

Steps for Commissioning Your DIRIS Digiware Using the D-70 System Interface



POWER
MONITORING

GUIDE NO. 2: D-70 with U & I Modules



Introduction



This document has been designed in order to help guide the user through the commissioning of the DIRIS Digiware system using a D-70 display for local visualization of measurements as well as Easy Config System to configure the DIRIS Digiware modules.

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1. Prerequisites

1.1 List of Devices Used

For this commissioning guide, we will be using the following devices:

Part Number	Description	Quantity
4829 0203	D-70 system interface module (display + webserver)	1
4829 0102	U-30 Voltage module – Analysis Version	1
4829 0130	I-35 Current module – Analysis version	3

Please note that the commissioning steps are the same if other modules are used including, but not limited to, M-50/M-70, D-50, U-10, U-20, I-30, I-33.



In order to configure the device, you will need the following:

- One PC equipped with USB ports
- One micro USB type B cable
- The latest version of EasyConfig System* and Product Upgrade Tool*

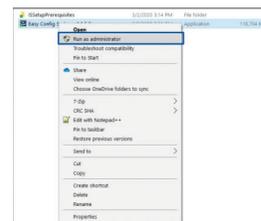
*Software is available for download on the Socomec website

1.2 Upgrading the Products

Each Digiware product has a firmware inside and to ensure that the product has the most up to date firmware, it is best to check the Digiware products firmware and upgrade it as needed before configuration. This can be done using Socomec's Product Upgrade Tool. This tool is downloadable on the Socomec website.

1.3 Installing EasyConfig System

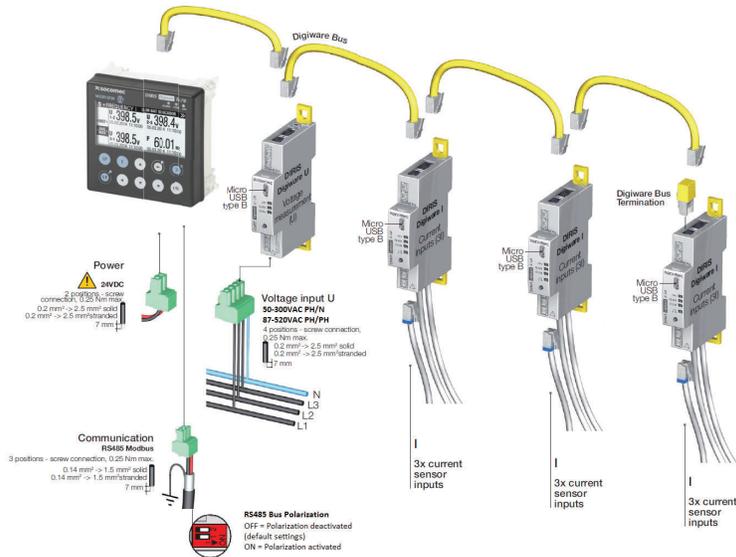
The Easy Config System software is a free software used for configuring Socomec Power metering devices from a computer. Once the Easy Config System folder is saved on your computer, right click on the setup file and click "run as administrator".



2. Wiring of the System

2.1 Diagram

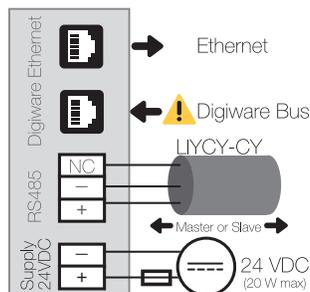
Please use this as a reference when following the steps for wiring your system.



2.2 Step by Step

To ensure the proper wiring of the system, the following steps need to be done (refer to the diagram above for more details):

- 1 Connect the 24 VDC power supply to the D-70 system interface.



- 2 Using the yellow RJ45 cables, connect the Digiware Bus to all of the modules.
- 3 On the last DIRIS Digiware I module, plug in the Digiware Bus Termination (for our example, it will be connected on the third I-35 module). The RJ45 termination resistor always comes with the system interfaces (M-50, M-70, D-50, D-70 and C-31 modules).



- 4 Connect the current sensors to the DIRIS Digiware I modules using the RJ12 cables (Input 1 for Line 1, Input 2 for Line 2, and so on).

i Please ensure that you do not use the RJ12 cable to connect the Digiware module together. By using the wrong cable, you run the risk of damaging the pins inside the RJ45 slot which will likely to cause the module to malfunction.

3. Configuration of the Modules

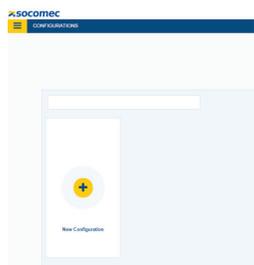
3.1 Using EasyConfig System & Automatic Detection

In this guide, we will be using Easy Config System to configure all of the modules one at a time.

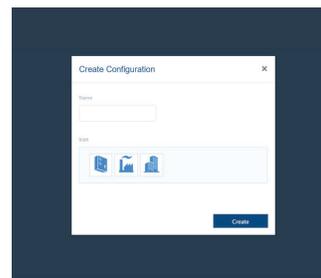
- 1 Open the EasyConfig System to configure modules at one time.
- 2 When logging in, choose the Admin profile and complete the verification using the information below. Depending on the type of profile that you select you will have different capabilities once in the system.

Profile	Default Password	Capabilities
User	<i>No Password</i>	<ul style="list-style-type: none">• Visualization• Full configuration
Admin	Admin	<ul style="list-style-type: none">• Visualization• Full configuration• Save system• Open system• Save template• Upload template• Template management Password modification

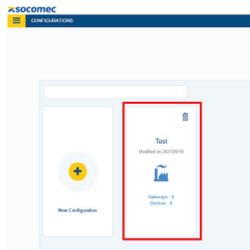
- 3 Create a new configuration by clicking on "New Configuration" as shown in the image.



- 4 Next you will see a screen pop up where you can name your configuration and select the icon for it.



- 5 You will now see the system you added as shown below. Click on the system to open it.

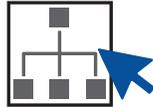


Automatic detection of modules from the DIRIS Digiware D-70, using Easy Config System

- 1 Plug the micro USB cable to the slot in the back of the D-70 module. Plug the USB end of the cable to the computer.

i The DIRIS Digiware D Module (D-70 in this example) should be configured first.

- 2 Click on “Device List”



- 3 Then click on “USB Mode” at the top right of the screen.



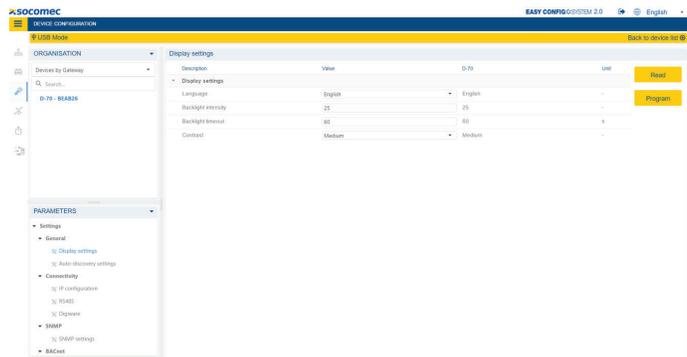
The D-70 module will be automatically detected by Easy Config System (shown in the image below). If not, try disconnecting and reconnecting the cable and click again on “USB Mode”.



- 4 Click on “Device Configuration”

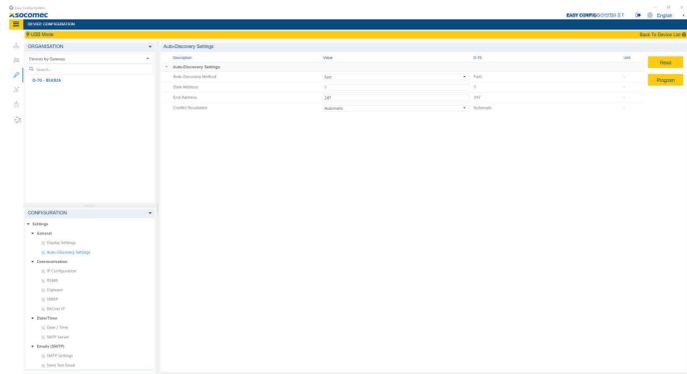


The “Display settings” section in the “General” tab on the bottom left side of the screen, contains information about the language and the settings of the LED backlight display.

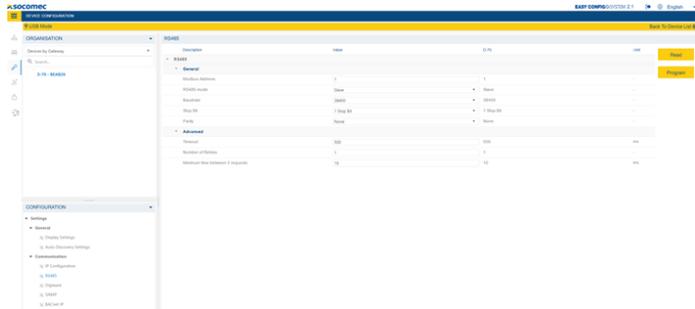


Once you have entered your parameters, click on “Program” at the top right side of the screen and this will immediately update the DIRIS Digiware D-70. When you click on “Program”, it sends the parameters of the tab that you are currently working on.

- 5 The “Auto-discovery settings” section allows you to choose the method of auto discovery from the below options:
- “Fast” if there is only Digiware products connected to the D-70;
 - “Full” if there is non-Digiware connected to the D-70 via the RS485 bus.



- 6 Next the “Communication” tab will show the different communication parameters (IP address, MODBUS address, baudrate, etc.).



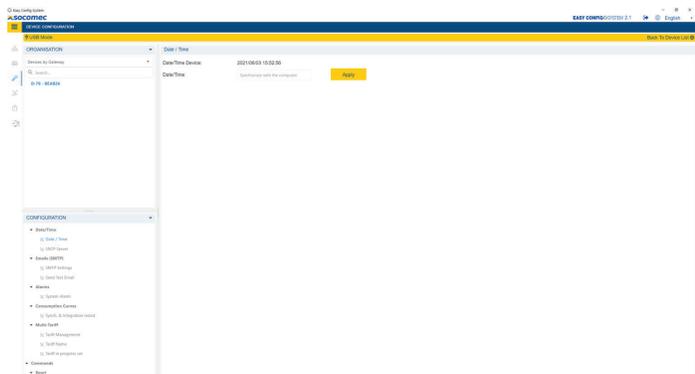
The IP address and the Modbus address will give you the capability to connect to the product and to communicate with it. The RS485 port can be configured as a master or a slave under the “RS485” section. If you are using Modbus communication over RS485, you have to select “Slave” in the “RS485 mode”.

i Each Device on the Digiware Bus has its own MODBUS/JBUS address. This unique address is a number between 1 and 247.

The default JBUS/MODBUS address of devices is as follows:

1. DIRIS Digiware M-50, M-70, D-50, D-70: Address 001
2. U-10, U-20 and U-30 Modules: Address 006
3. I-30, I-31, I-33, I-35, I-45, I-60 and I-61 Modules: Address 005

- 7 Next click on the “Date/Time” tab. You can configure the time synchronization, slave time update, etc. in this section.

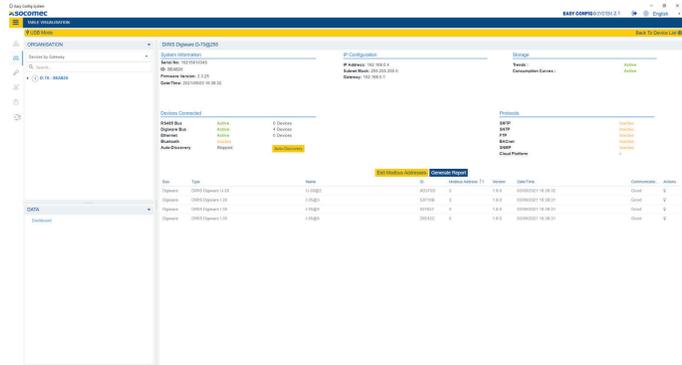


- 8 Continue to go through each tab, and configure the D-70 as needed for your application.

9 Click on “Real time visualization”



10 Click on “Auto-discovery” in the middle of the screen. The Auto-discovery will detect all Digiware modules on the Digiware bus (and all the other products connected via the RS485 bus if the “full” mode has been activated).



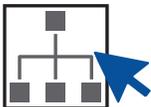
After few minutes, the product list will be displayed. If this is the first time you configure the modules, the Modbus address will be automatically changed in order to not have any Modbus addresses conflicts. You can change the Modbus addresses by clicking on “Edit Modbus Addresses” shown in the middle of the slide below.



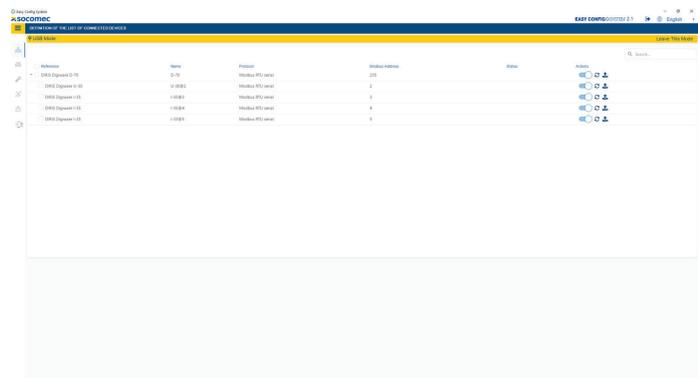
The auto discovery process can also be launched directly from the D-70 display. From the home menu, click on:

- PARAMETERS (default password is 100)
- AUTODETECT SERIAL DEVICES

11 Next click on “Device List”



The list of all discovered products will be displayed. The products are now accessible without disconnecting the USB cable from the D-70 display.



3.2 Configuration of the DIRIS Digiware U Module

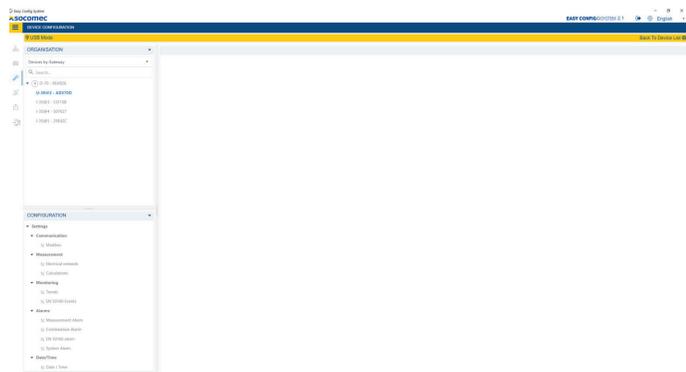
The DIRIS Digiware U module (U-30 in this example) should be configured before the DIRIS Digiware I modules. When you apply the configuration to the DIRIS Digiware U module, the configuration will automatically be applied to the DIRIS Digiware I module.

The U-30 module will be automatically detected by Easy Config System (shown in the image below). If not, try disconnecting and reconnecting the cable and click again on “USB Mode”.

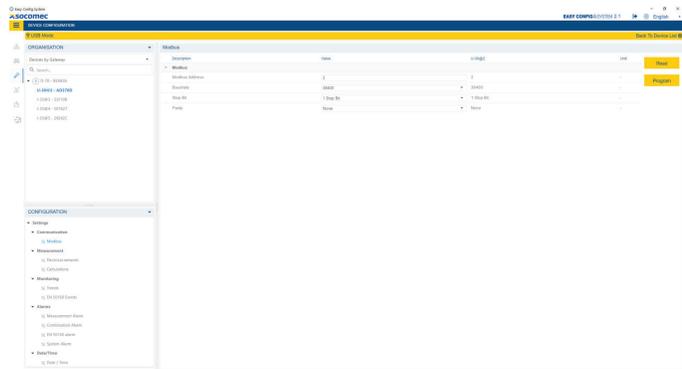
- 1 Click on “Device Configuration”



Once you click on the symbol you will see a list of the product available to configure. Select the “U-30” device first, this allows you to configure the DIRIS Digiware U module.

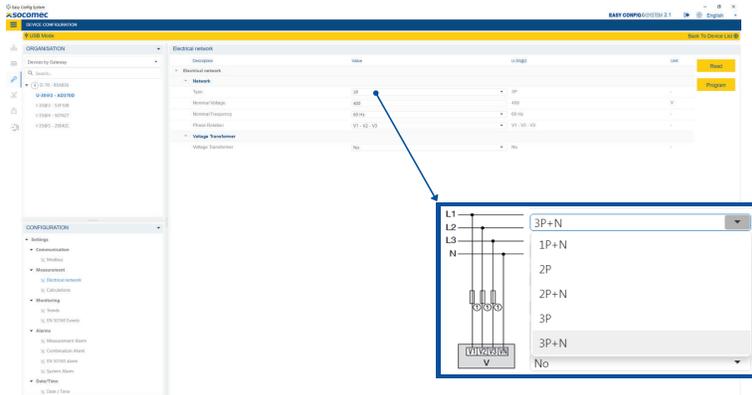


- 2 Under the “Parameters” section on the bottom left of the screen, select “Modbus”. The “Modbus” page of the U-30 module will be displayed. It contains information regarding the device identification as well as communication parameters (Type, MODBUS address, Baud rate, etc.)



Once you have entered your parameters, click on “Program” at the top right of the screen and the module will immediately update. When you click on “Program”, it sends the parameters of the tab that you are currently working on.

- The “Measurement” tab on the bottom left of the screen, corresponds to the Electrical Network configuration. Click on “Electrical Network” and select the network “Type” based on where the voltage is measured by the U-30 module as well as the nominal voltage (selecting an incorrect nominal voltage will NOT affect the voltage measurements).

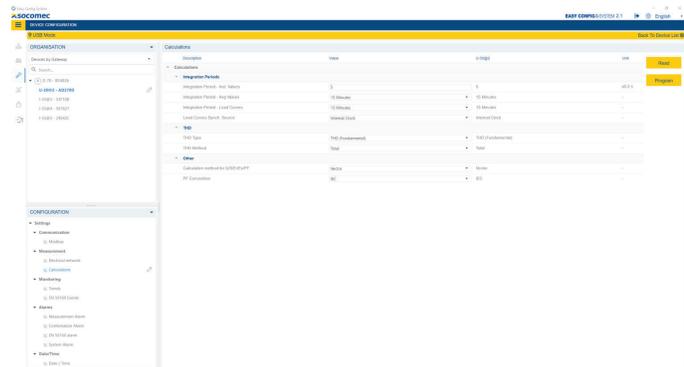


1P + N: Single-phase network
 2P: Two-phase network
 2P + N: Two-phase network + neutral
 3P: Three-phase network
 3P + N: Three-phase network +neutral

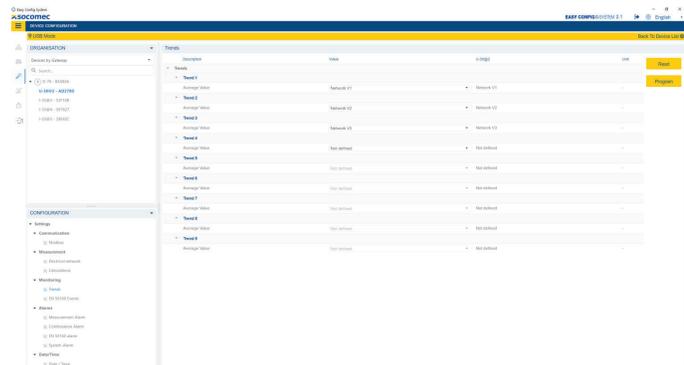
For a three-phase or two-phase network, the nominal voltage of the network is typically 208V, 240V, 480V, etc.

For a single-phase system, the nominal voltage is typically 120V in the USA and 230V in Europe

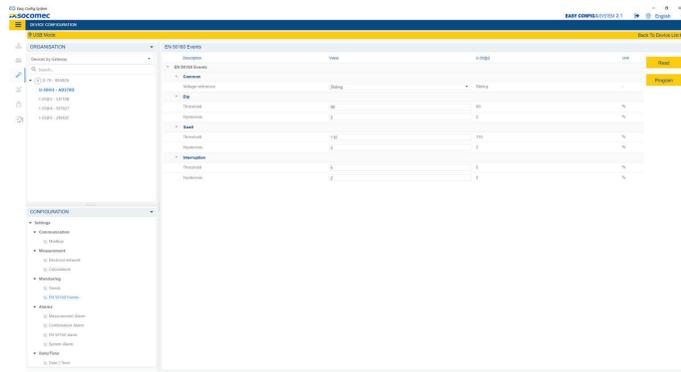
- The “Calculation” section under the “Measurement” tab is where you can enter the integration periods for average values.



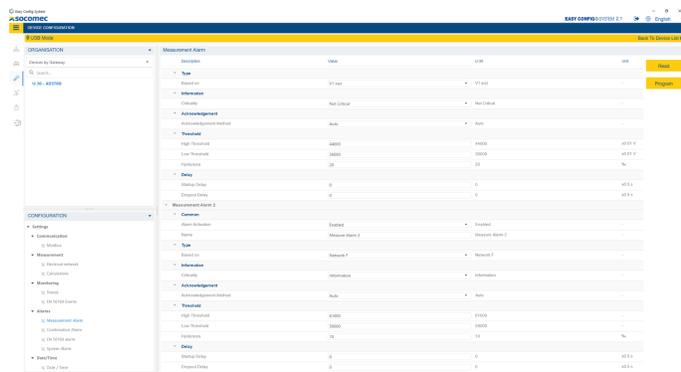
- In the “Trends” section under the “Monitoring” tab, you can select the parameters that you want stored in the memory over time. These parameters are called historical measurements.



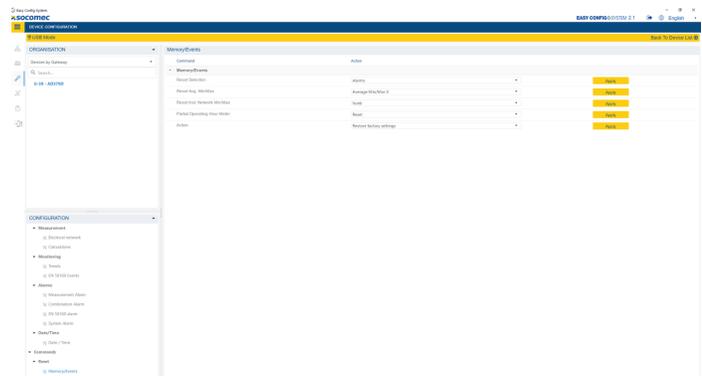
- 6 The “EN 50160 events” tab allows you to adjust the thresholds for Power Quality Events such as voltage sags, swells and interruptions.



- 7 The “Alarms” tab allows you to set up alarms. They can be based on measurements, combination of measurements, on a commissioning error, or on a Power Quality event (voltage dip/sag, swell, interruption).



- 8 The “Reset” tab allows you to do a reset on specific memory categories of the device.



The configuration of your DIRIS Digiware U Module is now complete. The guide will next walk through how to configure the I Modules.

3.3 Configuration of the DIRIS Digiware I Module

The DIRIS Digiware I module will be automatically detected by Easy Config System. If not, try disconnecting and reconnecting the cable and click again on “USB Mode”.

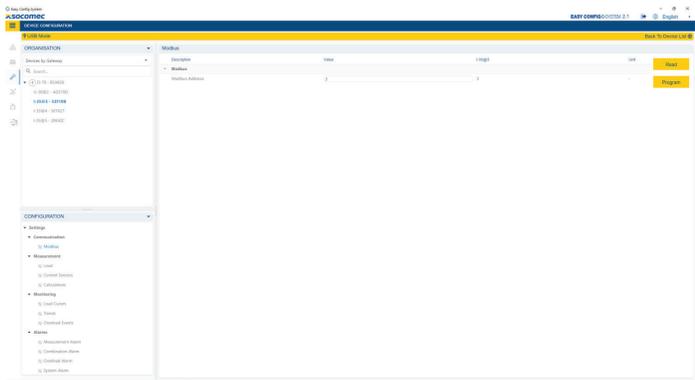
- 1 Click on “Device Configuration”



The “Device configuration” menu allows the user to read and program the parameters in the I-35.



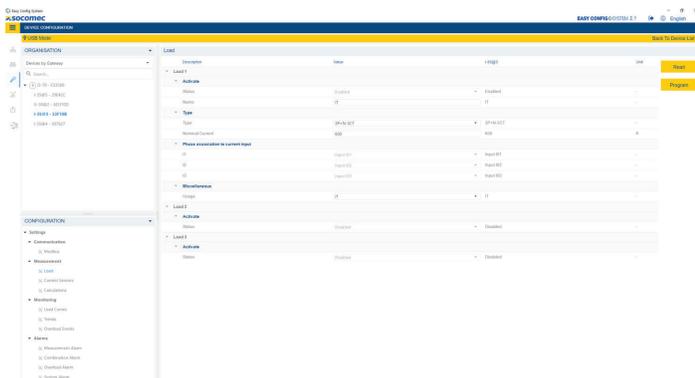
- 2 In the “Parameters” section on the bottom left of the screen, select “Modbus”. The “Modbus” page of the I-35 module will be displayed. It contains the information on the Modbus address.



- 3 Under the measurement section the “Load” section allows you to configure the different loads connected to the module.

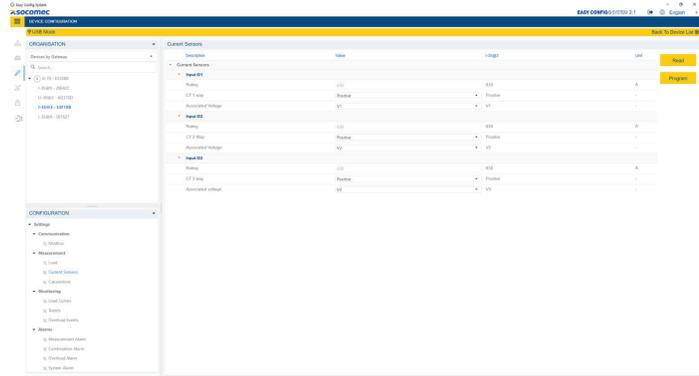
You must configure:

- The number of loads measured.
- For each load, the type of load measured, and the nominal current.



4 The “Current sensors” tab allows you to configure the current sensors depending on the loads. You must configure:

- For each load, the phase(s) on which the sensor(s) are connected
- For each sensor, you may need to adjust the direction of current in case of a wiring error.



i The maximum number of loads for an I-3x current module is 3, because there are 3 sensor inputs on the module.

The measured load can be:

1. Single-phase load measured by 1 sensor ($1P + N - 1CT$)
2. Three-phase load without unbalanced neutral measured by 2 sensors ($3P - 2CT$), with the 3rd current derived from a vector sum
3. Three-phase load with or without unbalanced neutral measured by 3 sensors ($3P - 3CT$ or $3P + N - 3CT$)
4. Three-phase balanced load with or without neutral measured by 1 sensor ($3P - 1CT$ or $3P + N - 1CT$)

For a balanced load measured by a single sensor you can connect this sensor to any phase.

The rating of the sensor is always automatically detected and it is not possible to change it.

Repeat the steps above for all the DIRIS Digiware I modules on the Digiware Bus.

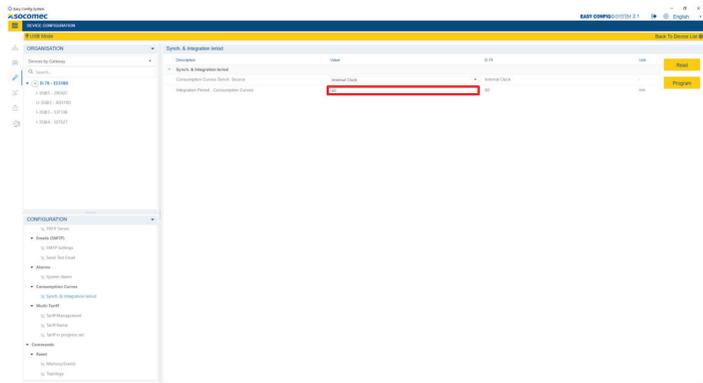
Once all modules are configured, the system is ready to read correct values and to communicate through Modbus to an external device and software.



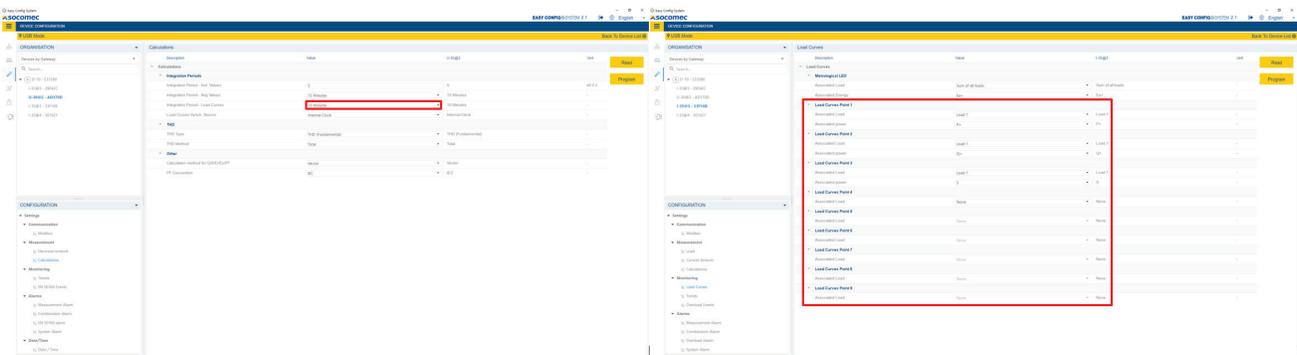
You can use the tab “Real time visualization” in order to visualize live measurements, phasor diagrams, and energies. You will be able to verify that the readings are consistent and approve that there is no wiring error.

3.4 Configuration of the Consumption Curves, Load Curves and Trends

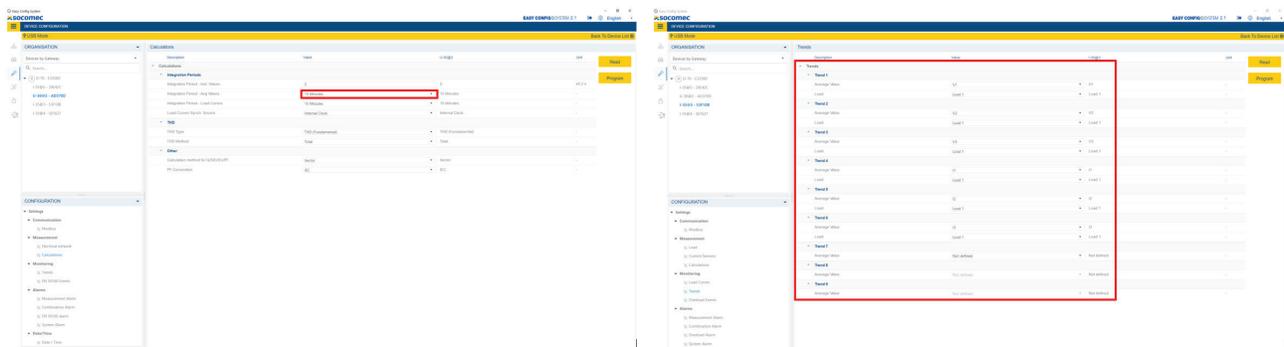
1 From the webserver you are able to see the consumption of each load along the time. You can select the length of the consumption curves from the D-70 under the “Sync. & Integration Period” tab.



- 2 To program the load curves you have to:
- Choose the integration period for Load Curves on the U module under the “Calculation” tab.
 - Select the power to log and their associated load on the I modules under the “Load curves” tab.



- 3 To program the trends you have to:
- Choose the integration period for Average (Avg.) Values on the U module under the “Calculation” tab
 - Select the electrical parameters to log on the I modules under the “Trends” tab.



3.5 Automatic Detection of Modules Directly from the D-70

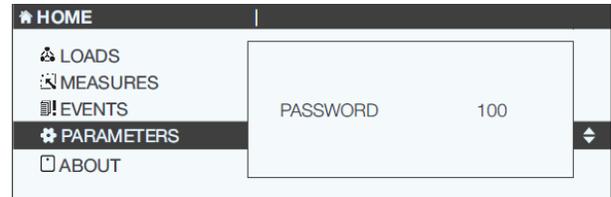
Depicted below are images of the screen from the display, starting with the home screen:



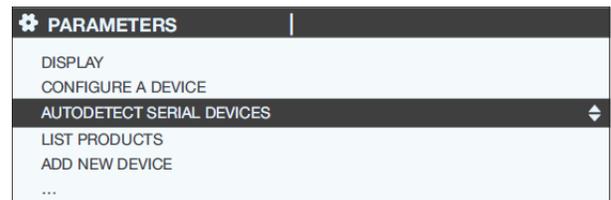
1 To return to the navigation menu, press “OK” to bring up the various menus. Once you see the menus click the down arrow 3 times until “PARAMETERS” is highlighted (as shown below) and click “OK”.



2 Enter the password “100” using the arrow pad (4 arrow keys) and confirm with “OK”.



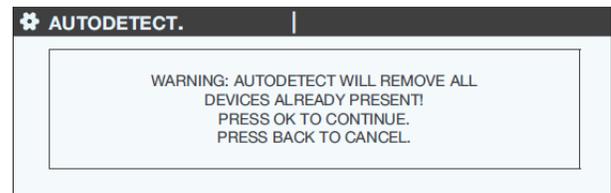
3 Go to “AUTODETECT SERIAL DEVICES”.



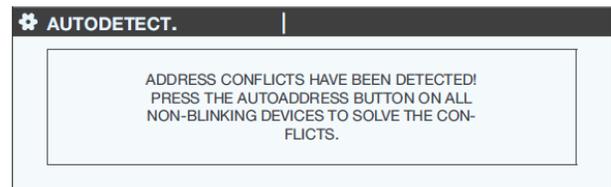
4 Select “START” then “OK” to start the scan/detection process (this can take up to 1 minute).



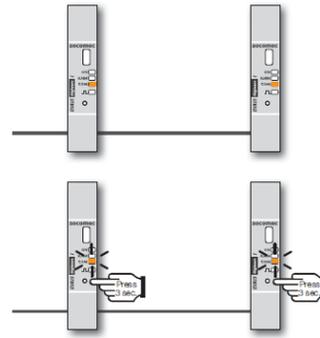
5 Please note that this removes all previously found devices (if they are still there they will be found again).



6 If there are several DIRIS Digiware I modules which all have the same MODBUS address (due to factory settings all DIRIS Digiware I module ship with MODBUS address 5), there will be conflicts of address and the following screen will be displayed



- 7 The products concerned will have an orange LED lit next to the title COM. To resolve the conflict, press and hold down the front button on the top of the module for a few seconds until the LED starts flashing.



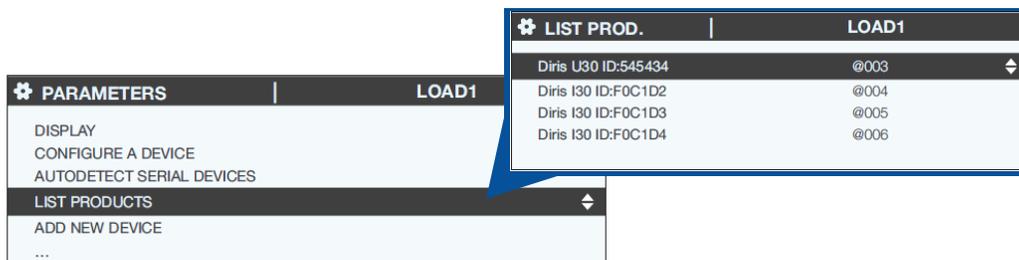
LED COM ON = address conflict
LED COM FLASHING = device address identified correctly.

i If no products have the same MODBUS address (only one current module used for example), there will not be any conflicts.

- 8 After approximately 2 minutes, all devices should be detected, and each current module will be automatically assigned a unique MODBUS address.

AUTODETECT.	
STATUS:	STOPPED
FOUND DEVICES	004
ADDR CONFLICTS	000
START	

- 9 Under the “PARAMETERS” menu, now select “LIST PRODUCTS” and click OK. Here you can check the list of devices found along with their addresses:



- 10 The ID next to the device type corresponds to the unique ID number every module has which is also written on the front face of the modules:



4. Using the Webserver

4.1 Visualization with WEBVIEW

In this portion of the guide, we will set up the visualization of measurements from the D-70's webserver, WEBVIEW.

- 1 To visualize the measurements in the Webserver, connect the DIRIS Digiware D-70 with an Ethernet cable to a router or PC in the same subnet.
- 2 In any Web browser, type the IP address of the D-70 to access the Webserver. The Default IP parameters are shown below:

IP address	<input type="text" value="192.168.0.4"/>	192.168.0.4
Subnet Mask	<input type="text" value="255.255.255.0"/>	255.255.255.0
Gateway	<input type="text" value="192.168.0.1"/>	192.168.0.1

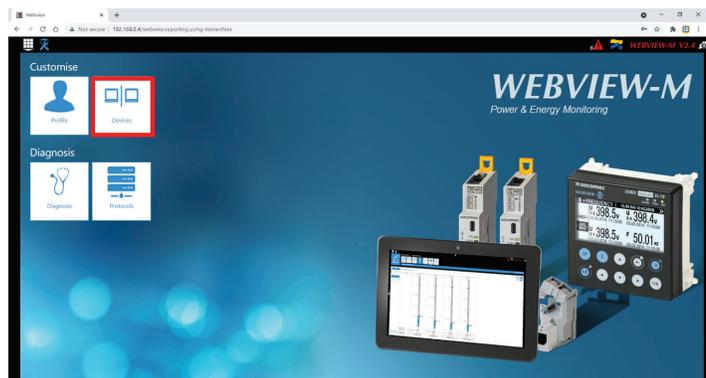
- 3 Log in as Administrator with the default password "Admin". For cyber security reasons, the application asks you to change the default password that has just expired. The password must be changed at least once a year.



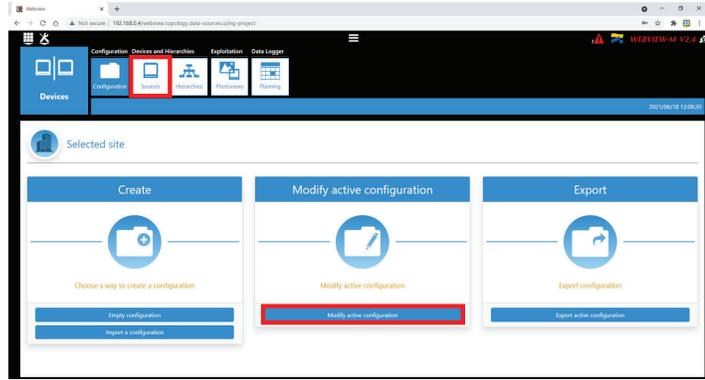
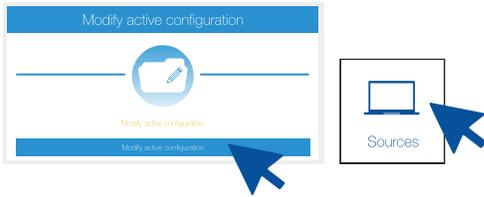
- 4 Once connected as Admin, click on the toolbox icon in the top left corner of the screen.



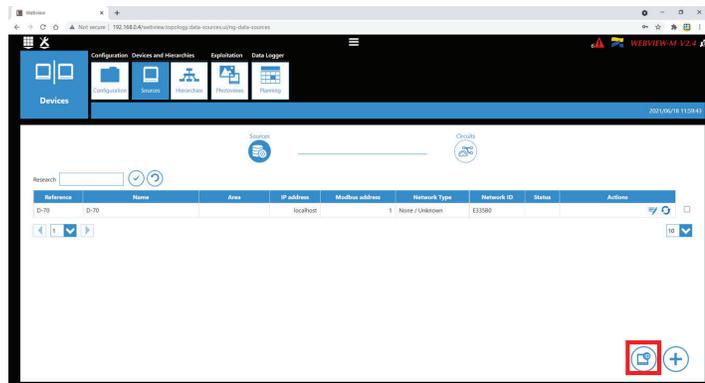
- 5 Then click on the "Devices" tab on the top left hand of the screen.



- Click on “Modify active configuration” in the middle of the screen and then click on “Sources” on the top left hand of the screen.



- In the “Sources” tab, click on the scan button at the bottom right hand side of the screen. This will add products present in the D-70 display's topology.

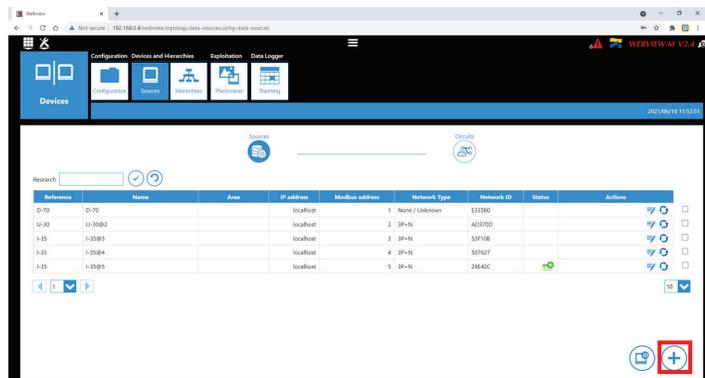


- Once products are added, you can change their names and enter an area to sort them by location.

The “+” button next to the scan button on the bottom right hand side of the screen, allows you to add products manually to the topology, whether they are locally connected to the D-70 via Digiware or RS485 bus, or remote via Ethernet.



- The naming of each module was done from Easy Config System but you can also change the names here in WEBVIEW.



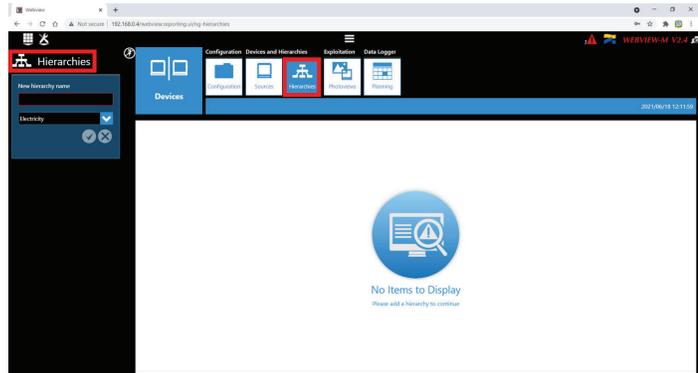
4.2 Configuring Hierarchies

The Hierarchy tab organizes measurement points in the form of a tree, to have a practical overview of the loads.

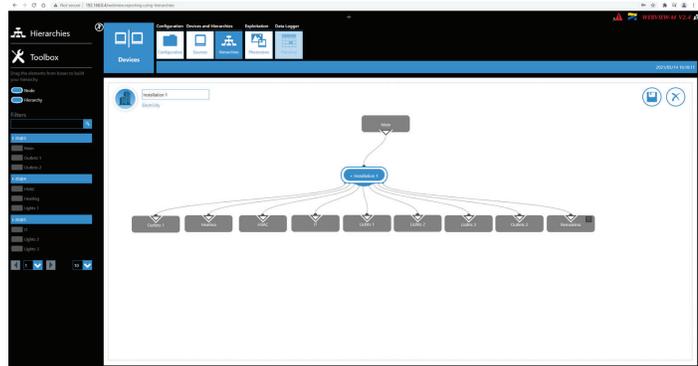
- 1 Click on the "Hierarchy" on the middle of the screen and then click on "Add a Hierarchy".



Choose a name, a fluid and then click the check mark to validate. The modules and associated loads are listed in the left pane.



- 2 Drag and drop the loads on the center of the screen.



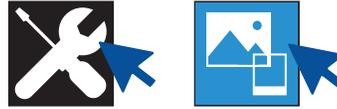
- 3 Once finished, save the Hierarchy by clicking the save symbol next to the "X" on the right hand side of the screen.

Once the hierarchy has been created, the distribution of consumptions per load and peruse can be viewed in the "Consumptions" function.

4.3 Configuring Photoview

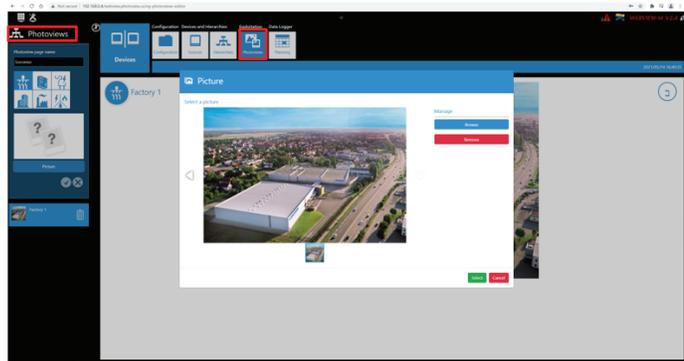
Photoview is an application part of WEBVIEW in the D-70. It allows you to display electrical measurements directly on a chosen background picture. The picture can be a map, a panel, an electrical diagram, etc. It gives you a global view of all your metering points and the electrical data associated to them.

- 1 When logged in as Admin or Super User, click on the toolbox menu on the right side of the screen and click on the "Photoview tab".



- 2 Click on "New Photoview" and then "add a new photoview".

- 3 Give it a name and choose an icon. Then select the picture you would like to use. After click the check mark to validate.

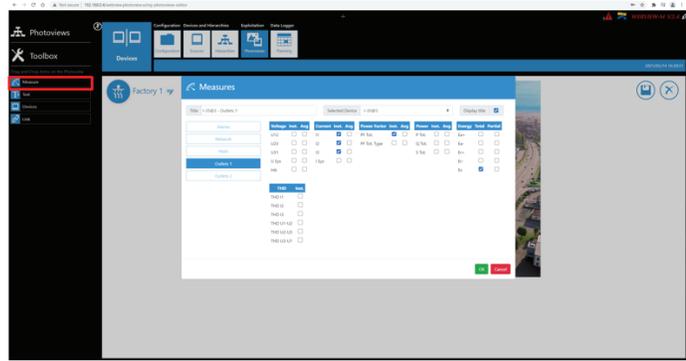


- 4 The picture will now appear on the screen. On the picture, you can drag and drop devices, text and measurements. You can also put a link to create a connection to another Photoview.

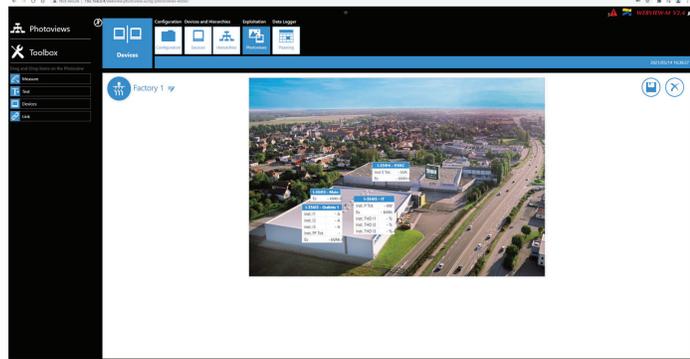
- 5 For example, click and hold on "Measure" and drag it onto the picture. A selection window will open with the list of available devices, loads associated to the devices and data available for each load.



- 6 Select a device and select the different measurements you want displayed on your Photoview.



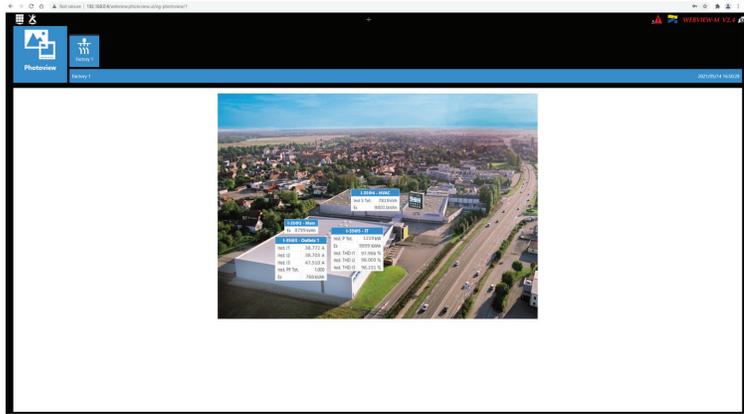
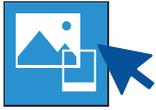
- 7 Once the measurements have been selected, they will be directly displayed on the picture. They can be moved anywhere on the picture.



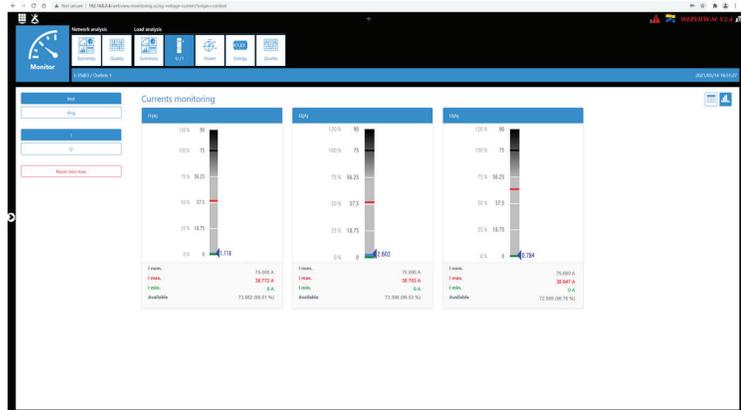
- 8 Double click on the measurement table to go back to the list of devices, loads and measurements.
- 9 Repeat the operation with other devices, other loads and other measurements, taking into account the following limitations:
- Maximum 21 Photoview pictures per D-70 display
 - Maximum 10 devices per Photoview
 - The size of the picture must not exceed 10MB
 - The picture must be in JPEG format
 - The picture's resolution must be max 1920 x 1080 (width x height)
- 10 Once your Photoview is fully configured, click on the save icon on the right side of the screen.
- 11 Go back to WEBVIEW's homepage; a Photoview tab is now available.



- 12 Click on "Photoview". The values are displayed in real time on the picture previously chosen.



- 13 Clicking on a measurement table will redirect you to the device page:



Congratulations! Your configuration is now complete.

If you need any assistance, please email our support team at tech.us@socomec.com.
For all other inquiries, contact info.us@socomec.com.

For more information on our other products and solutions, visit our website at www.socomec.us

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Steps for Commissioning Your DIRIS Digiware using the M-50 Communication Gateway



POWER
MONITORING

GUIDE NO. 3: M50 Communication Gateway with U, I & S Modules



Introduction



This document has been designed in order to help guide the user through the commissioning of the DIRIS Digiware system. In this instance, this will involve only using the M-50 Communication Gateway.

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1. Prerequisites

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3. Configuration of the Modules

- 3.1 Using EasyConfig System for Automatic detection
 - 3.1.1 Automatic detection of modules from the DIRIS Digiware M-50
- 3.2 Configuration of the Diris Digiware U Module
- 3.3 Configuration of the Diris Digiware I Module
- 3.4 Configuration of the Diris Digiware S Module

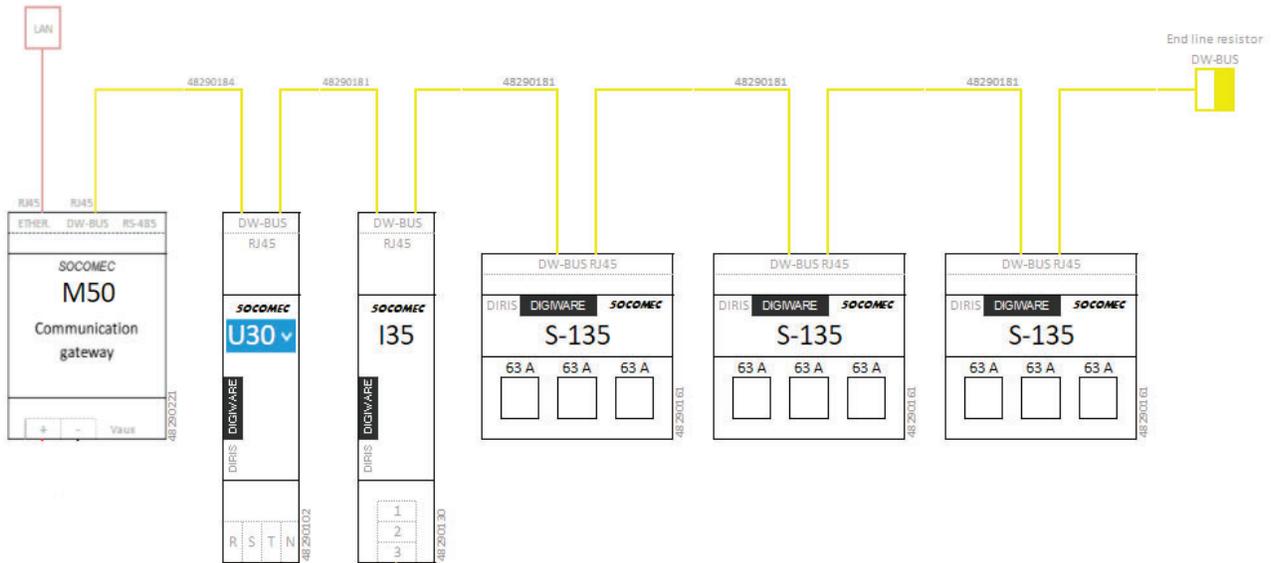
1. Prerequisites

1.1 List of Devices Used

For this commissioning guide, we will be using the following devices:

Part Numbers	Description	Quantity
4829 0221	Diris Digiware M-50 Gateway	1
4829 0102	U-30 Voltage Module (analysis version)	1
4829 0130	I-35 Current Module (analysis version)	1
4829 0161	S-135 Current Module (63 A)	3

Please note that the commissioning steps are the same if other modules are used including, but not limited to, U-10, U-20, I-30, I-33, S130, S-Datacenter.



In order to configure the devices you will need the following:

- One PC equipped with USB ports
- One micro USB type B cable
- The Latest version of the EasyConfig System and Product Upgrade Tool

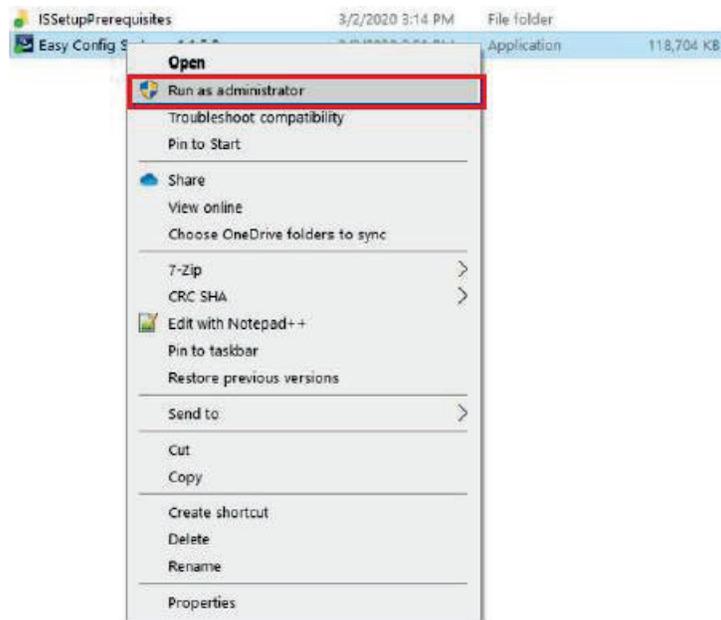
*Software's are available for download on the Socomec website: Socomec.com

1.1 Upgrading the Products

Before commissioning your DIRIS Digiware products, make sure they will operate under the latest firmware version available. The latest firmware versions are available on the Socomec website. The firmware upgrade is done using the **Product Upgrade Tool** software, by connecting a laptop to the Micro USB port of your DIRIS Digiware modules.

1.2 Installing EasyConfig System

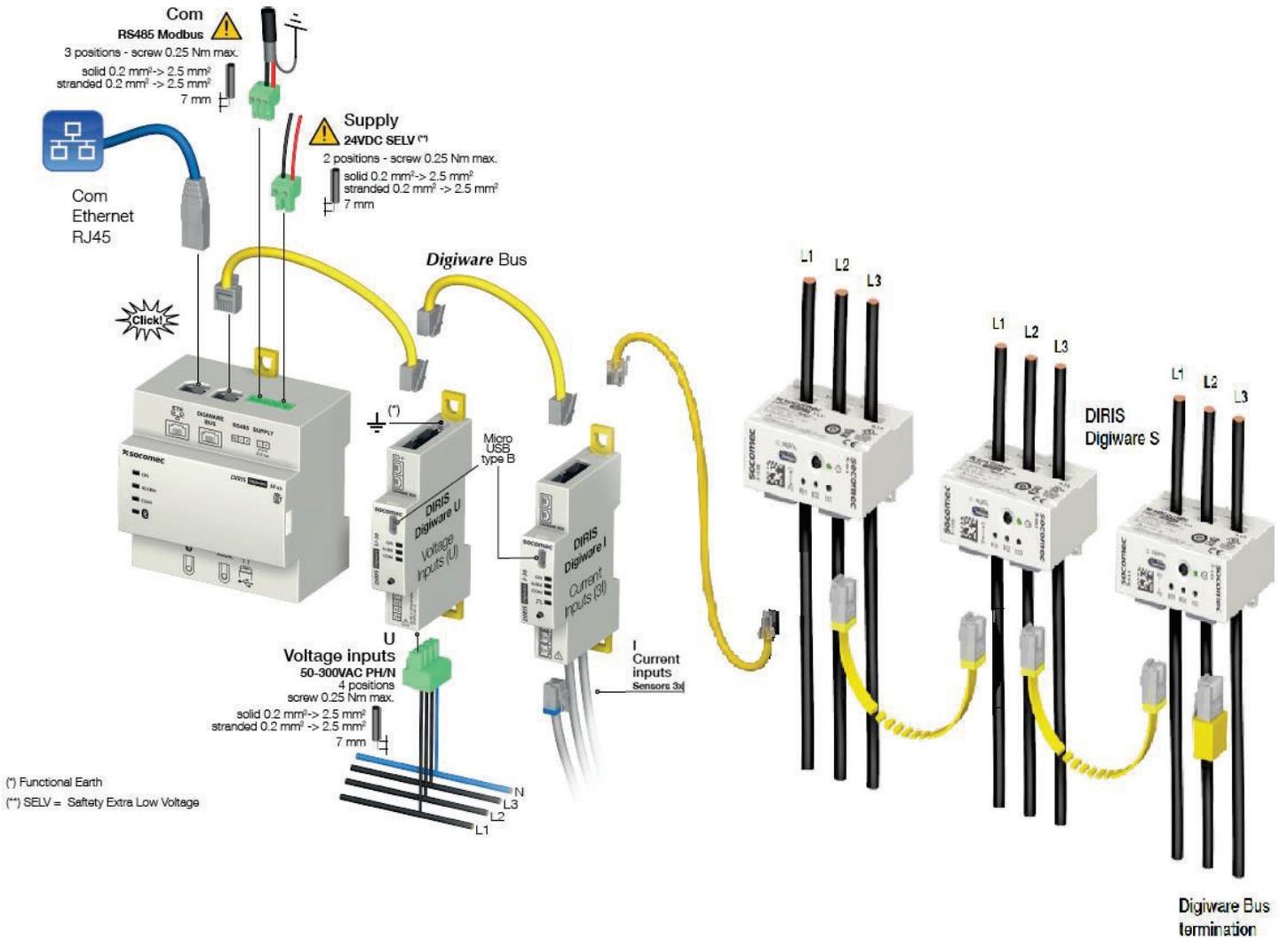
The EasyConfig System software is a free software used for configuring Socomec Power metering devices from a computer. Once the EasyConfig System folder is saved on your computer, right click on the setup file and click **Run as administrator**.



2. Wiring of the System

2.1 Diagram

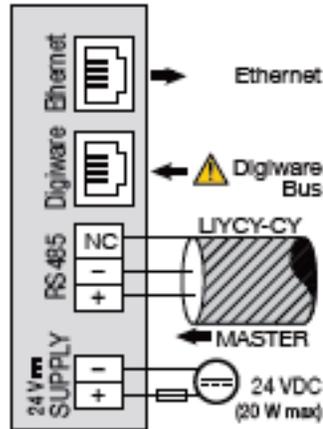
Please Use this as a reference when following the steps for your wiring system.



2.2 Step by Step

To ensure the proper wiring of the system, the following steps need to be completed:

1. Connect the 24VDC power supply to the M-50 Communication Gateway.



2. Using the yellow RJ45 cables connect the Digiware Bus to all of the modules
3. On the last Diris Digiware I module, plug in the Digiware Bus Termination (for our example, it will be connected to the S-135 module)



4. Fit the S Current Modules on to the insulated cables prior to connecting the cables to the load being Metered/Monitored.
5. Connect the current sensors to the Diris Digiware I modules using the RJ12 cables (Input 1 for Line 1, Input 2 for Line 2, etc.)



Please ensure that you do not use the RJ12 cable to connect the Digiware modules together. By using the wrong cable, you run the risk of damaging the pins inside the RJ45 slot which will likely cause the module to malfunction.

3. Configuration of the Modules

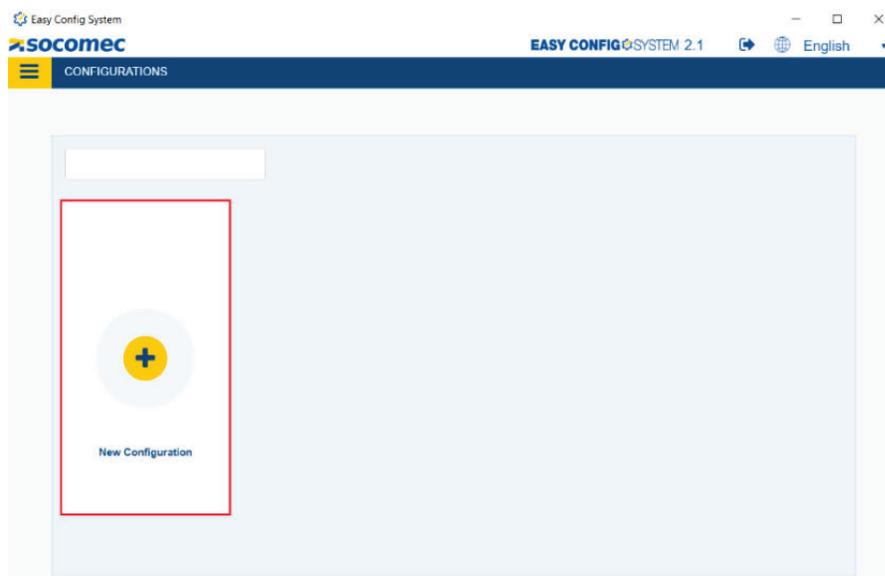
3.1 Using the EasyConfig System & Automatic Detection

For this commissioning guide, we will be using EasyConfig System to configure all of the modules one at a time.

1. Open the **EasyConfig System** SW to configure the modules one at a time
**SW is available online at Socomec.com*
2. When logging in, choose the Admin profile and complete the verification using the information below. Depending on the type of profile that you will have the different capabilities once in the system

Profile	Default Password	Capabilities
User	No Password	<ul style="list-style-type: none">• Visualization• Basic Configuration
Admin	Admin	<ul style="list-style-type: none">• Visualization• Full Configuration• Save System• Open System• Save Template• Upload Template• Template Management Password Modification

3. Create a new configuration by selecting **New Configuration**.



4. In the pop up window name your configuration and choose an icon.

Create Configuration ✕

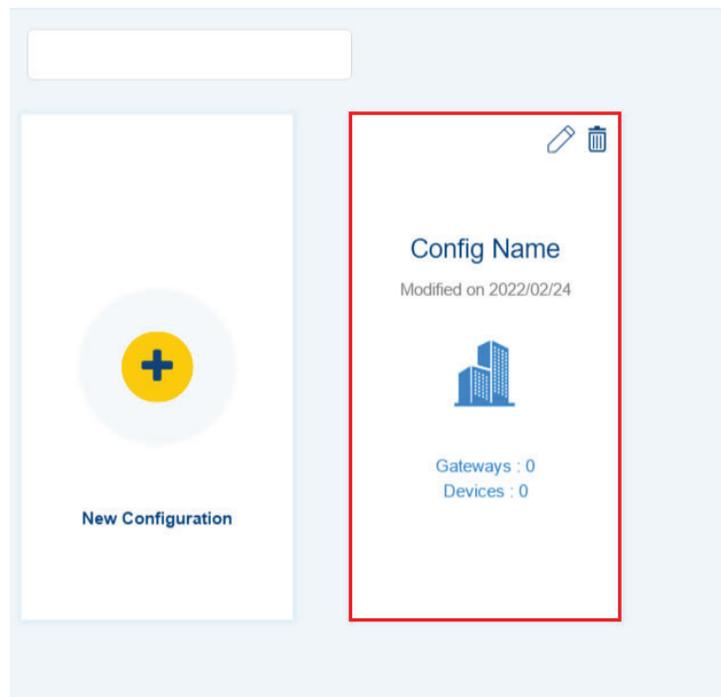
Name

Icon



Create

5. Select the recently created configuration from the list.



Automatic detection of modules from the DIRIS Digiware M-50, using EasyConfig System:

1. Plug the micro USB cable to the slot in the front of the M-50 module. Plug the USB end of the cable to the computer.

 *The DIRIS Digiware M Communication Gateway (M-50 in this example) should be configured first.*

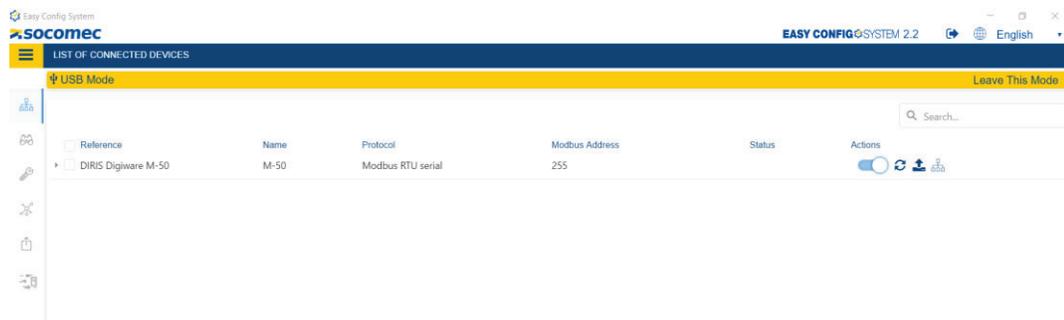
2. Click on the **Device List** icon



3. Navigate to and select **USB mode** on the top right corner to connect to the M-50 gateway and access configuration menus.



The M-50 module will be automatically detected by **EasyConfig System** (shown in the image below). If not, try disconnecting and reconnecting the cable and again clicking on **USB Mode**.



4. Navigate to and select **Device Configuration**. The **Display Settings** section in the **General** tab on the bottom left side of the screen contains information about the language and the settings of the LED backlight Display.



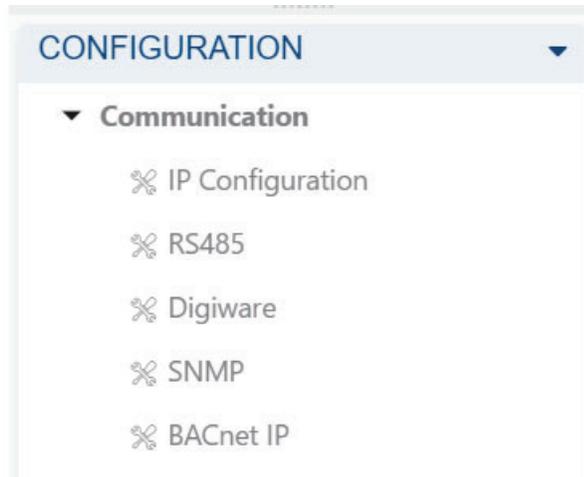
Note: Display settings not available on M-50 module

Once you have entered your parameters, click on **Program** at the top right side of the screen and this will immediately update the DIRIS Digiware M-50. When you click on **Program**, it flashes the parameters of the tab that you are currently working on to the module.

5. The **Auto-discovery Settings** section allows you to choose the method of auto discovery from the below options:

- **Fast** if there is only Digiware products connected to the M-50
- **Full** if there is non-Digiware connected to the M-50 via the RS485 bus

- Next the **Communication** tab will show the different communication parameters (IP Address, MODBUS Address, Baud rate, etc.).

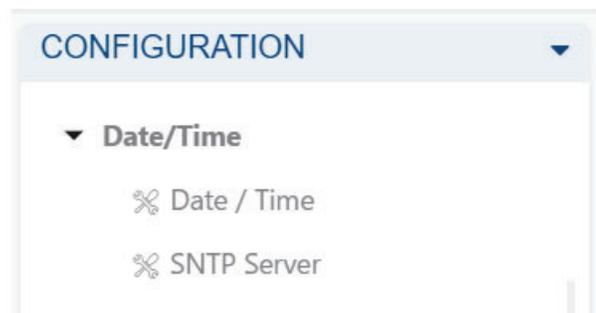


The IP address and the Modbus address will give you the capability to connect and communicate with the product. The RS485 port can be configured as a master or a slave under the **RS485** section. If you are using Modbus communication over RS485, you have to select **Slave** in the **RS485 Mode**.

i Each Device on the Digiware Bus has its own MODBUS/JBUS address. This unique address is a number between 1 and 247. The default JBUS/MODBUS address of devices is as follows:

- DIRIS Digiware M-50, M-70, D-50, D-70: Address 001
- U-10, U-20 and U-30 Modules: Address 006
- S-130, S-135, I-30, I-31, I-33, I-35, I-45, I-60 and I-61 Modules: Address 005

- Next click on the **Date/Time** tab. You can configure the time synchronization, slave time update, etc. in this section.

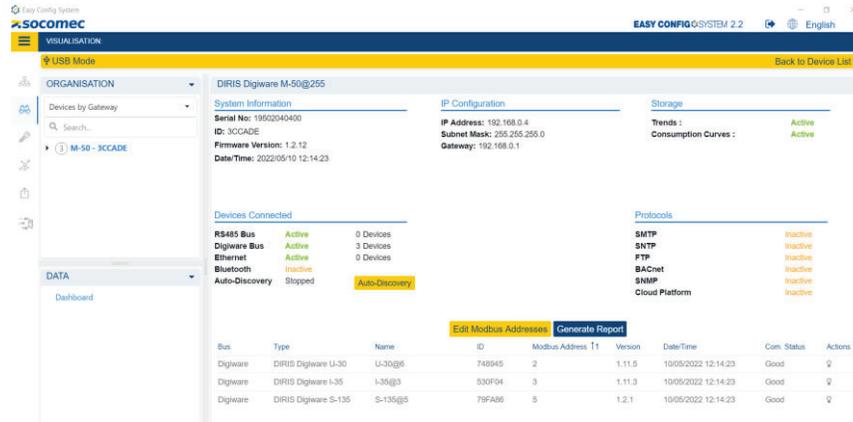


- Continue to go through each tab, and configure the M-50 as needed for your application.

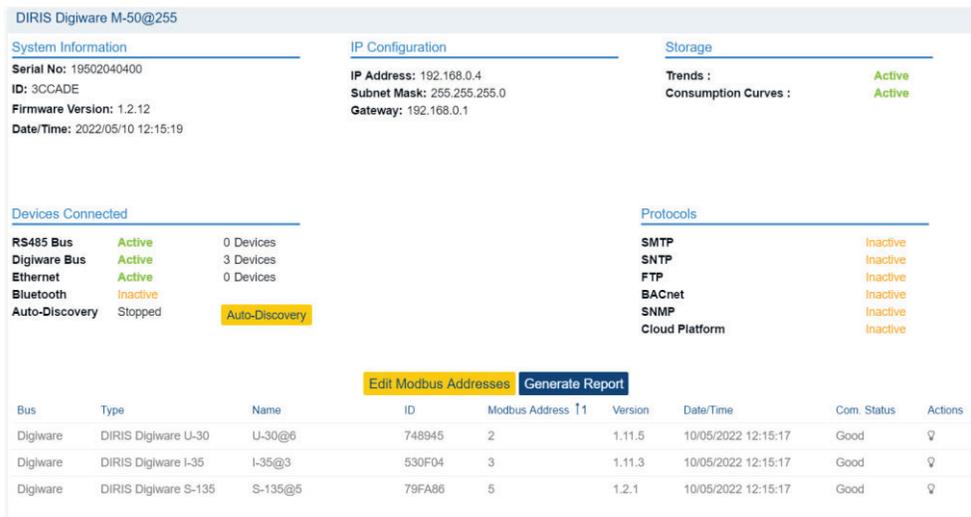
9. Click on the **Real Time Visualization** icon on the left side bar.



10. Navigate to and select **Auto-discovery** in the middle of the screen. The Auto discovery will detect all Digiware modules on the Digiware bus (and all the other products connected via the RS485 bus if the **Full** mode has been activated).



After few minutes, the product list will be displayed. If this is the first time you configure the modules, the Modbus address will be automatically changed in order to not have any Modbus addresses conflicts. You can change the Modbus addresses by clicking on **Edit Modbus Addresses** shown in the image below.



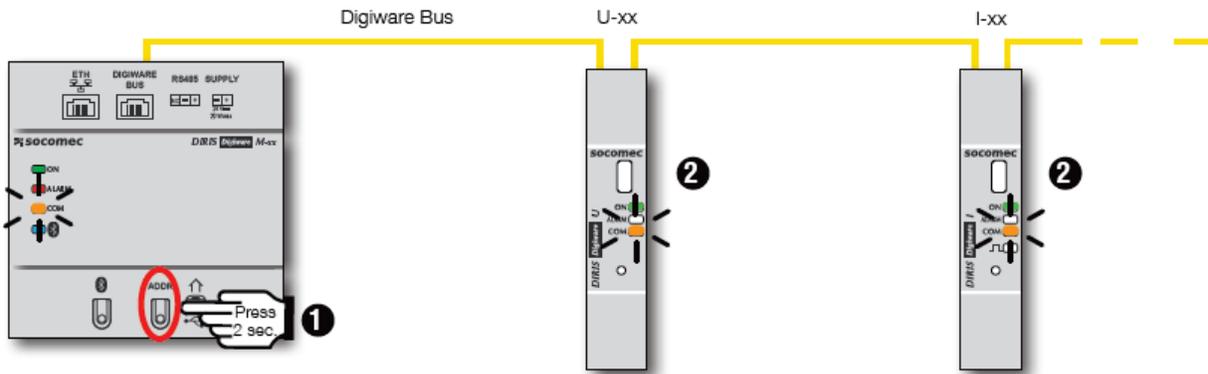
*The auto discovery process can also be launched directly from the M-50 Communication Gateway by pressing the **ADDR.** Button under the M-50 for 2 seconds.*

The auto-discovery process will discover devices connected to the Digiware bus and RS485 bus and assign them with a unique Modbus address. See Section 3.1.1.

3.1.1 Automatic detection of modules from the DIRIS Digiware M-50

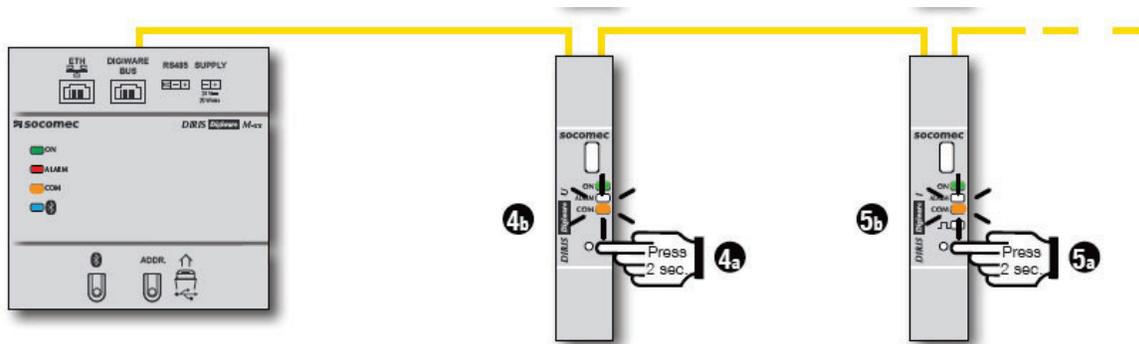
If an Auto Discovery has already been performed via EasyConfig System proceed to section 3.2.

1. Once the system is fully wired and powered, you must launch the auto-discovery process by pressing the “ADDR.” Button under the M-50/M-70 for 2 seconds.



The auto-discovery process will discover devices connected to the Digiware bus and RS485 bus and assign them with a unique Modbus address.

2. If multiple devices have the same Modbus address (which is common as multiple modules and devices may come out with the same factory default settings), there will be an address conflict during the auto-discovery process which is perfectly normal. All devices with an addressing conflict will have a fixed COM LED. To resolve address conflicts, press the front button of each module that has a fixed COM LED for 2 seconds.



i The order you will use to press the push buttons on the modules will also determine the order for the Modbus addressing of those modules.

3.2 Configuration of the Diris Digiware U Module

The DIRIS Digiware U module (U-30 in this example) should be configured before the Diris Digiware I modules. When you apply the configuration to the DIRIS Digiware U module, the configuration will automatically be applied to the DIRIS Digiware I module

1. Navigate to and select **Device Configuration**. Once you select the symbol a list of products available for configuration will appear.



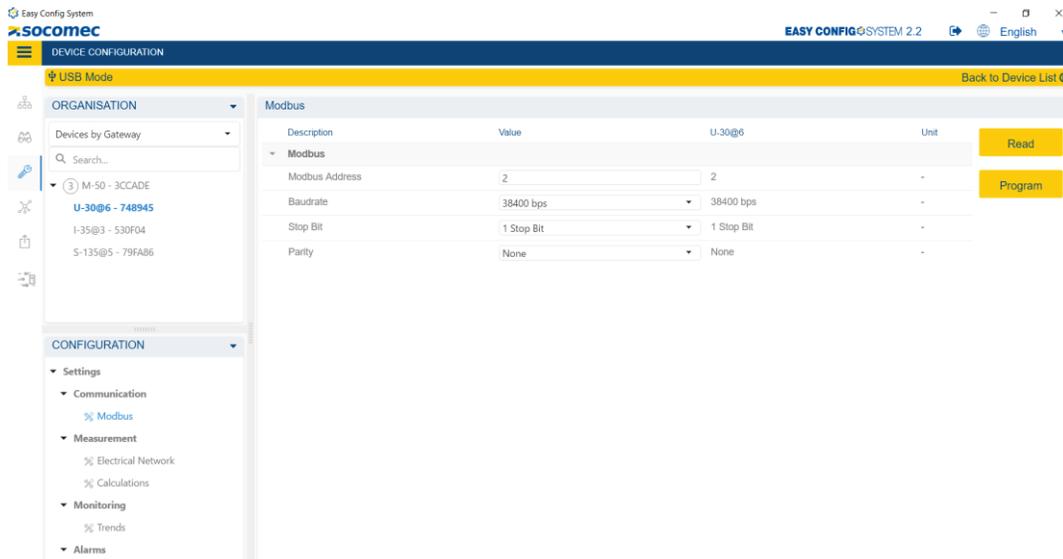
2. Click on **Modbus** on the bottom left hand side of the screen. The **Modbus** page of the U-30 module will be displayed. It contains information regarding the device identification as well as communication parameters (Type, MODBUS address, Baud rate, etc.)



Each Device on the Digiware Bus has its own MODBUS/JBUS address. This unique address is a number between 1 and 247

The default JBUS/MODBUS address of devices is as follows:

1. DIRIS Digiware M-50, M-70, D-50, D-70: Address 001
2. U-10, U-20 and U-30 Modules: Address 006
3. I-30, I-31, I-33, I-35, I-45, I-60 and I-61 Modules: Address 005
4. The C-31 interface does not have a MODBUS address



Once you have entered your parameters, click on **Program** at the top right of the screen and the module will immediately update. Clicking on **Program**, updates the module with the information of the tab that you are currently working on.

- The **Measurement** tab on the bottom left of the screen corresponds to the Electrical Network Configuration. Navigate to and select **Electrical Network**, select the network **Type** based on where the voltage is measured by the U-30 module as well as the nominal voltage.

1P + N: Single-phase network
 2P: Two-phase network
 2P + N: Two-phase network + neutral
 3P: Three-phase network
 3P + N: Three-phase network +neutral

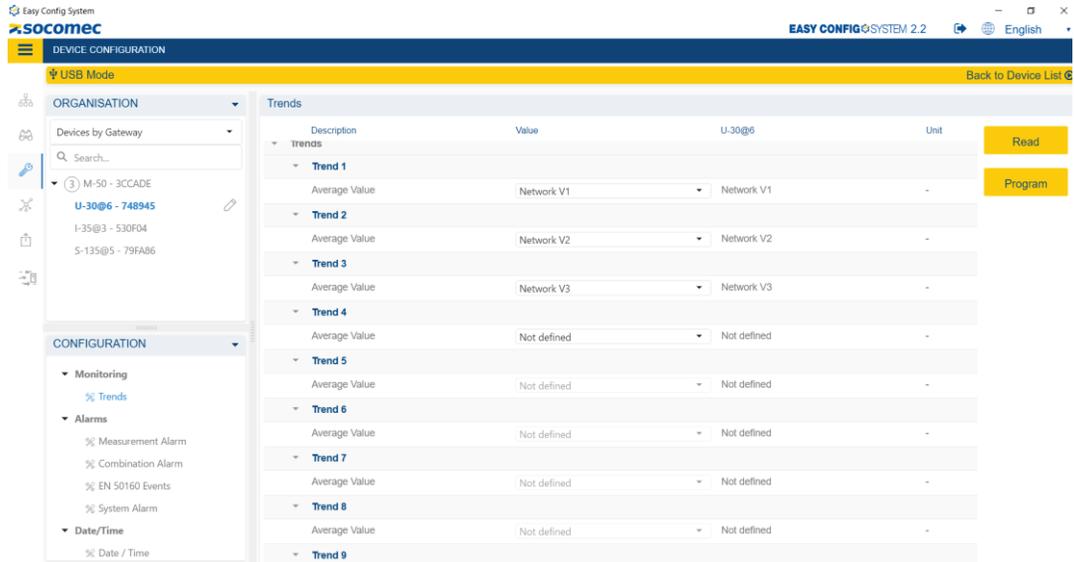
For a three-phase or two-phase network, the nominal voltage of the network is typically 208V, 240V, 480V, etc.

For a single-phase system, the nominal voltage is typically 120V in the USA and 230V in Europe

- The **Calculation** section under the **Measurement** tab is where you can enter the integration periods for the average values.

Description	Value	U-30@6	Unit	
Calculations				
Integration Periods				
Integration Period - Inst. Values	5	5	x0.2 s	Read
Integration Period - Avg Values	15 Minutes	15 Minutes	-	Program
Integration Period - Load Curves	15 Minutes	15 Minutes	-	
Load Curves Synch. Source	Internal Clock	Internal Clock	-	
THD				
THD Type	THD (Fundamental)	THD (Fundamental)	-	
THD Method	Total	Total	-	
Other				
Calculation method for Q/S/Er/Es/PF	Vector	Vector	-	
PF Convention	IEC	IEC	-	

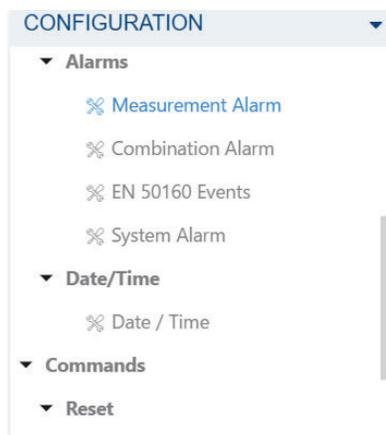
- In the **Trends** section under the **Monitoring** tab you can select the parameters that you want stored in the memory over time. These parameters are called historical measurements.



- The **EN 50160 Events** tab allows you to adjust the thresholds for Power Quality Events such as voltage sags, swells and interruptions.



- The **Alarms** tab allows you to set up alarms. They can be based on measurements, combination of measurements, on a commissioning error, or on a Power Quality event (voltage dip/sag, swell, interruption).



8. The **Reset** tab allows you to do a reset on specific memory categories of the device.

The configuration of your DIRIS Digiware U - Module is now complete!

3.3 Configuration of the Diris Digiware I Module

The Diris Digiware I-Current Module will be automatically detected by EasyConfig System. If not, try disconnecting and reconnecting the cable and again clicking on **USB Mode**.

1. Navigate to and select **Device Configuration**. The **Device Configuration** menu allows the user to read/program the parameters on the I-35.



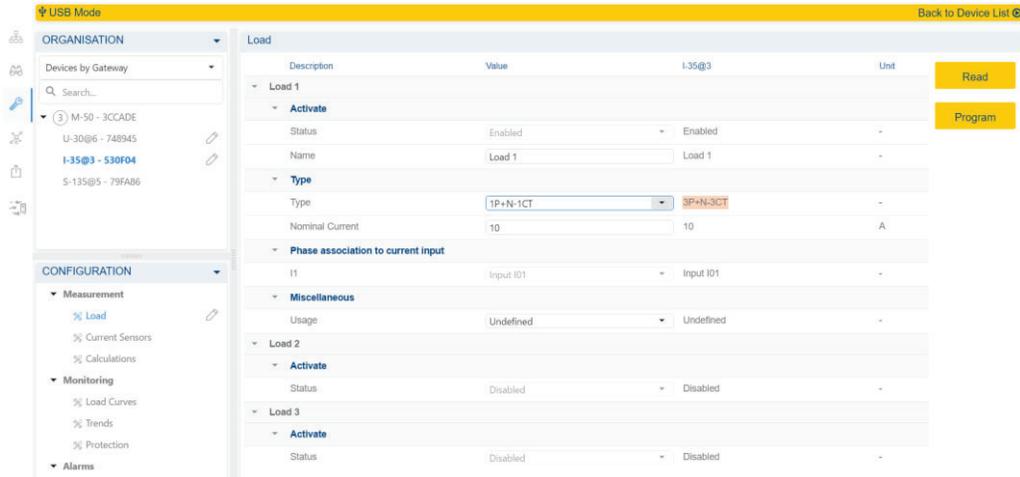
2. In the **Configuration** section on the bottom left of the screen navigate to **Communication** and select **Modbus**. The **Modbus** page of the I-35 will be displayed. It contains the information on the Modbus address.

The screenshot shows the 'USB Mode' interface. On the left, there is a sidebar with 'ORGANISATION' and 'CONFIGURATION' sections. Under 'CONFIGURATION', 'Communication' is expanded to show 'Modbus'. The main area displays the 'Modbus' configuration for 'I-35@3'. It includes a table with columns for 'Description', 'Value', and 'Unit'. The 'Modbus Address' is set to '3'. There are 'Read' and 'Program' buttons for the configuration.

Description	Value	Unit	
I-35@3			Read
Modbus			
Modbus Address	3		Program

3. Under the measurement section the **Load** section allows you to configure the different loads connected to the module. You must configure:

- The number of loads measured
- For each load, the type of load measured, and the nominal current.



4. The Current Sensors tab allows you to configure the current sensors depending on the loads. You must configure:

- For each load, the phase(s) on which the sensor(s) are connected.
- For each sensor, you may need to adjust the direction of current in the case of wiring error.

i The maximum number of loads for an I-3x current module is 3, because there are 3 sensor inputs on the Module.

The measured load can be:

- Single-phase load measured by 1 sensor (1P + N – 1CT)
- Three-phase load without unbalanced neutral measured by 2 sensors (3P – 2CT), with the 3rd current derived from a vector sum
- Three-phase load with or without unbalanced neutral measured by 3 sensors (3P – 3CT or 3P + N – 3CT)
- Three-phase balanced load with or without neutral measured by 1 sensor (3P – 1CT or 3P + N – 1CT)

For a balanced load measured by a single sensor you can connect this sensor to any phase.

The rating of the sensor is always automatically detected and it is not possible to change it

Repeat the process with all remaining I Current Modules.

Once the I-Current Module configuration is finished, move onto the S-Current Module Configuration.

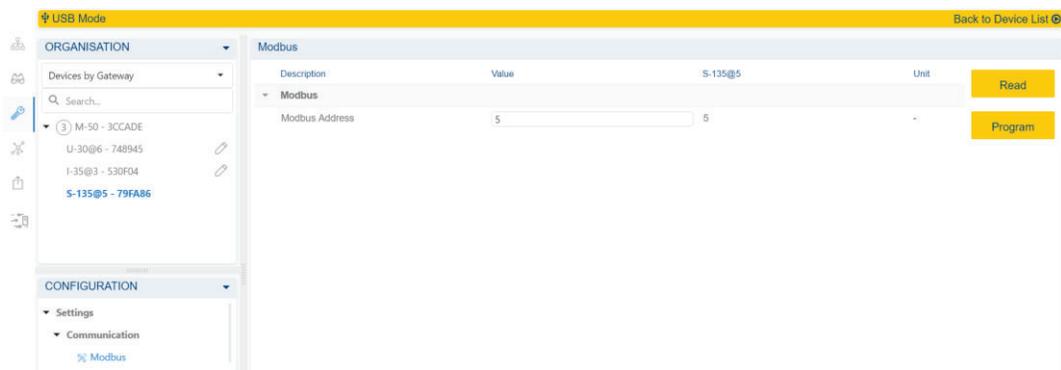
3.4 Configuration of the Diris Digiware S Module

The Diris Digiware S-Module will be automatically detected by EasyConfig System. If not, try disconnecting and reconnecting the cable and again select **USB Mode**.

1. Navigate to and select **Device Configuration**. The **Device Configuration** menu allows the user to read/program the parameters on the S-135.

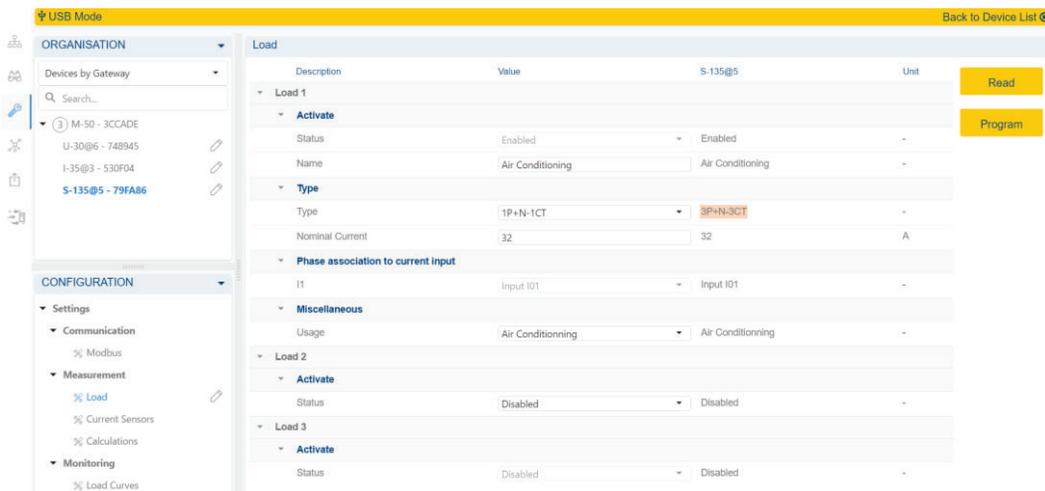


2. In the **Configuration** section on the bottom left of the screen navigate to **Communication** and select **Modbus**. The **Modbus** page of the S-135 module will be displayed. It contains the information on the Modbus address.



3. Under the **Measurement** section the **Load** allows you to configure the different loads connected to the module. You must configure:

- The number loads measured.
- For each load, the type of load measured and the nominal current



4. The Current Sensors tab allows you to configure the current sensor depending on the loads. You must configure:

- For each load, the phase(s) on which the sensor(s) are connected.
- For each sensor, you may need to adjust the direction of the current incase of a wiring error.

Current Sensors			
Description	Value	S-135@5	Unit
▼ Current Sensors			
▼ Input I01			
Rating	<input type="text" value="63"/>	63	A
CT 1 way	<input type="text" value="Positive"/>	Positive	-
Associated Voltage	<input type="text" value="V1"/>	V1	-

Read

Program

Repeat the steps above for all the Diris Digiware S- Modules on the Digiware Bus.

Once all modules are configured, the system is ready to read correct values and to communicate through Modbus to an external device and software.

You can use the tab **Real Time visualization** in order to visualize live measurements, phasor diagrams, and energies. You will be able to verify that the readings are consistent and approve that there is no wiring error.



Congratulations! Your configuration is now complete.

If you need any assistance, please email our support team at tech.us@socomec.com.
For all other inquiries, contact info.us@socomec.com.

For more information on our other products and solutions, visit our website at www.socomec.us

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Power metering and monitoring system for AC and DC electrical installations

DIRIS Digiware



When **energy** matters

DIRIS Digiware

Elevating power monitoring to a new level

Master your electrical installation and transform your performance with the most versatile and intelligent power monitoring system available.

The DIRIS Digiware system is a hub of technological innovations that has revolutionized the world of power monitoring - bringing a high degree of flexibility to installations and making connection and configuration easier than ever before.

A complete Socomec solution, DIRIS Digiware delivers unrivaled performance in terms of accuracy and functionality – whilst being tailored to your system architecture.

The most effective solution for monitoring the performance of your electrical installation – and that's proven.

Smart

Innovation you can rely on

- Fast RJ45 interconnection of modules (Digiware bus).
- Fast RJ12 current sensor connection.
- Unique class 0.5 system accuracy.
- Exclusive technologies for maximum reliability.

Versatile

A complete solution – with just one system

- Compatible with AC or DC applications.
- One system to monitor from the main incomer down to individual branch circuits.
- Complete solution from current sensors to software.

Scalable

Evolving with you, for you – at your pace

- The first system to be 100% customizable to your precise requirements.
- Modular concept for multi-circuit applications.
- An interoperable ecosystem, scalable with the evolution of your facility's strategy.

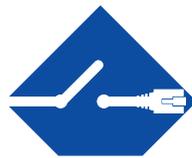
Groundbreaking technologies for greater simplicity and performance*



PreciSense

Best-in-class accuracy

- For the global measurement chain.
- Even at low load current.



VirtualMonitor

Smart monitoring of your protective devices

- Across your entire electrical installation.
- Remotely and in real-time.
- Without additional hardware or wiring.



AutoCorrect

Guaranteed reliability

- Automatic detection of wiring errors.
- Remote software correction.
- Feature available off-load.

* Only available with DIRIS Digiware AC.

VirtualMonitor and AutoCorrect are available with:



DIRIS A-40 and DIRIS Digiware I
Associated with iTR sensors



DIRIS Digiware S



DIRIS Digiware BCM

Put together your own AC or DC metering and monitoring system

A single point of access to AC and DC measurement data for local or remote analysis

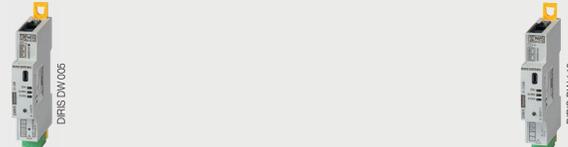
1



DIRIS Digiware D *DIRIS Digiware M* **+** *WEBVIEW-M*

Voltage acquisition modules for AC or DC measurement

2



DIRIS Digiware U *DIRIS Digiware Udc*

Current acquisition modules for AC or DC measurements

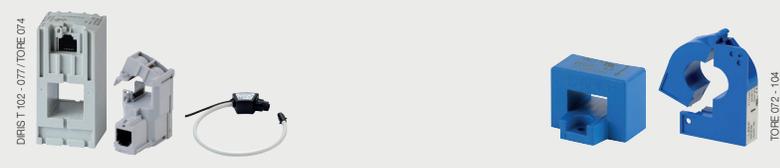
3



DIRIS Digiware S *DIRIS Digiware BCM* *DIRIS Digiware I* *DIRIS Digiware Idc*
All-in-one with 3 integrated current sensors All-in-one with 21 integrated current sensors To be associated with external AC or DC sensors

Solid-core and split-core current sensors for AC or DC measurement

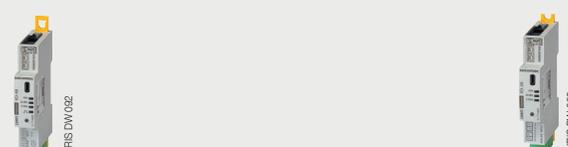
4



AC sensors *TE, TR, iTR, TF* DC sensors

Digital and analog input/output modules

5



DIRIS Digiware IO-10 *DIRIS Digiware IO-20*

Create your project

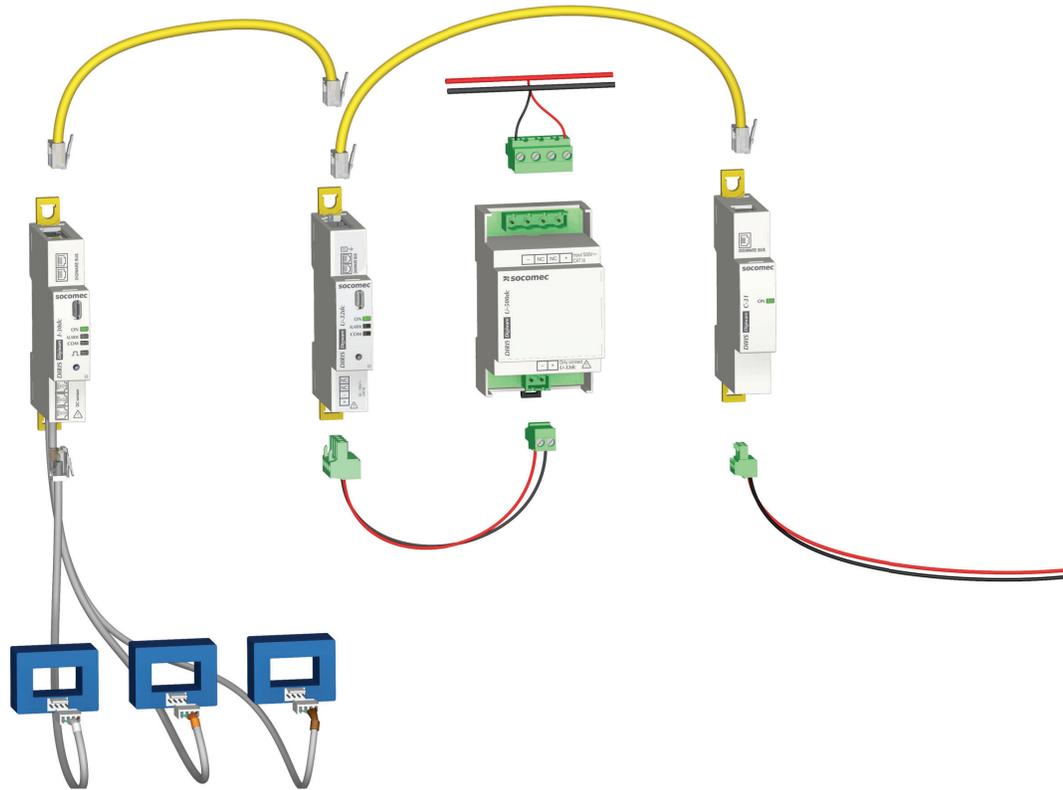
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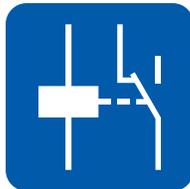
DIRIS Digiware DC system



The solution for



Telecom



Control
circuits

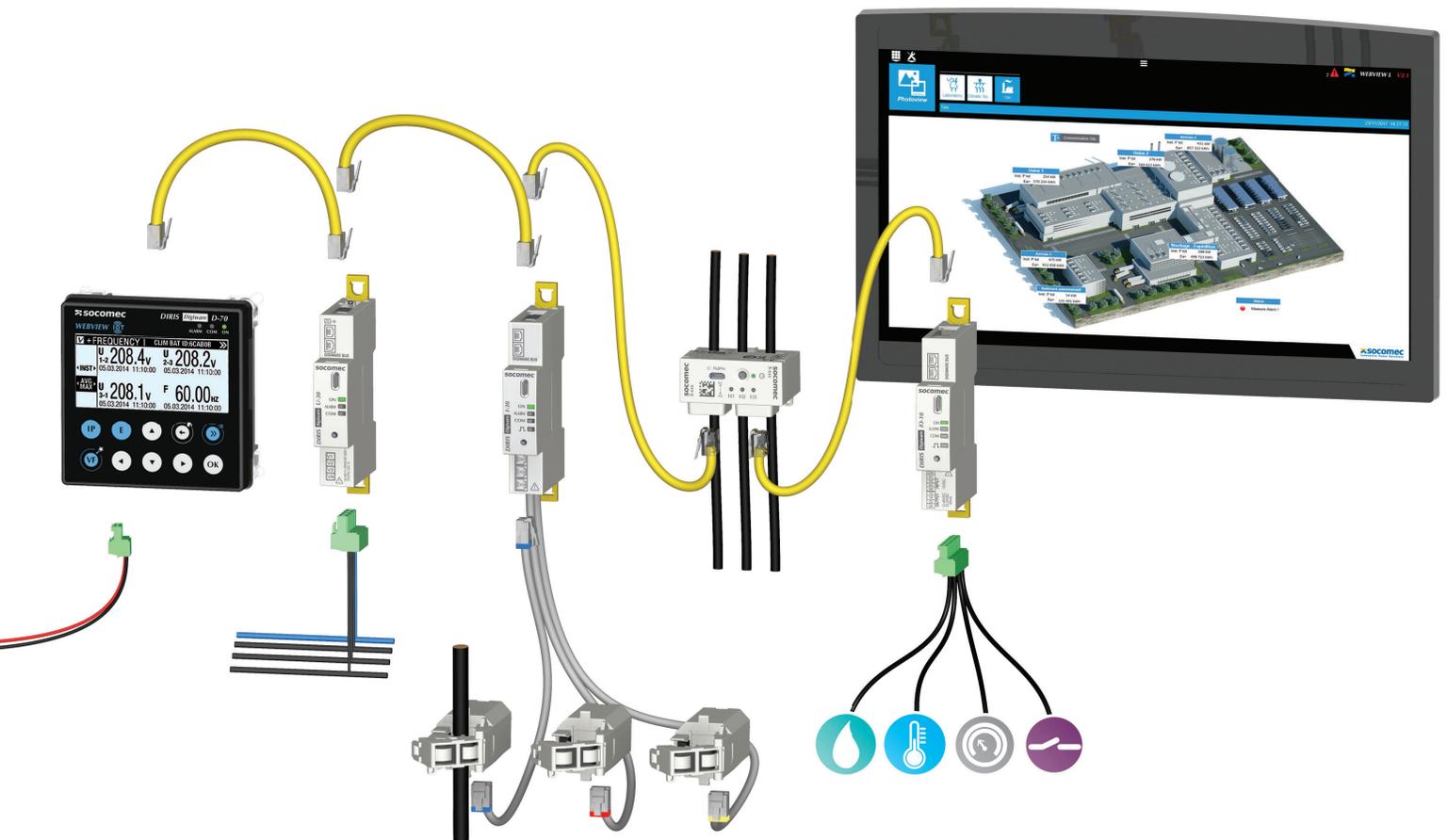


Renewable
power

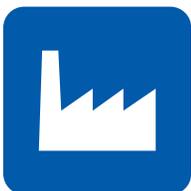


Micro grid

DIRIS Digiware AC system



The solution for



Industry



Building



Data center



Infrastructure

A single point of access to AC and DC measurement data

DIRIS Digiware D & M

The DIRIS Digiware D and M act as a system interface (24 VDC power supply and communication) for all downstream products. They are your point of access for measurements and can communicate via multiple protocols over serial RS485 or Ethernet.



Connected

- Equipped with multiple communication protocols: Modbus RTU/TCP, BACnet IP, SNMP v1, v2, v3 & Traps.



Embedded software

- WEBVIEW-M visualization software embedded in DIRIS Digiware M-70/D-70.



IOT ready

- Automatic data export with customizable format via FTP(S) to a remote server.
- Email notifications in case of alarms (SMTP).

Bonus

Cyber security is now integrated in all our gateways and displays to protect the confidentiality and integrity of your measurements.



APPLU 637

	Panel mounted display		DIN rail mounted interface and gateway		
					
	D-50	D-70	C-31	M-50	M-70
Inputs	Digiware/RS485	Digiware/RS485	Digiware	Digiware/RS485	Digiware/RS485
Outputs	Ethernet/RS485	Ethernet/RS485	RS485	Ethernet/RS485	Ethernet/RS485
Protocols	Modbus RTU	Modbus RTU	Modbus RTU	Modbus RTU	Modbus RTU
	Modbus TCP	Modbus TCP		Modbus TCP	Modbus TCP
	BACnet IP	BACnet IP		BACnet IP	BACnet IP
	SNMP v1, v2, v3	SNMP v1, v2, v3		SNMP v1, v2, v3	SNMP v1, v2, v3
Data export	•	•		•	•
Webserver	WEB-CONFIG	WEBVIEW-M		WEB-CONFIG	WEBVIEW-M

Voltage acquisition modules

DIRIS Digiware U & Udc

The DIRIS Digiware U and Udc modules measure the voltage reference for the entire DIRIS Digiware AC and DC system. The RJ45 Digiware bus transmits the voltage measurement as well as power supply to all products connected to the Digiware bus.



Flexible

- Complete, dedicated offer for metering, monitoring and power quality analysis.
- AC or DC electrical installations.



Safe

- No hazardous voltage on panel doors.

Bonus

Only **one voltage tap** for the entire system means that cabling and fuse protection are minimized inside electrical panels.

Applications	AC voltage measurement		DC voltage measurement	
	Metering	Analysis	Analysis	Analysis
				
DIRIS Digiware U	U-10	U-30	U-31dc	U-32dc
Measuring range (min-max)	50-300 VAC Ph/N		19.2 VDC - 60 VDC	48 VDC - 180 VDC
Multi-measurement AC				
U12, U23, U31, V1, V2, V3, f	•	•		
U system, V system		•		
Ph/N & Ph/Ph unbalance		•		
AC quality				
THD U, THD V		•		
Individual harmonics U/V		•		
Voltage sags, interruptions and swells (EN50160)		•		
Multi-measurement and DC quality				
DC voltage (VDC)			•	•
Ripple voltage (V ripple)			•	•
Vrms			•	•
Alarms (threshold)		•	•	•
History of average values		•	•	•
Width/Number of modules	0.70 in/1	0.70 in/1	0.70 in/1	0.70 in/1

U500dc, U1000dc and U1500dc adaptors

They can be combined with a DIRIS Digiware Udc module

The DC voltage adaptors are optionally used in addition to Udc voltage acquisition modules enabling the measurement of higher voltages up to 1500 VDC.

These adaptors make the DIRIS Digiware DC system suitable for use anywhere along the low voltage DC electrical distribution, regardless of the voltage level.



Multi-circuit current acquisition module with integrated sensors

DIRIS Digiware S & DIRIS Digiware BCM

Positioned directly above or below the protective devices, DIRIS Digiware S & BCM modules are associated with the DIRIS Digiware U voltage measurement module to measure consumption, to monitor the electrical installation and the quality of the power supply.



DIRIS Digiware S is a multi-circuit current measurement module with 3 integrated sensors and allows the monitoring of three-phase or single-phase circuits up to 63 A.

DIRIS Digiware BCM is a multi-circuit current measurement module with 21 integrated sensors and allows individual branch-circuit monitoring of any electrical panelboard. It is also equipped with three RJ12 channels to connect TE/TR/ITR/TF current sensors or Δ IC zero sequence CTs for earth leakage monitoring.



Did you know?

DIRIS Digiware BCM and DIRIS Digiware S come with exclusive technologies.



Smart monitoring of your protective devices

- Across your entire electrical installation.
- Remotely and in real-time.
- Without additional hardware or wiring.



Guaranteed reliability

- Automatic detection of wiring errors.
- Remote software correction.
- Feature available off-load.

3x

3x quicker to install than standard solutions

- The integrated current sensors do not require any extra wiring for CTs.
- Quick RJ45 connection between Digiware modules.

2x

2x quicker to configure than standard solutions

- Easy Config System Software - free of charge – simplifies configuration by providing configuration templates that can be saved and uploaded quickly on multiple Digiware modules.



Maximum reliability

- Class 0.5 accuracy according to ANSI C12.20 and IEC 61557-12 standards for accurate measurements over a wide measurement range.

The advantages of the DIRIS Digiware BCM module

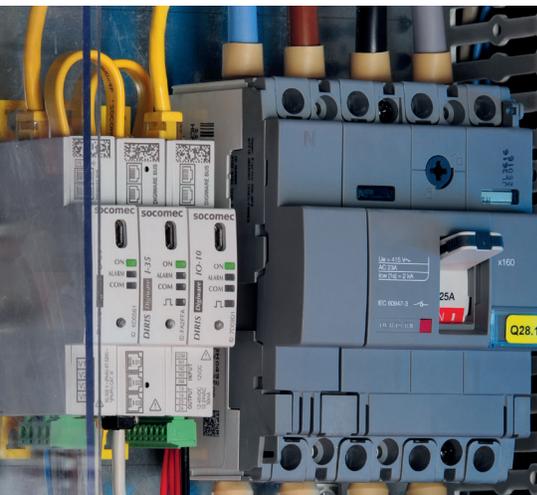
- The same Digiware BCM module can monitor 21 circuits plus a main feed.
- No additional CT leads required.
- Power metering and earth leakage monitoring.
- A robust plastic cover safeguards the electronic components and reduces the risk of breakage.

						
	S-130	S-135	BCM-2119	BCM-2119VM	BCM-2125	BCM-2125VM
DIRIS Digiware						
Number of current inputs	3	3	21 + 3x RJ12	21 + 3x RJ12	21 + 3x RJ12	21 + 3x RJ12
Maximum current (A)	63	63	80	80	120	120
Metering						
+/-kWh, +/-kvarh, kvah	•	•	•	•	•	•
Multi-tariff (max. 8)		•	•	•	•	•
Load curves		•	•	•	•	•
Multi-measurement						
I1, I2, I3, In, ΣP , ΣQ , ΣS , ΣPF	•	•	•	•	•	•
P, Q, S, PF by phase		•	•	•	•	•
Predictive power		•	•	•	•	•
Current unbalance		•	•	•	•	•
Phi, cosPhi, tanPhi		•	•	•	•	•
Virtual Monitor	•	•		•		•
Quality						
THD I		•	•	•	•	•
Individual harmonics I		•	•	•	•	•
Overcurrents		•	•	•	•	•
Alarms (threshold)		•	•	•	•	•
History of average values		•	•	•	•	•

3 Current acquisition modules

DIRIS Digiware I & Idc

The DIRIS Digiware I and Idc modules are associated with external smart current sensors for energy metering, power monitoring and power quality analysis of AC and DC loads.



Plug & Play

- Fast RJ45 interconnection of modules (Digiware bus).
- Color-coded RJ12 cables make wiring easy and error-free.
- Automatic configuration of connected current sensors: type, current rating, orientation and load type.



Comprehensive

- A complete range dedicated to energy metering, power monitoring and power quality analysis applications.
- Available in versions with 3, 4 or 6 current inputs.
- Modules for both AC and DC electrical installations.

Bonus

The RJ45 connection allows you to **quickly add** up to 32 DIRIS Digiware I or Idc modules, therefore enabling the monitoring of a large number of circuits.

									
	I-30	I-31	I-35	I-43	I-45	I-60	I-61	I-30dc	I-35dc
Application	Current measurement (AC)						Current measurement (DC)		
	Metering		Analysis	Monitoring	Analysis	Metering		Metering	Analysis
Number of current inputs	3	3	3	4	4	6	6	3	3
Metering									
+/- kWh, +/- kVarh, kVAh	•	•	•	•	•	•	•	• (+/-) kWh	• (+/-) kWh
Multi-tariff (max. 8)		•	•		•		•		•
Load curves		•	•		•		•		•
Maximum demand			•		•				•
Multi-measurement AC									
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•		
P, Q, S, PF per phase		•	•	•	•		•		
Predictive power			•		•				
Current unbalance			•		•				
Phi, cos Phi, tan Phi			•						
AC quality									
THDI			•	•	•				
Individual harmonics I			•		•				
Overcurrents			•		•				
Multi-measurement DC									
DC current and power (I DC, P DC)								•	•
DC predictive power									•
DC quality									
Ripple current (I ripple)									•
I RMS									•
Alarms on thresholds		• (Power)	•		•		• (Power)		•
Inputs / outputs				2/2	2/2				
History of average values			•		•				•
Width / number of modules	0.70 in/1	0.70 in/1	0.70 in/1	1.06 in/1.5	1.06 in/1.5	1.42 in/2	1.42 in/2	0.70 in/1	0.70 in/1

Removable connector

For busway and MCC drawers

The removable Digiware connector allows you to disconnect a Digiware module from the bus, while ensuring the continued operation of the rest of the DIRIS Digiware system. The accessory is very useful in applications using pullout drawers or for busway distributions in data centers.



DIRIS 0.025

4 Current sensors

TE, TR, iTR & TF sensors

A wide range of solid-core, split-core and flexible current sensors is available to meet any integration requirements from 5 to 6000 A. Totally flexible, they measure the current in new or existing installations.



Did you know?

Current sensors integrate exclusive technologies.



Best-in-class accuracy

- For the global measurement chain.
- Even at low load current.



Guaranteed reliability

- Automatic detection of wiring errors.
- Remote software correction.
- Feature available off-load.



Smart sensors

- Automatic rating detection.
- Safe disconnection of the current sensor under load.
- Fast connection via RJ12 and identification of cables by color-coding.



Compact

- The most compact current sensors on the market.
- Linear or staggered assembly to match the pitch of protective devices.

Bonus

Class 0.5 system accuracy on a wide measurement chain (2 – 120 % I_n) with TE, iTR and TF current sensors.

TE solid-core sensors	Rated currents (A)										Real range covered (A)	Pitch (in)	Aperture (in)		
	5	20	25	40	63	160	250	400	600	630				1000	2000
													12 ... 2400	3.54	2.52 x 2.52
													8 ... 1200	2.16	1.61 x 1.61
													3.2 ... 756	1.77	1.22 x 1.22
													1.26 ... 300	1.37	0.82 x 0.82
													0.8 ... 192	0.98	0.53 x 0.53
													0.5 ... 75	0.7	Ø 0.33
													0.1 ... 24	0.7	Ø 0.33

TR/iTR split-core sensors	Rated currents (A)						Real range covered (A)	Aperture (in)
	25	40	63	160	250	600		
							3.2 ... 720	Ø 1.26
							1.26 ... 300	Ø 0.83
							0.8 ... 192	Ø 0.55
							0.5 ... 75	Ø 0.39

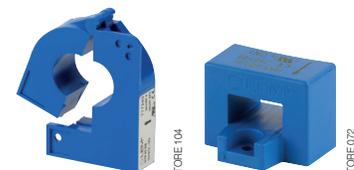
TF flexible sensors	Rated currents (A)								Real range covered (A)	Aperture (in)
	100	150	400	600	1600	2000	4000	6000		
									32 ... 7200	Ø 23.62
									32 ... 7200	Ø 11.81
									12 ... 4800	Ø 7.87
									8 ... 2400	Ø 4.72
									3 ... 720	Ø 3.15
									2 ... 480	Ø 1.57

DC current sensors

DC current sensors measure the load currents of a DC electrical installation and transmit the information to DIRIS Digiware Idc modules via a fast RJ12 connection with color-coded cables for the easy identification of circuits.

The range comprises solid-core and split-core sensors, from 50 to 5000 A in various sizes, suitable for new or retrofit applications.

- Easy connection to prevent wiring errors.
- Up to 3 sensors on each DIRIS Digiware Idc measurement module.



5 Input/output modules

DIRIS Digiware IO

The IO-10 modules have 4 digital inputs and 2 digital outputs to monitor the status of protective devices (ON/OFF/TRIP) or to collect pulses from multi-utility meters (gas, water...).

The IO-20 modules have 2 analog inputs allowing the collection of measurements from analog sensors (pressure, humidity, temperature) and the monitoring of levels by setting up alarms on preset thresholds.

Load shedding

- IO-10 modules automatically send output signals when an alarm is activated on any other Digiware module.
- Example: automatic load shedding if a power consumption alarm is configured on a Digiware I module.

Multi-fluid

Collect pulses from multi-utility meters on IO-10 modules and visualize consumption on the local D-xx display or remotely on WEBVIEW.

Connected

All data collected by IO-10 and IO-20 modules can be visualized on D-xx displays or WEBVIEW.

Bonus

Extra I/O functions within the same ecosystem provide a truly comprehensive solution.

		
Applications	Digital I/O	Analog I/O
DIRIS Digiware IO	IO-10	IO-20
Number of digital inputs/ outputs	4/2	-
Number of analog inputs	-	2
Multi-tariff (max. 8)	•	•
Alarms (threshold)	•	•
Alarms (change of status)	•	•
History of average values		•
Width/number of modules	0.70 in/1	0.70 in/1



Energy server solution embedded in the communication gateways

WEBVIEW

Socomec's displays and communication gateways centralize the measurement data from both DIRIS Digiware AC and DC systems. They embed the WEBVIEW-M software solution for visualization and analysis of real time and historical measurements from a large number of connected devices.



Embedded web based software

- No installation required and no licence fee: WEBVIEW-M is embedded in DIRIS Digiware M-70 and D-70. WEBVIEW-L is embedded in DATALOG H80 dataloggers.



Cyber security

- New cyber security features secure the confidentiality, integrity and availability of data.



Photoview functionality

- Display of electrical parameters from multiple devices on a customized background picture such as an electrical diagram, a site map or drawing.



Monitoring

- Visualization of real-time measurements.
- Power quality analysis of the electrical network and loads.
- Visualization of measurements on a user-customizable dashboard.

Alarming

- Overview of active alarms.
- Log of finished alarms.
- Email notification when a new alarm is activated.

Analysis

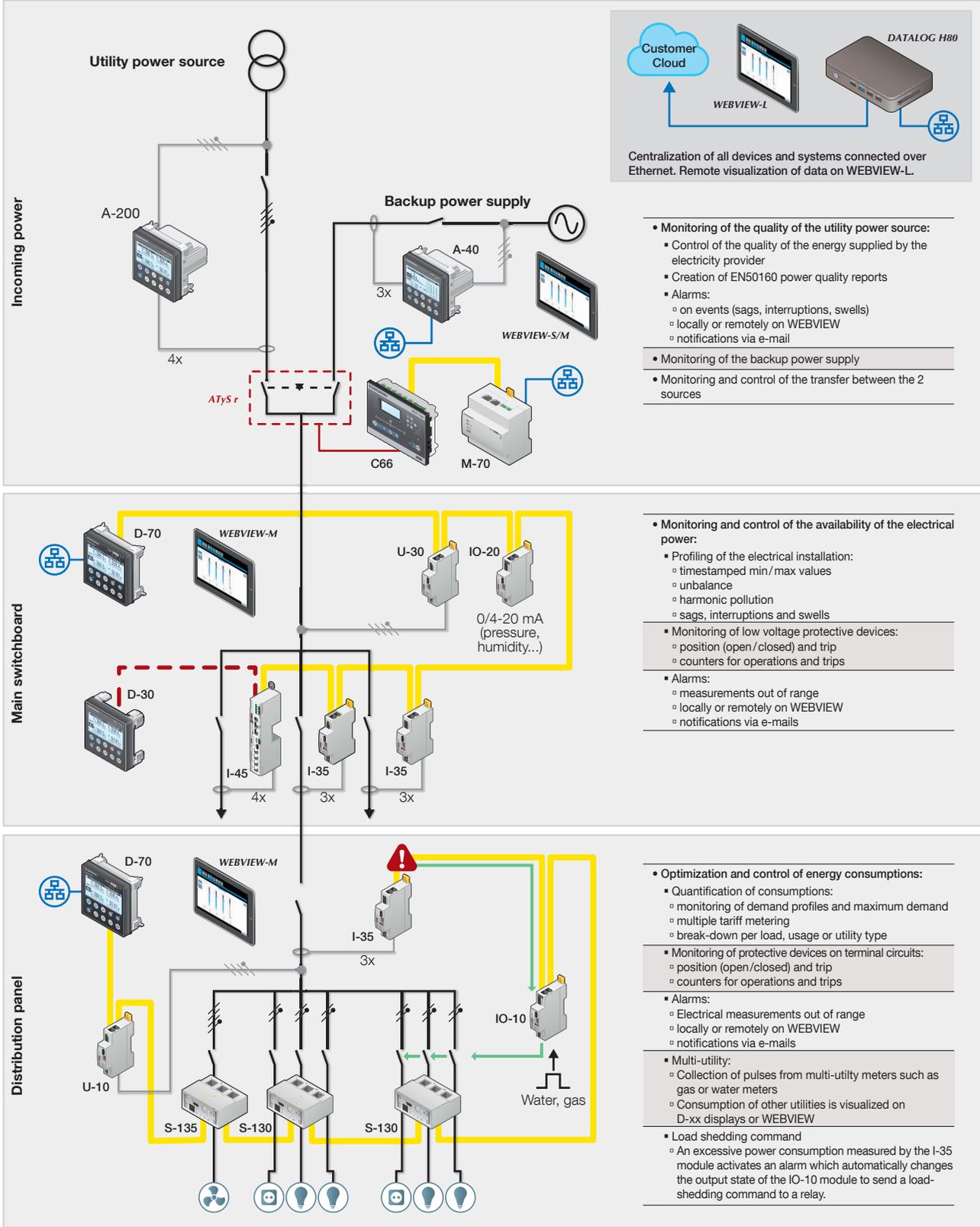
- High storage capacity of consumption and measurement trends.
- Breakdown of consumption by location, usage and utility type.
- Automatic export of stored data in CSV format with customizable layout for easy integration into any 3rd-party EMS.

WEBVIEW-L focus

- High storage capacity (64 GB).
- Compatible with third-party Modbus devices.
- Display of measurement trends from multiple devices on a single graph.



Example of *DIRIS Digiware* system architecture



Legend:

- Heat pump
- Receptacles
- Lighting

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