COMMISSIONING GUIDE

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





# **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.

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#### 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".

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# 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).



Ocnnect 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).

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	No Password	<ul><li>Visualization</li><li>Full configuration</li></ul>
Admin	Admin	<ul> <li>Visualization</li> <li>Full configuration</li> <li>Save system</li> <li>Open system</li> <li>Save template</li> <li>Upload template</li> <li>Template management Password modification</li> </ul>

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

🌖 You will now see 🇯 the system you added as shown below. Click on



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

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# 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.



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





**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".

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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.

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* General					
50 Display settings					
3; Auto-discovery settings					
· Connectivity					
50 IP configuration					
3% R5485					
% Digiware					
<ul> <li>SNMP</li> </ul>					

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.



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- 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.).

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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".

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.







10 Click on "Auto-discovery" in the middle of the screen. The Autodiscovery 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.

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#### 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".





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.



3 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).



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

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 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.

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

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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).

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

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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.

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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.

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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.

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Ange         Ange <th< td=""><td>(D.D.R. 61580)</td><td>* Input ID1</td><td></td><td></td><td>Down</td></th<>	(D.D.R. 61580)	* Input ID1			Down
10%     Not     Not     Not       10%     10%     10%     10%       10%     10%     10%	1-3585 - 286420	Ruleg		533	A
Shall Shall     Androthy is     N     N     N       Shall Shall     Shall Shall Shall     Shall Shal	U-5102 - A03710	CT 1 way	Positive	<ul> <li>Poster</li> </ul>	
Alast Sharing	1-359/3 - 53/108	Associated Vehage	31	• 10	
India         India <th< td=""><td>1-3540-4 - 5671627</td><td>* Imput IO3</td><td></td><td></td><td></td></th<>	1-3540-4 - 5671627	* Imput IO3			
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Name         Dial         A           Constantino         Solución		* Imput 103			
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Head Second Seco	ONFIGURATION				
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	Communication				
	30 Modbus				
kor     k	<ul> <li>Measurement</li> </ul>				
k Underkov K Jandanie S Jandanie S Jandanie K Jandanie K Jandanie K Jandanie K Jandanie Kon K Jandanie K	32 Ernel				
K Cancer Kenner      Konte Kenner      Kont	N Carnets Sensors				
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k Inn Kohani Jan Kinamentan Kinamentan	3) Load Curren				
2 Sectors 2 Sectors Marconserve 2 Constantions 2 Constantions	3) Trench				
Ame Ukaneentan Klankatan	N Overload Events				
S. Noncorrent Idam S. Constanta Rom S. Constant Rom	Alaeno				
N Cadeballer Mare N Overleen Mare	5% Measurement Alumn				
3. Overhood Maren	% Combination Marm				
	10 Overload Alarm				



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.

© tary ≯SO	antig System COMEC Representation and Previous s			EASY CONFIG® SYSTEM 2.1	- σ × ອ ⊕ English →
-	♥ USB Mode				Back To Device List 🛞
å	Device modified since last programming				
68	C Location	Type	Name		Designation
	×	DIRIS Digiware D-70	D-70		Program
P	×	DIRIS Digiware 1-35	1-35@5		
×	×	DIRIS Digiware U-30	U-30@2		
	×	DIRIS Digiware 1-36	1-35@3		
٥	×	DIRIS Digiware 1-35	1-35@4		
-218					

You can use the tab "Real tab 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

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.

DEVICE CONTROLINITION				EASY COMPISIONETEM 2.1 (* 🖶 English
₽ US8 Mode				Back To Device List
ORGANISATION	<ul> <li>Synch. &amp; Integration leriod</li> </ul>			
Devoes by Gateway	Designer	Value	078	DH
Q. Search.	<ul> <li>Synch. &amp; Integration leriod</li> </ul>			10540
* ( D.78. F1198	Consumption Curves Synch. Source	Internal Clock	<ul> <li>Internal Clock</li> </ul>	Downey
1.10.05. 20.05	Integration Period - Consumption Curves	60	60	
U-1082 - X01750				
1-25/02 - 53/110				
1-3549-4 - 5071627				
- Inch (1973)				
W rear and room				
• Addition				
20 allonair annai				
Consumption Curves				
3) Synch & Integration hand				
<ul> <li>Bhuite-Tarritt</li> </ul>				
N Tariff Management				
32 Taniff in progress set				
Commands				
Reset				
35 Memory/Events				

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.

ocomec				EASY COMPLEX DISTUIL 2.1 (+ C) Englis	× 0 te	config Series				EASY COMPLETION 2.1 St Copies
DEVICE CONFIGURINITION					=	DEVICE CONFIGURATION				
♥ USB Mode				Back To Device	List	♥ USB Mode				Back To Device I
ORGANISATION	 Catoulations					ORGANISATION	Load Curves			
Owners in Laboratory	Descation	Table	v-2082	104	-	Design in Colema	 Description	104	12003	
1 9 (mm)	* Calculations			Ana		a di tamb	* Lost Curves			Read
· (0.0.00.00000	<ul> <li>Integration Periods</li> </ul>				2		<ul> <li>Metotogical LED</li> </ul>			Dente
A TRACE PRANT	Integration Plenot - Inst. Values			102.6		1.15.05. 20007	Associated Land	Sum of all loads	<ul> <li>Samulations</li> </ul>	- Coper
N.M.92 - ADV200	trilegiator Period - Jug Waters	15 Minutes	<ul> <li>15.80vales</li> </ul>			0.000.000	Associated Energy	fa+	• E41	
1 2540 3 - 537 100	Integration Period - Load Curves	15 Minutes	<ul> <li>TS Mesdes</li> </ul>			1-354/3 - 537148	<ul> <li>Load Curves Panel 1</li> </ul>			
1-35894 - 503627	Load Curves Rynch. Nource	Internal Clock	<ul> <li>MenarClask</li> </ul>			1-158-4 - 507527	Associated Load	Load 1	H Lawr	
	- 140					Associated power	P+	1 D		
	THO Tape	1+D Fundamental	<ul> <li>THD (Fundamental)</li> </ul>				- Lood Curves Paint 2			
	THO Method	Sout	+ 164				Associated Law	Load L	+   Load t	
	- Other						Associated power	Q+	× 0*	
	Calculation method for QS/Ex/Ex/PF	Nector	· Neter				<ul> <li>Lood Curves Point 3</li> </ul>			
	PF Convention	80	+ 80				Associated Land	Losd 1	<ul> <li>Lost 1</li> </ul>	
							Associated power		+ 3	
							* Lood Curves Paint 4			
CONFIGURATION						CONCURATION	Associated Land	Note	* Nove	
							<ul> <li>Load Curves Panel 8</li> </ul>			
- Annap						· Company	Associated Law		* None	
V Madas						V Matha	- Lood Curves Point 6			
* Measurement						* Measurement	Associated Land		- Note	
5; Decival vetwork						X load	<ul> <li>Load Curves Paint 7</li> </ul>			
N Calculations						32 Carrent Sensors	Associated Load		<ul> <li>None</li> </ul>	
· Monitoring						SJ Calculations	* Load Curves Paint 8			
N french						· Monitoring	Associated Laad		* None	
N IN 10160 Events						32 Load Curves	<ul> <li>Lood Curves Point 9</li> </ul>			
· Alarma						N: Seeds	Associated Load		<ul> <li>Note</li> </ul>	
% Measurement Alarm.						3/ Overload Evenis				
						• Alarma				
No. 104 Strength Strength						N measurement Alarm				
A Data Data						in Constant Name				
N Date (Deep						to Design Diversi				
					_					

**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.

ICE CONFIGURATION					E SEVICE CONFIGURATION				
S8 Mode				Back To Device List @	VUSB Mode				Back To Device Un
SANISATION	<ul> <li>Calculations</li> </ul>				CROANISATION	<ul> <li>Trends</li> </ul>			
on ty Lenny	- Georgies	Value	0.3080	UNI BOOM	(g) Devices by Gamery	· Oracyton	VM	+Md3	(M) Real
	<ul> <li>Calculations</li> </ul>				Q, Search.	- Tends			
D-30-EXEMP	<ul> <li>Integration Periods</li> </ul>			Program	· (4) (5-10-122500	* Territ			Program
29.025 - 29.045	Integration Period - Inst Values	3		10.2.1	25 1101-2040	Average Weise	.vi	• 51	
00733A - 5901	Integration Panind - Aug Milues	13 Meules	<ul> <li>Minutes</li> </ul>		1-3102-A0070D	Load	(Lord 1	<ul> <li>Load 1</li> </ul>	
0.1 - 530108	Integration Period - Load Curves	15 Minubes	<ul> <li>Willington</li> </ul>		E 05-9-0 - 809'908	1 (Bend 2			
04 - 587627	Laad Curves Byrish Bounce	Internal Dock	Internal Dirok		275 1 10494 - MINUT	Average Value	10	<ul> <li>M</li> </ul>	
	1. 10					Land	Load 1	<ul> <li>Lond 1</li> </ul>	
	1HD 7934	THO (fundamental)	<ul> <li>SO/vidamental</li> </ul>			- Trend 3			
	THE Wellow	104	<ul> <li>(iii) (init)</li> </ul>			Average Velue	15	× 10	
	- Other					Lood	Load 1	<ul> <li>Losd 1</li> </ul>	
	Calculation method for G/SID/Ex/PF	Techa	<ul> <li>Moder</li> </ul>			* Tentil			
	PF Convention	81.	× 10			Average Weike	04		
						Load	Load 1	<ul> <li>Load 1</li> </ul>	
						7 Tend 5			
-					and the second second	Average Value	4		
					CONFIGURATION	Last	Load 1	<ul> <li>Lond 1</li> </ul>	
p.					- Lettings	- bend i			
- Martine					Communication	Average Wite			
automated.					A	Lood	Load 1	* Lost1	
					- Hiller	1 Den/7			
					to Connect Demonstry	Average Value	Tel privel	* Not Select	
raring					hi Caludrines	* Denil			
livenda					· Monitoring	Average Value		<ul> <li>Not-induced</li> </ul>	
UN MUNIC Durnets					35 Load Carves	1 Denil			
					x heres	Average Water		<ul> <li>NetArbad</li> </ul>	
Measurement Alumn					32 Overload Deeple				
Combination Aisem					· diama				
24 SE10E elem					32 Minuterent Marth				
Spriner Alaren					3; Combination Alarm				
-Time					52 Overload Alarm				



#### 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:

#### **z**socomec

- 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

★ HOME
▲ LOADS
④ MEASURES
④ EVENTS
✿ PARAMETERS
④ ABOUT

* HOME		
▲ LOADS ☑ MEASURES 創! EVENTS	PASSWORD	100
PARAMETERS		\$
ABOUT		

PARAMETERS	
DISPLAY	
CONFIGURE A DEVICE	
AUTODETECT SERIAL DEVICES	<b>\$</b>
AUTODETECT SERIAL DEVICES	\$
AUTODETECT SERIAL DEVICES LIST PRODUCTS ADD NEW DEVICE	\$

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

WARNING: AUTODETECT WILL REMOVE ALL
DEVICES ALREADY PRESENT!
PRESS OK TO CONTINUE.
PRESS BACK TO CANCEL.

#### AUTODETECT.

ADDRESS CONFLICTS HAVE BEEN DETECTED! PRESS THE AUTOADDRESS BUTTON ON ALL NON-BLINKING DEVICES TO SOLVE THE CON-FLICTS.



(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 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.



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:

		😫 LIST PROD.	LOAD1
		Diris U30 ID:545434	@003 🔶
PARAMETERS	LOAD1	Diris I30 ID:F0C1D2	@004
		Diris I30 ID:F0C1D3	@005
DISPLAY		Diris I30 ID:F0C1D4	@006
CONFIGURE A DEVICE			
AUTODETECT SERIAL DEVICES			
LIST PRODUCTS		\$	
ADD NEW DEVICE			

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.

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	192.168.0.4	192.168.0.4	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	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.



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.







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6 Click on "Modify active configuration" in the middle of the screen and then click on "Sources" on the top left hand of the screen.



Metview	view     view       view     view <t< th=""><th>• - • ×</th></t<>	• - • ×	
< → C 0	A Not secure   192.168.0.4/verbview.topology.data-sources.u/ng-p	roject	er 🕁 🏂 🖯
U & Devices	Configuration Devices and Hierarchies Exploitation Configuration Sources Hierarchies Proteiner	Gita Loger	مرود به معالی می مراجع می محمد می محمد می محمد محمد محمد محمد
	Selected site		
	Create	Modify active configuration	Export
	-@		
	Choose a way to create a configuration	Modify active configuration	Export configuration
	Empty configuration	Modify active configuration	Export active configuration
	Import a configuration		

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.



8 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.







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Solutions

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#### 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.







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.

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.



• 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.



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)

Once your Photoview is fully configured, click on the save icon on the right side of the screen.

Go back to WEBVIEW's homepage;
 a Photoview tab is now available.





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





 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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COMMISSIONING GUIDE

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



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.

### **Table of Contents**

#### 1. Prerequisites

1.1 List of the Devices Used

- 1.2 Upgrading the Products
- 1.3 Installing EasyConfig System
- 2. Wiring of the System
  - 2.1 Diagram
  - 2.2 Step by Step
- 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**.

ISSetupPrerequ	isites	3/2/2020 3:14 PM	File folder	200000000000000000000000000000000000000
Easy Config S	Open		Application	118,704 KB
	👎 Run as administ	rator		
	Troubleshoot co Pin to Start	ompatibility		
	<ul> <li>Share</li> <li>View online</li> <li>Choose OneDriv</li> </ul>	ve folders to sync		
1	7-Zip CRC SHA Edit with Notep Pin to taskbar Restore previou	ad++ is versions	>	
1	Send to		>	
	Cut Copy			
	Create shortcut Delete Rename		_	
	Properties		-	



### 2. Wiring of the System

#### 2.1 Diagram

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



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#### 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.

- 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><li>Visualization</li><li>Basic Configuration</li></ul>
Admin	Admin	<ul> <li>Visualization</li> <li>Full Configuration</li> <li>Save System</li> <li>Open System</li> <li>Save Template</li> <li>Upload Template</li> <li>Template Management Password Modification</li> </ul>

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	
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**.

😂 Easy (	Config System						- 🛛 🗙
<b>×SO</b>	comec				EASY	CONFIG@SYSTEM 2.2	English •
$\equiv$	LIST OF CONNECTED DEVICES						
	♥ USB Mode						Leave This Mode
ala						Q Search	
69	Reference	Name	Protocol	Modbus Address	Status	Actions	
ß	DIRIS Digiware M-50	M-50	Modbus RTU serial	255		<b>C 2 1</b>	
×							
Û							
- * [] - *							

 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



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

CONFIGURATION	•
<ul> <li>Communication</li> </ul>	
% IP Configuration	
% RS485	
% Digiware	
% SNMP	
% BACnet IP	

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**.

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
- 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 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).

C Easy								FAS	Y CONFIGRENCES 2 2	re m	O ×
=	VISUALISATION.							LAU			English
										Back to	Device List
-	ORGANISATION		DIRIS Digiwa	re M-50@255							
22	Devices by Gateway		System Inform	ation		IP Configuration		-	Storage		_
P	Q Search		Serial No: 19502040400			IP Address: 192.168.0.4 Subnet Mask: 255.255.255.0 Gateway: 192.168.0.1		Trends : Consumption Curves :		Act	ivo ivo
*	3 M-50 - 3CCADE     Fin     Dat		Firmware Versi Date/Time: 202	on: 1.2.12 2/05/10 12:14:23							
1			Devices Conn	ected	0 Devices			Pro	tocols	lood	
	DATA		Digiware Bus Ethernet Bluetooth Auto-Discovery	Active Active Inactive Stopped	3 Devices 0 Devices			SNT FTP BAC SNN	P Cnet	inacti Inacti Inacti Inacti	ve ve ve
	Dashboard				Part of the second s	Edit Madhur Adu	desease Constato Re	Clou	ad Platform	inacti	<i>i</i> e
			Bus	Туре	Name	ID	Modbus Address 11	Version	Date/Time	Com Status	Actions
			Digiware	DIRIS Digiware U-30	U-30@6	748945	2	1.11.5	10/05/2022 12:14:23	Good	Ŷ
			Digiware	DIRIS Digiware 1-35	1-35@3	530F04	3	1.11.3	10/05/2022 12:14:23	Good	Q
			Digiware	DIRIS Digiware S-135	S-135@5	79FA86	5	1.2.1	10/05/2022 12:14:23	Good	Ŷ

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.

System Inform	ation		IP Configuration		_	Storage			
Serial No: 19502040400 ID: SCCADE Firmware Version: 1.2.12 Date/Time: 2022/05/10 12:15:19		IP Address: 192.168.0.4 Subnet Mask: 255.255.255.0 Gateway: 192.168.0.1			Trends : Consumption Curves :	Active	6		
Devices Conne	ected				Prot	ocols		_	
RS485 Bus	Active	0 Devices			SMT	P	Inactive		
Digiware Bus Ethernet	Active	3 Devices 0 Devices			SNT	P	Inactive		
Bluetooth	Inactive				BAC	net	Inactive		
Auto-Discovery	Stopped	Auto-Discovery			Clou	IP Id Platform	Inactive		
			Edit Modbus Addr	Generate Re	aport				
Bus	Туре	Name	ID	Modbus Address 1	Version	Date/Time	Com. Status	Actions	
Digiware	DIRIS Digiware U-30	U-30@6	748945	2	1.11.5	10/05/2022 12:15:17	Good	8	
Digiware	DIRIS Digiware I-35	1-35@3	530F04	3	1.11.3	10/05/2022 12:15:17	Good	8	
			202100			10/05/0000 10 15 17	Company of the local sector of the local secto	0	



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.



1

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.



 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

😂 Easy (	Config System				EASY CONFIG	SYSTEM 2.2 🕞	- a × ⊕ English •
≡	DEVICE CONFIGURATION						
	♥ USB Mode					Ba	ick to Device List 🕑
-	ORGANISATION -	Modbus					
63	Devices by Gateway 🔹	Description	Value	U-30	@6	Unit	Dood
	Q. Search	* Modbus					Reau
<i>1</i> 9	<ul> <li>(3) M-50 - 3CCADE</li> </ul>	Modbus Address	2	2		-	Program
×	U-30@6 - 748945	Baudrate	38400 bps	▼ 3840	00 bps	-	
	I-35@3 - 530F04	Stop Bit	1 Stop Bit	▼ 1 St	op Bit	-	
Ċ	S-135@5 - 79FA86	Parity	None	▼ Non	e	-	
1 1 1 1 1	CONFIGURATION •						
	<ul> <li>Communication</li> </ul>						
	% Modbus						
	✓ Measurement						
	% Electrical Network						
	% Calculations						
	▼ Monitoring						
	% Trends						
	✓ Alarms						

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.



3. 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.



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

😂 Easy C	onfig System							– 🛛 🗡
<b>&gt;.</b> SO	comec					EASY CONFIG®SYSTE	EM 2.2 🕞	English •
Ξ	DEVICE CONFIGURATION							
	∲ USB Mode						Ba	ck to Device List 🕑
4	ORGANISATION	•	Calculations					
673	Devices by Gateway	•	Description	Value		U-30@6	Unit	Deed
0	Q Search		<ul> <li>Calculations</li> </ul>					Read
	▼ (3) M-50 - 3CCADE		<ul> <li>Integration Periods</li> </ul>					Program
×	U-30@6 - 748945	Ø	Integration Period - Inst. Values	5		5	x0.2 s	
	I-35@3 - 530F04		Integration Period - Avg Values	15 Minutes	•	15 Minutes	-	
	S-135@5 - 79FA86		Integration Period - Load Curves	15 Minutes	•	15 Minutes	-	
*			Load Curves Synch. Source	Internal Clock	•	Internal Clock	-	
			* THD					
			THD Type	THD (Fundamental)	•	THD (Fundamental)	-	
	CONFIGURATION	•	THD Method	Total	•	Total	-	
	<ul> <li>Measurement</li> </ul>		* Other					
	% Electrical Network	~	Calculation method for Q/S/Er/Es/PF	Vector	•	Vector	-	
	% Calculations	0	PF Convention	IEC	•	IEC	-	



5. 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.

🕸 Easy (	ionfig System					EASY CONFIG@SYSTEM 2.2	- ज × € ⊕ English ・
=	DEVICE CONFIGURATION						
	Ψ USB Mode						Back to Device List C
affa	ORGANISATION	•	Trends				
69	Devices by Gateway	•	Description  Trends	Value	U-30@6	Unit	Read
ß	Q Search		* Trend 1				
	▼ (3) M-50 - 3CCADE	~	Average Value	Network V1	<ul> <li>Network</li> </ul>		Program
~~	U-30@6 - 748945	0	<ul> <li>Trend 2</li> </ul>				
Û	S-135@5 - 79FA86		Average Value	Network V2	<ul> <li>Network</li> </ul>	- V2 -	
- 10			<ul> <li>Trend 3</li> </ul>				
			Average Value	Network V3	<ul> <li>Network</li> </ul>	- K V3	
			<ul> <li>Trend 4</li> </ul>				
	CONFIGURATION	-	Average Value	Not defined	<ul> <li>Not def</li> </ul>	ined -	
	<ul> <li>Monitoring</li> </ul>		<ul> <li>Trend 5</li> </ul>				
	* Trends		Average Value	Not defined	<ul> <li>Not def</li> </ul>	ined -	
	<ul> <li>Alarms</li> </ul>		<ul> <li>Trend 6</li> </ul>				
	% Measurement Alarm		Average Value	Not defined	<ul> <li>Not def</li> </ul>	ined -	
	% Combination Alarm		<ul> <li>Trend 7</li> </ul>				
	% EN 50160 Events		Average Value	Not defined	<ul> <li>Not def</li> </ul>	ined -	
	% System Alarm		<ul> <li>Trend 8</li> </ul>				
	▼ Date/Time		Average Value	Not defined	✓ Not def	ined -	
	% Date / Time		<ul> <li>Trend 9</li> </ul>				

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

EN 50'	160 Events				
	Description	Value	U-30@6	Unit	Deed
- EN	I 50160 Events				Read
÷	Common				Program
×.	Dip				1 logialit
Þ	Swell				
Þ	Interruption				

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!

#### **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.** 

 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.

<sup></sup> <b>Ψ</b> USB Mode					В	ack to Device List 🕑
ORGANISATION	•	Modbus				
Devices by Gateway		Description	Value	I-35@3	Unit	Read
Q Search		* Modbus				Reau
<ul> <li>▼ (3) M-50 - 3CCADE</li> <li>U-30@6 - 748945</li> <li>I-35@3 - 530F04</li> <li>S-135@5 - 79FA86</li> </ul>	0	Modbus Address	3	3		Program
CONFIGURATION   Settings  Communication  Modbus	•					



- 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.

USB Mode						Ba	ck to Device
ORGANISATION	-	Load					
Devices by Gateway		Description	Value		1-35@3	Unit	Dead
Q Search		✓ Load 1					Reat
(3) M-50 - 3CCADE		<ul> <li>Activate</li> </ul>					Progra
U-30@6 - 748945	0	Status	Enabled	*	Enabled		
I-35@3 - 530F04	0	Name	Load 1		Load 1		
S-135@5 - 79FA86		туре					
		Туре	1P+N-1CT		3P+N-3CT	(* )	
		Nominal Current	10		10	A	
		<ul> <li>Phase association to curre</li> </ul>	nt input				
CONFIGURATION	-	11	Input I01	*	Input I01		
▼ Measurement		<ul> <li>Miscellaneous</li> </ul>					
% Load	0	Usage	Undefined	•	Undefined		
3% Current Sensors		<ul> <li>Load 2</li> </ul>					
% Calculations		<ul> <li>Activate</li> </ul>					
Monitoring		Status	Disabled	*	Disabled		
% Trends		✓ Load 3					
16 Protection		- Activate					
▼ Alarms		Status	Disabled	*	Disabled	12.1	

- 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.

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 3<sup>rd</sup> 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.** 

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



 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.

JSB Mode					Back to Device Lis
RGANISATION		Modbus			
evices by Gateway	-	Description	Value	S-135@5	Unit
Search		* Modbus			Read
<ul> <li>M-50 - 3CCADE</li> <li>U-30@6 - 748945</li> <li>I-35@3 - 530F04</li> <li>S-135@5 - 79FA86</li> </ul>	0	Modbus Address	5	5	Program
ONFIGURATION	•				
Settings Communication % Modbus					

- 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

							Ba	ck to Device List 💿
品	ORGANISATION	•	Load					
33	Devices by Gateway		Description	Value		S-135@5	Unit	Deed
~	Q Search		✓ Load 1					Reau
P	▼ (3) M-50 - 3CCADE		<ul> <li>Activate</li> </ul>					Program
ж	U-30@6 - 748945	0	Status	Enabled		Enabled	÷	
	I-35@3 - 530F04	0	Name	Air Conditioning		Air Conditioning		
	S-135@5 - 79FA86	0	туре					
1			Туре	1P+N-1CT	•	3P+N-3CT	(m.)	
			Nominal Current	32		32	A	
			<ul> <li>Phase association to current</li> </ul>	ent input				
	CONFIGURATION	-	н	Input I01	÷	Input I01		
	▼ Settings		<ul> <li>Miscellaneous</li> </ul>					
	<ul> <li>Communication</li> </ul>		Usage	Air Conditionning		Air Conditionning		
	% Modbus		* Load 2					
	<ul> <li>Measurement</li> </ul>		* Activate					
	% Load	0	Status	Disabled		Disabled		
	% Current Sensors	ent Sensors	→ Load 3					
	% Calculations		* Activate					
	▼ Monitoring		Status	Disabled	*	Disabled		



- 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	Deed					
✓ Current Sensors	Current Sensors								
<ul> <li>Input I01</li> </ul>				Program					
Rating	63	63	А						
CT 1 way	Positive	✓ Positive	2						
Associated Voltage	V1	✓ V1	-						

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 <u>info.us@socomec.com</u>.

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

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### BROCHURE

# 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\*



#### Best-in-class accuracy

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

\* Only available with DIRIS Digiware AC.



#### 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.

#### VirtualMonitor and AutoCorrect are available with:







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



# 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



#### Voltage acquisition modules for AC or DC measurement



#### Current acquisition modules for AC or DC measurements





DIGITAL TOOL AVAILAB



DIRIS Digiware I DIRIS Digiware Idc To be associated with external AC or DC sensors

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





#### Digital and analog input/output modules



Create your project

www.meter-selector.com

# Elevating power monitoring to a new level.

Infinite scalability. Unique versatility. Unrivaled intelligence.

# DIRIS Digiware DC system



#### The solution for



Telecom



Control circuits



Renewable power



# DIRIS Digiware AC system





# 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.



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



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



- 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.



	Panel mou	nted display	DIN ra	ail mounted interface and ga	iteway
	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
	Modbus RTU	Modbus RTU	Modbus RTU	Modbus RTU	Modbus RTU
Drata a a la	Modbus TCP	Modbus TCP		Modbus TCP	Modbus TCP
Protocols	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-CONEIG	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.



 No hazardous voltage on panel doors.



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

A	AC voltage	measurement	DC voltage r	neasurement
Applications	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.



# 3 Multi-circuit current acquisition module with integrated sensors

#### **DIRIS Digiware S & DIRIS Digiware BCM**

lass 0.5

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.

# System DE accuracy

## 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 wirina



Guaranteed reliability

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

History of average values

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 ΔIC zero sequence CTs for earth leakage monitoring.

#### 3x quicker to install than 3x standard solutions

• The integrated current sensors do not require any extra wiring for CTs.

 Quick RJ45 connection between 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.

## **2**x

#### 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.

#### 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.
- **DIRIS Digiware** S-130 S-135 BCM-2119 BCM-2119VM BCM-2125 BCM-2125VM Number of current inputs 3 21 + 3x RJ12 21 + 3x RJ12 21 + 3x RJ12 21 + 3x RJ12 з 63 63 80 80 120 120 Maximum current (A) Metering +/-kWh, +/-kvarh, kvah Multi-tariff (max. 8) Load curves Multi-measurement 11, 12, 13, In, 5P, 5Q, 5S, 5PF P, Q, S, PF by phase Predictive power Current unbalance Phi, cosPhi, tanPhi Virtual Monitor Quality THD I Individual harmonics I Overcurrents • • • • • Alarms (threshold) • • • • •

# 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.



- 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			Curre	nt measureme	measurement (AC) Current me						
Application	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, ∑P, ∑Q, ∑S, ∑PF	•	•	•	•	•	•	•				
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)									•		
IRMS									•		
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

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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.



3

# 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.



TE Kal	Rated currents (A)												Real range		Aperture	
I E SOlid-core s	5	5 20 25 40 63 160 250 400 600 630 1000 2000						2000	covered (A)	Pitch (in)	(in)					
	TE-90									<				12 2400	3.54	2.52 x 2.52
	TE-55													8 1200	2.16	1.61 x 1.61
TE-45											3.2 756	1.77	1.22 x 1.22			
1.4.4	TE-35					<		>						1.26 300	1.37	0.82 x 0.82
	TE-25													0.8 192	0.98	0.53 x 0.53
	TE-18			<		>								0.5 75	0.7	Ø 0.33
	TE-18													0.1 24	0.7	Ø 0.33
TR/iTR split-core sensors			Rated currents (A)										Real range	A	Aperture	
		2	25	40 63				1	60	250 600			)	covered (A)		(in)
(The second seco	TR/iTR-32							<b></b>						3.2 720	(	01.26
	TR/iTR-21					4					1.26 300	Ø 0.83				
23 1	TR/iTR-14				_				>					0.8 192	(	0.55
- Ala	TR/iTR-10						<b></b>							0.5 75	(	0.39

TE flovible concern					Rate	ed current	s (A)	Real range covered	Aperture		
IF liexible selisor	100	150	400	600 1600 2000 4000 6000		6000	(A)	(in)			
	TF-600					4				32 7200	Ø 23.62
	TF-300					4				32 7200	Ø 11.81
	TF-200									12 4800	Ø 7.87
	TF-120			4						8 2400	Ø 4.72
	TF-80				>					3 720	Ø 3.15
	TF-40	<		>						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 ldc 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.

Tote ors

# Input/output modules

#### **DIRIS Digiware IO**

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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.



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



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.



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



• 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





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