | |
| **76** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **77** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Inputs | basic |
| The name of the digital input 4. | | | | | |
| **78** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **79** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Inputs | basic |
| The name of the digital input 5. | | | | | |
| **80** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **81** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Inputs | basic |
| The name of the digital input 6. | | | | | |
| **82** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **83** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Inputs | basic |
| The name of the digital input 7. | | | | | |
| **84** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **85** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Inputs | basic |
| The name of the digital input 8. | | | | | |
| **86** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **87** | **Digital Input 9 Name** | Digital Inputs | Digital Input 9 |  | Digital Inputs | basic |
| The name of the digital input 9. | | | | | |
| **88** | **Digital Input 9 Normally Closed** | Digital Inputs | Digital Input 9 |  | True/False (True) | basic |
| True/False value defining if the digital input 9 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **89** | **Digital Input 10 Name** | Digital Inputs | Digital Input 10 |  | Digital Inputs | basic |
| The name of the digital input 10. | | | | | |
| **90** | **Digital Input 10 Normally Closed** | Digital Inputs | Digital Input 10 |  | True/False (True) | basic |
| True/False value defining if the digital input 10 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **91** | **Digital Input 11 Name** | Digital Inputs | Digital Input 11 |  | Digital Inputs | basic |
| The name of the digital input 11. | | | | | |
| **92** | **Digital Input 11 Normally Closed** | Digital Inputs | Digital Input 11 |  | True/False (True) | basic |
| True/False value defining if the digital input 11 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 12 Name** | Digital Inputs | Digital Input 12 |  | Digital Inputs | basic |
| The name of the digital input 12. | | | | | |
| **94** | **Digital Input 12 Normally Closed** | Digital Inputs | Digital Input 12 |  | True/False (True) | basic |
| True/False value defining if the digital input 12 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **121** | **Relay 1 Change State Boolan Condition** | Relays | Relay 1 |  | (False) | basic |
| Relay 1 Boolean Condition | | | | | |
| **122** | **Relay 1 Normal State** | Relays | Relay 1 |  | (Energized / De-energized) | basic |
| Normal state of the relay 1: Energized/De-energized. | | | | | |
| **123** | **Relay 2 Change State Boolan Condition** | Relays | Relay 2 |  | (False) | basic |
| Relay 2 Boolean Condition | | | | | |
| **124** | **Relay 2 Normal State** | Relays | Relay 2 |  | (Energized / De-energized) | basic |
| Normal state of the relay 2: Energized/De-energized. | | | | | |
| **125** | **Relay 3 Change State Boolan Condition** | Relays | Relay 3 |  | (False) | basic |
| Relay 3 Boolean Condition | | | | | |
| **126** | **Relay 3 Normal State** | Relays | Relay 3 |  | (Energized / De-energized) | basic |
| Normal state of the relay 3: Energized/De-energized. | | | | | |
| **127** | **Relay 4 Change State Boolan Condition** | Relays | Relay 4 |  | (False) | basic |
| Relay 4 Boolean Condition | | | | | |
| **128** | **Relay 4 Normal State** | Relays | Relay 4 |  | (Energized / De-energized) | basic |
| Normal state of the relay 4: Energized/De-energized. | | | | | |
| **129** | **Relay 5 Change State Boolan Condition** | Relays | Relay 5 |  | (False) | basic |
| Relay 5 Boolean Condition | | | | | |
| **130** | **Relay 5 Normal State** | Relays | Relay 5 |  | (Energized / De-energized) | basic |
| Normal state of the relay 5: Energized/De-energized. | | | | | |
| **131** | **Relay 6 Change State Boolan Condition** | Relays | Relay 6 |  | (False) | basic |
| Relay 6 Boolean Condition | | | | | |
| **132** | **Relay 6 Normal State** | Relays | Relay 6 |  | (Energized / De-energized) | basic |
| Normal state of the relay 6: Energized/De-energized. | | | | | |
| **133** | **Relay 7 Change State Boolan Condition** | Relays | Relay 7 |  | (False) | basic |
| Relay 7 Boolean Condition | | | | | |
| **134** | **Relay 7 Normal State** | Relays | Relay 7 |  | (Energized / De-energized) | basic |
| Normal state of the relay 7: Energized/De-energized. | | | | | |
| **135** | **Relay 8 Change State Boolan Condition** | Relays | Relay 8 |  | (False) | basic |
| Relay 8 Boolean Condition | | | | | |
| **136** | **Relay 8 Normal State** | Relays | Relay 8 |  | (Energized / De-energized) | basic |
| Normal state of the relay 8: Energized/De-energized. | | | | | |
| **137** | **Relay 9 Change State Boolan Condition** | Relays | Relay 9 |  | (False) | basic |
| Relay 9 Boolean Condition | | | | | |
| **138** | **Relay 9 Normal State** | Relays | Relay 9 |  | (Energized / De-energized) | basic |
| Normal state of the relay 9: Energized/De-energized. | | | | | |
| **139** | **Relay 10 Change State Boolan Condition** | Relays | Relay 10 |  | (False) | basic |
| Relay 10 Boolean Condition | | | | | |
| **140** | **Relay 10 Normal State** | Relays | Relay 10 |  | (Energized / De-energized) | basic |
| Normal state of the relay 10: Energized/De-energized. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### ADIO 9

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| **Device Information** | |
| **Name** | ADIO 9 |
| **Short Description** | Custom I/O module Operanet |
| **Long Description** |  |
| **Hardware Reference** | 9413 060 05091 |
| **Software Reference** | SOFT 000094 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

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| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **71** | **Digital Input 1** | Digital Inputs | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **72** | **Digital Input 2** | Digital Inputs | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **73** | **Digital Input 3** | Digital Inputs | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **74** | **Digital Input 4** | Digital Inputs | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **75** | **Digital Input 5** | Digital Inputs | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **76** | **Digital Input 6** | Digital Inputs | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **77** | **Digital Input 7** | Digital Inputs | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **78** | **Digital Input 8** | Digital Inputs | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Temperature 1** | Temperature Sensors | Temperature 1 | degree C | basic |
| Temperature Measurement 01 | | | | |
| **2** | **Temperature 2** | Temperature Sensors | Temperature 2 | degree C | basic |
| Temperature Measurement 11 | | | | |
| **3** | **Temperature 3** | Temperature Sensors | Temperature 3 | degree C | basic |
| Temperature Measurement 21 | | | | |
| **4** | **Temperature 4** | Temperature Sensors | Temperature 4 | degree C | basic |
| Temperature Measurement 31 | | | | |
| **71** | **Digital Input 1 State** | Digital Inputs | Digital Input 1 |  | basic |
| The state of the digital input | | | | |
| **72** | **Digital Input 2 State** | Digital Inputs | Digital Input 2 |  | basic |
| The state of the digital input | | | | |
| **73** | **Digital Input 3 State** | Digital Inputs | Digital Input 3 |  | basic |
| The state of the digital input | | | | |
| **74** | **Digital Input 4 State** | Digital Inputs | Digital Input 4 |  | basic |
| The state of the digital input | | | | |
| **75** | **Digital Input 5 State** | Digital Inputs | Digital Input 5 |  | basic |
| The state of the digital input | | | | |
| **76** | **Digital Input 6 State** | Digital Inputs | Digital Input 6 |  | basic |
| The state of the digital input | | | | |
| **77** | **Digital Input 7 State** | Digital Inputs | Digital Input 7 |  | basic |
| The state of the digital input | | | | |
| **78** | **Digital Input 8 State** | Digital Inputs | Digital Input 8 |  | basic |
| The state of the digital input | | | | |
| **91** | **Voltage 1** | Voltage Sensors | Voltage 1 | Volt | basic |
| Voltage Measurement 1 | | | | |
| **131** | **Pulse Counter 1** | Digital Inputs | Digital Input 1 |  | basic |
| Energy Consumption Counter 1 | | | | |
| **132** | **Pulse Counter 2** | Digital Inputs | Digital Input 2 |  | basic |
| Energy Consumption Counter 2 | | | | |
| **133** | **Pulse Counter 3** | Digital Inputs | Digital Input 3 |  | basic |
| Energy Consumption Counter 3 | | | | |
| **134** | **Pulse Counter 4** | Digital Inputs | Digital Input 4 |  | basic |
| Energy Consumption Counter 4 | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **71** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Inputs | basic |
| The name of the digital input 1. | | | | | |
| **72** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **73** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Inputs | basic |
| The name of the digital input 2. | | | | | |
| **74** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **75** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Inputs | basic |
| The name of the digital input 3. | | | | | |
| **76** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **77** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Inputs | basic |
| The name of the digital input 4. | | | | | |
| **78** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **79** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Inputs | basic |
| The name of the digital input 5. | | | | | |
| **80** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **81** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Inputs | basic |
| The name of the digital input 6. | | | | | |
| **82** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **83** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Inputs | basic |
| The name of the digital input 7. | | | | | |
| **84** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **85** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Inputs | basic |
| The name of the digital input 8. | | | | | |
| **86** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **101** | **Set Pulse Counter 1** | Pulse Counter | Pulse Counter 1 | basic |
| Set Counter 01 Value | | | |
| **102** | **Set Pulse Counter 2** | Pulse Counter | Pulse Counter 2 | basic |
| Set Counter 11 Value | | | |
| **103** | **Set Pulse Counter 3** | Pulse Counter | Pulse Counter 3 | basic |
| Set Counter 21 Value | | | |
| **104** | **Set Pulse Counter 4** | Pulse Counter | Pulse Counter 4 | basic |
| Set Counter 31 Value | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### ADIO 10

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| **Device Information** | |
| **Name** | ADIO 10 |
| **Short Description** | Standard I/O module DC systems used as standard IO module |
| **Long Description** | I/O module with 2 inputs for temperature measurement, 4 voltage measurements, 2 current measurements, 8 digital inputs and 8 relays |
| **Hardware Reference** | 9413 060 05101 |
| **Software Reference** | SOFT 000099 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

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| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **71** | **Digital Input 1** | Digital Inputs | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **72** | **Digital Input 2** | Digital Inputs | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **73** | **Digital Input 3** | Digital Inputs | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **74** | **Digital Input 4** | Digital Inputs | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **75** | **Digital Input 5** | Digital Inputs | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **76** | **Digital Input 6** | Digital Inputs | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **77** | **Digital Input 7** | Digital Inputs | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **78** | **Digital Input 8** | Digital Inputs | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Temperature 1** | Temperature Sensors | Temperature 1 | degree C | basic |
| Temperature Measurement 1 | | | | |
| **2** | **Temperature 2** | Temperature Sensors | Temperature 2 | degree C | basic |
| Temperature Measurement 2 | | | | |
| **71** | **Shunt 1** | Current Sensors | Shunt 1 | Ampere | basic |
| Shunt Measurement 1 | | | | |
| **72** | **Shunt 2** | Current Sensors | Shunt 2 | Ampere | basic |
| Shunt Measurement 2 | | | | |
| **91** | **Voltage 1** | Voltage Sensors | Voltage 1 | Volt | basic |
| Voltage Measurement 1 | | | | |
| **92** | **Voltage 2** | Voltage Sensors | Voltage 2 | Volt | basic |
| Voltage Measurement 2 | | | | |
| **93** | **Voltage 3** | Voltage Sensors | Voltage 3 | Volt | basic |
| Voltage Measurement 3 | | | | |
| **94** | **Voltage 4** | Voltage Sensors | Voltage 4 | Volt | basic |
| Voltage Measurement 4 | | | | |
| **121** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay | | | | |
| **123** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay | | | | |
| **125** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay | | | | |
| **127** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay | | | | |
| **129** | **Relay 5 State** | Relays | Relay 5 |  | basic |
| Actual state of the Relay | | | | |
| **131** | **Relay 6 State** | Relays | Relay 6 |  | basic |
| Actual state of the Relay | | | | |
| **133** | **Relay 7 State** | Relays | Relay 7 |  | basic |
| Actual state of the Relay | | | | |
| **135** | **Relay 8 State** | Relays | Relay 8 |  | basic |
| Actual state of the Relay | | | | |

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| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **41** | **Shunt 1 Rating At 60mV** | Battery |  | Ampere |  | basic |
| The rating of the shunt 1 at 60mV. | | | | | |
| **42** | **Shunt 2 Rating At 60mV** | Battery |  | Ampere |  | basic |
| The rating of the shunt 2 at 60mV. | | | | | |
| **71** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Inputs | basic |
| The name of the digital input 1. | | | | | |
| **72** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **73** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Inputs | basic |
| The name of the digital input 2. | | | | | |
| **74** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **75** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Inputs | basic |
| The name of the digital input 3. | | | | | |
| **76** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **77** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Inputs | basic |
| The name of the digital input 4. | | | | | |
| **78** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **79** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Inputs | basic |
| The name of the digital input 5. | | | | | |
| **80** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **81** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Inputs | basic |
| The name of the digital input 6. | | | | | |
| **82** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **83** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Inputs | basic |
| The name of the digital input 7. | | | | | |
| **84** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **85** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Inputs | basic |
| The name of the digital input 8. | | | | | |
| **86** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **121** | **Relay 1 Change State Boolan Condition** | Relays | Relay 1 |  | (False) | basic |
| Relay 1 Boolean Condition | | | | | |
| **122** | **Relay 1 Normal State** | Relays | Relay 1 |  | (Energized / De-energized) | basic |
| Relay 1 Normal State | | | | | |
| **123** | **Relay 2 Change State Boolan Condition** | Relays | Relay 2 |  | (False) | basic |
| Relay 2 Boolean Condition | | | | | |
| **124** | **Relay 2 Normal State** | Relays | Relay 2 |  | (Energized / De-energized) | basic |
| Relay 2 Normal State | | | | | |
| **125** | **Relay 3 Change State Boolan Condition** | Relays | Relay 3 |  | (False) | basic |
| Relay 3 Boolean Condition | | | | | |
| **126** | **Relay 3 Normal State** | Relays | Relay 3 |  | (Energized / De-energized) | basic |
| Relay 3 Normal State | | | | | |
| **127** | **Relay 4 Change State Boolan Condition** | Relays | Relay 4 |  | (False) | basic |
| Relay 4 Boolean Condition | | | | | |
| **128** | **Relay 4 Normal State** | Relays | Relay 4 |  | (Energized / De-energized) | basic |
| Relay 4 Normal State | | | | | |
| **129** | **Relay 5 Change State Boolan Condition** | Relays | Relay 5 |  | (False) | basic |
| Relay 5 Boolean Condition | | | | | |
| **130** | **Relay 5 Normal State** | Relays | Relay 5 |  | (Energized / De-energized) | basic |
| Relay 5 Normal State | | | | | |
| **131** | **Relay 6 Change State Boolan Condition** | Relays | Relay 6 |  | (False) | basic |
| Relay 6 Boolean Condition | | | | | |
| **132** | **Relay 6 Normal State** | Relays | Relay 6 |  | (Energized / De-energized) | basic |
| Relay 6 Normal State | | | | | |
| **133** | **Relay 7 Change State Boolan Condition** | Relays | Relay 7 |  | (False) | basic |
| Relay 7 Boolean Condition | | | | | |
| **134** | **Relay 7 Normal State** | Relays | Relay 7 |  | (Energized / De-energized) | basic |
| Relay 7 Normal State | | | | | |
| **135** | **Relay 8 Change State Boolan Condition** | Relays | Relay 8 |  | (False) | basic |
| Relay 8 Boolean Condition | | | | | |
| **136** | **Relay 8 Normal State** | Relays | Relay 8 |  | (Energized / De-energized) | basic |
| Relay 8 Normal State | | | | | |
| **137** | **Default Digital Output Binary Vector** | Relays |  |  | (0b00000000) | basic |
| This configuration is stored inside the module in case of configuration failure | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **11** | **Calibrate V1** | Calibration |  | basic |
|  | | | |
| **12** | **Calibrate V2** | Calibration |  | basic |
|  | | | |
| **13** | **Calibrate V3** | Calibration |  | basic |
|  | | | |
| **14** | **Calibrate V4** | Calibration |  | basic |
|  | | | |
| **121** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay | | | |
| **123** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay | | | |
| **125** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay | | | |
| **127** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay | | | |
| **129** | **Invert Relay 5 State For X Seconds** | Relays | Relay 5 | basic |
| Generate Pulse on relay | | | |
| **131** | **Invert Relay 6 State For X Seconds** | Relays | Relay 6 | basic |
| Generate Pulse on relay | | | |
| **133** | **Invert Relay 7 State For X Seconds** | Relays | Relay 7 | basic |
| Generate Pulse on relay | | | |
| **135** | **Invert Relay 8 State For X Seconds** | Relays | Relay 8 | basic |
| Generate Pulse on relay | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### ADIO 12

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | ADIO 12 |
| **Short Description** | ADIO Module |
| **Long Description** |  |
| **Hardware Reference** | 9413 060 05121 |
| **Software Reference** | SOFT 000121 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Temperature 1** | Temperature Sensors | Temperature 1 | degree C | basic |
| Temperature Measurement 01 | | | | |
| **2** | **Temperature 2** | Temperature Sensors | Temperature 2 | degree C | basic |
| Temperature Measurement 11 | | | | |
| **71** | **Shunt 1** | Current Sensors | Shunt 1 | Ampere | basic |
| Shunt Measurement 1 | | | | |
| **72** | **Shunt 2** | Current Sensors | Shunt 2 | Ampere | basic |
| Shunt Measurement 2 | | | | |
| **73** | **Shunt 3** | Current Sensors | Shunt 3 | Ampere | basic |
| Shunt Measurement 3 | | | | |
| **74** | **Shunt 4** | Current Sensors | Shunt 4 | Ampere | basic |
| Shunt Measurement 4 | | | | |
| **75** | **Shunt 5** | Current Sensors | Shunt 5 | Ampere | basic |
| Shunt Measurement 5 | | | | |
| **76** | **Shunt 6** | Current Sensors | Shunt 6 | Ampere | basic |
| Shunt Measurement 6 | | | | |
| **77** | **Shunt 7** | Current Sensors | Shunt 7 | Ampere | basic |
| Shunt Measurement 7 | | | | |
| **78** | **Shunt 8** | Current Sensors | Shunt 8 | Ampere | basic |
| Shunt Measurement 8 | | | | |
| **91** | **Voltage 1** | Voltage Sensors | Voltage 1 | Volt | basic |
| Voltage Measurement 01 | | | | |
| **92** | **Voltage 2** | Voltage Sensors | Voltage 2 | Volt | basic |
| Voltage Measurement 11 | | | | |
| **93** | **Voltage 3** | Voltage Sensors | Voltage 3 | Volt | basic |
| Voltage Measurement 21 | | | | |
| **94** | **Voltage 4** | Voltage Sensors | Voltage 4 | Volt | basic |
| Voltage Measurement 31 | | | | |
| **121** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay | | | | |
| **123** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay | | | | |
| **125** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay | | | | |
| **127** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay | | | | |
| **129** | **Relay 5 State** | Relays | Relay 5 |  | basic |
| Actual state of the Relay | | | | |
| **131** | **Relay 6 State** | Relays | Relay 6 |  | basic |
| Actual state of the Relay | | | | |
| **133** | **Relay 7 State** | Relays | Relay 7 |  | basic |
| Actual state of the Relay | | | | |
| **135** | **Relay 8 State** | Relays | Relay 8 |  | basic |
| Actual state of the Relay | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **41** | **Shunt 1 Rating At 60mV** | Current Sensors | Shunt 1 | Ampere |  | basic |
| The rating of the shunt 1 at 60mV. | | | | | |
| **42** | **Shunt 2 Rating At 60mV** | Current Sensors | Shunt 2 | Ampere |  | basic |
| The rating of the shunt 2 at 60mV. | | | | | |
| **43** | **Shunt 3 Rating At 60mV** | Current Sensors | Shunt 3 | Ampere |  | basic |
| The rating of the shunt 3 at 60mV. | | | | | |
| **44** | **Shunt 4 Rating At 60mV** | Current Sensors | Shunt 4 | Ampere |  | basic |
| The rating of the shunt 4 at 60mV. | | | | | |
| **45** | **Shunt 5 Rating At 60mV** | Current Sensors | Shunt 5 | Ampere |  | basic |
| The rating of the shunt 5 at 60mV. | | | | | |
| **46** | **Shunt 6 Rating At 60mV** | Current Sensors | Shunt 6 | Ampere |  | basic |
| The rating of the shunt 6 at 60mV. | | | | | |
| **47** | **Shunt 7 Rating At 60mV** | Current Sensors | Shunt 7 | Ampere |  | basic |
| The rating of the shunt 7 at 60mV. | | | | | |
| **48** | **Shunt 8 Rating At 60mV** | Current Sensors | Shunt 8 | Ampere |  | basic |
| The rating of the shunt 8 at 60mV. | | | | | |
| **121** | **Relay 1 Change State Boolan Condition** | Relays | Relay 1 |  | (False) | basic |
| Relay 1 Boolean Condition | | | | | |
| **122** | **Relay 1 Normal State** | Relays | Relay 1 |  | (Energized / De-energized) | basic |
| Relay 1 Normal State | | | | | |
| **123** | **Relay 2 Change State Boolan Condition** | Relays | Relay 2 |  | (False) | basic |
| Relay 2 Boolean Condition | | | | | |
| **124** | **Relay 2 Normal State** | Relays | Relay 2 |  | (Energized / De-energized) | basic |
| Relay 2 Normal State | | | | | |
| **125** | **Relay 3 Change State Boolan Condition** | Relays | Relay 3 |  | (False) | basic |
| Relay 3 Boolean Condition | | | | | |
| **126** | **Relay 3 Normal State** | Relays | Relay 3 |  | (Energized / De-energized) | basic |
| Relay 3 Normal State | | | | | |
| **127** | **Relay 4 Change State Boolan Condition** | Relays | Relay 4 |  | (False) | basic |
| Relay 4 Boolean Condition | | | | | |
| **128** | **Relay 4 Normal State** | Relays | Relay 4 |  | (Energized / De-energized) | basic |
| Relay 4 Normal State | | | | | |
| **129** | **Relay 5 Change State Boolan Condition** | Relays | Relay 5 |  | (False) | basic |
| Relay 5 Boolean Condition | | | | | |
| **130** | **Relay 5 Normal State** | Relays | Relay 5 |  | (Energized / De-energized) | basic |
| Relay 5 Normal State | | | | | |
| **131** | **Relay 6 Change State Boolan Condition** | Relays | Relay 6 |  | (False) | basic |
| Relay 6 Boolean Condition | | | | | |
| **132** | **Relay 6 Normal State** | Relays | Relay 6 |  | (Energized / De-energized) | basic |
| Relay 6 Normal State | | | | | |
| **133** | **Relay 7 Change State Boolan Condition** | Relays | Relay 7 |  | (False) | basic |
| Relay 7 Boolean Condition | | | | | |
| **134** | **Relay 7 Normal State** | Relays | Relay 7 |  | (Energized / De-energized) | basic |
| Relay 7 Normal State | | | | | |
| **135** | **Relay 8 Change State Boolan Condition** | Relays | Relay 8 |  | (False) | basic |
| Relay 8 Boolean Condition | | | | | |
| **136** | **Relay 8 Normal State** | Relays | Relay 8 |  | (Energized / De-energized) | basic |
| Relay 8 Normal State | | | | | |
| **137** | **Default Digital Output Binary Vector** | Relays | General |  | (0b00000000) | basic |
| This configuration is stored inside the module in case of configuration failure | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **101** | **Set Pulse Counter 1** | Pulse Counter |  | basic |
| Set Counter 1 Value | | | |
| **102** | **Set Pulse Counter 2** | Pulse Counter |  | basic |
| Set Counter 2 Value | | | |
| **103** | **Set Pulse Counter 3** | Pulse Counter |  | basic |
| Set Counter 3 Value | | | |
| **104** | **Set Pulse Counter 4** | Pulse Counter |  | basic |
| Set Counter 4 Value | | | |
| **105** | **Set Pulse Counter 5** | Pulse Counter |  | basic |
| Set Counter 5 Value | | | |
| **106** | **Set Pulse Counter 6** | Pulse Counter |  | basic |
| Set Counter 6 Value | | | |
| **107** | **Set Pulse Counter 7** | Pulse Counter |  | basic |
| Set Counter 7 Value | | | |
| **108** | **Set Pulse Counter 8** | Pulse Counter |  | basic |
| Set Counter 8 Value | | | |
| **121** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay | | | |
| **123** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay | | | |
| **125** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay | | | |
| **127** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay | | | |
| **129** | **Invert Relay 5 State For X Seconds** | Relays | Relay 5 | basic |
| Generate Pulse on relay | | | |
| **131** | **Invert Relay 6 State For X Seconds** | Relays | Relay 6 | basic |
| Generate Pulse on relay | | | |
| **133** | **Invert Relay 7 State For X Seconds** | Relays | Relay 7 | basic |
| Generate Pulse on relay | | | |
| **135** | **Invert Relay 8 State For X Seconds** | Relays | Relay 8 | basic |
| Generate Pulse on relay | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### ADIO 13

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| --- | --- |
| **Device Information** | |
| **Name** | ADIO 13 |
| **Short Description** | ADIO Module |
| **Long Description** |  |
| **Hardware Reference** | 9413 060 05131 |
| **Software Reference** | SOFT 000122 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **11** | **Hybrid Power** | Hybrid |  | Watt | basic |
| The Output Power | | | | |
| **71** | **Shunt 1** | Current Sensors | Shunt 1 | Ampere | basic |
| Shunt Measurement 1 | | | | |
| **72** | **Shunt 2** | Current Sensors | Shunt 2 | Ampere | basic |
| Shunt Measurement 2 | | | | |
| **91** | **Voltage 1** | Voltage Sensors | Voltage 1 | Volt | basic |
| Voltage Measurement 1 | | | | |
| **201** | **Wind Direction** | Wind Sensor |  | degree | basic |
| The wind direction | | | | |
| **202** | **Wind Speed** | Wind Sensor |  |  | basic |
| The wind speed | | | | |
| **203** | **Wind Sensor Status** | Wind Sensor |  |  | basic |
| The wind sensor status | | | | |
| **301** | **MPPT GlobalSet Point** | Hybrid |  | Watt | basic |
|  | | | | |
| **310** | **MPPT Value 1** | Hybrid |  | Volt | basic |
|  | | | | |
| **311** | **MPPT Value 2** | Hybrid |  | Volt | basic |
|  | | | | |
| **312** | **MPPT Value 3** | Hybrid |  | Volt | basic |
|  | | | | |
| **313** | **MPPT Value 4** | Hybrid |  | Volt | basic |
|  | | | | |
| **314** | **MPPT Value 5** | Hybrid |  | Volt | basic |
|  | | | | |
| **315** | **MPPT Value 6** | Hybrid |  | Volt | basic |
|  | | | | |
| **316** | **MPPT Value 7** | Hybrid |  | Volt | basic |
|  | | | | |
| **317** | **MPPT Value 8** | Hybrid |  | Volt | basic |
|  | | | | |
| **318** | **MPPT Value 9** | Hybrid |  | Volt | basic |
|  | | | | |
| **319** | **MPPT Value 10** | Hybrid |  | Volt | basic |
|  | | | | |
| **320** | **MPPT Value 11** | Hybrid |  | Volt | basic |
|  | | | | |
| **321** | **MPPT Value 12** | Hybrid |  | Volt | basic |
|  | | | | |
| **322** | **MPPT Value 13** | Hybrid |  | Volt | basic |
|  | | | | |
| **323** | **MPPT Value 14** | Hybrid |  | Volt | basic |
|  | | | | |
| **324** | **MPPT Value 15** | Hybrid |  | Volt | basic |
|  | | | | |
| **325** | **MPPT Value 16** | Hybrid |  | Volt | basic |
|  | | | | |
| **326** | **MPPT Value 17** | Hybrid |  | Volt | basic |
|  | | | | |
| **327** | **MPPT Value 18** | Hybrid |  | Volt | basic |
|  | | | | |
| **328** | **MPPT Value 19** | Hybrid |  | Volt | basic |
|  | | | | |
| **329** | **MPPT Value 20** | Hybrid |  | Volt | basic |
|  | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **41** | **Shunt 1 Rating At 60mV** | Current Sensors |  | Ampere |  | basic |
| The rating of the shunt 1 at 60mV. | | | | | |
| **42** | **Shunt 2 Rating At 60mV** | Current Sensors |  | Ampere |  | basic |
| The rating of the shunt 2 at 60mV. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### ADIO SP0151

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| **Device Information** | |
| **Name** | ADIO SP0151 |
| **Short Description** | Standard I/O module : 6 digital inputs, 6 voltages |
| **Long Description** | I/O module with 6 digital inputs, 6 voltage measurements (0-3.6Vrms) |
| **Hardware Reference** | 9413 001 51001 |
| **Software Reference** | SOFT 000119 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

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| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **20** | **TC 1 Reference** | Track Circuits | Track Circuit 1 | basic |
| The name of the track circuit. TCx by default. | | | |
| **21** | **TC 1 Frequency** | Track Circuits | Track Circuit 1 | basic |
| The frequency of the track circuit. | | | |
| **22** | **TC 1 Code** | Track Circuits | Track Circuit 1 | basic |
| The coding of the track circuit (AB,CD or EF) | | | |
| **23** | **TC1 Length** | Track Circuits | Track Circuit 1 | basic |
| The length of the track circuit | | | |
| **40** | **TC 2 Reference** | Track Circuits | Track Circuit 2 | basic |
| The name of the track circuit. TCx by default. | | | |
| **41** | **TC 2 Frequency** | Track Circuits | Track Circuit 2 | basic |
| The frequency of the track circuit. | | | |
| **42** | **TC 2 Code** | Track Circuits | Track Circuit 2 | basic |
| The coding of the track circuit (AB,CD or EF) | | | |
| **43** | **TC2 Length** | Track Circuits | Track Circuit 2 | basic |
| The length of the track circuit | | | |
| **60** | **TC 3 Reference** | Track Circuits | Track Circuit 3 | basic |
| The name of the track circuit. TCx by default. | | | |
| **61** | **TC 3 Frequency** | Track Circuits | Track Circuit 3 | basic |
| The frequency of the track circuit. | | | |
| **62** | **TC 3 Code** | Track Circuits | Track Circuit 3 | basic |
| The coding of the track circuit (AB,CD or EF) | | | |
| **63** | **TC3 Length** | Track Circuits | Track Circuit 3 | basic |
| The length of the track circuit | | | |
| **80** | **TC 4 Reference** | Track Circuits | Track Circuit 4 | basic |
| The name of the track circuit. TCx by default. | | | |
| **81** | **TC 4 Frequency** | Track Circuits | Track Circuit 4 | basic |
| The frequency of the track circuit. | | | |
| **82** | **TC 4 Code** | Track Circuits | Track Circuit 4 | basic |
| The coding of the track circuit (AB,CD or EF) | | | |
| **83** | **TC4 Length** | Track Circuits | Track Circuit 4 | basic |
| The length of the track circuit | | | |
| **100** | **TC 5 Reference** | Track Circuits | Track Circuit 5 | basic |
| The name of the track circuit. TCx by default. | | | |
| **101** | **TC 5 Frequency** | Track Circuits | Track Circuit 5 | basic |
| The frequency of the track circuit. | | | |
| **102** | **TC 5 Code** | Track Circuits | Track Circuit 5 | basic |
| The coding of the track circuit (AB,CD or EF) | | | |
| **103** | **TC5 Length** | Track Circuits | Track Circuit 5 | basic |
| The length of the track circuit | | | |
| **120** | **TC 6 Reference** | Track Circuits | Track Circuit 6 | basic |
| The name of the track circuit. TCx by default. | | | |
| **121** | **TC 6 Frequency** | Track Circuits | Track Circuit 6 | basic |
| The frequency of the track circuit. | | | |
| **122** | **TC 6 Code** | Track Circuits | Track Circuit 6 | basic |
| The coding of the track circuit (AB,CD or EF) | | | |
| **123** | **TC6 Length** | Track Circuits | Track Circuit 6 | basic |
| The length of the track circuit | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **20** | **TC 1 Tx Alarm** | Track Circuits | Track Circuit 1 | major (0) | 5 / 2 |
| The Tx alarm | | | | |
| **21** | **TC 1 Rx Alarm A** | Track Circuits | Track Circuit 1 | major (0) | 5 / 2 |
| Level A Rx Alarm | | | | |
| **22** | **TC 1 Rx Alarm B** | Track Circuits | Track Circuit 1 | minor (0) | 5 / 2 |
| Level B Rx Alarm | | | | |
| **23** | **TC 1 Rx Alarm C** | Track Circuits | Track Circuit 1 | major (0) | 5 / 2 |
| Level C Rx Alarm | | | | |
| **24** | **TC 1 Rx Alarm D** | Track Circuits | Track Circuit 1 | warning (0) | 5 / 2 |
| Level D Rx Alarm | | | | |
| **40** | **TC 2 Tx Alarm** | Track Circuits | Track Circuit 2 | major (0) | 5 / 2 |
| The Tx alarm | | | | |
| **41** | **TC 2 Rx Alarm A** | Track Circuits | Track Circuit 2 | major (0) | 5 / 2 |
| Level A Rx Alarm | | | | |
| **42** | **TC 2 Rx Alarm B** | Track Circuits | Track Circuit 2 | minor (0) | 5 / 2 |
| Level B Rx Alarm | | | | |
| **43** | **TC 2 Rx Alarm C** | Track Circuits | Track Circuit 2 | major (0) | 5 / 2 |
| Level C Rx Alarm | | | | |
| **44** | **TC 2 Rx Alarm D** | Track Circuits | Track Circuit 2 | warning (0) | 5 / 2 |
| Level D Rx Alarm | | | | |
| **60** | **TC 3 Tx Alarm** | Track Circuits | Track Circuit 3 | major (0) | 5 / 2 |
| The Tx alarm | | | | |
| **61** | **TC 3 Rx Alarm A** | Track Circuits | Track Circuit 3 | major (0) | 5 / 2 |
| Level A Rx Alarm | | | | |
| **62** | **TC 3 Rx Alarm B** | Track Circuits | Track Circuit 3 | minor (0) | 5 / 2 |
| Level B Rx Alarm | | | | |
| **63** | **TC 3 Rx Alarm C** | Track Circuits | Track Circuit 3 | major (0) | 5 / 2 |
| Level C Rx Alarm | | | | |
| **64** | **TC 3 Rx Alarm D** | Track Circuits | Track Circuit 3 | warning (0) | 5 / 2 |
| Level D Rx Alarm | | | | |
| **80** | **TC 4 Tx Alarm** | Track Circuits | Track Circuit 4 | major (0) | 5 / 2 |
| The Tx alarm | | | | |
| **81** | **TC 4 Rx Alarm A** | Track Circuits | Track Circuit 4 | major (0) | 5 / 2 |
| Level A Rx Alarm | | | | |
| **82** | **TC 4 Rx Alarm B** | Track Circuits | Track Circuit 4 | minor (0) | 5 / 2 |
| Level B Rx Alarm | | | | |
| **83** | **TC 4 Rx Alarm C** | Track Circuits | Track Circuit 4 | major (0) | 5 / 2 |
| Level C Rx Alarm | | | | |
| **84** | **TC 4 Rx Alarm D** | Track Circuits | Track Circuit 4 | warning (0) | 5 / 2 |
| Level D Rx Alarm | | | | |
| **100** | **TC 5 Tx Alarm** | Track Circuits | Track Circuit 5 | major (0) | 5 / 2 |
| The Tx alarm | | | | |
| **101** | **TC 5 Rx Alarm A** | Track Circuits | Track Circuit 5 | major (0) | 5 / 2 |
| Level A Rx Alarm | | | | |
| **102** | **TC 5 Rx Alarm B** | Track Circuits | Track Circuit 5 | minor (0) | 5 / 2 |
| Level B Rx Alarm | | | | |
| **103** | **TC 5 Rx Alarm C** | Track Circuits | Track Circuit 5 | major (0) | 5 / 2 |
| Level C Rx Alarm | | | | |
| **104** | **TC 5 Rx Alarm D** | Track Circuits | Track Circuit 5 | warning (0) | 5 / 2 |
| Level D Rx Alarm | | | | |
| **120** | **TC 6 Tx Alarm** | Track Circuits | Track Circuit 6 | major (0) | 5 / 2 |
| The Tx alarm | | | | |
| **121** | **TC 6 Rx Alarm A** | Track Circuits | Track Circuit 6 | major (0) | 5 / 2 |
| Level A Rx Alarm | | | | |
| **122** | **TC 6 Rx Alarm B** | Track Circuits | Track Circuit 6 | minor (0) | 5 / 2 |
| Level B Rx Alarm | | | | |
| **123** | **TC 6 Rx Alarm C** | Track Circuits | Track Circuit 6 | major (0) | 5 / 2 |
| Level C Rx Alarm | | | | |
| **124** | **TC 6 Rx Alarm D** | Track Circuits | Track Circuit 6 | warning (0) | 5 / 2 |
| Level D Rx Alarm | | | | |

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| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **20** | **TC 1 Rx Voltage** | Track Circuits | Track Circuit 1 | mVolt | basic |
| The actual measured voltage, on RX | | | | |
| **21** | **TC 1 Tx Level** | Track Circuits | Track Circuit 1 |  | basic |
| The state of the TX, 1 or 0 | | | | |
| **22** | **Status** | Track Circuits | Track Circuit 1 |  | basic |
| --, Free or Occupied | | | | |
| **40** | **TC 2 Rx Voltage** | Track Circuits | Track Circuit 2 | mVolt | basic |
| The actual measured voltage, on RX | | | | |
| **41** | **TC 2 Tx Level** | Track Circuits | Track Circuit 2 |  | basic |
| The state of the TX, 1 or 0 | | | | |
| **42** | **Status** | Track Circuits | Track Circuit 2 |  | basic |
| --, Free or Occupied | | | | |
| **60** | **TC 3 Rx Voltage** | Track Circuits | Track Circuit 3 | mVolt | basic |
| The actual measured voltage, on RX | | | | |
| **61** | **TC 3 Tx Level** | Track Circuits | Track Circuit 3 |  | basic |
| The state of the TX, 1 or 0 | | | | |
| **62** | **Status** | Track Circuits | Track Circuit 3 |  | basic |
| --, Free or Occupied | | | | |
| **80** | **TC 4 Rx Voltage** | Track Circuits | Track Circuit 4 | mVolt | basic |
| The actual measured voltage, on RX | | | | |
| **81** | **TC 4 Tx Level** | Track Circuits | Track Circuit 4 |  | basic |
| The state of the TX, 1 or 0 | | | | |
| **82** | **Status** | Track Circuits | Track Circuit 4 |  | basic |
| --, Free or Occupied | | | | |
| **100** | **TC 5 Rx Voltage** | Track Circuits | Track Circuit 5 | mVolt | basic |
| The actual measured voltage, on RX | | | | |
| **101** | **TC 5 Tx Level** | Track Circuits | Track Circuit 5 |  | basic |
| The state of the TX, 1 or 0 | | | | |
| **102** | **Status** | Track Circuits | Track Circuit 5 |  | basic |
| --, Free or Occupied | | | | |
| **120** | **TC 6 Rx Voltage** | Track Circuits | Track Circuit 6 | mVolt | basic |
| The actual measured voltage, on RX | | | | |
| **121** | **TC 6 Tx Level** | Track Circuits | Track Circuit 6 |  | basic |
| The state of the TX, 1 or 0 | | | | |
| **122** | **Status** | Track Circuits | Track Circuit 6 |  | basic |
| --, Free or Occupied | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **Threshold Overvoltage (A)** | Track Circuits | Advanced | mVolt |  | basic |
|  | | | | | |
| **2** | **Threshold Critical (C)** | Track Circuits | Advanced | mVolt |  | basic |
|  | | | | | |
| **3** | **Threshold TC Busy** | Track Circuits | Advanced | mVolt |  | basic |
|  | | | | | |
| **20** | **Track Circuit Mode 1** | Track Circuits | Track Circuit 1 |  | Tx/Rx,Tx,Rx,Disabled | basic |
| Allows to select what is cabled and should be monitored by the controller | | | | | |
| **21** | **Track Circuit 1 Control Level Value** | Track Circuits | Track Circuit 1 | mVolt |  | basic |
| Control Level Value | | | | | |
| **22** | **Track Circuit 1 Integration Time** | Track Circuits | Track Circuit 1 | second |  | basic |
| Integration Time | | | | | |
| **23** | **Track Circuit 1 D Delay** | Track Circuits | Track Circuit 1 | minute |  | basic |
| TC Delay Time for TC Occupied Alarm (D) | | | | | |
| **24** | **Track Circuit 1 Link** | Track Circuits | Track Circuit 1 |  |  | basic |
| Allows to define a link between two TC. The relation is bidirectionnal. | | | | | |
| **28** | **Track Circuit 1 Status Enabled** | Track Circuits | Track Circuit 1 |  | True/False (True) | basic |
| Allows to enable the monitoring of TC status with ADIO7 | | | | | |
| **40** | **Track Circuit Mode 2** | Track Circuits | Track Circuit 2 |  | Tx/Rx,Tx,Rx,Disabled | basic |
| Allows to select what is cabled and should be monitored by the controller | | | | | |
| **41** | **Track Circuit 2 Control Level Value** | Track Circuits | Track Circuit 2 | mVolt |  | basic |
| Control Level Value | | | | | |
| **42** | **Track Circuit 2 Integration Time** | Track Circuits | Track Circuit 2 | second |  | basic |
| Integration Time | | | | | |
| **43** | **Track Circuit 2 D Delay** | Track Circuits | Track Circuit 2 | minute |  | basic |
| TC Delay Time for TC Occupied Alarm (D) | | | | | |
| **44** | **Track Circuit 2 Link** | Track Circuits | Track Circuit 2 |  |  | basic |
| Allows to define a link between two TC. The relation is bidirectionnal. | | | | | |
| **48** | **Track Circuit 2 Status Enabled** | Track Circuits | Track Circuit 2 |  | True/False (True) | basic |
| Allows to enable the monitoring of TC status with ADIO7 | | | | | |
| **60** | **Track Circuit Mode 3** | Track Circuits | Track Circuit 3 |  | Tx/Rx,Tx,Rx,Disabled | basic |
| Allows to select what is cabled and should be monitored by the controller | | | | | |
| **61** | **Track Circuit 3 Control Level Value** | Track Circuits | Track Circuit 3 | mVolt |  | basic |
| Control Level Value | | | | | |
| **62** | **Track Circuit 3 Integration Time** | Track Circuits | Track Circuit 3 | second |  | basic |
| Integration Time | | | | | |
| **63** | **Track Circuit 3 D Delay** | Track Circuits | Track Circuit 3 | minute |  | basic |
| TC Delay Time for TC Occupied Alarm (D) | | | | | |
| **64** | **Track Circuit 3 Link** | Track Circuits | Track Circuit 3 |  |  | basic |
| Allows to define a link between two TC. The relation is bidirectionnal. | | | | | |
| **68** | **Track Circuit 3 Status Enabled** | Track Circuits | Track Circuit 3 |  | True/False (True) | basic |
| Allows to enable the monitoring of TC status with ADIO7 | | | | | |
| **80** | **Track Circuit Mode 4** | Track Circuits | Track Circuit 4 |  | Tx/Rx,Tx,Rx,Disabled | basic |
| Allows to select what is cabled and should be monitored by the controller | | | | | |
| **81** | **Track Circuit 4 Control Level Value** | Track Circuits | Track Circuit 4 | mVolt |  | basic |
| Control Level Value | | | | | |
| **82** | **Track Circuit 4 Integration Time** | Track Circuits | Track Circuit 4 | second |  | basic |
| Integration Time | | | | | |
| **83** | **Track Circuit 4 D Delay** | Track Circuits | Track Circuit 4 | minute |  | basic |
| TC Delay Time for TC Occupied Alarm (D) | | | | | |
| **84** | **Track Circuit 4 Link** | Track Circuits | Track Circuit 4 |  |  | basic |
| Allows to define a link between two TC. The relation is bidirectionnal. | | | | | |
| **88** | **Track Circuit 4 Status Enabled** | Track Circuits | Track Circuit 4 |  | True/False (True) | basic |
| Allows to enable the monitoring of TC status with ADIO7 | | | | | |
| **100** | **Track Circuit Mode 5** | Track Circuits | Track Circuit 5 |  | Tx/Rx,Tx,Rx,Disabled | basic |
| Allows to select what is cabled and should be monitored by the controller | | | | | |
| **101** | **Track Circuit 5 Control Level Value** | Track Circuits | Track Circuit 5 | mVolt |  | basic |
| Control Level Value | | | | | |
| **102** | **Track Circuit 5 Integration Time** | Track Circuits | Track Circuit 5 | second |  | basic |
| Integration Time | | | | | |
| **103** | **Track Circuit 5 D Delay** | Track Circuits | Track Circuit 5 | minute |  | basic |
| TC Delay Time for TC Occupied Alarm (D) | | | | | |
| **104** | **Track Circuit 5 Link** | Track Circuits | Track Circuit 5 |  |  | basic |
| Allows to define a link between two TC. The relation is bidirectionnal. | | | | | |
| **108** | **Track Circuit 5 Status Enabled** | Track Circuits | Track Circuit 5 |  | True/False (True) | basic |
| Allows to enable the monitoring of TC status with ADIO7 | | | | | |
| **120** | **Track Circuit Mode 6** | Track Circuits | Track Circuit 6 |  | Tx/Rx,Tx,Rx,Disabled | basic |
| Allows to select what is cabled and should be monitored by the controller | | | | | |
| **121** | **Track Circuit 6 Control Level Value** | Track Circuits | Track Circuit 6 | mVolt |  | basic |
| Control Level Value | | | | | |
| **122** | **Track Circuit 6 Integration Time** | Track Circuits | Track Circuit 6 | second |  | basic |
| Integration Time | | | | | |
| **123** | **Track Circuit 6 D Delay** | Track Circuits | Track Circuit 6 | minute |  | basic |
| TC Delay Time for TC Occupied Alarm (D) | | | | | |
| **124** | **Track Circuit 6 Link** | Track Circuits | Track Circuit 6 |  |  | basic |
| Allows to define a link between two TC. The relation is bidirectionnal. | | | | | |
| **128** | **Track Circuit 6 Status Enabled** | Track Circuits | Track Circuit 6 |  | True/False (True) | basic |
| Allows to enable the monitoring of TC status with ADIO7 | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |
| **999** | **Test Emulate Changes** | Test |  | basic |
| Control used in development phase to test scenario | | | |

### ADIO SP0155/01

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | ADIO SP0155/01 |
| **Short Description** | I/O module : 32 Dig Inputs + 8 Relays |
| **Long Description** | I/O module with Standard I/O module : 32 Dig Inputs + 8 Relays |
| **Hardware Reference** | 9413 001 55011 |
| **Software Reference** | SOFT 000124 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **101** | **Digital Input 1** | Digital Inputs | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **102** | **Digital Input 2** | Digital Inputs | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **103** | **Digital Input 3** | Digital Inputs | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **104** | **Digital Input 4** | Digital Inputs | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **105** | **Digital Input 5** | Digital Inputs | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **106** | **Digital Input 6** | Digital Inputs | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **107** | **Digital Input 7** | Digital Inputs | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **108** | **Digital Input 8** | Digital Inputs | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |
| **109** | **Digital Input 9** | Digital Inputs | Digital Input 9 | warning (0) | 5 / 2 |
| The name of the digital input 9 alarm. | | | | |
| **110** | **Digital Input 10** | Digital Inputs | Digital Input 10 | warning (0) | 5 / 2 |
| The name of the digital input 10 alarm. | | | | |
| **111** | **Digital Input 11** | Digital Inputs | Digital Input 11 | warning (0) | 5 / 2 |
| The name of the digital input 11 alarm. | | | | |
| **112** | **Digital Input 12** | Digital Inputs | Digital Input 12 | warning (0) | 5 / 2 |
| The name of the digital input 12 alarm. | | | | |
| **113** | **Digital Input 13** | Digital Inputs | Digital Input 13 | warning (0) | 5 / 2 |
| The name of the digital input 13 alarm. | | | | |
| **114** | **Digital Input 14** | Digital Inputs | Digital Input 14 | warning (0) | 5 / 2 |
| The name of the digital input 14 alarm. | | | | |
| **115** | **Digital Input 15** | Digital Inputs | Digital Input 15 | warning (0) | 5 / 2 |
| The name of the digital input 15 alarm. | | | | |
| **116** | **Digital Input 16** | Digital Inputs | Digital Input 16 | warning (0) | 5 / 2 |
| The name of the digital input 16 alarm. | | | | |
| **117** | **Digital Input 17** | Digital Inputs | Digital Input 17 | warning (0) | 5 / 2 |
| The name of the digital input 17 alarm. | | | | |
| **118** | **Digital Input 18** | Digital Inputs | Digital Input 18 | warning (0) | 5 / 2 |
| The name of the digital input 18 alarm. | | | | |
| **119** | **Digital Input 19** | Digital Inputs | Digital Input 19 | warning (0) | 5 / 2 |
| The name of the digital input 19 alarm. | | | | |
| **120** | **Digital Input 20** | Digital Inputs | Digital Input 20 | warning (0) | 5 / 2 |
| The name of the digital input 20 alarm. | | | | |
| **121** | **Digital Input 21** | Digital Inputs | Digital Input 21 | warning (0) | 5 / 2 |
| The name of the digital input 21 alarm. | | | | |
| **122** | **Digital Input 22** | Digital Inputs | Digital Input 22 | warning (0) | 5 / 2 |
| The name of the digital input 22 alarm. | | | | |
| **123** | **Digital Input 23** | Digital Inputs | Digital Input 23 | warning (0) | 5 / 2 |
| The name of the digital input 23 alarm. | | | | |
| **124** | **Digital Input 24** | Digital Inputs | Digital Input 24 | warning (0) | 5 / 2 |
| The name of the digital input 24 alarm. | | | | |
| **125** | **Digital Input 25** | Digital Inputs | Digital Input 25 | warning (0) | 5 / 2 |
| The name of the digital input 25 alarm. | | | | |
| **126** | **Digital Input 26** | Digital Inputs | Digital Input 26 | warning (0) | 5 / 2 |
| The name of the digital input 26 alarm. | | | | |
| **127** | **Digital Input 27** | Digital Inputs | Digital Input 27 | warning (0) | 5 / 2 |
| The name of the digital input 27 alarm. | | | | |
| **128** | **Digital Input 28** | Digital Inputs | Digital Input 28 | warning (0) | 5 / 2 |
| The name of the digital input 28 alarm. | | | | |
| **129** | **Digital Input 29** | Digital Inputs | Digital Input 29 | warning (0) | 5 / 2 |
| The name of the digital input 29 alarm. | | | | |
| **130** | **Digital Input 30** | Digital Inputs | Digital Input 30 | warning (0) | 5 / 2 |
| The name of the digital input 30 alarm. | | | | |
| **131** | **Digital Input 31** | Digital Inputs | Digital Input 31 | warning (0) | 5 / 2 |
| The name of the digital input 31 alarm. | | | | |
| **132** | **Digital Input 32** | Digital Inputs | Digital Input 32 | warning (0) | 5 / 2 |
| The name of the digital input 32 alarm. | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **101** | **Digital Input 1 State** | Digital Inputs | Digital Input 1 |  | basic |
| The state of the digital input | | | | |
| **102** | **Digital Input 2 State** | Digital Inputs | Digital Input 2 |  | basic |
| The state of the digital input | | | | |
| **103** | **Digital Input 3 State** | Digital Inputs | Digital Input 3 |  | basic |
| The state of the digital input | | | | |
| **104** | **Digital Input 4 State** | Digital Inputs | Digital Input 4 |  | basic |
| The state of the digital input | | | | |
| **105** | **Digital Input 5 State** | Digital Inputs | Digital Input 5 |  | basic |
| The state of the digital input | | | | |
| **106** | **Digital Input 6 State** | Digital Inputs | Digital Input 6 |  | basic |
| The state of the digital input | | | | |
| **107** | **Digital Input 7 State** | Digital Inputs | Digital Input 7 |  | basic |
| The state of the digital input | | | | |
| **108** | **Digital Input 8 State** | Digital Inputs | Digital Input 8 |  | basic |
| The state of the digital input | | | | |
| **109** | **Digital Input 9 State** | Digital Inputs | Digital Input 9 |  | basic |
| The state of the digital input | | | | |
| **110** | **Digital Input 10 State** | Digital Inputs | Digital Input 10 |  | basic |
| The state of the digital input | | | | |
| **111** | **Digital Input 11 State** | Digital Inputs | Digital Input 11 |  | basic |
| The state of the digital input | | | | |
| **112** | **Digital Input 12 State** | Digital Inputs | Digital Input 12 |  | basic |
| The state of the digital input | | | | |
| **113** | **Digital Input 13 State** | Digital Inputs | Digital Input 13 |  | basic |
| The state of the digital input | | | | |
| **114** | **Digital Input 14 State** | Digital Inputs | Digital Input 14 |  | basic |
| The state of the digital input | | | | |
| **115** | **Digital Input 15 State** | Digital Inputs | Digital Input 15 |  | basic |
| The state of the digital input | | | | |
| **116** | **Digital Input 16 State** | Digital Inputs | Digital Input 16 |  | basic |
| The state of the digital input | | | | |
| **117** | **Digital Input 17 State** | Digital Inputs | Digital Input 17 |  | basic |
| The state of the digital input | | | | |
| **118** | **Digital Input 18 State** | Digital Inputs | Digital Input 18 |  | basic |
| The state of the digital input | | | | |
| **119** | **Digital Input 19 State** | Digital Inputs | Digital Input 19 |  | basic |
| The state of the digital input | | | | |
| **120** | **Digital Input 20 State** | Digital Inputs | Digital Input 20 |  | basic |
| The state of the digital input | | | | |
| **121** | **Digital Input 21 State** | Digital Inputs | Digital Input 21 |  | basic |
| The state of the digital input | | | | |
| **122** | **Digital Input 22 State** | Digital Inputs | Digital Input 22 |  | basic |
| The state of the digital input | | | | |
| **123** | **Digital Input 23 State** | Digital Inputs | Digital Input 23 |  | basic |
| The state of the digital input | | | | |
| **124** | **Digital Input 24 State** | Digital Inputs | Digital Input 24 |  | basic |
| The state of the digital input | | | | |
| **125** | **Digital Input 25 State** | Digital Inputs | Digital Input 25 |  | basic |
| The state of the digital input | | | | |
| **126** | **Digital Input 26 State** | Digital Inputs | Digital Input 26 |  | basic |
| The state of the digital input | | | | |
| **127** | **Digital Input 27 State** | Digital Inputs | Digital Input 27 |  | basic |
| The state of the digital input | | | | |
| **128** | **Digital Input 28 State** | Digital Inputs | Digital Input 28 |  | basic |
| The state of the digital input | | | | |
| **129** | **Digital Input 29 State** | Digital Inputs | Digital Input 29 |  | basic |
| The state of the digital input | | | | |
| **130** | **Digital Input 30 State** | Digital Inputs | Digital Input 30 |  | basic |
| The state of the digital input | | | | |
| **131** | **Digital Input 31 State** | Digital Inputs | Digital Input 31 |  | basic |
| The state of the digital input | | | | |
| **132** | **Digital Input 32 State** | Digital Inputs | Digital Input 32 |  | basic |
| The state of the digital input | | | | |
| **301** | **Relay 1 State** | Relays | Relay 1 |  | basic |
| Actual state of the Relay | | | | |
| **303** | **Relay 2 State** | Relays | Relay 2 |  | basic |
| Actual state of the Relay | | | | |
| **305** | **Relay 3 State** | Relays | Relay 3 |  | basic |
| Actual state of the Relay | | | | |
| **307** | **Relay 4 State** | Relays | Relay 4 |  | basic |
| Actual state of the Relay | | | | |
| **309** | **Relay 5 State** | Relays | Relay 5 |  | basic |
| Actual state of the Relay | | | | |
| **311** | **Relay 6 State** | Relays | Relay 6 |  | basic |
| Actual state of the Relay | | | | |
| **313** | **Relay 7 State** | Relays | Relay 7 |  | basic |
| Actual state of the Relay | | | | |
| **315** | **Relay 8 State** | Relays | Relay 8 |  | basic |
| Actual state of the Relay | | | | |

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| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **101** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Inputs | basic |
| The name of the digital input 1. | | | | | |
| **102** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **103** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Inputs | basic |
| The name of the digital input 2. | | | | | |
| **104** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **105** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Inputs | basic |
| The name of the digital input 3. | | | | | |
| **106** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **107** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Inputs | basic |
| The name of the digital input 4. | | | | | |
| **108** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **109** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Inputs | basic |
| The name of the digital input 5. | | | | | |
| **110** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **111** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Inputs | basic |
| The name of the digital input 6. | | | | | |
| **112** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **113** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Inputs | basic |
| The name of the digital input 7. | | | | | |
| **114** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **115** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Inputs | basic |
| The name of the digital input 8. | | | | | |
| **116** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **117** | **Digital Input 9 Name** | Digital Inputs | Digital Input 9 |  | Digital Inputs | basic |
| The name of the digital input 9. | | | | | |
| **118** | **Digital Input 9 Normally Closed** | Digital Inputs | Digital Input 9 |  | True/False (True) | basic |
| True/False value defining if the digital input 9 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **119** | **Digital Input 10 Name** | Digital Inputs | Digital Input 10 |  | Digital Inputs | basic |
| The name of the digital input 10. | | | | | |
| **120** | **Digital Input 10 Normally Closed** | Digital Inputs | Digital Input 10 |  | True/False (True) | basic |
| True/False value defining if the digital input 10 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **121** | **Digital Input 11 Name** | Digital Inputs | Digital Input 11 |  | Digital Inputs | basic |
| The name of the digital input 11. | | | | | |
| **122** | **Digital Input 11 Normally Closed** | Digital Inputs | Digital Input 11 |  | True/False (True) | basic |
| True/False value defining if the digital input 11 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **123** | **Digital Input 12 Name** | Digital Inputs | Digital Input 12 |  | Digital Inputs | basic |
| The name of the digital input 12. | | | | | |
| **124** | **Digital Input 12 Normally Closed** | Digital Inputs | Digital Input 12 |  | True/False (True) | basic |
| True/False value defining if the digital input 12 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **125** | **Digital Input 13 Name** | Digital Inputs | Digital Input 13 |  | Digital Inputs | basic |
| The name of the digital input 13. | | | | | |
| **126** | **Digital Input 13 Normally Closed** | Digital Inputs | Digital Input 13 |  | True/False (True) | basic |
| True/False value defining if the digital input 13 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **127** | **Digital Input 14 Name** | Digital Inputs | Digital Input 14 |  | Digital Inputs | basic |
| The name of the digital input 14. | | | | | |
| **128** | **Digital Input 14 Normally Closed** | Digital Inputs | Digital Input 14 |  | True/False (True) | basic |
| True/False value defining if the digital input 14 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **129** | **Digital Input 15 Name** | Digital Inputs | Digital Input 15 |  | Digital Inputs | basic |
| The name of the digital input 15. | | | | | |
| **130** | **Digital Input 15 Normally Closed** | Digital Inputs | Digital Input 15 |  | True/False (True) | basic |
| True/False value defining if the digital input 15 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **131** | **Digital Input 16 Name** | Digital Inputs | Digital Input 16 |  | Digital Inputs | basic |
| The name of the digital input 16. | | | | | |
| **132** | **Digital Input 16 Normally Closed** | Digital Inputs | Digital Input 16 |  | True/False (True) | basic |
| True/False value defining if the digital input 16 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **133** | **Digital Input 17 Name** | Digital Inputs | Digital Input 17 |  | Digital Inputs | basic |
| The name of the digital input 17. | | | | | |
| **134** | **Digital Input 17 Normally Closed** | Digital Inputs | Digital Input 17 |  | True/False (True) | basic |
| True/False value defining if the digital input 17 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **135** | **Digital Input 18 Name** | Digital Inputs | Digital Input 18 |  | Digital Inputs | basic |
| The name of the digital input 18. | | | | | |
| **136** | **Digital Input 18 Normally Closed** | Digital Inputs | Digital Input 18 |  | True/False (True) | basic |
| True/False value defining if the digital input 18 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **137** | **Digital Input 19 Name** | Digital Inputs | Digital Input 19 |  | Digital Inputs | basic |
| The name of the digital input 19. | | | | | |
| **138** | **Digital Input 19 Normally Closed** | Digital Inputs | Digital Input 19 |  | True/False (True) | basic |
| True/False value defining if the digital input 19 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **139** | **Digital Input 20 Name** | Digital Inputs | Digital Input 20 |  | Digital Inputs | basic |
| The name of the digital input 20. | | | | | |
| **140** | **Digital Input 20 Normally Closed** | Digital Inputs | Digital Input 20 |  | True/False (True) | basic |
| True/False value defining if the digital input 20 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **141** | **Digital Input 21 Name** | Digital Inputs | Digital Input 21 |  | Digital Inputs | basic |
| The name of the digital input 21. | | | | | |
| **142** | **Digital Input 21 Normally Closed** | Digital Inputs | Digital Input 21 |  | True/False (True) | basic |
| True/False value defining if the digital input 21 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **143** | **Digital Input 22 Name** | Digital Inputs | Digital Input 22 |  | Digital Inputs | basic |
| The name of the digital input 22. | | | | | |
| **144** | **Digital Input 22 Normally Closed** | Digital Inputs | Digital Input 22 |  | True/False (True) | basic |
| True/False value defining if the digital input 22 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **145** | **Digital Input 23 Name** | Digital Inputs | Digital Input 23 |  | Digital Inputs | basic |
| The name of the digital input 23. | | | | | |
| **146** | **Digital Input 23 Normally Closed** | Digital Inputs | Digital Input 23 |  | True/False (True) | basic |
| True/False value defining if the digital input 23 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **147** | **Digital Input 24 Name** | Digital Inputs | Digital Input 24 |  | Digital Inputs | basic |
| The name of the digital input 24. | | | | | |
| **148** | **Digital Input 24 Normally Closed** | Digital Inputs | Digital Input 24 |  | True/False (True) | basic |
| True/False value defining if the digital input 24 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **149** | **Digital Input 25 Name** | Digital Inputs | Digital Input 25 |  | Digital Inputs | basic |
| The name of the digital input 25. | | | | | |
| **150** | **Digital Input 25 Normally Closed** | Digital Inputs | Digital Input 25 |  | True/False (True) | basic |
| True/False value defining if the digital input 25 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **151** | **Digital Input 26 Name** | Digital Inputs | Digital Input 26 |  | Digital Inputs | basic |
| The name of the digital input 26. | | | | | |
| **152** | **Digital Input 26 Normally Closed** | Digital Inputs | Digital Input 26 |  | True/False (True) | basic |
| True/False value defining if the digital input 26 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **153** | **Digital Input 27 Name** | Digital Inputs | Digital Input 27 |  | Digital Inputs | basic |
| The name of the digital input 27. | | | | | |
| **154** | **Digital Input 27 Normally Closed** | Digital Inputs | Digital Input 27 |  | True/False (True) | basic |
| True/False value defining if the digital input 27 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **155** | **Digital Input 28 Name** | Digital Inputs | Digital Input 28 |  | Digital Inputs | basic |
| The name of the digital input 28. | | | | | |
| **156** | **Digital Input 28 Normally Closed** | Digital Inputs | Digital Input 28 |  | True/False (True) | basic |
| True/False value defining if the digital input 28 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **157** | **Digital Input 29 Name** | Digital Inputs | Digital Input 29 |  | Digital Inputs | basic |
| The name of the digital input 29. | | | | | |
| **158** | **Digital Input 29 Normally Closed** | Digital Inputs | Digital Input 29 |  | True/False (True) | basic |
| True/False value defining if the digital input 29 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **159** | **Digital Input 30 Name** | Digital Inputs | Digital Input 30 |  | Digital Inputs | basic |
| The name of the digital input 30. | | | | | |
| **160** | **Digital Input 30 Normally Closed** | Digital Inputs | Digital Input 30 |  | True/False (True) | basic |
| True/False value defining if the digital input 30 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **161** | **Digital Input 31 Name** | Digital Inputs | Digital Input 31 |  | Digital Inputs | basic |
| The name of the digital input 31. | | | | | |
| **162** | **Digital Input 31 Normally Closed** | Digital Inputs | Digital Input 31 |  | True/False (True) | basic |
| True/False value defining if the digital input 31 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **163** | **Digital Input 32 Name** | Digital Inputs | Digital Input 32 |  | Digital Inputs | basic |
| The name of the digital input 32. | | | | | |
| **164** | **Digital Input 32 Normally Closed** | Digital Inputs | Digital Input 32 |  | True/False (True) | basic |
| True/False value defining if the digital input 32 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **200** | **Default Output Relay Binary Vector** | Relays |  |  | (0b11111111) | basic |
| This configuration is stored inside the module in case of communication failure | | | | | |
| **301** | **Relay 1 Change State Boolan Condition** | Relays | Relay 1 |  | (False) | basic |
| Relay 1 Boolean Condition | | | | | |
| **302** | **Relay 1 Normal State** | Relays | Relay 1 |  | (Energized / De-energized) | basic |
| Relay 1 Normal State | | | | | |
| **303** | **Relay 2 Change State Boolan Condition** | Relays | Relay 2 |  | (False) | basic |
| Relay 2 Boolean Condition | | | | | |
| **304** | **Relay 2 Normal State** | Relays | Relay 2 |  | (Energized / De-energized) | basic |
| Relay 2 Normal State | | | | | |
| **305** | **Relay 3 Change State Boolan Condition** | Relays | Relay 3 |  | (False) | basic |
| Relay 3 Boolean Condition | | | | | |
| **306** | **Relay 3 Normal State** | Relays | Relay 3 |  | (Energized / De-energized) | basic |
| Relay 3 Normal State | | | | | |
| **307** | **Relay 4 Change State Boolan Condition** | Relays | Relay 4 |  | (False) | basic |
| Relay 4 Boolean Condition | | | | | |
| **308** | **Relay 4 Normal State** | Relays | Relay 4 |  | (Energized / De-energized) | basic |
| Relay 4 Normal State | | | | | |
| **309** | **Relay 5 Change State Boolan Condition** | Relays | Relay 5 |  | (False) | basic |
| Relay 5 Boolean Condition | | | | | |
| **310** | **Relay 5 Normal State** | Relays | Relay 5 |  | (Energized / De-energized) | basic |
| Relay 5 Normal State | | | | | |
| **311** | **Relay 6 Change State Boolan Condition** | Relays | Relay 6 |  | (False) | basic |
| Relay 6 Boolean Condition | | | | | |
| **312** | **Relay 6 Normal State** | Relays | Relay 6 |  | (Energized / De-energized) | basic |
| Relay 6 Normal State | | | | | |
| **313** | **Relay 7 Change State Boolan Condition** | Relays | Relay 7 |  | (False) | basic |
| Relay 7 Boolean Condition | | | | | |
| **314** | **Relay 7 Normal State** | Relays | Relay 7 |  | (Energized / De-energized) | basic |
| Relay 7 Normal State | | | | | |
| **315** | **Relay 8 Change State Boolan Condition** | Relays | Relay 8 |  | (False) | basic |
| Relay 8 Boolean Condition | | | | | |
| **316** | **Relay 8 Normal State** | Relays | Relay 8 |  | (Energized / De-energized) | basic |
| Relay 8 Normal State | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **301** | **Invert Relay 1 State For X Seconds** | Relays | Relay 1 | basic |
| Generate Pulse on relay | | | |
| **303** | **Invert Relay 2 State For X Seconds** | Relays | Relay 2 | basic |
| Generate Pulse on relay | | | |
| **305** | **Invert Relay 3 State For X Seconds** | Relays | Relay 3 | basic |
| Generate Pulse on relay | | | |
| **307** | **Invert Relay 4 State For X Seconds** | Relays | Relay 4 | basic |
| Generate Pulse on relay | | | |
| **309** | **Invert Relay 5 State For X Seconds** | Relays | Relay 5 | basic |
| Generate Pulse on relay | | | |
| **311** | **Invert Relay 6 State For X Seconds** | Relays | Relay 6 | basic |
| Generate Pulse on relay | | | |
| **313** | **Invert Relay 7 State For X Seconds** | Relays | Relay 7 | basic |
| Generate Pulse on relay | | | |
| **315** | **Invert Relay 8 State For X Seconds** | Relays | Relay 8 | basic |
| Generate Pulse on relay | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### ADIO SP0155/02

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | ADIO SP0155/02 |
| **Short Description** | I/O module : 64 Dig Inputs |
| **Long Description** | I/O module with Standard I/O module : 64 Dig Inputs |
| **Hardware Reference** | 9413 001 55021 |
| **Software Reference** | SOFT 000125 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **101** | **Digital Input 1** | Digital Inputs | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **102** | **Digital Input 2** | Digital Inputs | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **103** | **Digital Input 3** | Digital Inputs | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **104** | **Digital Input 4** | Digital Inputs | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **105** | **Digital Input 5** | Digital Inputs | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **106** | **Digital Input 6** | Digital Inputs | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **107** | **Digital Input 7** | Digital Inputs | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **108** | **Digital Input 8** | Digital Inputs | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |
| **109** | **Digital Input 9** | Digital Inputs | Digital Input 9 | warning (0) | 5 / 2 |
| The name of the digital input 9 alarm. | | | | |
| **110** | **Digital Input 10** | Digital Inputs | Digital Input 10 | warning (0) | 5 / 2 |
| The name of the digital input 10 alarm. | | | | |
| **111** | **Digital Input 11** | Digital Inputs | Digital Input 11 | warning (0) | 5 / 2 |
| The name of the digital input 11 alarm. | | | | |
| **112** | **Digital Input 12** | Digital Inputs | Digital Input 12 | warning (0) | 5 / 2 |
| The name of the digital input 12 alarm. | | | | |
| **113** | **Digital Input 13** | Digital Inputs | Digital Input 13 | warning (0) | 5 / 2 |
| The name of the digital input 13 alarm. | | | | |
| **114** | **Digital Input 14** | Digital Inputs | Digital Input 14 | warning (0) | 5 / 2 |
| The name of the digital input 14 alarm. | | | | |
| **115** | **Digital Input 15** | Digital Inputs | Digital Input 15 | warning (0) | 5 / 2 |
| The name of the digital input 15 alarm. | | | | |
| **116** | **Digital Input 16** | Digital Inputs | Digital Input 16 | warning (0) | 5 / 2 |
| The name of the digital input 16 alarm. | | | | |
| **117** | **Digital Input 17** | Digital Inputs | Digital Input 17 | warning (0) | 5 / 2 |
| The name of the digital input 17 alarm. | | | | |
| **118** | **Digital Input 18** | Digital Inputs | Digital Input 18 | warning (0) | 5 / 2 |
| The name of the digital input 18 alarm. | | | | |
| **119** | **Digital Input 19** | Digital Inputs | Digital Input 19 | warning (0) | 5 / 2 |
| The name of the digital input 19 alarm. | | | | |
| **120** | **Digital Input 20** | Digital Inputs | Digital Input 20 | warning (0) | 5 / 2 |
| The name of the digital input 20 alarm. | | | | |
| **121** | **Digital Input 21** | Digital Inputs | Digital Input 21 | warning (0) | 5 / 2 |
| The name of the digital input 21 alarm. | | | | |
| **122** | **Digital Input 22** | Digital Inputs | Digital Input 22 | warning (0) | 5 / 2 |
| The name of the digital input 22 alarm. | | | | |
| **123** | **Digital Input 23** | Digital Inputs | Digital Input 23 | warning (0) | 5 / 2 |
| The name of the digital input 23 alarm. | | | | |
| **124** | **Digital Input 24** | Digital Inputs | Digital Input 24 | warning (0) | 5 / 2 |
| The name of the digital input 24 alarm. | | | | |
| **125** | **Digital Input 25** | Digital Inputs | Digital Input 25 | warning (0) | 5 / 2 |
| The name of the digital input 25 alarm. | | | | |
| **126** | **Digital Input 26** | Digital Inputs | Digital Input 26 | warning (0) | 5 / 2 |
| The name of the digital input 26 alarm. | | | | |
| **127** | **Digital Input 27** | Digital Inputs | Digital Input 27 | warning (0) | 5 / 2 |
| The name of the digital input 27 alarm. | | | | |
| **128** | **Digital Input 28** | Digital Inputs | Digital Input 28 | warning (0) | 5 / 2 |
| The name of the digital input 28 alarm. | | | | |
| **129** | **Digital Input 29** | Digital Inputs | Digital Input 29 | warning (0) | 5 / 2 |
| The name of the digital input 29 alarm. | | | | |
| **130** | **Digital Input 30** | Digital Inputs | Digital Input 30 | warning (0) | 5 / 2 |
| The name of the digital input 30 alarm. | | | | |
| **131** | **Digital Input 31** | Digital Inputs | Digital Input 31 | warning (0) | 5 / 2 |
| The name of the digital input 31 alarm. | | | | |
| **132** | **Digital Input 32** | Digital Inputs | Digital Input 32 | warning (0) | 5 / 2 |
| The name of the digital input 32 alarm. | | | | |
| **133** | **Digital Input 33** | Digital Inputs | Digital Input 33 | warning (0) | 5 / 2 |
| The name of the digital input 33 alarm. | | | | |
| **134** | **Digital Input 34** | Digital Inputs | Digital Input 34 | warning (0) | 5 / 2 |
| The name of the digital input 34 alarm. | | | | |
| **135** | **Digital Input 35** | Digital Inputs | Digital Input 35 | warning (0) | 5 / 2 |
| The name of the digital input 35 alarm. | | | | |
| **136** | **Digital Input 36** | Digital Inputs | Digital Input 36 | warning (0) | 5 / 2 |
| The name of the digital input 36 alarm. | | | | |
| **137** | **Digital Input 37** | Digital Inputs | Digital Input 37 | warning (0) | 5 / 2 |
| The name of the digital input 37 alarm. | | | | |
| **138** | **Digital Input 38** | Digital Inputs | Digital Input 38 | warning (0) | 5 / 2 |
| The name of the digital input 38 alarm. | | | | |
| **139** | **Digital Input 39** | Digital Inputs | Digital Input 39 | warning (0) | 5 / 2 |
| The name of the digital input 39 alarm. | | | | |
| **140** | **Digital Input 40** | Digital Inputs | Digital Input 40 | warning (0) | 5 / 2 |
| The name of the digital input 40 alarm. | | | | |
| **141** | **Digital Input 41** | Digital Inputs | Digital Input 41 | warning (0) | 5 / 2 |
| The name of the digital input 41 alarm. | | | | |
| **142** | **Digital Input 42** | Digital Inputs | Digital Input 42 | warning (0) | 5 / 2 |
| The name of the digital input 42 alarm. | | | | |
| **143** | **Digital Input 43** | Digital Inputs | Digital Input 43 | warning (0) | 5 / 2 |
| The name of the digital input 43 alarm. | | | | |
| **144** | **Digital Input 44** | Digital Inputs | Digital Input 44 | warning (0) | 5 / 2 |
| The name of the digital input 44 alarm. | | | | |
| **145** | **Digital Input 45** | Digital Inputs | Digital Input 45 | warning (0) | 5 / 2 |
| The name of the digital input 45 alarm. | | | | |
| **146** | **Digital Input 46** | Digital Inputs | Digital Input 46 | warning (0) | 5 / 2 |
| The name of the digital input 46 alarm. | | | | |
| **147** | **Digital Input 47** | Digital Inputs | Digital Input 47 | warning (0) | 5 / 2 |
| The name of the digital input 47 alarm. | | | | |
| **148** | **Digital Input 48** | Digital Inputs | Digital Input 48 | warning (0) | 5 / 2 |
| The name of the digital input 48 alarm. | | | | |
| **149** | **Digital Input 49** | Digital Inputs | Digital Input 49 | warning (0) | 5 / 2 |
| The name of the digital input 49 alarm. | | | | |
| **150** | **Digital Input 50** | Digital Inputs | Digital Input 50 | warning (0) | 5 / 2 |
| The name of the digital input 50 alarm. | | | | |
| **151** | **Digital Input 51** | Digital Inputs | Digital Input 51 | warning (0) | 5 / 2 |
| The name of the digital input 51 alarm. | | | | |
| **152** | **Digital Input 52** | Digital Inputs | Digital Input 52 | warning (0) | 5 / 2 |
| The name of the digital input 52 alarm. | | | | |
| **153** | **Digital Input 53** | Digital Inputs | Digital Input 53 | warning (0) | 5 / 2 |
| The name of the digital input 53 alarm. | | | | |
| **154** | **Digital Input 54** | Digital Inputs | Digital Input 54 | warning (0) | 5 / 2 |
| The name of the digital input 54 alarm. | | | | |
| **155** | **Digital Input 55** | Digital Inputs | Digital Input 55 | warning (0) | 5 / 2 |
| The name of the digital input 55 alarm. | | | | |
| **156** | **Digital Input 56** | Digital Inputs | Digital Input 56 | warning (0) | 5 / 2 |
| The name of the digital input 56 alarm. | | | | |
| **157** | **Digital Input 57** | Digital Inputs | Digital Input 57 | warning (0) | 5 / 2 |
| The name of the digital input 57 alarm. | | | | |
| **158** | **Digital Input 58** | Digital Inputs | Digital Input 58 | warning (0) | 5 / 2 |
| The name of the digital input 58 alarm. | | | | |
| **159** | **Digital Input 59** | Digital Inputs | Digital Input 59 | warning (0) | 5 / 2 |
| The name of the digital input 59 alarm. | | | | |
| **160** | **Digital Input 60** | Digital Inputs | Digital Input 60 | warning (0) | 5 / 2 |
| The name of the digital input 60 alarm. | | | | |
| **161** | **Digital Input 61** | Digital Inputs | Digital Input 61 | warning (0) | 5 / 2 |
| The name of the digital input 61 alarm. | | | | |
| **162** | **Digital Input 62** | Digital Inputs | Digital Input 62 | warning (0) | 5 / 2 |
| The name of the digital input 62 alarm. | | | | |
| **163** | **Digital Input 63** | Digital Inputs | Digital Input 63 | warning (0) | 5 / 2 |
| The name of the digital input 63 alarm. | | | | |
| **164** | **Digital Input 64** | Digital Inputs | Digital Input 64 | warning (0) | 5 / 2 |
| The name of the digital input 64 alarm. | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **101** | **Digital Input 1 State** | Digital Inputs | Digital Input 1 |  | basic |
| The state of the digital input | | | | |
| **102** | **Digital Input 2 State** | Digital Inputs | Digital Input 2 |  | basic |
| The state of the digital input | | | | |
| **103** | **Digital Input 3 State** | Digital Inputs | Digital Input 3 |  | basic |
| The state of the digital input | | | | |
| **104** | **Digital Input 4 State** | Digital Inputs | Digital Input 4 |  | basic |
| The state of the digital input | | | | |
| **105** | **Digital Input 5 State** | Digital Inputs | Digital Input 5 |  | basic |
| The state of the digital input | | | | |
| **106** | **Digital Input 6 State** | Digital Inputs | Digital Input 6 |  | basic |
| The state of the digital input | | | | |
| **107** | **Digital Input 7 State** | Digital Inputs | Digital Input 7 |  | basic |
| The state of the digital input | | | | |
| **108** | **Digital Input 8 State** | Digital Inputs | Digital Input 8 |  | basic |
| The state of the digital input | | | | |
| **109** | **Digital Input 9 State** | Digital Inputs | Digital Input 9 |  | basic |
| The state of the digital input | | | | |
| **110** | **Digital Input 10 State** | Digital Inputs | Digital Input 10 |  | basic |
| The state of the digital input | | | | |
| **111** | **Digital Input 11 State** | Digital Inputs | Digital Input 11 |  | basic |
| The state of the digital input | | | | |
| **112** | **Digital Input 12 State** | Digital Inputs | Digital Input 12 |  | basic |
| The state of the digital input | | | | |
| **113** | **Digital Input 13 State** | Digital Inputs | Digital Input 13 |  | basic |
| The state of the digital input | | | | |
| **114** | **Digital Input 14 State** | Digital Inputs | Digital Input 14 |  | basic |
| The state of the digital input | | | | |
| **115** | **Digital Input 15 State** | Digital Inputs | Digital Input 15 |  | basic |
| The state of the digital input | | | | |
| **116** | **Digital Input 16 State** | Digital Inputs | Digital Input 16 |  | basic |
| The state of the digital input | | | | |
| **117** | **Digital Input 17 State** | Digital Inputs | Digital Input 17 |  | basic |
| The state of the digital input | | | | |
| **118** | **Digital Input 18 State** | Digital Inputs | Digital Input 18 |  | basic |
| The state of the digital input | | | | |
| **119** | **Digital Input 19 State** | Digital Inputs | Digital Input 19 |  | basic |
| The state of the digital input | | | | |
| **120** | **Digital Input 20 State** | Digital Inputs | Digital Input 20 |  | basic |
| The state of the digital input | | | | |
| **121** | **Digital Input 21 State** | Digital Inputs | Digital Input 21 |  | basic |
| The state of the digital input | | | | |
| **122** | **Digital Input 22 State** | Digital Inputs | Digital Input 22 |  | basic |
| The state of the digital input | | | | |
| **123** | **Digital Input 23 State** | Digital Inputs | Digital Input 23 |  | basic |
| The state of the digital input | | | | |
| **124** | **Digital Input 24 State** | Digital Inputs | Digital Input 24 |  | basic |
| The state of the digital input | | | | |
| **125** | **Digital Input 25 State** | Digital Inputs | Digital Input 25 |  | basic |
| The state of the digital input | | | | |
| **126** | **Digital Input 26 State** | Digital Inputs | Digital Input 26 |  | basic |
| The state of the digital input | | | | |
| **127** | **Digital Input 27 State** | Digital Inputs | Digital Input 27 |  | basic |
| The state of the digital input | | | | |
| **128** | **Digital Input 28 State** | Digital Inputs | Digital Input 28 |  | basic |
| The state of the digital input | | | | |
| **129** | **Digital Input 29 State** | Digital Inputs | Digital Input 29 |  | basic |
| The state of the digital input | | | | |
| **130** | **Digital Input 30 State** | Digital Inputs | Digital Input 30 |  | basic |
| The state of the digital input | | | | |
| **131** | **Digital Input 31 State** | Digital Inputs | Digital Input 31 |  | basic |
| The state of the digital input | | | | |
| **132** | **Digital Input 32 State** | Digital Inputs | Digital Input 32 |  | basic |
| The state of the digital input | | | | |
| **133** | **Digital Input 33 State** | Digital Inputs | Digital Input 33 |  | basic |
| The state of the digital input | | | | |
| **134** | **Digital Input 34 State** | Digital Inputs | Digital Input 34 |  | basic |
| The state of the digital input | | | | |
| **135** | **Digital Input 35 State** | Digital Inputs | Digital Input 35 |  | basic |
| The state of the digital input | | | | |
| **136** | **Digital Input 36 State** | Digital Inputs | Digital Input 36 |  | basic |
| The state of the digital input | | | | |
| **137** | **Digital Input 37 State** | Digital Inputs | Digital Input 37 |  | basic |
| The state of the digital input | | | | |
| **138** | **Digital Input 38 State** | Digital Inputs | Digital Input 38 |  | basic |
| The state of the digital input | | | | |
| **139** | **Digital Input 39 State** | Digital Inputs | Digital Input 39 |  | basic |
| The state of the digital input | | | | |
| **140** | **Digital Input 40 State** | Digital Inputs | Digital Input 40 |  | basic |
| The state of the digital input | | | | |
| **141** | **Digital Input 41 State** | Digital Inputs | Digital Input 41 |  | basic |
| The state of the digital input | | | | |
| **142** | **Digital Input 42 State** | Digital Inputs | Digital Input 42 |  | basic |
| The state of the digital input | | | | |
| **143** | **Digital Input 43 State** | Digital Inputs | Digital Input 43 |  | basic |
| The state of the digital input | | | | |
| **144** | **Digital Input 44 State** | Digital Inputs | Digital Input 44 |  | basic |
| The state of the digital input | | | | |
| **145** | **Digital Input 45 State** | Digital Inputs | Digital Input 45 |  | basic |
| The state of the digital input | | | | |
| **146** | **Digital Input 46 State** | Digital Inputs | Digital Input 46 |  | basic |
| The state of the digital input | | | | |
| **147** | **Digital Input 47 State** | Digital Inputs | Digital Input 47 |  | basic |
| The state of the digital input | | | | |
| **148** | **Digital Input 48 State** | Digital Inputs | Digital Input 48 |  | basic |
| The state of the digital input | | | | |
| **149** | **Digital Input 49 State** | Digital Inputs | Digital Input 49 |  | basic |
| The state of the digital input | | | | |
| **150** | **Digital Input 50 State** | Digital Inputs | Digital Input 50 |  | basic |
| The state of the digital input | | | | |
| **151** | **Digital Input 51 State** | Digital Inputs | Digital Input 51 |  | basic |
| The state of the digital input | | | | |
| **152** | **Digital Input 52 State** | Digital Inputs | Digital Input 52 |  | basic |
| The state of the digital input | | | | |
| **153** | **Digital Input 53 State** | Digital Inputs | Digital Input 53 |  | basic |
| The state of the digital input | | | | |
| **154** | **Digital Input 54 State** | Digital Inputs | Digital Input 54 |  | basic |
| The state of the digital input | | | | |
| **155** | **Digital Input 55 State** | Digital Inputs | Digital Input 55 |  | basic |
| The state of the digital input | | | | |
| **156** | **Digital Input 56 State** | Digital Inputs | Digital Input 56 |  | basic |
| The state of the digital input | | | | |
| **157** | **Digital Input 57 State** | Digital Inputs | Digital Input 57 |  | basic |
| The state of the digital input | | | | |
| **158** | **Digital Input 58 State** | Digital Inputs | Digital Input 58 |  | basic |
| The state of the digital input | | | | |
| **159** | **Digital Input 59 State** | Digital Inputs | Digital Input 59 |  | basic |
| The state of the digital input | | | | |
| **160** | **Digital Input 60 State** | Digital Inputs | Digital Input 60 |  | basic |
| The state of the digital input | | | | |
| **161** | **Digital Input 61 State** | Digital Inputs | Digital Input 61 |  | basic |
| The state of the digital input | | | | |
| **162** | **Digital Input 62 State** | Digital Inputs | Digital Input 62 |  | basic |
| The state of the digital input | | | | |
| **163** | **Digital Input 63 State** | Digital Inputs | Digital Input 63 |  | basic |
| The state of the digital input | | | | |
| **164** | **Digital Input 64 State** | Digital Inputs | Digital Input 64 |  | basic |
| The state of the digital input | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **102** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Inputs | basic |
| The name of the digital input 1. | | | | | |
| **103** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **104** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Inputs | basic |
| The name of the digital input 2. | | | | | |
| **105** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **106** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Inputs | basic |
| The name of the digital input 3. | | | | | |
| **107** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **108** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Inputs | basic |
| The name of the digital input 4. | | | | | |
| **109** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **110** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Inputs | basic |
| The name of the digital input 5. | | | | | |
| **111** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **112** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Inputs | basic |
| The name of the digital input 6. | | | | | |
| **113** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **114** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Inputs | basic |
| The name of the digital input 7. | | | | | |
| **115** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **116** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Inputs | basic |
| The name of the digital input 8. | | | | | |
| **117** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **118** | **Digital Input 9 Name** | Digital Inputs | Digital Input 9 |  | Digital Inputs | basic |
| The name of the digital input 9. | | | | | |
| **119** | **Digital Input 9 Normally Closed** | Digital Inputs | Digital Input 9 |  | True/False (True) | basic |
| True/False value defining if the digital input 9 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **120** | **Digital Input 10 Name** | Digital Inputs | Digital Input 10 |  | Digital Inputs | basic |
| The name of the digital input 10. | | | | | |
| **121** | **Digital Input 10 Normally Closed** | Digital Inputs | Digital Input 10 |  | True/False (True) | basic |
| True/False value defining if the digital input 10 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **122** | **Digital Input 11 Name** | Digital Inputs | Digital Input 11 |  | Digital Inputs | basic |
| The name of the digital input 11. | | | | | |
| **123** | **Digital Input 11 Normally Closed** | Digital Inputs | Digital Input 11 |  | True/False (True) | basic |
| True/False value defining if the digital input 11 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **124** | **Digital Input 12 Name** | Digital Inputs | Digital Input 12 |  | Digital Inputs | basic |
| The name of the digital input 12. | | | | | |
| **125** | **Digital Input 12 Normally Closed** | Digital Inputs | Digital Input 12 |  | True/False (True) | basic |
| True/False value defining if the digital input 12 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **126** | **Digital Input 13 Name** | Digital Inputs | Digital Input 13 |  | Digital Inputs | basic |
| The name of the digital input 13. | | | | | |
| **127** | **Digital Input 13 Normally Closed** | Digital Inputs | Digital Input 13 |  | True/False (True) | basic |
| True/False value defining if the digital input 13 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **128** | **Digital Input 14 Name** | Digital Inputs | Digital Input 14 |  | Digital Inputs | basic |
| The name of the digital input 14. | | | | | |
| **129** | **Digital Input 14 Normally Closed** | Digital Inputs | Digital Input 14 |  | True/False (True) | basic |
| True/False value defining if the digital input 14 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **130** | **Digital Input 15 Name** | Digital Inputs | Digital Input 15 |  | Digital Inputs | basic |
| The name of the digital input 15. | | | | | |
| **131** | **Digital Input 15 Normally Closed** | Digital Inputs | Digital Input 15 |  | True/False (True) | basic |
| True/False value defining if the digital input 15 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **132** | **Digital Input 16 Name** | Digital Inputs | Digital Input 16 |  | Digital Inputs | basic |
| The name of the digital input 16. | | | | | |
| **133** | **Digital Input 16 Normally Closed** | Digital Inputs | Digital Input 16 |  | True/False (True) | basic |
| True/False value defining if the digital input 16 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **134** | **Digital Input 17 Name** | Digital Inputs | Digital Input 17 |  | Digital Inputs | basic |
| The name of the digital input 17. | | | | | |
| **135** | **Digital Input 17 Normally Closed** | Digital Inputs | Digital Input 17 |  | True/False (True) | basic |
| True/False value defining if the digital input 17 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **136** | **Digital Input 18 Name** | Digital Inputs | Digital Input 18 |  | Digital Inputs | basic |
| The name of the digital input 18. | | | | | |
| **137** | **Digital Input 18 Normally Closed** | Digital Inputs | Digital Input 18 |  | True/False (True) | basic |
| True/False value defining if the digital input 18 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **138** | **Digital Input 19 Name** | Digital Inputs | Digital Input 19 |  | Digital Inputs | basic |
| The name of the digital input 19. | | | | | |
| **139** | **Digital Input 19 Normally Closed** | Digital Inputs | Digital Input 19 |  | True/False (True) | basic |
| True/False value defining if the digital input 19 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **140** | **Digital Input 20 Name** | Digital Inputs | Digital Input 20 |  | Digital Inputs | basic |
| The name of the digital input 20. | | | | | |
| **141** | **Digital Input 20 Normally Closed** | Digital Inputs | Digital Input 20 |  | True/False (True) | basic |
| True/False value defining if the digital input 20 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **142** | **Digital Input 21 Name** | Digital Inputs | Digital Input 21 |  | Digital Inputs | basic |
| The name of the digital input 21. | | | | | |
| **143** | **Digital Input 21 Normally Closed** | Digital Inputs | Digital Input 21 |  | True/False (True) | basic |
| True/False value defining if the digital input 21 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **144** | **Digital Input 22 Name** | Digital Inputs | Digital Input 22 |  | Digital Inputs | basic |
| The name of the digital input 22. | | | | | |
| **145** | **Digital Input 22 Normally Closed** | Digital Inputs | Digital Input 22 |  | True/False (True) | basic |
| True/False value defining if the digital input 22 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **146** | **Digital Input 23 Name** | Digital Inputs | Digital Input 23 |  | Digital Inputs | basic |
| The name of the digital input 23. | | | | | |
| **147** | **Digital Input 23 Normally Closed** | Digital Inputs | Digital Input 23 |  | True/False (True) | basic |
| True/False value defining if the digital input 23 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **148** | **Digital Input 24 Name** | Digital Inputs | Digital Input 24 |  | Digital Inputs | basic |
| The name of the digital input 24. | | | | | |
| **149** | **Digital Input 24 Normally Closed** | Digital Inputs | Digital Input 24 |  | True/False (True) | basic |
| True/False value defining if the digital input 24 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **150** | **Digital Input 25 Name** | Digital Inputs | Digital Input 25 |  | Digital Inputs | basic |
| The name of the digital input 25. | | | | | |
| **151** | **Digital Input 25 Normally Closed** | Digital Inputs | Digital Input 25 |  | True/False (True) | basic |
| True/False value defining if the digital input 25 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **152** | **Digital Input 26 Name** | Digital Inputs | Digital Input 26 |  | Digital Inputs | basic |
| The name of the digital input 26. | | | | | |
| **153** | **Digital Input 26 Normally Closed** | Digital Inputs | Digital Input 26 |  | True/False (True) | basic |
| True/False value defining if the digital input 26 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **154** | **Digital Input 27 Name** | Digital Inputs | Digital Input 27 |  | Digital Inputs | basic |
| The name of the digital input 27. | | | | | |
| **155** | **Digital Input 27 Normally Closed** | Digital Inputs | Digital Input 27 |  | True/False (True) | basic |
| True/False value defining if the digital input 27 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **156** | **Digital Input 28 Name** | Digital Inputs | Digital Input 28 |  | Digital Inputs | basic |
| The name of the digital input 28. | | | | | |
| **157** | **Digital Input 28 Normally Closed** | Digital Inputs | Digital Input 28 |  | True/False (True) | basic |
| True/False value defining if the digital input 28 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **158** | **Digital Input 29 Name** | Digital Inputs | Digital Input 29 |  | Digital Inputs | basic |
| The name of the digital input 29. | | | | | |
| **159** | **Digital Input 29 Normally Closed** | Digital Inputs | Digital Input 29 |  | True/False (True) | basic |
| True/False value defining if the digital input 29 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **160** | **Digital Input 30 Name** | Digital Inputs | Digital Input 30 |  | Digital Inputs | basic |
| The name of the digital input 30. | | | | | |
| **161** | **Digital Input 30 Normally Closed** | Digital Inputs | Digital Input 30 |  | True/False (True) | basic |
| True/False value defining if the digital input 30 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **162** | **Digital Input 31 Name** | Digital Inputs | Digital Input 31 |  | Digital Inputs | basic |
| The name of the digital input 31. | | | | | |
| **163** | **Digital Input 31 Normally Closed** | Digital Inputs | Digital Input 31 |  | True/False (True) | basic |
| True/False value defining if the digital input 31 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **164** | **Digital Input 32 Name** | Digital Inputs | Digital Input 32 |  | Digital Inputs | basic |
| The name of the digital input 32. | | | | | |
| **165** | **Digital Input 32 Normally Closed** | Digital Inputs | Digital Input 32 |  | True/False (True) | basic |
| True/False value defining if the digital input 32 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **166** | **Digital Input 33 Name** | Digital Inputs | Digital Input 33 |  | Digital Inputs | basic |
| The name of the digital input 33. | | | | | |
| **167** | **Digital Input 33 Normally Closed** | Digital Inputs | Digital Input 33 |  | True/False (True) | basic |
| True/False value defining if the digital input 33 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **168** | **Digital Input 34 Name** | Digital Inputs | Digital Input 34 |  | Digital Inputs | basic |
| The name of the digital input 34. | | | | | |
| **169** | **Digital Input 34 Normally Closed** | Digital Inputs | Digital Input 34 |  | True/False (True) | basic |
| True/False value defining if the digital input 34 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **170** | **Digital Input 35 Name** | Digital Inputs | Digital Input 35 |  | Digital Inputs | basic |
| The name of the digital input 35. | | | | | |
| **171** | **Digital Input 35 Normally Closed** | Digital Inputs | Digital Input 35 |  | True/False (True) | basic |
| True/False value defining if the digital input 35 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **172** | **Digital Input 36 Name** | Digital Inputs | Digital Input 36 |  | Digital Inputs | basic |
| The name of the digital input 36. | | | | | |
| **173** | **Digital Input 36 Normally Closed** | Digital Inputs | Digital Input 36 |  | True/False (True) | basic |
| True/False value defining if the digital input 36 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **174** | **Digital Input 37 Name** | Digital Inputs | Digital Input 37 |  | Digital Inputs | basic |
| The name of the digital input 37. | | | | | |
| **175** | **Digital Input 37 Normally Closed** | Digital Inputs | Digital Input 37 |  | True/False (True) | basic |
| True/False value defining if the digital input 37 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **176** | **Digital Input 38 Name** | Digital Inputs | Digital Input 38 |  | Digital Inputs | basic |
| The name of the digital input 38. | | | | | |
| **177** | **Digital Input 38 Normally Closed** | Digital Inputs | Digital Input 38 |  | True/False (True) | basic |
| True/False value defining if the digital input 38 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **178** | **Digital Input 39 Name** | Digital Inputs | Digital Input 39 |  | Digital Inputs | basic |
| The name of the digital input 39. | | | | | |
| **179** | **Digital Input 39 Normally Closed** | Digital Inputs | Digital Input 39 |  | True/False (True) | basic |
| True/False value defining if the digital input 39 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **180** | **Digital Input 40 Name** | Digital Inputs | Digital Input 40 |  | Digital Inputs | basic |
| The name of the digital input 40. | | | | | |
| **181** | **Digital Input 40 Normally Closed** | Digital Inputs | Digital Input 40 |  | True/False (True) | basic |
| True/False value defining if the digital input 40 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **182** | **Digital Input 41 Name** | Digital Inputs | Digital Input 41 |  | Digital Inputs | basic |
| The name of the digital input 41. | | | | | |
| **183** | **Digital Input 41 Normally Closed** | Digital Inputs | Digital Input 41 |  | True/False (True) | basic |
| True/False value defining if the digital input 41 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **184** | **Digital Input 42 Name** | Digital Inputs | Digital Input 42 |  | Digital Inputs | basic |
| The name of the digital input 42. | | | | | |
| **185** | **Digital Input 42 Normally Closed** | Digital Inputs | Digital Input 42 |  | True/False (True) | basic |
| True/False value defining if the digital input 42 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **186** | **Digital Input 43 Name** | Digital Inputs | Digital Input 43 |  | Digital Inputs | basic |
| The name of the digital input 43. | | | | | |
| **187** | **Digital Input 43 Normally Closed** | Digital Inputs | Digital Input 43 |  | True/False (True) | basic |
| True/False value defining if the digital input 43 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **188** | **Digital Input 44 Name** | Digital Inputs | Digital Input 44 |  | Digital Inputs | basic |
| The name of the digital input 44. | | | | | |
| **189** | **Digital Input 44 Normally Closed** | Digital Inputs | Digital Input 44 |  | True/False (True) | basic |
| True/False value defining if the digital input 44 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **190** | **Digital Input 45 Name** | Digital Inputs | Digital Input 45 |  | Digital Inputs | basic |
| The name of the digital input 45. | | | | | |
| **191** | **Digital Input 45 Normally Closed** | Digital Inputs | Digital Input 45 |  | True/False (True) | basic |
| True/False value defining if the digital input 45 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **192** | **Digital Input 46 Name** | Digital Inputs | Digital Input 46 |  | Digital Inputs | basic |
| The name of the digital input 46. | | | | | |
| **193** | **Digital Input 46 Normally Closed** | Digital Inputs | Digital Input 46 |  | True/False (True) | basic |
| True/False value defining if the digital input 46 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **194** | **Digital Input 47 Name** | Digital Inputs | Digital Input 47 |  | Digital Inputs | basic |
| The name of the digital input 47. | | | | | |
| **195** | **Digital Input 47 Normally Closed** | Digital Inputs | Digital Input 47 |  | True/False (True) | basic |
| True/False value defining if the digital input 47 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **196** | **Digital Input 48 Name** | Digital Inputs | Digital Input 48 |  | Digital Inputs | basic |
| The name of the digital input 48. | | | | | |
| **197** | **Digital Input 48 Normally Closed** | Digital Inputs | Digital Input 48 |  | True/False (True) | basic |
| True/False value defining if the digital input 48 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **198** | **Digital Input 49 Name** | Digital Inputs | Digital Input 49 |  | Digital Inputs | basic |
| The name of the digital input 49. | | | | | |
| **199** | **Digital Input 49 Normally Closed** | Digital Inputs | Digital Input 49 |  | True/False (True) | basic |
| True/False value defining if the digital input 49 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **200** | **Digital Input 50 Name** | Digital Inputs | Digital Input 50 |  | Digital Inputs | basic |
| The name of the digital input 50. | | | | | |
| **201** | **Digital Input 50 Normally Closed** | Digital Inputs | Digital Input 50 |  | True/False (True) | basic |
| True/False value defining if the digital input 50 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **202** | **Digital Input 51 Name** | Digital Inputs | Digital Input 51 |  | Digital Inputs | basic |
| The name of the digital input 51. | | | | | |
| **203** | **Digital Input 51 Normally Closed** | Digital Inputs | Digital Input 51 |  | True/False (True) | basic |
| True/False value defining if the digital input 51 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **204** | **Digital Input 52 Name** | Digital Inputs | Digital Input 52 |  | Digital Inputs | basic |
| The name of the digital input 52. | | | | | |
| **205** | **Digital Input 52 Normally Closed** | Digital Inputs | Digital Input 52 |  | True/False (True) | basic |
| True/False value defining if the digital input 52 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **206** | **Digital Input 53 Name** | Digital Inputs | Digital Input 53 |  | Digital Inputs | basic |
| The name of the digital input 53. | | | | | |
| **207** | **Digital Input 53 Normally Closed** | Digital Inputs | Digital Input 53 |  | True/False (True) | basic |
| True/False value defining if the digital input 53 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **208** | **Digital Input 54 Name** | Digital Inputs | Digital Input 54 |  | Digital Inputs | basic |
| The name of the digital input 54. | | | | | |
| **209** | **Digital Input 54 Normally Closed** | Digital Inputs | Digital Input 54 |  | True/False (True) | basic |
| True/False value defining if the digital input 54 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **210** | **Digital Input 55 Name** | Digital Inputs | Digital Input 55 |  | Digital Inputs | basic |
| The name of the digital input 55. | | | | | |
| **211** | **Digital Input 55 Normally Closed** | Digital Inputs | Digital Input 55 |  | True/False (True) | basic |
| True/False value defining if the digital input 55 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **212** | **Digital Input 56 Name** | Digital Inputs | Digital Input 56 |  | Digital Inputs | basic |
| The name of the digital input 56. | | | | | |
| **213** | **Digital Input 56 Normally Closed** | Digital Inputs | Digital Input 56 |  | True/False (True) | basic |
| True/False value defining if the digital input 56 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **214** | **Digital Input 57 Name** | Digital Inputs | Digital Input 57 |  | Digital Inputs | basic |
| The name of the digital input 57. | | | | | |
| **215** | **Digital Input 57 Normally Closed** | Digital Inputs | Digital Input 57 |  | True/False (True) | basic |
| True/False value defining if the digital input 57 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **216** | **Digital Input 58 Name** | Digital Inputs | Digital Input 58 |  | Digital Inputs | basic |
| The name of the digital input 58. | | | | | |
| **217** | **Digital Input 58 Normally Closed** | Digital Inputs | Digital Input 58 |  | True/False (True) | basic |
| True/False value defining if the digital input 58 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **218** | **Digital Input 59 Name** | Digital Inputs | Digital Input 59 |  | Digital Inputs | basic |
| The name of the digital input 59. | | | | | |
| **219** | **Digital Input 59 Normally Closed** | Digital Inputs | Digital Input 59 |  | True/False (True) | basic |
| True/False value defining if the digital input 59 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **220** | **Digital Input 60 Name** | Digital Inputs | Digital Input 60 |  | Digital Inputs | basic |
| The name of the digital input 60. | | | | | |
| **221** | **Digital Input 60 Normally Closed** | Digital Inputs | Digital Input 60 |  | True/False (True) | basic |
| True/False value defining if the digital input 60 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **222** | **Digital Input 61 Name** | Digital Inputs | Digital Input 61 |  | Digital Inputs | basic |
| The name of the digital input 61. | | | | | |
| **223** | **Digital Input 61 Normally Closed** | Digital Inputs | Digital Input 61 |  | True/False (True) | basic |
| True/False value defining if the digital input 61 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **224** | **Digital Input 62 Name** | Digital Inputs | Digital Input 62 |  | Digital Inputs | basic |
| The name of the digital input 62. | | | | | |
| **225** | **Digital Input 62 Normally Closed** | Digital Inputs | Digital Input 62 |  | True/False (True) | basic |
| True/False value defining if the digital input 62 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **226** | **Digital Input 63 Name** | Digital Inputs | Digital Input 63 |  | Digital Inputs | basic |
| The name of the digital input 63. | | | | | |
| **227** | **Digital Input 63 Normally Closed** | Digital Inputs | Digital Input 63 |  | True/False (True) | basic |
| True/False value defining if the digital input 63 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **228** | **Digital Input 64 Name** | Digital Inputs | Digital Input 64 |  | Digital Inputs | basic |
| The name of the digital input 64. | | | | | |
| **229** | **Digital Input 64 Normally Closed** | Digital Inputs | Digital Input 64 |  | True/False (True) | basic |
| True/False value defining if the digital input 64 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### BIOM

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | BIOM |
| **Short Description** | COMP@S BASIC I/O MODULE SYS BIOM |
| **Long Description** | 12 Digital Inputs, 4 output relay, 2 temperature sensors |
| **Hardware Reference** | 9413 060 05051 |
| **Software Reference** | SOFT 000037 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **71** | **Digital Input 1** | Digital Inputs | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **72** | **Digital Input 2** | Digital Inputs | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **73** | **Digital Input 3** | Digital Inputs | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **74** | **Digital Input 4** | Digital Inputs | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **75** | **Digital Input 5** | Digital Inputs | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **76** | **Digital Input 6** | Digital Inputs | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **77** | **Digital Input 7** | Digital Inputs | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **78** | **Digital Input 8** | Digital Inputs | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |
| **79** | **Digital Input 9** | Digital Inputs | Digital Input 9 | warning (0) | 5 / 2 |
| The name of the digital input 9 alarm. | | | | |
| **80** | **Digital Input 10** | Digital Inputs | Digital Input 10 | warning (0) | 5 / 2 |
| The name of the digital input 10 alarm. | | | | |
| **81** | **Digital Input 11** | Digital Inputs | Digital Input 11 | warning (0) | 5 / 2 |
| The name of the digital input 11 alarm. | | | | |
| **82** | **Digital Input 12** | Digital Inputs | Digital Input 12 | warning (0) | 5 / 2 |
| The name of the digital input 12 alarm. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Temperature 1** | Temperature Sensors | Temperature 1 | degree C | basic |
| Temperature Measurement 1 | | | | |
| **2** | **Temperature 2** | Temperature Sensors | Temperature 2 | degree C | basic |
| Temperature Measurement 2 | | | | |
| **71** | **Digital Input 1 State** | Digital Inputs | Digital Input 1 |  | basic |
| The state of the digital input | | | | |
| **72** | **Digital Input 2 State** | Digital Inputs | Digital Input 2 |  | basic |
| The state of the digital input | | | | |
| **73** | **Digital Input 3 State** | Digital Inputs | Digital Input 3 |  | basic |
| The state of the digital input | | | | |
| **74** | **Digital Input 4 State** | Digital Inputs | Digital Input 4 |  | basic |
| The state of the digital input | | | | |
| **75** | **Digital Input 5 State** | Digital Inputs | Digital Input 5 |  | basic |
| The state of the digital input | | | | |
| **76** | **Digital Input 6 State** | Digital Inputs | Digital Input 6 |  | basic |
| The state of the digital input | | | | |
| **77** | **Digital Input 7 State** | Digital Inputs | Digital Input 7 |  | basic |
| The state of the digital input | | | | |
| **78** | **Digital Input 8 State** | Digital Inputs | Digital Input 8 |  | basic |
| The state of the digital input | | | | |
| **79** | **Digital Input 9 State** | Digital Inputs | Digital Input 9 |  | basic |
| The state of the digital input | | | | |
| **80** | **Digital Input 10 State** | Digital Inputs | Digital Input 10 |  | basic |
| The state of the digital input | | | | |
| **81** | **Digital Input 11 State** | Digital Inputs | Digital Input 11 |  | basic |
| The state of the digital input | | | | |
| **82** | **Digital Input 12 State** | Digital Inputs | Digital Input 12 |  | basic |
| The state of the digital input | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **71** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Inputs | basic |
| The name of the digital input 1. | | | | | |
| **72** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **73** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Inputs | basic |
| The name of the digital input 2. | | | | | |
| **74** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **75** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Inputs | basic |
| The name of the digital input 3. | | | | | |
| **76** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **77** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Inputs | basic |
| The name of the digital input 4. | | | | | |
| **78** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **79** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Inputs | basic |
| The name of the digital input 5. | | | | | |
| **80** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **81** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Inputs | basic |
| The name of the digital input 6. | | | | | |
| **82** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **83** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Inputs | basic |
| The name of the digital input 7. | | | | | |
| **84** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **85** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Inputs | basic |
| The name of the digital input 8. | | | | | |
| **86** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **87** | **Digital Input 9 Name** | Digital Inputs | Digital Input 9 |  | Digital Inputs | basic |
| The name of the digital input 9. | | | | | |
| **88** | **Digital Input 9 Normally Closed** | Digital Inputs | Digital Input 9 |  | True/False (True) | basic |
| True/False value defining if the digital input 9 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **89** | **Digital Input 10 Name** | Digital Inputs | Digital Input 10 |  | Digital Inputs | basic |
| The name of the digital input 10. | | | | | |
| **90** | **Digital Input 10 Normally Closed** | Digital Inputs | Digital Input 10 |  | True/False (True) | basic |
| True/False value defining if the digital input 10 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **91** | **Digital Input 11 Name** | Digital Inputs | Digital Input 11 |  | Digital Inputs | basic |
| The name of the digital input 11. | | | | | |
| **92** | **Digital Input 11 Normally Closed** | Digital Inputs | Digital Input 11 |  | True/False (True) | basic |
| True/False value defining if the digital input 11 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **93** | **Digital Input 12 Name** | Digital Inputs | Digital Input 12 |  | Digital Inputs | basic |
| The name of the digital input 12. | | | | | |
| **94** | **Digital Input 12 Normally Closed** | Digital Inputs | Digital Input 12 |  | True/False (True) | basic |
| True/False value defining if the digital input 12 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **121** | **Relay 1 Change State Boolan Condition** | Digital Outputs |  |  |  | basic |
| PLC Boolean condition to energize the relay 01 | | | | | |
| **122** | **Relay 2 Change State Boolan Condition** | Digital Outputs |  |  |  | basic |
| PLC Boolean condition to energize the relay 11 | | | | | |
| **123** | **Relay 3 Change State Boolan Condition** | Digital Outputs |  |  |  | basic |
| PLC Boolean condition to energize the relay 21 | | | | | |
| **124** | **Relay 4 Change State Boolan Condition** | Digital Outputs |  |  |  | basic |
| PLC Boolean condition to energize the relay 31 | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

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| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

### SAM0948

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| --- | --- |
| **Device Information** | |
| **Name** | SAM0948 |
| **Short Description** | Site management card |
| **Long Description** | Site and infrastructure management card, 2 connections (RJ25) for card reader and door lock and 1 I/O connector (Sub-D26) - Captin FA and Captin BW lines |
| **Hardware Reference** | 9413 060 95131 |
| **Software Reference** | SOFT 000003 XX |
| **Equipment Type** | System Extension |
| **ETSI Level** | /site/sensors\_and\_actuators |

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| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Product Name** | Description | Product Info | basic |
| The commercial name of the extension card. | | | |
| **2** | **Hardware Reference** | Description | Product Info | basic |
| The hardware refence | | | |
| **3** | **Hardware Revision** | Description | Product Info | basic |
| The hardware revision | | | |
| **4** | **Software Reference** | Description | Product Info | basic |
| The software reference | | | |
| **6** | **Serial Number** | Description | Product Info | basic |
| The serial number. | | | |
| **8** | **Manufacturing Date** | Description | Product Info | basic |
| The production date. | | | |
| **11** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **12** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |

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| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **Cabinet Temperature High** |  |  | major (6) | 5 / 2 |
| The temperature of the cabinet is too high. | | | | |
| **2** | **Cabinet Temperature Low** |  |  | major (6) | 5 / 2 |
| The temperature of the cabinet is too low. | | | | |
| **3** | **Cabinet Temperature Sensor Fail** |  |  | minor (4) | 5 / 2 |
| The cabinet temperature sense is defect. | | | | |
| **11** | **Cabinet Humidity High** |  |  | major (6) | 5 / 2 |
| The cabinet humidity is too high | | | | |
| **12** | **Cabinet Humidity Low** |  |  | major (6) | 5 / 2 |
| The cabinet humidity is too low | | | | |
| **21** | **Water Detection Alarm** |  |  | major (6) | 5 / 2 |
| Water is detected by the water sensor. | | | | |
| **31** | **Tilt X Alarm** |  |  | major (6) | 5 / 2 |
| The X-tilt absolute value is too high | | | | |
| **32** | **Tilt Y Alarm** |  |  | major (6) | 5 / 2 |
| The Y-tilt absolute value is too high | | | | |
| **41** | **Vandalism Alarm** |  |  | major (6) | 5 / 2 |
| The vandalism score is too high | | | | |
| **51** | **Badge Reader Failure** |  |  | major (6) | 5 / 2 |
| The badge reader is defect or not connected | | | | |
| **71** | **Digital Input 1** | Digital Inputs | Digital Input 1 | warning (0) | 5 / 2 |
| The name of the digital input 1 alarm. | | | | |
| **72** | **Digital Input 2** | Digital Inputs | Digital Input 2 | warning (0) | 5 / 2 |
| The name of the digital input 2 alarm. | | | | |
| **73** | **Digital Input 3** | Digital Inputs | Digital Input 3 | warning (0) | 5 / 2 |
| The name of the digital input 3 alarm. | | | | |
| **74** | **Digital Input 4** | Digital Inputs | Digital Input 4 | warning (0) | 5 / 2 |
| The name of the digital input 4 alarm. | | | | |
| **75** | **Digital Input 5** | Digital Inputs | Digital Input 5 | warning (0) | 5 / 2 |
| The name of the digital input 5 alarm. | | | | |
| **76** | **Digital Input 6** | Digital Inputs | Digital Input 6 | warning (0) | 5 / 2 |
| The name of the digital input 6 alarm. | | | | |
| **77** | **Digital Input 7** | Digital Inputs | Digital Input 7 | warning (0) | 5 / 2 |
| The name of the digital input 7 alarm. | | | | |
| **78** | **Digital Input 8** | Digital Inputs | Digital Input 8 | warning (0) | 5 / 2 |
| The name of the digital input 8 alarm. | | | | |
| **79** | **Digital Input 9** | Digital Inputs | Digital Input 9 | warning (0) | 5 / 2 |
| The name of the digital input 9 alarm. | | | | |
| **80** | **Digital Input 10** | Digital Inputs | Digital Input 10 | warning (0) | 5 / 2 |
| The name of the digital input 10 alarm. | | | | |

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| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Cabinet Temperature** | Sensors |  | degree C | basic |
| The temperature in the cabinet | | | | |
| **11** | **Relative Humidity** | Sensors |  | % | basic |
| The relative humidity in the cabinet | | | | |
| **21** | **Tilt X** | Sensors |  | degree | basic |
| The tilt-X value | | | | |
| **22** | **Tilt Y** | Sensors |  | degree | basic |
| The tilt-Y value | | | | |
| **31** | **Vandalism Score** | Sensors |  |  | basic |
| The vandalism score. This depends of the cabinet acceleration over time. | | | | |
| **41** | **Last UID Badge Reader** | Badge Reader |  |  | basic |
| The last uid value read by the badge reader | | | | |
| **42** | **Last Time Badge Reader** | Badge Reader |  |  | basic |
| The date and time at which the badge reader has been used | | | | |
| **52** | **Lock 1 Open** | Access Control 1 |  |  | basic |
| The lock 1 is mechanically closed | | | | |
| **53** | **Lock 1 Enabled** | Access Control 1 |  |  | basic |
| The access control 1 is enabling the electronic lock 1 | | | | |
| **62** | **Lock 2 Open** | Access Control 2 |  |  | basic |
| The lock 2 is mechanically closed | | | | |
| **63** | **Lock 2 Enabled** | Access Control 2 |  |  | basic |
| The access control 2 is enabling the electronic lock 2 | | | | |
| **71** | **Digital Input 1 State** | Digital Inputs | Digital Input 1 |  | basic |
| The state of the digital input | | | | |
| **72** | **Digital Input 2 State** | Digital Inputs | Digital Input 2 |  | basic |
| The state of the digital input | | | | |
| **73** | **Digital Input 3 State** | Digital Inputs | Digital Input 3 |  | basic |
| The state of the digital input | | | | |
| **74** | **Digital Input 4 State** | Digital Inputs | Digital Input 4 |  | basic |
| The state of the digital input | | | | |
| **75** | **Digital Input 5 State** | Digital Inputs | Digital Input 5 |  | basic |
| The state of the digital input | | | | |
| **76** | **Digital Input 6 State** | Digital Inputs | Digital Input 6 |  | basic |
| The state of the digital input | | | | |
| **77** | **Digital Input 7 State** | Digital Inputs | Digital Input 7 |  | basic |
| The state of the digital input | | | | |
| **78** | **Digital Input 8 State** | Digital Inputs | Digital Input 8 |  | basic |
| The state of the digital input | | | | |
| **79** | **Digital Input 9 State** | Digital Inputs | Digital Input 9 |  | basic |
| The state of the digital input | | | | |
| **80** | **Digital Input 10 State** | Digital Inputs | Digital Input 10 |  | basic |
| The state of the digital input | | | | |

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| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **Cabinet Temperature High** | Alarm Parameters |  | degree C | -50/100 (50) | basic |
| The temperature over which the cabinet temperature is too high | | | | | |
| **2** | **Cabinet Temperature Low** | Alarm Parameters |  | degree C | -50/100 (-5) | basic |
| The temperature under which the cabinet temperature is too low | | | | | |
| **3** | **Temperature Hysteresis** | Alarm Parameters |  | degree C | 0/20 (1) | basic |
| The hysteresis on the temperature alarm | | | | | |
| **11** | **Cabinet Humidity High** | Alarm Parameters |  | % | 0/100 (80) | basic |
| The relative humidity over which the cabinet humidity is too high | | | | | |
| **12** | **Cabinet Humidity Low** | Alarm Parameters |  | % | 0/100 (0) | basic |
| The relative humidity over which the cabinet humidity is too low | | | | | |
| **13** | **Humidity Alarm Hysteresis** | Alarm Parameters |  | % | 0/50 (2) | basic |
| The hysteresis on the humidty alarms, in percent | | | | | |
| **21** | **Tilt X High** | Alarm Parameters |  | degree | 0/90 (10) | basic |
| The maximum absolute tilt-X value allowed for the cabinet | | | | | |
| **22** | **Tilt Y High** | Alarm Parameters |  | degree | 0/90 (10) | basic |
| The maximum absolute tilt-Y value allowed for the cabinet | | | | | |
| **23** | **Tilt Alarm Hysteresis** | Alarm Parameters |  | degree | 0/45 (2) | basic |
| The hysteresis on tilt X/Y alarms | | | | | |
| **31** | **Vandalism Detection Threshold** | Alarm Parameters |  |  |  | basic |
| The maximum vandalism score allowed for the cabinet. | | | | | |
| **41** | **Access Control 1 Enabled** | Access Control 1 |  |  | True/False (False) | basic |
| The access control 1 is enabled. The electronic lock 1 must be managed. | | | | | |
| **42** | **Access Control 1 Authorized UID** | Access Control 1 |  |  |  | basic |
| Coma separated list of the UID allowed to disable the electronic lock 1 | | | | | |
| **43** | **Access Control 1 Auto Close Time** | Access Control 1 |  | second | 0/1000 (30) | basic |
| Time in second after which the electronic lock 1 must be automatically locked again | | | | | |
| **44** | **Access Control 1 Disabled If Badge Reader Failure** | Access Control 1 |  |  | True/False (True) | basic |
| The electronic lock 1 must be disabled if the 'Badge reader failure' alarm is set. | | | | | |
| **45** | **Access Control 1 Doors Inputs** | Access Control 1 |  |  | (7,9,10) | basic |
| This is the coma separated list of the digital inputs which are door contacts related to the access control 1 | | | | | |
| **51** | **Access Control 2 Enabled** | Access Control 2 |  |  | True/False (False) | basic |
| The access control 2 is enabled. The electronic lock 2 must be managed. | | | | | |
| **52** | **Access Control 2 Authorized UID** | Access Control 2 |  |  |  | basic |
| Coma separated list of the UID allowed to disable the electronic lock 2 | | | | | |
| **53** | **Access Control 2 Auto Close Time** | Access Control 2 |  | second | 0/1000 (30) | basic |
| Time in second after which the electronic lock 2 must be automatically locked again | | | | | |
| **54** | **Access Control 2 Disabled If Badge Reader Failure** | Access Control 2 |  |  | True/False (True) | basic |
| The electronic lock 1 must be disabled if the 'Badge reader failure' alarm is set. | | | | | |
| **55** | **Access Control 2 Doors Inputs** | Access Control 2 |  |  | (8) | basic |
| This is the coma separated list of the digital inputs which are door contacts related to the access control 2 | | | | | |
| **71** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Inputs | basic |
| The name of the digital input 1. | | | | | |
| **72** | **Digital Input 1 Normally Closed** | Digital Inputs | Digital Input 1 |  | True/False (True) | basic |
| True/False value defining if the digital input 1 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **73** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Inputs | basic |
| The name of the digital input 2. | | | | | |
| **74** | **Digital Input 2 Normally Closed** | Digital Inputs | Digital Input 2 |  | True/False (True) | basic |
| True/False value defining if the digital input 2 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **75** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Inputs | basic |
| The name of the digital input 3. | | | | | |
| **76** | **Digital Input 3 Normally Closed** | Digital Inputs | Digital Input 3 |  | True/False (True) | basic |
| True/False value defining if the digital input 3 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **77** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Inputs | basic |
| The name of the digital input 4. | | | | | |
| **78** | **Digital Input 4 Normally Closed** | Digital Inputs | Digital Input 4 |  | True/False (True) | basic |
| True/False value defining if the digital input 4 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **79** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Inputs | basic |
| The name of the digital input 5. | | | | | |
| **80** | **Digital Input 5 Normally Closed** | Digital Inputs | Digital Input 5 |  | True/False (True) | basic |
| True/False value defining if the digital input 5 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **81** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Inputs | basic |
| The name of the digital input 6. | | | | | |
| **82** | **Digital Input 6 Normally Closed** | Digital Inputs | Digital Input 6 |  | True/False (True) | basic |
| True/False value defining if the digital input 6 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **83** | **Digital Input 7 Name** | Digital Inputs | Digital Input 7 |  | Digital Inputs | basic |
| The name of the digital input 7. | | | | | |
| **84** | **Digital Input 7 Normally Closed** | Digital Inputs | Digital Input 7 |  | True/False (True) | basic |
| True/False value defining if the digital input 7 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **85** | **Digital Input 8 Name** | Digital Inputs | Digital Input 8 |  | Digital Inputs | basic |
| The name of the digital input 8. | | | | | |
| **86** | **Digital Input 8 Normally Closed** | Digital Inputs | Digital Input 8 |  | True/False (True) | basic |
| True/False value defining if the digital input 8 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **87** | **Digital Input 9 Name** | Digital Inputs | Digital Input 9 |  | Digital Inputs | basic |
| The name of the digital input 9. | | | | | |
| **88** | **Digital Input 9 Normally Closed** | Digital Inputs | Digital Input 9 |  | True/False (True) | basic |
| True/False value defining if the digital input 9 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **89** | **Digital Input 10 Name** | Digital Inputs | Digital Input 10 |  | Digital Inputs | basic |
| The name of the digital input 10. | | | | | |
| **90** | **Digital Input 10 Normally Closed** | Digital Inputs | Digital Input 10 |  | True/False (True) | basic |
| True/False value defining if the digital input 10 is normally closed. If this digital input is not in this default state, the related alarm is set. | | | | | |
| **121** | **Digital Output Relay 1 Energized Boolan Condition** | Relays | Relay 1 |  |  | basic |
| PLC Boolean condition to energize the relay 1 | | | | | |
| **521** | **Read Access User Numbers** | Generic | Allowed Users |  | (1,2,3,4,5) | basic |
| The list of the user numbers which have read access to this equipment. The user numbers are coma separated. The accepted user id are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **522** | **Write Access User Numbers** | Generic | Allowed Users |  | () | basic |
| The list of the user numbers which have write access to this equipment. This means that these users can modify the configuration element, the alarm settings and use the control elements. The user numbers are coma separated. The accepted user ids are 1,2,3,4 and 5. Ex: 1,3,4 | | | | | |
| **601** | **Event Table Length** | Generic | Events |  | 10/4000 (100) | basic |
| The maximum length of the table. The value must be comprised between 10 and 4000 | | | | | |
| **901** | **Number Of PLC Data** | PLC |  |  | (0) | plc |
| The number of PLC data. Every equipment can manage up to 20 user programmable data. Data elements are automatically added in the data table. Configuration parameters are added to set the PLC Data Name and the PLC Data Mathematical calculation. In order to use these functionalities, you need a license with the 'PLC' module | | | | | |
| **902** | **Number Of PLC Alarm** | PLC |  |  | (0) | plc |
| The number of PLC alarm. Every equipment can manage up to 20 user programmable alarms. Alarm elements are automatically added in the alarm table. The alarm parameters are added to set the PLC Alarm Name and the PLC Alarm Boolean condition. In order to use these functionalities, you need a licence with the 'PLC' module | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Unlock Door 1** | Lock Control |  | basic |
| Electronic lock 1 must be disabled | | | |
| **2** | **Unlock Door 2** | Lock Control |  | basic |
| Electronic lock 2 must be disabled | | | |
| **11** | **Lock Door 1** | Lock Control |  | basic |
| Electronic lock 1 must be enabled | | | |
| **12** | **Lock Door 2** | Lock Control |  | basic |
| Electronic lock 2 must be enabled | | | |
| **31** | **Auto Calibrate Tilt Zero** | Calibration |  | basic |
| The tilt-X and tilt-Y must be calibrated to 0 with the actual tilt. | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

Remote Power Feeding System Tables

### CEM03\_Remote\_Power\_Feeding\_System

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CEM03\_Remote\_Power\_Feeding\_System |
| **Short Description** | Monitoring for Central Up Converter system |
| **Long Description** | Central monitoring card for 4 down converter cards with CAN IN/CAN OUT and 4 relays |
| **Hardware Reference** | 9413 044 89421 |
| **Software Reference** | SOFT 000022 XX |
| **Equipment Type** | Monitoring For Remote (About Remote Power Feeding System) |
| **ETSI Level** | /site/energy\_system/remote\_power\_feeding\_system |

|  |  |  |  |
| --- | --- | --- | --- |
| Description Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **1** | **Description** | Description | basic |
| A free text zone to write a system description | | |
| **2** | **Reference** | Description | basic |
| A free text zone to write the customer reference of the system | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Config Table | | | | | |
| *Id* | *Name* | *Group* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **Number of CEM03 By Shelf** | Up Converters |  |  | basic |
| Maximum number of CEM03 cards that are authorized by shelf. This parameter value must be comprised between 1 and 4. | | | | |

### CEM03 Remote Power Feeding\_System

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CEM03 Remote Power Feeding\_System |
| **Short Description** | Monitoring for Central Up Converter system |
| **Long Description** | Central monitoring card for 4 down converter cards with CAN IN/CAN OUT and 4 relays |
| **Hardware Reference** | 9413 044 89421 |
| **Software Reference** | SOFT 000022 XX |
| **Equipment Type** | Monitoring For Remote (About Remote Power Feeding System) |
| **ETSI Level** | /site/energy\_system/remote\_power\_feeding\_system |

Up Converter System Tables

### CEM03\_Up\_Converter\_System

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CEM03\_Up\_Converter\_System |
| **Short Description** | Monitoring for Central Up Converter system |
| **Long Description** | Central monitoring card for 4 down converter cards with CAN IN/CAN OUT and 4 relays |
| **Hardware Reference** | 9413 044 89421 |
| **Software Reference** | SOFT 000022 XX |
| **Equipment Type** | Monitoring For Remote (About Up Converter System) |
| **ETSI Level** | /site/energy\_system/remote\_power\_feeding\_system/up\_converter\_system |

|  |  |  |  |
| --- | --- | --- | --- |
| Description Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **1** | **Description** | Description | basic |
| A free text zone to write a system description | | |
| **2** | **Reference** | Description | basic |
| A free text zone to write the customer reference of the system | | |
| **11** | **Product Name** | Monitoring | basic |
| The product name of the DC system monitoring | | |
| **12** | **Hardware Reference** | Monitoring | basic |
| The hardware reference of the DC system monitoring | | |
| **14** | **Software Reference** | Monitoring | asset |
| The serial number of the DC system monitoring | | |
| **16** | **Serial Number** | Monitoring | asset |
| The serial number of the DC system monitoring | | |
| **17** | **Manufacturing ID** | Monitoring | asset |
| The batch id of the DC system monitoring | | |
| **18** | **Manufacturing Date** | Monitoring | asset |
| The production date of the DC system monitoring | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Alarm Table | | | |
| *Id* | *Name* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **One Up Converter Failure** | minor (4) | 5 / 2 |
| One Up converter is defect or not connected to a down converter (and enabled) | | |
| **2** | **More Than One Up Converter Failure** | major (6) | 5 / 2 |
| More than one Up converter is defect or not connected to a down converter (and enabled) | | |
| **3** | **More Than One Up Converter Card Failure** | major (6) | 5 / 2 |
| More than one up converter card is defect or not connected to a down converter (and enabled) | | |
| **11** | **One FAN Failure** | minor (4) | 5 / 2 |
| One FAN has a problem | | |
| **12** | **More Than One FAN Failure** | major (6) | 5 / 2 |
| More Than One FAN has a problem | | |
| **14** | **Configuration Problem** | minor (4) | 5 / 2 |
| There is a configuration problem. A card is configuted but not available | | |
| **20** | **Slot 0 Alarm** | minor (4) | 15 / 15 |
| Slot 0 is in alarm | | |
| **21** | **Slot 1 Alarm** | minor (4) | 15 / 15 |
| Slot 1 is in alarm | | |
| **22** | **Slot 2 Alarm** | minor (4) | 15 / 15 |
| Slot 2 is in alarm | | |
| **23** | **Slot 3 Alarm** | minor (4) | 15 / 15 |
| Slot 3 is in alarm | | |
| **24** | **Slot 4 Alarm** | minor (4) | 15 / 15 |
| Slot 4 is in alarm | | |
| **25** | **Slot 5 Alarm** | minor (4) | 15 / 15 |
| Slot 5 is in alarm | | |
| **26** | **Slot 6 Alarm** | minor (4) | 15 / 15 |
| Slot 6 is in alarm | | |
| **27** | **Slot 7 Alarm** | minor (4) | 15 / 15 |
| Slot 7 is in alarm | | |
| **28** | **Slot 8 Alarm** | minor (4) | 15 / 15 |
| Slot 8 is in alarm | | |
| **29** | **Slot 9 Alarm** | minor (4) | 15 / 15 |
| Slot 9 is in alarm | | |
| **30** | **Slot 10 Alarm** | minor (4) | 15 / 15 |
| Slot 10 is in alarm | | |
| **31** | **Slot 11 Alarm** | minor (4) | 15 / 15 |
| Slot 11 is in alarm | | |
| **32** | **Slot 12 Alarm** | minor (4) | 15 / 15 |
| Slot 12 is in alarm | | |
| **33** | **Slot 13 Alarm** | minor (4) | 15 / 15 |
| Slot 13 is in alarm | | |
| **34** | **Slot 14 Alarm** | minor (4) | 15 / 15 |
| Slot 14 is in alarm | | |
| **35** | **Slot 15 Alarm** | minor (4) | 15 / 15 |
| Slot 15 is in alarm | | |
| **36** | **Slot 16 Alarm** | minor (4) | 15 / 15 |
| Slot 16 is in alarm | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data Table | | | | |
| *Id* | *Name* | *Group* | *Unit* | *License* |
| **1** | **Input Voltage** | Rack | Volt | basic |
| No information | | | |
| **2** | **Temperature** | Rack | degree C | basic |
| No information | | | |
| **12** | **Number Of Up Converter NOK** | Up Converters |  | basic |
| No information | | | |
| **13** | **Number Of Up Converter Card NOK** | Up Converters |  | basic |
| No information | | | |
| **20** | **Status Slot 0** | Slots Status |  | basic |
| No information | | | |
| **21** | **Status Slot 1** | Slots Status |  | basic |
| No information | | | |
| **22** | **Status Slot 2** | Slots Status |  | basic |
| No information | | | |
| **23** | **Status Slot 3** | Slots Status |  | basic |
| No information | | | |
| **24** | **Status Slot 4** | Slots Status |  | basic |
| No information | | | |
| **25** | **Status Slot 5** | Slots Status |  | basic |
| No information | | | |
| **26** | **Status Slot 6** | Slots Status |  | basic |
| No information | | | |
| **27** | **Status Slot 7** | Slots Status |  | basic |
| No information | | | |
| **28** | **Status Slot 8** | Slots Status |  | basic |
| No information | | | |
| **29** | **Status Slot 9** | Slots Status |  | basic |
| No information | | | |
| **30** | **Status Slot 10** | Slots Status |  | basic |
| No information | | | |
| **31** | **Status Slot 11** | Slots Status |  | basic |
| No information | | | |
| **32** | **Status Slot 12** | Slots Status |  | basic |
| No information | | | |
| **33** | **Status Slot 13** | Slots Status |  | basic |
| No information | | | |
| **34** | **Status Slot 14** | Slots Status |  | basic |
| No information | | | |
| **35** | **Status Slot 15** | Slots Status |  | basic |
| No information | | | |
| **36** | **Status Slot 16** | Slots Status |  | basic |
| No information | | | |
| **51** | **Powered Site Ids** | Monitoring |  | basic |
| No information | | | |
| **52** | **Monitored Site Ids** | Monitoring |  | basic |
| No information | | | |
| **53** | **Powered Site Ids with Possible Line Feed Problem** | Monitoring |  | basic |
| No information | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Config Table | | | | | |
| *Id* | *Name* | *Group* | *Unit* | *Range: Min/Max (default)* | *License* |
| **20** | **Slot 0** | Config Site |  |  | basic |
| No information | | | | |
| **21** | **Slot 1** | Config Site |  |  | basic |
| No information | | | | |
| **22** | **Slot 2** | Config Site |  |  | basic |
| No information | | | | |
| **23** | **Slot 3** | Config Site |  |  | basic |
| No information | | | | |
| **24** | **Slot 4** | Config Site |  |  | basic |
| No information | | | | |
| **25** | **Slot 5** | Config Site |  |  | basic |
| No information | | | | |
| **26** | **Slot 6** | Config Site |  |  | basic |
| No information | | | | |
| **27** | **Slot 7** | Config Site |  |  | basic |
| No information | | | | |
| **28** | **Slot 8** | Config Site |  |  | basic |
| No information | | | | |
| **29** | **Slot 9** | Config Site |  |  | basic |
| No information | | | | |
| **30** | **Slot 10** | Config Site |  |  | basic |
| No information | | | | |
| **31** | **Slot 11** | Config Site |  |  | basic |
| No information | | | | |
| **32** | **Slot 12** | Config Site |  |  | basic |
| No information | | | | |
| **33** | **Slot 13** | Config Site |  |  | basic |
| No information | | | | |
| **34** | **Slot 14** | Config Site |  |  | basic |
| No information | | | | |
| **35** | **Slot 15** | Config Site |  |  | basic |
| No information | | | | |
| **36** | **Slot 16** | Config Site |  |  | basic |
| No information | | | | |
| **51** | **Urgent Relay Energized Boolean Condition** | Relays |  |  | basic |
| No information | | | | |
| **52** | **Non Urgent Relay Energized Boolean Condition** | Relays |  |  | basic |
| No information | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Control Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **501** | **Clear My Events** | Event | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | |
| **502** | **Clear All Events** | Event | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | |
| **511** | **Add Event** | Event | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | |
| **512** | **Add Major Event** | Event | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | |
| **521** | **Reset Default Names And Groups** | Advanced | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | |
| **522** | **Reset Default Names And Groups Recursive** | Advanced | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | |

### CEM03 Up Converter\_System

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CEM03 Up Converter\_System |
| **Short Description** | Monitoring for Central Up Converter system |
| **Long Description** | Central monitoring card for 4 down converter cards with CAN IN/CAN OUT and 4 relays |
| **Hardware Reference** | 9413 044 89421 |
| **Software Reference** | SOFT 000022 XX |
| **Equipment Type** | Monitoring For Remote (About Up Converter System) |
| **ETSI Level** | /site/energy\_system/remote\_power\_feeding\_system/up\_converter\_system |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **11** | **Product Name** | Monitoring |  | basic |
| The product name of the DC system monitoring | | | |
| **12** | **Hardware Reference** | Monitoring |  | basic |
| The hardware reference of the DC system monitoring | | | |
| **14** | **Software Reference** | Monitoring |  | asset |
| The serial number of the DC system monitoring | | | |
| **16** | **Serial Number** | Monitoring |  | asset |
| The serial number of the DC system monitoring | | | |
| **18** | **Manufacturing Date** | Monitoring |  | asset |
| The production date of the DC system monitoring | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **One Up Converter Failure** | Up Converters |  | minor (4) | 5 / 2 |
| One Up converter is defect or not connected to a down converter (and enabled) | | | | |
| **2** | **More Than One Up Converter Failure** | Up Converters |  | major (6) | 5 / 2 |
| More than one Up converter is defect or not connected to a down converter (and enabled) | | | | |
| **3** | **More Than One Up Converter Card Failure** | Up Converters |  | major (6) | 5 / 2 |
| More than one up converter card is defect or not connected to a down converter (and enabled) | | | | |
| **11** | **One FAN Failure** | Up Converters |  | minor (4) | 5 / 2 |
| One FAN has a problem | | | | |
| **12** | **More Than One FAN Failure** | Up Converters |  | major (6) | 5 / 2 |
| More Than One FAN has a problem | | | | |
| **14** | **Configuration Problem** | Slots |  | minor (4) | 5 / 2 |
| There is a configuration problem. A card is configuted but not available | | | | |
| **20** | **Slot 0 Alarm** | Slots | Slot 0 | minor (4) | 15 / 15 |
| Slot 0 is in alarm | | | | |
| **21** | **Slot 1 Alarm** | Slots | Slot 1 | minor (4) | 15 / 15 |
| Slot 1 is in alarm | | | | |
| **22** | **Slot 2 Alarm** | Slots | Slot 2 | minor (4) | 15 / 15 |
| Slot 2 is in alarm | | | | |
| **23** | **Slot 3 Alarm** | Slots | Slot 3 | minor (4) | 15 / 15 |
| Slot 3 is in alarm | | | | |
| **24** | **Slot 4 Alarm** | Slots | Slot 4 | minor (4) | 15 / 15 |
| Slot 4 is in alarm | | | | |
| **25** | **Slot 5 Alarm** | Slots | Slot 5 | minor (4) | 15 / 15 |
| Slot 5 is in alarm | | | | |
| **26** | **Slot 6 Alarm** | Slots | Slot 6 | minor (4) | 15 / 15 |
| Slot 6 is in alarm | | | | |
| **27** | **Slot 7 Alarm** | Slots | Slot 7 | minor (4) | 15 / 15 |
| Slot 7 is in alarm | | | | |
| **28** | **Slot 8 Alarm** | Slots | Slot 8 | minor (4) | 15 / 15 |
| Slot 8 is in alarm | | | | |
| **29** | **Slot 9 Alarm** | Slots | Slot 9 | minor (4) | 15 / 15 |
| Slot 9 is in alarm | | | | |
| **30** | **Slot 10 Alarm** | Slots | Slot 10 | minor (4) | 15 / 15 |
| Slot 10 is in alarm | | | | |
| **31** | **Slot 11 Alarm** | Slots | Slot 11 | minor (4) | 15 / 15 |
| Slot 11 is in alarm | | | | |
| **32** | **Slot 12 Alarm** | Slots | Slot 12 | minor (4) | 15 / 15 |
| Slot 12 is in alarm | | | | |
| **33** | **Slot 13 Alarm** | Slots | Slot 13 | minor (4) | 15 / 15 |
| Slot 13 is in alarm | | | | |
| **34** | **Slot 14 Alarm** | Slots | Slot 14 | minor (4) | 15 / 15 |
| Slot 14 is in alarm | | | | |
| **35** | **Slot 15 Alarm** | Slots | Slot 15 | minor (4) | 15 / 15 |
| Slot 15 is in alarm | | | | |
| **36** | **Slot 16 Alarm** | Slots | Slot 16 | minor (4) | 15 / 15 |
| Slot 16 is in alarm | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Input Voltage** | Rack |  | Volt | basic |
|  | | | | |
| **2** | **Temperature** | Rack |  | degree C | basic |
|  | | | | |
| **12** | **Number Of Up Converter NOK** | Up Converters |  |  | basic |
|  | | | | |
| **13** | **Number Of Up Converter Card NOK** | Up Converters |  |  | basic |
|  | | | | |
| **20** | **Status Slot 0** | Slots | Slot 0 |  | basic |
|  | | | | |
| **21** | **Status Slot 1** | Slots | Slot 1 |  | basic |
|  | | | | |
| **22** | **Status Slot 2** | Slots | Slot 2 |  | basic |
|  | | | | |
| **23** | **Status Slot 3** | Slots | Slot 3 |  | basic |
|  | | | | |
| **24** | **Status Slot 4** | Slots | Slot 4 |  | basic |
|  | | | | |
| **25** | **Status Slot 5** | Slots | Slot 5 |  | basic |
|  | | | | |
| **26** | **Status Slot 6** | Slots | Slot 6 |  | basic |
|  | | | | |
| **27** | **Status Slot 7** | Slots | Slot 7 |  | basic |
|  | | | | |
| **28** | **Status Slot 8** | Slots | Slot 8 |  | basic |
|  | | | | |
| **29** | **Status Slot 9** | Slots | Slot 9 |  | basic |
|  | | | | |
| **30** | **Status Slot 10** | Slots | Slot 10 |  | basic |
|  | | | | |
| **31** | **Status Slot 11** | Slots | Slot 11 |  | basic |
|  | | | | |
| **32** | **Status Slot 12** | Slots | Slot 12 |  | basic |
|  | | | | |
| **33** | **Status Slot 13** | Slots | Slot 13 |  | basic |
|  | | | | |
| **34** | **Status Slot 14** | Slots | Slot 14 |  | basic |
|  | | | | |
| **35** | **Status Slot 15** | Slots | Slot 15 |  | basic |
|  | | | | |
| **36** | **Status Slot 16** | Slots | Slot 16 |  | basic |
|  | | | | |
| **51** | **Powered Site Ids** | Monitoring |  |  | basic |
|  | | | | |
| **52** | **Monitored Site Ids** | Monitoring |  |  | basic |
|  | | | | |
| **53** | **Powered Site Ids with Possible Line Feed Problem** | Monitoring |  |  | basic |
|  | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **20** | **Slot 0** | Slots | Slot 0 |  |  | basic |
|  | | | | | |
| **21** | **Slot 1** | Slots | Slot 1 |  |  | basic |
|  | | | | | |
| **22** | **Slot 2** | Slots | Slot 2 |  |  | basic |
|  | | | | | |
| **23** | **Slot 3** | Slots | Slot 3 |  |  | basic |
|  | | | | | |
| **24** | **Slot 4** | Slots | Slot 4 |  |  | basic |
|  | | | | | |
| **25** | **Slot 5** | Slots | Slot 5 |  |  | basic |
|  | | | | | |
| **26** | **Slot 6** | Slots | Slot 6 |  |  | basic |
|  | | | | | |
| **27** | **Slot 7** | Slots | Slot 7 |  |  | basic |
|  | | | | | |
| **28** | **Slot 8** | Slots | Slot 8 |  |  | basic |
|  | | | | | |
| **29** | **Slot 9** | Slots | Slot 9 |  |  | basic |
|  | | | | | |
| **30** | **Slot 10** | Slots | Slot 10 |  |  | basic |
|  | | | | | |
| **31** | **Slot 11** | Slots | Slot 11 |  |  | basic |
|  | | | | | |
| **32** | **Slot 12** | Slots | Slot 12 |  |  | basic |
|  | | | | | |
| **33** | **Slot 13** | Slots | Slot 13 |  |  | basic |
|  | | | | | |
| **34** | **Slot 14** | Slots | Slot 14 |  |  | basic |
|  | | | | | |
| **35** | **Slot 15** | Slots | Slot 15 |  |  | basic |
|  | | | | | |
| **36** | **Slot 16** | Slots | Slot 16 |  |  | basic |
|  | | | | | |
| **51** | **Urgent Relay Energized Boolean Condition** | Relays |  |  |  | basic |
|  | | | | | |
| **52** | **Non Urgent Relay Energized Boolean Condition** | Relays |  |  |  | basic |
|  | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

Remote Site Tables

### CEM03\_Remote\_Site

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CEM03\_Remote\_Site |
| **Short Description** | Monitoring for Central Up Converter system |
| **Long Description** | Central monitoring card for 4 down converter cards with CAN IN/CAN OUT and 4 relays |
| **Hardware Reference** | 9413 044 89421 |
| **Software Reference** | SOFT 000022 XX |
| **Equipment Type** | Monitoring For Remote (About Remote Site) |
| **ETSI Level** | /site/energy\_system/remote\_power\_feeding\_system/remote\_site |

|  |  |  |  |
| --- | --- | --- | --- |
| Description Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **2** | **Site Name** | Site | basic |
| The name of the site | | |
| **3** | **Short Description** | Site | basic |
| A short description of the site | | |
| **4** | **Info** | Site | basic |
| Some more information about the site | | |
| **11** | **Street** | Address | basic |
| Street part of the site address | | |
| **12** | **City** | Address | basic |
| City part of the site address | | |
| **13** | **Province** | Address | basic |
| Province part of the site address | | |
| **14** | **Postal Code** | Address | basic |
| Postal Code part of the site address | | |
| **15** | **Region** | Address | basic |
| Region part of the site address | | |
| **16** | **Country** | Address | basic |
| Country part of the site address | | |
| **31** | **Latitude** | GPS Position | asset |
| The latitude of the site | | |
| **32** | **Longitude** | GPS Position | asset |
| The longitude of the site | | |
| **33** | **Altitude** | GPS Position | asset |
| The altitude of the site | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Alarm Table | | | |
| *Id* | *Name* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **One Down Converter Failure** | minor (4) | 10 / 2 |
|  | | |
| **2** | **More Than One Down Converter Failure** | major (6) | 10 / 2 |
|  | | |
| **3** | **One Fan Failure** | minor (4) | 30 / 2 |
|  | | |
| **4** | **More Than One FAN Failure** | major (6) | 30 / 2 |
|  | | |
| **5** | **Possible Power Feed Reduced** | warning (2) | 5 / 2 |
|  | | |
| **8** | **One Down Converter Over Temperature** | minor (4) | 10 / 2 |
|  | | |
| **9** | **Output 1 Off** | major (6) | 5 / 2 |
|  | | |
| **10** | **Output 2 Off** | major (6) | 5 / 2 |
|  | | |
| **15** | **Communication Failure** | major (6) | 5 / 2 |
|  | | |
| **25** | **Digital Input 1** | major (6) | 5 / 2 |
| This alarm is related to digital input 1 | | |
| **26** | **Digital Input 2** | major (6) | 5 / 2 |
| This alarm is related to digital input 2 | | |
| **27** | **Digital Input 3** | major (6) | 5 / 2 |
| This alarm is related to digital input 3 | | |
| **28** | **Digital Input 4** | minor (4) | 5 / 2 |
| This alarm is related to digital input 4 | | |
| **29** | **Digital Input 5** | minor (4) | 5 / 2 |
| This alarm is related to digital input 5 | | |
| **30** | **Digital Input 6** | minor (4) | 5 / 2 |
| This alarm is related to digital input 6 | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data Table | | | | |
| *Id* | *Name* | *Group* | *Unit* | *License* |
| **1** | **Number of Configured Power Lines** | Lines |  | basic |
| No information | | | |
| **2** | **Line Configured for Monitoring** | Lines |  | basic |
| No information | | | |
| **11** | **Remote Type** | Remote DC System |  | basic |
| No information | | | |
| **12** | **Input Voltage** | Remote DC System | Volt | basic |
| No information | | | |
| **13** | **Input Common Mode Voltage** | Remote DC System | Volt | basic |
| Input Common Mode Voltage with respect to ground | | | |
| **14** | **Output Voltage** | Remote DC System | Volt | basic |
| No information | | | |
| **15** | **Temperature** | Remote DC System | degree C | basic |
| No information | | | |
| **21** | **Number Of Declared Down Converters** | Remote DC System |  | basic |
| No information | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Config Table | | | | | |
| *Id* | *Name* | *Group* | *Unit* | *Range: Min/Max (default)* | *License* |
| **91** | **Digital Input 1 Name** | Digital Inputs |  | Digital Input 1 | basic |
| The name of the digital input 1 | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs |  | Digital Input 2 | basic |
| The name of the digital input 2 | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Control Table | | | |
| *Id* | *Name* | *Group* | *License* |
| **11** | **Copy Address From Top Site Level** | Address | basic |
| Writing a '1' to this control element will copy the Address from the Site level, except the Street Name | | |
| **501** | **Clear My Events** | Event | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | |
| **502** | **Clear All Events** | Event | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | |
| **511** | **Add Event** | Event | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | |
| **512** | **Add Major Event** | Event | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | |
| **521** | **Reset Default Names And Groups** | Advanced | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | |
| **522** | **Reset Default Names And Groups Recursive** | Advanced | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | |

### CEM03 Remote Site

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | CEM03 Remote Site |
| **Short Description** | Monitoring for Central Up Converter system |
| **Long Description** | Central monitoring card for 4 down converter cards with CAN IN/CAN OUT and 4 relays |
| **Hardware Reference** | 9413 044 89421 |
| **Software Reference** | SOFT 000022 XX |
| **Equipment Type** | Monitoring For Remote (About Remote Site) |
| **ETSI Level** | /site/energy\_system/remote\_power\_feeding\_system/remote\_site |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **2** | **Site Name** | Site |  | basic |
| The name of the site | | | |
| **3** | **Short Description** | Site |  | basic |
| A short description of the site | | | |
| **4** | **Info** | Site |  | basic |
| Some more information about the site | | | |
| **11** | **Street** | Address |  | basic |
| Street part of the site address | | | |
| **12** | **City** | Address |  | basic |
| City part of the site address | | | |
| **13** | **Province** | Address |  | basic |
| Province part of the site address | | | |
| **14** | **Postal Code** | Address |  | basic |
| Postal Code part of the site address | | | |
| **15** | **Region** | Address |  | basic |
| Region part of the site address | | | |
| **16** | **Country** | Address |  | basic |
| Country part of the site address | | | |
| **31** | **Latitude** | GPS Position |  | asset |
| The latitude of the site | | | |
| **32** | **Longitude** | GPS Position |  | asset |
| The longitude of the site | | | |
| **33** | **Altitude** | GPS Position |  | asset |
| The altitude of the site | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **One Down Converter Failure** | Converters |  | minor (4) | 10 / 2 |
|  | | | | |
| **2** | **More Than One Down Converter Failure** | Converters |  | major (6) | 10 / 2 |
|  | | | | |
| **3** | **One Fan Failure** | Converters |  | minor (4) | 30 / 2 |
|  | | | | |
| **4** | **More Than One FAN Failure** | Converters |  | major (6) | 30 / 2 |
|  | | | | |
| **5** | **Possible Power Feed Reduced** | Converters |  | warning (2) | 5 / 2 |
|  | | | | |
| **8** | **One Down Converter Over Temperature** | Converters |  | minor (4) | 10 / 2 |
|  | | | | |
| **9** | **Output 1 Off** | Outputs |  | major (6) | 5 / 2 |
|  | | | | |
| **10** | **Output 2 Off** | Outputs |  | major (6) | 5 / 2 |
|  | | | | |
| **15** | **Communication Failure** | Communication |  | major (6) | 5 / 2 |
|  | | | | |
| **25** | **Digital Input 1** | Digital Inputs | Digital Input 1 | major (0) | 5 / 2 |
| This alarm is related to digital input 1 | | | | |
| **26** | **Digital Input 2** | Digital Inputs | Digital Input 2 | major (0) | 5 / 2 |
| This alarm is related to digital input 2 | | | | |
| **27** | **Digital Input 3** | Digital Inputs | Digital Input 3 | major (0) | 5 / 2 |
| This alarm is related to digital input 3 | | | | |
| **28** | **Digital Input 4** | Digital Inputs | Digital Input 4 | minor (0) | 5 / 2 |
| This alarm is related to digital input 4 | | | | |
| **29** | **Digital Input 5** | Digital Inputs | Digital Input 5 | minor (0) | 5 / 2 |
| This alarm is related to digital input 5 | | | | |
| **30** | **Digital Input 6** | Digital Inputs | Digital Input 6 | minor (0) | 5 / 2 |
| This alarm is related to digital input 6 | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Number of Configured Power Lines** | Lines |  |  | basic |
|  | | | | |
| **2** | **Line Configured for Monitoring** | Lines |  |  | basic |
|  | | | | |
| **11** | **Remote Type** | Remote DC System |  |  | basic |
|  | | | | |
| **12** | **Input Voltage** | Remote DC System |  | Volt | basic |
|  | | | | |
| **13** | **Input Common Mode Voltage** | Remote DC System |  | Volt | basic |
| Input Common Mode Voltage with respect to ground | | | | |
| **14** | **Output Voltage** | Remote DC System |  | Volt | basic |
|  | | | | |
| **15** | **Temperature** | Remote DC System |  | degree C | basic |
|  | | | | |
| **21** | **Number Of Declared Down Converters** | Remote DC System |  |  | basic |
|  | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **91** | **Digital Input 1 Name** | Digital Inputs | Digital Input 1 |  | Digital Input 1 | basic |
| The name of the digital input 1 | | | | | |
| **93** | **Digital Input 2 Name** | Digital Inputs | Digital Input 2 |  | Digital Input 2 | basic |
| The name of the digital input 2 | | | | | |
| **95** | **Digital Input 3 Name** | Digital Inputs | Digital Input 3 |  | Digital Input 3 | basic |
| The name of the digital input 3 | | | | | |
| **97** | **Digital Input 4 Name** | Digital Inputs | Digital Input 4 |  | Digital Input 4 | basic |
| The name of the digital input 4 | | | | | |
| **99** | **Digital Input 5 Name** | Digital Inputs | Digital Input 5 |  | Digital Input 5 | basic |
| The name of the digital input 5 | | | | | |
| **101** | **Digital Input 6 Name** | Digital Inputs | Digital Input 6 |  | Digital Input 6 | basic |
| The name of the digital input 6 | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **11** | **Copy Address From Top Site Level** | Address |  | basic |
| Writing a '1' to this control element will copy the Address from the Site level, except the Street Name | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

Inverter Tables

### Inverter Module (T2S)

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | Inverter Module (T2S) |
| **Short Description** | Inverter (Bravo, Media, Nova, etc.), managed by T2S |
| **Long Description** |  |
| **Hardware Reference** |  |
| **Software Reference** |  |
| **Equipment Type** | Missing information |
| **ETSI Level** | /site/energy\_system/inverter\_system/inverter |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **5** | **Serial Number** | Product Info |  | basic |
| Serial Number | | | |
| **6** | **Version** | Product Info |  | basic |
| Software Revision | | | |
| **11** | **Module Number** | Live Configuration |  | basic |
| Module Address | | | |
| **21** | **AC Output Group** | Live Configuration |  | basic |
| Inverter module AC output group | | | |
| **22** | **AC Input Group** | Live Configuration |  | basic |
| Inverter module AC input group | | | |
| **23** | **DC Input Group** | Live Configuration |  | basic |
| Inverter module DC input group | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **34** | **Temp Too High** | General |  | major (6) | 5 / 2 |
| Temperature on heat sink to high | | | | |
| **83** | **Manually Off** | General |  | minor (4) | 5 / 2 |
| The inverter are seted in manually OFF. | | | | |
| **101** | **Fan Failure** | General |  | major (6) | 5 / 2 |
| Failed fan or speed inapropriate | | | | |
| **161** | **Vac In Too Low** | AC IN |  | minor (4) | 5 / 2 |
|  | | | | |
| **162** | **Vac In Too High** | AC IN |  | minor (4) | 5 / 2 |
|  | | | | |
| **194** | **Vdc In Too Low** | DC IN |  | minor (4) | 5 / 2 |
|  | | | | |
| **195** | **Vdc In Too High** | DC IN |  | minor (4) | 5 / 2 |
|  | | | | |
| **255** | **Specific Alarm** |  |  | major (6) | 5 / 2 |
| Specific manufacturer alarm. Please contact your reseller | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Module Status** | Inverter Status |  |  | basic |
| Module Status | | | | |
| **2** | **AC Output Status** | Inverter Status |  |  | basic |
| Module AC output status | | | | |
| **3** | **AC Input Status** | Inverter Status |  |  | basic |
| Module AC input status | | | | |
| **4** | **DC Input Status** | Inverter Status |  |  | basic |
| Module DC input status | | | | |
| **5** | **Temperature** | Inverter Status |  | degree C | basic |
| Temperature | | | | |
| **11** | **Output Voltage** | AC Output |  | Volt | basic |
| Output voltage in volts | | | | |
| **12** | **Output Current** | AC Output |  | Ampere | basic |
| Output current in amperes | | | | |
| **13** | **Output Power** | AC Output |  | Watt | basic |
| Output power in watts | | | | |
| **14** | **Output Apparent Power** | AC Output |  | VA | basic |
| Output apparent power in VA | | | | |
| **16** | **Load Position regarding input power source** | AC Output |  |  | basic |
| Position of the load regarding input power sources | | | | |
| **17** | **Loading Ratio in W** | AC Output |  | % | basic |
| Loading ratio regarding power un watts | | | | |
| **18** | **Loading Ratio in VA** | AC Output |  | % | basic |
| Loading ratio regarding power un watts | | | | |
| **21** | **Input Voltage** | AC Input |  | Volt | basic |
| AC input voltage | | | | |
| **22** | **Input Current** | AC Input |  | Ampere | basic |
| AC input current | | | | |
| **23** | **Input Power** | AC Input |  | Watt | basic |
| AC input power in watts | | | | |
| **24** | **Input Apparent Power** | AC Input |  | VA | basic |
| AC apparent input power in VA | | | | |
| **25** | **Input Frequency** | AC Input |  | Hz | basic |
| AC Input Frequency | | | | |
| **31** | **Input Voltage** | DC Input |  | Volt | basic |
| DC input voltage | | | | |
| **32** | **Input Current** | DC Input |  | Ampere | basic |
| DC input current | | | | |
| **33** | **Input Power** | DC Input |  | Watt | basic |
| DC input power | | | | |
| **101** | **Specific Id Alarms** | Error List |  |  | basic |
| List of active manufacturer specific alarms | | | | |
| **102** | **Alarm Name List** | Error List |  |  | basic |
| List of active manufacturer specific alarms | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Start Locate Inverter** | TSI Inverter |  | basic |
| Locate the inverter module. | | | |
| **11** | **Turn On Module** | TSI Inverter |  | basic |
| Turn on the inverter module. | | | |
| **12** | **Turn Off Module** | TSI Inverter |  | basic |
| Turn off the inverter module. | | | |
| **21** | **Modify AC Input Group** | TSI Inverter |  | basic |
| Modify ... | | | |
| **22** | **Modify DC Input Group** | TSI Inverter |  | basic |
| Modify ... | | | |
| **23** | **Modify AC Output Group** | TSI Inverter |  | basic |
| Modify ... | | | |
| **31** | **Modify Inverter Id** | TSI Inverter |  | basic |
| Modify ... | | | |

Inverter System Tables

### Inverter System (T2S)

|  |  |
| --- | --- |
| **Device Information** | |
| **Name** | Inverter System (T2S) |
| **Short Description** | Inverter System (With Bravo, Media, Nova, etc. ), managed by T2S |
| **Long Description** |  |
| **Hardware Reference** |  |
| **Software Reference** |  |
| **Equipment Type** | Missing information |
| **ETSI Level** | /site/energy\_system/inverter\_system |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Description** | Description | Custom Description | basic |
| A free text zone to write a system description | | | |
| **2** | **Reference** | Description | Custom Description | basic |
| A free text zone to write the customer reference of the system | | | |
| **10** | **T2S Serial Number** | Description | T2S | basic |
| T2S Serial Number | | | |
| **11** | **T2S Software Revision** | Description | T2S | basic |
| T2S Software Revision | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Alarm Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Severity Type (Level)* | *Set/Clear Delay* |
| **1** | **One Inverter in Alarm** | Inverter System |  | minor (4) | 5 / 2 |
| One Inverter is in alarm. Check specific Inverter Alarm table. | | | | |
| **2** | **More Than One Inverter in Alarm** | Inverter System |  | major (6) | 10 / 2 |
| More than one Inverter are in alarm | | | | |
| **161** | **Vac In Too Low** | AC Inputs |  | minor (4) | 5 / 2 |
|  | | | | |
| **162** | **Vac In Too High** | AC Inputs |  | minor (4) | 5 / 2 |
|  | | | | |
| **194** | **Vdc In Too Low** | DC Inputs |  | minor (4) | 5 / 2 |
|  | | | | |
| **195** | **Vdc In Too High** | DC Inputs |  | minor (4) | 5 / 2 |
|  | | | | |
| **227** | **Digital Input 1 Failure** | Digital Inputs |  | major (6) | 5 / 2 |
| Give alarm with code 227 and appropriate texte when digital input 1 change is state | | | | |
| **228** | **Digital Input 2 Failure** | Digital Inputs |  | major (6) | 5 / 2 |
| Give alarm with code 228 and appropriate text when digital input 2 change is state | | | | |
| **229** | **Redundancy Lost** | Inverter System |  | minor (4) | 5 / 2 |
| Give alarm with code 229 and text 'Redudancy Lost' when the condition is true | | | | |
| **230** | **Redundancy Plus 1 Lost** | Inverter System |  | major (6) | 5 / 2 |
| Give alarm with code 230 and text 'Redudancy + 1 Lost' when the condition is true | | | | |
| **232** | **Main Source Lost** | AC Inputs |  | major (6) | 5 / 2 |
| Give alarm with code 232 and text 'Mains source lost' when the condition is true | | | | |
| **233** | **Secondary Source Lost** | DC Inputs |  | minor (4) | 5 / 2 |
| Give alarm with code 233 and 'Sec Source Lost' when the condition is true | | | | |
| **235** | **T2S Failure** | Inverter System |  | major (6) | 5 / 2 |
| Give alarm with code 235 and text 'T2S FAILURE' when the condition is true | | | | |
| **255** | **Specific Alarm** |  |  | major (6) | 5 / 2 |
| Specific manufacturer alarm. Please contact your reseller | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Table | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *License* |
| **1** | **Output Voltage** | AC Outputs | AC Output 1 | Volt | basic |
| Output Voltage in volts group 1 | | | | |
| **2** | **Output Power** | AC Outputs | AC Output 1 | Ampere | basic |
| Output Current in amperes group 1 | | | | |
| **3** | **Output Power** | AC Outputs | AC Output 1 | Watt | basic |
| Output power in watts group 1 | | | | |
| **4** | **Output Apparent Power** | AC Outputs | AC Output 1 | VA | basic |
| Output apparent power in VA group 1 | | | | |
| **5** | **Output Frequency** | AC Outputs | AC Output 1 | Hz | basic |
| Output Frequency in hertz group 1 | | | | |
| **6** | **Loading Ratio** | AC Outputs | AC Output 1 | % | basic |
| Ratio between output load and available power expressed in watts group 1 | | | | |
| **7** | **Loading Ratio - Available Power in VA** | AC Outputs | AC Output 1 | % | basic |
| Ratio between output load and available power expressed in VA group 1 | | | | |
| **8** | **Loading Ratio - Installed Power in W** | AC Outputs | AC Output 1 | % | basic |
| Ratio between output load and installed power expressed in watts group 1 | | | | |
| **9** | **Loading Ratio - Installed Power in VA** | AC Outputs | AC Output 1 | % | basic |
| Ratio between output load and installed power expressed in VA group 1 | | | | |
| **10** | **Number Of Modules Configured** | AC Outputs | AC Output 1 |  | basic |
| Number of modules configured for the phase 1 | | | | |
| **11** | **Amount of redundancy configured** | AC Outputs | AC Output 1 |  | basic |
| Amount of redundancy configured in the phase 1 | | | | |
| **12** | **DC Input Power** | AC Outputs | AC Output 1 | Watt | basic |
| DC input power for group 1 | | | | |
| **13** | **AC Input Power in W** | AC Outputs | AC Output 1 | Watt | basic |
| AC input power (W) for group 1 | | | | |
| **14** | **AC Input Power in VA** | AC Outputs | AC Output 1 | VA | basic |
| AC input power (VA) for group 1 | | | | |
| **15** | **Installed Power in W** | AC Outputs | AC Output 1 | Watt | basic |
| Installed power value in watts for group 1 | | | | |
| **16** | **Installed Power in VA** | AC Outputs | AC Output 1 | VA | basic |
| Installed power value in VA for group 1 | | | | |
| **17** | **Available Power in W** | AC Outputs | AC Output 1 | Watt | basic |
| Available power value in watts for group 1 | | | | |
| **18** | **Available Power in VA** | AC Outputs | AC Output 1 | VA | basic |
| Available power value in VA for group 1 | | | | |
| **19** | **Number Of Module seen by T2S** | AC Outputs | AC Output 1 |  | basic |
| Number of modules seen by T2S for group 1 | | | | |
| **20** | **Number Of Modules delivering output** | AC Outputs | AC Output 1 |  | basic |
| Number of modules delivering output for group 1 | | | | |
| **21** | **Number Of Modules manually off** | AC Outputs | AC Output 1 |  | basic |
| Number of modules manually off for group 1 | | | | |
| **22** | **Number Of Module In Failure** | AC Outputs | AC Output 1 |  | basic |
| Number of modules in failure for group 1 | | | | |
| **23** | **Number Of Module not seen by T2S** | AC Outputs | AC Output 1 |  | basic |
| Number of modules not seen by T2S for group 1 | | | | |
| **51** | **Output Voltage** | AC Outputs | AC Output 2 | Volt | basic |
| Output Voltage in volts group 2 | | | | |
| **52** | **Output Power** | AC Outputs | AC Output 2 | Ampere | basic |
| Output Current in amperes group 2 | | | | |
| **53** | **Output Power** | AC Outputs | AC Output 2 | Watt | basic |
| Output power in watts group 2 | | | | |
| **54** | **Output Apparent Power** | AC Outputs | AC Output 2 | VA | basic |
| Output apparent power in VA group 2 | | | | |
| **55** | **Output Frequency** | AC Outputs | AC Output 2 | Hz | basic |
| Output Frequency in hertz group 2 | | | | |
| **56** | **Loading Ratio** | AC Outputs | AC Output 2 | % | basic |
| Ratio between output load and available power expressed in watts group 2 | | | | |
| **57** | **Loading Ratio - Available Power in VA** | AC Outputs | AC Output 2 | % | basic |
| Ratio between output load and available power expressed in VA group 2 | | | | |
| **58** | **Loading Ratio - Installed Power in W** | AC Outputs | AC Output 2 | % | basic |
| Ratio between output load and installed power expressed in watts group 2 | | | | |
| **59** | **Loading Ratio - Installed Power in VA** | AC Outputs | AC Output 2 | % | basic |
| Ratio between output load and installed power expressed in VA group 2 | | | | |
| **60** | **Number Of Modules Configured** | AC Outputs | AC Output 2 |  | basic |
| Number of modules configured for the phase 2 | | | | |
| **61** | **Amount of redundancy configured** | AC Outputs | AC Output 2 |  | basic |
| Amount of redundancy configured in the phase 2 | | | | |
| **62** | **DC Input Power** | AC Outputs | AC Output 2 | Watt | basic |
| DC input power for group 2 | | | | |
| **63** | **AC Input Power in W** | AC Outputs | AC Output 2 | Watt | basic |
| AC input power (W) for group 2 | | | | |
| **64** | **AC Input Power in VA** | AC Outputs | AC Output 2 | VA | basic |
| AC input power (VA) for group 2 | | | | |
| **65** | **Installed Power in W** | AC Outputs | AC Output 2 | Watt | basic |
| Installed power value in watts for group 2 | | | | |
| **66** | **Installed Power in VA** | AC Outputs | AC Output 2 | VA | basic |
| Installed power value in VA for group 2 | | | | |
| **67** | **Available Power in W** | AC Outputs | AC Output 2 | Watt | basic |
| Available power value in watts for group 2 | | | | |
| **68** | **Available Power in VA** | AC Outputs | AC Output 2 | VA | basic |
| Available power value in VA for group 2 | | | | |
| **69** | **Number Of Module seen by T2S** | AC Outputs | AC Output 2 |  | basic |
| Number of modules seen by T2S for group 2 | | | | |
| **70** | **Number Of Modules delivering output** | AC Outputs | AC Output 2 |  | basic |
| Number of modules delivering output for group 2 | | | | |
| **71** | **Number Of Modules manually off** | AC Outputs | AC Output 2 |  | basic |
| Number of modules manually off for group 2 | | | | |
| **72** | **Number Of Module In Failure** | AC Outputs | AC Output 2 |  | basic |
| Number of modules in failure for group 2 | | | | |
| **73** | **Number Of Module not seen by T2S** | AC Outputs | AC Output 2 |  | basic |
| Number of modules not seen by T2S for group 2 | | | | |
| **101** | **Output Voltage** | AC Outputs | AC Output 3 | Volt | basic |
| Output Voltage in volts group 3 | | | | |
| **102** | **Output Power** | AC Outputs | AC Output 3 | Ampere | basic |
| Output Current in amperes group 3 | | | | |
| **103** | **Output Power** | AC Outputs | AC Output 3 | Watt | basic |
| Output power in watts group 3 | | | | |
| **104** | **Output Apparent Power** | AC Outputs | AC Output 3 | VA | basic |
| Output apparent power in VA group 3 | | | | |
| **105** | **Output Frequency** | AC Outputs | AC Output 3 | Hz | basic |
| Output Frequency in hertz group 3 | | | | |
| **106** | **Loading Ratio** | AC Outputs | AC Output 3 | % | basic |
| Ratio between output load and available power expressed in watts group 3 | | | | |
| **107** | **Loading Ratio - Available Power in VA** | AC Outputs | AC Output 3 | % | basic |
| Ratio between output load and available power expressed in VA group 3 | | | | |
| **108** | **Loading Ratio - Installed Power in W** | AC Outputs | AC Output 3 | % | basic |
| Ratio between output load and installed power expressed in watts group 3 | | | | |
| **109** | **Loading Ratio - Installed Power in VA** | AC Outputs | AC Output 3 | % | basic |
| Ratio between output load and installed power expressed in VA group 3 | | | | |
| **110** | **Number Of Modules Configured** | AC Outputs | AC Output 3 |  | basic |
| Number of modules configured for the phase 3 | | | | |
| **111** | **Amount of redundancy configured** | AC Outputs | AC Output 3 |  | basic |
| Amount of redundancy configured in the phase 3 | | | | |
| **112** | **DC Input Power** | AC Outputs | AC Output 3 | Watt | basic |
| DC input power for group 3 | | | | |
| **113** | **AC Input Power in W** | AC Outputs | AC Output 3 | Watt | basic |
| AC input power (W) for group 3 | | | | |
| **114** | **AC Input Power in VA** | AC Outputs | AC Output 3 | VA | basic |
| AC input power (VA) for group 3 | | | | |
| **115** | **Installed Power in W** | AC Outputs | AC Output 3 | Watt | basic |
| Installed power value in watts for group 3 | | | | |
| **116** | **Installed Power in VA** | AC Outputs | AC Output 3 | VA | basic |
| Installed power value in VA for group 3 | | | | |
| **117** | **Available Power in W** | AC Outputs | AC Output 3 | Watt | basic |
| Available power value in watts for group 3 | | | | |
| **118** | **Available Power in VA** | AC Outputs | AC Output 3 | VA | basic |
| Available power value in VA for group 3 | | | | |
| **119** | **Number Of Module seen by T2S** | AC Outputs | AC Output 3 |  | basic |
| Number of modules seen by T2S for group 3 | | | | |
| **120** | **Number Of Modules delivering output** | AC Outputs | AC Output 3 |  | basic |
| Number of modules delivering output for group 3 | | | | |
| **121** | **Number Of Modules manually off** | AC Outputs | AC Output 3 |  | basic |
| Number of modules manually off for group 3 | | | | |
| **122** | **Number Of Module In Failure** | AC Outputs | AC Output 3 |  | basic |
| Number of modules in failure for group 3 | | | | |
| **123** | **Number Of Module not seen by T2S** | AC Outputs | AC Output 3 |  | basic |
| Number of modules not seen by T2S for group 3 | | | | |
| **151** | **Output Voltage** | AC Outputs | AC Output 4 | Volt | basic |
| Output Voltage in volts group 4 | | | | |
| **152** | **Output Power** | AC Outputs | AC Output 4 | Ampere | basic |
| Output Current in amperes group 4 | | | | |
| **153** | **Output Power** | AC Outputs | AC Output 4 | Watt | basic |
| Output power in watts group 4 | | | | |
| **154** | **Output Apparent Power** | AC Outputs | AC Output 4 | VA | basic |
| Output apparent power in VA group 4 | | | | |
| **155** | **Output Frequency** | AC Outputs | AC Output 4 | Hz | basic |
| Output Frequency in hertz group 4 | | | | |
| **156** | **Loading Ratio** | AC Outputs | AC Output 4 | % | basic |
| Ratio between output load and available power expressed in watts group 4 | | | | |
| **157** | **Loading Ratio - Available Power in VA** | AC Outputs | AC Output 4 | % | basic |
| Ratio between output load and available power expressed in VA group 4 | | | | |
| **158** | **Loading Ratio - Installed Power in W** | AC Outputs | AC Output 4 | % | basic |
| Ratio between output load and installed power expressed in watts group 4 | | | | |
| **159** | **Loading Ratio - Installed Power in VA** | AC Outputs | AC Output 4 | % | basic |
| Ratio between output load and installed power expressed in VA group 4 | | | | |
| **160** | **Number Of Modules Configured** | AC Outputs | AC Output 4 |  | basic |
| Number of modules configured for the phase 4 | | | | |
| **161** | **Amount of redundancy configured** | AC Outputs | AC Output 4 |  | basic |
| Amount of redundancy configured in the phase 4 | | | | |
| **162** | **DC Input Power** | AC Outputs | AC Output 4 | Watt | basic |
| DC input power for group 4 | | | | |
| **163** | **AC Input Power in W** | AC Outputs | AC Output 4 | Watt | basic |
| AC input power (W) for group 4 | | | | |
| **164** | **AC Input Power in VA** | AC Outputs | AC Output 4 | VA | basic |
| AC input power (VA) for group 4 | | | | |
| **165** | **Installed Power in W** | AC Outputs | AC Output 4 | Watt | basic |
| Installed power value in watts for group 4 | | | | |
| **166** | **Installed Power in VA** | AC Outputs | AC Output 4 | VA | basic |
| Installed power value in VA for group 4 | | | | |
| **167** | **Available Power in W** | AC Outputs | AC Output 4 | Watt | basic |
| Available power value in watts for group 4 | | | | |
| **168** | **Available Power in VA** | AC Outputs | AC Output 4 | VA | basic |
| Available power value in VA for group 4 | | | | |
| **169** | **Number Of Module seen by T2S** | AC Outputs | AC Output 4 |  | basic |
| Number of modules seen by T2S for group 4 | | | | |
| **170** | **Number Of Modules delivering output** | AC Outputs | AC Output 4 |  | basic |
| Number of modules delivering output for group 4 | | | | |
| **171** | **Number Of Modules manually off** | AC Outputs | AC Output 4 |  | basic |
| Number of modules manually off for group 4 | | | | |
| **172** | **Number Of Module In Failure** | AC Outputs | AC Output 4 |  | basic |
| Number of modules in failure for group 4 | | | | |
| **173** | **Number Of Module not seen by T2S** | AC Outputs | AC Output 4 |  | basic |
| Number of modules not seen by T2S for group 4 | | | | |
| **201** | **Output Voltage** | AC Outputs | AC Output 5 | Volt | basic |
| Output Voltage in volts group 5 | | | | |
| **202** | **Output Power** | AC Outputs | AC Output 5 | Ampere | basic |
| Output Current in amperes group 5 | | | | |
| **203** | **Output Power** | AC Outputs | AC Output 5 | Watt | basic |
| Output power in watts group 5 | | | | |
| **204** | **Output Apparent Power** | AC Outputs | AC Output 5 | VA | basic |
| Output apparent power in VA group 5 | | | | |
| **205** | **Output Frequency** | AC Outputs | AC Output 5 | Hz | basic |
| Output Frequency in hertz group 5 | | | | |
| **206** | **Loading Ratio** | AC Outputs | AC Output 5 | % | basic |
| Ratio between output load and available power expressed in watts group 5 | | | | |
| **207** | **Loading Ratio - Available Power in VA** | AC Outputs | AC Output 5 | % | basic |
| Ratio between output load and available power expressed in VA group 5 | | | | |
| **208** | **Loading Ratio - Installed Power in W** | AC Outputs | AC Output 5 | % | basic |
| Ratio between output load and installed power expressed in watts group 5 | | | | |
| **209** | **Loading Ratio - Installed Power in VA** | AC Outputs | AC Output 5 | % | basic |
| Ratio between output load and installed power expressed in VA group 5 | | | | |
| **210** | **Number Of Modules Configured** | AC Outputs | AC Output 5 |  | basic |
| Number of modules configured for the phase 5 | | | | |
| **211** | **Amount of redundancy configured** | AC Outputs | AC Output 5 |  | basic |
| Amount of redundancy configured in the phase 5 | | | | |
| **212** | **DC Input Power** | AC Outputs | AC Output 5 | Watt | basic |
| DC input power for group 5 | | | | |
| **213** | **AC Input Power in W** | AC Outputs | AC Output 5 | Watt | basic |
| AC input power (W) for group 5 | | | | |
| **214** | **AC Input Power in VA** | AC Outputs | AC Output 5 | VA | basic |
| AC input power (VA) for group 5 | | | | |
| **215** | **Installed Power in W** | AC Outputs | AC Output 5 | Watt | basic |
| Installed power value in watts for group 5 | | | | |
| **216** | **Installed Power in VA** | AC Outputs | AC Output 5 | VA | basic |
| Installed power value in VA for group 5 | | | | |
| **217** | **Available Power in W** | AC Outputs | AC Output 5 | Watt | basic |
| Available power value in watts for group 5 | | | | |
| **218** | **Available Power in VA** | AC Outputs | AC Output 5 | VA | basic |
| Available power value in VA for group 5 | | | | |
| **219** | **Number Of Module seen by T2S** | AC Outputs | AC Output 5 |  | basic |
| Number of modules seen by T2S for group 5 | | | | |
| **220** | **Number Of Modules delivering output** | AC Outputs | AC Output 5 |  | basic |
| Number of modules delivering output for group 5 | | | | |
| **221** | **Number Of Modules manually off** | AC Outputs | AC Output 5 |  | basic |
| Number of modules manually off for group 5 | | | | |
| **222** | **Number Of Module In Failure** | AC Outputs | AC Output 5 |  | basic |
| Number of modules in failure for group 5 | | | | |
| **223** | **Number Of Module not seen by T2S** | AC Outputs | AC Output 5 |  | basic |
| Number of modules not seen by T2S for group 5 | | | | |
| **251** | **Output Voltage** | AC Outputs | AC Output 6 | Volt | basic |
| Output Voltage in volts group 6 | | | | |
| **252** | **Output Power** | AC Outputs | AC Output 6 | Ampere | basic |
| Output Current in amperes group 6 | | | | |
| **253** | **Output Power** | AC Outputs | AC Output 6 | Watt | basic |
| Output power in watts group 6 | | | | |
| **254** | **Output Apparent Power** | AC Outputs | AC Output 6 | VA | basic |
| Output apparent power in VA group 6 | | | | |
| **255** | **Output Frequency** | AC Outputs | AC Output 6 | Hz | basic |
| Output Frequency in hertz group 6 | | | | |
| **256** | **Loading Ratio** | AC Outputs | AC Output 6 | % | basic |
| Ratio between output load and available power expressed in watts group 6 | | | | |
| **257** | **Loading Ratio - Available Power in VA** | AC Outputs | AC Output 6 | % | basic |
| Ratio between output load and available power expressed in VA group 6 | | | | |
| **258** | **Loading Ratio - Installed Power in W** | AC Outputs | AC Output 6 | % | basic |
| Ratio between output load and installed power expressed in watts group 6 | | | | |
| **259** | **Loading Ratio - Installed Power in VA** | AC Outputs | AC Output 6 | % | basic |
| Ratio between output load and installed power expressed in VA group 6 | | | | |
| **260** | **Number Of Modules Configured** | AC Outputs | AC Output 6 |  | basic |
| Number of modules configured for the phase 6 | | | | |
| **261** | **Amount of redundancy configured** | AC Outputs | AC Output 6 |  | basic |
| Amount of redundancy configured in the phase 6 | | | | |
| **262** | **DC Input Power** | AC Outputs | AC Output 6 | Watt | basic |
| DC input power for group 6 | | | | |
| **263** | **AC Input Power in W** | AC Outputs | AC Output 6 | Watt | basic |
| AC input power (W) for group 6 | | | | |
| **264** | **AC Input Power in VA** | AC Outputs | AC Output 6 | VA | basic |
| AC input power (VA) for group 6 | | | | |
| **265** | **Installed Power in W** | AC Outputs | AC Output 6 | Watt | basic |
| Installed power value in watts for group 6 | | | | |
| **266** | **Installed Power in VA** | AC Outputs | AC Output 6 | VA | basic |
| Installed power value in VA for group 6 | | | | |
| **267** | **Available Power in W** | AC Outputs | AC Output 6 | Watt | basic |
| Available power value in watts for group 6 | | | | |
| **268** | **Available Power in VA** | AC Outputs | AC Output 6 | VA | basic |
| Available power value in VA for group 6 | | | | |
| **269** | **Number Of Module seen by T2S** | AC Outputs | AC Output 6 |  | basic |
| Number of modules seen by T2S for group 6 | | | | |
| **270** | **Number Of Modules delivering output** | AC Outputs | AC Output 6 |  | basic |
| Number of modules delivering output for group 6 | | | | |
| **271** | **Number Of Modules manually off** | AC Outputs | AC Output 6 |  | basic |
| Number of modules manually off for group 6 | | | | |
| **272** | **Number Of Module In Failure** | AC Outputs | AC Output 6 |  | basic |
| Number of modules in failure for group 6 | | | | |
| **273** | **Number Of Module not seen by T2S** | AC Outputs | AC Output 6 |  | basic |
| Number of modules not seen by T2S for group 6 | | | | |
| **301** | **Output Voltage** | AC Outputs | AC Output 7 | Volt | basic |
| Output Voltage in volts group 7 | | | | |
| **302** | **Output Power** | AC Outputs | AC Output 7 | Ampere | basic |
| Output Current in amperes group 7 | | | | |
| **303** | **Output Power** | AC Outputs | AC Output 7 | Watt | basic |
| Output power in watts group 7 | | | | |
| **304** | **Output Apparent Power** | AC Outputs | AC Output 7 | VA | basic |
| Output apparent power in VA group 7 | | | | |
| **305** | **Output Frequency** | AC Outputs | AC Output 7 | Hz | basic |
| Output Frequency in hertz group 7 | | | | |
| **306** | **Loading Ratio** | AC Outputs | AC Output 7 | % | basic |
| Ratio between output load and available power expressed in watts group 7 | | | | |
| **307** | **Loading Ratio - Available Power in VA** | AC Outputs | AC Output 7 | % | basic |
| Ratio between output load and available power expressed in VA group 7 | | | | |
| **308** | **Loading Ratio - Installed Power in W** | AC Outputs | AC Output 7 | % | basic |
| Ratio between output load and installed power expressed in watts group 7 | | | | |
| **309** | **Loading Ratio - Installed Power in VA** | AC Outputs | AC Output 7 | % | basic |
| Ratio between output load and installed power expressed in VA group 7 | | | | |
| **310** | **Number Of Modules Configured** | AC Outputs | AC Output 7 |  | basic |
| Number of modules configured for the phase 7 | | | | |
| **311** | **Amount of redundancy configured** | AC Outputs | AC Output 7 |  | basic |
| Amount of redundancy configured in the phase 7 | | | | |
| **312** | **DC Input Power** | AC Outputs | AC Output 7 | Watt | basic |
| DC input power for group 7 | | | | |
| **313** | **AC Input Power in W** | AC Outputs | AC Output 7 | Watt | basic |
| AC input power (W) for group 7 | | | | |
| **314** | **AC Input Power in VA** | AC Outputs | AC Output 7 | VA | basic |
| AC input power (VA) for group 7 | | | | |
| **315** | **Installed Power in W** | AC Outputs | AC Output 7 | Watt | basic |
| Installed power value in watts for group 7 | | | | |
| **316** | **Installed Power in VA** | AC Outputs | AC Output 7 | VA | basic |
| Installed power value in VA for group 7 | | | | |
| **317** | **Available Power in W** | AC Outputs | AC Output 7 | Watt | basic |
| Available power value in watts for group 7 | | | | |
| **318** | **Available Power in VA** | AC Outputs | AC Output 7 | VA | basic |
| Available power value in VA for group 7 | | | | |
| **319** | **Number Of Module seen by T2S** | AC Outputs | AC Output 7 |  | basic |
| Number of modules seen by T2S for group 7 | | | | |
| **320** | **Number Of Modules delivering output** | AC Outputs | AC Output 7 |  | basic |
| Number of modules delivering output for group 7 | | | | |
| **321** | **Number Of Modules manually off** | AC Outputs | AC Output 7 |  | basic |
| Number of modules manually off for group 7 | | | | |
| **322** | **Number Of Module In Failure** | AC Outputs | AC Output 7 |  | basic |
| Number of modules in failure for group 7 | | | | |
| **323** | **Number Of Module not seen by T2S** | AC Outputs | AC Output 7 |  | basic |
| Number of modules not seen by T2S for group 7 | | | | |
| **351** | **Output Voltage** | AC Outputs | AC Output 8 | Volt | basic |
| Output Voltage in volts group 8 | | | | |
| **352** | **Output Power** | AC Outputs | AC Output 8 | Ampere | basic |
| Output Current in amperes group 8 | | | | |
| **353** | **Output Power** | AC Outputs | AC Output 8 | Watt | basic |
| Output power in watts group 8 | | | | |
| **354** | **Output Apparent Power** | AC Outputs | AC Output 8 | VA | basic |
| Output apparent power in VA group 8 | | | | |
| **355** | **Output Frequency** | AC Outputs | AC Output 8 | Hz | basic |
| Output Frequency in hertz group 8 | | | | |
| **356** | **Loading Ratio** | AC Outputs | AC Output 8 | % | basic |
| Ratio between output load and available power expressed in watts group 8 | | | | |
| **357** | **Loading Ratio - Available Power in VA** | AC Outputs | AC Output 8 | % | basic |
| Ratio between output load and available power expressed in VA group 8 | | | | |
| **358** | **Loading Ratio - Installed Power in W** | AC Outputs | AC Output 8 | % | basic |
| Ratio between output load and installed power expressed in watts group 8 | | | | |
| **359** | **Loading Ratio - Installed Power in VA** | AC Outputs | AC Output 8 | % | basic |
| Ratio between output load and installed power expressed in VA group 8 | | | | |
| **360** | **Number Of Modules Configured** | AC Outputs | AC Output 8 |  | basic |
| Number of modules configured for the phase 8 | | | | |
| **361** | **Amount of redundancy configured** | AC Outputs | AC Output 8 |  | basic |
| Amount of redundancy configured in the phase 8 | | | | |
| **362** | **DC Input Power** | AC Outputs | AC Output 8 | Watt | basic |
| DC input power for group 8 | | | | |
| **363** | **AC Input Power in W** | AC Outputs | AC Output 8 | Watt | basic |
| AC input power (W) for group 8 | | | | |
| **364** | **AC Input Power in VA** | AC Outputs | AC Output 8 | VA | basic |
| AC input power (VA) for group 8 | | | | |
| **365** | **Installed Power in W** | AC Outputs | AC Output 8 | Watt | basic |
| Installed power value in watts for group 8 | | | | |
| **366** | **Installed Power in VA** | AC Outputs | AC Output 8 | VA | basic |
| Installed power value in VA for group 8 | | | | |
| **367** | **Available Power in W** | AC Outputs | AC Output 8 | Watt | basic |
| Available power value in watts for group 8 | | | | |
| **368** | **Available Power in VA** | AC Outputs | AC Output 8 | VA | basic |
| Available power value in VA for group 8 | | | | |
| **369** | **Number Of Module seen by T2S** | AC Outputs | AC Output 8 |  | basic |
| Number of modules seen by T2S for group 8 | | | | |
| **370** | **Number Of Modules delivering output** | AC Outputs | AC Output 8 |  | basic |
| Number of modules delivering output for group 8 | | | | |
| **371** | **Number Of Modules manually off** | AC Outputs | AC Output 8 |  | basic |
| Number of modules manually off for group 8 | | | | |
| **372** | **Number Of Module In Failure** | AC Outputs | AC Output 8 |  | basic |
| Number of modules in failure for group 8 | | | | |
| **373** | **Number Of Module not seen by T2S** | AC Outputs | AC Output 8 |  | basic |
| Number of modules not seen by T2S for group 8 | | | | |
| **401** | **Input Voltage** | AC Inputs | AC Input 1 | Volt | basic |
| AC input voltage value (V) group 1 | | | | |
| **402** | **Input Current** | AC Inputs | AC Input 1 | Ampere | basic |
| AC input current value (A) group 1 | | | | |
| **403** | **Input Power** | AC Inputs | AC Input 1 | Watt | basic |
| AC input power value (W) group 1 | | | | |
| **404** | **Input Apparent Power** | AC Inputs | AC Input 1 | VA | basic |
| AC input apparent power value (VA) group 1 | | | | |
| **405** | **Input Frequency** | AC Inputs | AC Input 1 | Hz | basic |
| AC input frequency (Hz) group 1 | | | | |
| **406** | **Number Of Modules delivering output** | AC Inputs | AC Input 1 |  | basic |
| Number of modules that are delivering output in the group 1 | | | | |
| **407** | **Number Of Modules manually off** | AC Inputs | AC Input 1 |  | basic |
| Number of modules manually off in the group 1 | | | | |
| **408** | **Number Of Modules in failure** | AC Inputs | AC Input 1 |  | basic |
| Number of modules that are not delivering output due to a failure in the group 1 | | | | |
| **409** | **Number Of Modules seen by T2S** | AC Inputs | AC Input 1 |  | basic |
| Number of modules seen by T2S in the group 1 | | | | |
| **410** | **Number Of Modules stating AC input OK** | AC Inputs | AC Input 1 |  | basic |
| Number of modules stating AC input is OK group 1 | | | | |
| **426** | **Input Voltage** | AC Inputs | AC Input 2 | Volt | basic |
| AC input voltage value (V) group 2 | | | | |
| **427** | **Input Current** | AC Inputs | AC Input 2 | Ampere | basic |
| AC input current value (A) group 2 | | | | |
| **428** | **Input Power** | AC Inputs | AC Input 2 | Watt | basic |
| AC input power value (W) group 2 | | | | |
| **429** | **Input Apparent Power** | AC Inputs | AC Input 2 | VA | basic |
| AC input apparent power value (VA) group 2 | | | | |
| **430** | **Input Frequency** | AC Inputs | AC Input 2 | Hz | basic |
| AC input frequency (Hz) group 2 | | | | |
| **431** | **Number Of Modules delivering output** | AC Inputs | AC Input 2 |  | basic |
| Number of modules that are delivering output in the group 2 | | | | |
| **432** | **Number Of Modules manually off** | AC Inputs | AC Input 2 |  | basic |
| Number of modules manually off in the group 2 | | | | |
| **433** | **Number Of Modules in failure** | AC Inputs | AC Input 2 |  | basic |
| Number of modules that are not delivering output due to a failure in the group 2 | | | | |
| **434** | **Number Of Modules seen by T2S** | AC Inputs | AC Input 2 |  | basic |
| Number of modules seen by T2S in the group 2 | | | | |
| **435** | **Number Of Modules stating AC input OK** | AC Inputs | AC Input 2 |  | basic |
| Number of modules stating AC input is OK group 2 | | | | |
| **451** | **Input Voltage** | AC Inputs | AC Input 3 | Volt | basic |
| AC input voltage value (V) group 3 | | | | |
| **452** | **Input Current** | AC Inputs | AC Input 3 | Ampere | basic |
| AC input current value (A) group 3 | | | | |
| **453** | **Input Power** | AC Inputs | AC Input 3 | Watt | basic |
| AC input power value (W) group 3 | | | | |
| **454** | **Input Apparent Power** | AC Inputs | AC Input 3 | VA | basic |
| AC input apparent power value (VA) group 3 | | | | |
| **455** | **Input Frequency** | AC Inputs | AC Input 3 | Hz | basic |
| AC input frequency (Hz) group 3 | | | | |
| **456** | **Number Of Modules delivering output** | AC Inputs | AC Input 3 |  | basic |
| Number of modules that are delivering output in the group 3 | | | | |
| **457** | **Number Of Modules manually off** | AC Inputs | AC Input 3 |  | basic |
| Number of modules manually off in the group 3 | | | | |
| **458** | **Number Of Modules in failure** | AC Inputs | AC Input 3 |  | basic |
| Number of modules that are not delivering output due to a failure in the group 3 | | | | |
| **459** | **Number Of Modules seen by T2S** | AC Inputs | AC Input 3 |  | basic |
| Number of modules seen by T2S in the group 3 | | | | |
| **460** | **Number Of Modules stating AC input OK** | AC Inputs | AC Input 3 |  | basic |
| Number of modules stating AC input is OK group 3 | | | | |
| **476** | **Input Voltage** | AC Inputs | AC Input 4 | Volt | basic |
| AC input voltage value (V) group 4 | | | | |
| **477** | **Input Current** | AC Inputs | AC Input 4 | Ampere | basic |
| AC input current value (A) group 4 | | | | |
| **478** | **Input Power** | AC Inputs | AC Input 4 | Watt | basic |
| AC input power value (W) group 4 | | | | |
| **479** | **Input Apparent Power** | AC Inputs | AC Input 4 | VA | basic |
| AC input apparent power value (VA) group 4 | | | | |
| **480** | **Input Frequency** | AC Inputs | AC Input 4 | Hz | basic |
| AC input frequency (Hz) group 4 | | | | |
| **481** | **Number Of Modules delivering output** | AC Inputs | AC Input 4 |  | basic |
| Number of modules that are delivering output in the group 4 | | | | |
| **482** | **Number Of Modules manually off** | AC Inputs | AC Input 4 |  | basic |
| Number of modules manually off in the group 4 | | | | |
| **483** | **Number Of Modules in failure** | AC Inputs | AC Input 4 |  | basic |
| Number of modules that are not delivering output due to a failure in the group 4 | | | | |
| **484** | **Number Of Modules seen by T2S** | AC Inputs | AC Input 4 |  | basic |
| Number of modules seen by T2S in the group 4 | | | | |
| **485** | **Number Of Modules stating AC input OK** | AC Inputs | AC Input 4 |  | basic |
| Number of modules stating AC input is OK group 4 | | | | |
| **501** | **Input Current** | DC Inputs | DC Input 1 | Ampere | basic |
| DC input current value in amperes group 1 | | | | |
| **502** | **Input Power** | DC Inputs | DC Input 1 | Watt | basic |
| DC input power value in watts group 1 | | | | |
| **526** | **Input Current** | DC Inputs | DC Input 2 | Ampere | basic |
| DC input current value in amperes group 2 | | | | |
| **527** | **Input Power** | DC Inputs | DC Input 2 | Watt | basic |
| DC input power value in watts group 2 | | | | |
| **551** | **Input Current** | DC Inputs | DC Input 3 | Ampere | basic |
| DC input current value in amperes group 3 | | | | |
| **552** | **Input Power** | DC Inputs | DC Input 3 | Watt | basic |
| DC input power value in watts group 3 | | | | |
| **576** | **Input Current** | DC Inputs | DC Input 4 | Ampere | basic |
| DC input current value in amperes group 4 | | | | |
| **577** | **Input Power** | DC Inputs | DC Input 4 | Watt | basic |
| DC input power value in watts group 4 | | | | |
| **601** | **Input Current** | DC Inputs | DC Input 5 | Ampere | basic |
| DC input current value in amperes group 5 | | | | |
| **602** | **Input Power** | DC Inputs | DC Input 5 | Watt | basic |
| DC input power value in watts group 5 | | | | |
| **626** | **Input Current** | DC Inputs | DC Input 6 | Ampere | basic |
| DC input current value in amperes group 6 | | | | |
| **627** | **Input Power** | DC Inputs | DC Input 6 | Watt | basic |
| DC input power value in watts group 6 | | | | |
| **651** | **Input Current** | DC Inputs | DC Input 7 | Ampere | basic |
| DC input current value in amperes group 7 | | | | |
| **652** | **Input Power** | DC Inputs | DC Input 7 | Watt | basic |
| DC input power value in watts group 7 | | | | |
| **676** | **Input Current** | DC Inputs | DC Input 8 | Ampere | basic |
| DC input current value in amperes group 8 | | | | |
| **677** | **Input Power** | DC Inputs | DC Input 8 | Watt | basic |
| DC input power value in watts group 8 | | | | |
| **701** | **Alarm Id List** | Error List |  |  | basic |
| List of active manufacturer specific alarms | | | | |
| **702** | **Alarm Name List** | Error List |  |  | basic |
| List of active manufacturer specific alarms | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Config Table | | | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *Unit* | *Range: Min/Max (default)* | *License* |
| **1** | **Number of AC Output Groups To Configure** | Inverter System | Group Config |  |  | basic |
| Number of AC output groups that must be displayed in configuration | | | | | |
| **2** | **Number of AC Input Groups To Configure** | Inverter System | Group Config |  |  | basic |
| Number of AC input groups that must be displayed in configuration | | | | | |
| **3** | **Number of DC Input Groups To Configure** | Inverter System | Group Config |  |  | basic |
| Number of DC input groups that must be displayed in configuration | | | | | |
| **5** | **Input Ratio On DC** | Inverter System |  |  |  | basic |
| 0-100 : 0 full AC, 100 full AC | | | | | |
| **21** | **AC Input Frequency Low Start** | AC Inputs | Input Frequency | Hz | 0/1000 (0) | basic |
| The AC frequency low start in hertz. | | | | | |
| **22** | **AC Input Frequency Low Stop** | AC Inputs | Input Frequency | Hz | 0/1000 (0) | basic |
| The AC frequency low stop in hertz. | | | | | |
| **23** | **AC Input Frequency High Start** | AC Inputs | Input Frequency | Hz | 0/1000 (0) | basic |
| The AC frequency high start in hertz. | | | | | |
| **24** | **AC Input Frequency High Stop** | AC Inputs | Input Frequency | Hz | 0/1000 (0) | basic |
| The AC frequency high stop in hertz. | | | | | |
| **101** | **Number of Modules** | AC Outputs | AC Output 1 |  |  | basic |
| The number of modules in phase 1 | | | | | |
| **102** | **Amount of Redundancy** | AC Outputs | AC Output 1 |  |  | basic |
| The amount of redundancy in phase 1 | | | | | |
| **103** | **Phase Shift** | AC Outputs | AC Output 1 | degree |  | basic |
| The phase shift in degrees in phase 1 | | | | | |
| **104** | **Nominal Output Voltage** | AC Outputs | AC Output 1 | Volt | 0/250 (120) | basic |
| The output voltage 1 in volts phase 1 | | | | | |
| **111** | **Number of Modules** | AC Outputs | AC Output 2 |  |  | basic |
| The number of modules in phase 2 | | | | | |
| **112** | **Amount of Redundancy** | AC Outputs | AC Output 2 |  |  | basic |
| The amount of redundancy in phase 2 | | | | | |
| **113** | **Phase Shift** | AC Outputs | AC Output 2 | degree |  | basic |
| The phase shift in degrees in phase 2 | | | | | |
| **114** | **Nominal Output Voltage** | AC Outputs | AC Output 2 | Volt | 0/250 (120) | basic |
| The output voltage 1 in volts phase 2 | | | | | |
| **121** | **Number of Modules** | AC Outputs | AC Output 3 |  |  | basic |
| The number of modules in phase 3 | | | | | |
| **122** | **Amount of Redundancy** | AC Outputs | AC Output 3 |  |  | basic |
| The amount of redundancy in phase 3 | | | | | |
| **123** | **Phase Shift** | AC Outputs | AC Output 3 | degree |  | basic |
| The phase shift in degrees in phase 3 | | | | | |
| **124** | **Nominal Output Voltage** | AC Outputs | AC Output 3 | Volt | 0/250 (120) | basic |
| The output voltage 1 in volts phase 3 | | | | | |
| **131** | **Number of Modules** | AC Outputs | AC Output 4 |  |  | basic |
| The number of modules in phase 4 | | | | | |
| **132** | **Amount of Redundancy** | AC Outputs | AC Output 4 |  |  | basic |
| The amount of redundancy in phase 4 | | | | | |
| **133** | **Phase Shift** | AC Outputs | AC Output 4 | degree |  | basic |
| The phase shift in degrees in phase 4 | | | | | |
| **134** | **Nominal Output Voltage** | AC Outputs | AC Output 4 | Volt | 0/250 (120) | basic |
| The output voltage 1 in volts phase 4 | | | | | |
| **141** | **Number of Modules** | AC Outputs | AC Output 5 |  |  | basic |
| The number of modules in phase 5 | | | | | |
| **142** | **Amount of Redundancy** | AC Outputs | AC Output 5 |  |  | basic |
| The amount of redundancy in phase 5 | | | | | |
| **143** | **Phase Shift** | AC Outputs | AC Output 5 | degree |  | basic |
| The phase shift in degrees in phase 5 | | | | | |
| **144** | **Nominal Output Voltage** | AC Outputs | AC Output 5 | Volt | 0/250 (120) | basic |
| The output voltage 1 in volts phase 5 | | | | | |
| **151** | **Number of Modules** | AC Outputs | AC Output 6 |  |  | basic |
| The number of modules in phase 6 | | | | | |
| **152** | **Amount of Redundancy** | AC Outputs | AC Output 6 |  |  | basic |
| The amount of redundancy in phase 6 | | | | | |
| **153** | **Phase Shift** | AC Outputs | AC Output 6 | degree |  | basic |
| The phase shift in degrees in phase 6 | | | | | |
| **154** | **Nominal Output Voltage** | AC Outputs | AC Output 6 | Volt | 0/250 (120) | basic |
| The output voltage 1 in volts phase 6 | | | | | |
| **161** | **Number of Modules** | AC Outputs | AC Output 7 |  |  | basic |
| The number of modules in phase 7 | | | | | |
| **162** | **Amount of Redundancy** | AC Outputs | AC Output 7 |  |  | basic |
| The amount of redundancy in phase 7 | | | | | |
| **163** | **Phase Shift** | AC Outputs | AC Output 7 | degree |  | basic |
| The phase shift in degrees in phase 7 | | | | | |
| **164** | **Nominal Output Voltage** | AC Outputs | AC Output 7 | Volt | 0/250 (120) | basic |
| The output voltage 1 in volts phase 7 | | | | | |
| **171** | **Number of Modules** | AC Outputs | AC Output 8 |  |  | basic |
| The number of modules in phase 8 | | | | | |
| **172** | **Amount of Redundancy** | AC Outputs | AC Output 8 |  |  | basic |
| The amount of redundancy in phase 8 | | | | | |
| **173** | **Phase Shift** | AC Outputs | AC Output 8 | degree |  | basic |
| The phase shift in degrees in phase 8 | | | | | |
| **174** | **Nominal Output Voltage** | AC Outputs | AC Output 8 | Volt | 0/250 (120) | basic |
| The output voltage 1 in volts phase 8 | | | | | |
| **201** | **Vac In Low Start** | AC Inputs | AC Input 1 | Volt | 0/300 (0) | basic |
| The AC input low start in volts group 1 | | | | | |
| **202** | **Vac In Low Transfer** | AC Inputs | AC Input 1 | Volt | 0/300 (0) | basic |
| The AC input low transfer in volts group 1 | | | | | |
| **203** | **Vac In Low Stop** | AC Inputs | AC Input 1 | Volt | 0/300 (0) | basic |
| The AC input low stop in volts group 1 | | | | | |
| **204** | **Vac In High Start** | AC Inputs | AC Input 1 | Volt | 0/300 (0) | basic |
| The AC input high start in volts group 1 | | | | | |
| **205** | **Vac In High Transfer** | AC Inputs | AC Input 1 | Volt | 0/300 (0) | basic |
| The AC input high transfer in volts group 1 | | | | | |
| **206** | **Vac In High Stop** | AC Inputs | AC Input 1 | Volt | 0/300 (0) | basic |
| The AC input high stop in volts group 1 | | | | | |
| **211** | **Vac In Low Start** | AC Inputs | AC Input 2 | Volt | 0/300 (0) | basic |
| The AC input low start in volts group 2 | | | | | |
| **212** | **Vac In Low Transfer** | AC Inputs | AC Input 2 | Volt | 0/300 (0) | basic |
| The AC input low transfer in volts group 2 | | | | | |
| **213** | **Vac In Low Stop** | AC Inputs | AC Input 2 | Volt | 0/300 (0) | basic |
| The AC input low stop in volts group 2 | | | | | |
| **214** | **Vac In High Start** | AC Inputs | AC Input 2 | Volt | 0/300 (0) | basic |
| The AC input high start in volts group 2 | | | | | |
| **215** | **Vac In High Transfer** | AC Inputs | AC Input 2 | Volt | 0/300 (0) | basic |
| The AC input high transfer in volts group 2 | | | | | |
| **216** | **Vac In High Stop** | AC Inputs | AC Input 2 | Volt | 0/300 (0) | basic |
| The AC input high stop in volts group 2 | | | | | |
| **221** | **Vac In Low Start** | AC Inputs | AC Input 3 | Volt | 0/300 (0) | basic |
| The AC input low start in volts group 3 | | | | | |
| **222** | **Vac In Low Transfer** | AC Inputs | AC Input 3 | Volt | 0/300 (0) | basic |
| The AC input low transfer in volts group 3 | | | | | |
| **223** | **Vac In Low Stop** | AC Inputs | AC Input 3 | Volt | 0/300 (0) | basic |
| The AC input low stop in volts group 3 | | | | | |
| **224** | **Vac In High Start** | AC Inputs | AC Input 3 | Volt | 0/300 (0) | basic |
| The AC input high start in volts group 3 | | | | | |
| **225** | **Vac In High Transfer** | AC Inputs | AC Input 3 | Volt | 0/300 (0) | basic |
| The AC input high transfer in volts group 3 | | | | | |
| **226** | **Vac In High Stop** | AC Inputs | AC Input 3 | Volt | 0/300 (0) | basic |
| The AC input high stop in volts group 3 | | | | | |
| **231** | **Vac In Low Start** | AC Inputs | AC Input 4 | Volt | 0/300 (0) | basic |
| The AC input low start in volts group 4 | | | | | |
| **232** | **Vac In Low Transfer** | AC Inputs | AC Input 4 | Volt | 0/300 (0) | basic |
| The AC input low transfer in volts group 4 | | | | | |
| **233** | **Vac In Low Stop** | AC Inputs | AC Input 4 | Volt | 0/300 (0) | basic |
| The AC input low stop in volts group 4 | | | | | |
| **234** | **Vac In High Start** | AC Inputs | AC Input 4 | Volt | 0/300 (0) | basic |
| The AC input high start in volts group 4 | | | | | |
| **235** | **Vac In High Transfer** | AC Inputs | AC Input 4 | Volt | 0/300 (0) | basic |
| The AC input high transfer in volts group 4 | | | | | |
| **236** | **Vac In High Stop** | AC Inputs | AC Input 4 | Volt | 0/300 (0) | basic |
| The AC input high stop in volts group 4 | | | | | |
| **301** | **Vdc In Low Start** | DC Inputs | DC Input 1 | Volt | 0/80 (0) | basic |
| The DC input low start in volts group 1 | | | | | |
| **302** | **Vdc In Low Transfer** | DC Inputs | DC Input 1 | Volt | 0/80 (0) | basic |
| The DC input low transfer in volts group 1 | | | | | |
| **303** | **Vdc In Low Stop** | DC Inputs | DC Input 1 | Volt | 0/80 (0) | basic |
| The DC input low stop in volts group 1 | | | | | |
| **304** | **Vdc In High Start** | DC Inputs | DC Input 1 | Volt | 0/80 (0) | basic |
| The DC input high start in volts group 1 | | | | | |
| **305** | **Vdc In High Transfer** | DC Inputs | DC Input 1 | Volt | 0/80 (0) | basic |
| The DC input high transfer in volts group 1 | | | | | |
| **306** | **Vdc In High Stop** | DC Inputs | DC Input 1 | Volt | 0/80 (0) | basic |
| The DC input high stop in volts group 1 | | | | | |
| **311** | **Vdc In Low Start** | DC Inputs | DC Input 2 | Volt | 0/80 (0) | basic |
| The DC input low start in volts group 2 | | | | | |
| **312** | **Vdc In Low Transfer** | DC Inputs | DC Input 2 | Volt | 0/80 (0) | basic |
| The DC input low transfer in volts group 2 | | | | | |
| **313** | **Vdc In Low Stop** | DC Inputs | DC Input 2 | Volt | 0/80 (0) | basic |
| The DC input low stop in volts group 2 | | | | | |
| **314** | **Vdc In High Start** | DC Inputs | DC Input 2 | Volt | 0/80 (0) | basic |
| The DC input high start in volts group 2 | | | | | |
| **315** | **Vdc In High Transfer** | DC Inputs | DC Input 2 | Volt | 0/80 (0) | basic |
| The DC input high transfer in volts group 2 | | | | | |
| **316** | **Vdc In High Stop** | DC Inputs | DC Input 2 | Volt | 0/80 (0) | basic |
| The DC input high stop in volts group 2 | | | | | |
| **321** | **Vdc In Low Start** | DC Inputs | DC Input 3 | Volt | 0/80 (0) | basic |
| The DC input low start in volts group 3 | | | | | |
| **322** | **Vdc In Low Transfer** | DC Inputs | DC Input 3 | Volt | 0/80 (0) | basic |
| The DC input low transfer in volts group 3 | | | | | |
| **323** | **Vdc In Low Stop** | DC Inputs | DC Input 3 | Volt | 0/80 (0) | basic |
| The DC input low stop in volts group 3 | | | | | |
| **324** | **Vdc In High Start** | DC Inputs | DC Input 3 | Volt | 0/80 (0) | basic |
| The DC input high start in volts group 3 | | | | | |
| **325** | **Vdc In High Transfer** | DC Inputs | DC Input 3 | Volt | 0/80 (0) | basic |
| The DC input high transfer in volts group 3 | | | | | |
| **326** | **Vdc In High Stop** | DC Inputs | DC Input 3 | Volt | 0/80 (0) | basic |
| The DC input high stop in volts group 3 | | | | | |
| **331** | **Vdc In Low Start** | DC Inputs | DC Input 4 | Volt | 0/80 (0) | basic |
| The DC input low start in volts group 4 | | | | | |
| **332** | **Vdc In Low Transfer** | DC Inputs | DC Input 4 | Volt | 0/80 (0) | basic |
| The DC input low transfer in volts group 4 | | | | | |
| **333** | **Vdc In Low Stop** | DC Inputs | DC Input 4 | Volt | 0/80 (0) | basic |
| The DC input low stop in volts group 4 | | | | | |
| **334** | **Vdc In High Start** | DC Inputs | DC Input 4 | Volt | 0/80 (0) | basic |
| The DC input high start in volts group 4 | | | | | |
| **335** | **Vdc In High Transfer** | DC Inputs | DC Input 4 | Volt | 0/80 (0) | basic |
| The DC input high transfer in volts group 4 | | | | | |
| **336** | **Vdc In High Stop** | DC Inputs | DC Input 4 | Volt | 0/80 (0) | basic |
| The DC input high stop in volts group 4 | | | | | |
| **341** | **Vdc In Low Start** | DC Inputs | DC Input 5 | Volt | 0/80 (0) | basic |
| The DC input low start in volts group 5 | | | | | |
| **342** | **Vdc In Low Transfer** | DC Inputs | DC Input 5 | Volt | 0/80 (0) | basic |
| The DC input low transfer in volts group 5 | | | | | |
| **343** | **Vdc In Low Stop** | DC Inputs | DC Input 5 | Volt | 0/80 (0) | basic |
| The DC input low stop in volts group 5 | | | | | |
| **344** | **Vdc In High Start** | DC Inputs | DC Input 5 | Volt | 0/80 (0) | basic |
| The DC input high start in volts group 5 | | | | | |
| **345** | **Vdc In High Transfer** | DC Inputs | DC Input 5 | Volt | 0/80 (0) | basic |
| The DC input high transfer in volts group 5 | | | | | |
| **346** | **Vdc In High Stop** | DC Inputs | DC Input 5 | Volt | 0/80 (0) | basic |
| The DC input high stop in volts group 5 | | | | | |
| **351** | **Vdc In Low Start** | DC Inputs | DC Input 6 | Volt | 0/80 (0) | basic |
| The DC input low start in volts group 6 | | | | | |
| **352** | **Vdc In Low Transfer** | DC Inputs | DC Input 6 | Volt | 0/80 (0) | basic |
| The DC input low transfer in volts group 6 | | | | | |
| **353** | **Vdc In Low Stop** | DC Inputs | DC Input 6 | Volt | 0/80 (0) | basic |
| The DC input low stop in volts group 6 | | | | | |
| **354** | **Vdc In High Start** | DC Inputs | DC Input 6 | Volt | 0/80 (0) | basic |
| The DC input high start in volts group 6 | | | | | |
| **355** | **Vdc In High Transfer** | DC Inputs | DC Input 6 | Volt | 0/80 (0) | basic |
| The DC input high transfer in volts group 6 | | | | | |
| **356** | **Vdc In High Stop** | DC Inputs | DC Input 6 | Volt | 0/80 (0) | basic |
| The DC input high stop in volts group 6 | | | | | |
| **361** | **Vdc In Low Start** | DC Inputs | DC Input 7 | Volt | 0/80 (0) | basic |
| The DC input low start in volts group 7 | | | | | |
| **362** | **Vdc In Low Transfer** | DC Inputs | DC Input 7 | Volt | 0/80 (0) | basic |
| The DC input low transfer in volts group 7 | | | | | |
| **363** | **Vdc In Low Stop** | DC Inputs | DC Input 7 | Volt | 0/80 (0) | basic |
| The DC input low stop in volts group 7 | | | | | |
| **364** | **Vdc In High Start** | DC Inputs | DC Input 7 | Volt | 0/80 (0) | basic |
| The DC input high start in volts group 7 | | | | | |
| **365** | **Vdc In High Transfer** | DC Inputs | DC Input 7 | Volt | 0/80 (0) | basic |
| The DC input high transfer in volts group 7 | | | | | |
| **366** | **Vdc In High Stop** | DC Inputs | DC Input 7 | Volt | 0/80 (0) | basic |
| The DC input high stop in volts group 7 | | | | | |
| **371** | **Vdc In Low Start** | DC Inputs | DC Input 8 | Volt | 0/80 (0) | basic |
| The DC input low start in volts group 8 | | | | | |
| **372** | **Vdc In Low Transfer** | DC Inputs | DC Input 8 | Volt | 0/80 (0) | basic |
| The DC input low transfer in volts group 8 | | | | | |
| **373** | **Vdc In Low Stop** | DC Inputs | DC Input 8 | Volt | 0/80 (0) | basic |
| The DC input low stop in volts group 8 | | | | | |
| **374** | **Vdc In High Start** | DC Inputs | DC Input 8 | Volt | 0/80 (0) | basic |
| The DC input high start in volts group 8 | | | | | |
| **375** | **Vdc In High Transfer** | DC Inputs | DC Input 8 | Volt | 0/80 (0) | basic |
| The DC input high transfer in volts group 8 | | | | | |
| **376** | **Vdc In High Stop** | DC Inputs | DC Input 8 | Volt | 0/80 (0) | basic |
| The DC input high stop in volts group 8 | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Control Table | | | | |
| *Id* | *Name* | *Group* | *SubGroup* | *License* |
| **1** | **Load Actual Configuration Running on T2S** | Inverter System |  | basic |
| This control will reload the configuration of the T2S inside the Configuration Element of the Inverter System. It returns 'command canceled' if all the information is not yet read | | | |
| **2** | **Save Configuration To T2S** | Inverter System |  | basic |
| Save Configuration To T2S | | | |
| **11** | **Turn All Modules Off** | Inverter System |  | basic |
| Turn All Modules Off | | | |
| **12** | **Turn All Modules On** | Inverter System |  | basic |
| Turn All Modules Off | | | |
| **501** | **Clear My Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment will be cleared. | | | |
| **502** | **Clear All Events** | Generic | Events | basic |
| By writing '1' to this control element, all the events of this equipment and all the events of all the sub-equipments will be cleared. | | | |
| **511** | **Add Event** | Generic | Events | basic |
| This control element adds an event of severity none. The event name is the text written to this control element | | | |
| **512** | **Add Major Event** | Generic | Events | basic |
| This control element adds an event of severity major. The event name is the text written to this control element | | | |
| **521** | **Reset Default Names And Groups** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment | | | |
| **522** | **Reset Default Names And Groups Recursive** | Generic | Renaming | basic |
| This control element resets all the element Names, Groups and Subgroups to default values for this equipment and all sub equipments | | | |

Licenses

* [The Comp@s license packages](#scroll-bookmark-201)
* [How can I upgrade my license?](#scroll-bookmark-202)
* [How is the license stored?](#scroll-bookmark-203)

The Comp@s license packages

The Comp@s software has functionalities which are accessible depending of the licensed options. For the time being, 4 license packages are available: battery, asset, plc and modbus.

* [The Battery Package](#scroll-bookmark-204)
* [The Asset Package](#scroll-bookmark-205)
* [The PLC Package](#scroll-bookmark-206)
* [The Modbus Package](#scroll-bookmark-207)
* [License currently in use](#scroll-bookmark-208).

### The Battery Package

This package allows using advanced functionalities related to the battery management. It allows configuring and starting battery test, it allows to retrieve test battery records, etc. The detailed table, in chapter 8, details the table entries only available with the battery package.

### The Asset Package

This package allows:

* To retrieve any available data record, with a resolution of second, minute, hour or day. This includes also some statistics about the data. The records can be viewed with a web browser with Flash installed. The records can also be downloaded in CSV;
* To retrieve any information about the components of a system, like serial numbers, batch ids, production dates, software information, etc;
* To retrieve detailed information about smart rectifiers;
* To use strategy to optimize the global efficiency.

Note: The PLC package is also included in the Asset Package.

### The PLC Package

This PLC package allows:

* The creation of customer defined data, like in a Programmable Logic Controller: a PCL Data is defined by any mathematical operation over any data;
* The creation of customer defined alarms, like in a Programmable Logic Controller: a PLC Alarm is defined by any combination of any data and any alarm.

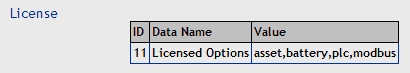
### The Modbus Package

This Mobdus package allows retrieving the data and the alarms related to one dc system with the Modbus RTU over TCP protocol. This protocol is used in some industrial environment.

### License currently in use

In order to check which license is currently used by Comp@s, browse to SiteàData. The entry “Licensed Options” provides the information, as shown on the following figure:

Figure 89 Installed License



How can I upgrade my license?

If you want to unlock functionalities thanks to a new license:

**STEP** 1: Please contact your vendor.

**STEP 2:** He will ask you to send you actual license file.

**STEP 3:** A new license file will be returned.

**STEP 4:** Copy it to \\FlashDisk\\User

**STEP 5:** After a reboot, your system is using the new license.

How is the license stored?

The Comp@s license is a XML file named “licenseKey\_XX-XX-XX-XX-XX-XX.xml”, where XX-XX…-XX is the registered MAC address, in hexadecimal. (Example: licenseKey\_00-14-2D-20-0B-20.xml) When the file is installed at factory, it is located in “\\FlashDisk\Factory”.

The content of this XML file looks like:

|  |
| --- |
| **XML licence file content:**  <licenseKey version="1.0">  <product version="0.1.X.X">Alpha Technologies Comp@s</product>  <macAddress>00-14-2D-20-0B-20</macAddress>  <options>asset,battery</options> <key>vddR+a7oQcx4Qrmt24padm3hSd1DJtbC3LEsKtzxdSJ5mCloN9uZMg  NnvemA13CWE5pOZxZBJY/uTsuCPHEwAQ==</key>  </licenseKey> |

The interesting part is “<options>asset,battery</options>” which corresponds to the licensed option you bought.

|  |
| --- |
| Note that this license is unique on each monitoring. If you copy a license file from one monitoring to another, it will not work! |

Software Release Components

A comp@s release is composed of different components.

Comp@s is evolving every day to satisfy new customer and new products needs. It supports more and more devices.

When required, we release a production release.This release is composed of the following components :

* [System bootloader](#scroll-bookmark-210)
* [The Operating System](#scroll-bookmark-211)
* [Comp@s Starter Executable](#scroll-bookmark-212)
* [Comp@s Executable](#scroll-bookmark-213)
* [Comp@s FTP Server Executable](#scroll-bookmark-214).

System bootloader

The Bootloader is the first piece of code being executed at start-up. Its main purpose is to load and start the OS (WinCE). The Boot loader is also the place where various settings can be changed.

The Operating System

Comp@s is running on Windows CE 5.0 operating system, featuring nice features like:

* Real Time
* A reliable TCP/IP stack
* USB driver for local connection
* Fast development capabilities.

The system image is build with the Microsoft Platform Builder. It uses the Toradex BSP (Board Support Package).

An external watchdog system is present to automatically restart the monitoring application if loss of activity is detected.

Microsoft® Windows® CE 5.0 is an open, scalable, 32-bit operating system (OS) that integrates reliable, real time capabilities with advanced Windows technologies. Windows CE allows you to build a wide range of innovative, small footprint devices. A typical Windows CE–based device is designed for a specific use, often runs disconnected from other computers, and requires a small OS that has a deterministic response to interrupts. Examples include enterprise tools, such as industrial controllers, communications hubs, and point-of-sale terminals, and consumer products, such as cameras, Internet appliances, and interactive televisions.

See MSDN Win CE 5.0 for more information: <http://msdn.microsoft.com/en-us/library/ms905511.aspx>.

Comp@s Starter Executable

That application is stored on the Flash, in the AutoRun folder. The exact file name is : "Compas\_Starter.exe".

The application is written in c# and run over the .NET CF 2.0.

Comp@s Executable

The application is written in c# and run over the .NET CF 2.0.

When Compas is executed, the followings tasks are run:

1. Extract and load of [C Drivers](#scroll-bookmark-215)
2. Retrieve [Environment Configuration](#scroll-bookmark-216)
3. Load [License](#scroll-bookmark-217)
4. Load [Translation Dictionary](#scroll-bookmark-218)
5. Create a [Site Object](#scroll-bookmark-219)
6. Create Thread “[Decode CAN Msg](#scroll-bookmark-220) ” >
7. Create Thread “[Web Server](#scroll-bookmark-221)”
8. Create Thread [SNMP](#scroll-bookmark-222)
9. Create Thread “Modbus Slave”
10. Create Thread “Modbus Master”
11. Create Thread “[ProcessScheduledTasks](#scroll-bookmark-223)".

### C Drivers

In order to guarantee fast and reliable CAN communication, the can drivers is build in a C DLL (Dynamic Link Library).

The driver is not build in the operating system to allow easy upgrade and avoid compatibility issues.

The hardware CAN controller model is Microchip MCP 2515. It provides a SPI interface used to communicate with the Compas electronic board.

[Microchip MCP 2515 details](http://www.microchip.com/wwwproducts/Devices.aspx?dDocName=en010406).

#### CAN Message Receiving

Each time a message is received, the MCP 2515 use hardware interrupt to request the driver to read the new message.

The CAN messages are stored in a large circular buffer queue. These messages can be read without real time issues.

#### CAN Message Sending

Message can be sent via 3 different output buffers:

* High Priority Buffer
* Normal Priority Buffer
* Low Priority Buffer

They can be sent one by one or in block of maximum 10 messages. (Block sending is required by the CANOpen LSS algorithm to guarantee the message order)

#### Other Driver Functions

The C driver is also used to control led, and to reset the hardware watchdog, depending of the hardware configuration.

### Environment Configuration

Global variables are configured depending of the environment:

* [BSP Version](#scroll-bookmark-227)
* [Flash path](#scroll-bookmark-228)
* [Ethernet Device](#scroll-bookmark-229).

#### BSP Version

The Board Support Package is related to the operating system version.

#### Flash path

Default path to access the flash memory is \\FlashDisk

But, on previous versions of Compas, \\NOR Flash was used.

#### Ethernet Device

Depending of the comp@s hardware revision, different chipset are used for Ethernet:

* DM90001
* AX887961

### License

The license is validated and loaded if trusted.

### Translation Dictionary

On start-up, the list of all the used strings is generated dynamically.

Then, the associated translations are loaded in memory from csv files stored in the user dedicated Flash.

The Namespace in charge of the translations is Compas.Strings.

### Site Object

The site object is the root node of the equipments controlled and monitored by Compas.

Any detected equipment/device will be a child of this object.

After the object creation, the associated site configuration is loaded.

### Decode CAN Msg

See MonitoringThreadDecodeCANMsg()()()()

### Web Server Interface

The internal Web server of the application is launched at startup in a separate thread. It is constituted of an request extractor that listens to the HTTP messages, and calls back a method to process them.

Default listening port number is 80.

### SNMP Management

A new SNMP agent is instantiated at application startup. This agent is called in order to send an event trap each time a new event is added by an equipment.

### Process Scheduled Tasks

This thread is looping on the function “ProcessTasks”, and sleep 20 milliseconds after each execution. It executes the following tasks:

* Execute the “RefreshSlow” of all the equipments. It recalculate the internal variables, the PLC data, manage the regulation, etc. (Every 1000ms)
* Execute the “UpdateAlarmTableAndStatus” of all the equipments. It recalculate each alarm, and update the global status of the equipment. (Every 1000ms)
* Update Led status, for led controlled directly by Comp@s. (every 100ms)
* Ask necessary CANOpen variables refresh (every 100ms)
* Manage CANOpen Nodes, detect nodes to remove (Every 1500ms)
* Check if new CANOpen LSS node has been detected (Every 2000ms)
* Refresh the equipment structure if needed (Every 2000ms)
* Send SNMP trap if Authentication Failure (Every 2000ms)
* Process Data Records elements with second resolution (Every 1 sec)
* Process Data Records elements with minute resolution (Every time the system ime as changed of minute)
* Process Data Records elements with hour resolution (Every time the system time as changed of hour)
* Archive Data records (Every x hours if x is configured and different of 0)
* Process Data Records elements with day resolution, and save all records in flash (Every time the system time as changed of day)
* Post XML events if any and if configured, for all equipments (Every 2 seconds)

### Inventory Management and Equipment Mounting

The device inventory is initialized and loaded at startup. First application is searching for the file devices.xml in \\User\\ directory of the flash memory path. If this file doesn't exist, a default initialization procedure is started.

Procedure is the following:

* If a site doesn't exist, application is creating or getting one. Getting one means that application is searching for an equipment with the same name or ID. Otherwise, a new site is created.
* If an energy system doesn't exist, application is creating or getting one.
* After CAN bus initialization, LSS (Layer Setting Services) messages are processed. Each time a new CANOpen node is found, corresponding device is added to the device dictionary.

### Alarm Set-up and Clearance

Each time a new alarm is created, two "Set" and "Clear" delay parameters are associated to it. By default they are equal to 0 and 2 seconds respectively:

* Alarm is set if its severity type is different to "Disabled" AND if its alarm condition is true since a time in seconds superior to the set delay parameter.
* Alarm is cleared if its alarm condition is NOT true since a time in seconds superior to the clear delay parameter.

### System and Application Configuration

Each equipment of the application possess its own configuration elements. They appear in the Web page Config tab related to the equipment in order to be editable by application user.

### Data Record Management

In addition to instantaneous Data objects, the application manages Data Records objects that accumulate information from Data objects. Real-time statistics like average, max. and min. values are computed. The Comp@s Web server uses an integrated javascript applet in order to generate a dyncamical display of the data record information.

### Equipment Emulation

If equipment emulation is used, CANDriver is emulating a set of equipments by sending corresponding CAN messages.

Comp@s FTP Server Executable

The application is written in c# and run over the .NET CF 2.0.

This program implements a FTP server. The program is separated from Comp@s to allow software upgrade also when Compas.exe is not running. The security management is separated from the Comp@s one.

File Transfer Protocol (FTP) is a standard network protocol used to transfer files from one host to another host over a TCP-based network, such as the Internet. FTP is built on a client-server architecture and uses separate control and data connections between the client and server.

[Wikipedia - FTP](http://en.wikipedia.org/wiki/File_Transfer_Protocol)

Software Changelog

* [.NET Executable Versioning](#scroll-bookmark-237)
* [Comp@s Changelog](#scroll-bookmark-238).

.NET Executable Versioning

The software versioning is the process of assigning unique version numbers to unique states of computer software. Each assembly has a version number as part of its identity.

Since March 2012, the standardized format used is :

<*major version*>.<*minor version*>.<*build number*>.<*revision*>

All the fields are integers.

* The major version changes when a release is made that breaks backwards compatibility.
* The minor version will be used in other cases when we release versions.
* The build number increments as we do code reviews and check in working code to the repository . (this number is not displayed to the customer to avoid confusion - it is showned as 0.
* The revision is used for internal build, it designate alpha or beta status for releases that are not stable enough for general or practical deployment and are intended for testing/internal use only:
  + <revision> - 0 : for alpha (non-stable)
  + <revision> - 1: for beta (internal)
  + <revision> - 2 : for release candidate (QA-passed, final tests)
  + <revision> - 3 : for public (release)
  + <revision> - 4 and following : for releasing specific modifications on a released version (for specific customers - should be avoided as much as possible)

Before that version, the used format was:

0.Y.0.X where:

* X is the minor revision number and is:
  + odd for beta version
  + even for stable version
* Y is the major revision number.

Comp@s Changelog

Note: Only revisions with a SOFT 000031 XX code were released in production. The other versions were distributed to customers for upgrade when necessary.

**Legend:**  
+ Added feature  
\* Improved/changed feature  
- Bug fixed  
! Known issue / missing feature

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| Revision 2.11.0.4 (24/07/2014) - SOFT 000031 47 |
| - Event name was not correct for alarm related events. 'Alarm Clear/Set/Ack :' was missing - Bug introduced in 2.9.0.3. |
| - The fix introduced in 2.9.0.3 about event memory leak had broken the correct behavior of the event\_flat.xml log cleaner. |
| \* Bootloader - Improved 'Upgrade All' Bootloading reliability. (The sequence could get stuck with a race condition on the node reset) |
| \* Bootloader - Improved Can Bootloading reliability on old hardware without interrupt line for the can driver |
| \* Bootloader - No need to reboot after Cordex Rectifier Upgrade |
| + New alarm 'Running CAN Firmware Upgrade' (AL5) at site level during any CAN Bootloading |
| + New events are generated with information about the bootloading start and stop. |
| + New description 'CPU Info' (DE93) at site level to help support in case of investigation |

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| Revision 2.10.0.3 (16/07/2014) - SOFT 000031 46 |
| \* Removed unused alarms for 300W rectifier |
| \* Edit mode is not anymore accessible for rectifier and inverter equipment (Because change is not saved) |

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| Revision 2.9.0.3 (11/07/2014) - SOFT 000031 45 |
| - Memory - Fixed small memory leak critical for systems generating many events (>5000/day) |
| \* Emulator - Each emulator option store now 'flash files' in a subfolder corresponding to emulation id |
| \* Emulator - Possibility to define the FlashPath for integration and unit testing |

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| Revision 2.8.0.5 (26/06/2014) - SOFT 000031 44 |
| \* Data records - Memory Usage optimisation, some records vector could be duplicated |
| \* Data records - Support for disabling data record enabled by default, and check for some critical records |
| - Web Interface - Elements Entries under development, with license 'underdev' where shown in the interface since version 2.X (but not usable) |
| - XML Event Posting - Fixed memory leak if XML POST is configured to inexisting server for a long period of time, with a small timeout |
| - Data Records - Sometimes, the tooltip displaying the value on mouse over did not disappeared when mouse was removed. |
| + Data Records - Support of Zoom in/out and span in charts. |
| + Data Records - Start/Stop Auto Refresh of the charts.(to allow zooming) |
| - Site Alarm 'XML Heartbeat Post Failure' was not working as expected. |
| - Email Support - Automated mail was sending too many emails |
| + Web Interface - Waiting popup is now shown for long operations (Save Configuration, Upload file, Send mail, etc). It avoids clicking somewhere else when request is not complete. |
| \* Bootloader - Support of 'Upgrade All Compatible' with file format with comments like 'SOFT\_0000YY\_XX\_some\_comments.txt' |
| + Support - New zip file 'diagnostics.zip' can be generated on the fly for investigation by Alpha Technologies SA in case of issue. (Available in Files menu) |
| - Web Server - 'ContentEncoding: gzip' was sent in header when downloading .xml.zip files. This was an error. (Fix issue with IE, it was ok with firefox and Chrome) |
| \* File Manager - Diplaying now 'Write Time' instead of 'Creation Time'. |
| \* Debug - Internal generic object counters allows to detect possible memory leaks at runtime. |
| - Memory - Fixed memory leak when equipments are powered and unpowered many times a day, like with alternative energy sources. (Could slow down or event reboot the Comp@s after a few weeks) |

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| Revision 2.7.0.5 (13/06/2014) - SOFT 000031 43 |
| - CAN Bus - New Alarm 'CAN Bus Addressing Error' was too sensitive (race condition). |
| \* Dashboard - Data records shown for Cordex 4kW and 2.4kW Systems |

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| Revision 2.7.0.4 (11/06/2014) - SOFT 000031 42 |
| + Email Support - On event with a configured minimal severity, summary mail can be sent to multiple recipients. (need 'asset' License) |
| + CAN Bus - New alarm 'CAN Bus Addressing Error'. This helps detecting configuration problems. The alarm will disappear only if you remove all the node that are related to the duplication. (See inventory to know which one is duplicated) |
| + Controller Upgrade - Support of zip file upgrade, with possible MD5 Checksum validation (if file compas.exe.md5 available in zip.) |
| + Debug - All the debug files can be retrieved in one text file (for issue investigation) |
| - Webpage - DC System - Dashboard diagram box was too big with Chrome Browser |

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| Revision 2.6.0.5 (17/04/2014) - SOFT 000031 41 |
| + Alarms - Acknowledgement feature. Each alarm can be acknowledged. This will allow smart filtering in Arm@da between new alarms and managed alarms. |
| + Alarms - Acknowledgement feature - Generation of events on ack/unack of an alarm (type= alarm ack / alarm unack). |
| \* Web UI : Alarms/Events - Long event names are now split in multiple lines |
| - Delta Data Record : solved bug in XML generation (Wrong write format used for RAM records) |
| - PLC equation with @(alarmXX) on relay boolean condition was broken on ADIO10 |
| \* Web UI: Solved top menu Drop Down issue with Internet Explorer 9 |
| - Web UI: Alarms/Events - Event name button link was always refering to site level instead of the right equipment |
| \* API - ProcessXml.cgi : if clear/set delay, relay, severirty\_level/type is not defined, the default value is not reset anymore. Only the sent attributes are updated. |

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| Revision 2.5.0.3 (9/04/2014) - SOFT 000031 40 |
| - Web UI - CSS: with some webpage witdh smaller than 980px but larger than mobile version, some menu was hidden. |
| - Web UI - javascript: Solved possible race condition on initial load |
| - Web Server Socket - Under some very rare race conditions, socket could reply twice with the same response to different requests |

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| Revision 2.4.0.3 (4/04/2014) - SOFT 000031 39 |
| - 1-Wire humidity sensor: under some rare circonstance, corrupted value could be read - timing issue solved. |
| \* Data Record - Delta record is now immediatly available after configuration change. Previously, a least one append to file was required |
| + PLC - support of equations with strings. Example to link dc system realys with inverter system 1, to define in the alternate condition: @(es1\_invs1\_severity\_type)="major" || @(es1\_invs1\_severity\_type)="critical" |
| - CanOpen - Inventory - LSS CAN id range configuration was broken, required to mix T2S with CAR systems (Mixing static and dynamic CanOpen adressing) |
| \* Inverter System: Improvement of the group and subgroup strings to have a more user friendly user interface. It is needed to reset default Name/Groups/Subgroups if there is already a saved configuration. |

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| Revision 2.3.0.3 (31/03/2014) - SOFT 000031 38 |
| \* Improved Speed of Can Node type detection |
| + SNMP - Possibility to modify the trap content, by sending additional site description. |
| + SNMP - Developpers have the possibility to link data to alarms, to send them with the trap. |
| + SNMP - Some data MIb entries described as Integer32 were transmitted as OctetString |
| + TCP/Ip - New configuration element allows to define the Maximum Transmission Unit (MTU) |

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| Revision 2.2.0.3 (12/03/2014) - SOFT 000031 37 |
| - Web server redirection could loop if the default web page was forced to blank. |
| - Logout page link was pointing to old version of webpage |
| + Suppport of Data Record on PLC Data |
| + Suppport of $iif(condition, val if true, val if false) and $case(condition, val, condition2, val2, ...) functions in PLC equations |
| + Dashboard support multiple dc systems |
| \* Summary renamed to Reports |
| \* Site --> in tab view, 'All' selection will also select the Description, Data, Alarm, Config and Control to understand the concept easily |
| - Renaming tool in the web interface was buggy because the page was self-refreshing while editing |
| \* Schneider PM9C and IEM3150 RS485-devices are now seen as Energy Meter in the ETSI structure |
| \* SNMP - Get of site data date and time was returning empty value. (Datetime format was not correctly supported) |
| - XML Post - Seconds between two XML Post was not correctly handeled) |
| \* Better Factory Testing support for UCC (RS485 and RS232 are now automatically tested) |
| \* When saving configuration, old element ids of live equipment are removed, this allows to clean if another type of ADIO has been installed, with different features |
| \* New Control element 'Clean and Save XML User Configuration' allows to remove from configuration information about devices that are not present anymore. |

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| Revision 2.1.0.3 (25/02/2014) |
| \* Improved can drivers |
| \* Minor changes |
| \* Refactoring code for future improvements |

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| Revision 2.0.0.3 (19/02/2014) |
| \* FIRST RELEASE OF COMPAS '2.0.' - SUBJECT TO MINOR CHANGES |
| \* New web interface - for old, go to index\_old.html |
| \* Major CPU and Memory Usage Optimisation |
| \* Group and Subgroup allows filtering |
| \* Support of SP0155/01 and SP0155/02 |
| \* Many other new features |

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| Revision 0.126.0.4 (3/09/2013) |
| \* Emulation - added configuration 54, UCC + 15 x Adio7 |

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| Revision 0.126.0.3 (23/08/2013) - SOFT 000031 36 |
| \* Sensors and Actuators - SAM0948 - Added hysteresis parameter on some alarms related to temperature, humidity and tilt |
| - CAN Driver is now compatible (was broken for 1 year) with first generation of compas board (blue card) |
| + DC System - Support of scheduled battery test (based on CRON rules) |
| + Support of wizards (first used to help defining the cron rule) |
| \* Site: Drop-box for the configuration of the Time Zone |
| \* XML Posting - Possibility to select which table must be sent on event. (description, alarm, data, configuration, control) |
| \* ADIO - Support up to 16 ADIO board as sensors and actuators by default |

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| Revision 0.125.0.3 (5/08/2013) - SOFT 000031 35 |
| + Remote Power Feeding: Support of new Module 60W/190V |
| - Set/Clear delays of alarms were divided by factor 2 because the alarm calculation was called twice. |

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| Revision 0.124.0.3 (28/06/2013) |
| + Allow to set MCU specific configuration id. (Done in production, but allow to change in case of misconfigured MCU) |

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| Revision 0.123.0.4 (13/06/2013) - SOFT 000031 34 |
| \* Table documentation generator for T2s (Inverter), Cordex Rectifiers and Cordex Dc System |

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| Revision 0.123.0.3 (30/05/2013) |
| + Remote Power Feeding : Support of new Module REC009 |
| \* XML Events and Armada: Alarm table was not sent completelly. Real time for alarm clear events is now ok. |
| \* XML Events and Armada: Alarms are now correctly cleared for CAR rectifier, and sent also in realtime |
| \* XML Events and Armada: After equipment creation, data sync is done for descriptions, alarms, data, events and configs |
| - Rack ACE102FALP - Module position issue with 2-slot distribution. |

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| Revision 0.122.0.3 (9/04/2013) - SOFT 000031 33 |
| - SNMP - Walk was not going anymore inside the dc system. Broken in 0.113.0.3 |
| \* SNMP - GlobalAlarmSeverityLevel of each equipment is now sent as an Integer (OctetString previously) |
| \* SNMP - renamed Mitra to Atsa in Mib due to company name change. |
| \* SNMP - Get next will now work from base oid iso.org.dod.internet |
| \* SNMP - New oid entry 'xxxxGlobalAlarmSeverityTypeInt' for each equipment level. It is the same as the 'xxxxGlobalAlarmSeverityType' but as an integer (critical=4, major=3, minor=2, warning=1, none=0) |

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| Revision 0.121.0.3 (21/03/2013) - SOFT 000031 32 |
| + Remote Power Feeding: Support of new 120W remote module. |
| - Cordex DC System: Solved transient dc mode changed to safe mode (bug introduced in 0.120.0.3 |

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| Revision 0.120.0.3 (8/03/2013) - SOFT 000031 31 |
| \* Cordex DC-System : Check that the voltage measurement has been refreshed recently, before regulating bus voltage. |
| \* Cordex DC-System : Improved bus voltage regulation - reduce possible 100mV oscillation with ADIO10 |
| \* Inverter System - Optimisation of the bandwidth usage to allow more inverter systems (up to 20 T2S - More should be possible after validation) |
| \* Inverter System - The system id is now saved with the CAN LSS information - allows to keep the same system order after a reboot |
| \* Inverter System - Added a 1 minute delay before creating the inverters to avoid id transient. |

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| Revision 0.119.0.3 (19/02/2013) - SOFT 000031 30 |
| - Fix bug : element change event where not added to the correct equipment. |
| \* Optimised version of the XML posting to Armada. Description, Data, Alarm, Config of the equipment are also sent. |
| \* Remote Site - New control to copy address from the top site level (not the street). |
| \* Remote Site - Address is copied from Top Site on first creation |
| \* Up Converter System: Set/Clear Delay of the slot alarm increased to 15 |
| \* Default Post XML timeout changed to 100 seconds (was 2 seconds) |

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| Revision 0.118.0.3 (23/01/2013) - SOFT 000031 29 |
| - Fix bug introduced in 0.113.0.3 - If the site id is changed to anything starting with 1 like 11, 1021, etc. A stack overflow can happen at next reboot. |
| \* Inverter system - Support of ETSI XML posting for real time events in Armada. |

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| Revision 0.117.0.3 (21/01/2013) - SOFT 000031 28 |
| - Fix bug introduced in 0.116.0.3 about the data record xml generation) |
| \* Remote Site: Alarms list is updated depending on remote system (no fan alarm with 60W module for example) |
| \* Remote Power System: Alarms are now grouped |
| + Web Server: Display the Site Name as title of the web page |
| + Display the Serial Number of Cordex Rectifier and Inverters in the left menu and on top of the element tables, display the reference for systems |

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| Revision 0.116.0.3 (16/01/2013) - SOFT 000031 27 |
| - Fix for relay control problem on ADIO10 (introduced in 0.115.0.3 changes) |
| \* New control elements to calibrate voltage and currents on ADIO10 |
| + When the Site Name is configured, it is now the title of the web page. This needs a complete refresh of the web page (Ctrl-F5) |
| - Inverter system with T2S - Save to T2s is now more reliable |
| + Inverter system with T2S - New control element to Turn On/Off all modules |
| \* New parameters for site.xml, allowing to download only some resolutions of the records (day, hour, minute, second). By default, it retrieves only daily and hourly data records |
| \* Finalization of the equalize feature for Cordex dc systems |
| + Implementation of the periodic automatic battery test |

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| Revision 0.115.0.3 (20/12/2012) - SOFT 000031 26 |
| - Reworked relay boolean condition on ADIOs. Possibility to configure normal condition as 'Energized' or 'De-Energized'. |
| - Some Alarm Set delay were not reloaded correctly after reboot, lile the bus voltage sense failure |
| \* Better support of T2S alarms |
| \* Support of the T2S with Media Inverters |
| \* Relay of Alarm 'Missing Rectifiers' can now be saved in MCU |

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| Revision 0.114.0.7 (17/12/2012) - SOFT 000031 25 |
| - Randomly, system could reboot at midnight during data records saving |
| - If events.xml was corrupted, the system could never start without deleting the file |
| \* Better implementation of the data\_record management. Thread safe and faster. |
| \* Improvement of the DC bus voltage sense failure detection on Cordex |
| - Digital Input alarm logic was inverted on ADIO 7-8-9-10. If you are using it, care required when upgrading. |
| \* More robust and faster startup |
| \* Reboot improved to reply to request, delayed by 10 seconds to allow events to be sent to Arm@da |
| - After a 'Clear All Events' or 'Clear Events', the events were not rewritten to flash, and were present again at reboot. (broken in 0.113.0.3) |
| \* Optimisation of the Web Server - Faster and uses less memory when files are posted |
| \* Better support of zip files generation (site.xml.zip). The files are now fully compliant (before, it was a compressed stream) |
| - PLC functions without arguments like $second() where broken unless used as $second(0) |

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| Revision 0.113.0.3 (15/11/2012) - SOFT 000031 24 |
| - SNMP walk was not working from top snmp node |
| + Introduced group possibilities for the alarm table |
| + Events are now automatically saved in a flat file : events\_flat.xml. events.xml is converted on first boot. |
| + Group is now loaded from configuration.xml for any element, allowing total customisation of name/group of elements |
| + Possibility to rename Name and Group of any element from the web interface |
| + Initial limited support of Cordex Converters |
| + Support of energy meter IEM3150 on RS485 bus |
| \* Improved RS485 modbus driver allowing different types of device on the same bus |
| \* CEM03 - Remote Site can now have an id > 100 (up to 1000) |
| \* Better implementation of the battery test for Cordex DC Systems |
| \* SNMP - Improved MIB compliance - Some oid related name were too long |
| - SNMP - Traps content oids where shifted of 1 |
| + Cordex - Initial support of firmware upgrade |

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| Revision 0.111.0.5 (12/10/2012) |
| - Corrected bugs in Cordex regulation, load sharing was wrong if canid did not match rectifier id |

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| Revision 0.111.0.3 (31/07/2012) - SOFT 000031 23 |
| + Support of multiple Inverter System (T2S) |
| \* Allow to limit the request of one CAN message at the time (for T2S) |
| + Initial support of Alpha CXC over SNMP |

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| Revision 0.110.0.3 (11/07/2012) - SOFT 000031 22 |
| + SNMP - Initial Support of monitoring of SNMP device like the Cordex CXC |
| + Added possibilites to store a fix information about alarms |
| + Support of 850W/1000W systems with embedded distribution. |
| + Auto detection of the rectifier model for smart energy |
| + Introduction of 'Absent' status for Cordex Rectifiers |
| + New site control to remove absent equipments |
| + New alarm at the site level to notify that the last configuration changes are not saved |
| \* Remote Power Feeding - Added customer description element at the Remote Power Feeding System level |
| \* Remote Power Feeding - Possiblitly to define the number of CEM03 by rack, in master/slave configuration --> up to 64 racks |
| \* Better support of T2S inverter monitoring |
| \* Better conversion from XML to XLS. (site.xml.xls) Can be used to generate a system user guide with the request : site.xml.xls?help=true&control=true |
| - CAN Driver - Randomly, a can message was corrupted because of an OS interrupt during SPI communication |
| - CAN Driver - The can driver was crashing when there was only one node on the bus and it was removed |
| - It was no possible to reset to empty the list of required node on the can bus (config Required CAN Bus Node IDs) |
| - Changed unit of Rectifier Cordex 'Service Time'(s->m) and 'Converted Energy'(KJ->kwh) |

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| Revision 0.106.0.3 (22/03/2012) - SOFT 000031 21 |
| \* Changed the versioning method to allow modifications of release - 0.106.0.3 is the version after 0.1.0.104 |

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| Revision 0.1.0.104 (15/03/2012) |
| - CET Inverter were not detected anymore correctly -broken with 1.0.96 |
| - Remote Powering System was not detected anymore correctly - broken with 1.0.96 |
| \* Remote Power Feeding system - New alarm is generated 'Configuration problem' when the slot is empty but there is a configuration |

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| Revision 0.1.0.102 (23/02/2012) |
| \* Modbus Slave – Do not reply anymore until modbus variable are updated on dc system creation. This avoids to send transiant 'fake' data |

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| Revision 0.1.0.100 (15/02/2012) |
| - Modbus Slave – Socket was closed if the device id did not exist. Comp@s will now send a Modbus exception according to the standard. |
| - In remote Site in relation of a remote power feeding system, the latitude position parameter was not set correctly. (And changed the longitude). |

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| Revision 0.1.0.98 (30/11/2011) |
| - In configurations with multiple independent racks, Modbus data were not correctly updated when multiple request on different racks were processed during one second. |

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| Revision 0.1.0.96 (21/11/2011) |
| + First official release supporting cordex 4kw rectifier, with new UCC |
| + CanOpen Node definition is now managed to avoid any interference between new development and old qualified developments. (Thanks to better use of the polymorphism) |
| + Complete support of LSS devices (Dynamic CanOpen node addressing for Cordex rectifiers) |
| + Optimization of the CAN and CANOpen layer to reduce cpu usage. Great result achieved, CPU usage reduced by more than 20%. This allows better reactivity through the communications interfaces. |
| + Web interface allows minimizing parts of the tables, by group. |

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| Revision 0.1.0.88 (11/09/2011) - SOFT 000031 20 |
| \* Added debug features to analyze Modbus problems (connection timeout, new sockets, etc.) |
| \* Support of rack 300W, with specific battery configuration possibilities with the help of the front button (electronic LVD) |

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| Revision 0.1.0.86 (12/07/2011) - SOFT 000031 19 |
| \* The auto-save of records happening at midnight is now running in a separated thread to avoid any loss of communication and any problem in the main loop. |

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| Revision 0.1.0.84 (21/06/2011) |
| \* Support of up to 4 master racks on the modbus interface. (Previously 4). Modbus id 1-->4 are reserved for the 4 first DC Systems. If a request if sent to another id, the dc system 1 will reply. |

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| Revision 0.1.0.82 (16/06/2011) - SOFT 000031 18 |
| - Problem with reload of current limitation regulation parameter (because development test on going with hard coded values) |

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| Revision 0.1.0.80 (16/06/2011) |
| + Initial support for Alpha Cordex Rectifiers regulation of the dc system |
| + Support of rack CAPTIN 300W |
| - Modbus Slave communication could fail when there are socket problems. (Cable disconnection, timeout, etc.) - This problems appeared with the new Ethernet drivers of BSP 3.9. |

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| Revision 0.1.0.78 (30/05/2011) - SOFT 00031 17 |
| + Added support of PLC functions for es1 device. |

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| Revision 0.1.0.76 (27/05/2011) - SOFT 00031 17 |
| \* RS485 communications was corrupted when interrupted by another task with higher priority. |

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| Revision 0.1.0.74 (24/05/2011) |
| \* New CAN driver – reduced CPU usage by up to 30%. |
| \* New operating system – BSP 3.9 |
| \* New production tool – display instructions also in English |
| - BSP 3.9 new Ethernet driver is now synchronous to solve problems when communication is very high – Microsoft bug (Mobdus fast request in loop for instance) |

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| Revision 0.1.0.72 (20/05/2011) |
| + Added hidden function to clear registry (may be required after OS update) |

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| Revision 0.1.0.70 (10/05/2011) |
| + Possibilities to auto save records in xml, download files from web interface, and delete files. |
| + Possibilities to rename descriptions, alarms, data, configuration and control elements with the configuration.xml file |
| + Initial support of independent LVD |
| + Initial support of predefined configurations |

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| Revision 0.1.0.68 (20/04/2011) |
| - Hardware watchdog – forgot to uncomment after test. |

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| Revision 0.1.0.66 (20/04/2011) |
| + Added zip extraction functions : Extract Zip File in user-upload |
| - Records of the energy system pulse counter were loaded twice with a PM9C device |

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| Revision 0.1.0.64 (16/04/2011) |
| + Support of remote upgrade of the operating system and boot loader. (very advanced, necessary only for specific new functionalities) |
| + Added data at site level: ‘CPU Percentage Usage’ and ‘Free Flash Memory Space’, with associated records. |
| + Added description at site level : Operating System Revision |
| + Support for the http post of files |
| + New web page accessible from “Advanced” : manage\_files.html |
| + The exe file are analysed to retrieve the software revision |
| + The zip files are analysed to discover the compressed file. (Only one file by zip is allowed to avoid unmanageable folder structure) |
| + Added advanced functions in site/control: (used by the manage files web-page) (Flash Binary, Download File From Url, Delete User Uploaded File, Move User Uploaded File |

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| Revision 0.1.0.62 (10/04/2011) |
| \* Support of snmp get bulk |
| \* Added possibilities to rename all the variable names. Change the name in the xml configuration file and the related id will be updated on start. (for description, data, alarm, config and control) |
| - Snmp walk was buggy with some PLC data configurations |

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| Revision 0.1.0.60 (6/04/2011) |
| + Added configuration parameters to force the Ethernet mode (10-100Mb – Half-full duplex. (Require OS 3.5 at least) |
| + Initial support of snmp get bulk |
| + Improved support of default snmp oid (1.3.6.1.2.1.1.4,5,6,9.1.3 |

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| Revision 0.1.0.58 (5/04/2011) |
| - Rewrite of the Modbus RTU Master driver to solve random crash after a few days (windows serial driver bug) |

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| Revision 0.1.0.56 (9/03/2011) |
| + Support of additional extensions for Opera Net Project (sensors and actuators) |
| + Support of PM9C energy counter over RS485 |

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| Revision 0.1.0.54 (21/02/2011) |
| + Initial support of Alpha rectifiers |
| + CANOpen LSS master implementation |
| \* Added PLC functions to get site level info |

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| Revision 0.1.0.52 (6/01/2011) |
| + Initial support of RS485 Modbus Master |
| \* Added entry 151 in Modbus |

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| Revision 0.1.0.50 (29/10/2010) - SOFT 000031 16 |
| \* Improved support of 300W rack family |

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| Revision 0.1.0.48 (18/10/2010) |
| + Initial support of 300W rack family |

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| Revision 0.1.0.46 (29/06/2010) |
| \* Support of 3 dc-system over Modbus interface |

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| Revision 0.1.0.44 (3/06/2010) |
| \* Added concept of dc system and rectifier models (for smart functions) |

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| Revision 0.1.0.42 (20/04/2010) |
| \* Improved support of CET inverters |
| - Bug correction of removed rectifiers if not declared in large systems |

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| Revision 0.1.0.40 (21/01/2010) - SOFT 000031 14 |
| + Minor support of CET inverters |
| \* Change of OS, minor security updates (BSP 0.5) |
| - Correction of Ethernet bug with HUB (drivers was switching of the Ethernet devices if disconnected from hub) |

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| Revision 0.1.0.38 (19/01/2010) |
| \* Review of the logic for ac fail conditions |

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| Revision 0.1.0.34 (24/11/2009) |
| \* Increased reliability of the CAN bootloader reset algorithm |

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| Revision 0.1.0.32 (19/11/2009) |
| + Support of large system with CAN regulation (up to 90x2600W rectifiers) |

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| Revision 0.1.0.30 (19/10/2009) |
| + Support of MCU0548 |
| \* Changed remote system type name (3x120w, etc) |

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| Revision 0.1.0.28 (19/10/2009) - SOFT 000031 13 |
| \* Data records are now stored in XML, and are auto-saved |
| \* Data records are reloaded on startup |
| \* Optimization of the XML file generation |
| \* Support of compressed XML file in ZIP (xml.zip) |
| \* Full support of SNMP V3 traps |
| \* Added support of energy consumption measurement at the energy system level (pulse counter) |
| \* Added cold start type event (to be able to rediscover the site in XML after power outage – according to ES 202 336 standard change request) |
| - Modification of one registry parameter, to disable the “auto sense mode” of Ethernet, which was disabling the Ethernet when connected to a hub. |

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| Revision 0.1.0.26 (16/06/2009) |
| \* Added support for SNMP V3, with updated libraries |
| \* Added support of remote power feeding systems |
| \* Compilation in VS2008 |
| \* Web page layout changed from Cherokee to Mitra E&I |
| \* Updated version of operation system, with latest windows update and latest drivers. (in production with SOFT 000031 12) |
| - Bug in the data record queue for last days and last hours records. |

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| Revision 0.1.0.24 (27/03/2009) |
| \* Added support of MCU3048M6 |
| \* Optimization of the CAN driver |

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| Revision 0.1.0.22 (1/10/2008) - SOFT 000031 12 |
| \* (Updated OS drivers on 25 March 2009, because of new booloader on Comp@s card.) |
| - DC System Refresh Task buggy if only one rectifier in current limitation --> nothing was refreshed |

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| Revision 0.1.0.20 (1/09/2008) - SOFT 000031 11 |
| \* With the Modbus interface, the currents are now given in 0.1A as unit. |
| \* Support of XXXXconfigurationYYYY.xml files in Factory folder. This allows naming easily the configuration files. |
| - With a very low probability, the application could crash during startup. (It restarted correctly after 5 minutes thanks to the watchdog). |

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| Revision 0.1.0.18 (1/08/2008) |
| \* New configuration parameter: XML Event Posting To Secondary Only If Primary Failure (Set to True by default). This allows sending XML events to the redundant server only if the first fails. |
| \* New configuration parameter: XML Heartbeat Time (minute): Define the time in minutes between two heartbeats. It is now possible to request the monitoring to send heartbeat in order to check the communication availability. This XML heartbeat looks like: <site id="1" status="alarms" severity\_type="major" severity\_level="6" /> Note that the same behavior with primary/secondary server is used. |
| \* Modbus compatibility improvements |
| \* No current limitation by default (1000A by default, must be set correctly). |
| \* Functional battery test is configured (1000A as discharge current, 0% of discharge capacity, duration of 10 minutes). --> Must me correctly configured with the battery parameters for reliable battery test. |
| \* PLC license is now included in the Asset license. |

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| Revision 0.1.0.16 (1/07/2008) |
| \* New Modbus license option |
| \* MCU30110 support |
| \* Comp@s Display Module Support (CDM) |
| \* CSV Log file of battery tests can be downloaded from web interface |
| - Firmware boot loading may fail under some circumstances |
| - The web server function ‘ProcessXML.cgi’ processed only site level configuration |
| - On system reboot, for alarm related events, the datetime is not parsed correctly |
| - On system reboot, the set delay of the alarms was replaced by the clear delay. |

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| Revision 0.1.0.14 (28/05/2008) - SOFT 000031 10 |
| \* Web interface compatible with older browser (Internet Explorer 6) |
| \* Web page generation 4x faster |
| + Time Zone support |
| + Daylight Saving Time |
| - The system time could be badly loaded during booting |
| - XML event posting locked when server answers badly |
| - Possible web server crash if socket not correctly closed |

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| Revision 0.1.0.12 (14/02/2008) - SOFT 000031 09 |
| + Support of multi-language web interface |
| + Support of 2x6x1800W DC systems (with 2 MCU1848) |
| + PLC module added (customization of data and alarm) |
| - The severy\_type attribute in the XML syntax was not correctly encoded |

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| Revision 0.1.0.8 (6/01/2008) - SOFT 000031 06 |
| \* The default value of the minimal number of rectifier is 0, to avoid alarm by default. |
| + Support of 3U rack with up to 8 CAR0948TN. |
| \* Improvement of the logic of the site access control with SAM0948. Any digital input can be associated with a door. |
| - DC system alarm relay configuration was not saved if configured on ‘0’. |
| - Problem with reload of customized alarm related to the digital inputs of the dc system. |

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| Revision 0.1.0.2 (1/11/2007) |
| + Support of MCU1848 |
| \* Added alarm “Missing Rectifiers” at DC system level |
| \* Added configuration parameter “Minimal number of rectifier” at DC system level |
| - Configuration of the SAM0948 was not kept after system reboot |

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| Revision 0.1.0.1 (1/06/2007) - SOFT 000031 01 |
| + First official version |
| + Support of MCU0948 |
| + Support of CAR0948TN |
| + Support of SAM0948 |

Emulation Capabilities

On demand, we can provide an emulation program of the real monitoring application. This emulation program can run on any personal computer running Windows. Thanks to this last, you can develop and test the integration of our monitoring platform inside your network management application.

* [What is the Comp@s emulator?](#scroll-bookmark-240)
* [What are the requirements?](#scroll-bookmark-241)
* [How to run the emulator?](#scroll-bookmark-242)
* [How to use the emulator?](#scroll-bookmark-243)
* [Simulating a network of Comp@s system](#scroll-bookmark-244)
* [Where can I get the emulator?](#scroll-bookmark-245)
* [Remarks](#scroll-bookmark-246).

What is the Comp@s emulator?

This is software which allows the simulation of the Comp@s monitoring, with some DC Systems and extension cards.

By default, the emulator simulates the presence of 2 sub-shelves 4x850W, with some rectifiers. Also an AC failure alarm appears and disappears, generating events and modifications of element status. An extension card with some sensors and access control is also simulated.

With the emulator, you can develop and test the integration of our monitoring platform inside your network management application.

What are the requirements?

* Any personal computer running Windows 2000, XP or later.
* You need the Microsoft .NET Framework 2.0 installed on your computer. This is freely available through Microsoft website or Windows Update.

How to run the emulator?

* When you execute the provided “Compas\_Emulator.exe”, it is possible that the windows firewall ask to open port 80 and/or 161. This is necessary in order to run the web server and the SNMP agent.
* To stop the emulator, you just have to close the opened shell window.

How to use the emulator?

* Start the Compas\_Emulator.exe application
* Testing the Web Server :
  1. Start you favorite web browser (Firefox 2.x or Internet Explorer 7.x)
  2. Browse to http://127.0.0.1:8080/ or http://localhost:8080/
  3. You are asked for a login/password which is admin/compas by default
  4. Please refer to 5.3. to use the Web Interface
* Testing SNMP :
  1. You need a SNMP MIB browser (see [The Comp@s SNMP Agent](#scroll-bookmark-40))
  2. The MIB can be downloaded through the web interface
  3. You can test the SNMP agent at the ip 127.0.0.1 (port 162)
  4. Read Community is admin:compas by default
  5. Write Community is admin:compas by default
  6. Please refer to [SNMP Agent](#scroll-bookmark-103) for more information.

Simulating a network of Comp@s system

If you want to simulate multiple sites, you can start the emulator on different port. For example, to execute an instance on port 85, execute “Compas\_Emulator 85”.

Where can I get the emulator?

Please contact your vendor.

Remarks

* This emulator is just an introduction to the different interfaces
* It is not possible to have a real overview of all the Comp@s functionalities.
* This emulator is not deeply tested as the real embedded monitoring, bugs may be present, please tell us.
* By default, the emulator opens the port 8080 for the web server. If you are already running a web server on your computer, you will need to start the emulator on another port.
* The FTP Server is not emulated.

Frequently Asked Questions

* [USB Connection Troubles](#scroll-bookmark-248)

USB Connection Troubles

Q : I can browse Comp@s flash disk but I cannot open the Comp@s webpage in my web browser.

A: This kind of troubles usually occurs when software on your computer is listening on port 80. To solve, check if your port 80 is listening and then shutdown the application listening on it or kill it. This trouble appears with IIS, Skype, …

To do that:

* Open cmd prompt and type the following command:

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| *Administrator Command Prompt* |

* Focus on line: TCP 0.0.0.0:80 0.0.0.0 LISTENING 4. You see on the first line something is listening on port 80 and it’s the pid number 4 which is listening.
* Open task manager and check if you can locate pid number. If you cannot see pid column, click “View -> Select columns” and check checkbox “PID Process identifier”. Select the pid process and click on “End Process” button:

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| *Windows Task Manager* |

* If you cannot find your pid, open cmd prompt and type “c:\windows\system32\telnet 127.0.0.1 80”. Telnet connect to the port. A black screen occurs and type “Echo”. If the telnet command is not recognized, type “pkgmgr /iu:TelnetClient “, and retry.
* In my example case, I type echo in the black screen and I have the following message. I see it’s Microsoft HTTP Server, so I shutdown IIS:

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| *ISS Shutdown* |

* And finally, I retype “netstat –ano | findstr 0.0:80” and I see nothing is listening on port 80. So I can now connect to Comp@s WebPage.

Q : After plug in, the usb cable in my computer, i see the device is not recognized and the driver could not successfully installed.

A: You have to take care of using multiple mobile devices at the same time. For exemple, it’s not possible to connect to compas if you have connected your mobile phone to the computer using bluetooth and so on.

Q: On my web brower, I see access denied to 127.0.0.1 .

A: If you are connected to LAN, and the network uses proxy or firewall, it is possible the connection to 127.0.0.1 is blocked.

Try to unplug your Ethernet cable or switch off your wifi connection, and try again. It’s possible to add a special rule in browser connection settings to bypass proxy/firewall when connection to 127.0.0.1 occurs.

For this example, if you use IE, go to options -> Connections -> Lan Settings and check “Bypass proxy server for local address”:

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| *Bypass Proxy Server for Local Address* |

Support

Do not hesitate to contact us in case of questions, problems, suggestions, etc. We want to be your partner in a successful network management.