



Socomes DIRIS Digiware D v2 - руководство по эксплуатации. Юниджет

Постоянная ссылка на страницу: <https://www.uni-jet.com/catalog/commutation/izmeritelnyie-priboryi/socomes-diris-digiware-d-c.html>



**INSTRUCTION
MANUAL**

DIRIS Digiware **D-50 & D-70 v2**

Control and power supply interface

EN



[www.socomec.com/
en/diris-d](http://www.socomec.com/en/diris-d)

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Innovative Power Solutions

- 1. DOCUMENTATION** 4
- 2. HAZARDS AND WARNINGS** 5
 - 2.1. Risk of electrocution, burns or explosion 5
 - 2.2. Risk of damaging the device 5
 - 2.3. Liability 5
- 3. PRELIMINARY OPERATIONS** 6
- 4. INTRODUCTION** 7
 - 4.1. Range 7
 - 4.2. Introduction to DIRIS Digiware D 7
 - 4.2.1. Introduction to DIRIS Digiware D-50 8
 - 4.2.2. Introduction to DIRIS Digiware D-70 9
 - 4.3. Touchscreens 11
 - 4.4. LED display 11
 - 4.5. Navigation 11
 - 4.6. Menu structure 12
 - 4.7. Dimensions 13
- 5. MOUNTING** 14
 - 5.1. Recommendations and safety 14
 - 5.2. Back-plate mounting 14
 - 5.3. DIN rail mounting 15
- 6. CONNECTION** 16
 - 6.1. DIRIS Digiware D-50 - wiring 16
 - 6.2. DIRIS Digiware D-70 - wiring 16
- 7. CONFIGURATION** 17
 - 7.1. Display-specific settings 18
 - 7.1.1. Language 19
 - 7.1.2. Date format 19
 - 7.1.3. RS485 communication 19
 - 7.1.4. Ethernet communication 19
 - 7.1.5. Setting the date/time on the remote product 20
 - 7.2. Detecting and addressing 21
 - 7.2.1. DIRIS Digiware D-50 / D-70 21
 - 7.3. Configuring the DIRIS Digiware system 25
 - 7.3.1. Network configuration 27
 - 7.3.2. Configuring loads 28
 - 7.4. SNMP - BACNET - FTP - SMTP protocols 32
- 8. USE** 33
- 9. DIRIS DIGIWARE D-50/D-70 TECHNICAL CHARACTERISTICS** 34
 - 9.1. Mechanical characteristics 34
 - 9.2. Communication characteristics 34
 - 9.3. Electrical characteristics 34
 - 9.4. Environmental characteristics 34
 - 9.5. EMC characteristics 35
- ANNEX.A. SNMP COMMUNICATION WITH THE DIRIS DIGIWARE D-50 / D-70** 36
 - A.6. SNMP generalities 36
 - A.7. SNMP functions supported 36
 - A.8. SNMP versions supported 37
 - A.9. SNMP ports 38
 - A.10. Retrieving data using the DIRIS Digiware D-50 / D-70 MIB file 38
 - A.11. SNMP configuration via Easyconfig 40
- ANNEX.B. BACNET COMMUNICATION WITH THE DIRIS DIGIWARE D-50 / D-70** 42
 - B.1. BACnet Generalities 42
 - B.2. BACnet Objects 42
 - B.3. BACnet Services 47
 - B.4. BACnet IP configuraiton via Easyconfig 48

ANNEX.C. SMTP AND FTP CONFIGURATION	49
C.1. SMTP email export protocol	49
C.2. FTP file export protocol (only available with DIRIS Digiware D-70)	50
C.2.1. FTP server activation:	50
C.2.2. FTP planning configuration	51
C.2.3. Understanding the exported .csv file in EMS mode	53

1. DOCUMENTATION

All documentation on DIRIS Digiware D-50 and D-70 is available on the SOCOMEC website:

www.socomec.com/en/diris-d



2. HAZARDS AND WARNINGS

The term "device" used in this document covers both DIRIS Digiware D-50 and D-70.

The assembly, use, servicing and maintenance of this equipment must only be carried out by trained, qualified professionals.

SOCOMEK shall not be held responsible for failure to comply with the instructions in this manual.

2.1. Risk of electrocution, burns or explosion

- This device must only be installed and serviced by qualified personnel who have in-depth knowledge of installing, commissioning and operating the device and who have had appropriate training. He or she should have read and understood the various safety measures and warnings stated in the instructions.
- Before carrying out any work on the device, switch off the power supply to the device.
- Always use an appropriate voltage detection device to confirm the absence of voltage.
- Replace all devices, doors and covers before turning on power to this equipment.
- Always power the device with the correct rated voltage.
- Install the device following the recommended installation instructions and in a suitable electrical cabinet.

Failure to take these precautions could cause death or serious injuries.

2.2. Risk of damaging the device

To ensure that the device operates correctly, make sure that:

- The device is correctly installed.
- The auxiliary power supply voltage indicated on the product is observed: 24 VDC \pm 10%.
- Use 230 VAC / 24 VDC SOCOMEK power supply (P15 15W 4829 0120) or use a 1 A 24 VDC safety fuse.

Failure to respect these precautions could cause damage to the device.

2.3. Liability

- Assembly, connection and use must be carried out in accordance with the installation standards currently in force.
- The device must be installed in accordance with the rules given in this manual.
- Failure to observe the rules for installing this device may compromise the device's intrinsic protection.
- The device must be positioned within an installation which complies with the standards currently in force.
- Any cable which needs to be replaced may only be replaced with a cable having the correct rating.

3. PRELIMINARY OPERATIONS

To ensure the safety of personnel and the product, please carefully read the contents of these instructions before installation.

Check the following points as soon as you receive the package containing the device:

- The packaging is in good condition
- The device has not been damaged during transportation
- The device reference number conforms to your order
- The packaging includes the device fitted with removable terminal blocks and a Quick start guide.

4. INTRODUCTION

4.1. Range

	
DIRIS Digiware D-50 Multipoint display Ref. 4829 0204	DIRIS Digiware D-70 Multipoint display Ref. 4829 0203
Ethernet output Modbus TCP BACnet IP SNMP v1, v2 & v3	Ethernet output Modbus TCP BACnet IP SNMP v1, v2 & v3
-	WEBVIEW-M embed- ded web server Power & Energy Monitoring

4.2. Introduction to DIRIS Digiware D

DIRIS Digiware D-50 and D-70 are system displays and act as the unique point of access to measurements from DIRIS Digiware meters.

They can also display measurements from other SOCOMEC meters and measuring devices: COUNTIS, DIRIS A, DIRIS B.

They centralise data from up to 32 devices (a maximum of 192 circuits).

These products may be connected by a Digiware bus and/or an RS485 bus.

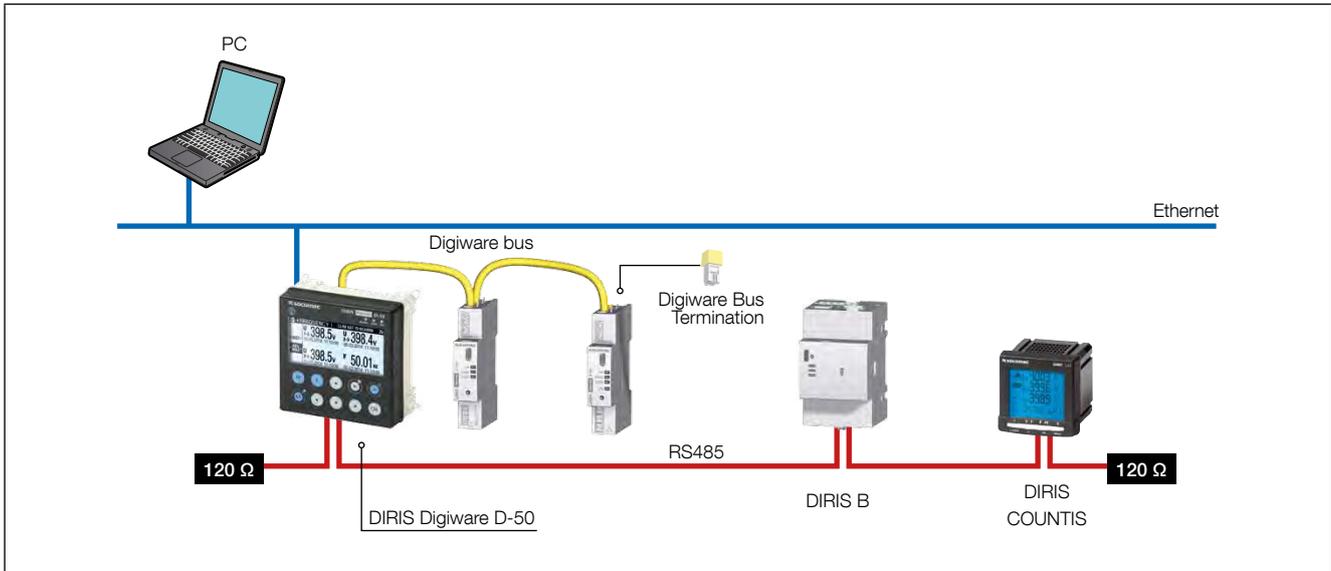
Centralised products can be shown as well as configured by DIRIS Digiware D displays.

4.2.1. Introduction to DIRIS Digiware D-50

A DIRIS Digiware D-50 display is a master device on the RS485 bus and master on the DIRIS Digiware bus. It is used as an Ethernet gateway.

The Ethernet port is used to:

- Communicate over Ethernet in ModbusTCP (max. 32 simultaneous connections) data from meters and measuring devices connected to its Digiware and RS485 ports.
- Display data from remote meters and power monitoring devices connected over the local Ethernet network.
- Communicate over Ethernet using BACnet IP and SNMP protocols, data from meters and power monitoring devices connected to the Digiware or RS485 port inputs of the DIRIS Digiware D-50.
- Automatically send alarm notifications via emails (SMTPS).



4.2.2. Introduction to DIRIS Digiware D-70

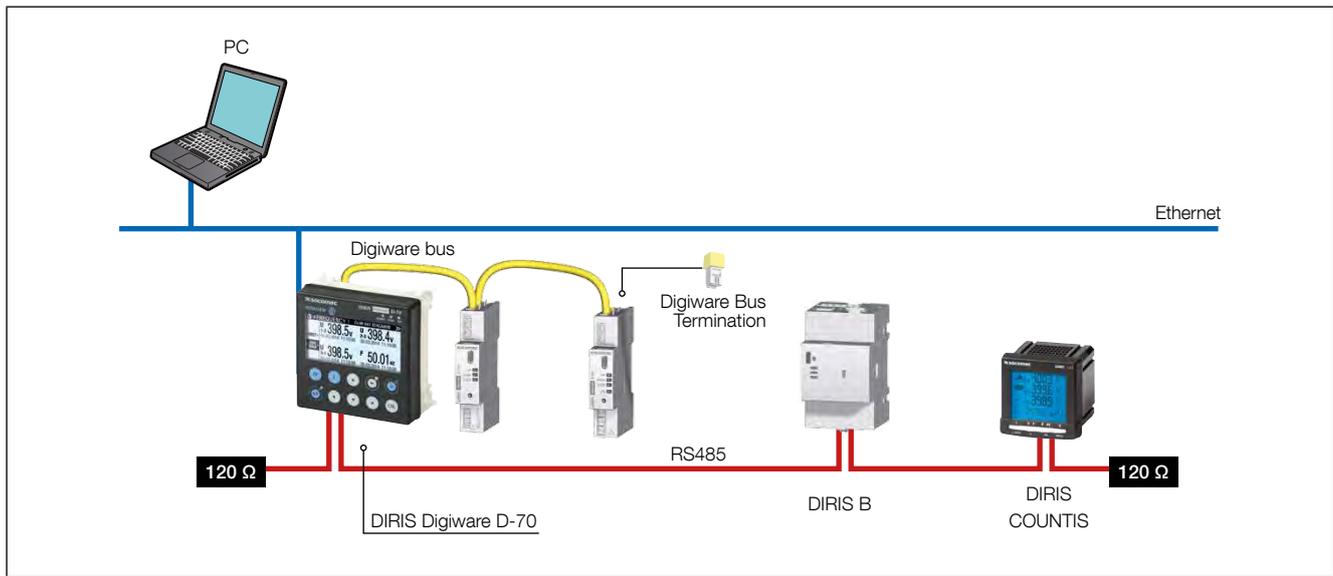
A DIRIS Digiware D-70 display is a master device on the RS485 bus and master on the DIRIS Digiware bus. It is used as an Ethernet gateway.

The Ethernet port is used to:

- Communicate over Ethernet in ModbusTCP (max. 32 simultaneous connections) data from meters and power monitoring devices connected to the Digiware or RS485 port inputs of the DIRIS Digiware D-70.
- Display data on the DIRIS Digiware D-70 from remote meters and power monitoring devices connected over the local Ethernet network.
- Access real-time and historical measurements in WEBVIEW-M, the visualisation software embedded into the DIRIS Digiware D-70.
- Communicate over Ethernet using BACnet IP and SNMP protocols data from meters and power monitoring devices connected to the Digiware or RS485 port inputs of the DIRIS Digiware D-70.
- Automatically and cyclically export historical measurements via FTPS.
- Automatically send alarm notifications via emails (SMTPS).

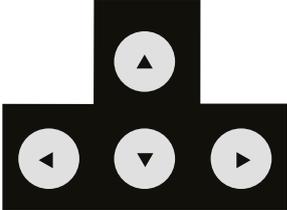
Data logging capabilities of the DIRIS Digiware D-70 are explained in the table below:

	Consumption curves	Load curves	Trends
Logged data	Energy: kWh, kvarh, kVAh	Power: kW, kvar, kVA	Average measurements: U, V, I, P, Q, S, PF, Temperature...
Compatible products	COUNTIS Exx (all) DIRIS Axx (all) DIRIS Bxx (all) DIRIS Digiware XXX (all)	Countis Eci, Countis E3x DIRIS A-30 + MEM / A60/A80 DIRIS B-30 DIRIS Digiware I-31 / I-61 / I-35 / I-45 / I-35dc / S-135 / S-Datacenter DIRIS A-40	DIRIS B-30 DIRIS Digiware I-35 / I-45 / U-30 / U-31dc / U-32dc / S-135 / S-Datacenter DIRIS A-40
Integration period	configurable from Easy Config, 10 min to 60 min	configurable from Easy Config, 1 min to 60 min	
Data logging duration	1 year with a 60-min integration period. Proportional for different values: For example: 3 months with a 15-min integration period. This applies no matter how many devices (1 to 32) are connected to the D-70. The level of detail of the log is not linked to the number of devices connected:		
Operation	Readings taken every 10 min / 60 min in the meter/PMD.	The data is recorded in a cache memory on the meter and then downloaded by the D-70. If communication is interrupted, the missing data is recovered by the D-70 once the connection is restored so that recording continues.	
Data backup (in the event of a loss of communication between the D-70 and the meter)	NO	YES (in the meter's cache memory)	
Export to FTP server	YES	YES	YES
Webview link			
Specific configuration	Nothing to configure (data is recorded automatically).	Load curves must be activated on the meters (via Easy Config). Load curves are then automatically downloaded from the meter's cache memory to the D-70.	Trends must be activated on the meters (via Easy Config). The logs are then automatically downloaded from the meter's cache memory to the D-70.



4.3. Touchscreens

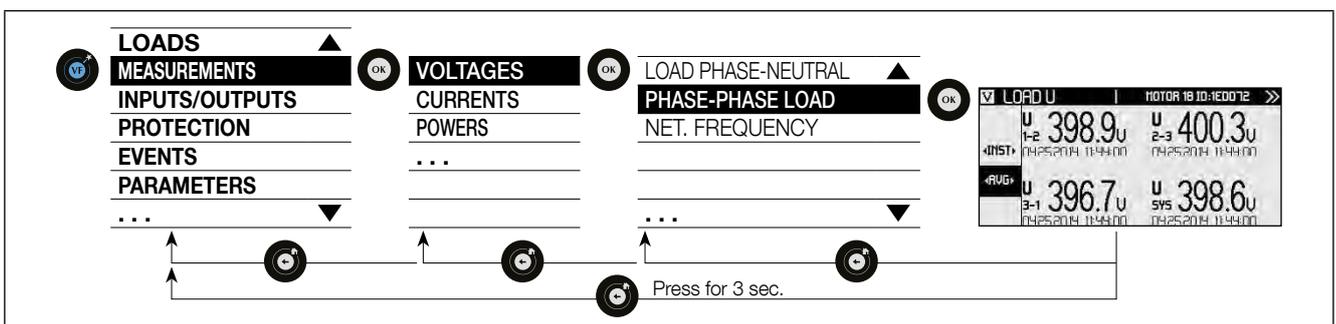
The display consists of a screen and 10 shortcut keys:

	Shortcut keys for load measurements: current, active power, reactive power, apparent power, power factor, cosinus phi
	Shortcut keys for electrical network measurements: line to neutral voltages, to line-line voltages, frequency
	Shortcut keys for active, reactive, apparent energy meters (total and partial readings)
	Arrow keys for navigation
	Use this to go back to a previous navigation menu
	Use this to go to the previous/next product (to scroll through all your meters and centralised measuring devices)
	Use this to confirm your navigation or entry selection

4.4. LED display

	<p>ALARM</p> <ul style="list-style-type: none"> - Off: no active alarm. - Stable: alarm (logical/analogue...) is active or finished but not acknowledged on one device connected to the display. - Flashing: system alarm is active on one device connected to the display. <p>COM</p> <ul style="list-style-type: none"> - Off: no communication. - Flashing: communication in progress on the RS485 and/or DIGIWARE bus. <p>ON</p> <ul style="list-style-type: none"> - Off: device is off. - On: device working OK.
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4.5. Navigation

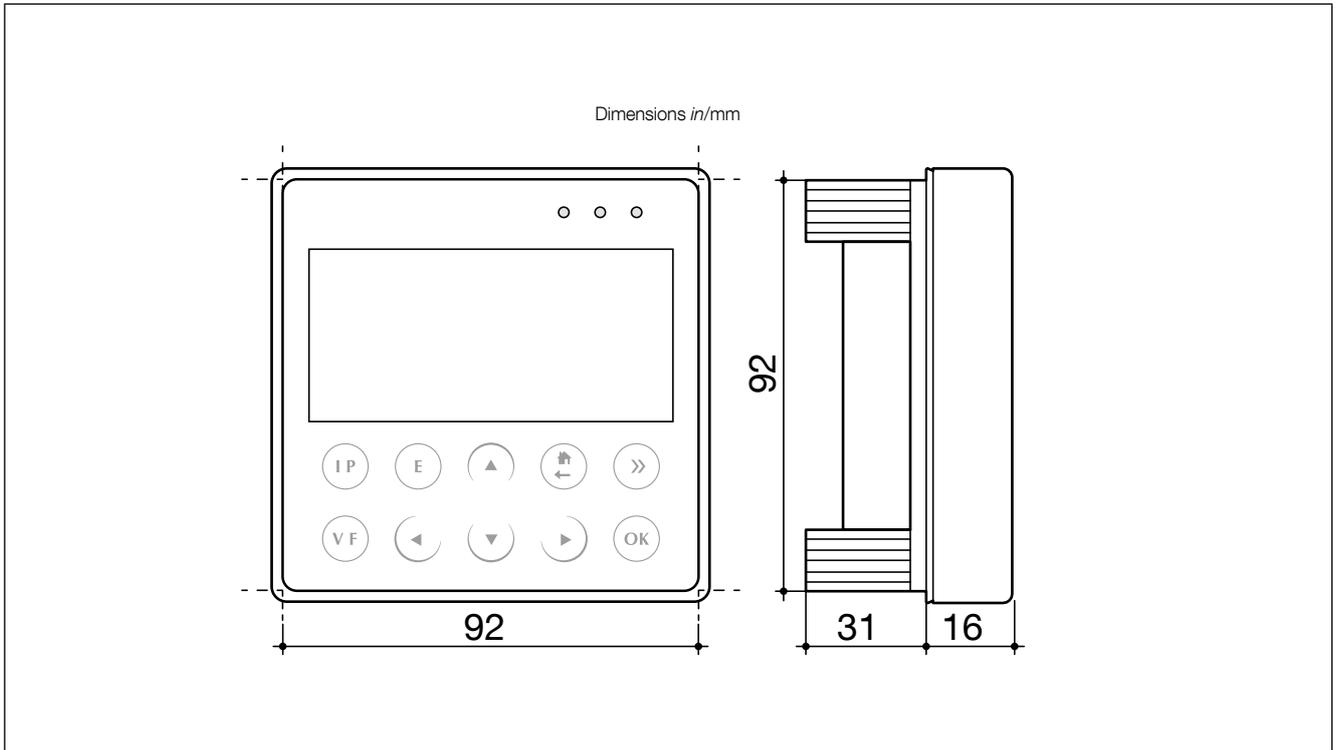


4.6. Menu structure

		D-50 / D-70		
Loads		•		
		•		
Measures	Voltages	Load Line-Neutral	•	
		Load Line-Line	•	
		Net. Frequency	•	
		Net. Line-Neutral	•	
		Net. Line-Neutral Unbalanced	•	
		Net. Line-Neutral THD	•	
		Net. Line-Neutral Harmonics	•	
		Net. Line-Neutral Crest Factor	•	
		Net. Line-Line	•	
		Net. Line-Line Unbalanced	•	
		Net. Line-Line THD	•	
		Net. Line-Line Harmonics	•	
		Net. Line-Line Crest Factor	•	
		Currents	Currents	•
	Currents System		•	
	Currents Unbalanced		•	
	Currents THD		•	
	Currents K Factor		•	
	Currents Harmonics		•	
	Currents Crest Factor		•	
	Powers	Active Powers	•	
		Reactive Powers	•	
		Apparent Powers	•	
		Predictive Power	•	
		Power Factors	•	
		Cos Phi	•	
		Tan Phi	•	
	Energies	Positive Active Energies	•	
		Negative Active Energies	•	
		Positive Reactive Energies	•	
		Negative Reactive Energies	•	
		Positive/Negative Reactive Lead/Lag Energies	•	
		Apparent Energies	•	
		Reset All Min/Max Values	•	
	Events	In Progress	•	
		History	Alarms, Quality	•
	Parameters	Display	Language	•
			Date Format	•
			Digiware Addressing Range	
			RS485 Master: <i>Baudrate, Stop, Parity, Address</i>	•
Ethernet communication: <i>Dhcp, Ip Address, Mask, Gateway</i>			•	
Set Remote Product Date / Time: <i>Activation</i>			•	
<i>SNTP (Server IP Address, Server Port, Time Zone, Send settings)</i>			•	
Change Lock Code			•	
Configure a Device			Select product: <i>Network, Loads</i>	•
Autodetect Serial Devices			Status, Found Devices, Addr Conflicts, Digiware addressing range, Start	•
List Products			•	
Add New Device		Type of Device, Address	•	
Remove Device			•	
Restore a product factory settings		•		
Products soft version		•		
About	IP address		•	
	MAC address		•	
	Serial number		•	
	Software version		•	
	Reboot		•	

Note: the menus available depend on the product features.

4.7. Dimensions



Door cut-out must be 92x92mm.

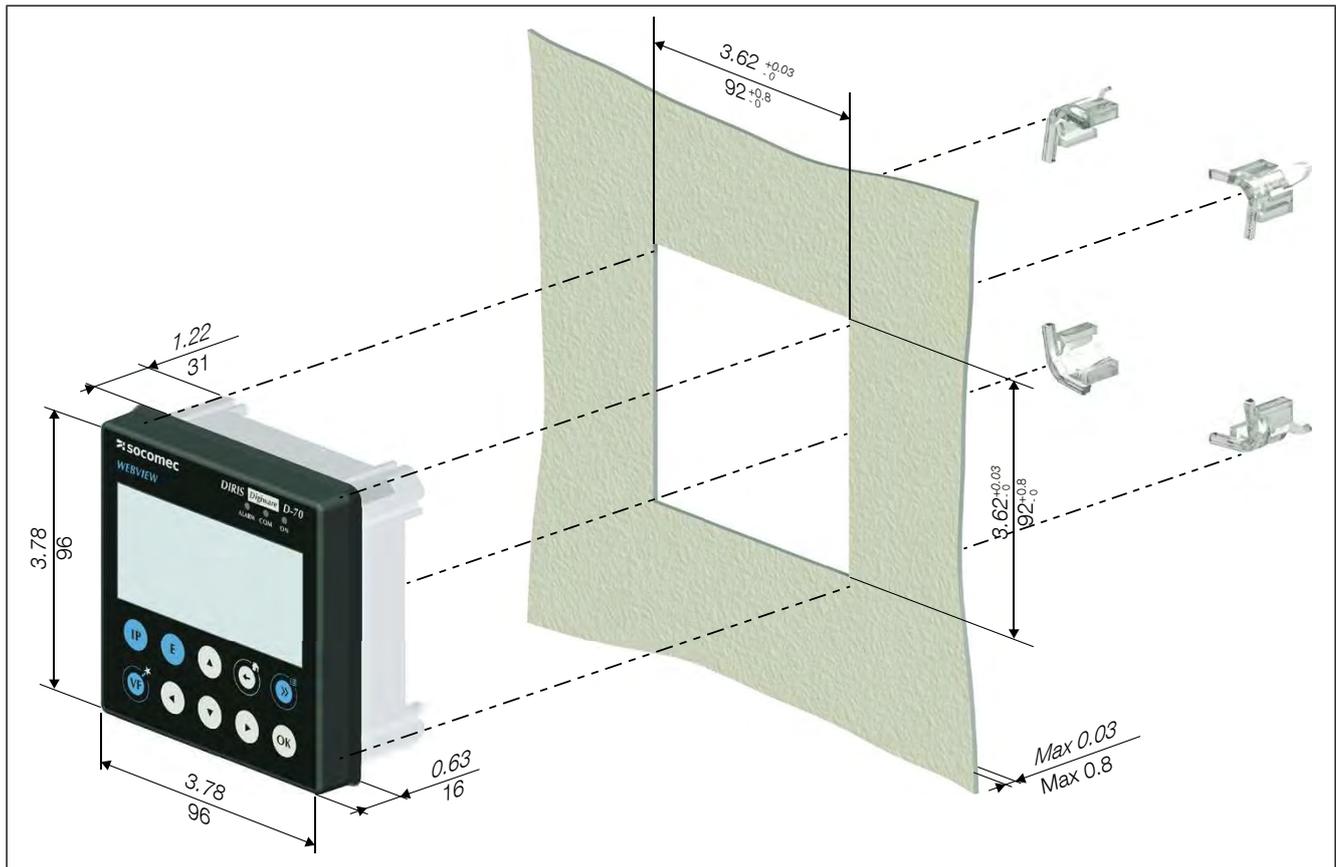
5. MOUNTING

5.1. Recommendations and safety

Refer to the safety instructions (section "2. Hazards and warnings", page 5)

5.2. Back-plate mounting

DIRIS Digiware D-50 and D-70 are panel-mounted (cut-out: 92x92mm). The display is secured with clips.



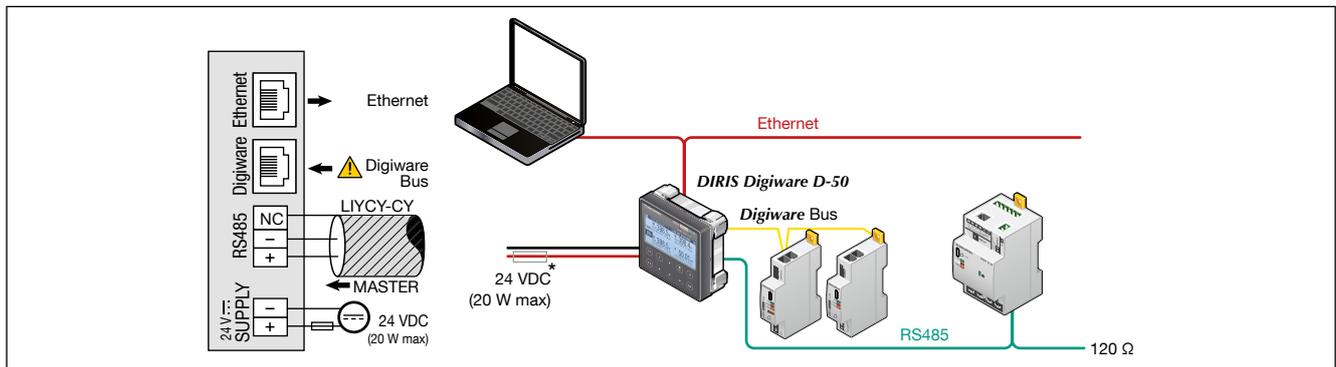
5.3. DIN rail mounting

DIRIS Digiware D-50 and D-70 can also be mounted on a DIN rail using a dedicated accessory (4829 0230) sold separately.



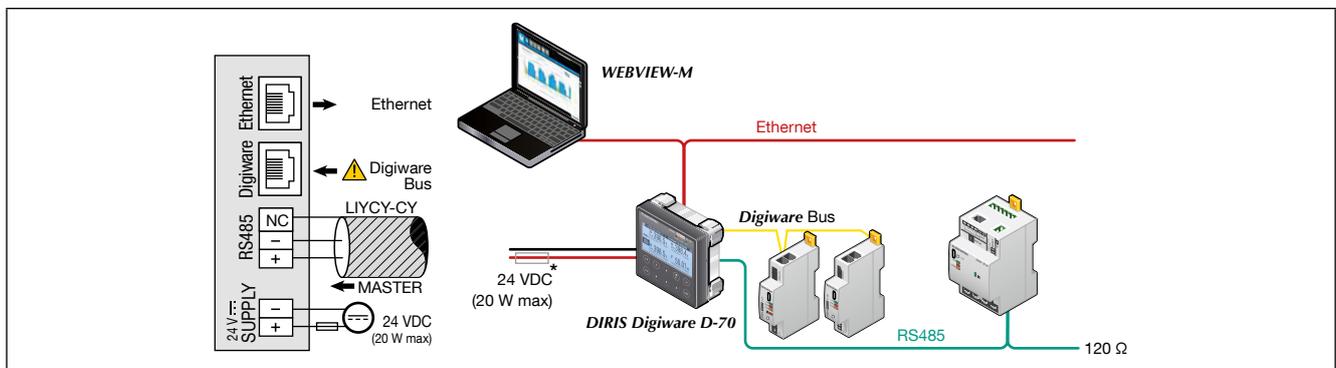
6. CONNECTION

6.1. DIRIS Digiware D-50 - wiring



(*) The use of a 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

6.2. DIRIS Digiware D-70 - wiring



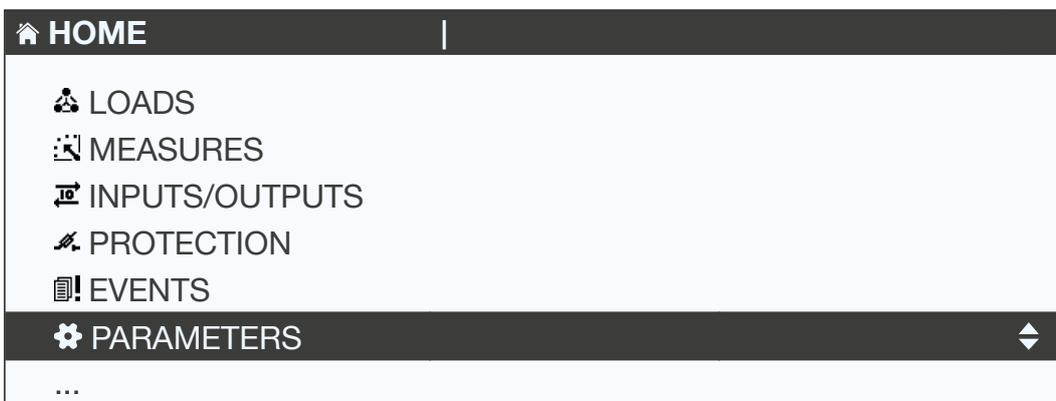
(*) The use of a 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

7. CONFIGURATION

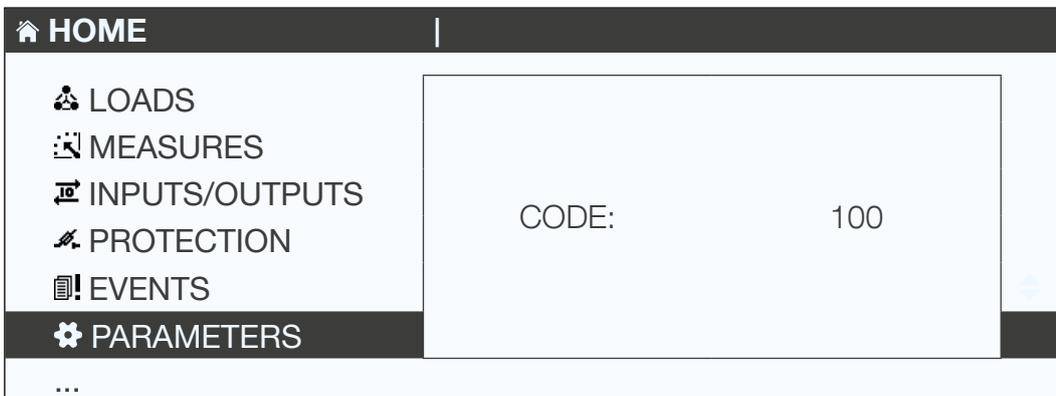
From the Socomec start-up screen, press "OK" to enter the navigation menu:



Select the "PARAMETERS" menu by using the navigation key "DOWN ARROW" 3x and confirm with "OK":



Enter the password "100" using the arrow pad (4 arrow keys) and confirm with "OK":



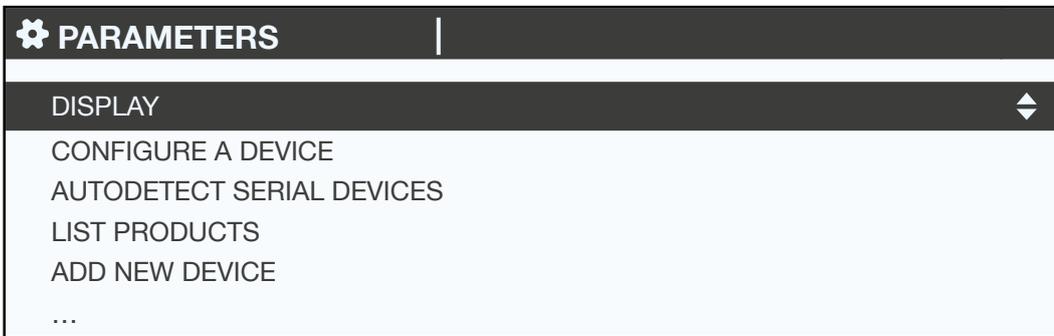
Do not power off the display before saving the configuration or changes will be lost.

The 3 following menus will be detailed in the paragraphs below:

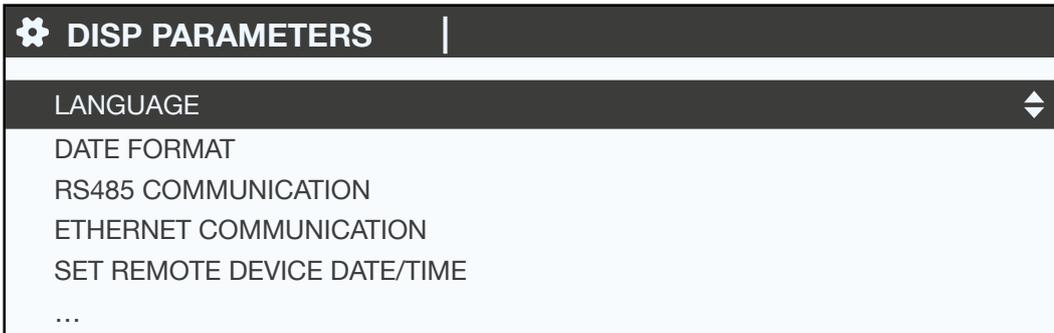


- DISPLAY: to access settings that are specific to the display (7.1)
- AUTODETECT SERIAL DEVICES: to launch an automatic detection and addressing of meters and power monitoring devices connected to the D-50/D-70 display (7.2).
- CONFIGURE A DEVICE: to configure the meters and other power monitoring devices connected to the D-50/D-70 display.

7.1. Display-specific settings



- Press "OK" to enter the "DISPLAY" menu:



- LANGUAGE: to set the display's navigation language
- DATE FORMAT: to set the date/time format
- RS485 COMMUNICATION: to configure the RS485 communication settings
- ETHERNET COMMUNICATION: to set the display's IP address
- SET REMOTE DEVICE DATE/TIME: to set the date and time
- CHANGE PASSWORD: to change the password to access the settings menu (default: "100")

7.1.1. Language

You can change the display's navigation language here.

Choose from: English, French, German, Italian, Spanish, Flemish, Polish, Turkish, Russian, Slovenian and Chinese.

Select your language with the arrow pad and confirm with "OK".

PARAMETERS	
ENGLISH	◀▶
FRANCAIS	
DEUTSCH	
ITALIANO	
POLSKI	
...	

7.1.2. Date format

You can select the display's date format, including the separator between the day, month and year:

DATE FORMAT	
DATE FORMAT:	MM/DD/YYYY
DATE SEPARATOR:	◀/▶ ◀▶

7.1.3. RS485 communication

Configure the display's Modbus address.

Configure the baudrate, stop bits, parity of the RS485 and Digiware bus.

	DIRIS Digiware D-50 / D-70 are master devices on Digiware and RS485 buses (baudrate, parity, stop bits).
---	--

PARAMETERS	
BAUDRATE:	◀38400▶ ◀▶
STOP:	1BIT
PARITY:	NONE
ADDRESS:	001

7.1.4. Ethernet communication

You can configure the Ethernet settings of DIRIS Digiware D-50 / D-70 displays:

- DHCP (IP address dynamically assigned by the Ethernet network) ENABLED/DISABLED
- IP address
- Subnet mask
- LAN gateway

PARAMETERS	
DHCP:	◀ DISABLED ▶
IP ADDRESS:	192.168.000.003
MASK:	255.255.255.000
GATEWAY:	000.000.000.000

7.1.5. Setting the date/time on the remote product

You can configure the date and time on the DIRIS Digiware D-50/D-70 display:

- Manually by entering the year, month, day, hour, minute, second
- Automatically (like a computer) by SNTP server

If the DIRIS Digiware D-50/D-70 is synchronised by SNTP, it will broadcast and synchronise the date and time of all downstream devices.

CONF. DATE/TIME	
AUTO. REMOTE DATE/TIME SET	◀ MANUAL ▶
YEAR	00
MONTH	01
DAY	01
TIME	00
...	

To configure the SNTP server, you will need to enter the following fields:

- SNTP server IP address
- SNTP server port

CONF. DATE/TIME	
AUTO. REMOTE DATE/TIME SET	◀ SNTP ▶
SERVER IP ADDRESS:	000.000.000.000
SERVER PORT:	00123
TIME ZONE:	GMT +9:00
OK	

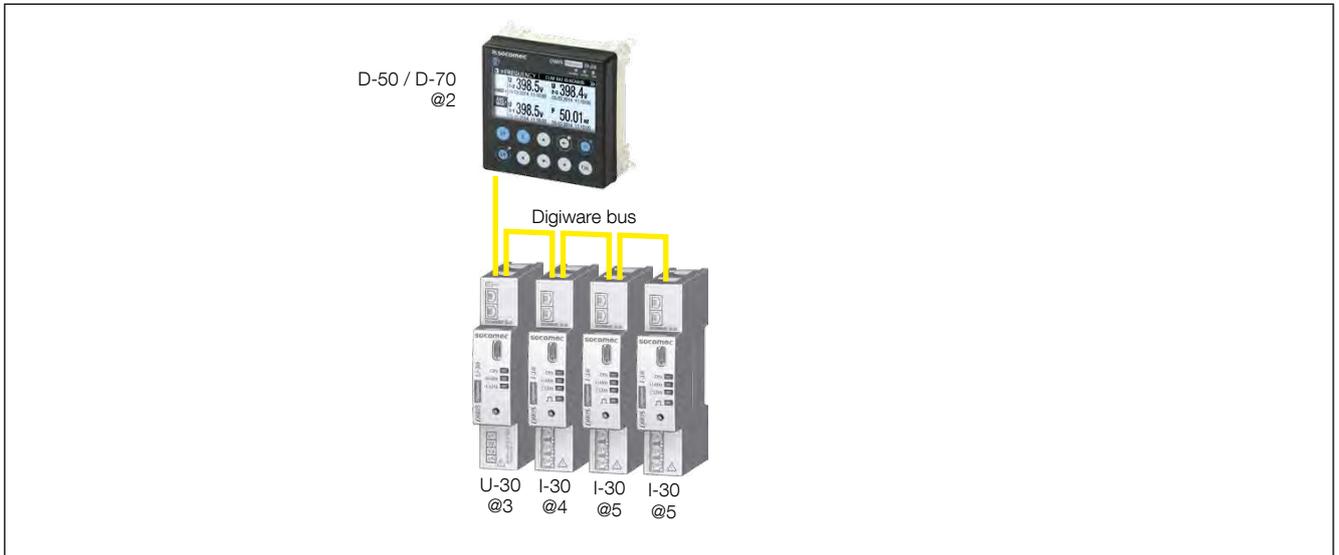
7.2. Detecting and addressing

With the auto-addressing mode the system can automatically assign addresses to devices connected to the DIRIS Digiware D-50 / D-70. This mode is compatible with DIRIS Digiware, DIRIS B, and DIRIS A-40 PMDs. The addresses will be allocated manually on other PMDs such as DIRIS A-10/A-20/A-30/A-60 and COUNTIS energy meters.

7.2.1. DIRIS Digiware D-50 / D-70

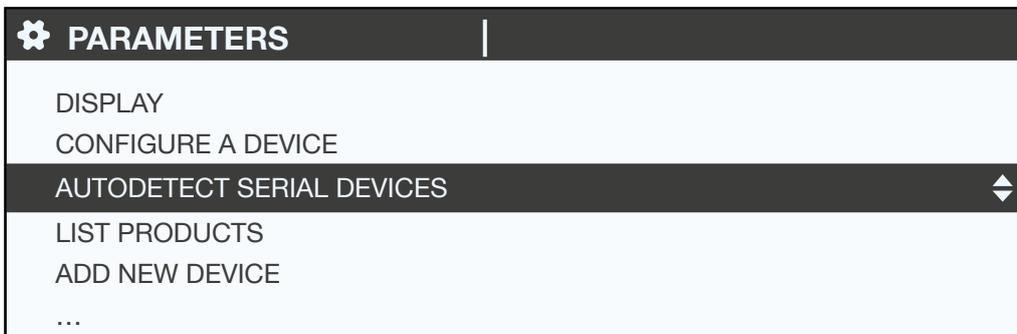
Example of auto-addressing on the D-50 / D-70.

Four products are connected to the D-50 / D-70. Two are addressed correctly, the other two have an identical address.



Go to "PARAMETERS" / "AUTODETECT SERIAL DEVICES":

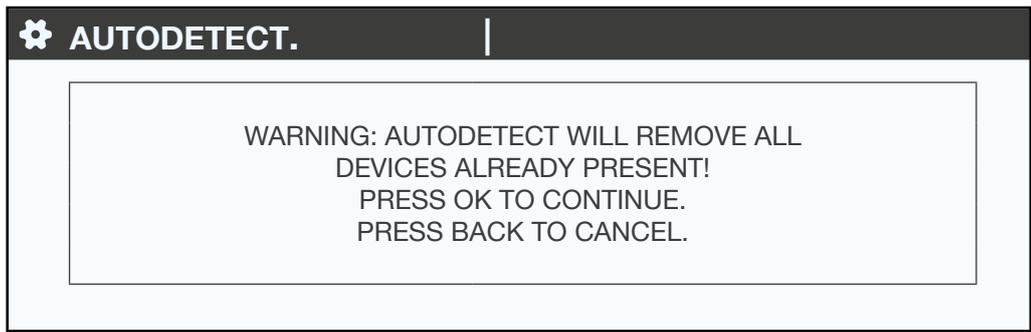
With this function you can detect all the products connected to the DIRIS Digiware D-50/D-70 via the Digiware and/or RS485 buses.



Select "START" then "OK" to start the scan/detection process (this can take up to 5 minutes).



Please be aware that this removes all previously found devices (if they are still there they will be found again).

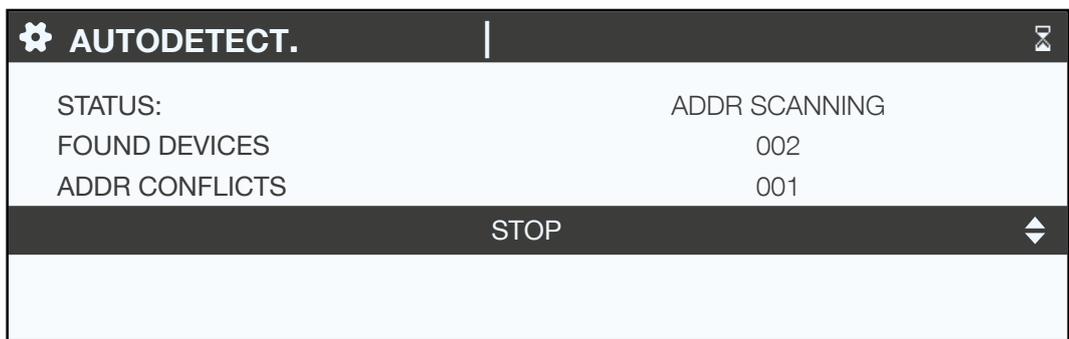


The different stages follow automatically:

- DETECTING ADDRESS

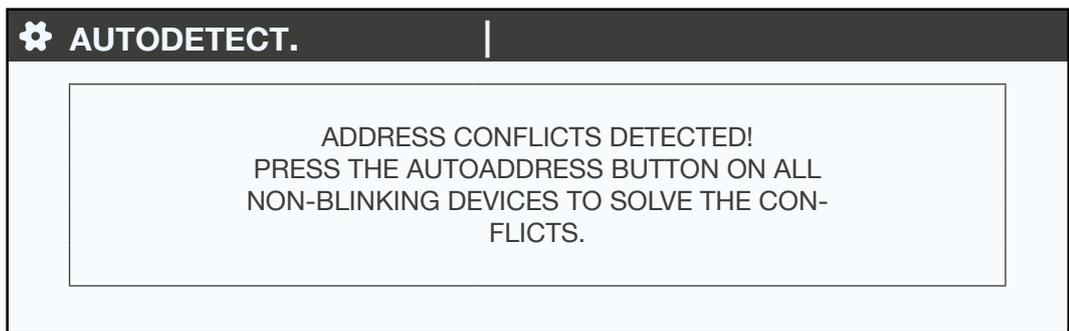


- ADDR SCANNING



When the STATUS "STOPPED" appears, the system has ended the scanning process.

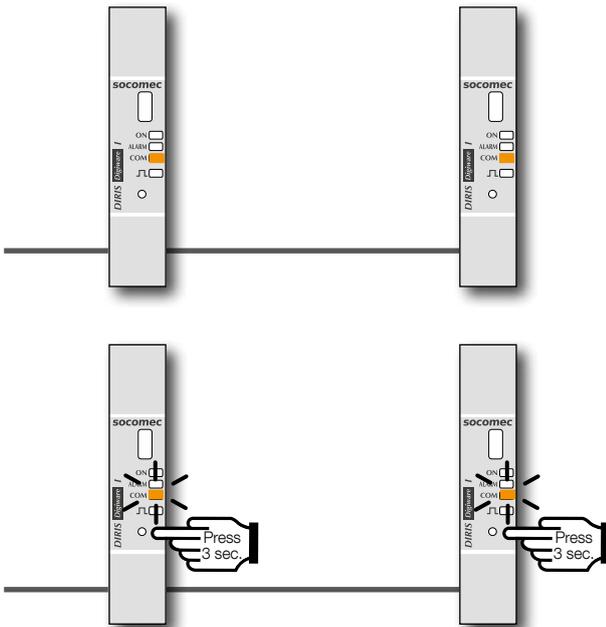
The number of found devices is the number of devices that have been correctly located (two in this example). If there is an address conflict (if 10 products have the same address, this is taken as a single conflict, not 10 conflicts), this means multiple products have the same address (two in this example). In this case, assign them individual and unique addresses.



Press "OK".



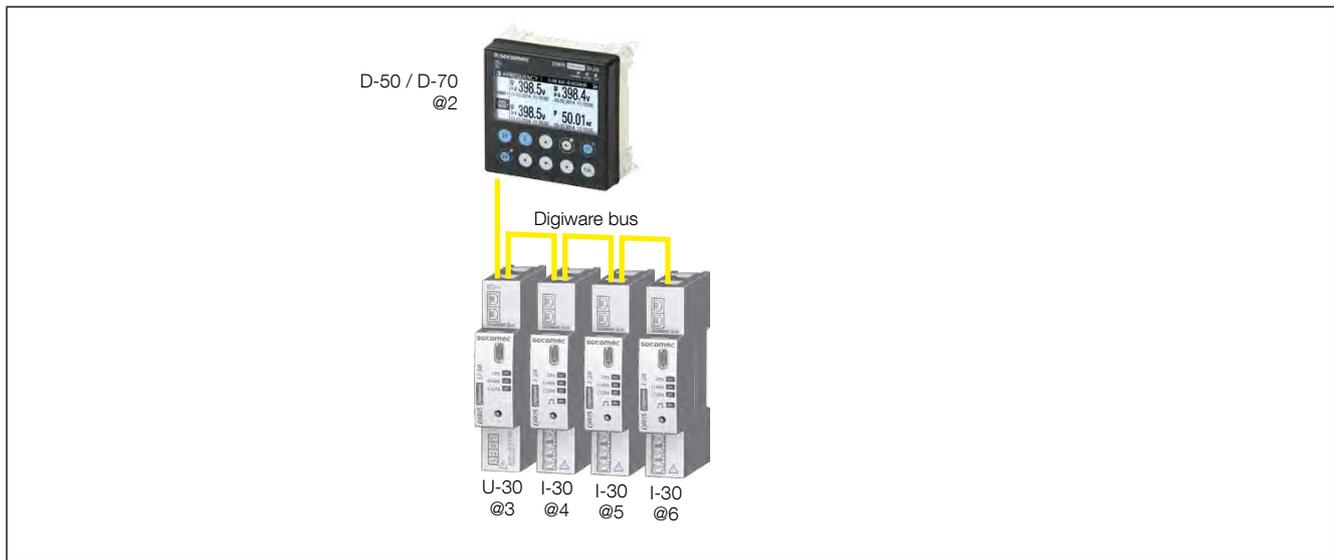
To resolve address conflicts, locate the lit and stable "COM" LED on the front of each product. Press and hold down the addr. button on the front face of the module for a few seconds until the LED flashes:



LED COM ON AND STABLE = address conflict
 LED COM FLASHING = product address identified correctly.



The display now shows the number of detected products increase and the number of conflicts decrease to reach zero once all products have a unique address.



You can then check the list of detected products along with their addresses in the “LIST PRODUCTS” menu:

PARAMETERS	LOAD1
DISPLAY	
CONFIGURE A DEVICE	
AUTODETECT SERIAL DEVICES	
LIST PRODUCTS	◆
ADD NEW DEVICE	
...	

Example:

LIST PROD.	LOAD1
Diris U30 ID:545434	@003 ◆
Diris I30 ID:F0C1D2	@004
Diris I30 ID:F0C1D3	@005
Diris I30 ID:F0C1D4	@006

You can find the IDs on the marking on the products (546434 on the U-30 and F0C1D2 on one of the I-30s) in the photo:



We can now perform the configuration of the system. Each product must be configured individually.

7.3. Configuring the DIRIS Digiware system

Go to "Parameters" > "Configure a device".

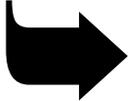
PARAMETERS	LOAD1
DISPLAY	
CONFIGURE A DEVICE	◆
AUTODETECT SERIAL DEVICES	
LIST PRODUCTS	
ADD NEW DEVICE	
...	

There are 2 steps to configure the DIRIS Digiware system:

- **Network:** setting the type of voltage network: single-phase (1P+N), two-phase (2P), three-phase without neutral (3P), three-phase with neutral (3P+N).
- **Load:** configuring the loads/circuits measured. You can, for example, measure three-phase and single-phase loads connected to a three-phase electrical network.

Electrical network settings are configured from the DIRIS Digiware U-xx module.

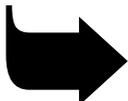
⚙️ LIST PROD.	
Diris I30 ID:FOC1D2	@004
Diris U30 ID:546434	@006



⚙️ SELECT PROD.		Diris U30 ID:546434
NETWORK		⬆️

Load settings are configured from DIRIS Digiware I-xx modules

⚙️ SELECT PROD..	
Diris I30 ID:FOC1D2	@004
Diris U30 ID:546434	@006



⚙️ SELECT PROD.		Diris I30 ID:FOC1D2
LOADS		⬆️

With DIRIS B PMDs, network and loads settings are accessible from the DIRIS B altogether.

7.3.1. Network configuration

You can configure the various network voltage parameters:

- Network type: single-phase (1P+N), two-phase (2P), three-phase without neutral (3P), three-phase+neutral (3P+N)
- Nominal voltage:
This is the phase-phase voltage (usually 400 V) for three-phase networks
This is the phase-neutral voltage (usually 230 V) for single-phase networks
- Nominal frequency: 50 or 60 Hz depending on the country
- Phase rotation: V1-V2-V3 (Direct) or V1-V3-V2 (reverse).

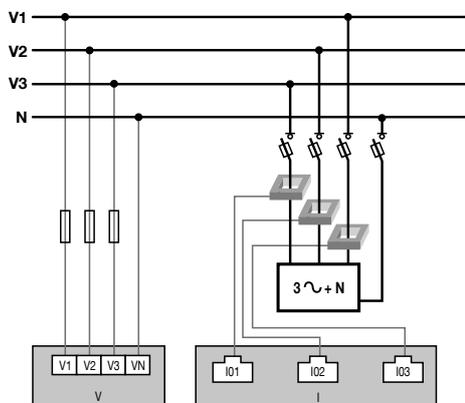
 PARAMETERS	Diris U30 ID:546434
NETWORK TYPE	00400
NOMINAL FREQUENCY	3P + N
NOMINAL VOLTAGE (V)	50HZ
PHASE ROTATION	V1-V2-V3
PRESS OK TO CONFIRM 	

7.3.2. Configuring loads

Multiple loads (single-phase, two-phase or three-phase) can be measured on a DIRIS B or DIRIS Digiware I module.

7.3.2.1. Example of a load configuration

This example shows a DIRIS Digiware I-30 module measuring a three-phase + neutral load using 3 current sensors.



LOAD		Diris I30 ID:FOC1D2		
INPUT		I01	I02	I03
CT		250 A	250 A	250 A
WAY		+ / DIRECT	+ / DIRECT	+ / DIRECT
V LINE		V3	V2	V1
LOAD		L1	L1	L1
TYPE		3P+N_3CT	3P+N_3CT	3P+N_3CT

PRESS OK TO ENTER SETTINGS



The current sensor connected to the current 1 input measures the current of phase 3 (V3)

The current sensor connected to the current 2 input measures the current of phase 2 (V2)

The current sensor connected to the current 3 input measures the current of phase 1 (V1)

LOAD		Diris I30 ID:FOC1D2		
INPUT		I01	I02	I03
CT		250 A	250 A	250 A
WAY		+ / DIRECT	+ / DIRECT	+ / DIRECT
LINE V		V3	V2	V1
LOAD		L1	L1	L1
TYPE		3P+N_3CT	3P+N_3CT	3P+N_3CT

PRESS OK TO ENTER SETTINGS

The 3 current inputs I01, I02, I03 are assigned to the same three-phase load no. 1 (L1).

⚙️ LOAD		Diris I30 ID:FOC1D2		
INPUT		I01	I02	I03
CT		250 A	250 A	250 A
WAY		+/DIRECT	+/DIRECT	+/DIRECT
LINE V		V3	V2	V1
LOAD		L1	L1	L1
TYPE		3P+N_3CT	3P+N_3CT	3P+N_3CT
PRESS OK TO ENTER SETTINGS				

The "CT" field indicates the current rating of the sensor connected and the "WAY" field shows if it was mounted in the correct orientation (+/DIRECT = P1 --> P2) or backwards (-/INV = P2 --> P1)

⚙️ LOAD		Diris I30 ID:FOC1D2		
INPUT		I01	I02	I03
CT		250 A	250 A	250 A
WAY		+/DIRECT	+/DIRECT	+/DIRECT
LINE V		V3	V2	V1
LOAD		L1	L1	L1
TYPE		3P+N_3CT	3P+N_3CT	3P+N_3CT
PRESS OK TO ENTER SETTINGS				

7.3.2.2. Changing the load settings

Following the example above, to change the settings, press "OK".

⚙️ LOAD		Diris I30 ID:FOC1D2		
INPUT		I01	I02	I03
CT		250 A	250 A	250 A
WAY		+/DIRECT	+/DIRECT	+/DIRECT
LINE V		V3	V2	V1
LOAD		L1	L1	L1
TYPE		3P+N_3CT	3P+N_3CT	3P+N_3CT
PRESS OK TO ENTER SETTINGS				

You can change each parameter to configure each of the loads (the values in bold are shown on the screen in the example below).

- LOAD -> configure load 1: **L1** - load 2: L2 - load 3: L3
- NAME -> name of the load: **LOAD 1** (edit with max. 16 characters)
- TYPE -> type of load: single-phase (1P+N), two-phase (2P), three-phase (3P), **three-phase+neutral (3P+N)**
- NOMINAL I (A) -> set the nominal current of the load: **20A** (caution: the nominal current of the load may differ from the rating of the current sensor (CT1) used: a 63A current sensor can be used to monitor a 20A circuit breaker.
- CT1 -> current measured by the current sensor connected to input: **I01**, I02, I03.

⚙️ LOAD		Diris I30 ID:FOC1D2
LOAD	◀ L1 ▶	⬆
NAME	LOAD 1	
TYPE	3P+N_3CT	
NOMINAL I (A)	00020	
CT1	I01	
...		

Go to "CT settings" to perform the configuration of current sensors.

⚙️ LOAD		Diris I30 ID:FOC1D2
...		
NAME	LOAD 1	
TYPE	3P+N_3CT	
NOMINAL I (A)	00020	
CT1	I01	
CT settings		⬆
...		

Configure:

- WAY -> Direction of the current sensor **+ /DIRECT**, - /INV.
- V Line -> V1, V2, **V3** (position of the current sensor on phase 1, phase 2 or phase 3).
- CT -> Indicates the rating of the current sensor used. Click on "DETECT" to automatically detect the rating. After 2 seconds, the rating is displayed.

Complete the process by selecting "OK" then "OK" again

⚙️ LINE SETTINGS		Diris I30 ID:FOC1D2
WAY	+ /DIRECT	
V LINE	V3	
CT	0600	
DETECT		⬆
OK		

If a load is configured as three-phase or three-phase+neutral, for example, you would have to configure multiple current sensors (e.g. 3 current sensors for one three-phase load):

LOAD		Diris I30 ID:FOC1D2	
...			
		CT SETTINGS	
CT2			I02
		CT SETTINGS	
CT3			I03
		CT SETTINGS	⬆
...			

When you have finished configuring the entire load (L1) (type of load, name, nominal current, current sensors), scroll right from the "LOAD" line to configure loads 2 and 3 (L2, L3):

LOAD		Diris I30 ID:FOC1D2	
LOAD		◀ L1 ▶	⬆
NAME		LOAD 1	
TYPE		3P+N_3CT	
NOMINAL I (A)		00020	
CT1			I01
...			

For example, a DIRIS Digiware I-30 with 3 current inputs is best for measuring:

- 1 three-phase load (1 three-phase load L1 using the current inputs I01, I02, I03)
- 3 single-phase loads (1 L1 single-phase load with a current sensor connected to the I01 current input, 1 L2 single-phase load with a current sensor connected to the I02 current input, 1 L3 single-phase load with a current sensor connected to the I03 current input).

Numerous other load combinations are possible.

When all the circuits/loads are configured (maximum 3 on one DIRIS Digiware I-30), apply your settings by selecting "SEND SETTINGS" and click "OK".

LOAD		Diris I30 ID:FOC1D2	
...			
CT3			I03
		CT SETTINGS	
CT4			I01
		CT SETTINGS	
		SEND SETTINGS	⬆

7.4. SNMP - BACNET - FTP - SMTP protocols

DIRIS Digiware D-50 and D-70 interfaces act as a gateway:

- Digiware => Ethernet
- RS485 => Ethernet

Measurement data is available via numerous protocols:

- Modbus TCP
- SNMP v1, v2, v3
- Bacnet IP
- SMTPS: Secure or non-secure SMTP: automatic notification emails in case of alarms
- FTPS: Secure or non-secure FTP: automatic export of measurement logs (DIRIS Digiware D-70 only)

Bacnet IP, SNMP, SMTP and FTP settings are not accessible via the onscreen interface of the DIRIS Digiware D-50 / D-70 and are only available on a PC:

- SNMP => via the configuration software Easy Config which connects via USB or Ethernet to the DIRIS Digiware D-50 / D-70 (for more, see the notes on Easy Config),
- Bacnet IP => via the configuration software Easy Config which connects via USB or Ethernet to the DIRIS Digiware D-50 / D-70 (for more, see the notes on Easy Config),
- SMTPS => via the configuration software Easy Config which connects via USB or Ethernet to the DIRIS Digiware D-50 / D-70 (for more, see the notes on Easy Config),
- FTPS => via the embedded web interface WEBVIEW-M on the DIRIS Digiware D-70.

Please refer to annex A, B and C for more information about these protocols and their configuration.

8. USE

Once the loads are configured, you can visualise the measurements of each load from the "MEASURES" menu. You can view active and finished alarms from the "EVENTS" menu. If there is an active alarm, the "ALARM" LED of the D-50/D-70 display is on.



9. DIRIS DIGIWARE D-50/D-70 TECHNICAL CHARACTERISTICS

9.1. Mechanical characteristics

Type of screen	Capacitive touch-screen technology, 10 keys
Screen resolution	350 x 160 pixels
Front panel protection index	IP65 IEC 60529
Weight DIRIS Digiware D-50 / D-70	210 g
Casing material and flammability rating	Polycarbonate UL94-V0

9.2. Communication characteristics

Type of screen	Multipoint remote screen
Ethernet RJ45 10/100 Mbs	Gateway function: - Modbus TCP (max. 32 simultaneous connections) - WEBVIEW-M embedded web server (D-70 only) - BACnet IP - SNMP v1, v2 & v3
SNTP protocol	Updates the screen from an SNTP server. The display updates the connected devices.
SMTP(S) protocol	Sends email notifications from the display.
FTP(S) protocol <i>Only available with DIRIS Digiware D-70</i>	Automatically exports data via FTP standard or secure server (consumption curves, load curves, measurement logs)
RJ45 Digiware	Control and power supply interface function
RS485 2-3 wires	Modbus RTU master communication function
USB	Upgrade and configuration via type B micro USB connector

9.3. Electrical characteristics

Power supply	24 VDC +10% / -20%
Power consumption	2.5 VA
Battery life	10 years with the following typical battery profile over its lifetime: - Product storage: 1 year of full time battery back-up (based on an average storage temperature of 25°C). - Product life: 10 days / year of battery back-up over 9 years
Battery type	3V Lithium cell battery, 48mAh rated capacity

9.4. Environmental characteristics

Storage temperature	-40°C ... +70°C (IEC 60068-2-1 / IEC 60068-2-2)
Operating temperature	-10°C ... +55°C (IEC 60068-2-1 / EN/IEC 60068-2-2)
Humidity	55°C / 90% RH (IEC 60068-2-30)
Installation category - degree of pollution	CAT III, 2

9.5. EMC characteristics

Characteristic	Test standard	Performance criteria	Level
Electrostatic discharges (Contact)	IEC 61000-4-2	B	III
Electrostatic discharges (Air)	IEC 61000-4-2	B	III
Radiated radio-frequency field immunity	IEC 61000-4-3	A	III
Burst immunity	IEC 61000-4-4	B	III
Surge immunity (Common mode)	IEC 61000-4-5	B	III
Surge immunity (Differential mode)	IEC 61000-4-5	NA	NA
Conducted RF immunity	IEC 61000-4-6	A	III
Power magnetic field immunity	IEC 61000-4-8	A	IV\400A/m
Dips immunity	IEC 61000-4-11	NA	NA
Conducted emissions	CISPR11	NA	NA
Radiated emissions	CISPR11	Passed	Gr:1 – Class B

ANNEX.A. SNMP COMMUNICATION WITH THE DIRIS DIGIWARE D-50 / D-70

A.6. SNMP generalities

SNMP stands for Simple Network Management Protocol and is widely used by administrators for an easy network monitoring of devices on IP networks. It works in a client-server communication mode on an Ethernet physical layer.

Once enabled from the Easy Config configuration software, the DIRIS Digiware D-70 display supports SNMP v1, v2 and v3. The D-50 / D-70 is an agent SNMP v1, v2, v3 which responds to queries from managers (also called management stations or supervisors).

The D-50 / D-70 allows access through SNMP of measurement data from SOCOMEC slaves connected via the RS485 bus or the Digiware bus.

Data from the slaves can be reached through a file called "MIB" ("Management Information Base") under a hierarchical and pre-defined structure. The MIB file of the D-50 / D-70 is named "socomec-diris-products-mib" and is available from www.socomec.com

The file must be uploaded in the Management station managing your metering system.

The Tree structure of the MIB contains multiple OIDs (Object Identifiers). An OID uniquely identifies and labels a managed object (=parameter from metering devices) in the MIB.

For example, the electrical parameter "Current Inst I1" is identified by one OID. "Current Inst I2" is identified by another one.

Common SNMP terms	Consumption curves
Agent	Corresponds to the DIRIS Digiware D-50 / D-70: Interface between the PMDs and the manager
Managed device	The PMDs connected downstream the D-50 / D-70 (ex: I-35, DIRIS B, DIRIS A...)
MIB	Management information base where the OIDs are organized in a hierarchical tree
OID	An object identifier that uniquely identifies and labels a managed object in the MIB hierarchy
Community strings	A text that enables the authentication between an agent and the manager
Traps	Notifications sent by the agent and received by the manager

A.7. SNMP functions supported

There are 4 types of SNMP requests supported by the DIRIS Digiware D-50 / D-70:

- **GetRequest:** to retrieve the variable of an OID (I1 Inst for example)
- **GetNextRequest:** to retrieve the variable of the next OID (I2 Inst in this case)
- **GetBulk:** to retrieve multiple variables gathered together
- **SetRequest:** to change the value of one variable such as the state of a Digital output.
- **Traps:** Unlike the above commands which are initiated by the SNMP manager, Traps are initiated by the Agents with no solicitation from the Manager. Traps are notifications to the Manager by the Agent of the occurrence of an event and/or alarm..

Traps are sent by the agent in case one of the following alarms occurs:

- Alarm on a measurement
- Logical alarm (change of status of a Digital input)
- Combination alarms
- PQ events (inrush, voltage swells, voltage sags/dips, voltage interruptions)
- System alarms (Phase Rotation, CT disconnect, VI association)

Traps are sent automatically when the alarm occurs. They will be sent again once the “Trap report frequency” time (entered in Easy Config) is elapsed.

The alarm must be activated in the product (using the configuration software Easy Config) in order for the Traps to be sent.

Traps can either be configured for specific hosts or “broadcast” to the whole network. Up to two server IP addresses can be entered in Easy Config for SNMP trap notification of specific hosts.

A.8. SNMP versions supported

The DIRIS Digiware D-50 / D-70 can use all three versions of SNMP: SNMPv1, v2 and v3.

• SNMPv1 and v2:

The identification is based on Read-only and Read-Write Community passwords. They are non-encrypted and are passed over the network in plaintext.

Both passwords have to be entered in the Agent (DIRIS Digiware D-50 / D-70) and the Manager and must be identical.

A matching Read Community allows the Get functions to be executed on the agent.

A matching Read-Write Community also allows the Set function to be executed on the agent.

- The default Read Community V1 password is “public” and the default Read-Write Community V1 password is “Private”.
- The default Read Community V2 password is “publicv2” and the Read-Write Community V2 is “privatev2”.

• SNMPv3:

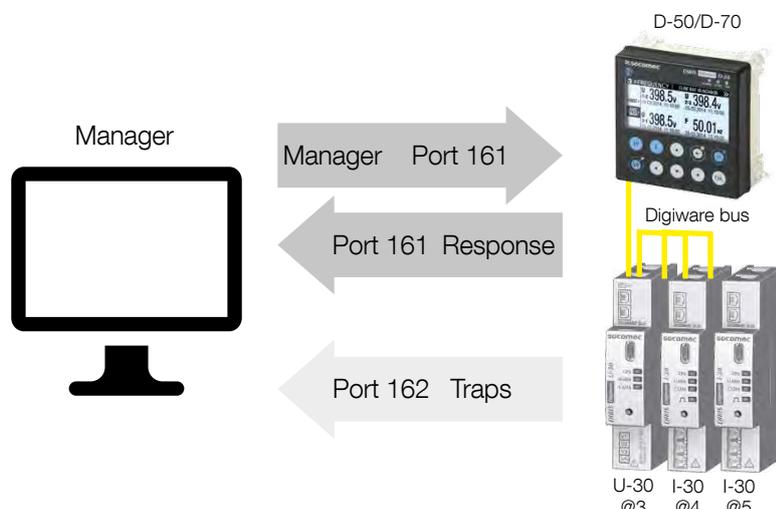
SNMPv3 uses the USM (User-based Security Module) for controlling access to information available via SNMP. This version offers more security using three important features to prevent the interception and deciphering of data:

- A username (called security username)
- MD5 and SHA1 authentication protocols to hash the passwords
- DES and AES Privacy protocols to encrypt the data

A.9. SNMP ports

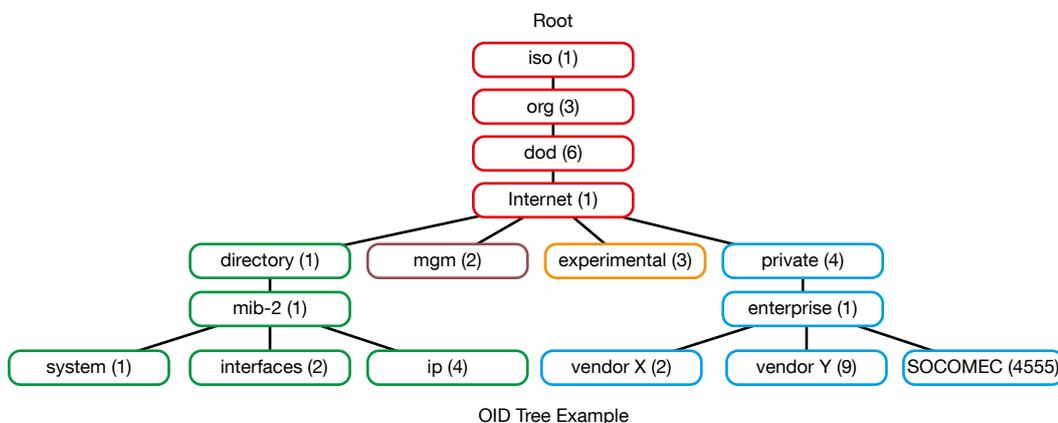
The DIRIS Digiware D-50 / D-70 is configured with standard SNMP ports to receive requests and send notifications:

Port	Description
161	Used to send and receive requests from the manager.
162	Used by the manager to receive notifications from the agent



A.10. Retrieving data using the DIRIS Digiware D-50 / D-70 MIB file

The DIRIS Digiware D-50 / D-70 is compliant with MIB-II defined by the MIB standard RFC 1213 which defines the following structure:



The standard branches are under the same parent branch structure: 1.3.6.1.4.1

The “Private (4)” group enables vendors to define private branches including the MIB OIDs of their own products. Data related to SOCOMEC metering devices is located under the SOCOMEC enterprise category identified by OID 1.3.6.1.4.1.4555. This implies that all queries from a manager to SOCOMEC agents will start by the base path 1.3.6.1.4.1.4555.

Because the DIRIS Digiware is a multi-circuit system, the DIRIS Digiware D-50 / D-70 creates a dynamic table which depends on the products connected downstream compatible with the DIRIS Digiware D-50 / D-70 and the loads configured on each product.

After adding/deleting a downstream device or a load, make sure to update the topology of the D-70 display. This can be done either directly from the display or from Webview:

- Add or delete a device
- Refresh the loads

Example: The OID for “Current Inst I1” will return a value for all I-xx, B-xx, DIRIS A etc.. On the contrary, the OID for “THD Inst I1” will return “0” for an I-30 or an I-31 module.

This implies that each OID can be associated with several products and several loads.

For example the OID for instCurrentI1 is represented by the sequence 1.3.6.1.4.1.4555.10.20.20.1.10000.

OID sequence	Description
4555	“SOCOMECEC” enterprise branch
10	“SocomecProducts” table
20	“ProductMetrology” table
20	“InstantaneousTable”
1	Entry (always = 1)
10000	Service ID

This OID is associated with the multiple devices connected downstream the DIRIS Digiware D-50 / D-70.

To identify those multiple devices, the Modbus address and the load number are added to the end of the OID.

Example: Let us consider the following architecture:



Product	I-30	I-30
Modbus address	4	5
Load type	Load 1: 3P + N - 3CT	Load 1: 1P + N - 1CT Load 2: 1P + N - 1CT Load 3: 1P + N - 1CT

The final OID to get the instantaneous current I1 for the I-30 module @ Modbus address 4 for load 1 is:
1.3.6.1.4.1.4555.10.20.20.1.10000.4.1

For the I-30 module @ address 5, there are multiple loads configured. This implies that the Modbus address must be followed by the Load number in the OID.

Therefore, the final OID used to request I1 Inst for load 1 of the I-30 @ address 5 is:

1.3.6.1.4.1.4555.10.20.20.1.10000.5.1

The final OID to request I1 Inst for load 2 of the I-30 @ address 5 is **1.3.6.1.4.1.4555.10.20.20.1.10000.5.2**

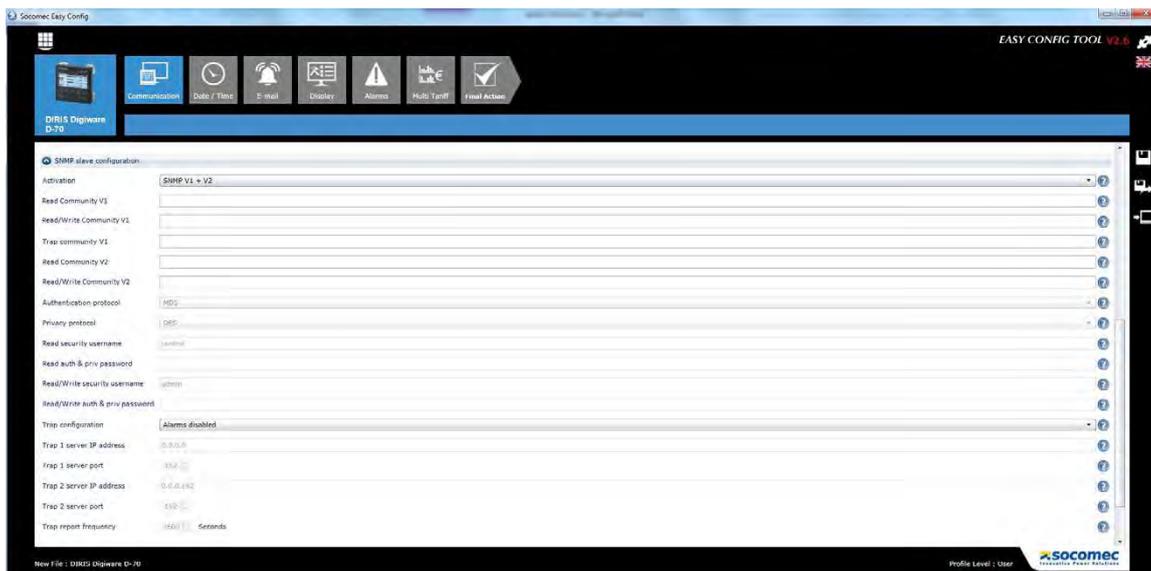
The final OID to request I1 Inst for load 3 of the I-30 @ address 5 is **1.3.6.1.4.1.4555.10.20.20.1.10000.5.3**

OID sequence	Description
4555	“SOCOMECEC” enterprise branch
10	“SocomecProducts” table
20	“ProductMetrology” table
20	“InstantaneousTable”
1	Entry (always = 1)
10000	Service ID
5	Modbus Address
3	Load number

Note: A request to OID 1.3.6.1.4.1.4555.10.20. 20.1.10001.5 will return “0” because the service ID 10001 corresponds to I2 inst whereas only single-phase loads are configured in the I-30 module @ address 5, which means currents I2 and I3 parameters aren’t used.

A.11. SNMP configuration via Easyconfig

After logging into Easy Config on the DIRIS Digiware D-50 / D-70, you can find the SNMP settings in the following menu:



- Community configuration SNMP v1 & v2:

Read Community V1: Read-only community string for SNMP v1. Default community string is “public”. It allows a manager to retrieve read-only data from a device connected to the DIRIS Digiware D-50 / D-70.

Read-Write Community V1: Read-Write community string for SNMP v1. Default Read/Write community string is “private”. It allows a manager to write (ex: position of a Digital output) to a device connected to the DIRIS Digiware D-50 / D-70.

Trap Community V1: The Trap community string allows the manager to receive notifications in case of an event and/or alarm.

Read Community V2: Read-only community string for SNMP v2. Default community string is “publicv2”. It allows a manager to retrieve read-only data from a device connected to the DIRIS Digiware D-50 / D-70.

Read-Write Community V2: Read-Write community string for SNMP v2. Default Read/Write community string is “privatev2”. It allows a manager to change a setting (ex: position of a Digital output) in a device connected to the DIRIS Digiware D-50 / D-70.

- SNMP v3 configuration:

Authentication protocol: If SNMP v3 is activated, you can choose an authentication protocol (MD5 or SHA) to hash your password. For no authentication, select “None”.

Privacy Protocol: Choose between DES or AES privacy protocols for the encryption of data messages. For no encryption, select “None”.

Read security username: Username enabling authentication for read-only functions.

Read authentication & privacy password: Password (also passphrase) accompanying the authentication and privacy protocols, and allowing read-only functions. The length of the Read-only authentication & privacy password must be between 8 and 16 characters.

Read-Write security username: Username enabling authentication for read and write functions

Read-Write authentication & privacy password: Password (also called passphrase) accompanying the authentication and privacy protocols and allowing read and write functions. The length of the Read-Write authentication & privacy password must be between 8 and 16 characters.

- Trap configuration:

Choose to deactivate or activate the traps. If activated, you can choose to broadcast trap notifications to all supervisors on the network or to notify only specific host stations (up to 2).

Trap 1 server IP address: enter the IP address of the 1st host station which will receive trap notifications.

Trap 1 server port: enter the port used to send traps for the 1st host station.

Trap 2 server IP address: enter the IP address of the 2nd host station which will receive trap notifications.

Trap 2 server port: enter the port used to send traps for the 2nd host station.

Trap report frequency: enter the time after which a trap reminder will be sent for active alarms. By default, it is set to 60min.

ANNEX.B. BACNET COMMUNICATION WITH THE DIRIS DIGIWARE D-50 / D-70

The DIRIS Digiware D-50 / D-70 supports the BACnet IP protocol, once enabled from the Easy Config software (see 7.1.8.2).

It acts as a BACnet IP gateway to all devices compatible and connected downstream via RS485 or the Digiware Bus.

The PICS (Protocol Implementation Conformance Statement) of the DIRIS Digiware D-50 / D-70 is available on the Socomec website at www.socomec.com.

B.1. BACnet Generalities

BACnet provides a method for computer-based control equipment from different manufacturers to be interoperable. BACnet is designed to handle many types of building controls, including HVAC, lighting, security, fire, access control, maintenance, waste management and so forth.

Common terms used in BACnet communication:

Object: Represents a device and its data. Multiple objects type can be available for each device (*analog input, binary input...). Each object has a number of properties which fully describe the BACnet object to the network.

Object identifier: Uniquely identifies an object within a BACnet device.

Property: A property describes a BACnet object to the network.

Present value: It is one of the properties of the Analog_Input Object. It represents the current value of an analog input object.

Service: Message type between one BACnet device to another.

BACnet uses a client/server communication mode between devices. Devices communicate between each other using services describing the type of exchange.

A BACnet client is a device that requests a service, and a BACnet server is a device that executes a service.

Data inside a BACnet device is organized as a series of objects, each composed of multiple properties.

Ex: the analog_input object defines a property for present_value, a property for average_value etc...

A BACnet client initiates a request to a BACnet server using a service (ex: read_property) to a specific property (ex: present_value) contained in a BACnet object (ex: analog_input).

B.2. BACnet Objects

BACnet defines a standard set of "Objects", each of which has a standard set of "Properties" describing the object and its current status to other devices on the BACnet internetwork. The properties allow for the object to be controlled by other BACnet devices.

BACnet defines 54 objects. Each element of the building control system is represented by one or more objects. The DIRIS Digiware D-50 / D-70 supports the below Objects:

Object type	Exemple of use
Device	To describe the device to the BACnet network.
Analog input	Instantaneous current for phase 1 (I1) measured by a DIRIS Digiware I-xx current module with associated current sensor
Binary input	Status (ON/OFF) of an auxiliary contact
Binary output	Change of status of the output of a DIRIS Digiware IO-20

A list of properties defines each BACnet Object. Properties can be:

- Required by the BACnet specification.
- Optional. In this case, vendors can choose whether to implement them for their devices.
- Proprietary. Vendors can add their own created properties.

Device Object:

Every BACnet device compatible with the DIRIS Digiware D-50 / D-70 must have the Device Object and its associated required properties that fully describe the BACnet device to the network

Example for the Device Object of the DIRIS Digiware D-50 / D-70.:

Property	BACnet
Object_Identifier (OID)	Required
Object_Name	Required
Object_Type	Required
System_Status	Required
Vendor_Name	Required
Vendor_Identifier	Required
Model_Name	Required
Firmware_Revision	Required
Application_Software_Version	Required
Protocol_Version	Required
Protocol_Conformance_Class	Required
Protocol_Services_Supported	Required
Protocol_Object_Types_Supported	Required
Object_List	Required
Max_APDU_Length_Supported	Required
Segmentation_Supported	Required
APDU_Timeout	Required
Location	Optional
Description	Optional
Local_Time	Optional
Utc_Offset	Optional
Local_Date	Optional
Daylight_Saving_Status	Optional
Active_COV_Subscriptions	Optional
Serial_Number	Optional
Property_List	Optional
Version_Build_Date	Proprietary
Operating_Hour_Counter	Proprietary

The way the OID is assigned to a device (instance number) is the following:

OID = Main OID (= default 100) + ModbusAddress

- Device with Main OID (100) is the DIRIS Digiware D-50 / D-70 display itself
- The device with OID (1xx) is the device with the Modbus address xx.

Analog Input Object:

The DIRIS Digiware D-50 / D-70 acts as a BACnet gateway. It provides a number of Analog Input objects which may be available from the devices compatible and connected to the DIRIS Digiware D-50 / D-70.

Whether a device supports an AI object depends on its measurement functionalities.

Ex: The OID for THD_I1 will return 0 for a DIRIS Digiware I-30 module because this parameter is not handled.

The AI object defines 25 properties. The devices compatible and connected downstream the DIRIS Digiware D-50 / D-70 support the following properties:

Property	BACnet
Object_Identifier	Required
Object_Name	Required
Object_Type	Required
Present_Value	Required
Status_Flags	Required
Event_State	Required
Out_Of_Service	Required
Units	Required
Description	Optional
Reliability	Optional
Min_Pres_Value	Optional
Minimum_Value_Stamp	Optional
Max_Pres_Value	Optional
Maximum_Value_Stamp	Optional
Average_Value	Optional
Instantaneous_Stamp	Proprietary
Average_Stamp	Proprietary
Max_Average_Value	Proprietary
Max_Average_Stamp	Proprietary
Min_Average_Value	Proprietary
Min_Average_Stamp	Proprietary
Harmonics_Row_02	Proprietary
Harmonics_Row_03	Proprietary
Harmonics_Row_04	Proprietary
Harmonics_Row_05	Proprietary
Harmonics_Row_06	Proprietary
Harmonics_Row_07	Proprietary
Harmonics_Row_08	Proprietary
Harmonics_Row_09	Proprietary
Harmonics_Row_10	Proprietary

Energy_Total_Residual	Proprietary
Energy_Total_Hourmeter	Proprietary
Energy_Partial	Proprietary
Energy_Partial_Residual	Proprietary
Energy_Partial_Hourmeter	Proprietary
Energy_Total_Lagging	Proprietary
Energy_Total_Lagging_Res	Proprietary
Energy_Total_Leading	Proprietary
Energy_Total_Leading_Res	Proprietary
Energy_Last_Partial	Proprietary
Energy_Last_Partial_Res	Proprietary
Energy_Last_Partial_Timestamp	Proprietary
Multifluid_Partial	Proprietary
Multifluid_Weight	Proprietary
Instant_Min_Max_Reset	Proprietary
Average_Min_Max_Reset	Proprietary

The way the OID is assigned to an Analog Input Object (instance number) is the following:
 OID = LLMM

- with LL = Load # of the device (starting at 1)
- with MM = Index of the measurement type (see Analog Input Measurement List).

For example, Analog Input with OID 204 reflects Phasis/Neutral Voltage V1 of Load 2 of corresponding device.

The table with indexes of the analog input measurement list is given below:

Index	Object Name	Object Description	Unit	Type	Present + Timestamp	Present Min/Max + Timestamp	Average + Timestamp	Average Min/Max + Timestamp	Harmonics 2 -> 10	Energies Total + Partial + LastPartial	Energies Total Lagging/Leading	Multifluid	Reset Min/Max
0	VystPhN	System Ph-N Voltage	V	Unsigned	•								•
1	VystPhPh	System Ph-Ph Voltage	V	Unsigned	•								•
2	CurrentSyst	System Current	A	Unsigned	•								•
3	Frequency	System Frequency	Hz	Unsigned	•	•	•	•					•
4	VoltPhNV1	Ph-N Voltage V1	V	Unsigned	•	•	•	•					•
5	VoltPhNV2	Ph-N Voltage V2	V	Unsigned	•	•	•	•					•
6	VoltPhNV3	Ph-N Voltage V3	V	Unsigned	•	•	•	•					•
7	VoltPhNVn	Ph-N Voltage Vn	V	Unsigned	•	•	•	•					•
8	VoltPhPhU12	Ph-Ph Voltage U12	V	Unsigned	•	•	•	•					•
9	VoltPhPhU23	Ph-Ph Voltage U23	V	Unsigned	•	•	•	•					•

10	VoltPhPhU31	Ph-Ph Voltage U31	V	Unsigned	•	•	•	•					•
11	CurrentI1	Current I1	A	Unsigned	•	•	•	•					•
12	CurrentI2	Current I2	A	Unsigned	•	•	•	•					•
13	CurrentI3	Current I3	A	Unsigned	•	•	•	•					•
14	CurrentIn	Current In	A	Unsigned	•	•	•	•					•
15	CurrentInba	Current Inba	%	Unsigned	•								•
16	CurrentIdir	Current Idir	A	Unsigned	•								•
17	Currentlinv	Current linv	A	Unsigned	•								•
18	CurrentIhom	Current Ihom	A	Unsigned	•								•
19	CurrentInb	Current Inb	%	Unsigned	•								•
20	PowerApparentNom	Nominal Apparent Power	VA	Unsigned	•								•
21	TotalPowerActive	Total Active Power	W	Signed	•	•	•	•					•
22	TotalPowerRActive	Total Reactive Power	VAr	Signed	•	•	•	•					•
23	TotalPowerApparent	Total Apparent Power	VA	Unsigned	•	•	•	•					•
24	TotalPowerFactor	Total Power Factor	-	Signed	•	•	•	•					•
25	TotalPowerFactorType	Total Power Factor Type	-	Unsigned	•	•	•	•					•
26	PowerActiveP1	P1 Active Power	W	Signed	•	•	•	•					•
27	PowerActiveP2	P2 Active Power	W	Signed	•	•	•	•					•
28	PowerActiveP3	P3 Active Power	W	Signed	•	•	•	•					•
29	PowerRActiveQ1	Q1 Reactive Power	VAr	Signed	•	•	•	•					•
30	PowerRActiveQ2	Q2 Reactive Power	VAr	Signed	•	•	•	•					•
31	PowerRActiveQ3	Q3 Reactive Power	VAr	Signed	•	•	•	•					•
32	PowerApparentS1	S1 Apparent Power	VA	Unsigned	•	•	•	•					•
33	PowerApparentS2	S2 Apparent Power	VA	Unsigned	•	•	•	•					•
34	PowerApparentS3	S3 Apparent Power	VA	Unsigned	•	•	•	•					•
35	PowerFactorPF1	PF1 Power Factor	-	Signed	•	•	•	•					•
36	PowerFactorTypeSPF1	sPF1 Power Factor Type	-	Unsigned	•	•	•	•					•
37	PowerFactorPF2	PF2 Power Factor	-	Signed	•	•	•	•					•
38	PowerFactorTypeSPF2	sPF1 Power Factor Type	-	Unsigned	•	•	•	•					•
39	PowerFactorPF3	PF3 Power Factor	-	Signed	•	•	•	•					•
40	PowerFactorTypeSPF3	sPF1 Power Factor Type	-	Unsigned	•	•	•	•					•
41	LoadCurve_P+	Load Curve Positive Active Power	W	Unsigned	•								•
42	LoadCurve_P-	Load Curve Negative Active Power	W	Unsigned	•								•

B.4. BACnet IP configuration via Easyconfig

The PICS file (Protocol Implementation Conformance Statement) is available at www.socomec.com

After logging into Easy Config on the DIRIS Digiware D-50 / D-70, you can find the BACNET IP settings on the following page:



Activation: enable or disable the Bacnet IP function

Virtual network ID: set the virtual network ID

Main instance ID: 100 by default. It must be unique within the BACnet network.

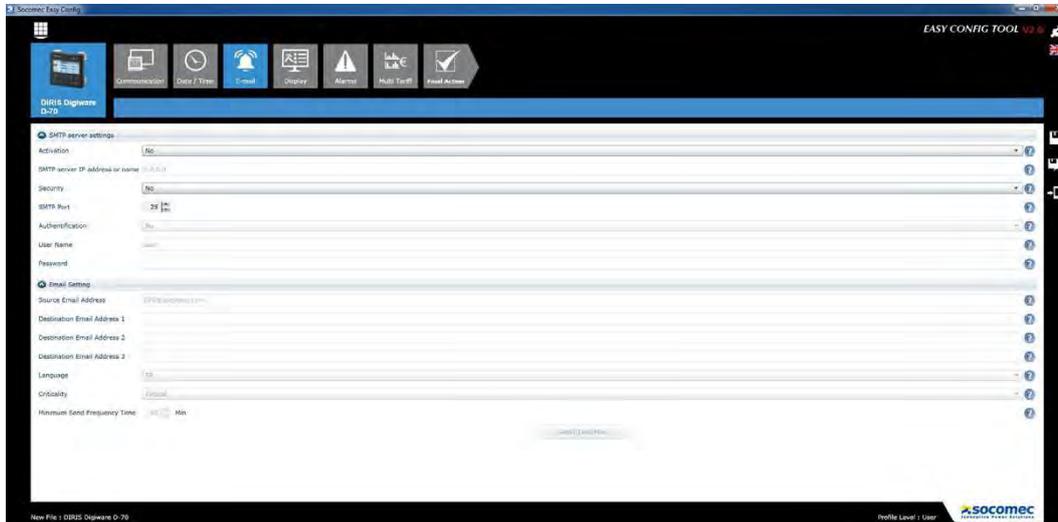
The port used by the DIRIS Digiware D-50 / D-70 for BACnet IP communication is set to 47808 (BAC0 in hexadecimal) and cannot be changed.

ANNEX.C. SMTP AND FTP CONFIGURATION

C.1. SMTP email export protocol

This protocol enables an automatic notification via emails in case of alarm or event. Available as standard and secure SMTP.

After logging into Easy Config on the DIRIS Digiware D-50 / D-70, SMTP settings are accessible via the following page:



Setting up the SMTP server:

Activation: enable/disable the SMTP email export function.

SMTP server IP address or name: IP address of the SMTP server or name (backup for configured DNS server).

Security: enable or disable security (SMTPS).

SMTP Port: enter the standard unencrypted SMTP port.

Secured port: enter the port number for a secured connection. Default port number is 465.

Authentication: enable or disable SMTP authentication.

User name: enter the user name for the authentication.

Password: enter the password for the authentication.

Email settings:

Source Email Address: email address shown when sending emails.

Destination Email Address 1: email address #1 to send email notifications to.

Destination Email Address 2: email address #2 to send email notifications to.

Destination Email Address 3: email address #3 to send email notifications to.

Language: language in which emails are sent.

Criticality: set the degree of criticality to email alarms with just a minimum level of criticality.

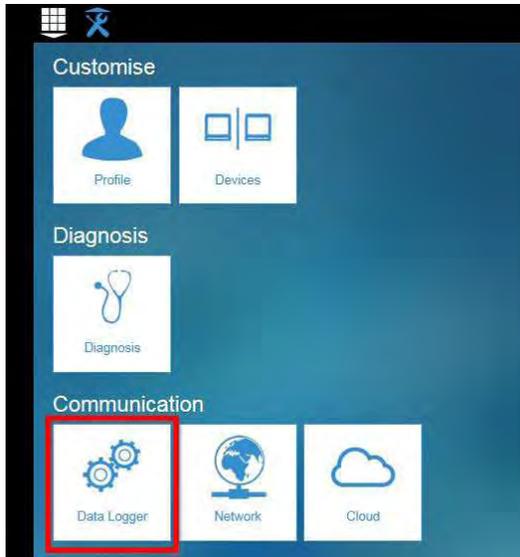
Minimum send frequency time: Time after which the email notification is sent by the DIRIS Digiware D-50 / D-70. This limits the number of emails sent by the D-50 / D-70, especially when the same alarm changes state repeatedly.

C.2. FTP file export protocol (only available with DIRIS Digiware D-70)

Measurement logs (see “4.2.2. Introduction to DIRIS Digiware D-70”, page 9) can be automatically exported via FTP(S).

C.2.1. FTP server activation:

Connect to WEBVIEW-M and go to the “Data Logger” menu:



Identification:

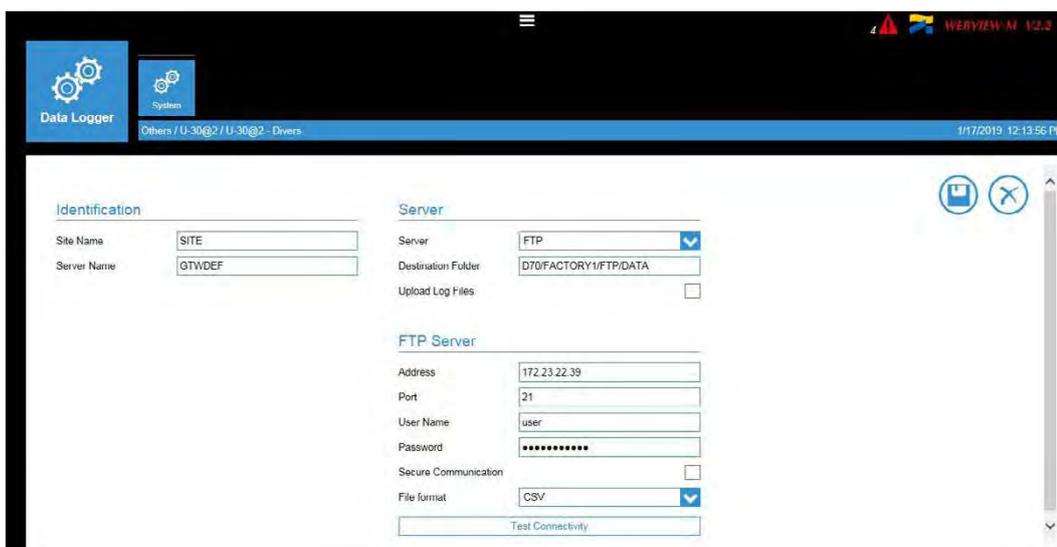
Site Name & Server Name: used to identify from which DIRIS Digiware D-70 the files are being exported.

Server

Server: activate the FTP server to enable the automatic export of data

Destination folder: tree view of the FTP server folder in which you want to export the files

Upload Log files: activate this to have additional information for troubleshooting in case of an export issue



FTP Server

This contains the login details of the FTP server (standard or secure).

Address: enter the IP address of your FTP server

Port: enter the secured or non-secured port to use for the FTP export

User Name: enter the user name of the FTP server

Password: enter the password of the FTP server

Secure Communication: activate or deactivate the secured export (FTPS)

File format: there are two different types of data file

- **CSV:** file in a .csv format in which data is in a user-friendly layout
- **EMS:** file in .csv format whose layout is more practical to integrate into monitoring or energy management software.

In EMS mode, the exported files are named according to the following:

Site name_Server name_Device name_Data type_date_time.csv

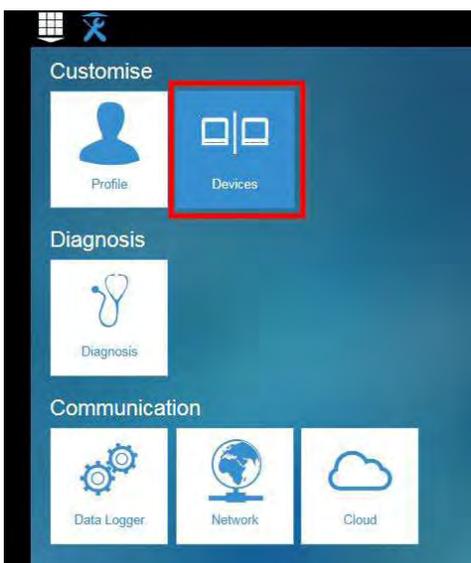
Example: if an export file is named “**socomec_GTWDEF_I35_LoadCurve_2017-08-15_20-00-00.csv**”, then the file was exported on August 15th, 2017 at 20:00 (8:00pm), it contains Load curves (Demand Power) from a device named I35 from a gateway whose ID is 8AD4A2 and site ID is socomec.

If the file format is on “EMS”, the Site Name must be different from default name (“SITE”).

Test Connectivity: once the configuration is done, you can test the connectivity by manually exporting a test file

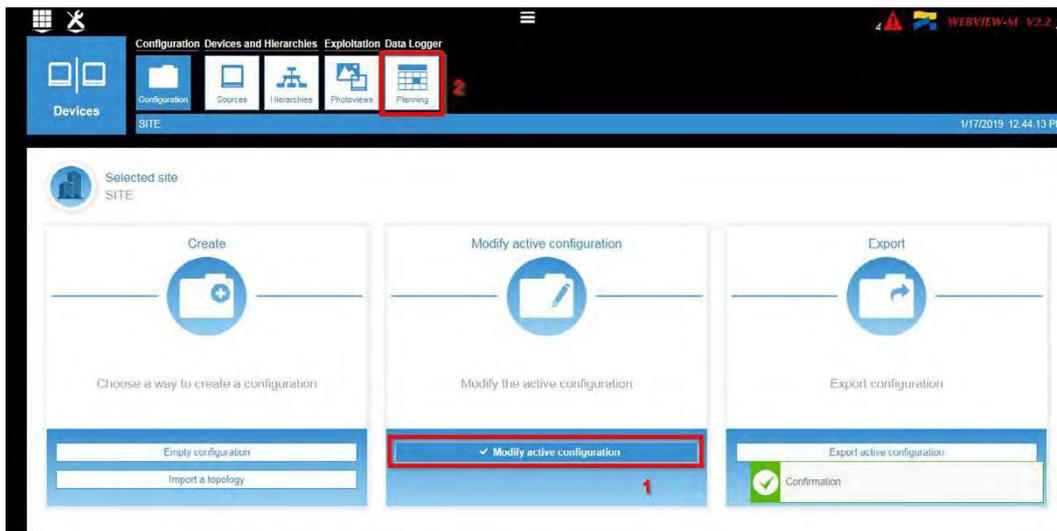
C.2.2. FTP planning configuration

Click on “Devices”:



Click on “Modify active configuration” (1)

Click on “Planning” (2)



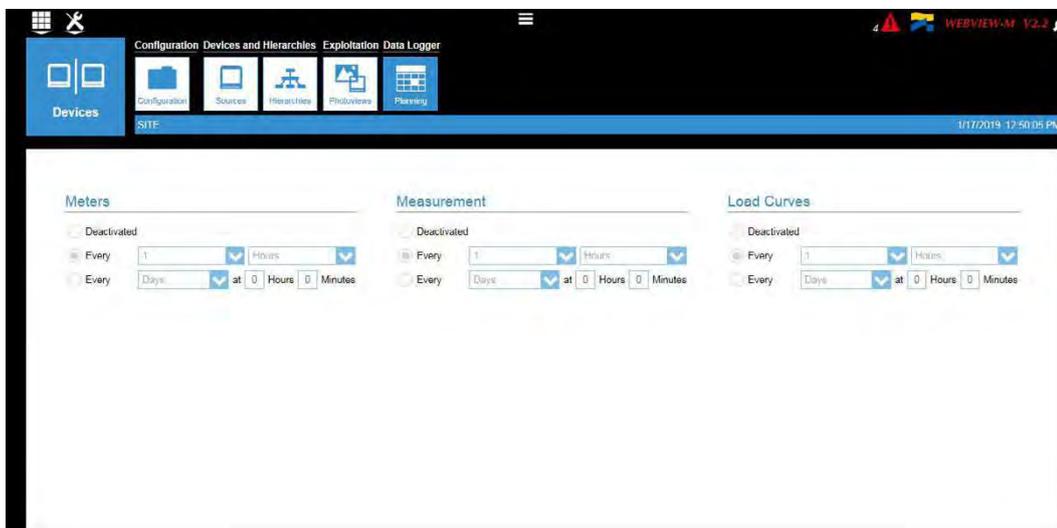
Activate the type of data you want to export automatically. The DIRIS Digiware D-70 can log and export 3 types of data:

Energy meters: Ea, Er, Es etc. (Meters)

Measurement logs/trends: archived parameters U, I, F, PF etc. (Measurements)

Load curves / demand: P, Q, S etc. (Load curves)

For each data type, specify the rate at which data will be exported (once an hour, once a day etc.) and at which time.



C.2.3. Understanding the exported .csv file in EMS mode

Data Type	TimeZone	Datation	Transfer Cycle (sec)	Pooling Tr	Version	Site name	Server name						
Avg	UTC	Local	600	N/A		1	socomec	GTWDEF					
Index Key	Key	Type	Name	Fluid	Use	Coef	Unit	Path	Device Id	Index	Data Id		
0	socomec GTWDEF 14 1 ANA 100006	ANA	THD I1 of PC 1-2-3 of I-35@4	ELEC	Indoor Lighting	100	%	/	14	1	100006		
1	socomec GTWDEF 14 1 ANA 100007	ANA	THD I2 of PC 1-2-3 of I-35@4	ELEC	Indoor Lighting	100	%	/	14	1	100007		
2	socomec GTWDEF 14 1 ANA 100008	ANA	THD I3 of PC 1-2-3 of I-35@4	ELEC	Indoor Lighting	100	%	/	14	1	100008		
3	socomec GTWDEF 14 1 ANA 100023	ANA	I1 AVG of PC 1-2-3 of I-35@4	ELEC	Indoor Lighting	1000	A	/	14	1	100023		
4	socomec GTWDEF 14 1 ANA 100024	ANA	I2 AVG of PC 1-2-3 of I-35@4	ELEC	Indoor Lighting	1000	A	/	14	1	100024		
5	socomec GTWDEF 14 1 ANA 100025	ANA	I3 AVG of PC 1-2-3 of I-35@4	ELEC	Indoor Lighting	1000	A	/	14	1	100025		
Index Key	Date	Value	Quality										
0	2019-01-18T15:14:00	234	192										
0	2019-01-18T15:13:00	237	192										
0	2019-01-18T15:12:00	190	192										
0	2019-01-18T15:11:00	201	192										
0	2019-01-18T15:10:00	200	192										
0	2019-01-18T15:09:00	198	192										
0	2019-01-18T15:08:00	210	192										
0	2019-01-18T15:07:00	231	192										
0	2019-01-18T15:06:00	211	192										
0	2019-01-18T15:05:00	199	192										
1	2019-01-18T15:14:00	20001	192										
1	2019-01-18T15:13:00	21605	192										
1	2019-01-18T15:12:00	19804	192										
1	2019-01-18T15:11:00	20901	192										

The csv file is split into two parts:

- The part (1) in red corresponds to the header. It contains a unique key, created out of multiple parameters such as the site and server name, the data type, the data ID, the device ID to uniquely identify each parameter that is exported.
- The part (2) in green contains the logged and time stamped data. Each line is identified via the simplified index key, which refers to a unique key in cells B5 through B10.

The final value for cells C13 through C26 is obtained considering the right coefficient in cells G5 through G10 along with the right unit in cells H5 through H10.

Example for line 13:

The final value for THD I1 of circuit PC1-2-3 on module I-35@4 is equal to 2.34 % on January 18th, 2019 at 15:14:00.



When integrating data into a third-party energy management or monitoring software, always refer to the unique Key in column “B”, part (1) as a unique import code and do not only use the simplified index key in column “A”, part (2).

If multiple DIRIS Digiware D-70 displays are exporting to the same folder, the simplified index key cannot differentiate them.

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