Installation & Commissioning Guide

DIRIS DigiBOX A-200



When **energy** matters



Introduction:

The purpose of this document is to explain the steps of installing and configuring the DIRIS DigiBOX A-200.

Part Number	Description	
USDBPA200RJ	DIRIS DigiBOX A-200 enclosed single-point power meter; 4 CT channels; Polycarbonate NEMA 4X enclosure; RS485 Modbus RTU and Ethernet Modbus TCP/IP + BACnet IP communication; internally pre-wired with fused voltage connections; 115 – 600 VAC power supply	



Dimensions in / [mm]:











Wiring diagrams:

> USDBPA200RJ





Technical characteristics:

Electrical characteristics

Auxiliary power supply		
Voltage	115-600 VAC	
Frequency	50/60 Hz	

Measurement characteristics

Power and energy measurement	
Accuracy active energy and active	Class 0.2, DigiBOX A-200 alone
power	Class 0.5 with TE, iTR, TF sensors
	Class 1 with TR sensors
Accuracy reactive energy	Class 1 with TE, iTR, TF sensors
Power factor measurement	
Accuracy	Class 0.5 with TE, iTR, TF sensors
	Class 1 with TR sensors
Voltage measurement	
Electrical network type	Single-phase (1P2W) / Two-phase (2P2W) / Two-
	phase with neutral (2P3W) / Three-phase (3P3W)
	Delta / Three-phase with neutral (3P4W) Wye /
	Three-phase (3P4W) Delta High Leg
Voltage measurement rating	50-600 VAC (Ph-N) / 90-690 VAC (Ph-Ph) – CAT III
Voltage accuracy	Class 0.1
Voltage input consumption	≤1VA
Frequency range	45 – 65 Hz
Frequency accuracy	Class 0.02
Current measurement	
Number of current inputs	4
Associated current sensors	Solid-core TE, split-core TR/iTR, flexible Rogowski
	TF
Connection	Socomec RJ12 cables
Accuracy	Class 0.1 DigiBOX A-200 alone
	Class 0.5 with TE, iTR, TF sensors
	Class 1 with TR sensors

Mechanical characteristics

Application	Indoor or outdoor installations
Enclosure	Polycarbonate with UV inhibitors
	UL94-5VA flammability rating
Enclosure dimensions (in)	12 (H) x 10 (W) x 6 (D)
Protection rating	NEMA 4X / IP66
Operational temperature	-13 +158 °F / -25 °C +70 °C
Altitude	≤ 9840 ft / 3000 m



Communication characteristics

RS485	
Link	RS485
Connection type	2 to 3 half duplex wires
Protocol	Modbus RTU
Baudrate	9600 – 115200 baud
Ethernet	
Link	Dual Ethernet
Connection type	RJ45 10/100 Mbs
Protocol	Modbus TCP/IP, BACnet IP
USB	
Link	Micro USB Type b
Protocol	Modbus RTU
Use	Configuration via Easy Config System
	and firmware upgrade via Product
	Upgrade Tool



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1. Hazards and Warnings

The term "device" used in the paragraphs below refers to the DIRIS A-200. The assembly, use, servicing and maintenance of this product must only be carried out by trained, qualified professionals.

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

1.1 Risk of electrocution, burns or explosion

4	Caution: risk of electric shock	Ref. ISO 7000-0434B (2004-01)
	Caution: refer to the accompanying documentation each time this symbol is shown	Ref. ISO 7010-W001 (2011-05)

- Only duly authorized and qualified personnel may work or install/uninstall the device.
- The instructions are valid together with the specific instructions for the device.
- The device is designed only for its intended purpose as set out in the instructions.
- Only accessories authorized or recommended by SOCOMEC may be used in association with the device.
- Before proceeding with installation, maintenance, cleaning, disassembly, connection, or maintenance work, the device and system must be cut off from the mains to avoid electrocution



Do NOT clamp or pull out NON-INSULATED conductors carrying DANGEROUS VOLTAGE which could cause an electric shock, burn or arc flash. Ref. IEC 61010-2-032

and damaging the system and device.

- This device is not designed to be repaired by the user.
- For any questions related to the disposal of the device, please contact SOCOMEC.

Failure to comply with the instructions of the device and this safety information can cause bodily injury, electric shock, burns, death or damage to property.



1.2 Risk of Damaging the Device



Caution: risk of electric shock	Ref. ISO 7000-0434B (2004-01)
Caution: refer to the accompanying documentation each time this symbol is shown	Ref. ISO 7010-W001 (2011-05)

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

- The device is correctly installed.
- There is a maximum voltage at the voltage measurement input terminals of 690 VAC phase-phase or 600 VAC phase-neutral.
- There is a maximum voltage at the auxiliary power supply input terminals of 600 V AC.
- The network frequency indicated on the device is observed: 50 or 60 Hz.
- Always connect the TE, TR/iTR or TF current sensors using Socomec RJ12 cables and observing the maximum prescribed currents.
- When the ambient temperature exceeds +50°C, the minimum temperature rating of the copper cable to be connected to terminal must be +85°C.

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

1.3 Responsibility

- Assembly, connection and use must be carried out in accordance with the installation standards currently in force.
- The device must be installed in accordance with the rules given in this manual.
- Failure to observe the rules for installing this unit may compromise the device's intrinsic protection.
- The device must be positioned within an installation which complies with the standards currently in force.
- Any cable which needs to be replaced may only be replaced with a cable having the correct rating.
- Despite constantly striving for quality in preparing this manual, errors or omissions are always a possibility and are not the responsibility of SOCOMEC



2. Conduit Hole

The DIRIS DigiBOX A-200 is shipped with no conduit holes; they can be cut on the left side, right side, and/or the top. See the below drawings for recommended conduit hole locations.

- 1. Open the enclosure door, unscrew the two right ride screws, and lift the metal plate.
- **2.** Cut the conduit holes only in the locations where conduit fittings will be installed. Conduit hole templates can be found within the black bag that comes in the box.
- **3.** To maintain the enclosure's environmental rating, the installer must use conduit hubs/fittings* with the same environmental rating as the enclosure.
- **4.** Maintain spacing of at least ½ inch between conduit hubs/fittings and uninsulated live conductors.
- 5. Use "Grounding" conduit fittings* with built-in set screws. Run insulated copper conductors, 16awg or thicker, from fittings to spar ground terminal blocks.
- 6. Route incoming voltage conductors at least ¼ inch away from current sensor and signal conductors. Route current sensor conductors at least ¼ inch away from communication conductors.
- 7. Use cable ties to secure conductors to each other and to maintain spacing



Figure 1: Recommended conduit hole locations



3. Install Mounting Feet to the Back of the Enclosure

1. A mounting feet and screw pack is provided with the DIRIS DigiBOX A-200.



Figure 2: Mounting feet and hardware provided with the DIRIS DigiBOX A-200.

2. Turn the enclosure upside down on a flat surface so the back side is visible. Then place the mounting feet over the octagon pieces either horizontally, diagonally, or vertically and fasten them with the ¼ inch -20 x 0.25 inch SS, countersunk Phillips drive screws (torque limit is 30 in. lbs.).



Figure 3: Three ways to place the mounting feet on the enclosure (vertical, horizontal, and diagonal).

- **3.** The enclosure is now ready to be mounted vertically (i.e. on a wall) or horizontally (i.e. on a table top).
- **4.** To mount the unit, use #10-32 ¾ inch pan head screws and screw directly in the center of the cross on the mounting feet.



Figure 4: Red dot indicates where to screw when mounting on surface.



4. Wiring of the system



Before wiring the system, make sure that the fuses are NOT installed. The fuses are to be installed AFTER all wiring is complete.

- 1. Behind the metal plate the prewired and the components that need to be wired can be seen.
- 2. Wire the voltage according to the designated fuse holder (L1, L2, L3, and N).



Figure 5: Wire the voltage based on the labeled fuse holders (note that the fuse holders are empty).

Note:

- For a three-phase DELTA system, voltage is only wired to L1 L2, L3 inputs.
- For a single-phase system, voltage should be wired between L1 and N
- 3. Plug in the RJ12 cables to the DIRIS A-200 and feed the RJ12 cables out of a conduit hole.

For a three-phase system:

- Current sensor on phase A should be connected to IO1 RJ12 port of DIRIS A-200,
- Current sensor on phase B should be connected to IO2 RJ12 port of DIRIS A-200,
- Current sensor on phase C should be connected to IO3 RJ12 port of DIRIS A-200,
- Optional current sensor on Neutral must be connected to IO4 RJ12 port of DIRIS A-200.





Figure 6: The boxed area is where the RJ12 cables are inserted on the DIRIS A-200.

In case of wiring errors (orientation of current sensor or phase association), software correction is possible without physically changing the wiring of current sensors (refer to <u>5.4</u>, <u>paragraph 5</u> to change current sensor settings).

- 4. Connect the current sensor to the load and plug the current sensor into the RJ12 cable connected to the DIRIS A-200
- 5. Plug in the Ethernet or RS485 bus depending on which communication protocol will be used, and feed the cable out of a conduit hole.
- 6. Maintain spacing of at least ½ inch between conduit hubs/fittings and uninsulated live conductors. Use cable ties to secure conductors to each other and to maintain spacing.
- 7. Put fuses provided in the black bag into the fuse holders
- 8. Close the metal plate and screw it back down. The DIRIS A-200 should now be on.



5. Configuring the DigiBOX A-200

5.1 Making sure firmware is up to date

1. Before commissioning your DIRIS DigiBOX A-200, make sure the DIRIS A-200 operates under the latest firmware version.

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 DIRIS A-200.

Go to the website to download the Product Upgraded Tool: <u>https://www.socomec.us/en-us/product-upgrade-tool</u>

 Product firmware is accessible from the Resource Center at the following link: <u>https://www.socomec.us/en-us/resource-center/resource-type/firmware-266#main-wrapper</u> Use the filter section on the left to find and download the DIRIS A-200 firmware.

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 A-200.



Figure 7: The micro USB port on the DIRIS A-200



DIRIS A-200 must be powered before connecting USB cable to laptop. In the event the USB cable has been plugged before powering the DIRIS A-200, disconnect both power supply and USB cable and repeat operation, powering the DIRIS A-200 first.



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

roduct Upgrade Tool			-		Х
Product Upgrade Tool		Product Upgra	de Tool V1.5.	0.1 Befresh	
Master	DIRIS A-200	100400	~	neifesn	
master	Custime de Cabiere	122			
	Systeme de fichiers	1.2.2			
Slot	A-200 ETHERNET	1.2.2.303			
	A-200 ETHERNET Bootloader	1.2.1.0			
File content			^	Browse	
Package selected :	Package version :				
Update					
Errors				^	_
Data				^	
There is no RF module con	nected to this device.				
There is no option module	connected to this device.				
Detection completed					
			SOCO	mec	
			Innovative Power	Solutions	

Figure 8: 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 A-200.
 - A green symbol means that the firmware selected is more recent than the one currently on the DIRIS A-200 and an upgrade is possible.
 - A red symbol means that the firmware selected is a lower version than the one currently on the DIRIS A-200.

Product Upgrade Tool					-		_
Product Upgrade Tool			Product	Upgrade Tool	v1.5.	0.1	
Modules connected					^	Refresh	
Master 🚹	DIRIS A-200	1.0.0.40	0				
	Système de fichiers	1.2.2					
Slot	A-200 ETHERNET	1.2.2.30	3				
	A-200 ETHERNET Bootloader	1.2.1.0					
File content					~	Browse	٦
Package selected : VL		Package versi	on: 1.1.3.447				1
PRO880471_DIRIS_A-20)_FullPackage_1_1_3_447.dfu	1.1.3.447					-
Update							
Errors						^	_
Data						^	
Package read completed							
				7.50	çoi	mec	

Figure 9: Product upgrade tool screen once the firmware is selected.



6. Click on "Update" if needed. Once the firmware is up to date you will see the following screen

Product Upgrade Tool					-		\times
Product Upgrade Tool		ł	Product Upg	rade Tool v	1.5.0.1		
Master 📑	DIRIS A-200	1.1.3.447				^	
_	File System	1.3.7					
Slot	A-200 ETHERNET	1.3.7.126					
	A-200 ETHERNET Bootloader	1.2.1.0					
File content				^	Browse	2	
Package selected : VLC	D880471Package_DIRIS_A-200_v1_1_3_447.zip	Package version :	1.1.3.447				
PRO880471_DIRIS_A-200	0_FullPackage_1_1_3_447.dfu	1.1.3.447					
Update							
Errors						^	
Data						^	
Update in progress 1 Please disconnect your devi There is no RF module con There is no option module of Detection completed	ices. nected to this device. connected to this device.	ompleted					
				SOC	ome	ec	

Figure 10: Product Upgrade Tool screen once update is complete.

5.2 Configuration Wizard

The DIRIS A-200 can be configured using the screen's configuration "Wizard". When using the Wizard the DIRIS A-200 provides step by step assistance from its screen. Follow the on screen instructions.

Complete configuration of the DIRIS DigiBOX A-200 can be performed from the Easy Config System software (versions 2.5 and above).



5.3 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.us/en-us/easy-config-system-software
- 2. Once the Easy Config System folder is saved on your computer, right click on the setup file and **Run as administrator**.



3. Plug the micro USB cable to the slot on the back of the A-200 power meter. Plug the USB end of the cable to the computer.





The DIRIS A-200 must be powered before connecting USB cable to laptop. In the event the USB cable has been plugged before powering the DIRIS A-200, disconnect both power supply and USB cable from DIRIS A-200 and repeat operation, powering the DIRIS A-200 first.



- 4. Open Easy Config System to configure the DIRIS A-200 power meter.
- 5. 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
Lleen	No Password	Visualization
User	NO Password	Basic Configuration
		Visualization
	Admin	Full Configuration
		Save System
Admin		Open System
		Save Template
		Upload Template
		Template Management Password Modification

6. Create a new configuration by selecting New Configuration.



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

Create Configuration	×
Name	
	Create



8. Select the recently created configuration from the list.



9. Click on the Device List icon



10. Navigate to and select **USB mode** on the top right corner to connect to the A-200 power meter and access configuration menus.



The DIRIS DigiBOX A-200 will be automatically detected by **Easy Config System** (shown in the image below). If not, try disconnecting and reconnecting the cable and again clicking on **USB Mode**



5.4 Configuration of the DIRIS DigiBOX A-200 using Easy Config System

1. Once connected to the DIRIS A-200, navigate to and select **Device Configuration.**



Time of Use

The DIRIS A-200 records Time of Use (ToU) energies on a perpetual calendar, managing up to 4 different seasons, up to 4 different rates, holidays and special days.

A dedicated dashboard allows to customize the tariff schedule based on the utility requirements. A tutorial video is available at the following link to help you configure your Time of Use calendar: <u>https://www.youtube.com/watch?v=z_03s5IBDM</u>

Measurement

 Electrical Network: select the Network Type being measured based on where the voltage is measured by the DigiBOX A-200 as well as the L-L nominal voltage and nominal frequency (60 Hz in North America)

🕸 Easy	Config System							×
^				×.50C	omec	EASY CONFIG@SYSTEM 2.5	•	English (USA) •
=	the USD Mode							Section Device Line O
	4 OSB MODE							Back to Device List
å	ORGANIZATION -	Electrical Network						
69	Devices by Gateway 👻	+ Description	Value		DIRIS A-200)	Unit	Dead
	Q Search	* Electrical Network						Redu
10	DIRIS A-200 - 0F0683	Network						Program
×		Туре	3P+N	•	3P+N			
		Nominal Voltage (L-L)	480		480		V	
		Nominal Frequency	60 Hz	•	60 Hz			
		Phase Rotation	Va - Vb - Vc	•	Va - Vb - V	c		
	CONFIGURATION -	Voltage Transformer						
	Time of Use	Voltage Transformer	No	•	No			
	▼ Settings							
	 Measurement 							
	% Electrical Network							
	% Load							
	% Current Sensors							
	 Display 							
	Screen Configuration							
	 Communication 							
	% Modbus							
	% IP Configuration							
	% BACnet IP							



For a three-phase Wye system, make sure the Electrical Network is configured as 3P+N. If configured as 3P only (Delta system), some electrical values (Va, Vb, Vc) will not be available.



- **3.** Once you have entered your parameters, click on **Program** at the top right side of the screen and this will immediately flash the DigiBOX A-200. Clicking on **Program**, only flashes the parameters of the tab that you are currently working on to the DigiBOX A-200.
- **4.** Load: Define the Load Type being measured and provide the Nominal Current. You can also name the Load and define the energy usage.

Note: Supported load types : 1P+N – 1CT, 2P – 1CT, 2P+N - 2CT, 3P – 3CT / 3P – 2CT / 3P – 1CT, 3P+N – 3CT / 3P+N – 1CT



For a three-phase load with neutral (Wye), make sure the Load type is configured as 3P+N - 3CT or 3P+N - 4CT. If configured as 3P (Delta), some electrical values for individual phases will not be available (P1, P2, P3).

🧐 Easy	Config System					- 0 X
=	DEVICE CONFIGURATION		×500	COMEC EASY CONFIGRASYSTEM 2.	› [# 5	
-	∳ USB Mode				Bi	ack to Device List 🕑
æ	ORGANIZATION	Load				
69	Devices by Gateway 👻	+ Description	Value	DIRIS A-200		Dead
	Q Search	Load 1				Read
10	DIRIS A-200 - 0F0683	Activate				Program
×		Status	Enabled	Enabled		
÷.		Name	Load 1	Load 1		
		* Туре				
		Туре	3P+N-4CT *	3P+N-4CT		
	CONFIGURATION -	Nominal Current	63	63	A	
	Time of Use	* Phase association to current input				
	 Settings Mossurement 	la	Input I01 *	Input I01		
	32 Electrical Network	Ib	Input I02 *	Input I02		
	% Load	lc	Input I03 *	Input I03		
	% Current Sensors	In	Input I04 *	Input I04		
	% Calculations	Miscellaneous				
	▼ Display	Residual Currents (RCM)				
	% Screen Configuration	› Load 2				
	 Communication 	› Load 3				
	% Modbus	› Load 4				
	% IP Configuration					
	% BACnet IP					

5. The **Current Sensors** menu allows you to configure the current sensors connected to the DigiBOX A-200.

The rating of current sensors is automatically detected thanks to the RJ12 technology. For each current sensor, you can change:

- Its orientation: Positive = P1 → P2 on TE/TR/iTR current sensors and in the same direction as arrow for TF current sensors
- Its phase voltage association. This is particularly useful if a wiring mistake has been made during installation



🔅 Easy	Config System				×500	omec	EASY CONFIG@SYSTEM 2.5	•	– 🗆 X 🌐 English (USA) 🔹
≡	DEVICE CONFIGURATION								
	4 USB Mode								Back to Device List 🖲
ŝ	ORGANIZATION	-	Current Sensors						
64	Devices by Gateway	•	Description	Value		DIRIS A-200)	Unit	Bood
	Q Search		Current Sensors						Reau
-	DIRIS A-200 - 0F0683	0	Tinput I01						Program
×			Rating	600		10		A	
rħ			CT 1 Orientation	Positive	•	Positive			
			Associated Voltage	Va	•	Va			
			input I02						
	CONFIGURATION	•	Rating	600		10		A	
	Time or Use		CT 2 Orientation	Positive	•	Positive			
	 Measurement 		Associated Voltage	Vb	•	Vb			
	% Electrical Network		* Input I03						
	% Load		Rating	600		10		A	
	% Current Sensors	0	CT 3 Orientation	Positive	•	Positive			
	% Calculations		Associated voltage	Vc	•	Vc			
	 Display 								
	% Screen Configuration								
	 Communication 								
	% Modbus								
	% IP Configuration								
	% BACnet IP								

6. Calculations: Set the integration period for instantaneous and average values of the different electrical parameters.

Notes:

The integration period of average values determines the reading interval of **Trends** displayed on WEBVIEW-S, the webserver embedded in the DigiBOX A-200.

Refer to step 11 to choose the electrical parameters you wish to record for Trends curves on WEBVIEW-M.

🔅 Easy	Config System									- 🗆 ×
^						×.500	omec	EASY CONFIG@SYSTEM 2.5	•	English (USA) •
=	ILLISP Mode									Dack to Daviso List O
	T OSB MODE									Back to Device List
ಹೆ	ORGANIZATION		Calci	ulations						
69	Devices by Gateway	•	+	Description	Value		DIRIS A-2	00	Unit	Read
	Q, Search		Υ.	Calculations						Reau
10	DIRIS A-200 - 0F0683	0		* Integration Periods						Program
×				Integration Period - Inst. Values	5		5		x0.2 s	
				Integration Period - Avg Values	15 Minutes	•	15 Minut	tes	min	
Ċ				* THD						
				THD Type	THD (Fundamental)	•	THD (Fur	ndamental)		
	CONFIGURATION	•		THD Method	Total	•	Total			
	Time of Use			* Other						
	 Settings 			Calculation method for Q/S/Er/Es/PF	Arithmetic	•	Arithmet	tic		
	✓ Measurement			Phase to neutral voltage Lowest Level	10		10		V	
	% Electrical Network			PF Convention	IEC	•	IEC			
	% Current Sensors	1		Average min/max mode	Normal	•	Normal			
	% Calculations	וו		* Acquisition Mode						
	 Display 	· .		Average Values Acquisition Mode	Fixed Window	•	Fixed Wi	ndow		
	% Screen Configuration			* Billing cycle						
	 Communication 			Start day	1		1			
	% Modbus									
	% IP Configuration									
	% BACnet IP									



Display

7. The **Display** section allows to customize the A-200 screen settings for optimal user experience (language, backlight settings etc.).

Communication

8. The **Communication** section will show the different communication protocols and their parameters (IP Address, MODBUS Address, Baud rate, etc.).

•	Com	munication
	×	Modbus
	×	IP Configuration
	×	BACnet IP

The Modbus address and IP address will give you the capability to connect and communicate with the product. Enter all desired IP settings.

🤤 Easy	Config System								- 🗆 ×
^					× 50	comec	EASY CONFIG®SYSTEM 2.5	•	English (USA) •
=	DEVICE CONFIGURATION								
	Ψ USB Mode								Back to Device List 🕑
æ.	ORGANIZATION		Modbus						
63	Devices by Gateway	•	Description	Value		DIRIS A-200		Unit	Road
	Q Search		Modbus						Reau
1	DIRIS A-200 - 0F0683	0	Modbus Address	5		5			Program
Ж			Baud Rate	38400 bps	•	38400 bps			
			Stop Bit	1 Stop Bit	•	1 Stop Bit			
			Parity	None	•	None			
	CONFIGURATION	*							
	Time of Use								
	✓ Settings								
	 Measurement 								
	% Electrical Network								
	% Load								
	% Current Sensors	0							
	% Calculations								
	 Display 								
	% Screen Configuration								
	 Communication 								
	% Modbus								
	% IP Configuration								
	% BACnet IP								



y Config System		~5	OCOMEC EASY CONFIG@SYSTEM 2.	5 🕞 (– 🗆 × 🖶 English (USA) •
DEVICE CONFIGURATION					
🕈 USB Mode				B	ack to Device List (
ORGANIZATION -	IP Configuration				
Devices by Gateway	Description	Value	DIRIS A-200	Unit	Dood
Q Search	* IP Configuration				Redu
DIRIS A-200 - 0F0683	IP Address	192.168.0.4	192.168.0.4		Program
	Subnet Mask	255.255.255.0	255.255.255.0		
	Gateway	192.168.0.1	192.168.0.1		
	DHCP	No	No		
	HTTP Port	80	80		
CONFIGURATION -	DNS Server IP Address	0.0.0.0	0.0.0.0		
Time of Use	Domain Name	socomec.com	socomec.com		
 Settings Monsurement 	Host Name	S0F0683	S0F0683		
% Electrical Network	TCP Modbus port	502	502		
% Load	Ethernet Auto-Detection (SSDP)	Active	Active		
% Current Sensors	Product Name	DIRIS A-200	DIRIS A-200		
% Calculations	Product Description	SOCOMEC/CCS	SOCOMEC/CCS		
Display Screen Configuration Communication Motibus Ponfiguration Planne 19					

Date/Time

9. Next, click on the **Date/Time** tab. You can synchronize the date/time of the DigiBOX A-200 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.



Monitoring

10. Demand profiles: Set the integration period of Demand profiles, then select which power values you wish to log and their associated load. Demand profiles can be visualized on the embedded webserver WEBVIEW-S.



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

🕸 Easy	Config System			- 0 X
=	DEVICE CONFIGURATION		ASOCOMPC EAST CONFIGURIST	M 2.5 CF 🌚 English (USA) 🖲
	♥ USB Mode			Back to Device List 🛛
<u>.</u>	ORGANIZATION -	Demand Profiles		
64	Devices by Gateway	Description Value	DIRIS A-200	Unit
	Q Search	* Demand Profiles		Read
1 9	DIRIS A-200 - 0F0683 🖉	The Integration Period		Program
ж		Integration Period - Demand Profiles 15 Minut	es • 15 Minutes	
đ		Demand Profiles Sync. Source Internal 0	Clock Internal Clock	
		Metrological LED		
		Associated Load Load 1	 Load 1 	
	CONFIGURATION	Associated Energy Ea+	▼ Ea+	
	% Digital Input	* Demand Profiles Point 1		
	% Digital Output	Associated Load Load 1	 Load 1 	
	▼ Date/Time	Associated Power P+	• p+	
	% Date / Time	* Demand Profiles Point 2		
	% SNTP Server	Associated Load Load 1	 Load 1 	
	% Week Numbering	Associated Power P-	• p.	
	Monitoring Monitoring Monitoring	* Demand Profiles Point 3		
	% Trends	Associated Load 1	 Load 1 	
	% Consumption Curves	Associated Power Q+	• Q+	
	% Load Shedding	Demand Profiles Point 4		
	% Protection	Associated Load Load 1	Load 1	
	% Customisable Modbus Table	Associated Power Q-	• Q.	

11. Trends: Choose and select the different parameters you want to record and be able to visualize trends (historical view) on WEBVIEW.

🔅 Easy	Config System				X
=	DEVICE CONFIGURATION			ASOCOMEC EAST COMPAGE	Stew 2.5 CF @ English (USA) •
	ቁ USB Mode				Back to Device List 📀
÷	ORGANIZATION -	Trends			
A:A	Devices by Gateway 👻	+ Description	Value	DIRIS A-200	Unit
	Q Search	Trends			Read
<i>_</i>	DIRIS A-200 - 0F0683 🖉	Trend 1			Program
×		Average Value	la	▼ la	
		Load	Load 1	 Load 1 	
•		Trend 2			
1		Average Value	Ib	▼ Ib	
	CONFIGURATION -	Load	Load 1	 Load 1 	
	% Digital Input	* Trend 3			
	% Digital Output	Average Value	Ic	▼ Ic	
	▼ Date/Time	Load	Load 1	 Load 1 	
	% Date / Time	* Trend 4			
	% SNTP Server	Average Value	In	▼ In	
	% Week Numbering	Load	Load 1	 Load 1 	
	▼ Monitoring	Trend 5			
	% Demand Profiles	Average Value	Va	▼ Va	
	% Consumption Curves	Load	Load 1	 Load 1 	
	% Load Shedding	Trend 6			
	% Protection	Average Value	Vb	• Vb	
	% Customisable Modbus Table	Load	Load 1	Load 1	



12. Consumption Curves: Set the desired integration period for consumption curves (kWh). Consumption curves can be visualized on the embedded webserver WEBVIEW-S.

🕸 Easy	Config System							– 🗆 X
f				<mark>≍</mark> .50	comec	EASY CONFIG@SYSTEM 2.5	•	English (USA) •
=	DEVICE CONFIGURATION							
	🖞 USB Mode							Back to Device List 🕑
品	ORGANIZATION -	 Consumption Curves						
63	Devices by Gateway	Description	Value		DIRIS A-200		Unit	Pead
	Q Search	Consumption Curves						NCOU
<i>•</i>	DIRIS A-200 - 0F0683	Energy Curves Sync. Source	Internal Clock	•	Internal Cl	ock		Program
ж		Integration Period - Energy Curves	15		15		min	
ŵ								
	% Digital Input							
	% Digital Output							
	▼ Date/Time							
	% Date / Time							
	% SNTP Server							
	% Week Numbering							
	 Monitoring 							
	% Demand Profiles							
	% Trends 🖉							
	% Consumption Curves							
	% Load Shedding							
	% Protection							
	% Customisable Modbus Table							

Waveforms

- **13.** By default, waveform captures are disabled for voltage sags, interruptions, swells and overcurrents. Change each setting to "Enabled" to activate automatic waveform capture upon detection of a power quality event.
- **14.** To trigger a waveform capture upon a loss of power supply, enable "Capture on Powerfail".

😂 Easy	Config System					socomec	EASY CONFIG@SYSTEM 2.5		– 🗗 × 🌐 English (USA) •
≡	DEVICE CONFIGURATION								
	🕈 USB Mode								Back to Device List 🖲
æ	ORGANIZATION		Waveform settings						
62	Devices by Gateway	•	+ Description	Value		DIRIS A-200		Unit	Dec d
	Q Search		* Waveform settings						Read
1	DIRIS A-200 - 1D9C20	0	Main settings						Program
×			Caputre ratio post trig event	50		50		96	
			Capture subsamling	x 2	*	x 2			
			* Waveform Capture Trigger						
			Swell	Enabled	•	Disabled			
			Sag	Enabled	•	Disabled			
			Interruption	Enabled	•	Disabled			
	CONFIGURATION	•	Overcurrent	Enabled	•	Disabled			
	 Waveforms 		Digital input	Disabled	•	Disabled			
	% Waveform settings	0	* Other						
	 Emails (SMTP) 		Capture On Powerfail	Enabled	•	Disabled			
	% SMTP Settings								
	▼ Tariff Settings								
	% Tariff Management								
	% Tariff Name								
	▼ Time of Use								
	% Time of Use Settings								
	✓ Commands								
	▼ System								
	12 System Action								





Make sure nominal voltage (L-L value) is correctly configured in "Electrical Network" menu.

Notes: By default, a sag will be detected if voltage drops below 90% of nominal voltage, a swell if voltage goes above 110% of nominal voltage, and an interruption if voltage drops below 5% of nominal voltage. If necessary, go to the Alarms section - EN50160 events to change the power quality event thresholds.

- **15.** You can also change the Pre/Post trigger ration (50% by default, meaning that half of the capture is before the event and the other half is after the event).
- **16.** You can also change the capture subsampling from x1 to x8 (x2 by default). A subsampling x2 will provide 80 samples per cycle, while a subsampling x1 will provide 160 samples per cycle.
- **17.** Continue to navigate through the remaining settings menus (*Digital I/O, Alarms and Emails (SMTP)*) and set all parameters per your application.

Please note that additional assistance from your IT department may be required when it comes to configuring communication protocols, services and ports.

18. Once the configuration is done in Easy Config System, follow the steps in <u>chapter 6</u> to set up WEBVIEW-S to be able to visualize measurements from a web browser.



6. WEBVIEW-S

WEBVIEW-S is a free webserver, embedded in the DigiBOX A-200 and provides visualization of realtime measurements and monitoring of energy consumption and demand profiles. It is intended for use by those who wish to have a complete and user-friendly tool to quickly analyze malfunctions within their electrical installation to guarantee energy-related performance.

6.1 WEBVIEW-S configuration

1. Open the internet browser and type in the IP address of the DIRIS DigiBOX A-200.



The default IP address for the DIRIS DigiBOX A-200 is: 192.168.0.4

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 DIRIS A-200 will be flashing.**

The Password Alert alarm can also be disabled from Easy Config System.



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





4. Then Click on the "Devices" tab on the top left hand of the screen.





5. The DIRIS A-200 will be listed, and you can click on the "Edit" button under the "Actions" column to customize the device name and choose an Area where the A-200 is located.

Devices Devices <	₩\$	Architecture			Exploitation					4	8	₩EBVIEW-S V2.12 ¥
Devices 2022/11/20 10.00 Sources Research Image: Control of the state of th		Sources	Circuits	Usages	Hierarchies	Photoviews						
Sources Research Reference Name Area IP Address Modbus Address Network Type Network ID Status Actions A200 Ethernet DIRIS A-200 localhost \$ 3P+N 1D9C20 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Devices											2023/11/30 10:20:34
Research Reference Name Area IP Address Modbus Address Network Type Network ID Status Actions A200 Ethernet DIRIS A-200 Iocalhost 5 3P+N 1D9C20 Image: Comparison of the status Image: Comparison of the status Actions Image: Comparison of the status Image: Compa	Sources											
Reference Name Area IP Address Modbus Address Network Type Network ID Status Actions A200 Ethernet DIRIS A-200 Iocalhost S 3P+N 1D9C20 Image: Comparison of the status <	Research			00								
A200 Ethernet DIRIS A-200 localhost 5 3P+N 1D9C20 E 0 C	Reference		Name		Area	IP J	Address	Modbus Address	Network Type	Network ID	Status	Actions
	A200 Ethernet	DIRIS A-200					localhost	5	5 3P+N	1D9C20		
	1 0											10 \$
												\frown

6. From the "Circuits" tab, you can rename the Load name (normally already configured 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.

=	Devices		Sources Circuits	Usages	Exploitation Hierarchies	Photoviews	Ξ		▲ ≈ V	EBVIEW-S V2.12 x
	Circuits Research									
	٩			00)					
	Device	Area	Circuit A200Eth : Miscellaneous 1		Fluid	Index	Undefined	Load Type	Status	Actions
١	DIRIS A-200		MSWB2 Feeder		Electricity	Load 1	Undefined	♣ 3P + N - 4CT (4NBL)		
	10	•								10 ¢

WEBVIEW-S 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.



6.2 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 Photoview".
- **3.** Give it a name and choose an icon. Then select the picture you would like to use. Select the checkmark to validate.

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Photoviews	(R)	Architecture	Exploitation			
Photoview page name	Picture					
A Panel PB2				Manage	1	
TT	-			None	Browse	2023/11/30 10:56:18
		-		Maximum Size:	10.0 MiB	
? Pcture				Maximum Resc	lution: 1.920×1.080 px	
Photoviews List	•			Þ		
					Cancel	

- **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-S'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 <u>tech.us@socomec.com</u>. For all other inquiries, contact <u>info.us@socomec.com</u>.

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

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