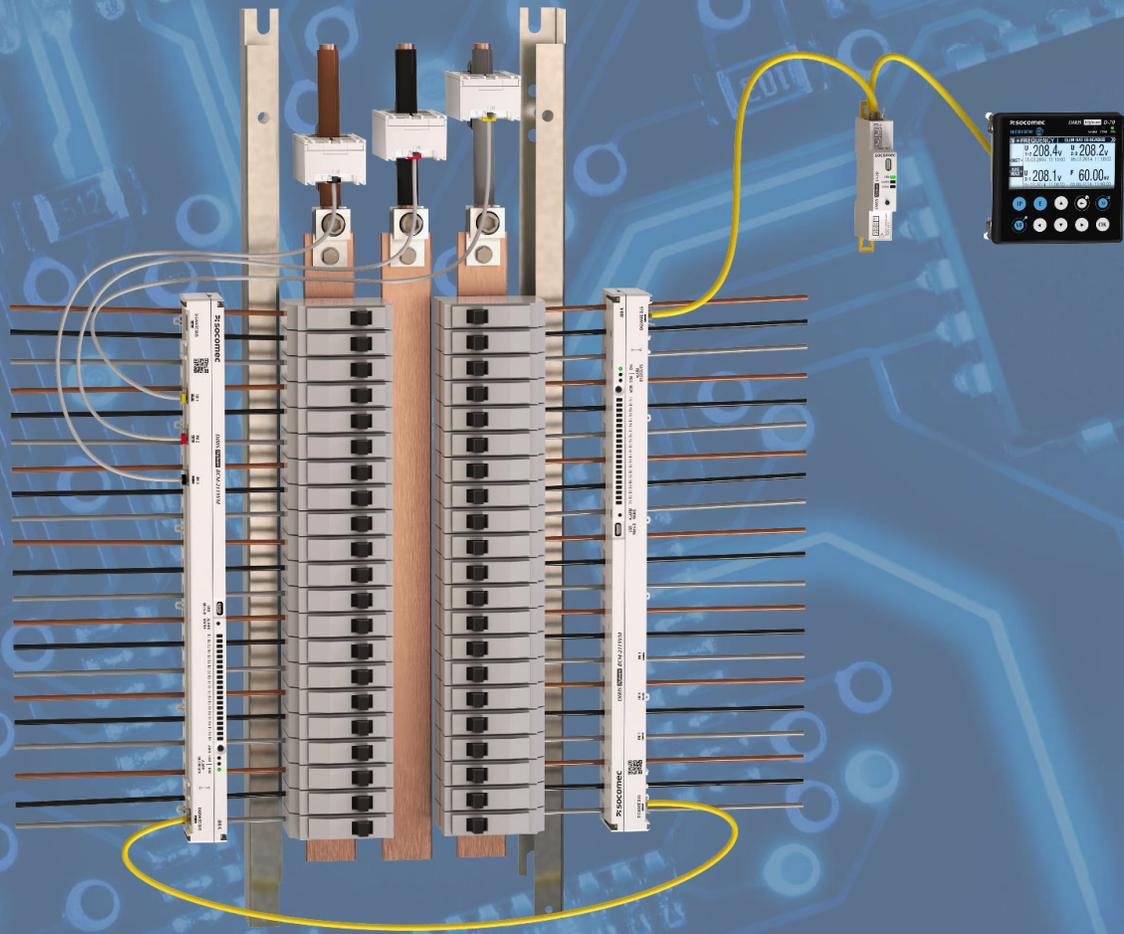


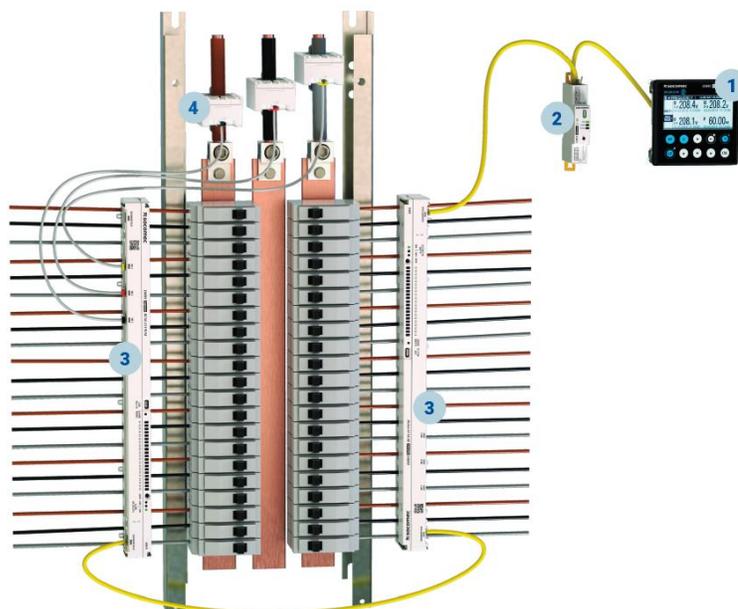
DIRIS Digiware SBCM (with D-70 display)

UL/CSA
Ed.1



Introduction:

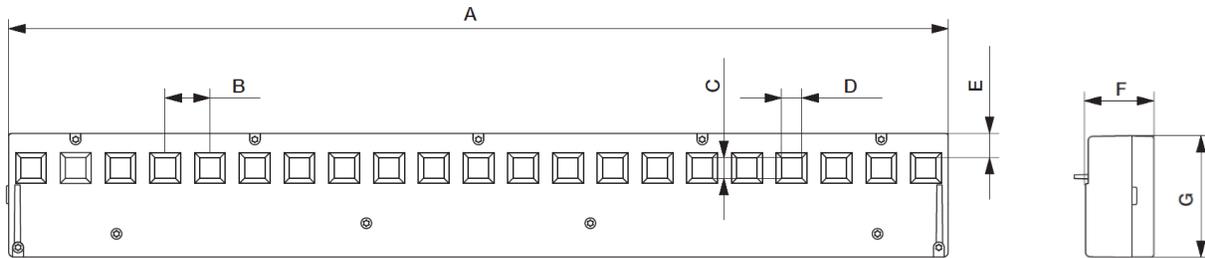
The purpose of this document is to explain the steps of configuring the DIRIS Digiware SBCM system, composed of the following items:



#	Part #	Description
1	48290221 48290222 48290203 48290204	DIRIS Digiware interface: <ul style="list-style-type: none"> - DIRIS Digiware M-50 gateway, <u>or</u> - DIRIS Digiware M-70 gateway with embedded WEBVIEW-M webserver, <u>or</u> - DIRIS Digiware D-50 gateway & display, <u>or</u> - DIRIS Digiware D-70 gateway & display with WEBVIEW-M webserver
2	48290105 48290102	DIRIS Digiware U voltage measurement module: <ul style="list-style-type: none"> - DIRIS Digiware U-10 Basic Level, <u>or</u> - DIRIS Digiware U-30 Power Quality Level
3	48290167 48290168 48290169 48290170	DIRIS Digiware BCM branch-circuit meter strip: <ul style="list-style-type: none"> - DIRIS Digiware BCM-2119 (3/4" pitch, 80Amps), <u>or</u> - DIRIS Digiware BCM-2119VM (3/4" pitch, 80 Amps, with breaker status), <u>or</u> - DIRIS Digiware BCM-2125 (1" pitch, 120Amps), <u>or</u> - DIRIS Digiware BCM-2125VM (1" pitch, 80 Amps, with breaker status)

This technical guide explains the commissioning with a D-70 display, a U-30 voltage module and a BCM-2119VM meter strip. The methodology and configuration steps apply if other options listed above are used.

Dimensions (in/mm):



	A	B	C	D	E	F	G
DIRIS Digiware BCM-2119 / 2119VM	15.75 400	0.75 19	0.35 8,8	0.34 8,6	0.39 10	1.18 30	2.09 53
DIRIS Digiware BCM-2125 / 2125VM	20.98 533,5	0.98 25	0.55 14	0.54 13,6	0.75 19	1.26 32	2.68 68

Table of Contents:

1. Mounting the DIRIS Digiware BCM branch-circuit strips	4
2. Configuring the DIRIS Digiware SBCM system	6
2.1 Making sure firmware is up to date	6
2.2 Installing Easy Config System	9
2.3 Configuration of the DIRIS Digiware SBCM using Easy Config System	11
2.3.1 Configuring the DIRIS Digiware U-30	11
2.3.2 Configuring the DIRIS Digiware BCM-2119VM.....	15
2.3.3 Configuring the DIRIS Digiware D-70.....	20
3. Using the webserver (WEBVIEW-M) – only for D-70 or M-70	23
3.1 Setting up Digiware modules in WEBVIEW-M	23
3.2 Configuring Hierarchies	26
3.3 Configuring Photoview	28

1. Mounting the DIRIS Digiware BCM branch-circuit strips

For a typical 42-circuit panelboard, one DIRIS Digiware BCM-2119VM branch-circuit strip will go on the left side of the panelboard, and a second DIRIS Digiware BCM-2119VM will go on the right side, as shown in the diagram below.

The tables on the left and right show how the branch CT input associations to phase voltages should be configured in Easy Config System (explained in paragraph 2.3.2, part 6).

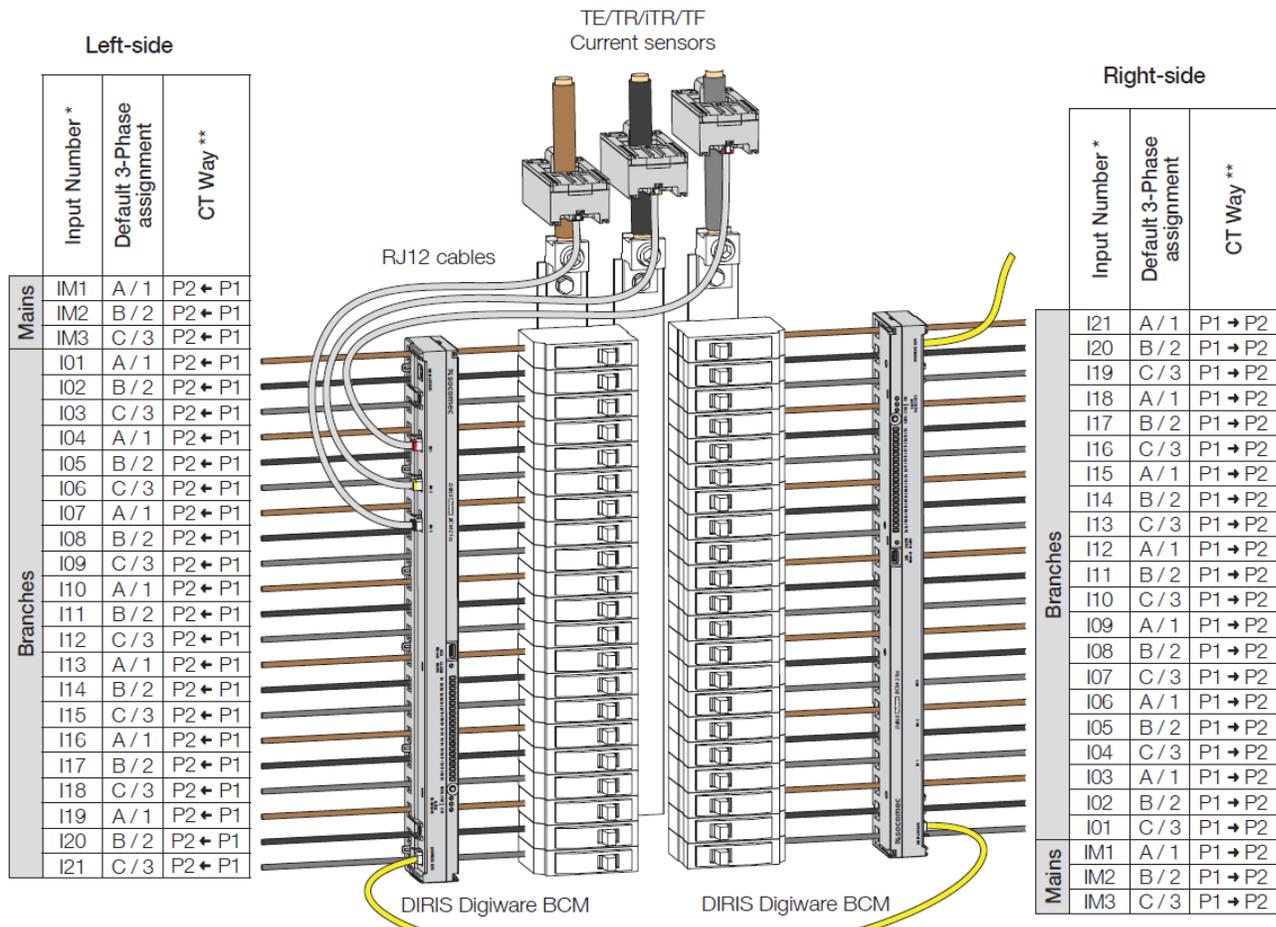


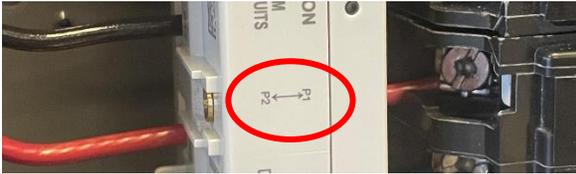
Figure 1: Left-side and Right-side mounting and current/voltage associations

Left side:

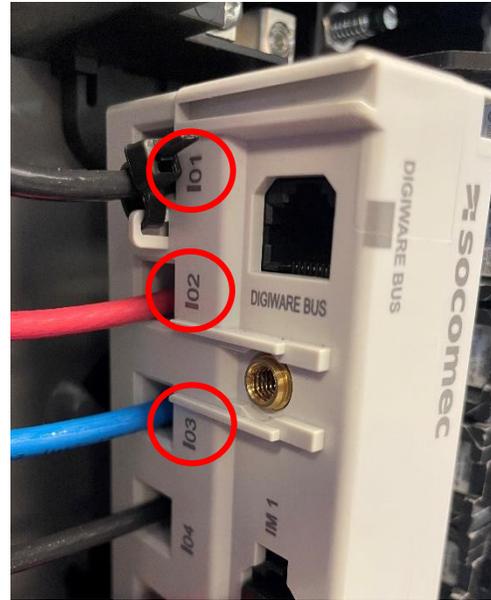
When the DIRIS Digiware BCM-2119VM is on the left side of panelboard, the first branch input at the top of the BCM-2119VM (**I01**) is associated with voltage V1 (phase A).

I02 is associated with voltage V2 (Phase B), **I03** with voltage V3 (Phase C) etc.

In the left side situation, the default CT WAY configurations of the BCM-2119VM branch inputs (“Positive”) match the actual current flow (P1→P2) as indicated by product marking:



➔ **Default configuration of DIRIS Digiware BCM-2119VM is OK for left-side situation**



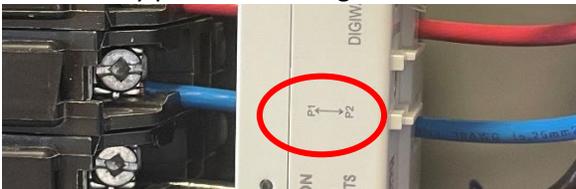
Right side:

When the DIRIS Digiware BCM-2119VM is on the right side of panelboard, the first branch input at the top of the BCM-2119VM (**I21**) is associated with voltage V1 (phase A).

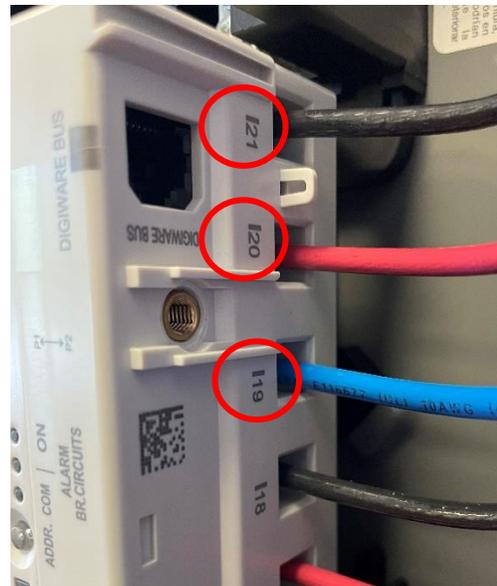
I20 is associated with voltage V2 (Phase B), **I19** with voltage V3 (Phase C) etc. and I01 which is now all the way at the bottom is associated with voltage V3 (phase C).

➔ **Configuration must be changed, will be explained in paragraph 2.3.2, part 6.**

In the right side situation, the default CT WAY configurations of the BCM-2119VM branch inputs (“Positive”) match the actual current flow (P1→P2) as indicated by product marking:



➔ **Default CT way configuration of DIRIS Digiware BCM-2119VM is OK**



2. Configuring the DIRIS Digiware SBCM system

2.1 Making sure firmware is up to date

1. Before commissioning your DIRIS Digiware SBCM system, make sure the associated devices DIRIS Digiware D-70, U-30, BCM-2119VM operate under the latest firmware versions.

The latest firmware versions are available on the Socomec website and firmware upgrade is done using the Product Upgrade Tool software, by connecting a laptop to the Micro USB port of the desired device.

Go to the website to download the Product Upgraded Tool:

https://www.socomec.com/product-upgrade-tool-software_en.html

2. Under the “Firmware” section, download firmware pertaining to the module being updated (DIRIS Digiware D-70x, U-30, and BCM-xx). **Please note that the firmware downloaded from the website is a zip file. DO NOT unzip the file, just directly upload the file into Product Upgrade Tool.**
3. Plug in a micro USB cable to the back of the DIRIS Digiware D-70 or associated module (U-30 module, BCM-xx strip).



Figure 2: The micro USB port on the DIRIS Digiware D-70.

4. Open the Product Upgrade Tool software to get the below screen:

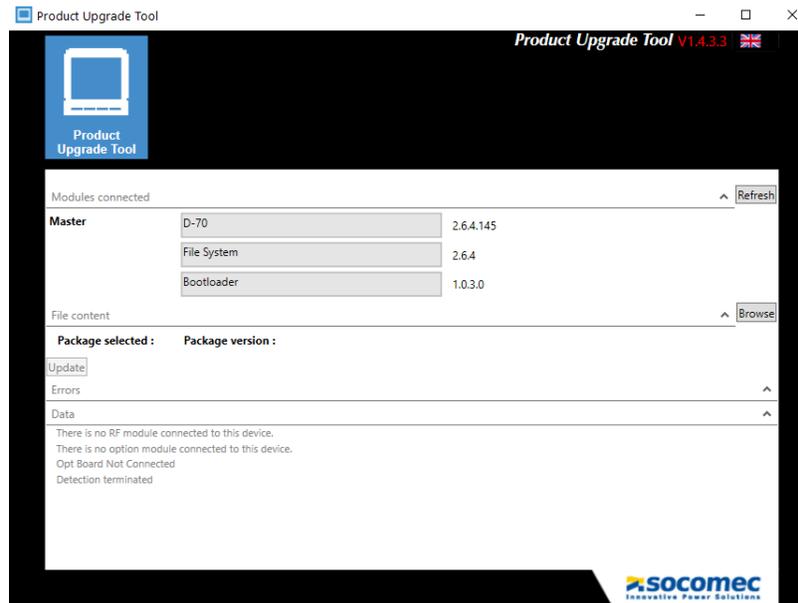


Figure 3: Product Upgrade tool home screen.

5. Click “Browse” and select the firmware folder that was downloaded.
- An orange symbol means the firmware selected is the same as the one on the DIRIS Digiware D-70.
 - A green symbol means that the firmware selected is more recent than the one currently on the DIRIS Digiware D-70 and an upgrade is possible.
 - A red symbol means that the firmware selected is a lower version than the one currently on the DIRIS Digiware D-70.

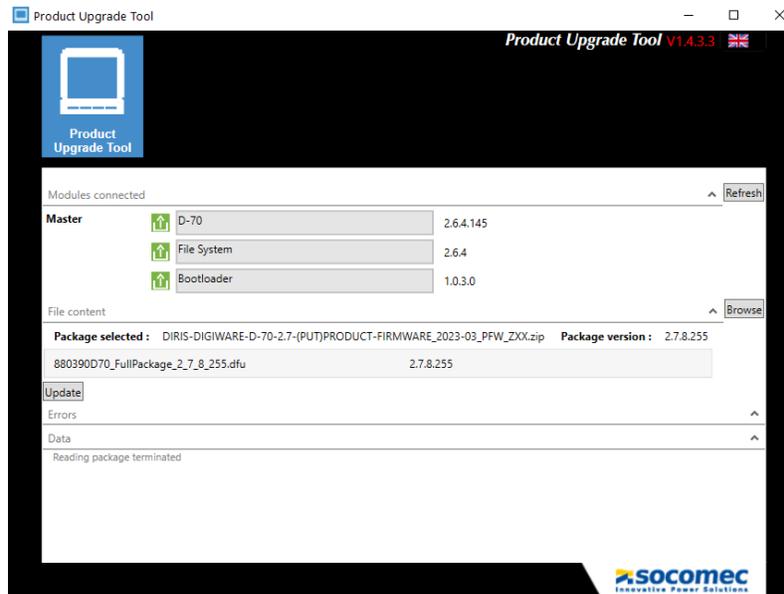


Figure 4: Product upgrade tool screen once the firmware is uploaded.

- Click “Update” if needed. Once the firmware is up to date you will see the following screen

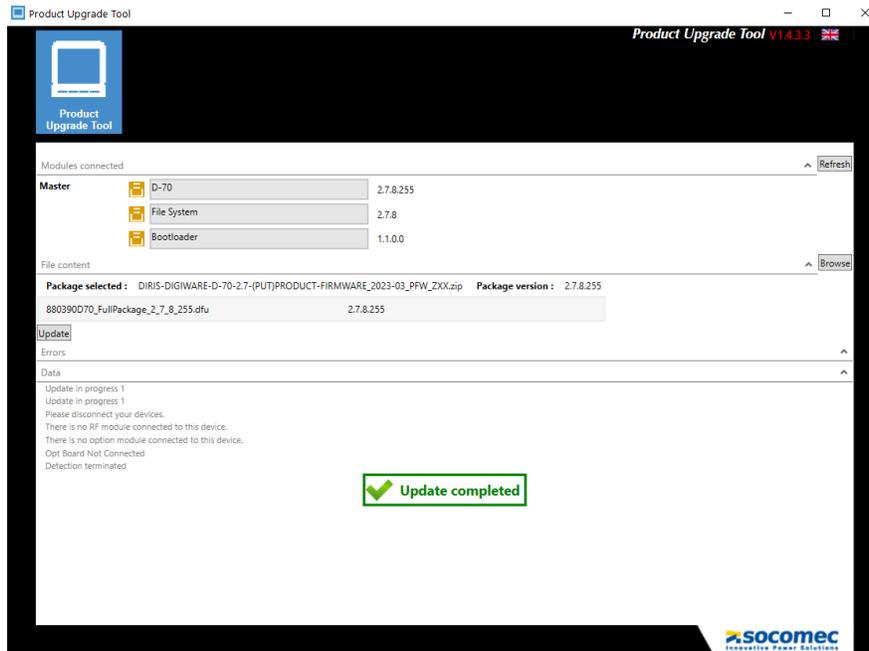


Figure 5: Product Upgrade Tool screen once update is complete.

- Repeat the same operation for DIRIS Digiware U-30 and BCM-2119VM if necessary.



Figure 6: The micro USB port on the DIRIS Digiware U-30

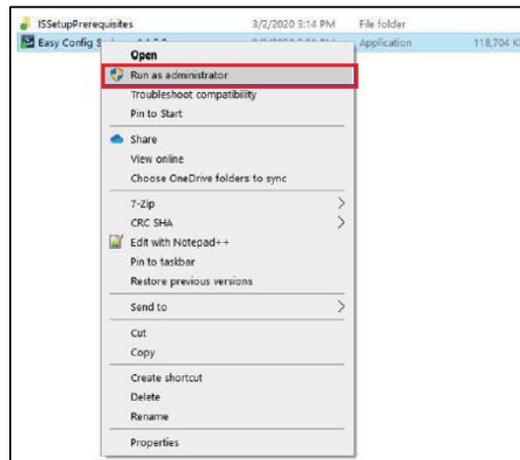


Figure 7: The micro USB port on the DIRIS Digiware BCM-2119VM

2.2 Installing Easy Config System

Easy Config System is a free software used for configuring Socomec Power metering devices from a computer.

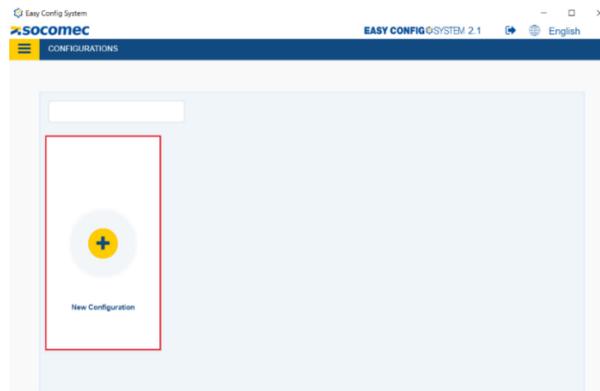
1. Download Easy Config System from the following link:
https://www.socomec.com/easy-config-system_en.html
2. Once the Easy Config System folder is saved on your computer, right click on the setup file and **Run as administrator**.



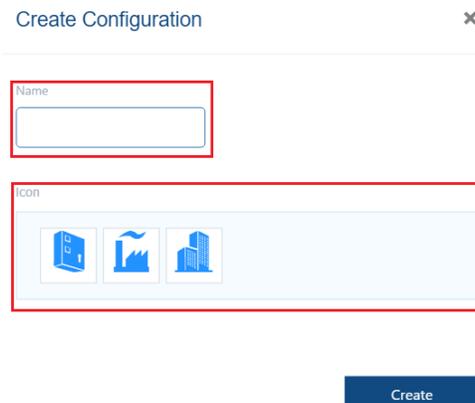
3. Open Easy Config System
4. When logging in, choose the Admin profile and complete the verification using the information below. Each profile provides a different level of access.

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

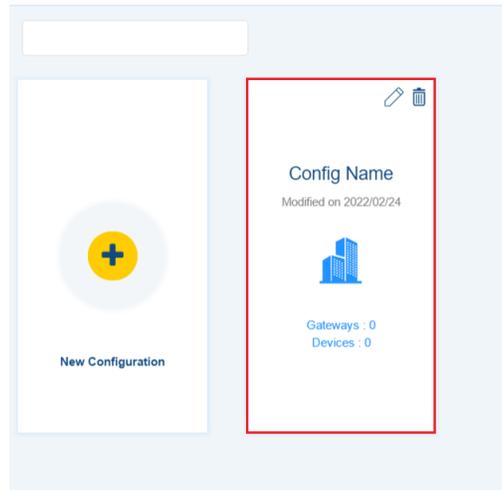
5. Create a new configuration by selecting **New Configuration**.



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



7. Select the recently created configuration from the list.



2.3 Configuration of the DIRIS Digiware SBCM using Easy Config System

2.3.1 Configuring the DIRIS Digiware U-30

The DIRIS Digiware U-30 module should be configured first, before the DIRIS Digiware BCM-2119VM branch-circuit meters.

1. Navigate to and select **USB mode** on the top right corner to connect to the U-30 module and access configuration menus.



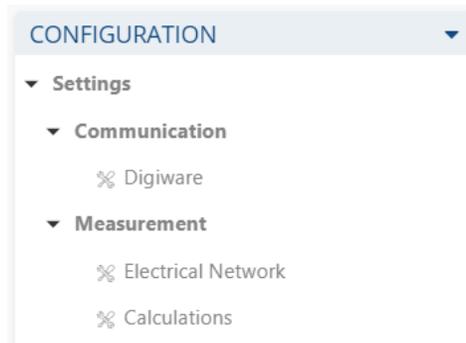
2. Navigate to and select Device Configuration.



3. In the “**ORGANIZATION**” section on the left side of the screen, select the U-30 module

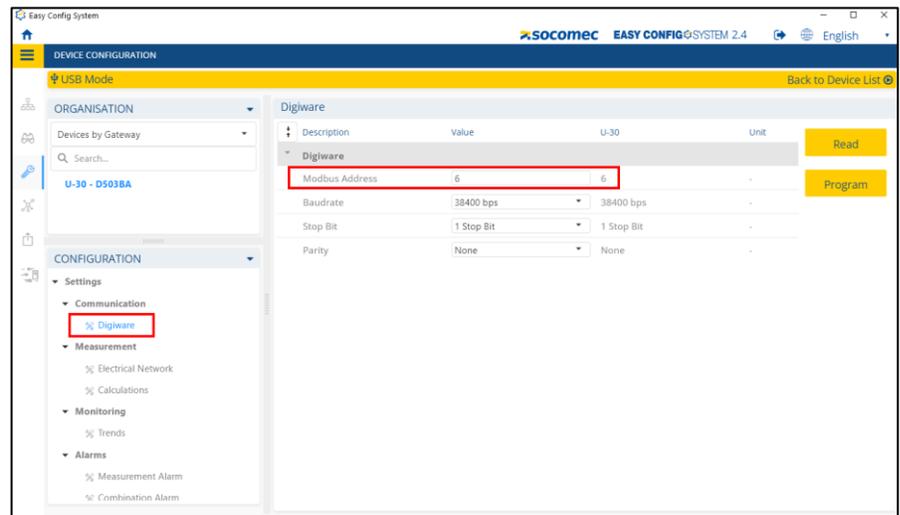


Configuration menus are accessible from the “**CONFIGURATION**” section:



Communication

1. The **Digiware** menu in the **Communication** section allows to change the Modbus address of the DIRIS Digiware U-30. The Modbus address must be unique within the DIRIS Digiware SBCM system.



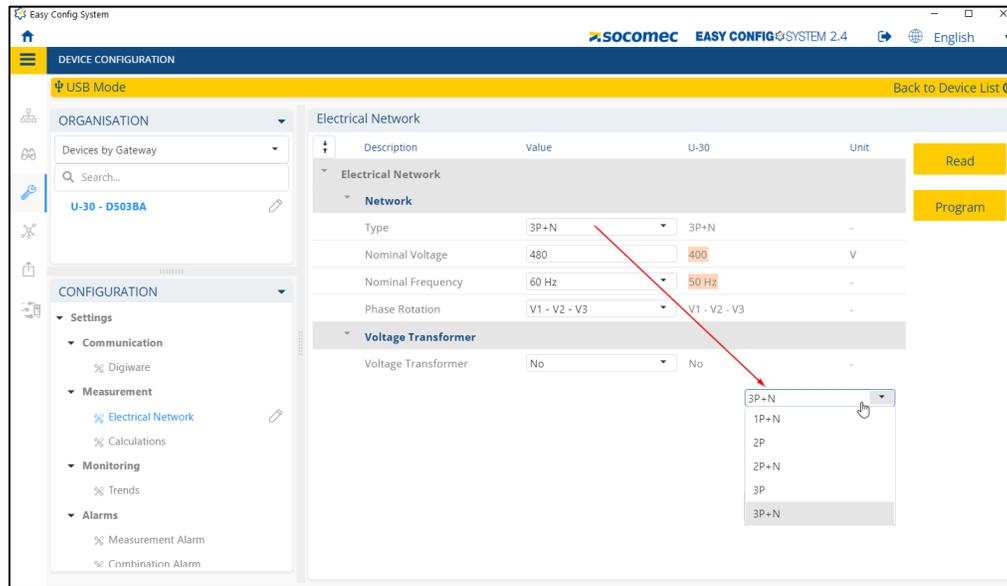
Each Device on the Digiware Bus has its own MODBUS/JBUS ID. This unique ID is a number between 1 and 247. The default JBUS/MODBUS address of devices is as follows:

- *DIRIS Digiware D-50/D-70 displays and M-50/M-70 gateways: **ID 001***
- *DIRIS Digiware U-10/U-30 Modules: **ID 006***
- *DIRIS Digiware BCM-2119/2119VM/2125/2125VM branch-circuit meters: **ID 008***

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 U-30. When you click on **Program**, it only uploads the parameters **of the menu that you are currently working on** to the device.

Measurement

4. **Electrical Network:** select the network **Type** being measured by the U-30 module as well as the nominal voltage (L-L) and nominal frequency (60 Hz in North America):
- **3P** for a three-phase DELTA system (with no neutral), for example 480V L-L
 - **3P+N** for a three-phase WYE system (with neutral), for example 277 L-N / 480V L-L
 - **2P+N** for a single-phase system (2 hot legs + neutral), usually 120 L-N / 208V L-L



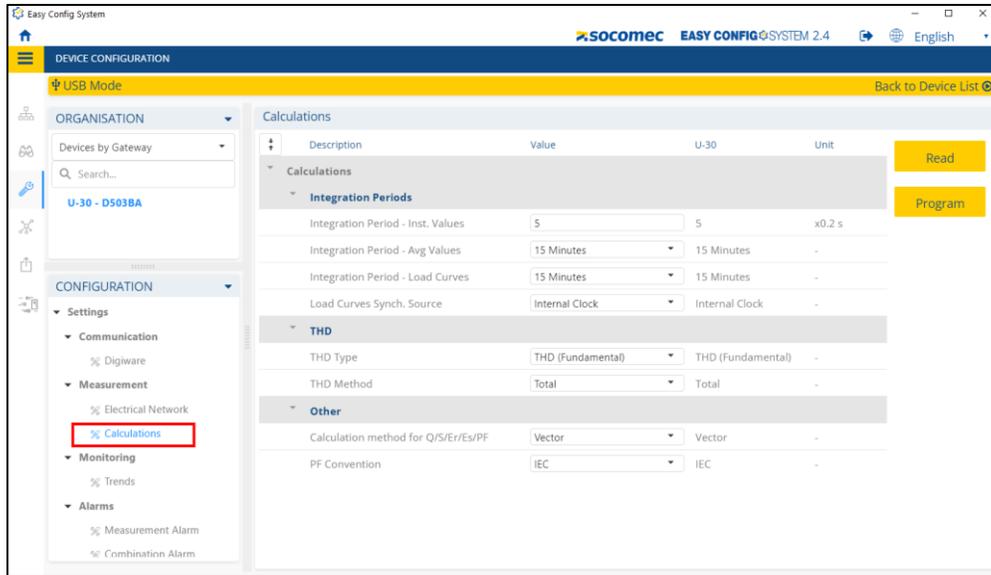
5. The **Calculations** menu under the **Measurement** section is where you can set the integration periods for instantaneous and average values of the different electrical parameters.

Notes:

The integration period of average values and Load curves configured in the U-30 module determines the reading interval of Trends and Load curves for all downstream Digiware devices.

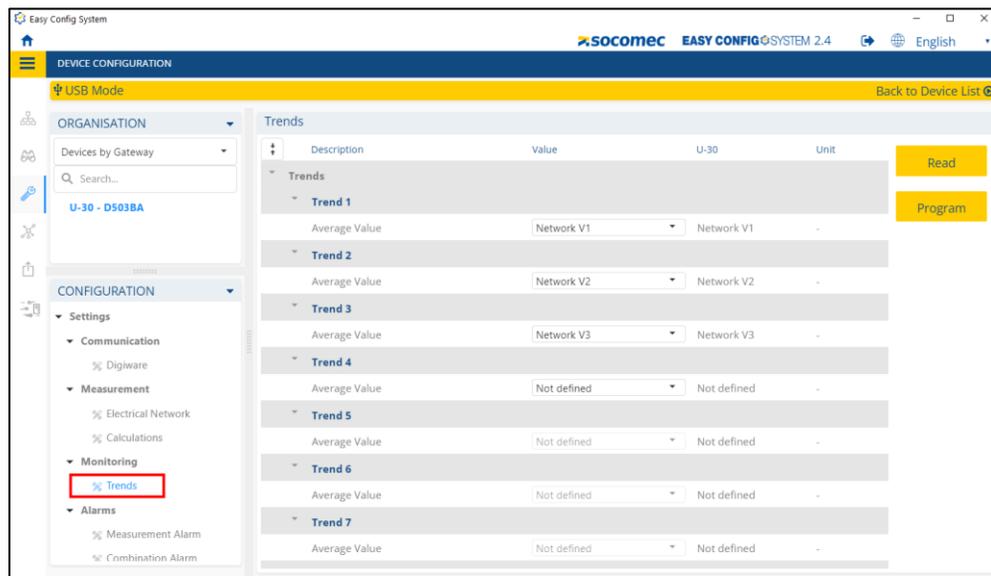
Trends and Load curves are displayed on WEBVIEW-M, the webserver embedded to the DIRIS Digiware D-70. Refer to the "Trends" menu to choose electrical parameters you wish to record for Trends curves on WEBVIEW-M.

It is recommended to set the integration period of Load curves at 15 min (default value), so it matches most utility meter reading intervals.



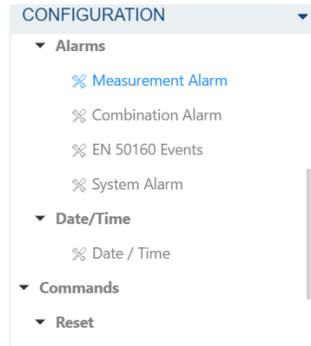
Monitoring

- In the **Trends** menu under the **Monitoring** section you can select the parameters that you want to record and visualize in Trends menu of the WEBVIEW-M visualization webserver.



Alarms

7. The **Alarms** section allows you to set up alarms:
 - Measurement alarms are based on custom measurement thresholds
 - EN 50160 Events are based on power quality events (voltage sags, swells, interruptions)
 - System alarms are based on commissioning errors



8. The **Reset** section allows you to do a reset on specific memory categories of the device. You can also restore the device to its default factory settings.

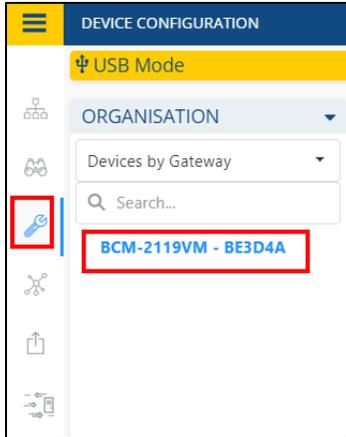
The configuration of your DIRIS Digiware U-30 module is now complete!

2.3.2 Configuring the DIRIS Digiware BCM-2119VM

1. Unplug the USB cable from the DIRIS Digiware U-30 module and plug onto the DIRIS Digiware BCM-2119VM branch-circuit meter.
2. Navigate to and select **USB Mode** on the top right corner to connect to the BCM-2119VM and access configuration menus.

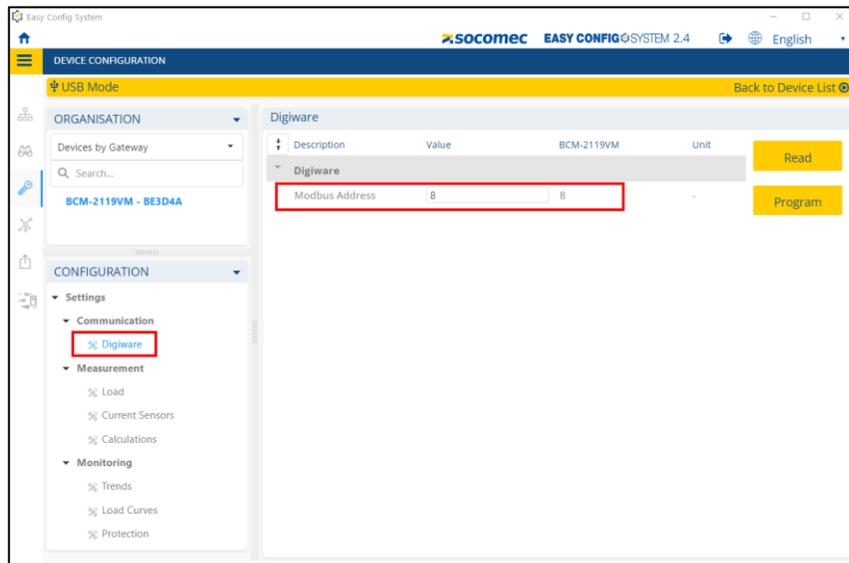


3. Click on the **Device Configuration** tab and click on the DIRIS Digiware BCM-2119VM.



Communication

4. The **Digiware** menu in the **Communication** section allows to change the Modbus address of the DIRIS Digiware BCM-219VM. Change the Modbus address so it is unique within the DIRIS Digiware SBCM system

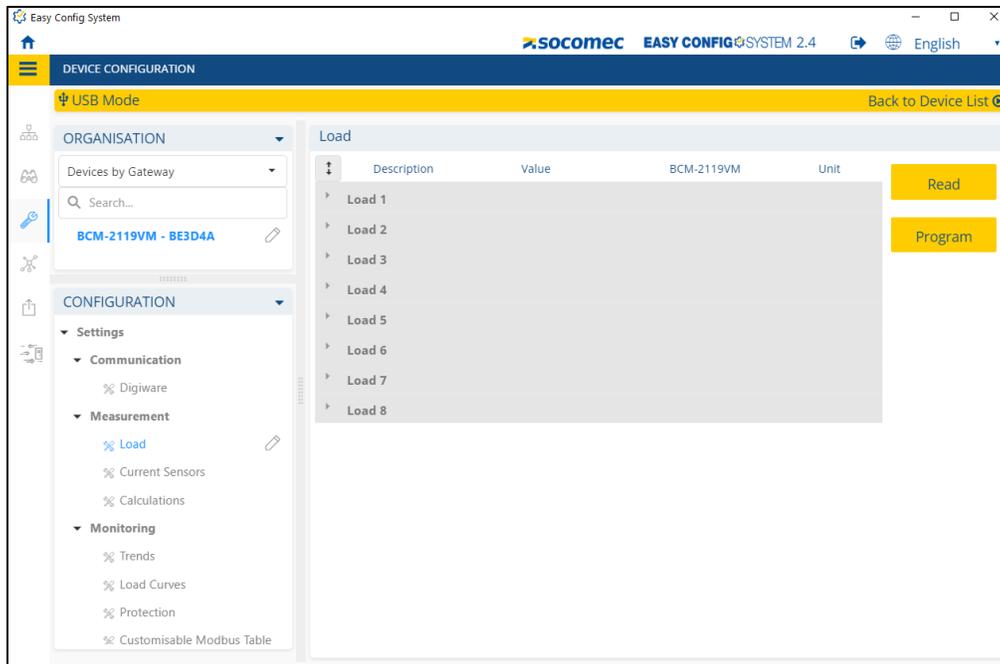


Measurement

- 5. Load:** This menu allows you to configure the different load(s) monitored by the BCM-xx branch-circuit meter.

By default, the BCM-xx is configured with 8 x three-phase loads:

- 7 x three-phase loads for the branch circuits (Load 1 – 7)
- 1 x three-phase load for the main feed (Load 8)



For each load, you must configure a name. The name will be seen on the D-70 display to identify measurements to the proper circuit.

For each load, you must configure a load type, for example:

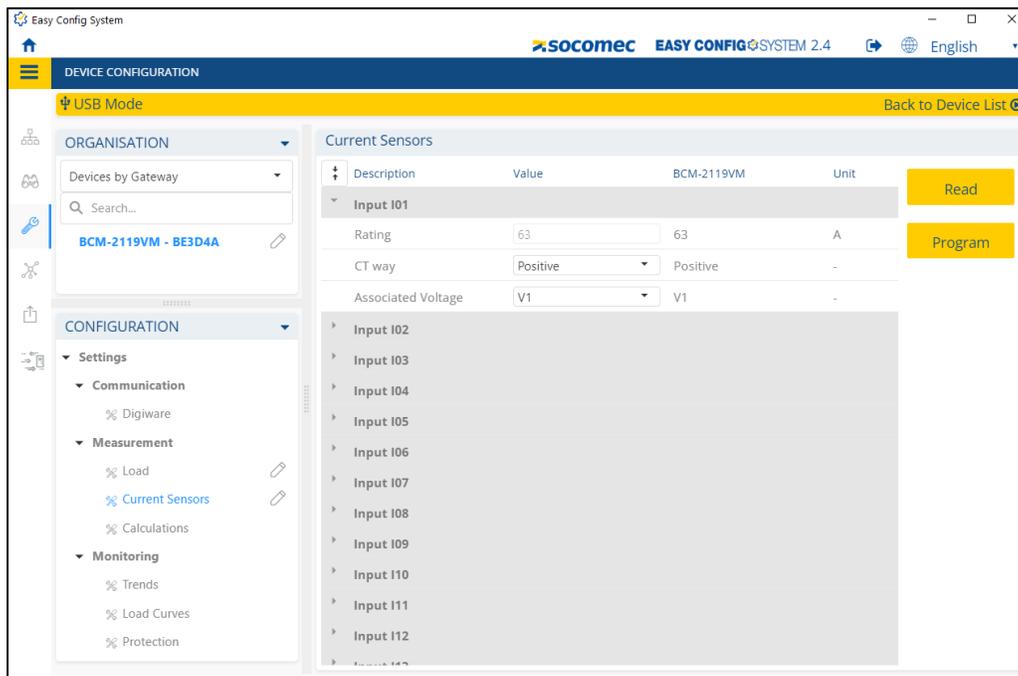
- 3P+N – 3CT for a three-phase load monitored by 3 CTs of the BCM-xx
- 1P+N – 1CT for a single-phase load monitored by 1 CT of the BCM-xx

For each load, you must configure its nominal current which can typically be set to the circuit's breaker rating.

Load 8 (using the 3 external RJ12 CT inputs) is disabled by default. If 3 current sensors are used to monitor the main feed of the panel, Load 8 must be enabled and correctly configured:

Load 8		
Activate		
Status	Enabled	Disabled
Name	Main	Main
Type		
Type	3P+N-3CT	3P+N-3CT
Nominal Current	63	63 A
Phase association to current input		
I1	Input IM 1	Input IM 1
I2	Input IM 2	Input IM 2
I3	Input IM 3	Input IM 3

6. The **Current Sensors** menu allows you to configure the current sensor inputs of the BCM-2119VM:



For each direct input (I01-I21) of the BCM-xx, you must configure:

- The CT Way, **positive** when the “P1” mark is on the source side and “P2” mark on the load side meaning current flows P1→P2
- The associated voltage, meaning which voltage phase is running through the CT (V1 for phase A, V2 for phase B, V3 for phase C). **Refer to section 1. of this document to learn how to identify the CT input numbering on the Digiware BCM-2119VM and assign the proper voltage/phase association, in both left-side and right-side panelboard situations.**

If the RJ12 inputs are used to monitor the main feed, inputs IM1, IM2 and IM3 must be configured:

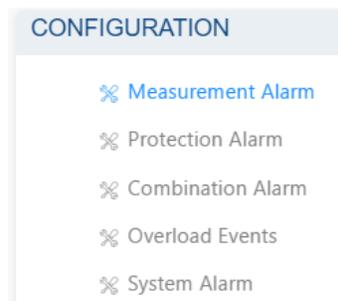
- The CT Way, **positive** when the “P1” mark on the sensor is on the source side and “P2” mark is on the load side. For Rogowski TF sensors, the arrow located on the junction box points towards the load and indicates the positive flow of energy.
- The associated voltage, meaning which voltage phase is running through each external RJ12 current sensor (V1 for phase A, V2 for phase B, V3 for phase C).

Monitoring

7. The **Trends** menu allows you to select parameters you wish to record and visualize in Trends menu of the WEBVIEW-M visualization webserver.
8. The **Load curves** menu allows to select Power values (kW, kvar, kVA) you wish to record and visualize in Trends menu of the WEBVIEW-M visualization webserver.

Alarms

9. The **Alarms** tab allows you to set up alarms:
 - Measurement alarms are based on custom measurement thresholds
 - System alarms are based on commissioning errors (CT disconnected, inconsistent CT rating etc.)



- Protection alarms notify in the event of a protective device opening.
 - o Choose a name for each alarm (for example, RPP-01 MCB1 Open, etc.)
 - o Assign a load to the protection alarm

Reset

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

System

11. The **System Action** menu allows you to restore the device to its default factory settings.

Now let's move on to the configuration of the next BCM-2119VM branch-circuit meter.

12. Click on “**Back to Device List**” button at the top right corner of the screen.

Back to Device List 

13. Then click on “**Leave This Mode**” to exist USB mode.

Leave This Mode

14. Unplug the USB cable from the first DIRIS Digiware BCM-2119VM and plug onto the next one.

15. Navigate to and select **USB mode** on the top right corner to connect to the second DIRIS Digiware BCM-2119VM branch-circuit meter.

 USB Mode 

16. Click on the **Device Configuration** tab and click on the BCM-2119VM.



17. Repeat the steps in paragraph 3.3.2 for all other DIRIS Digiware BCM-2119VM.

2.3.3 Configuring the DIRIS Digiware D-70

1. Plug the USB cable to the USB port on the back of the DIRIS Digiware D-70.
2. Navigate to and select **USB mode** on the top right corner to connect to the D-70.

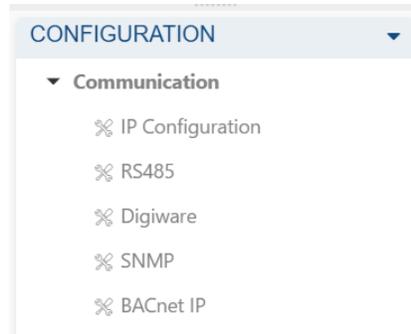
 USB Mode 

3. Navigate to and click on the **Device Configuration** tab and click on the D-70.



Communication

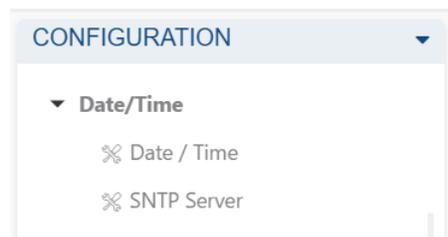
4. The **Communication** section will show the different communication parameters (IP Address, MODBUS ID, Baud rate, etc.).



The IP address and the Modbus ID 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.

Date/Time

5. Next, click on the **Date/Time** section. You can synchronize the date/time of the DIRIS Digiware D-70 to the Date/time of your computer manually, or set up an SNTP server for an automatic time synchronization to an SNTP server. Ask your IT department for SNTP server credentials.



The D-70 then synchronizes the date and time of all downstream Digiware devices.

Consumption Curves

- Set the desired integration period for **Consumption Curves**. Consumption Curves can be visualized on the embedded webserver WEBVIEW-M. They allow a breakdown of energy consumption per load, usage or location.
- Continue to go through each menu, and configure the D-70 as needed for your application.

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



- Navigate to and click on **Auto-discovery** in the middle of the screen. The Auto discovery will scan and detect all devices (U-30 and BCM-2119VM) connected on the Digiware bus.

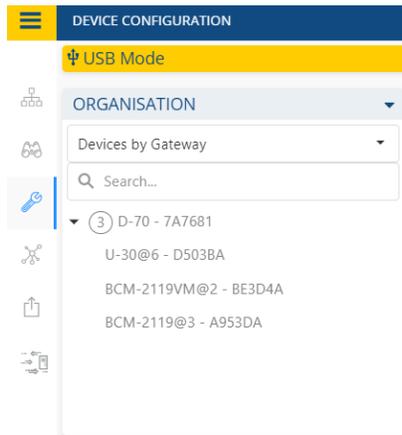
The screenshot shows the 'Easy Config System' interface for a 'DIRIS Digiware D-70@255'. The left sidebar has a 'DATA' section with 'Dashboard' selected. The main content area is divided into several sections: 'System Information' (Serial No: 22292040197, ID: 7A7681, Firmware Version: 2.6.4, Date/Time: 2023/05/26 16:17:50), 'IP Configuration' (IP Address: 0.0.0.0, Subnet Mask: 0.0.0.0, Gateway: 0.0.0.0), 'Storage' (Trends: Active, Consumption Curves: Active), 'Devices Connected' (RS485 Bus: Active, 0 Devices; Digiware Bus: Active, 3 Devices; Ethernet: Active, 0 Devices; Bluetooth: Inactive), and 'Protocols' (SMTP: Inactive, SNTP: Inactive, FTP: Inactive, BACnet: Inactive, SNMP: Inactive, Cloud Platform: Inactive). At the bottom, there are buttons for 'Auto-Discovery', 'Edit Modbus Addresses', and 'Generate Report'. Below these buttons is a table of connected devices:

Bus	Type	ID	Modbus Address	T1	Version	Date/Time	Com. Status	Actions
Digiware	DIRIS Digiware BCM-2119VM	BE3D4A	2		1.0.1	26/05/2023 16:17:51	Good	⌵
Digiware	DIRIS Digiware BCM-2119	A953DA	3		1.0.1	26/05/2023 16:17:51	Good	⌵
Digiware	DIRIS Digiware U-30	D503BA	6		1.11.5	26/05/2023 16:17:50	Good	⌵

After a few minutes, the product list will be displayed with the Modbus IDs previously configured in each Digiware device.

If you forgot to change the Modbus ID on Digiware devices, the Auto-discovery process will automatically assign them a random Modbus ID. After the Auto-discovery process is complete, you can change the Modbus ID by clicking on **Edit Modbus Addresses**.

Once the Auto-discovery is done, all downstream Digiware modules will appear in the “Organization” section under the D-70:



3. Using the webserver (WEBVIEW-M) – only for D-70 or M-70

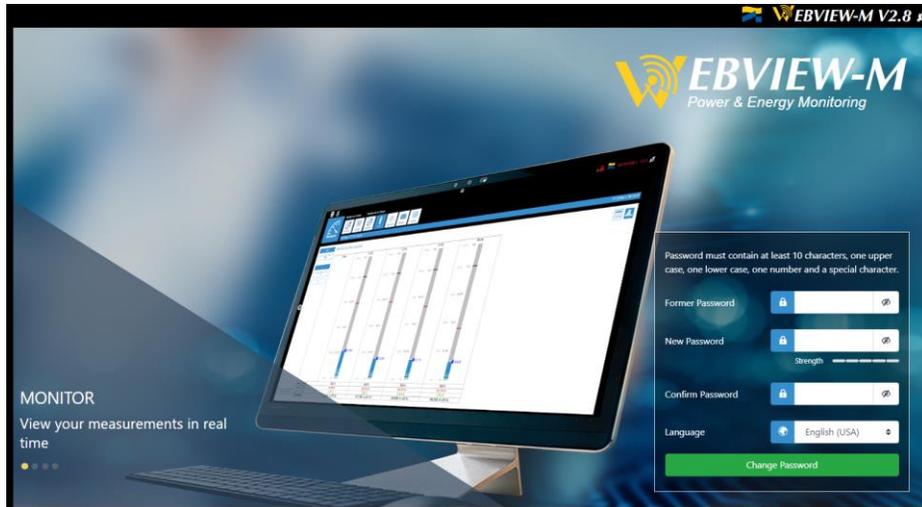
In this portion of the guide, we will set up the visualization of the measurements from the D-70’s webserver, WEBVIEW-M.

3.1 Setting up Digiware modules in WEBVIEW-M

1. To access the webserver, connect to the DIRIS Digiware D-70 with an Ethernet cable to a router or PC in the same network.
2. In any Web Browser, type the IP address of the D-70 to access the Webserver. The Default IP configuration is shown below.

IP Configuration	
IP Address	192.168.0.4
Subnet Mask	255.255.255.0
Gateway	192.168.0.1

3. Log in as Administrator with the default password “Admin”.
For cyber security reasons the application ask you to change the default password. Your password must be changed at least once a year to access the setup menu of the webserver.

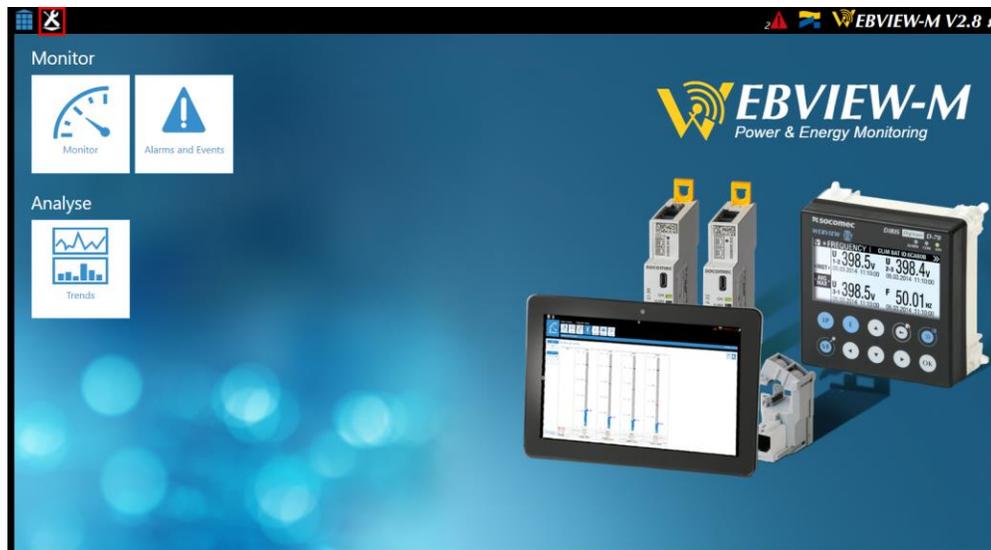


It is also recommended to change default passwords of Cyber Security and Advanced User profiles in addition to the Admin profile. Until default passwords for all 3 profiles have been changed, the Password Alert alarm will remain active and **the ALARM LED on the D-70 will be flashing.**



The Password Alert alarm can also be disabled from Easy Config System (System Alarm 8 in the System Alarm configuration menu of the D-70).

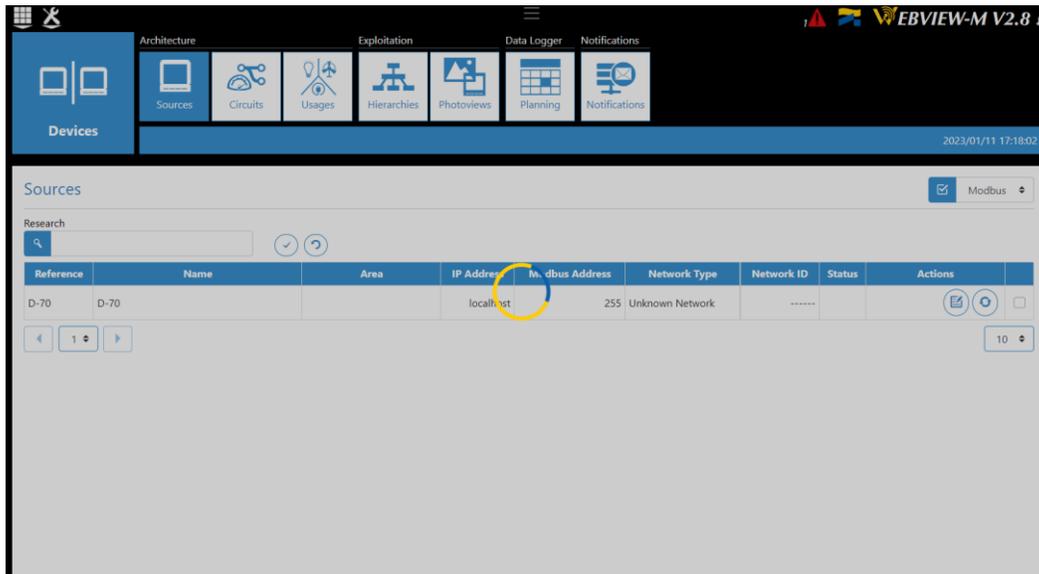
- Once connected as Admin, click on the toolbox icon in the top left corner of the screen



- Then Click on the “Devices” tab on the top left hand of the screen



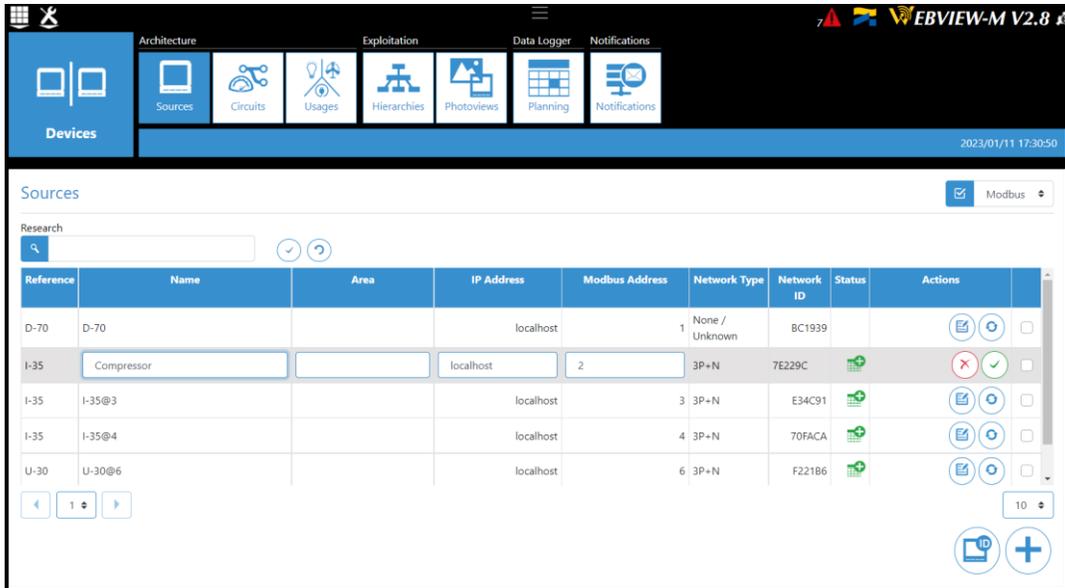
- The first time you connect to the webserver, it will automatically load the slave modules connected to the D-70 into the webserver:



If new devices are added to the D-70, they will need to be added to WEBVIEW-M by clicking on the “Scan” button at the bottom right corner. They can also be added manually by clicking on the “+” button.



- Once all modules have been added to WEBVIEW-M, you can change the module’s names, and their area from the “Sources” tab. To do so, click on “Edit” button under the “Actions” column.



- From the **“Circuits”** tab, you can rename the Load names (they have already been changed in Easy Config System), and select an energy usage (heating, lighting etc.) associated to each load. Selecting energy usages is useful when creating Hierarchies to understand which usage consumes the most energy.

WEBVIEW-M is now set up. You can go back to home screen menu by clicking on



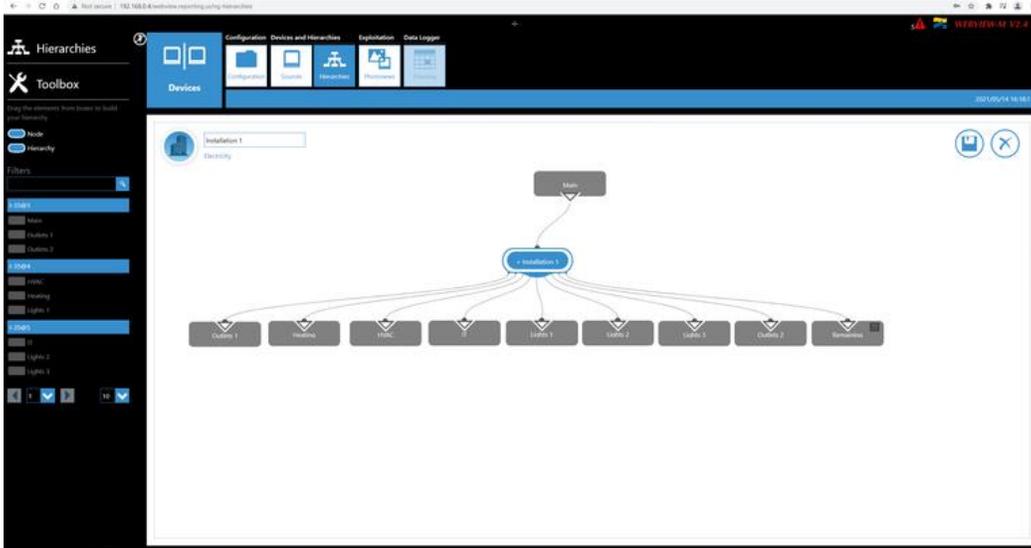
The **“Monitor”** menu allows you to visualize real time measurements, the **“Trends”** menu allows you to visualize historical measurements, and **“Consumption”** menu shows consumption curves.

3.2 Configuring Hierarchies

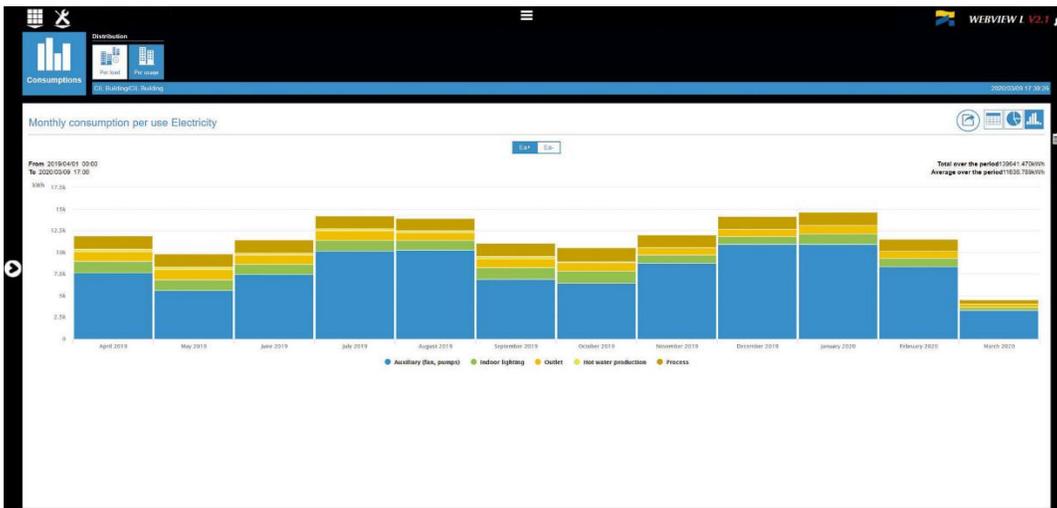
The Hierarchies organize the metering points in the form of a tree structure, giving you a functional view of the loads.

The hierarchy generally represents a geographical organization (Site → Buildings → Areas), so you can show energy breakdown by area.

- Click on the **“Hierarchy”** tab and then select **“Add a Hierarchy”**. Choose a name and a fluid the select the check mark to validate.
- Drag and drop the loads on the center of the screen, create a link between the loads to create the desired relationship



- 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 breakdown of consumption per load and per usage can be viewed in the “Consumptions” menu accessible from WEBVIEW-M’s home screen:



3.3 Configuring Photoview

Photoview 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 shows an overview of all your metering points and their electrical measurements.

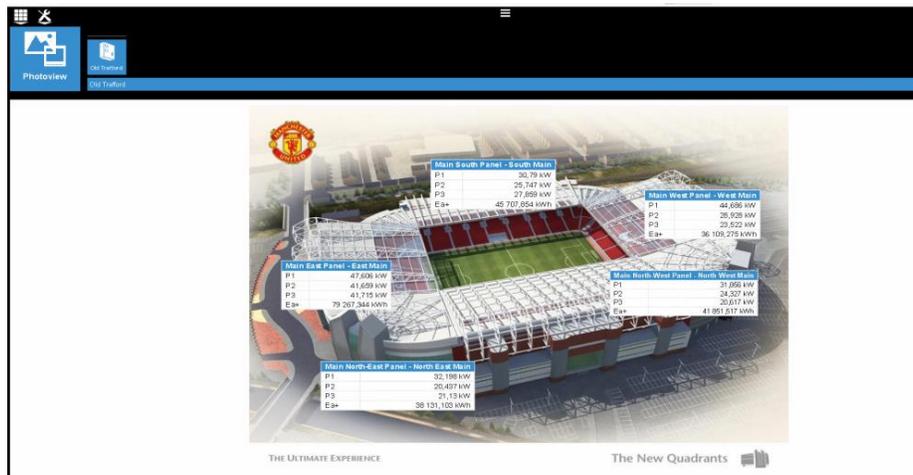
1. Click on the “**Photoviews**” tab:



2. Next click on “Add a new Photo view”.
3. Give it a name and choose an icon. Then select the picture you would like to use. Select the checkmark 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 add 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. Once your Photoview is fully configured, click on the save icon on the right side of the screen.
10. Go back to WEBVIEW-M’s homepage; a “**Photoview**” menu is now available.



11. Click on **“Photoview”**. The values are displayed in real time on the picture previously chosen.





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

HEAD OFFICE

SOCOME C, INC.

9 Galen Street, Suite 120
Watertown, MA. 20472
(617) 245-0447
info.us@socomec.com

YOUR DISTRIBUTOR / PARTNER