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# Logger3000

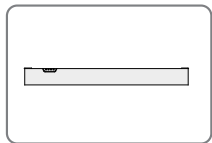
Data Logger

Quick User Manual

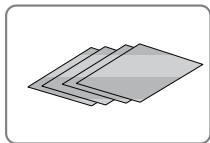


## 1 Unpacking and Inspection

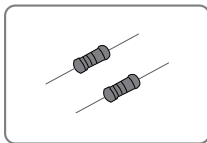
Check the package and remove the internal accessories.



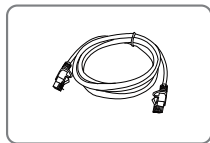
A



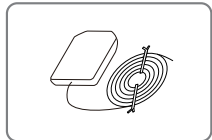
B



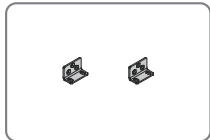
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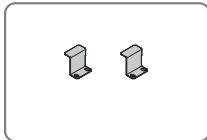
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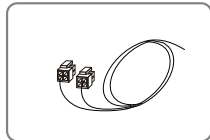
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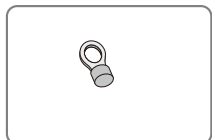
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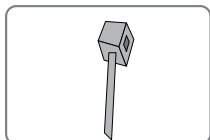
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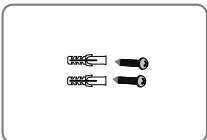
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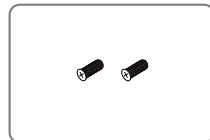
I



J



K



L

No.	Name	Description
A	Logger3000	-
B	Documents	Quick User Manual, quality certificate, packing list, product test report, and warranty card
C	Communication terminal resistor	(Note: if there are more than 15 devices connected on the RS485 bus, it is recommended to connect a 120 Ω terminal resistor in parallel on the A and B lines at the head or tail end of the bus)
D	Ethernet cable	1x2m
E	GPS antenna	Optional
F	Mounting ear	2
G	Bottom supporter	2
H	PLC cable	2 x 1 m, cable specification: 0.5mm <sup>2</sup>

No.	Name	Description
I	OT terminal	RNBL5-4
J	Nylon cable tie	Used to tie cables
K	Tapping screw assembly	8, including ST4.8x19 expansion bolts and tapping screws, used for wall-mounted installation
L	Fastener assembly	6, M4x8 cross recessed countersunk head screws, used to anchor the mounting ears to the Logger3000

If anything is missing or damaged, please contact the supplier.

Connection through Sore Switch

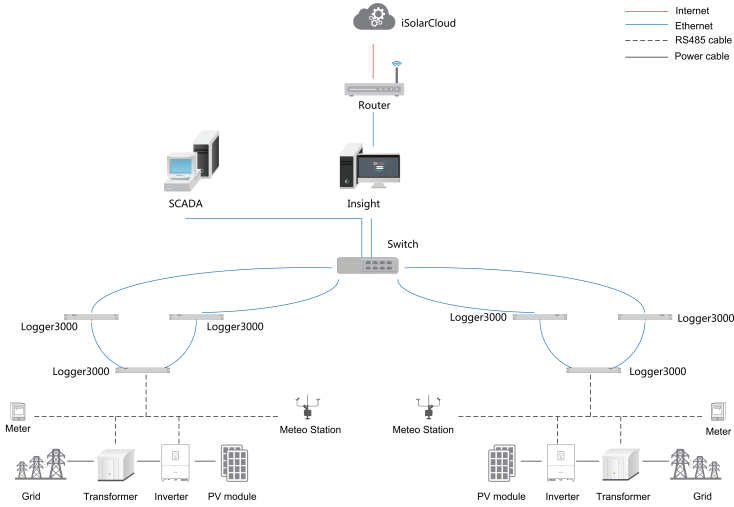


Fig. 2-1 Ring networking

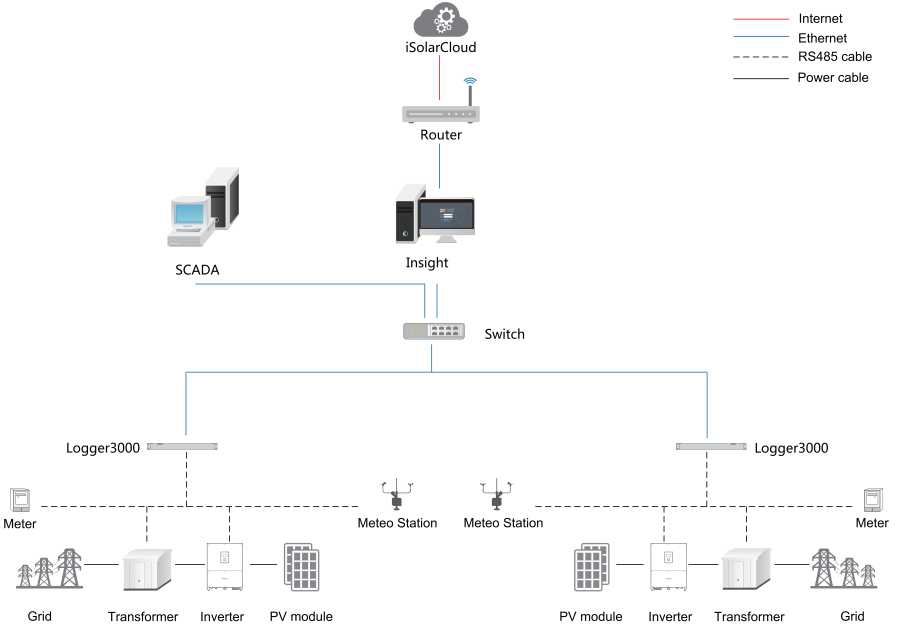
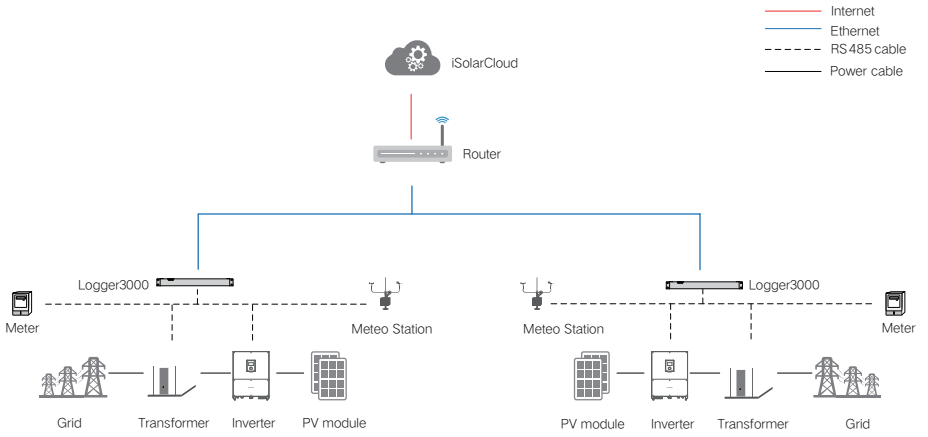


Fig. 2-2 Star networking



# Connection through Router



## 3 Mechanical Installation

### 3.1 Wall-Mounted Installation

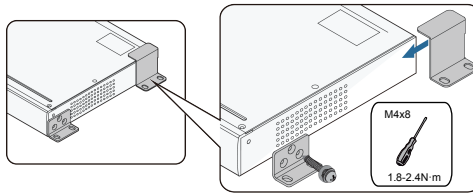
#### DANGER

Avoid drilling holes in the utility pipes and/or cables attached to back of the wall!

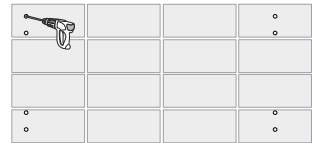
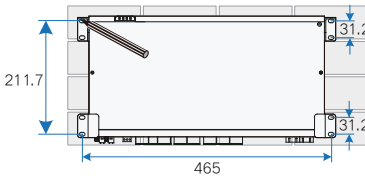


Turn on the vacuum cleaner and wear safety goggles and dust mask throughout the drilling process to avoid dust inhalation or contact with eyes.

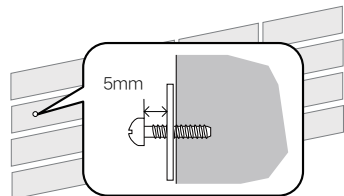
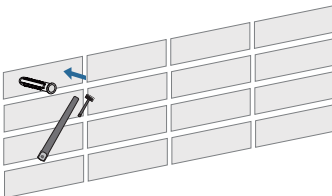
#### 1. Installing Mounting Ears and Bottom Supporters



#### 2. Drilling the Holes



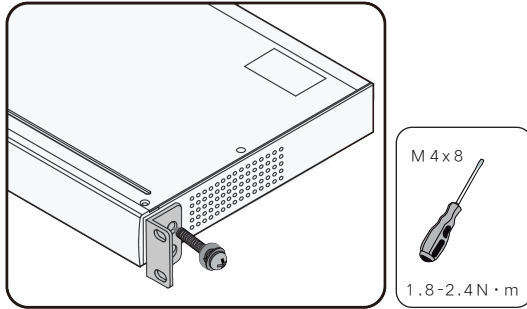
#### 3. Fixing the Logger3000



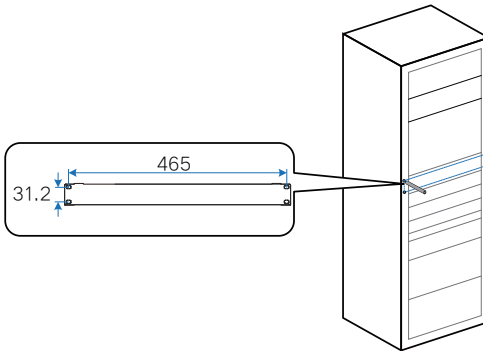
### 3.2 Rack-mounted Installation

Use 1U standard rack in case of the rackmounted installation.

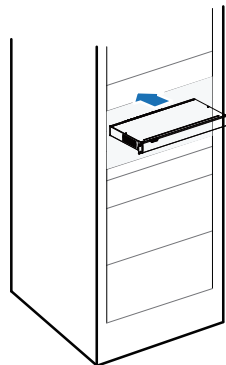
#### 1. Installing Mounting Ears



#### 2. Drilling the Holes



#### 3. Fixing the Logger3000



## 4. Electrical Connection


### ⚠ NOTICE

Incorrect cable connection may damage the Logger3000 and even the operator. All cables must be intact and well-insulated. The dimensions are proper and the connection is secure.

#### 4.1 Terminal Introduction



Port	Function	Description
ETH1, ETH2	Ethernet port	Can be connected to the background through devices like switch and router.
DIN	Digital input	Dry contact input interface
USBHOST	USB port	Reserved
SD	SD port	Reserved
Debug	Debug port	Used for debugging of the Logger3000
RST	Reset	Used for hardware reset of Logger3000
DO1~DO4	Digital output	Relay output interface Relay specification: 250Vac/1A or 30Vdc/1A
PT1, PT2, AI1~AI4	Analog input	<ul style="list-style-type: none"> <li>PT1、PT2 detect range: -30°C~120°C</li> <li>AI1~AI2: 4~20mA/0~10Vdc</li> <li>AI3~AI4: 0~0.1Vdc</li> </ul>
A1B1~A6B6	RS485 communication interface	Support of 6 inputs of RS485 Can be connected to both slave device and background
CAN	CAN communication port	Reserved

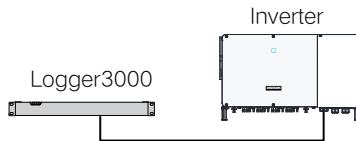
Port	Function	Description
24V	DC24 V power supply port	If the current is $\leq 2.0A$ , the switch mode power supply at this port requires reinforced insulation.
AC(100~277V)	AC power supply port	Connecting 100~277Vac (50/60Hz), current $\leq 0.5A$
GPS/BDS	GPS antenna interface	Used for time synchronization and positioning
RF	Wireless antenna interface	Reserved
	Grounding hole	Connecting protective grounding cable
PLC (L1, L2)	PLC communication interface	Can be connected to string inverters equipped with PLC communication function

## 4.2 Connecting to the Inverter

### 4.2.1 Connecting to the Inveter with RS485 Port

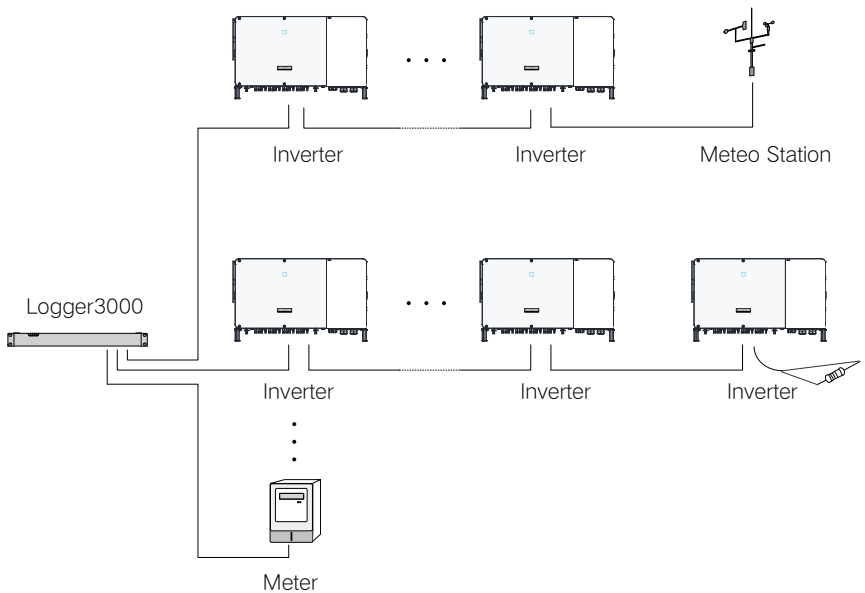
#### Connecting to a Single Inverter

Insert the communication cable led from the inverter to any RS485 port (A1B1 – A6B6) of the Logger3000.



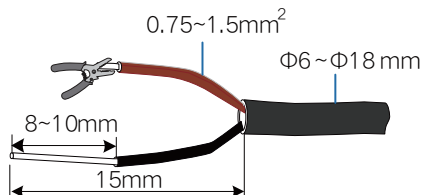
#### Connecting to a Multiple Inverter

Multiple inverters are connected to the Logger3000 in the RS485 daisy chain manner. If more than 15 inverters are connected on the RS485 bus, it is recommended to connect a 120Ω terminal resistor in parallel on the RS485A and RS485B lines at the head or tail end of the bus.

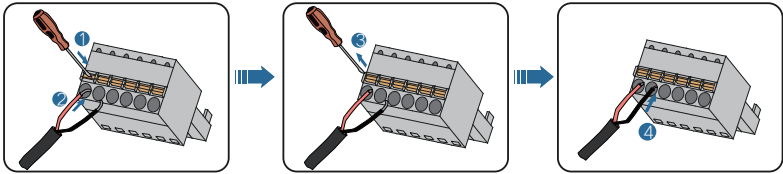
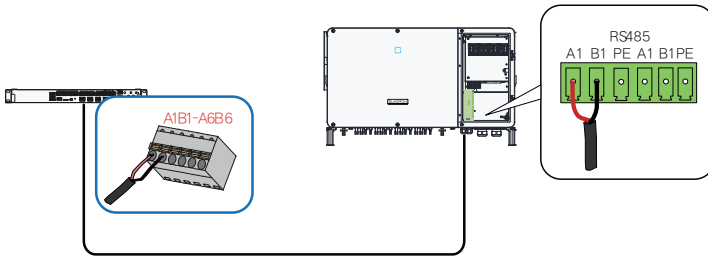


- The Logger3000 supports 6 RS485 buses and 200 devices at most. Each RS485 bus supports 60 devices at most.
- Devices of different types must be connected to different RS485 communication ports of the Logger3000. For example, the transformer and the inverter should be connected to different RS485 communication ports of the Logger3000.
- The address of each device on the RS485 bus should be within the set address range (1 to 246) of the Logger3000 without repetition. Otherwise, communication failure occurs.
- Serial port parameters of each device on the RS485 bus should be consistent with those of the Logger3000. The serial port parameters include baud rate, data bit, stop bit, and check bit.

## 1. Striping Cables

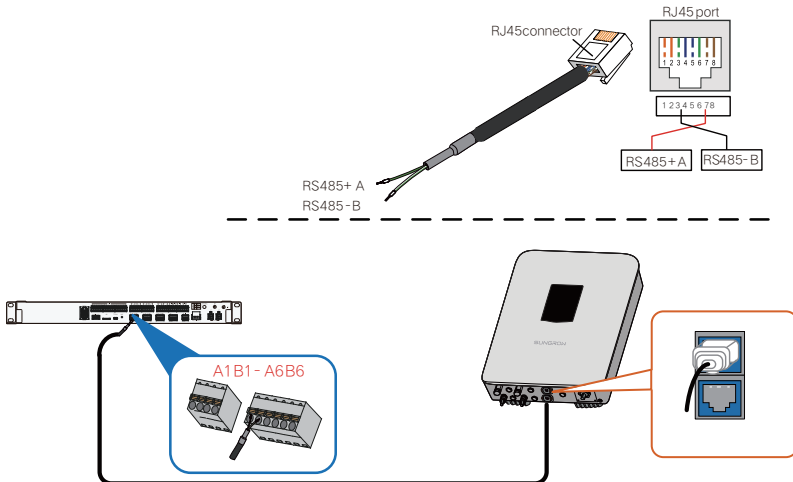


## 2. Connecting Methods



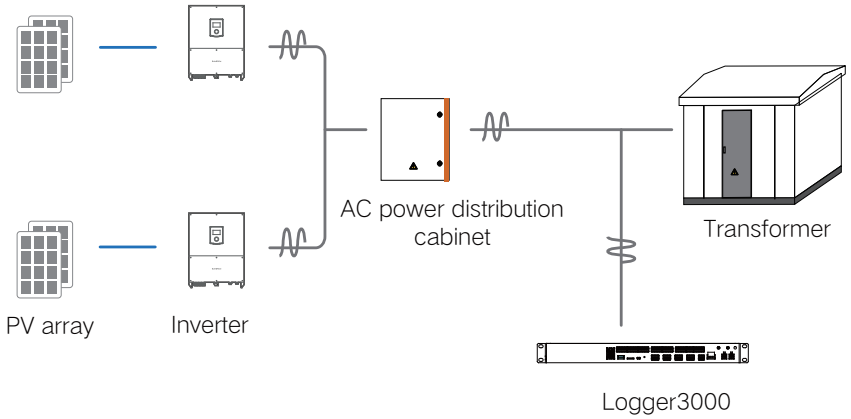
RS485A is connected to port A while RS485B is connected to port B.

### 4.2.2 Connecting to the Inverter with RJ45 Port



The white-green wire 3 is defined as RS485- B wire and the green wire 6 as RS485+ A wire.

### 4.2.3 Connecting to Inverter (LV Side of the Transformer) with PLC Port

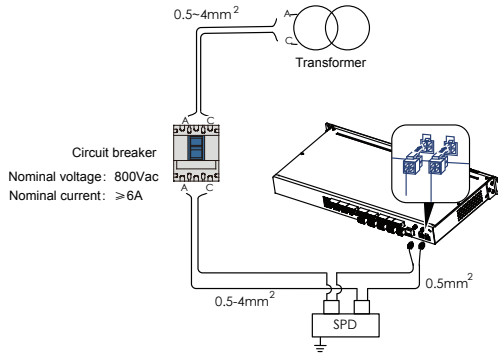


#### Preparation before Wiring

- Disconnect the transformer from the grid.
- Disconnect the DC side of the inverter and make sure the system is in safe state.

#### Connecting Methods

Connect one end of the supplied PLC power cable to any two phases of the micro circuit breaker and the other end to the port "PLC ( L1、L2 )" of the Logger3000.



The external circuit breaker is beyond the scope of delivery, and users need to prepare it by themselves if necessary.

The external circuit breaker just needs to meet the above two parameters (nominal voltage and nominal current). Other parameters, such as breaking capacity, are not mandatory requirement.





### ⚠ NOTICE

Isolation voltage of the PLC cable should be greater than 1,000V, recommended cable specification: 0.5mm<sup>2</sup>.

PLC cable must be connected to an additional SPD with the protection degree of 3. Otherwise, device damage may occur.

### ⚠ NOTICE

The built-in PLC module of the Logger3000 supports AC voltage less than 1,000V.

In case of PLC communication, the distance between the Logger3000 and the inverter should be no more than 1,000m.

### ⚠ NOTICE

PLC networking is intended for medium voltage grid-connection. If low voltage grid-connection is desired, observe the following two conditions:

Never connect a load between the Logger3000 and the PLC slave node.

The distance between the Logger3000 and the load should be greater than 20m, that is, the LV grid-connection point should be more than 20m away from the nearest load distribution line. The load includes air conditioners, machines, motors, etc.

### ⚠ NOTICE

In case of PLC communication, note that:

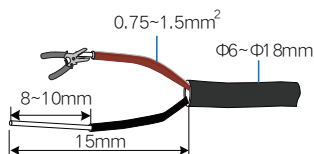
Electrical connection between the inverter and its downstream transformer has been correctly performed.

Input and output circuit breakers of the Logger, inverter, and transformer are connected.

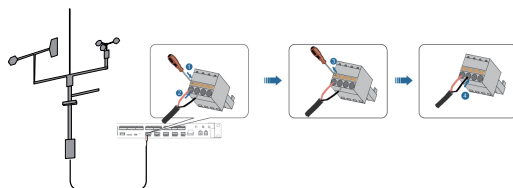
## 4.3 Connecting to the Meteo Station

Meteo Station of the Modbus-RTU protocol can be connected to the Logger3000.

### 1. Striping the Cables



## 2. Connecting Methods



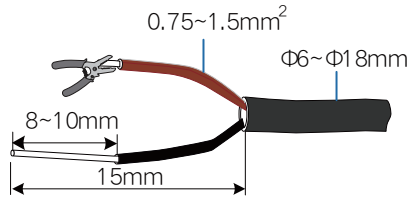
### 4.4 Connecting to the Energy Meter

The Logger can be connected to the energy meter through the RS485 port or the Ethernet port. Specifically, refer to the table below.

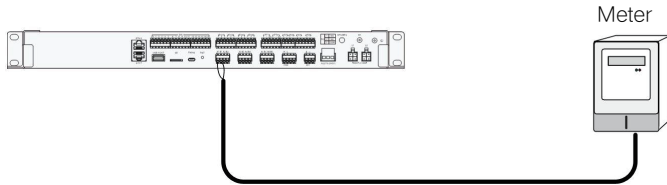
Energy Meter	Communication Port	Port Definition	Protocol Type	Wiring Method
Wasion	24	RS485-A	Modbus RTU	
	25	RS485-B	Modbus RTU	
	26	Public	Modbus RTU	
	27	RS485-A	Modbus RTU	
	28	RS485-B	Modbus RTU	
Acrel	21	RS485-A	Modbus RTU	
	22	RS485-B	Modbus RTU	
Weidmuller	17	RS485-A	Modbus RTU	
EM610	16	RS485-B		
Janitza	22	RS485-A	Modbus RTU	
	UMG604	23		RS485-B
	Ethernet	Ethernet	Modbus TCP	

## Solution 1 RS485 Communication

### 1. Stripping the Cables

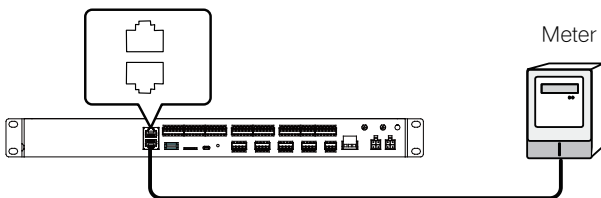


### 2. Connecting Methods



## Solution 2 Ethernet Communication

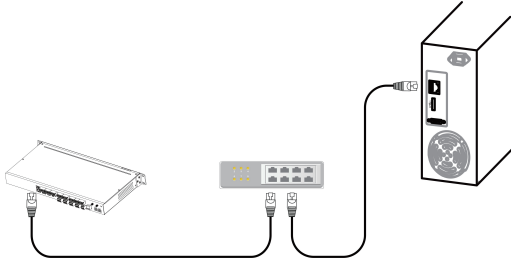
Connect the "Ethernet" port of the energy meter and the "Ethernet" port of the Logger with a network cable.



## 4.5 Connecting to the Remote Monitoring Device

### 1. Connecting Methods

The Logger3000 can be connected to the Ethernet switch and router through the ETH2 port.

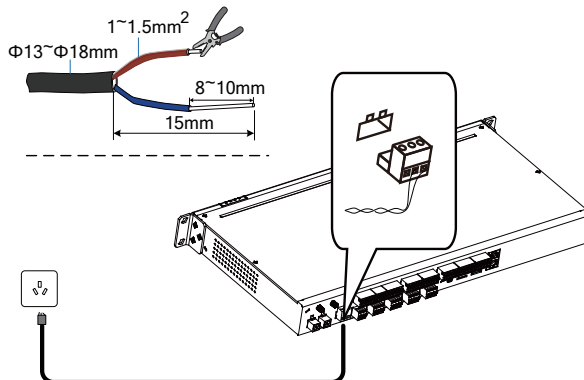


### 2. Configuring Network Parameters

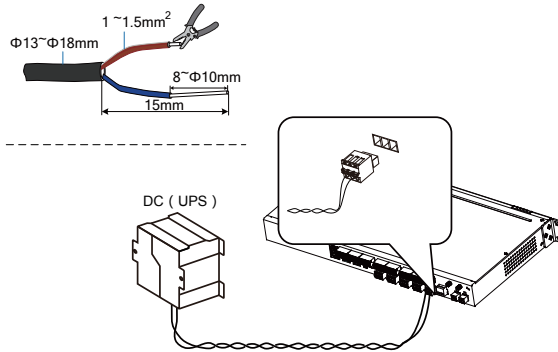
- Default IP address of the ETH2 port is 13.13.13.13.
- If the ETH2 port has enabled the Dynamic Host Configuration Protocol (DHCP) function, the IP address of the port can be read out after the it is connected to a router or other devices.

## 4.6 Connecting to the AC Power Supply

The Logger3000 can be connected to a power source with voltage ranging from 100 to 277Vac.



## 4.7 Connecting to the DC Power Supply

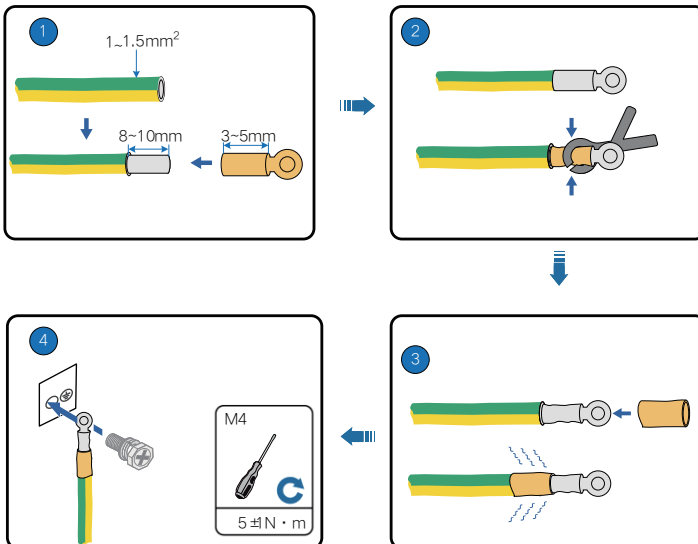


The Logger3000 can be connected to both AC power supply and DC power supply. UPS can be used as a DC backup power source.

## 4.8 Earthing Connection

### ⚠ NOTICE

The grounding cable should be grounded reliably. Otherwise, lethal electric shock may occur in case of fault; and the device may be damaged due to lightning.



## 5 Commissioning

No.	Step
1	Power on the Logger3000.
2	Check whether the RUN indicator of Logger3000 is normal state.
3	Enter the IP address, such as 13.13.13.13, of the Logger3000 in the PC address bar.
4	Configure serial port parameters on the WEB interface.
5	Add the PV devices connected to the Logger3000 to the WEB interface by means of searching or manual adding.
6	Configure IP address.
7	Configure iSolarCloud address if inverter data needs to be uploaded to iSolarCloud. Accessed iSolarCloud site is "Chinese Server" by default. In mainland China, set the site to "Chinese Server". In Europe, set the site to "European Server". In other regions, set the site to "International Server".
8	Check whether running data of SUNGROW inverter is correct via the WEB interface.
9	Check whether the forwarding data is correct via the background monitoring system.
10	Create new plant through the iSolarCloud APP and check whether the platform data is correct.

\* For more details about the Logger3000, refer to the corresponding user manual which can be obtained at [en. www.sungrowpower.com](http://en.www.sungrowpower.com).

Sungrow Power Supply Co., Ltd.

Add: No.1 699 Xiyou Rd., New & High Technology Industrial Development Zone, 230088, Hefei, P. R. China.  
Web: [www.sungrowpower.com](http://www.sungrowpower.com)  
Tel: +86 551 6532 7834 / 6532 7845  
E-mail: [info@sungrow.cn](mailto:info@sungrow.cn)



More information in the QR code or  
at <http://support.sungrowpower.com/>

**SUNGROW**

Specifications are subject to changes without advance notice.



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