

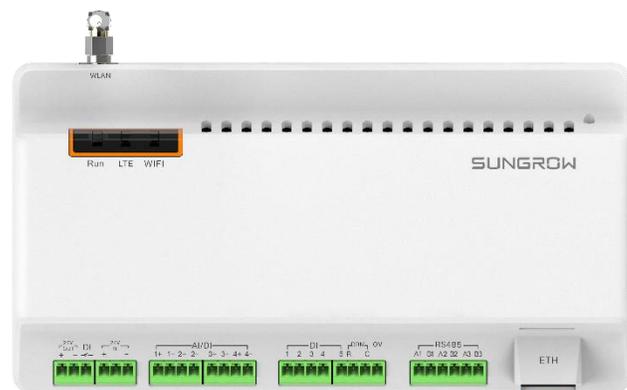
The image shows a close-up of the terminal block on a Sungrow solar inverter. The terminal block is a dark grey metal plate with several connection points. From left to right, there are three PV input terminals labeled PV1+, PV2+, and PV3+. Next to them is a BAT+ terminal. To the right of the BAT+ terminal are two LAN ports, each with a label 'LAN' and a small icon of a network port. Further right is a COM port with a label 'COM' and a small icon of a serial port. The background is a blurred view of the inverter's internal components, including a large capacitor and other electronic parts. The entire image has a warm, orange-tinted overlay.

SUNGROW

Clean power for all

COM100E

Logger1000B vs. COM100E?





C&I MONITORING Solution LOGGER1000B / COM100E

01

Supporting RS485,
Ethernet and WLAN/Wifi

02

Active- and reactive
power control

03

Simple using and
maintenance

04

Inverter batch
parametrizing and
firmware updates

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COMMUNICATION	COM100E	LOGGER1000B
Max. Inverters	30	30
RS485 Interfaces	3	3
Ethernet	1 x RJ45, 10/100/1000 Mbps	1 x RJ45, 10/100/1000 Mbps
Digital Inputs (DI)	5, max. 24 VDC	5, max. 24 VDC
Analog Inputs (AI)	4, Support of 4-20 mA and/or 0-10 Vdc	4, Support of 4-20 mA and/or 0-10 Vdc
Wifi Communication	802.11 b/g/n/ac HT20/40/80 MHz 2,4 GHz / 5 GHz	802.11 b / g / n / ac HT20 / 40 / 80MHz 2.4G Hz / 5GHz

GENERAL DATA

Size (W × H × D)	460 x 315 x 126 mm	200 x 110 x 60 mm
Mass	6 kg	500 g
Operation Temperature	-30...60°C	-30...60°C
Storage Temperature	-40...80°C	-40...80°C
IP (Ingress Protection Class)	IP66	IP20
Allowed relative air humidity	< 95% (non condensing)	< 95% (non condensing)
Maximum operating altitude	4000 m	4000 m
Housing material	PC (PolyCarbonate)	-

Information

**COM100E consists of:
Logger1000B, AC Adapter, surge
protect, electrical fuse, night
light**

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USER MANUALS

COM100E: [ENG](#)

LOGGER1000B: [ENG](#)

INSTALLATION GUIDES

(COM100E: [ENG](#))

LOGGER1000B: [ENG](#)



DATA SHEETS

(COM100E: [ENG](#))

(LOGGER1000B: [ENG](#))

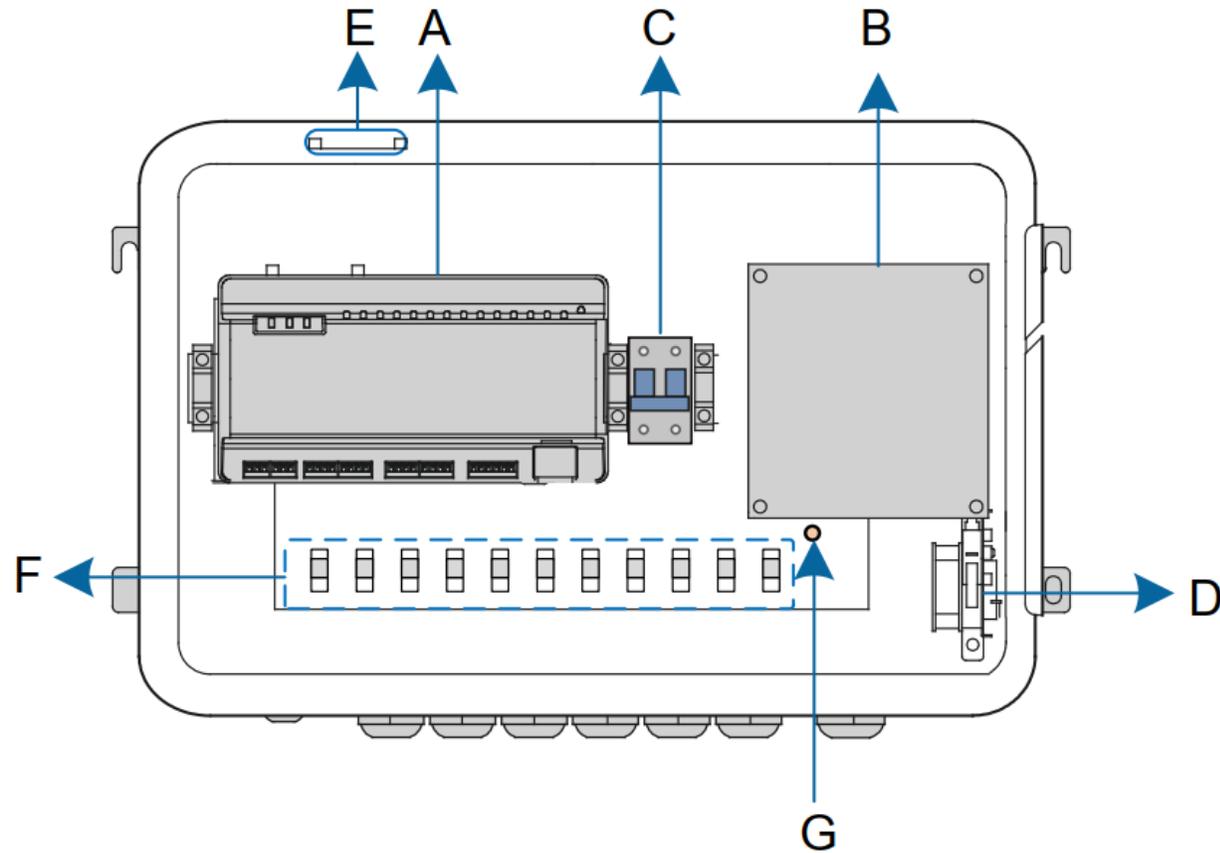
(In brackets: might not work
during website relaunch)



Outside Connections COM100E



Inner Installation COM100E

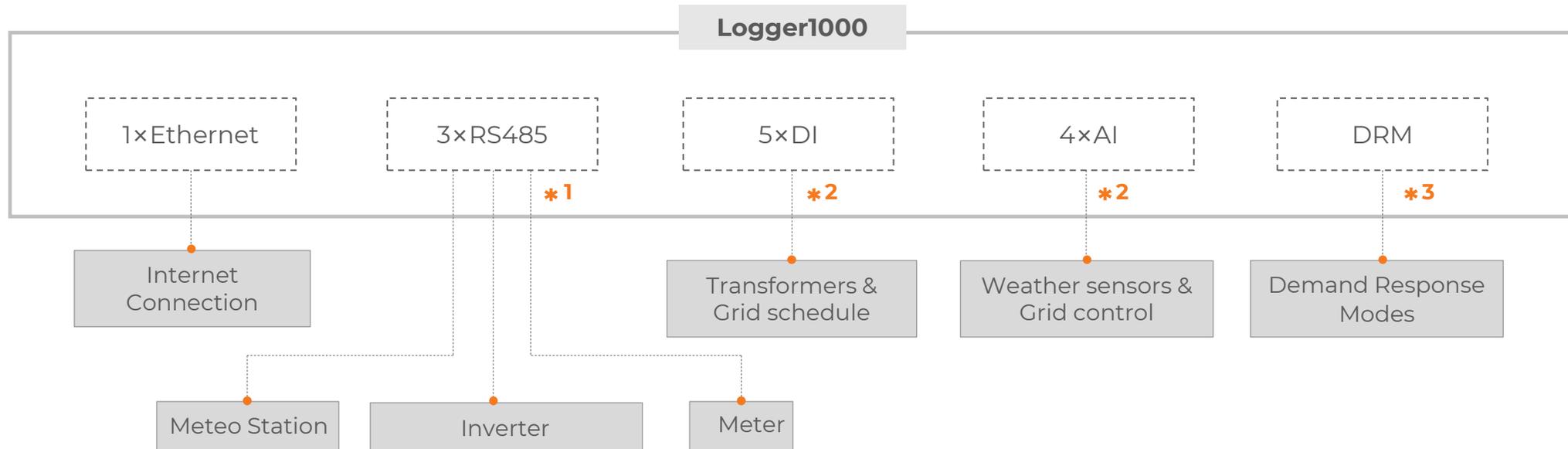


Description

A	Logger1000B
B	AC Power Supply and Surge Protect for 24 Vdc
C	Micro circuit breaker for disconnection of 230Vac power supply
D	Night / Maintenance light
E	Antenna
F	Cable fixation holders
G	Grounding terminal

Interface Description

Logger1000 / COM100

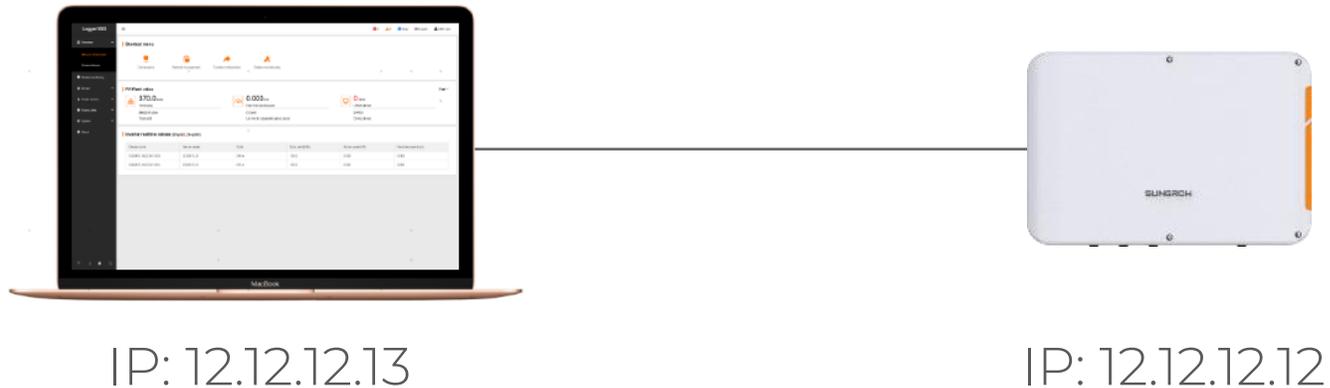


- *1** Devices of each type are connected by using an independent RS485 cable
- *2** Via the DI & AI-Ports grid schedule / regulation functions can be performed, by receiving signals from the utility provider (e.g. ripple control)
- *3** For the Demand Response Mode (DRM) standard required for Australia



Local Access via Ethernet

- Connect Notebook to the logger via LAN-Cable CAT5/6
- Configure the notebook IP-address to 12.12.12.xx e.g. .13 (under „network settings“)
- Enter logger IP-address in the internet browser

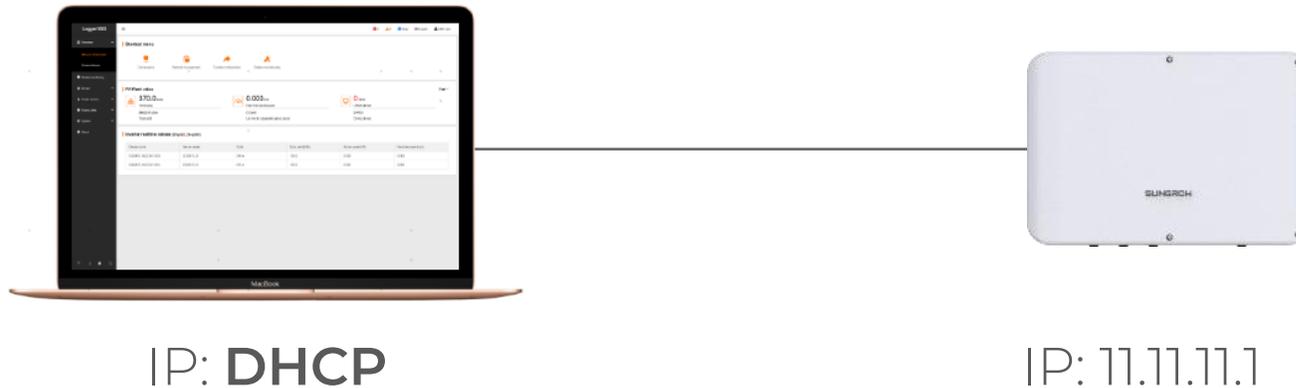


- Default PW: **pw1111**
- IP 12.12.12.12 is the factory-set IP-address for the logger Ethernet port (Subnet mask: 255.255.255.0)



Local Access via WiFi/WLAN

- Open WiFi-adjustments of the smartphone – Look for SSID „SG-Axxxxxx“ of the logger
- Click and connect smartphone to the logger WiFi hotspot
- Enter Logger IP adress in the internet browser

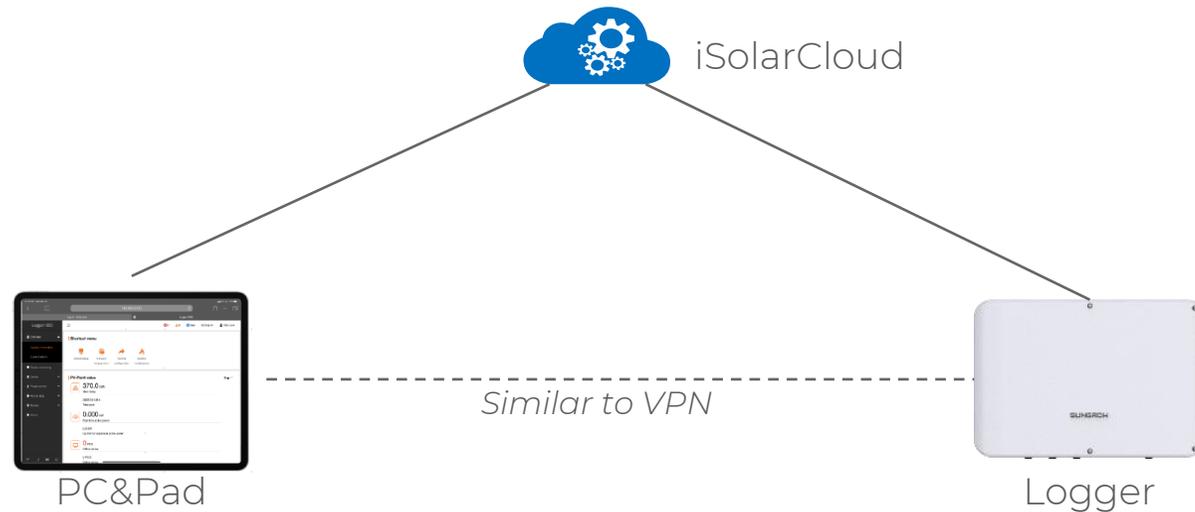


- Default PW: **pw1111**
- IP 11.11.11.1 is the factory-set IP address for the WiFi/WLAN hotspot



Remote Access via Internet

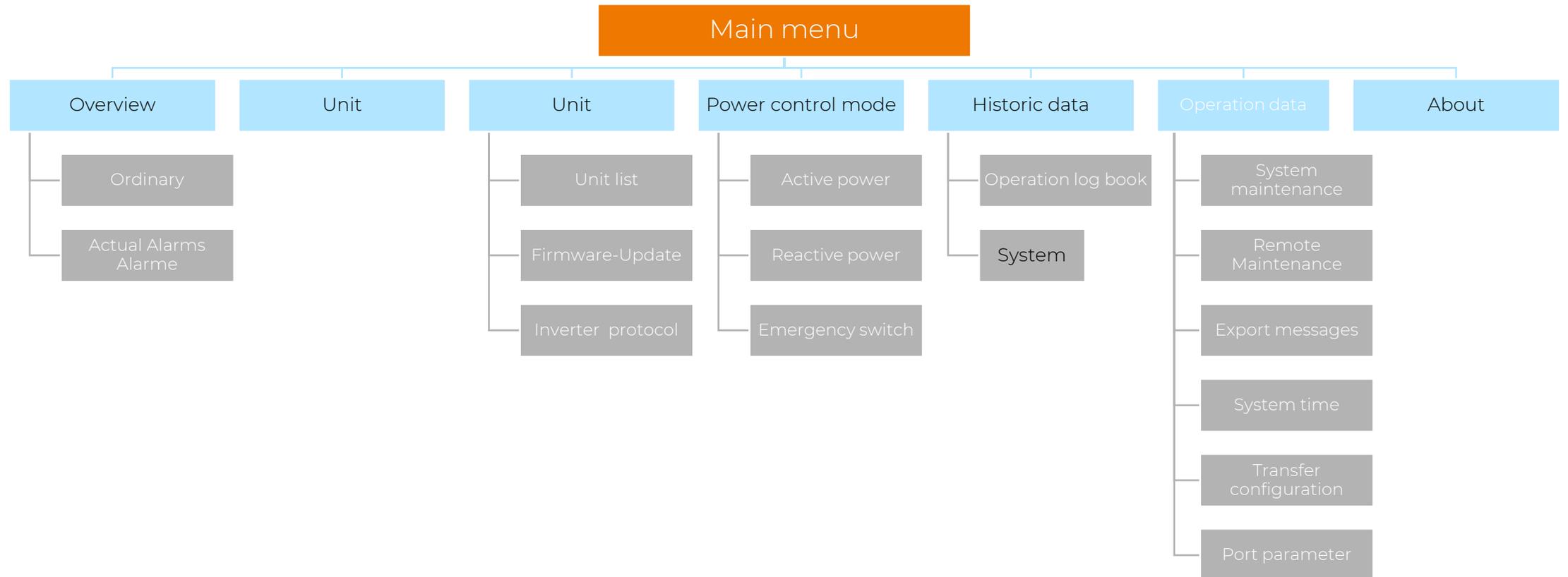
- For remote access to the logger it has to be connected to iSolarCloud (access via „remote maintenance“)
- Login iSolarCloud – Advanced – Remote Control – Click on HTTP-remote connection address



Default PW: **pw1111**

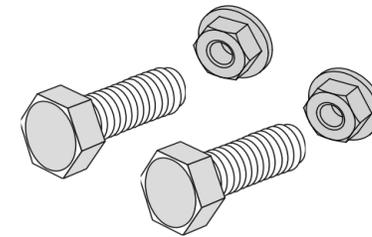
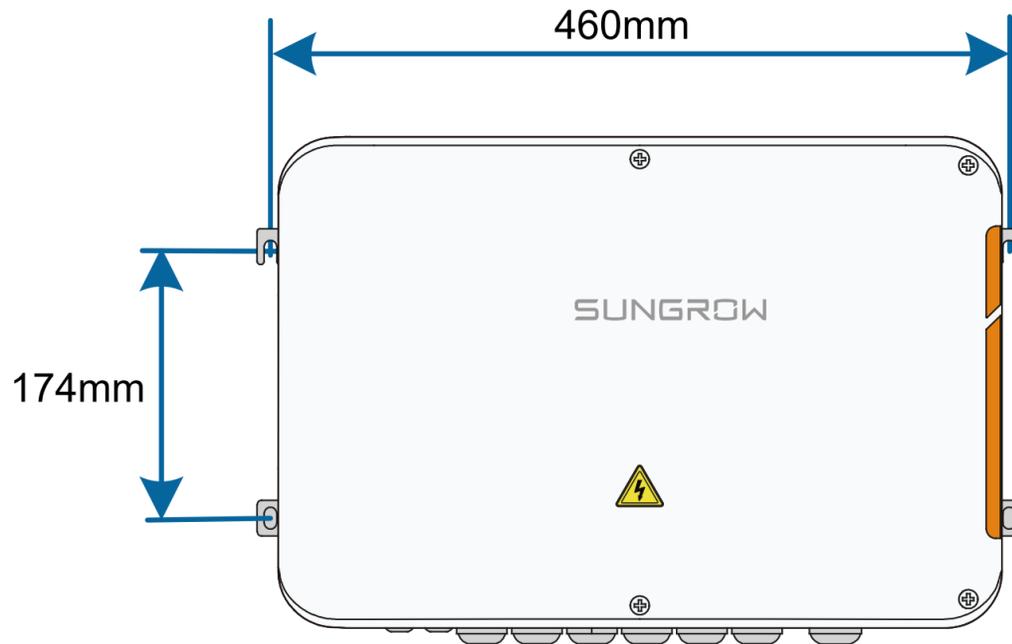


Menu structure



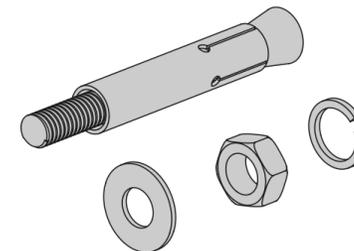
Mechanic Installation

Equipment for concrete and metal wall included in the scope of delivery.
Four mounting hooks on the backside of the logger.



Metal wall

Hexagon bolt screws
with nut,
4x M6x45



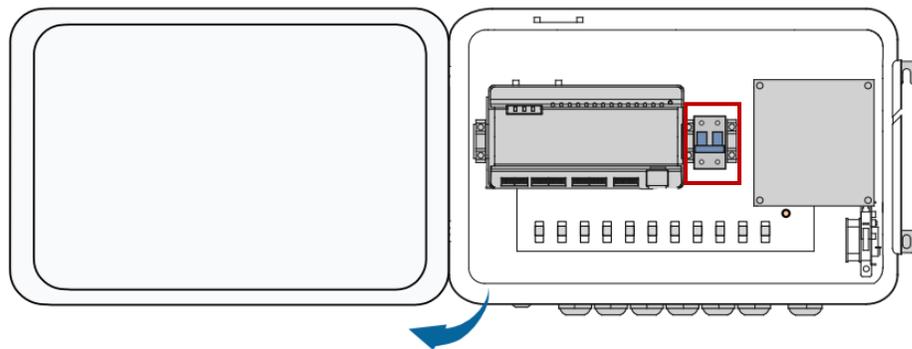
Concrete wall

Expansion bolt,
consisting of
4x M6x60



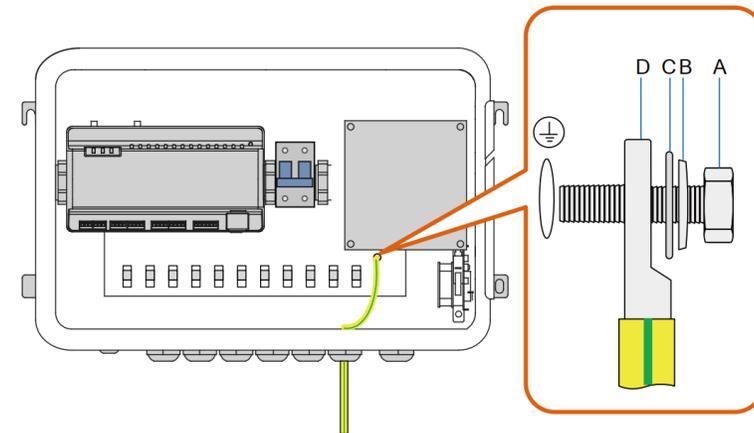
Preparing of Electric Installation

1. Switching off COM100E



- Release the four screws on top of the enclosure and open it
- Turn the internal power switch of the COM100 to the "OFF" position to ensure the COM100 is voltage-free(switch showing down)

2. Grounding COM100E



- Strip the insulation cover of the grounding cable and crimp the stripped cable to the OT terminal.
- Fasten the grounding cable in the sequence of cross recessed fastener assembly, OT terminal, and grounding hole.

A = M5x10 cross recessed fastener | B = flat washer | C = spring washer | D= OT Terminal

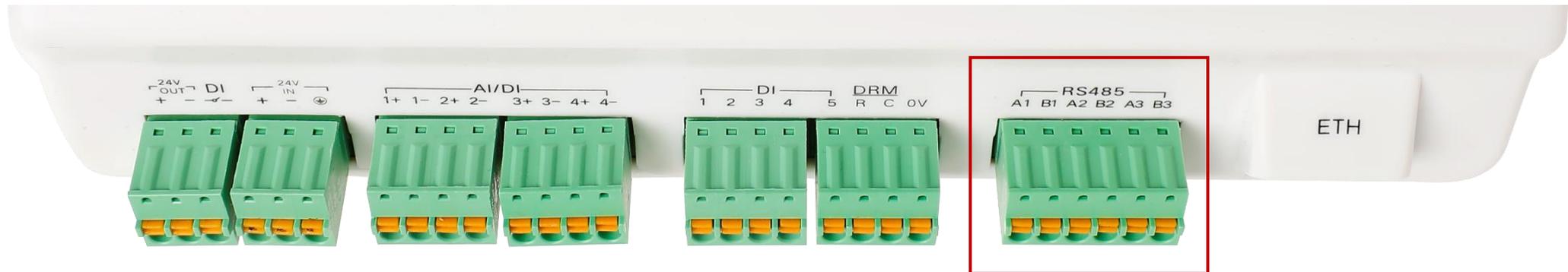


RS485 Connection

The protocol between all connected units in the PV array is RS485.

Three ports are available (A1B1, A2B2, A3B3).

3rd-party units (environmental sensors, grid analysers) and energy meter are connected to a different port as the inverters.

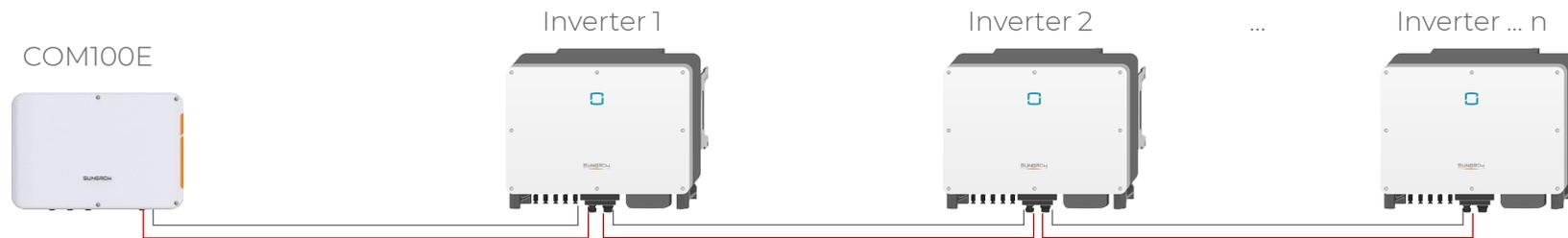


Cable requirements: **Shielded Twisted-Pair, min. 0,75 mm diameter**



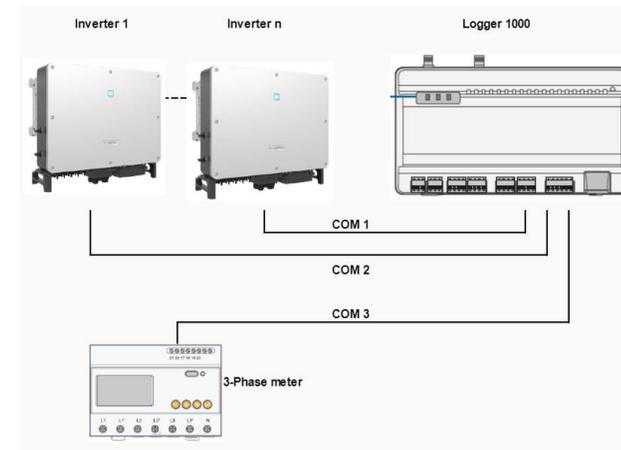
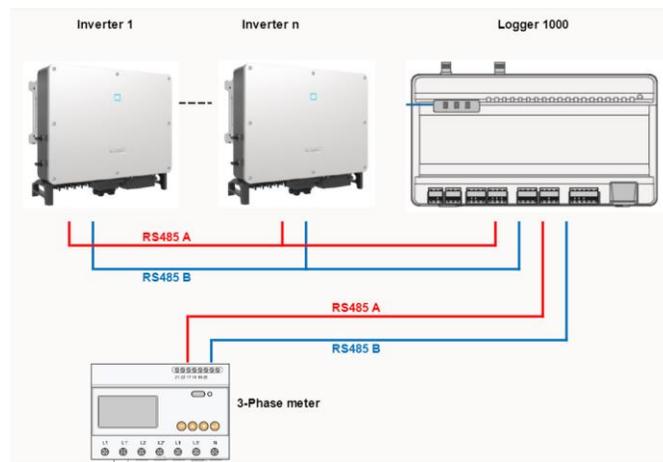
Connection Scheme RS485

The inverters will get connected in series (daisy-chained). KTL series: just 1 or last unit per daisy-chain.

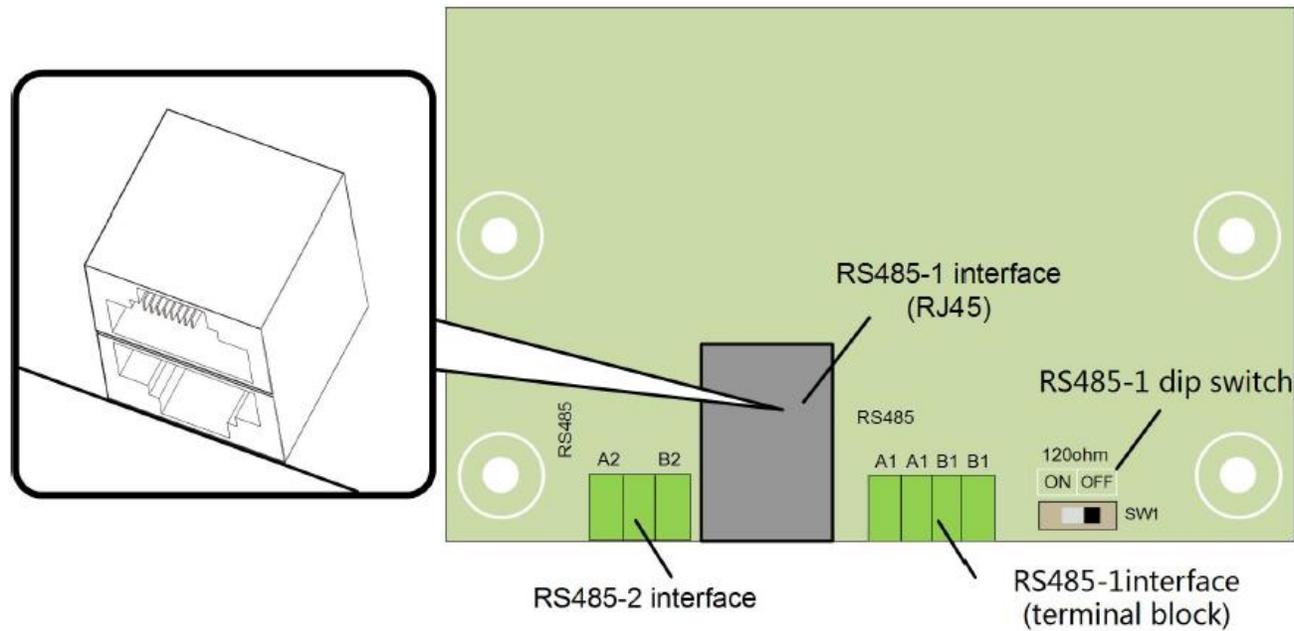


Option 1: connecting all inverters to one RS485 port. (KTL series: last in row)

Option 2: connecting the inverters to two different RS485 ports



Connection of the Sungrow CX series



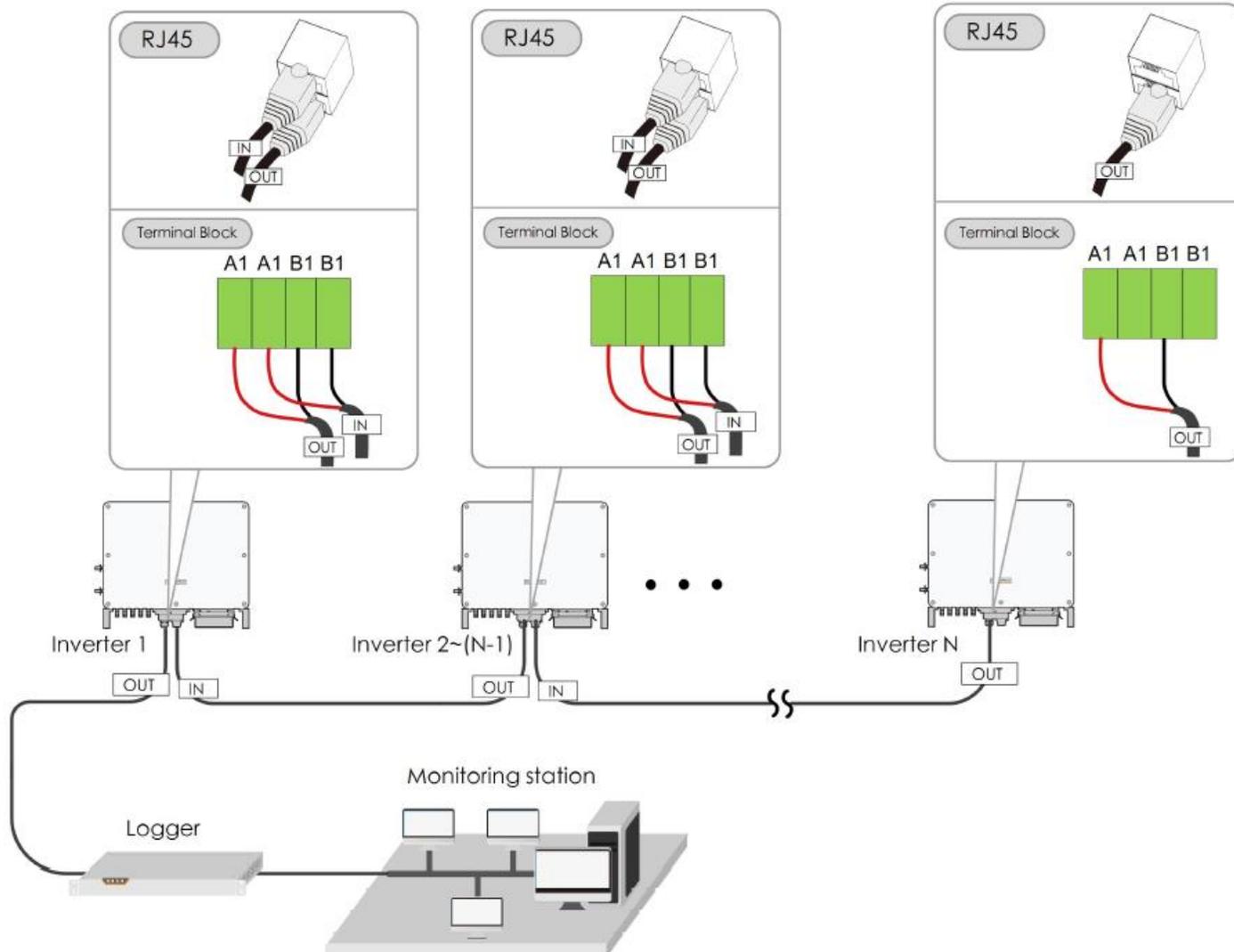
The CX series has two RS485 interfaces (RS485-1 and RS485-2), of which RS485-1 is equipped with both RJ45 and terminal block. Which connection form (RJ45 or terminal block) is used does not influence the functionality.

For the connection in series (daisy chain) only RS485-1 is possible.

For ensuring the communication quality, dip switches with 120 Ohm resistance are used. The first and last unit in the inverter chain should be set to „on“ (in above graphics: „Ein“)



Connection of the Sungrow CX series



Maximum length of the RS485 cable: **1.200 m**

With more than 15 inverter (at latest) per chain, the activation of the termination resistance is needed on the first and last inverter in the chain (see previous slide)



Login

Logger1000

0 0 ? Help English Login

Overview

General Information

Current Alarms

Device Monitoring

System

About

Data Index

Expand

--- kWh
Daily Yield

--- kW
Real-time Active Power

2 Piece
Offline Device

0 Piece
Online Device

User Login

Password

Forgot Password

Login

Inverter Realtime Values

Device Name	Daily Yield(kWh)	Active Power(kW)	Reactive Power(kvar)
SG60KTL(COM1-014)	--	--	--
SG250HX(COM1-001)	SG250HX	Offline	--

Default PW: pw1111

1.



5 first steps

Logger1000

- Overview
- General Information
- Current Alarms
- Device Monitoring
- System
- About

✖ 0 ⚠ 0 🔍 Help

Basic Configuration Steps

- 1

System Time Synchronization

Operating path: System -> System time

Note: Check whether the current time of the system is correct, set the current time of the system and whether to synchronize the time of the inverter

Manual time synchronization: can adjust the current date, time and time zone

Time synchronization mode: support "NTP, IEC60870-5-104, MODBUS-TCP, iSolarCloud"
- 2

Device Setup

Operating path: Device maintenance -> Device list

Note: Support automatic discovery of Sungrow inverters, and also support manual management, including addition, deletion and modification of devices
- 3

Transfer Configuration

Operating path: System -> Forwarding configuration

Description: Collected device data are forwarded to the remote or local monitoring system

 - iSolarCloud
Server address and port are configured to transmit the collected data to iSolarCloud
 - IEC60870-5-104
Through IEC60870-5-104 the protocol stack transmits the collected device data to the monitoring system
 - MODBUS
Through MODBUS (TCP or RTU) the protocol connects the collected data to the monitoring system
 - Third party cloud
Third party server address and port are configured to transmit the collected data to Third party cloud monitoring system

1. Adjust system time
2. Unit configuration
3. Transfer configuration
4. Setting of export limit and typ of net
5. Connection to the internet



Adjust system time

Logger1000

History Data

System

Run Information

System Maintenance

Remote Maintenance

Message Export

1. System Time

Transfer Configuration

System time

Port Parameter

About

Inverter Timing

Current Time 2021-04-12 11:20

Clock Source

NTP

2. Select „NTP“ (Network Time Protocol)

Time Zone

(UTC+01:00) Amsterdam, I

3. Choose time zone

Server

ntp.api.bz

Time Interval (Min)

5

Last Synchronize Time --

4. Save



Unit configuration

Logger3000
☰

🔴 0 🟡 0
🔗 Help
🌐 English
👤 O&M user

☰ Overview
▲

General Information

Current Alarms

📄 Device Monitoring

✕ Device ▼

👤 Power Control ▼

🕒 History Data ▼

⚙️ System ▼

📄 About

Shortcut Menu


 Device Setup


 Network Management


 Transfer Configuration


 System Maintenance

PV-Plant Value Folding ^

 -- kWh
Daily Yield

-- kWh
Total Yield

 -- kW
Real-time Active Power

-- kW
Max. Adjustable Active Power

 2 Piece
Offline Device

0 Piece
Online Device

 -- kvar
Real-time Reactive Power

-- ~ -- kvar
Reactive Power Range

Inverter Realtime Values (Off-grid 1, On-grid 0)

Device Name	Device Model	Status	Daily Yield(kWh)	Active Power(kW)	Reactive Power(kvar)
SG250HX(COM5-002)	SG250HX	Offline	--	--	--



Unit configuration

2. Select „Auto Search“ or „Add Device“

Logger3000

Overview
Device Monitoring
Device
Device List
Firmware Update
Inverter Log
AFCI Activation
Power Control
History Data
System
About

0 0 Help English O&M user

No.	SN	Device Name	Device Model	Port	Device Address	Forwarding IP	Com Status	Operation
1	A1910281889	SG250HX(COM5-002)	SG250HX	COM5	2	1	🚫	⚙️
2		aaa(COM1-001)	aaa	COM1	1	2	🚫	⚙️

Auto Search Add Device

Auto Search Add Device

Add Device

Device Type
Meteo Station

Port
COM1

Device Model
PC-4-Slope

- PC-4-Slope
- PC-4-Horizontal
- PC-4-Pro
- WING-TRACKER
- WS601
- RT1-Horizontal
- RT1-Slope
- SMP10-Horizontal



Transfer configuration iSC

Logger3000

- Overview
- General Information
- Current Alarms
- Device Monitoring
- Device
- Power Control
- History Data
- System
- About

0 0 Help English O&M user

1. „Transfer Configuration“

Shortcut Menu


Device Setup


Network Management


Transfer Configuration


System Maintenance

PV-Plant Value Folding^

 -- kWh
Daily Yield

-- kWh
Total Yield

 -- kW
Real-time Active Power

-- kW
Max. Adjustable Active Power

 2 Piece
Offline Device

0 Piece
Online Device

 -- kvar
Real-time Reactive Power

-- ~ -- kvar
Reactive Power Range

Inverter Realtime Values (off-grid 1, On-grid 0)

Device Name	Device Model	Status	Daily Yield(kWh)	Active Power(kW)	Reactive Power(kvar)
SG250HX(COM5-002)	SG250HX	Offline	--	--	--



Transfer configuration iSC

The screenshot displays the Logger1000 web interface. On the left is a dark sidebar menu with the following items: Overview, Device Monitoring, Device, Power Control, History Data, System (highlighted with a yellow box), Run Information, System Maintenance, Remote Maintenance, Message Export, System Time, Transfer Configuration (highlighted with a red box), Port Parameter, and About. At the bottom of the sidebar, a control panel with icons for Wi-Fi, cellular, and cloud is highlighted with a red box and labeled "Control panel".

The main content area shows a configuration table for iSolarCloud. The table has columns for Server, Peer Port, and Switch. The first row contains the value "api.isolarcloud.eu" in the Server column, "19999" in the Peer Port column, and a toggle switch in the Switch column. A red box highlights the entire row, and a red circle highlights a gear icon in the rightmost column of that row. A red "3." is positioned to the right of the table. Below the table, a blue message reads: "Please change this server as api.isolarcloud.eu!!!".

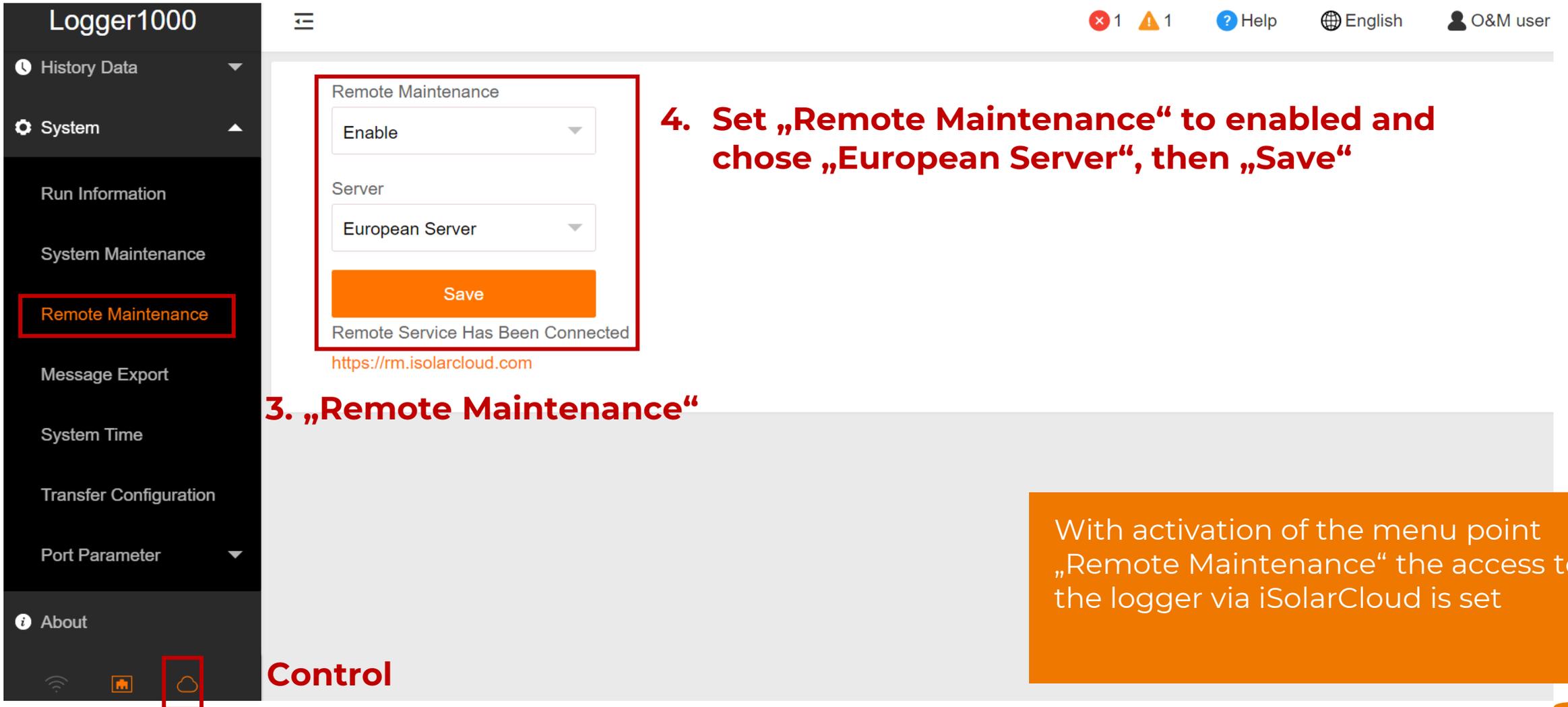
At the top right of the interface, there are notification icons (4 red crosses, 2 yellow triangles), a Help icon, language settings (English), and a user profile (O&M user).

2. „Transfer Configuration“

Control panel



Transfer configuration iSC



Logger1000

History Data

System

Run Information

System Maintenance

Remote Maintenance

Message Export

System Time

Transfer Configuration

Port Parameter

About

Remote Maintenance

Enable

Server

European Server

Save

Remote Service Has Been Connected

<https://rm.isolarcloud.com>

x 1 ! 1 ? Help English O&M user

3. „Remote Maintenance“

4. Set „Remote Maintenance“ to enabled and chose „European Server“, then „Save“

Control

With activation of the menu point „Remote Maintenance“ the access to the logger via iSolarCloud is set



Adjusting the grid parameters

2. Initial-

3. Protection Parameters

1. **„Device Monitoring“**

The screenshot displays the Logger1000 web interface. The sidebar on the left contains a menu with 'Device Monitoring' highlighted. The main content area is divided into two tabs: 'Initial Parameter' and 'Protection Parameters'. The 'Initial Parameter' tab is active, showing a table of parameters. The 'Active Power Limit Ratio' parameter is highlighted with a red box and has a value of 10.0. The 'Protection Parameters' tab is also visible, showing a table of protection levels. Arrows point from the section headers to the respective tabs. A red box highlights the 'Device Monitoring' menu item in the sidebar.

Parameter Name	Current Value	Illustrate
Active Power Soft Start after Fault	Enable	
Active Power Soft Start Time aft	Country/Region	
	Poland	
Active Power Gradient Control	Grid Type	
Active Power Decline Gradient	Low Voltage	
Active Power Rising Gradient		
Active Power Setting Persistenc		
Active Power Limit		
Active Power Limit Ratio	10.0	
Shutdown When Active Power Limit to 0%		
Power Regulation at Grid Overvoltage		
Reactive Power Generation at Night		
Reactive Power Setting Persistence		
Reactive Power Regulation Mode		
Reactive Response		

Parameter Name	Current Value	Illustrate
Protection Level	Single Level	The Protection Levels to Be Set Separately
Lower Reconnection Voltage Limit	253.0	[230.1~321.9] V
Upper Reconnection Voltage Limit	207.0	[23.1~230.0] V
Lower Reconnection Frequency Limit	50.50	50.02~54.98 Hz
Upper Reconnection Frequency Limit	49.50	45.02~49.98 Hz

All settings have to be confirmed (by clicking „Einstellungen = Adjustments“), otherwise all adjustments will be cancelled at change of menu.



Adjusting the grid parameters

By clicking „Configure Synchronization“, set parameters can be forwarded to all other inverters

The screenshot shows the Logger1000 interface with the following components:

- Left Sidebar:** Contains navigation options like Overview, Device Monitoring, Device, Device List, Firmware Update, History Data, System, and About. An orange arrow points to the "Device Monitoring" option, which is labeled with the text **„Device Monitoring“**.
- Device List:** Lists several inverters, with SG110CX(COM1-002) selected.
- Main Panel:** Displays the configuration page for the selected device. It includes a "Refresh" button and a "Settings" button. The "Configure Synchronization" button is highlighted with a red box and labeled **1.** An orange arrow points from this button to a modal dialog.
- Modal Dialog:** Titled "Bitte Gerät auswählen", it contains a table of inverters. The "NR" column (1-7) is highlighted with a red box and labeled **2.** The "Speichern" button is highlighted with a red box and labeled **3. „Save“**.
- Parameter Table:** A table showing various grid parameters and their current values. A callout box highlights the "Settings" and "Configure Synchronization" buttons.

Parametername	Aktueller Wert	Veranschaulichen
Schutzlevel	2 Level	Schutzklassen müssen separat eingestellt werden
Überspannung-Schutz-Wiederherstellungswert	657.0	
Unterspannung-Schutz-Wiederherstellungswert	531.0	V
Überfrequenz-Schutz-Wiederherstellungswert	51.49	Hz
Unterfrequenz-Schutz-Wiederherstellungswert	47.51	Hz
AC-Unterspannungsstufe 1 Schutzwert	528.0	V
AC Überspannungspegel 1 Schutzwert	600.0	V

(graphics currently partly available in German language only)



Network management

Logger3000 0 0 Help English O&M user

Shortcut Menu

Device Setup **Network Management** Transfer Configuration System Maintenance

1. „Network Management“

PV-Plant Value Folding ^

-- kWh
Daily Yield
 -- kWh
Total Yield

-- kW
Real-time Active Power
 -- kW
Max. Adjustable Active Power

-- kvar
Real-time Reactive Power
 -- ~ -- kvar
Reactive Power Range

2 Piece
Offline Device
 0 Piece
Online Device

Inverter Realtime Values (Off-grid 1, On-grid 0)

Device Name	Device Model	Status	Daily Yield(kWh)	Active Power(kW)	Reactive Power(kvar)
SG250HX(COM5-002)	SG250HX	Offline	--	--	--



Net management Ethernet/LAN

Logger1000

Device Monitoring

Device

Power Control

History Data

System

Run Information

System Maintenance

Remote Maintenance

Message Export

System Time

Transfer Configuration

Port Parameter

RS485

Ethernet

WiFi

AI

DI

About

Control panel

1a. „Automatically Obtain IP Settings (DHCP)“

4 2 Help English O&M user

Network Port	Automatically Obtain IP Settings (DHCP)	IP Address	Subnet Mask	Default Gateway	Primary DNS-Server	Secondary DNS-Server	
ETH1	<input checked="" type="radio"/> On <input type="radio"/> Close	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0	

Automatically Obtain IP Settings (DHCP)

On Close



Net management WLAN/WiFi

The screenshot shows the Logger1000 mobile application interface. On the left is a dark sidebar menu with the following items: Device Monitoring, Device, Power Control, History Data, System (highlighted with a yellow box and a '1'), Run Information, System Maintenance, Remote Maintenance, Message Export, System Time, Transfer Configuration, Port Parameter (highlighted with a yellow box and a '2'), RS485, Ethernet, WiFi (highlighted with a yellow box and a '3'), AI, DI, and About. At the bottom of the sidebar, there are three icons: a Wi-Fi signal icon, a network icon, and a cloud icon, all enclosed in a red box. The main content area is titled 'Client Hotspot' and features a 'WLAN On-off' toggle switch (highlighted with a red box and labeled '3a.') which is currently turned on. Below this, there is a section for 'Available WLAN Networks' with a 'Choose a network...' dropdown menu and a 'Refresh' button. A blue annotation '4 Select the right WLAN' points to the dropdown menu. At the bottom of the main content area, there is a text note: 'WLAN only supports numbers, English letters and English characters (except "-")'. The word 'Control' is written in large red font at the bottom center of the screenshot. A small copyright notice '© Sungrow. All rights reserved.' is visible at the bottom right of the interface.

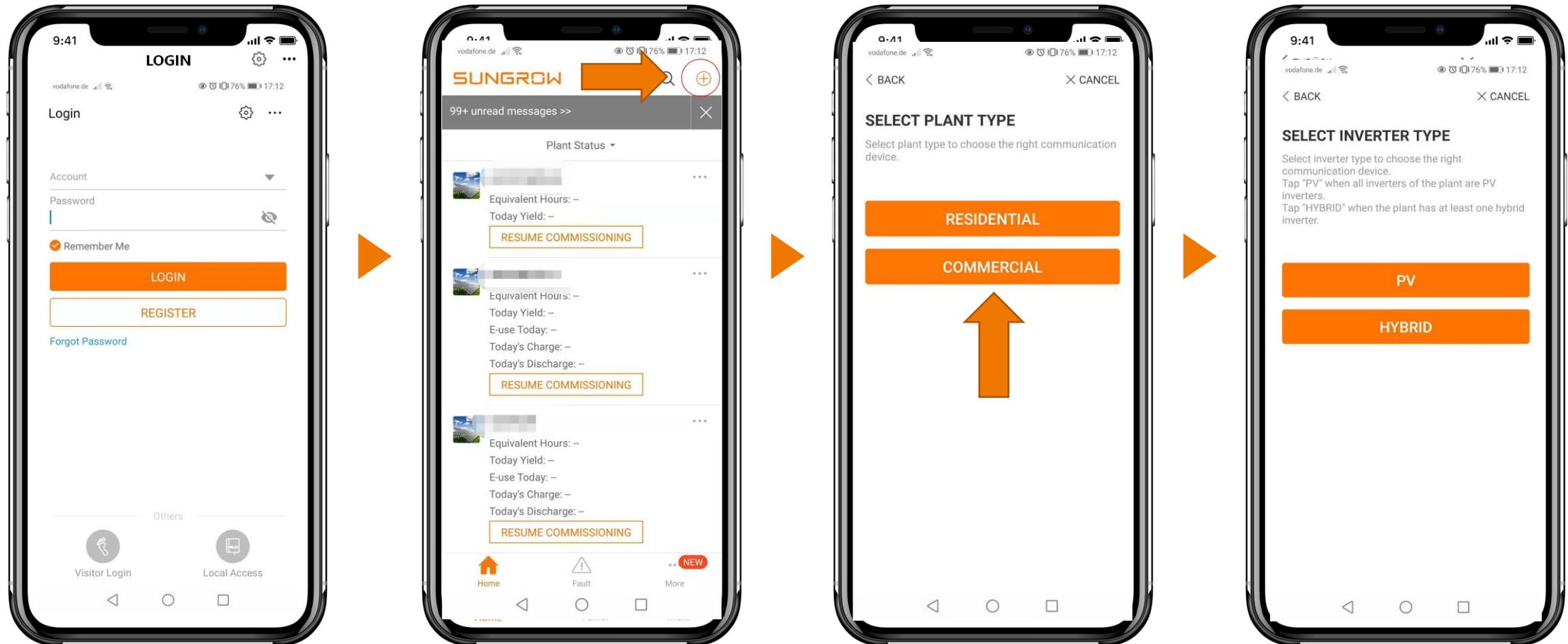


Installation and Displaying in the iSolarCloud

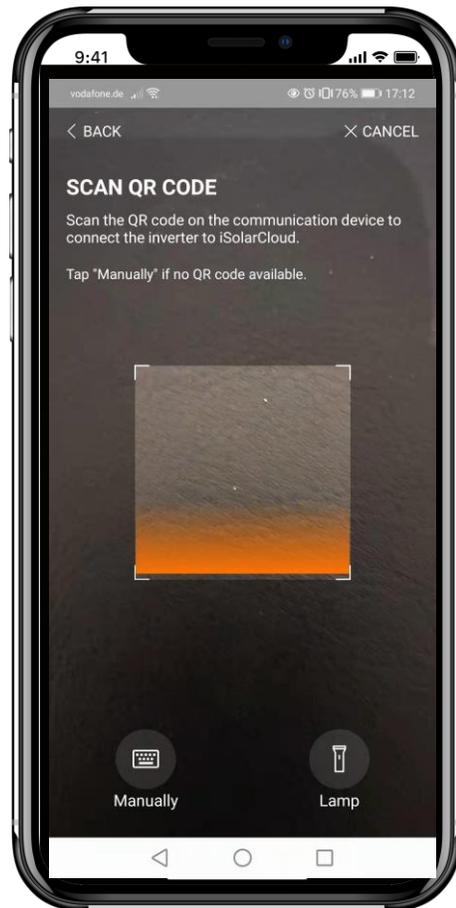
- In order to see the data monitored in iSolarCloud the array has to be added
- By the transfer configuration and the internet connection via ETH or WiFi, data gets transferred to the server, but not yet to an initialized array.



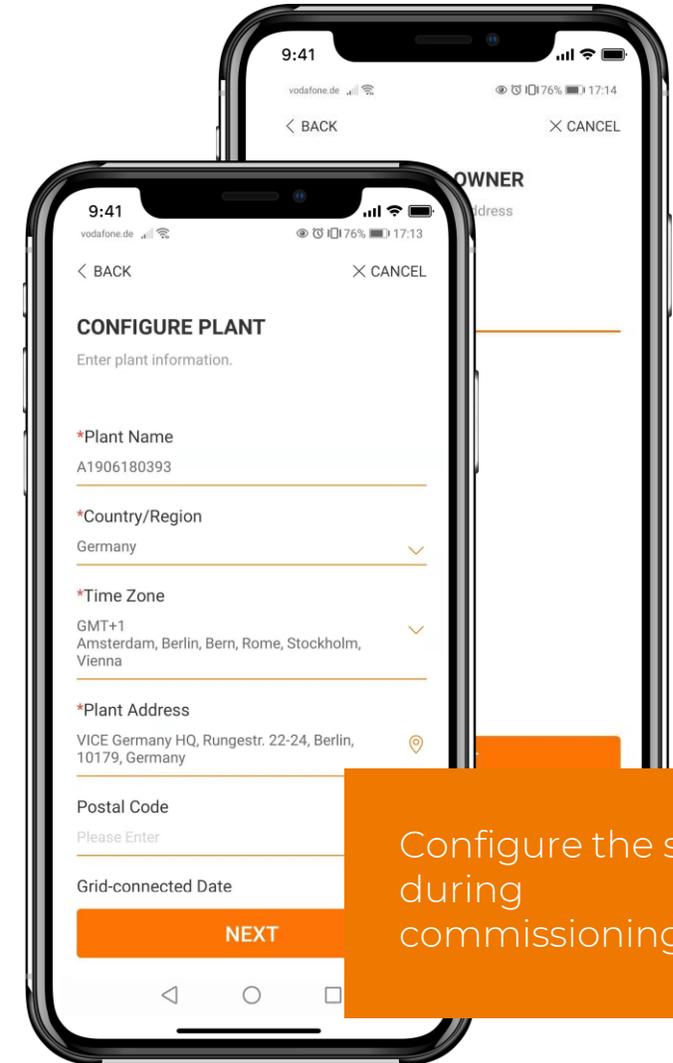
Commissioning and Displaying in the iSolarCloud



Commissioning and Displaying in the iSolarCloud



Scan the QR Code on the logger enclosure



Configure the system during commissioning



Commissioning and Displaying in the iSolarCloud



Commissioning IsolarCloud / Logger – Check List

1. Inspect the logger before commissioning

2. Switch on the logger

3. Check the status LEDs of the logger

4. Connect a notebook via ETH with the logger for any error removal (IP: 12.12.12.12 , notebook: .13)

5. Switch on DC switch for the inverters connected

6. If needed: Adoption of the RS485 interface to special requirements

7. Add all units connected to the logger via „unit administration“

8. Aktiviere DHCP für automatisch receiving an IP address

9. Connect to iSolarCloud (transver configuration -> europ. server)

10. Check the inverter data for correctness via real time information

11. Create a new system in iSolarCloud and check system parameters



Functions Overview

1.

Zero Feed-In/
Limiting of active
power

2.

Reactive power
control

3.

Connection to
Ripple Control
Receiver (RSE)

4.

Connectin 3rd-
party data logger
via
Modbus TCP

5.

Compatibility and
connection of 3rd-
party
units/sensors

6.

FTP / SFTP

7.

AFCI

8.

Firmware-
Updates for
Sungrow units



Zero Feed-In / Active Power Limiting

Logger1000

Overview
Device Monitoring
Device
Power Control
Active Power
Reactive Power
Emergency Button
History Data
System
About

Active Control Mode

Local Power Control

Disable Derating
Remote Power Control
Local Power Control
Analog Input
Digital Input
DRM Mode
Custom mode

Control Cycle (5-60)S
10

Instruction Type
%

Active Control Mode
Local Power Control

Communication abnormality output (%)
100.0

Control Method
Closed-loop Control

Select Meter
Unselect

Control Cycle (5-60)S
10

Instruction Type
%

Start Time Percentage
00:00

4. Enter requested active power

Clear Data

Start Time Percentage
00:00

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Chose active power setting in case of communication failure

1. Active Power

2. Local power control

3. Chose Energy Meter



Reactive Power Control

Logger1000

- Overview
- Device Monitoring
- Device
- Power Control
 - Active Power
 - Reactive Power**
 - Emergency Button
- History Data
- System
- About



× 1 ⚠ 1

? Help

🌐 English

👤 O&M user

Reactive Control Mode
Local Power Control

2. Local or remote control

Communication abnormality output (%)
0.0

Control Method
Open-loop Control

Instruction Type
%

3. Enter percentage or PF Regulation mode of reactive power

Clear Data

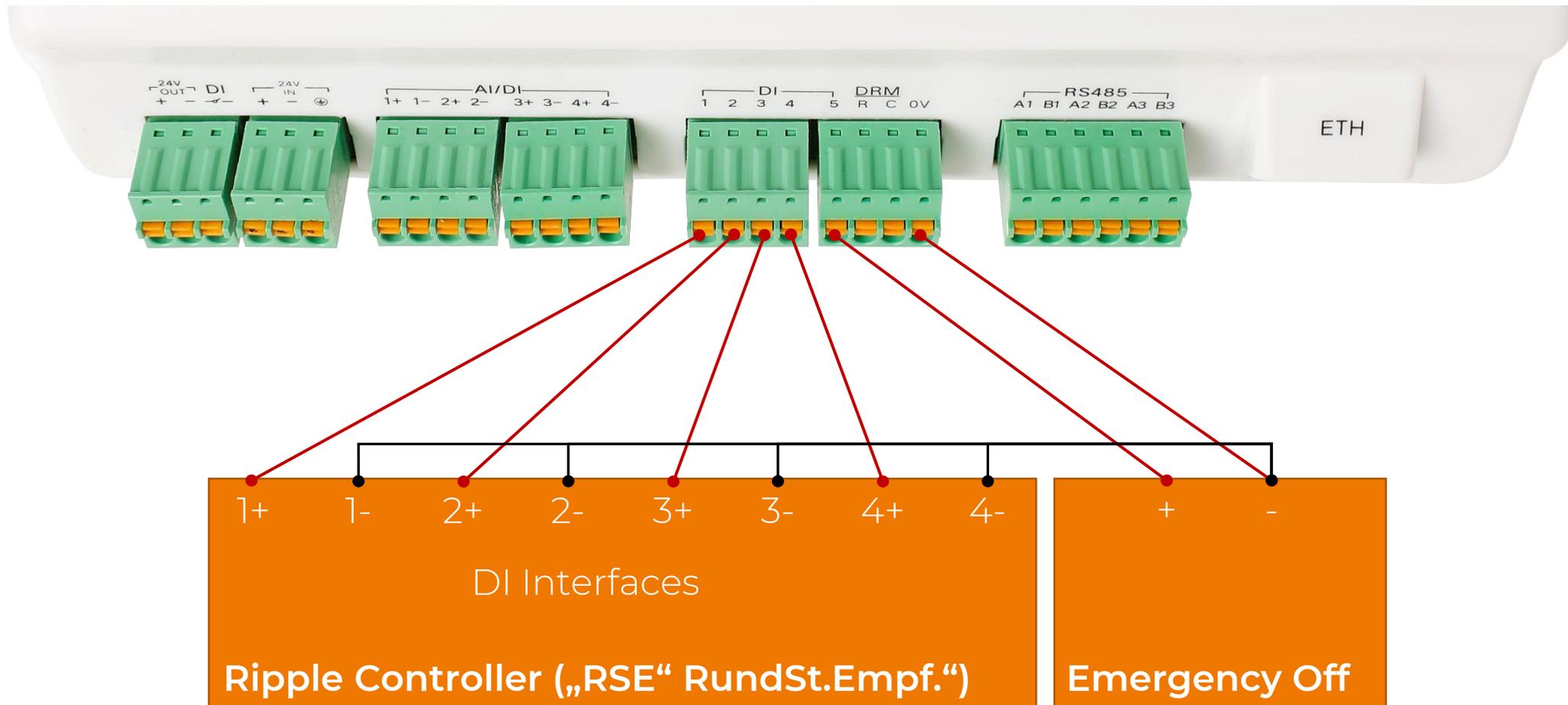
<input type="checkbox"/>	Start Time	Percentage	<input type="checkbox"/>
<input type="checkbox"/>	00:00		<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>

4. Setting of requested reactive power

1.



Connecting the ripple controller („RSE“)



Connecting the ripple controller

Logger1000

Overview Device Monitoring Device Power Control

1. Active Power

Reactive Power Emergency Button

History Data System About

Active Control Mode
Digital Input

2. Select active power limit input channel, e.g. DI

Communication abnormality output (%)
100.0

Control Method
Closed-loop Control

Select energy meter/transformer
Unselect

3. Select Smart Energy Meter with / w/o CT

Control Cycle (5-60)S
10

Instruction Type
%

Clear Data

	DI1	DI2	DI3	DI4	Percentage
<input type="checkbox"/>	<input type="text"/>				

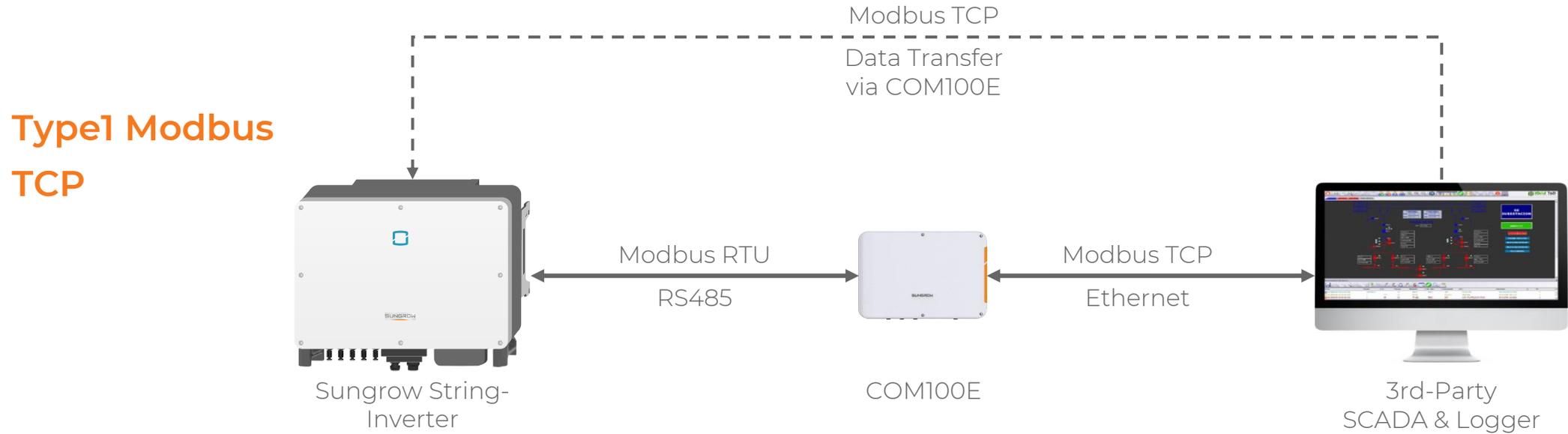


Connecting the ripple controller

					Clear Data
<input type="checkbox"/>	DI1	DI2	DI3	DI4	Percentage
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100.0
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	60.0
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	30.0
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0.0
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Connecting 3rd-Party Logger via Modbus TCP



Preparations

- Logger Modbus protocol (if not yet compatible)
- Inverter ,Meteostation, etc...
- Forwarding of device IP addresses
- Logger IP address and Modbus server ports



Connecting 3rd-party logger via Modbus TCP

1.

Logger1000

- Device Monitoring
- Device
- Power Control
- History Data
- System
- Run Information
- System Maintenance
- Remote Maintenance
- Message Export
- System Time
- Transfer Configuration
- Port Parameter
- About

iSolarCloud IEC104 MODBUS Third-party Portal

Server Client RTU 2.

Local Port	Switch
502	<input checked="" type="checkbox"/>
503	<input checked="" type="checkbox"/>
504	<input type="checkbox"/>
505	<input type="checkbox"/>
506	<input type="checkbox"/>
507	<input type="checkbox"/>
508	<input type="checkbox"/>
509	<input type="checkbox"/>
510	<input type="checkbox"/>
511	<input type="checkbox"/>

White List Setting

3. Activation server port



Connecting 3rd-party logger via Modbus TCP

4.

Logger1000

Overview
Device Monitoring
Device
Device List
Firmware Update
Inverter Log
AFCl Activation
Power Control
History Data
System
About

Auto Search Add Device

No.	SN	Device Name	Device Model	Port	Device Address	Forwarding Modbus ID	Com Status	Operation
1	A1907126700	Opo 8	SG110CX	COM1	8	1		
2	A1907050240	Opo 7	SG110CX	COM1	7	2		
3	A1906281393	Opo 2	SG110CX	COM2	2	3		
4	A1907126704	Opo 1	SG110CX	COM2	1	4		
5	A1908021901	Opo 5	SG110CX	COM2	5	5		
6	A1907126736	Opo 4	SG110CX	COM2	4	4		
7	A1908021840	Opo 6	SG110CX	COM2	6	7		
8	A1908022121	Opo 3	SG110CX	COM2	3	8		

5. The 3rd-party logger(s) need the transferred IP in order to communicate with the devices used.



Connecting 3rd-party devices Type 1

1. „Device List“

2. „Add device“

3. Selection of type, interface, model name and device address

No.	SN	Device Address	Forwarding Modbus ID	Com Status	Operation
1	A190712	8	1	🔗	⚙️
2	A190705	7	2	🔗	⚙️
3	A190628	2	3	🔗	⚙️
4	A190712	1	4	🔗	⚙️
5	A190802	5	5	🔗	⚙️
6	A190712	4	6	🔗	⚙️
7	A190802	6	7	🔗	⚙️
8	A190802	3	8	🔗	⚙️



Connnecting 3rd-Party Devices Type 2

Logger1000

Overview
Device Monitoring
Device
Device List
Firmware Update
Inverter Log
AFCI Activation
Power Control
History Data
System
About

2. „Add device“

1. Select „device list“

3. Select „Environmental sensor“ or Meteo Station

4. Select „COM1“ or „Other“

5. Select model or „User defined“

Auto Search Add Device

No.	SN	Device Address	Forwarding Modbus ID	Com Status	Operation
1	A1907126700	8	1	🔗	⚙️
2	A1907050240	7	2	🔗	⚙️
3	A1906281393	2	3	🔗	⚙️
4	A1907126704	1	4	🔗	⚙️
5	A1908021901	5	5	🔗	⚙️
6	A1907126736	4	6	🔗	⚙️
7	A1908021840	6	7	🔗	⚙️
8	A1908022121	3	8	🔗	⚙️

Add Device

Device Type
Meteo Station

Port
COM1

Device Model
PC-4-Slope

Beginning Address (1~255)
1

Quantity of Device (1~30)
1

Save



Connecting 3rd-Party Devices Type 2

Messpunkt konfigurieren

Byteihenfolge **1**: Big-Endian für Byte-Daten, Big-Endian für Wortdaten

Anfangsadresse **2**: 1

Anzahl der Geräte **3**: 1

Adresse debuggen **4**: 1

<input checked="" type="checkbox"/>	Nr.	Messpunktname	Modbus-ID	Registrierungstyp	Datentyp	Typ lesen 5	Koeffizient 6	Rücklesewert 7	Einheit
<input checked="" type="checkbox"/>	1	Umgebungsfeuchtigkeit	3000	0x4	U16	Kontinuierlich	1.0		°C
<input checked="" type="checkbox"/>	2	Temp. (PV-Modul)	3001	0x4	U16	Kontinuierlich	1.0		°C
<input checked="" type="checkbox"/>	3	Umgebungsfeuchtigkeit	3002	0x4	U16	Kontinuierlich	1.0		%RH
<input checked="" type="checkbox"/>	4	Luftdruck	3003	0x4	U16	Kontinuierlich	1.0		hPa
<input checked="" type="checkbox"/>	5	Horizontale transiente Strahlung	3004	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	6	transiente Einstrahlung am Gefälle	3005	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	7	Windwinkel	3006	0x4	U16	Kontinuierlich	1.0		°
<input checked="" type="checkbox"/>	8	Windgeschwindigkeit	3007	0x4	U16	Kontinuierlich	1.0		m/s
<input checked="" type="checkbox"/>	9	gesamte horizontale Einstrahlung	3008	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	10	Gesamteinstrahlung Gefälle	3009	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	11	Horizontale tägliche Bestrahlung	3010	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	12	Einstrahlung am Gefälle pro Tag	3011	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	13	Windgeschwindigkeitsskala	3012	0x4	U16	Kontinuierlich	1.0		NA

Zurücklesen Vorlage speichern

Zurück Bestätigen

- 1** Byte sequence: Depending on Modbus protocol of the 3rd-party device
- 2** Start address: device start address
- 3** Number of devices: device position at RS485-port
- 4** Debug address: The device address to be used read when clicking on „read“.
(range: [(start address), (start address + number of devices(-1))])
- 5** Reading the „type“: frequency of data selection (once / all the time)
- 6** coefficient: depending on the Modbus protocol of the 3rd-party device, multiplier of the value
- 7** Reading value: The value delivered from the measuring point after clicking on „Reading“

(graphics currently partly available in German language only)



Connecting 3rd-party devices

Type 2

5. Aselect data points which shall be measured

Messpunkt konfigurieren

Bytereiherfolge: Big-Endian für Byte-Daten, Big-Endian für Wortdaten

Anfangsadresse: 1

Anzahl der Geräte: 1

Adresse debuggen: 1

7. Click on „Read Back“ to check the consistency of the configuration

Zurücklesen Vorlage speichern

<input checked="" type="checkbox"/>	Nr.	Messpunktname	Modbus-ID	Registrierungstyp	Datentyp	Typ lesen	Koeffizient	Rücklesewert	Einheit
<input checked="" type="checkbox"/>	1	Umgebungsfeuchtigkeit	3000	0x4	U16	Kontinuierlich	1.0		°C
<input checked="" type="checkbox"/>	2	Temp. (PV-Modul)	3001	0x4	U16	Kontinuierlich	1.0		°C
<input checked="" type="checkbox"/>	3	Umgebungsfeuchtigkeit	3002	0x4	U16	Kontinuierlich	1.0		%RH
<input checked="" type="checkbox"/>	4	Luftdruck	3003	0x4	U16	Kontinuierlich	1.0		hPa
<input checked="" type="checkbox"/>	5	Horizontale transiente Strahlung	3004	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	6	transiente Einstrahlung am Gefälle	3005	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	7	Windwinkel	3006	0x4	U16	Kontinuierlich	1.0		°
<input checked="" type="checkbox"/>	8	Windgeschwindigkeit	3007	0x4	U16	Kontinuierlich	1.0		m/s
<input checked="" type="checkbox"/>	9	gesamte horizontale Einstrahlung	3008	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	10	Gesamteinstrahlung Gefälle	3009	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	11	Horizontale tägliche Bestrahlung	3010	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	12	Einstrahlung am Gefälle pro Tag	3011	0x4	U16	Kontinuierlich	1.0		Wh/m ²
<input checked="" type="checkbox"/>	13	Windgeschwindigkeitsskala	3012	0x4	U16	Kontinuierlich	1.0		NA

6. Parametrizing the relevant data

Zurück Bestätigen

6. Adding the Meteostation to the list of devices by clicking „Confirm“

(graphics currently partly available in German language only)



Connecting 3rd-party devices

Type 2 – template creation

When a certain Meteostation is used more often by the installer, the configuration can be saved and exported, for future use in other PV systems.

Messpunkt konfigurieren

Bytereihenfolge: Big-Endian für Byte-Daten, Big-Endian für Wortdaten

Anfangsadresse: 1

Anzahl der Geräte: 1

Adresse debuggen: 1

Zurücklesen Vorlage speichern Exportieren

<input checked="" type="checkbox"/>	Nr.	Messpunktname	Modbus-ID	Registrierungstyp	Datentyp	Typ lesen	Koeffizient	Rücklesewert	Einheit
<input checked="" type="checkbox"/>	1	Umgebungsfeuchtigkeit	3000	0x4	U16	Kontinuierlich	1.0		°C
<input checked="" type="checkbox"/>	2	Temp. (PV-Modul)	3001	0x4	U16	Kontinuierlich	1.0		°C
<input checked="" type="checkbox"/>	3	Umgebungsfeuchtigkeit	3002	0x4	U16	Kontinuierlich	1.0		%RH
<input checked="" type="checkbox"/>	4	Luftdruck	3003	0x4	U16	Kontinuierlich	1.0		hPa
<input checked="" type="checkbox"/>	5	Horizontale transiente Strahlung	3004	0x4	U16	Kontinuierlich	1.0		W/m ²
<input checked="" type="checkbox"/>	6	transiente Einstrahlung am Gefälle	3005	0x4	U16	Kontinuierlich	1.0		W/m ²
<input checked="" type="checkbox"/>	7	Windwinkel	3006	0x4	U16	Kontinuierlich	1.0		°

Zurück Bestätigen

1. Navigate to „Configure data point“ (see previous slides)

2. Configure data point (see previous slides)

3a. „Save template“ for saving in the logger

3b. „Export“ for the download to the final device (for usage at other loggers)

4. Create a template name (combination of numbers, letters, underscores and dash (max. 32 bit) and click „Confirm“

(graphics currently partly available in German language only)



Connecting 3rd-party devices

Type 2 – template re-use

1. **Device List**

2. **Add Device**

3. **Select „Configuration File“**

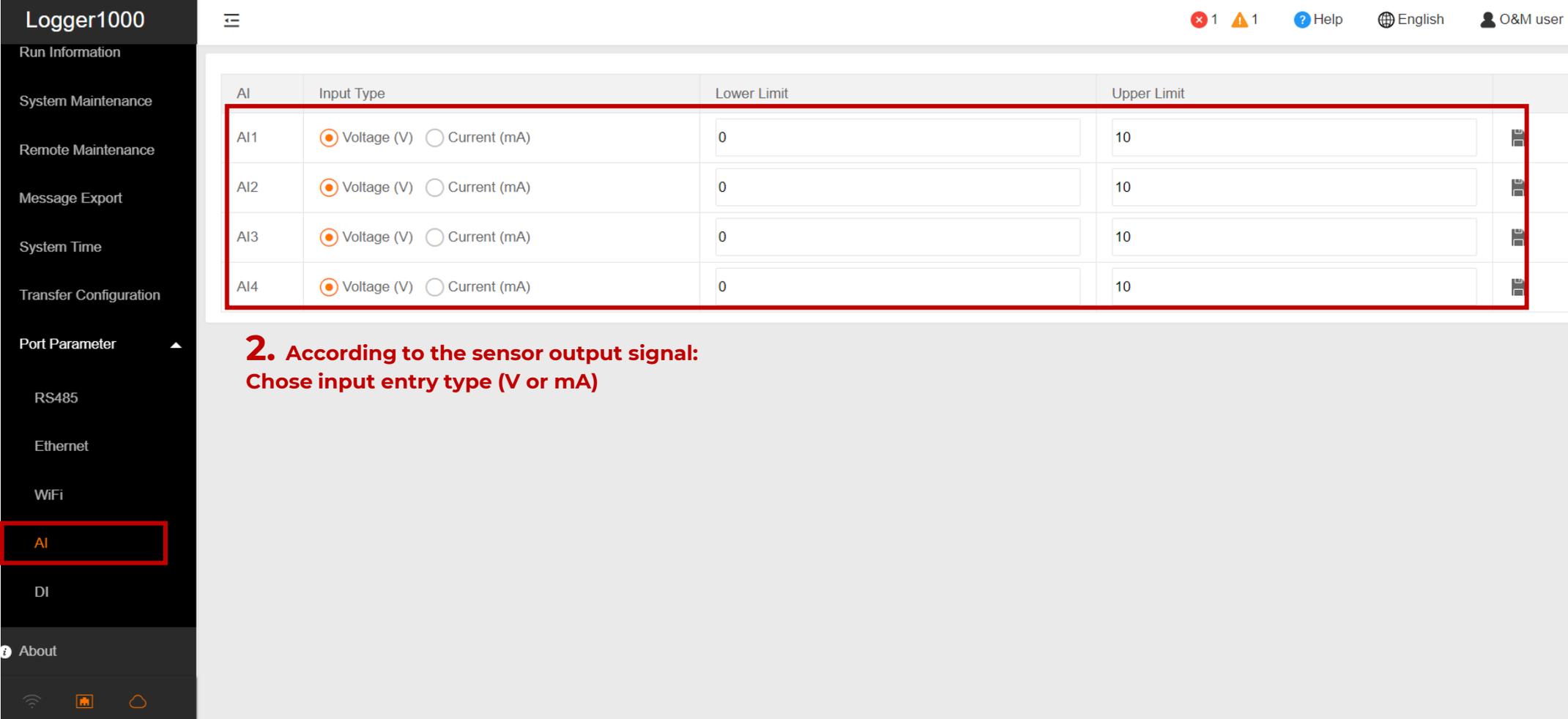
4. **Template (.xml) upload with click on arrow symbol of the end device**

No.	SN	Device Address	Forwarding Modbus ID	Com Status	Operation
1	A19071	8	1	🔗	⚙️
2	A19070	7	2	🔗	⚙️
3	A19062	2	3	🔗	⚙️
4	A19071	1	4	🔗	⚙️
5	A19080	5	5	🔗	⚙️
6	A19071	4	6	🔗	⚙️
7	A19080	6	7	🔗	⚙️
8	A19080	3	8	🔗	⚙️



Connecting 3rd-party Devices Type 3

1.



Logger1000

Run Information

System Maintenance

Remote Maintenance

Message Export

System Time

Transfer Configuration

Port Parameter

RS485

Ethernet

WiFi

AI

DI

About

1 1 ? Help English O&M user

AI	Input Type	Lower Limit	Upper Limit
AI1	<input checked="" type="radio"/> Voltage (V) <input type="radio"/> Current (mA)	0	10
AI2	<input checked="" type="radio"/> Voltage (V) <input type="radio"/> Current (mA)	0	10
AI3	<input checked="" type="radio"/> Voltage (V) <input type="radio"/> Current (mA)	0	10
AI4	<input checked="" type="radio"/> Voltage (V) <input type="radio"/> Current (mA)	0	10

2. According to the sensor output signal:
Chose input entry type (V or mA)



Connecting 3rd-party Devices Type 3

3. **Device List**

4. **Add Device**

5. **Save**

The screenshot displays the Logger1000 web interface. On the left, a dark sidebar contains a menu with 'Device List' highlighted. The main area shows a table of devices with columns for 'No.', 'SN', 'Device Address', 'Forwarding Modbus ID', 'Com Status', and 'Operation'. A modal dialog titled 'Add Device' is open, featuring a 'Device Type' dropdown menu with 'Meteorological Sensor' selected and a 'Save' button.

No.	SN	Device Address	Forwarding Modbus ID	Com Status	Operation
1	A19071	8	1	🔗	⚙️
2	A19070	7	2	🔗	⚙️
3	A19062	2	3	🔗	⚙️
4	A19071	1	4	🔗	⚙️
5	A19080	5	5	🔗	⚙️
6	A19071	4	6	🔗	⚙️
7	A19080	6	7	🔗	⚙️
8	A19080	3	8	🔗	⚙️



Connecting 3rd-party Devices Type 3

6. **Geräteüberwachung**

Device Monitoring

7. **Meteorological Station**

8. **Initial Parameters**

9. **Choose the accordingly correct AI und enter the data delivered from the environmental sensor**

Name	AI	Min.	Max.
momentane Bestrahlung auf Flächen (W/m ²)	--	0	0
momentane Bestrahlung auf Schrägflächen (W/m ²)	--	0	0
Umwelttemperatur (°C)	--	0	0
Komponenten-Temperatur (°C)	--	0	0

(graphics currently partly available in German language only)



FTP/SFTP



Provided by Sungrow: FTP protocol

Provided by customer: Domain, Port, Account, Password, FTP path



FTP/SFTP

Logger1000

Overview
Device Monitoring
Device
Power Control
History Data
System

Run Information
System Maintenance
Remote Maintenance
Message Export
System Time

1. Transfer Configuration

Port Parameter

iSolarCloud IEC104 MODBUS **Third-party Portal** **2.**

Name	Server	Peer Port	Switch	
Information Management System of Photovoltaic Poverty Alleviation in China	cie-bj.tpddns.cn	19020	<input type="checkbox"/>	⚙️
FTP/SFTP	--		<input type="checkbox"/>	⚙️

3. Switch to „on“ and click on gearwheel

4. Enter the customer-specific parameters

Erweiterte Einstellungen

Domäne
--

Protokolltyp
FTP

Peer-Port
--

Account
--

Passwort
..

FTP Pfad
/

Probenahmezeitraum (min)
5

Übertragungsperiode (min)
5

Speichern

(graphics currently partly available in German language only)



AFCI Activation (V112 CX)

1. **AFCI Activation**

2. Set status to „Active“

3a. „Adjustments“

3b. Parametrizing with further inverters (synchronisation)

4b. Selection of all devices to be synchronized

5b. „Save“

No.	Device Name	Status	Result
1	Opo 8	Disable	Not self-tested
2	Opo 7	Disable	Not self-tested
3	Opo 2		
4	Opo 1		
5	Opo 5		
6	Opo 4		
7	Opo 6		
8	Opo 3		

Self-checking Clear Fault

Hinweis

AFCI-Funktion aktivieren?

Einstellungen

Konfiguration synchronisieren

Bitte Gerät auswählen

Speichern

Nr.	Name
1	SG40CX(COM1-001)

(graphics currently partly available in German language only)



AFCI (V112 CX) – Selftest and Error Reset

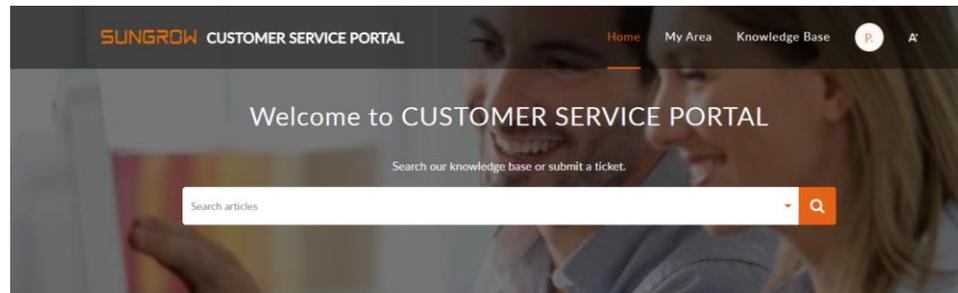
The screenshot displays the Logger1000 interface for AFCI activation. The sidebar menu on the left includes options like Overview, Device Monitoring, Device, Device List, Firmware Update, Inverter Log, AFCI Activation (highlighted), Power Control, History Data, System, and About. The top navigation bar shows 1 error and 1 warning, along with Help, English, and O&M user. The main table lists 8 devices, each with a checkbox, a number, a device name, a status dropdown, and a result field. Red annotations highlight the checkbox column (1.), the 'Self-checking' and 'Clear Fault' buttons (2a. and 2b.), and the 'Status' column (3. Status area (Errors, self test, ...)).

	No.	Device Name	Status	Result
<input type="checkbox"/>	1	Opo 8	Disable	Not self-tested
<input type="checkbox"/>	2	Opo 7	Disable	Not self-tested
<input type="checkbox"/>	3	Opo 2	Disable	Not self-tested
<input type="checkbox"/>	4	Opo 1	Disable	Not self-tested
<input type="checkbox"/>	5	Opo 5	Disable	Not self-tested
<input type="checkbox"/>	6	Opo 4	Disable	Not self-tested
<input type="checkbox"/>	7	Opo 6	Disable	Not self-tested
<input type="checkbox"/>	8	Opo 3	Disable	Not self-tested

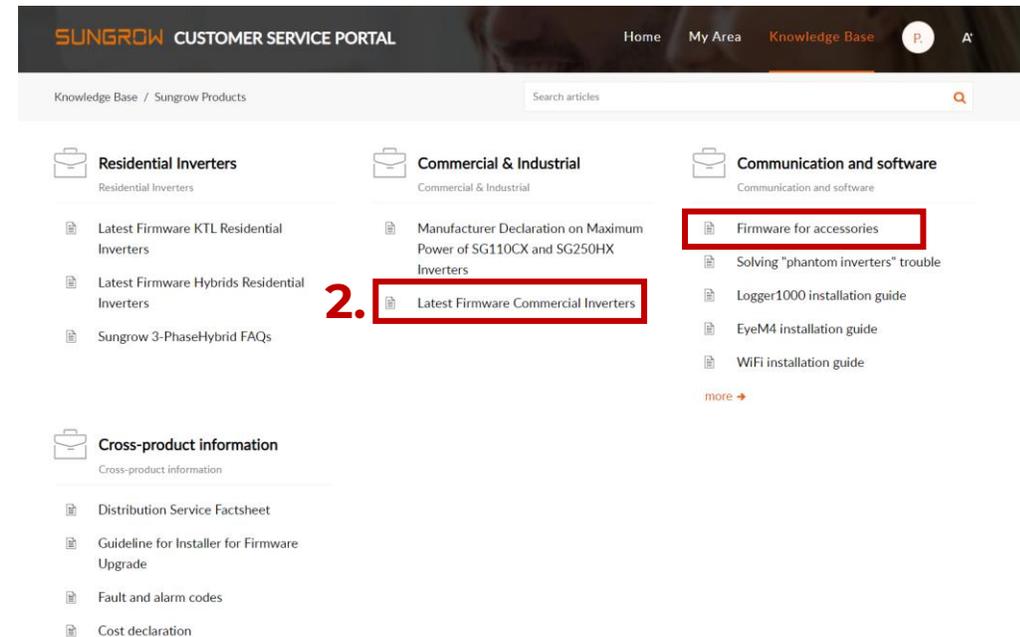


Firmware-Updating Sungrow Units

- Download of latest firmware files from Sungrow Customer Service Portal:
<https://support.sungrow.co/portal/en/kb/articles/firmware-for-accessories>
<https://support.sungrow.co/portal/en/kb/articles/latest-firmware-commercial-inverters>



1.



2.



Firmware-Updating Sungrow Units

2.

Logger1000

Overview
Device Monitoring
Device
Device List
Firmware Update
Inverter Log
AFCI Activation
Power Control
History Data
System
About

1 1 ? Help English O&M user

Select a Firmware File

3. Chose the right firmware sgu-file you have downloaded

No. ▾	Device Name	Current Version	Target Version	Start Time	End Time	Update Progress	Updating Result
No Data							

The firmware update file should be in .sgu format

After the import chose the devices to get updated and start actualization

Under no circumstances interrupt the FW update before finished

