

Smart Communication Unit

SCU3000-S

SCU3000

SCU3000A-S

SCU3000A

User Manual

GOODWE

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NOTE

Due to product version upgrades or other reasons, the document content may be updated from time to time. Unless otherwise agreed, the document content does not supersede the safety precautions on the product label. All descriptions in this document are for guidance only.

Preface

Overview

This document mainly introduces the product information, installation and wiring, configuration and commissioning, fault troubleshooting, and maintenance of the Smart Communication Box. Before installing or using the product, read this manual carefully to understand the safety information and familiarize yourself with the functions and features of the product. The document may be updated from time to time. Please obtain the latest version of the documentation and more product information from the official website.

Applicable Products

This document applies to the following Smart Data Collectors:

- SCU3000-S
- SCU3000
- SCU3000A-S
- SCU3000A

The above model is hereinafter referred to as the Smart Communication Box.

Applicable Personnel

Only applicable to professionals who are familiar with local regulations and standards and electrical systems, have received professional training, and are knowledgeable about this product.

Symbol Definitions

DANGER

Indicates a high-level potential hazard that, if not avoided, will result in death or serious injury.

WARNING

Indicates a moderate-level potential hazard that, if not avoided, could result in death or serious injury.

 CAUTION

Indicates a low-level potential hazard that, if not avoided, may result in moderate or minor injury.

NOTE

Emphasis and supplementary information about the content, may also provide tips or tricks for optimal product use that can help you solve a problem or save your time.

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1 Safety Precautions



WARNING

The equipment has been designed and tested in strict accordance with safety regulations. However, as electrical equipment, relevant safety instructions must be followed before any operation. Improper operation may cause serious injury or property loss.

1.1 General Safety

NOTE

- Due to product version upgrades or other reasons, the document content may be updated from time to time. Unless otherwise agreed, the document content does not supersede the safety precautions on the product label. All descriptions in this document are for guidance only.
- Before installing the equipment, read this document carefully to understand the product and precautions.
- All operations on the equipment must be performed by professional and qualified electrical technicians who are familiar with relevant standards and safety regulations at the project location.
- When operating the equipment, use insulated tools and wear personal protective equipment to ensure personal safety. When touching electronic components, wear anti-static gloves, anti-static wrist straps, anti-static clothing, etc. for Protection of the equipment from electrostatic damage.
- Unauthorized disassembly or modification may cause equipment damage. Such damage is not covered by the warranty.
- Equipment damage or personal injury caused by failure to install, use, or configure the equipment as required by this document or the corresponding user manual shall not be the responsibility of the equipment manufacturer. For more product warranty information, please visit the official website: <https://en.goodwe.com/warranty>.

1.2 Grounding Safety

DANGER

When installing the equipment, the grounding cable must be installed first; when removing the equipment, the grounding cable must be removed last.

WARNING

- Ground the equipment at a nearby point.
- For equipment Protection grounding, the grounding point on the chassis enclosure is recommended as the first choice.
- Before operating the equipment, ensure that the equipment is reliably grounded.

1.3 Personal Safety

DANGER

- When operating the equipment, use insulated tools and wear personal protective equipment to ensure personal safety.
- If the equipment is short-circuited, do not approach or touch the equipment; turn off the power immediately.
- Before making electrical connections to the equipment, disconnect all upstream switches to ensure the equipment is de-energized.

1.4 Equipment Safety

DANGER

Before installing the equipment, ensure that the installation location is reliable and stable.



WARNING

- When performing installation, maintenance, or other operations on the equipment, use appropriate tools and operate correctly.
- When operating the equipment, comply with local relevant standards and safety regulations.
- Unauthorized disassembly or modification may cause equipment damage. Such damage is not covered by the warranty.

1.5 Warning Label Explanations

DANGER

- After equipment installation, the labels and warning signs on the enclosure must be clearly visible; covering, altering, or damaging them is prohibited.
- The warning labels on the equipment enclosure are as follows:

No.	Symbol	Description
1		High voltage hazard. High voltage exists when the equipment is in operation. Ensure that the equipment is de-energized before operating it.
2		Potential danger exists after the equipment is in operation. Take protective measures when operating.
3		Before operating the equipment, read the product manual carefully.
4		Protection grounding conductor connection point.
5		CE marking

No.	Symbol	Description
6		The equipment must not be disposed of as household waste. Dispose of the equipment in accordance with local laws and regulations, or return it to the manufacturer.

1.6 Personnel Requirements

NOTE

- Personnel responsible for installing and maintaining the equipment must first undergo strict training, understand all product safety precautions, and master correct operating methods.
- Only qualified professionals or trained personnel are allowed to install, operate, maintain, or replace equipment or components.

1.7 European Conformity Declaration

1.7.1 Devices Without Wireless Communication Function

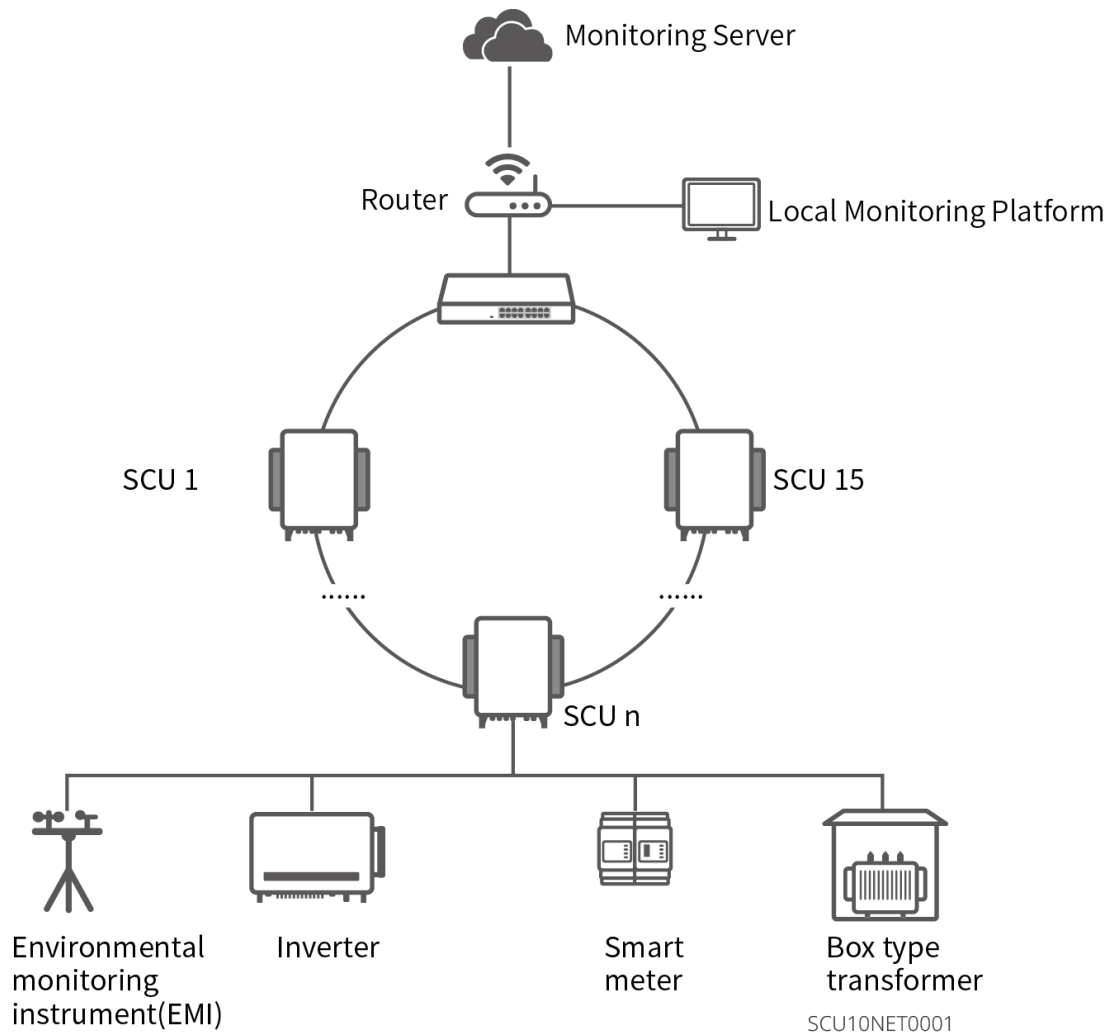
Equipment without wireless communication functions that can be sold in the European market complies with the following directive requirements:

- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

2 Product Introduction

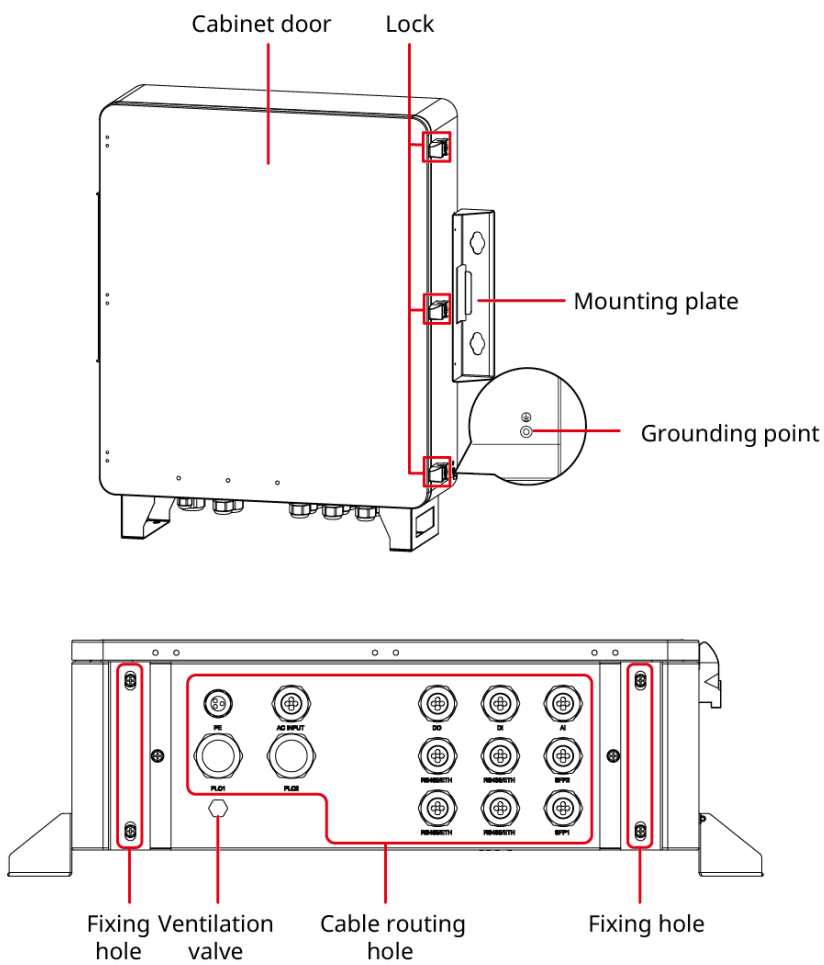
2.1 Functional Description

- SCU3000-S, SCU3000, SCU3000A-S, and SCU3000A are smart communication boxes that can be installed outdoors. They integrate the EzLogger, PLC communication module, optical-electrical switch, fiber optic splice closure, and more.
- Supports receiving and processing device data reported by inverters via PLC or RS485 communication.
- Can report data to the monitoring platform via Ethernet or fiber optic, or receive commands issued by the monitoring platform.
- The built-in fiber optic switch enables multiple smart communication boxes to communicate over a fiber optic ring network.
- Supports wall-mounted, floor-standing, and pole-mounted installation, facilitating equipment installation, maintenance, and other operations.
- The cabinet door uses a security lock to ensure equipment safety.

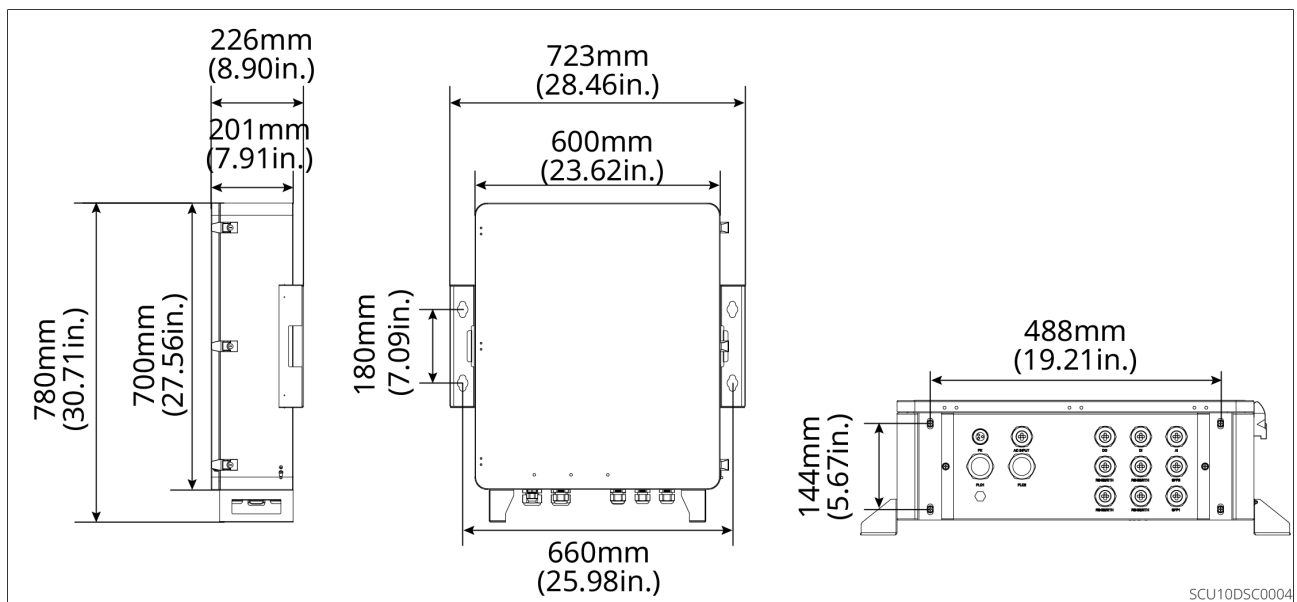


- Supports up to 15 smart communication boxes in a fiber optic ring network.
- A single PLC communication channel of the smart communication box supports connection of up to 60 inverters.
- A single RS485 communication channel of the smart communication box supports connection of up to 20 inverters.
- In the same sub-array, do not mix equipment from different manufacturers when using PLC. If mixing is required, contact the manufacturer in advance for details.

2.2 Appearance and Dimensions

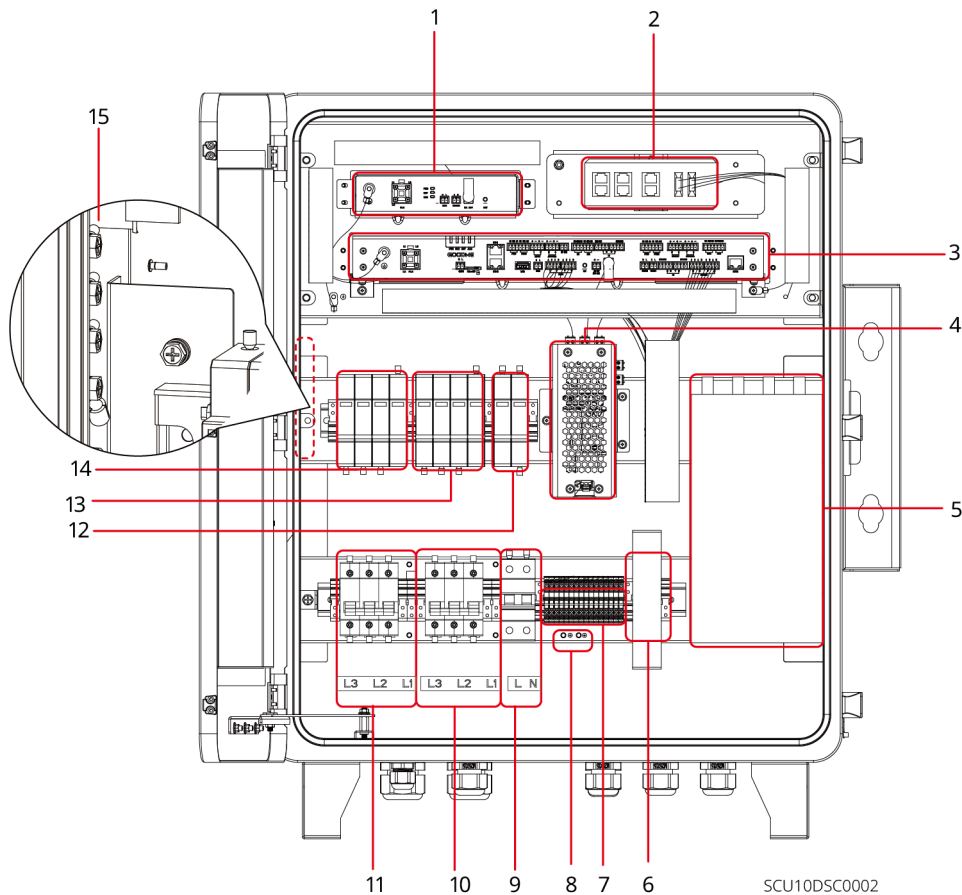


SCU10DSC0003



SCU10DSC0004

2.3 Structure Description

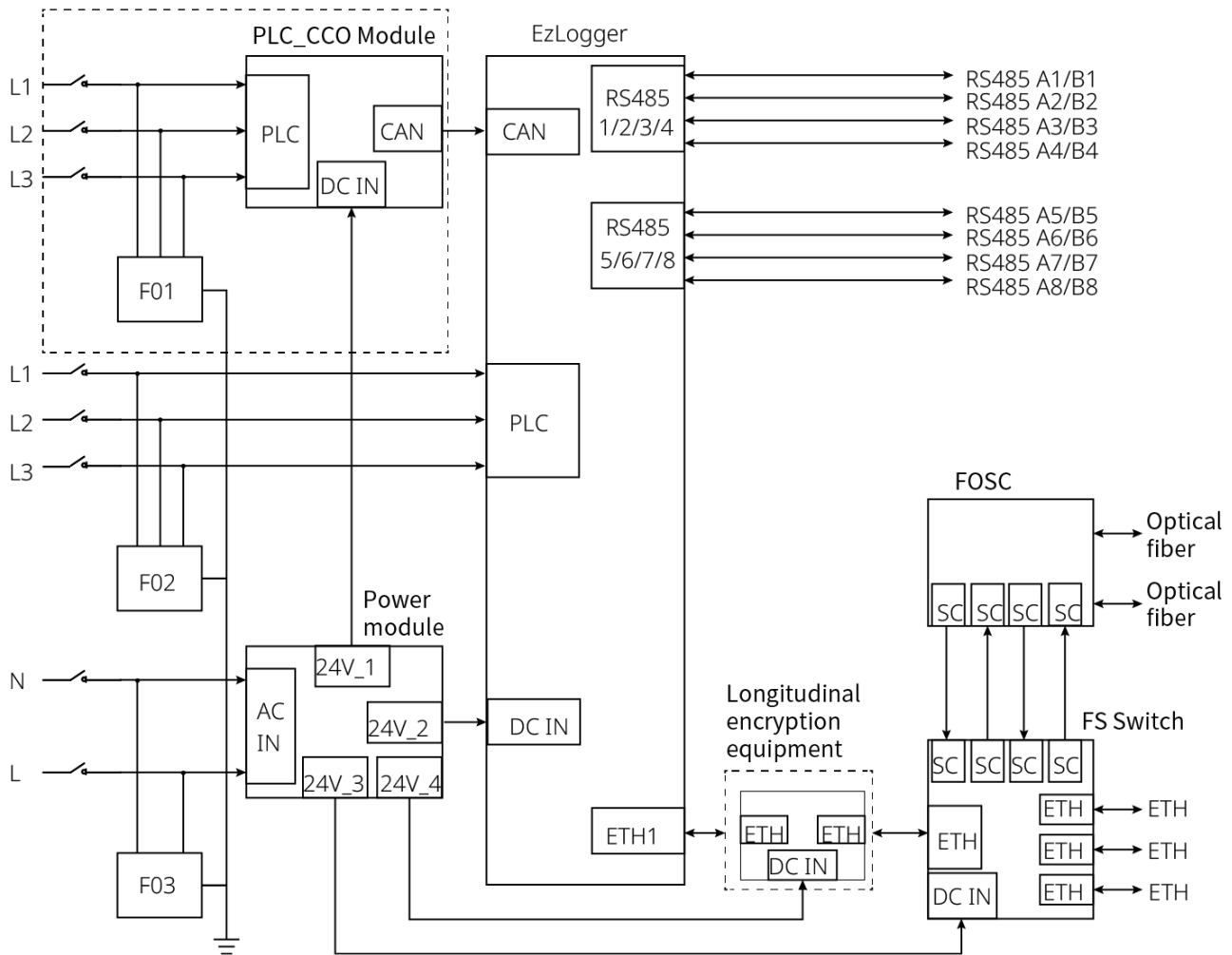


No.	Name	Description
1	(Optional) PLC CCO module	(Optional) PLC_CCO module, required for use in scenarios connecting dual-split box-type transformers. It is used to report and distribute inverter communication data, and aggregate the data to EzLogger. SCU3000A can be optionally equipped with a built-in HPLC_CCO module, and SCU3000 can be optionally equipped with a built-in PLC_CCO module. SCU3000A-S and SCU3000-S do not have a PLC_CCO module.

No.	Name	Description
2	Switch	The switch is an industrial ring network switch with 2 optical ports and 6 electrical ports. Internally, it connects to EzLogger via electrical ports; externally, it connects to routers, switches, or computer terminals via network cables or optical fiber.
3	EzLogger	Smart data logger. The SCU3000 and SCU3000-S have built-in Ezlogger3000U; the SCU3000A and SCU3000A-S have built-in Ezlogger3000U-A.
4	Power adapter	AC-to-DC power module, providing 24V, 3.2A DC power to the equipment.
5	Fiber optic splice box	The fiber optic splice box uses optical ports to connect to the switch internally, and leads out fiber optic cables externally.
6	Other equipment installation location	If other equipment needs to be installed, please provide it yourself. Rail specification: height 35mm, width 45mm.
7	RS485 communication terminal	Terminal for connecting RS485 communication devices.
8	RS485 communication grounding terminal	Grounding terminal for the shielding layer of RS485 communication cables.
9	Single-phase input switch	Single-phase AC circuit breaker, specification: 1P, 400V, 25A
10	Three-phase input switch	Three-phase AC circuit breaker, connecting PLC1 cable; specification: 3P, 1000V, 32A
11	(Optional) Three-phase input switch	Three-phase AC circuit breaker, connecting PLC2 cable; specification: 3P, 1000V, 32A

No.	Name	Description
12	Surge protection module	Single-phase AC surge protection module, specification: 385V AC/20kA
13	Surge protection module	Three-phase AC surge protection module, specification: 1500V AC/20kA
14	(Optional) Surge protection module	Three-phase AC surge protection module, specification: 1500V AC/20kA
15	Protection grounding busbar	Equipment Protection Earthing Connection Busbar

2.4 Circuit Block Diagram



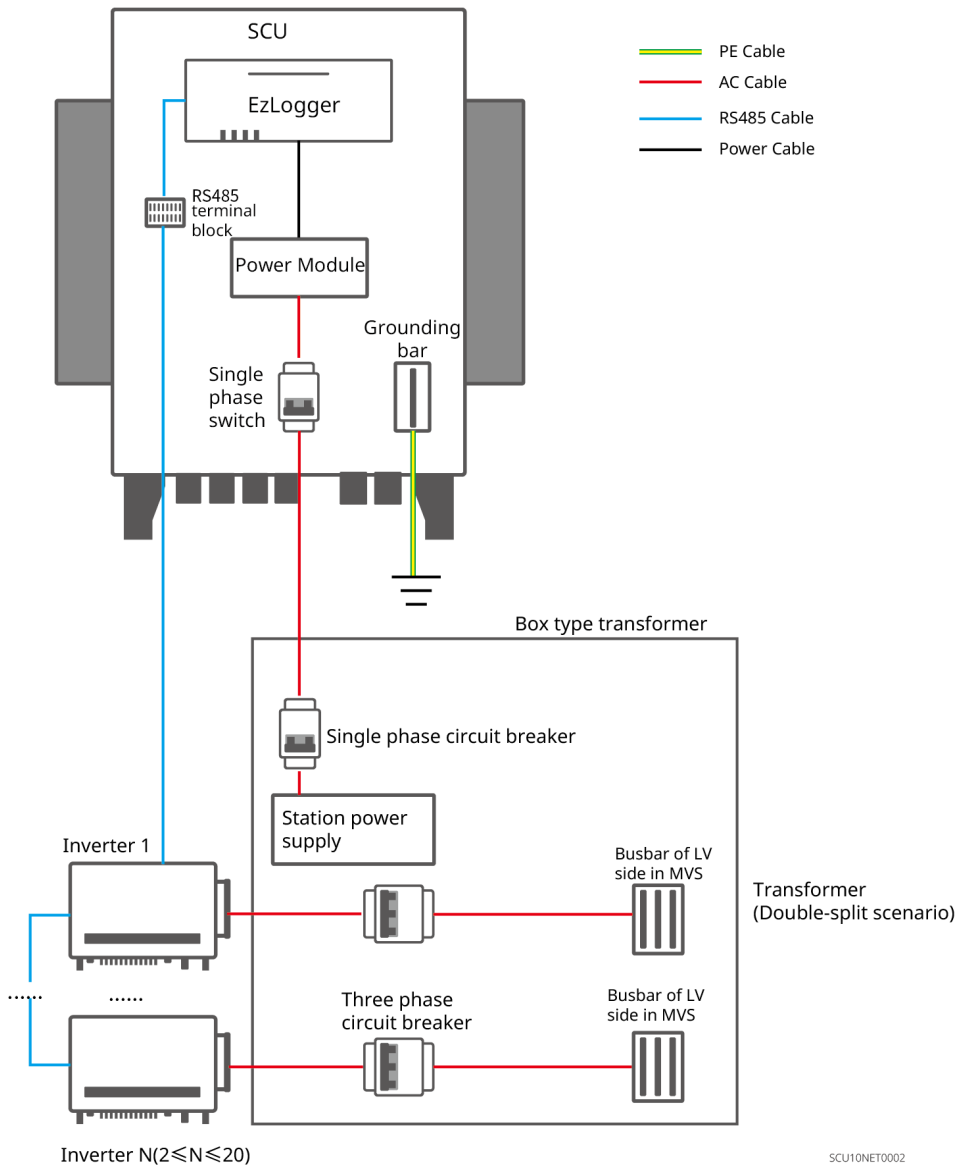
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Note:

- The SCU3000A can be optionally equipped with a built-in HPLC_CCO module, and the SCU3000 can be optionally equipped with a built-in PLC_CCO module; the SCU3000A-S and SCU3000-S do not have PLC_CCO modules.
- The SCU3000 and SCU3000-S have built-in Ezlogger3000U; the SCU3000A and SCU3000A-S have built-in Ezlogger3000U-A.
- Longitudinal encryption device: optional.
- F01/F02/F03 are lightning protection modules.

2.5 RS485 Communication Networking

The smart communication box supports connecting to devices such as inverters, box-type transformers, and environmental monitors via RS485 Communication.



2.6 PLC Communication Networking

The smart communication box supports PLC communication.

When connecting a double-winding transformer, only one PLC communication channel needs to be connected via a three-phase AC line.

When connecting a double-split transformer, two PLC communication channels need to be connected via three-phase AC lines.

3 Equipment Inspection and Storage

3.1 Pre-Acceptance Inspection

Before signing for the product, please carefully check the following:

1. Check whether the outer packaging is damaged, such as deformation, holes, cracks, or other signs that may cause damage to the equipment inside the carton. If damaged, do not open the packaging and contact your dealer.
2. Check whether the equipment model is correct. If it does not match, do not open the packaging and contact your dealer.
3. Check whether the type and quantity of deliverables are correct and whether the appearance is damaged. If damaged, contact your dealer.

3.2 Equipment Storage

If the smart communication box is not put into use immediately, store it according to the following requirements:

1. Ensure that the outer packaging box is not removed and the desiccant inside the box is not lost.
2. Ensure the storage environment is clean, the temperature and humidity are within suitable ranges, and there is no condensation.
3. Ensure that the stacking height and direction of the equipment follow the label instructions on the packaging box.
4. Ensure that the equipment has no risk of tipping over after stacking.
5. After long-term storage, the equipment must be inspected and confirmed by professionals before it can be used again.

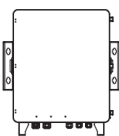
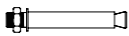
3.3 Deliverables

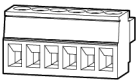
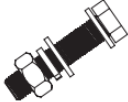
WARNING

- Check whether the type and quantity of deliverables are correct and whether the appearance is damaged. If damaged, contact your dealer.
- After removing the deliverables from the packaging, do not place them on rough, uneven, or sharp surfaces to avoid paint peeling.

NOTE

- Use the terminals and screws provided with the box. Using other types of terminals and screws may lead to serious consequences. Equipment damage caused thereby is not within the responsibility of the equipment manufacturer.
- PLC communication OT terminals: 6 for dual-split scenario; 3 for dual-winding scenario.

Component	Description	Component	Description
	Smart communication box x1		Cabinet grounding screw x1
	RS485 communication grounding screw x2		PLC communication OT terminal xN
	M12 expansion bolt x4		Tubular terminal x2
	Outer enclosure OT grounding terminal and RS485 communication grounding OT terminal x 3		Tubular terminal x 16

Component	Description	Component	Description
	OT grounding terminal inside the enclosure x 1		6-pin communication terminal x 4
	2-pin communication terminal x 6		4-pin communication terminal x 8
	DC power terminal x 2		Cabinet door key x 6
	Firestop putty x 3		M10 combination bolt x 4
	Product documentation x 1	-	-

4 Installation

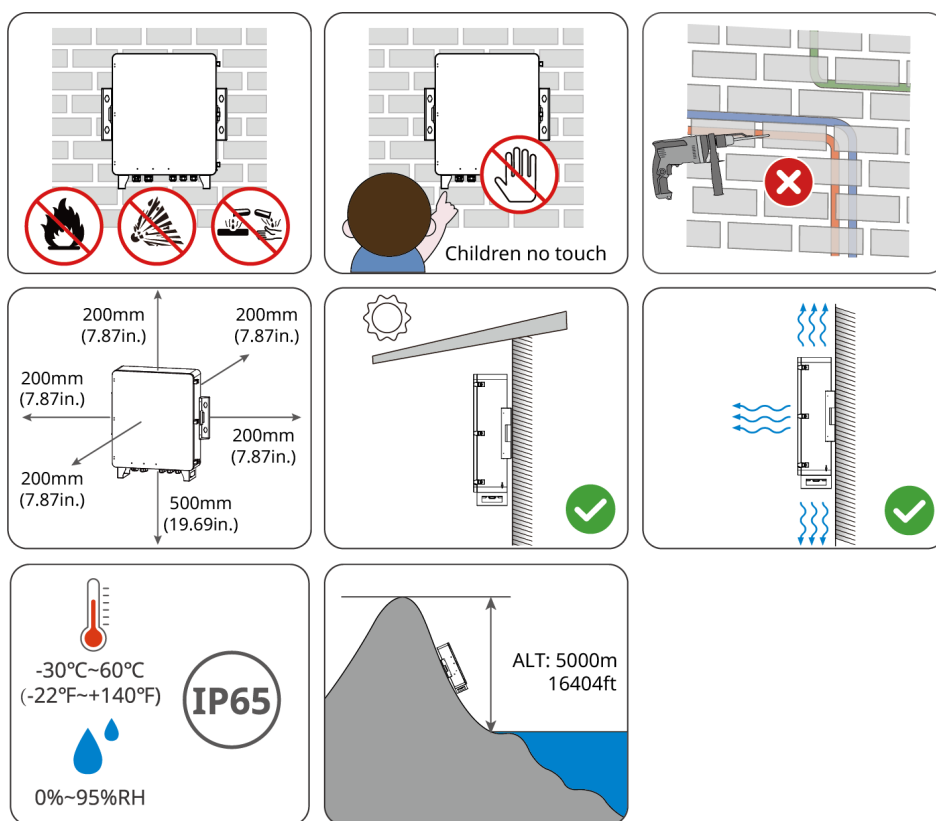
DANGER

Use the deliverables shipped with the equipment for installation and electrical connection; otherwise, any equipment damage caused will not be covered by the warranty.

4.1 Installation Requirements

4.1.1 Installation Environment Requirements

1. The equipment must not be installed in flammable, explosive, corrosive, or other similar environments.
2. The temperature and humidity of the equipment installation environment must be within suitable ranges.
3. The installation location must be kept out of children's reach and avoid being installed in positions that can be easily touched.
4. The equipment must avoid installation environments such as direct sunlight, rain, and snow accumulation. It is recommended to install it in a sheltered location, and a sunshade canopy can be erected if necessary.
5. The installation space must meet the equipment's ventilation and heat dissipation requirements as well as the operating space requirements.
6. The equipment installation height should facilitate operation and maintenance, ensuring that the equipment indicator lights and all labels are easy to view, and the wiring terminals are easy to operate.
7. Keep away from strong magnetic field environments to avoid electromagnetic interference.



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4.1.2 Installation Carrier Requirements

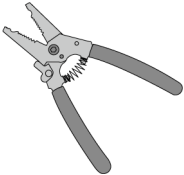
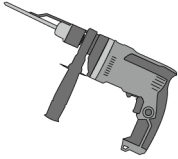
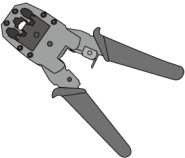
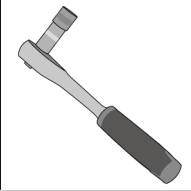
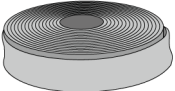
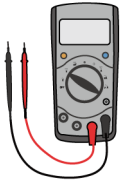
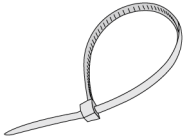
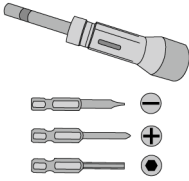
- The installation carrier must not be made of flammable materials and must have fire-resistant properties.
- Please ensure that the installation carrier is sturdy and reliable and can bear the weight of the equipment.

4.1.3 Tool Requirements

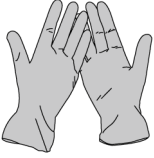
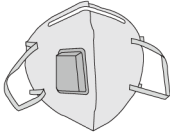
NOTE

When installing, it is recommended to use the following installation tools. If necessary, other auxiliary tools may be used on site.

Installation Tools

Tool Type	Description	Tool Type	Description
	Diagonal Cutting Pliers		Wire Strippers
	Impact Drill		Heat Gun
	Crimping Pliers		Socket Wrench M5/M12
	Marking Pen		Spirit Level
	Heat Shrink Tubing		Rubber Mallet
	Multimeter		Vacuum Cleaner
	Cable Ties		Torque Wrench M3/M4/M6

Personal Protective Equipment

Tool Type	Description	Tool Type	Description
	Safety Gloves		Dust Mask
	Safety Goggles		Safety Shoes

4.2 Install Smart Communication Box

CAUTION

Before installation, the equipment must be transported to the installation site. During transportation, to avoid personal injury or equipment damage, please note the following:

1. Please allocate corresponding personnel according to the equipment Weight, so as to prevent the equipment from exceeding the weight range that can be carried by humans and injuring personnel.
2. Please wear safety gloves to avoid injury.
3. Please ensure the equipment remains balanced during transportation to avoid falling.

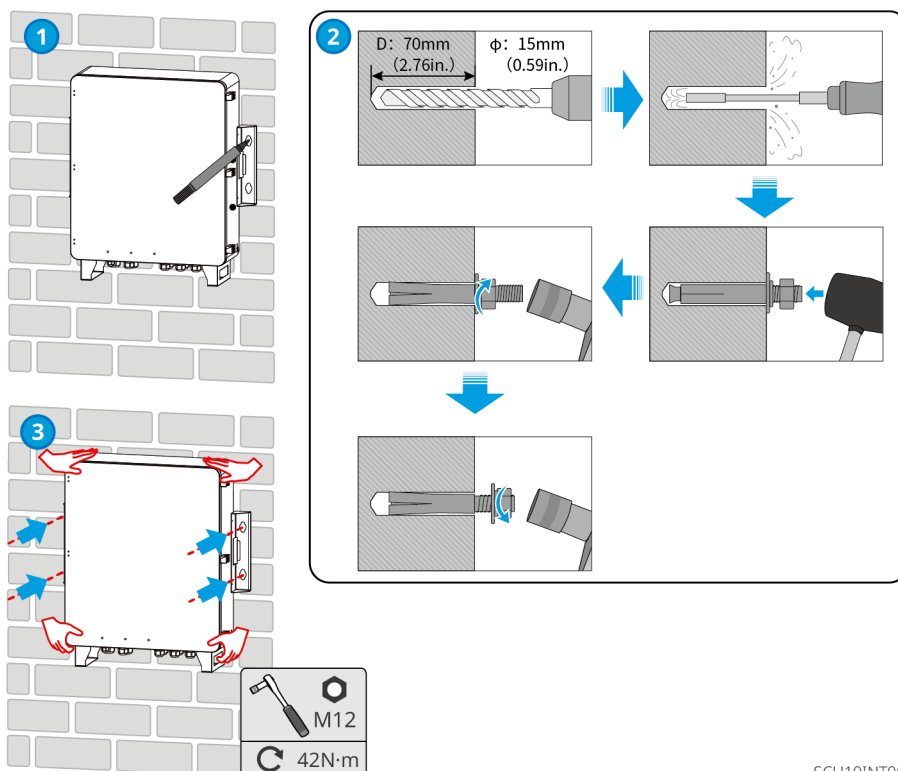
Wall-Mounting the Smart Communication Box

NOTE

- When drilling, ensure that the drilling position avoids water pipes, cables, etc. inside the wall to prevent danger.
- When drilling, please wear goggles and a dust mask to prevent dust from being inhaled into the respiratory tract or entering the eyes.

Operating steps

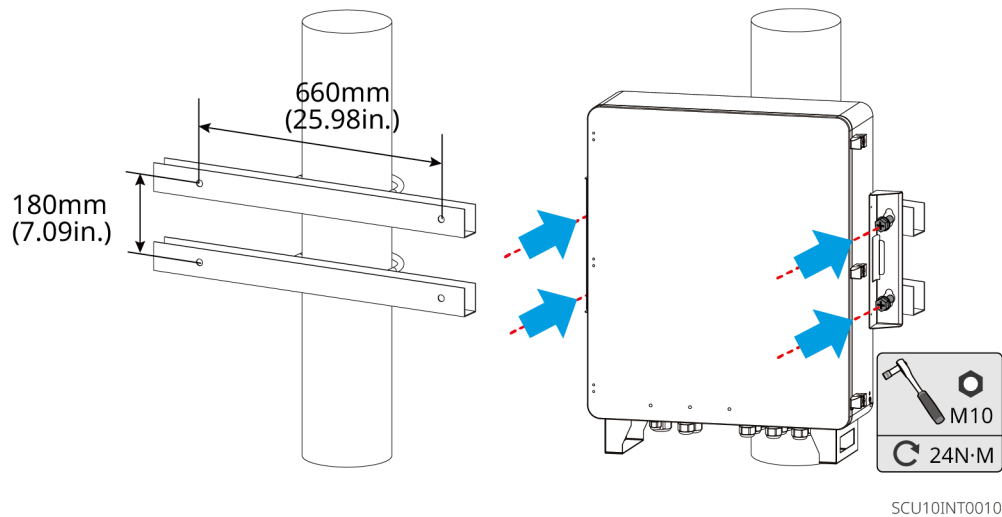
1. Place the smart communication box horizontally on the wall, and use a marker to mark the drilling positions.
2. Use an impact drill with a 15 mm (0.59 in.) drill bit to drill holes, ensuring a hole depth of about 70 mm (2.76 in.), and install the expansion bolts.
3. Two people lift the smart communication box, hang it on the expansion bolts, and hold it steady. A third person assists in tightening the expansion bolts with a socket wrench.



Pole-Mounting the Smart Communication Box

NOTE

When using pole-mounting to install the smart communication box, the user should prepare the pole-mounting accessories.



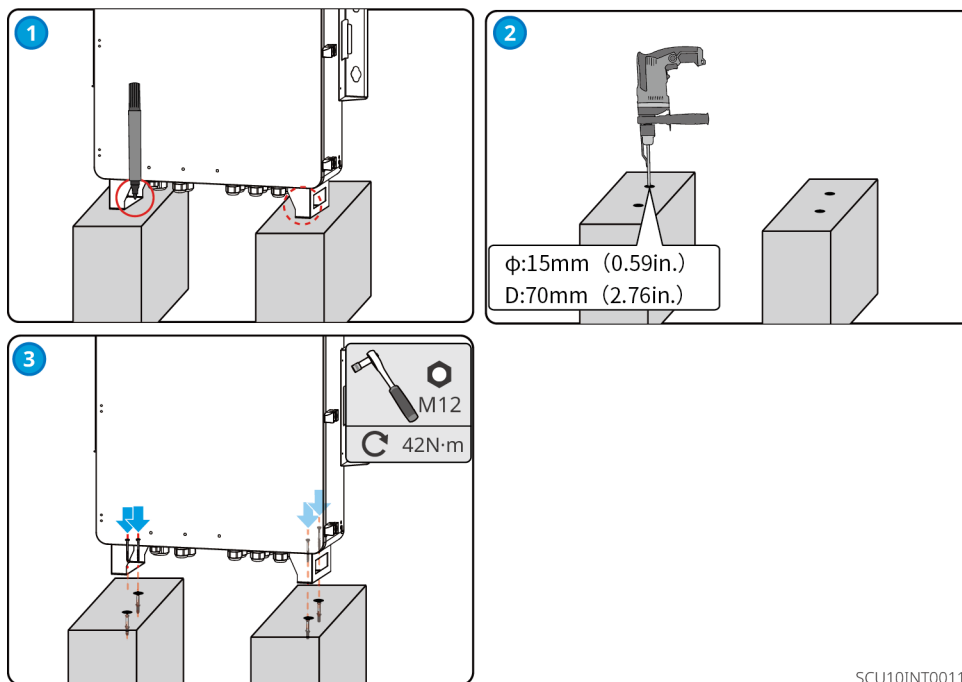
Freestanding Installation of the Smart Communication Box

NOTE

- When installing the smart communication box in a freestanding position, choose a suitable location and a sturdy surface.
- It is recommended to use M12 bolts to secure the smart communication box to the ground.

Operating steps

1. Place the smart communication box on a horizontal surface, and use a marker to mark the drilling positions.
2. Use an impact drill with a 15 mm (0.59 in.) drill bit to drill holes, ensuring a hole depth of about 70 mm (2.76 in.).
3. Use M12 bolts to secure the smart communication box to the mounting surface.



SCU10INT0011

4.3 Open the Cabinet Door

WARNING

- If you need to open the cabinet door in rainy or snowy weather, take protective measures to prevent rain or snow from entering the cabinet. If entry of rain or snow cannot be prevented, opening the cabinet door is forbidden.
- Before opening the cabinet door, ensure that the upstream switch of the smart communication box is disconnected. If live-line operation is required, take insulation protection measures.

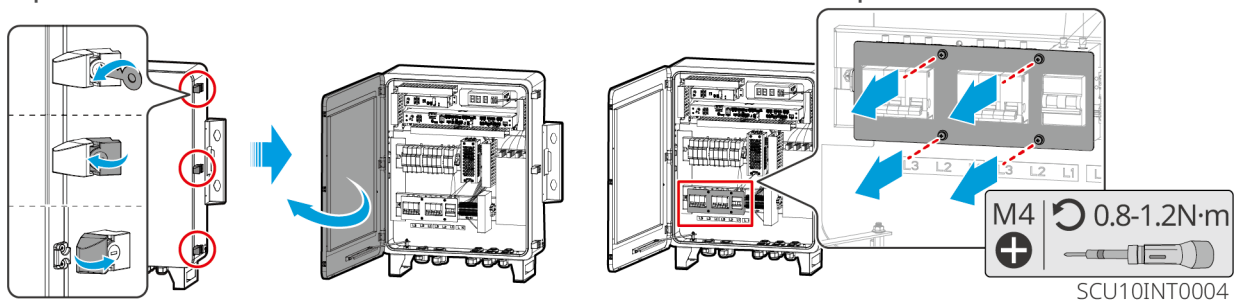
NOTE

Use the key to open the smart communication box cabinet door. After opening the door, keep the key in a safe place for future use.

Operating steps

1. Use the key to open the three cabinet door locks.
2. Toggle the cabinet door lock.

3. Open the cabinet door and remove the Protection cover plate.



5 Electrical Connection

DANGER

- Before making electrical connections, disconnect all upstream switches of the equipment to ensure that the equipment is de-energized. Live operation is strictly prohibited; otherwise, hazards such as electric shock may occur.
- All operations during the electrical connection process and the specifications of cables and components used must comply with local laws and regulations.
- If the cable is subjected to excessive tension, it may lead to poor connections. When wiring, leave a certain length of cable slack before connecting it to the equipment terminal.

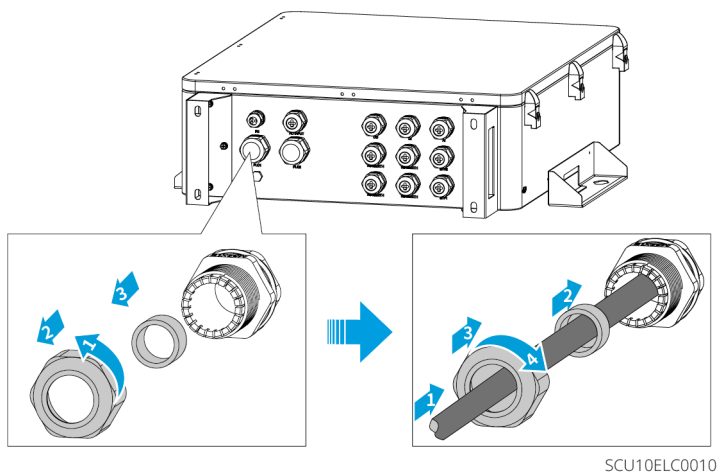
NOTE

- When making electrical connections, wear personal protective equipment such as safety shoes, protective gloves, insulating gloves, etc. as required.
- Only professionals are allowed to perform operations related to electrical connections.
- The cable colors in the figures in this document are for reference only. The specific cable specifications must comply with local regulatory requirements.
- To avoid signal interference, route the signal cables and power cables separately, with at least 500 mm between cables.

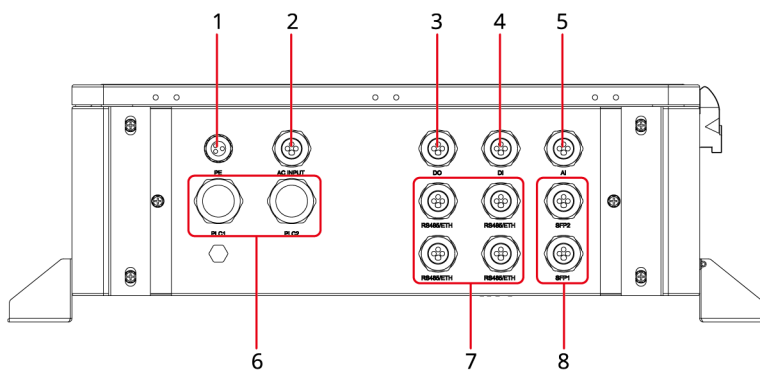
Steps for connecting cables using waterproof connectors

The smart communication box connects external cables via waterproof connectors.

1. Remove the locking cap and rubber ring of the waterproof connector.
2. Pass the cable through the locking cap and rubber ring in sequence.
3. Tighten the locking cap.



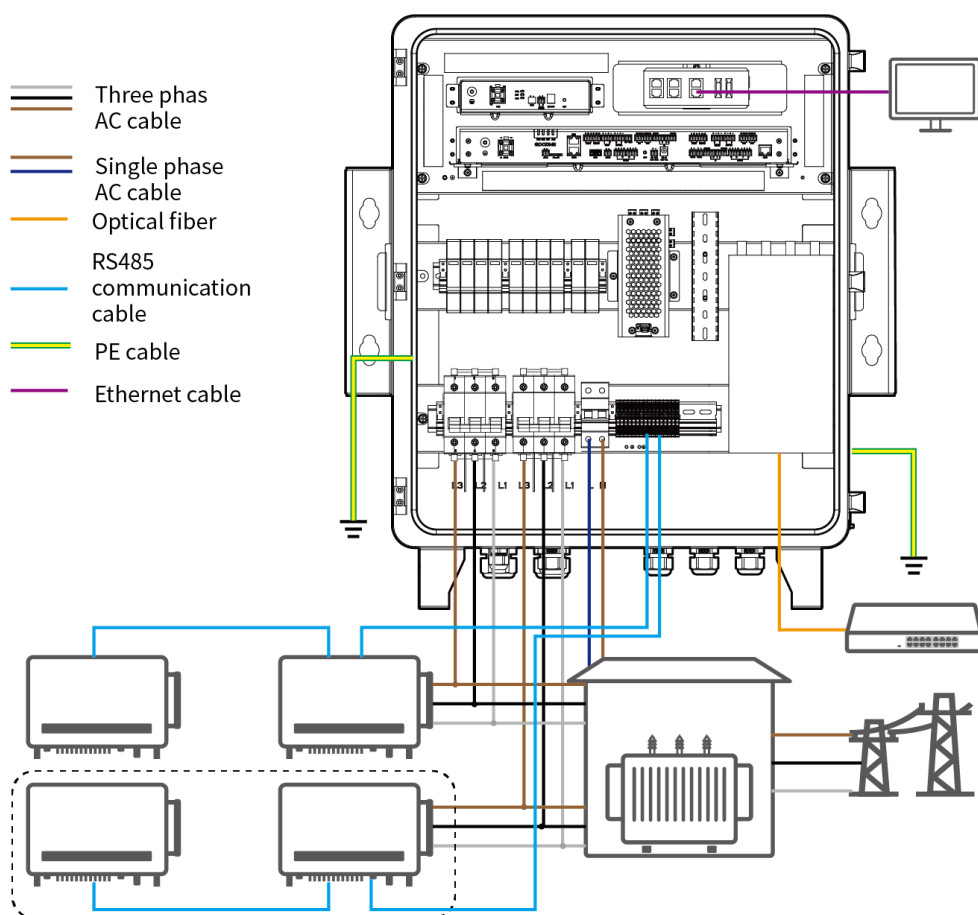
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No.	Silkscreen	Port name	Maximum cable size that can pass through the waterproof plug
1	PE	Protection ground wire routing hole	18mm (0.71in.)
2	AC INPUT	Single-phase AC wire routing hole	23mm (0.91in.)
3	DO	DO signal wire routing hole	
4	DI	(Reserved) DI signal wire routing hole	
5	AI	(Reserved) AI signal wire and PT signal wire routing hole	25.4mm (1in.)
6	PLC1/P LC2	Three-phase AC wire routing hole	

No.	Silkscreen	Port name	Maximum cable size that can pass through the waterproof plug
7	RS485/ ETH	RS485 communication cable/Ethernet cable routing hole	23mm (0.91in.)
8	SFP1 SFP2	Fiber optic cable routing hole	



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No.	Name	Silkscreen	Cable requirements
1	Three-phase AC cable	L1/L2/L3	- Single-core outdoor armored copper-core cable, withstand voltage >1000V - Conductor cross-sectional area: 1.5mm²-2.5mm²(14AWG-12AWG)
2	Single-phase AC cable	L/N	- Outdoor armored copper-core cable, withstand voltage >300V - Conductor cross-sectional area: 2.5mm²-4mm²(12AWG-10AWG)
3	RS485 communication cable	A1-A9/B1-B8	- Shielded twisted pair cable suitable for outdoor use - Conductor cross-sectional area: 0.2mm²-1mm²(24AWG-18AWG)
4	Fiber optic cable	-	4-core or 8-core single-mode armored fiber optic cable supporting a transmission wavelength of 1310nm - Fiber optic cable outer diameter ≤ 18mm (0.71in.)
5	Ethernet cable	ETH	- CAT 5E outdoor shielded Ethernet cable with outer diameter < 9mm (0.35in.) - Shielded RJ45 plug
6	Grounding busbar ground wire		- Outdoor copper-core cable - Conductor cross-sectional area: 6mm²-10mm²(8AWG-6AWG)

No.	Name	Silkscreen	Cable requirements
7	External enclosure grounding wire		• Outdoor copper-core cable • Conductor cross-sectional area: 2.5mm²-4mm²(12AWG-10AWG)

5.1 Connect the Protection Ground Wire

WARNING

- Ground the equipment at a nearby point.
- Before operating the equipment, ensure that the equipment is reliably grounded.
- To improve the corrosion resistance of the terminal, it is recommended to apply silicone or paint on the exterior of the grounding terminal for protection after completing the connection of the Protection ground wire.

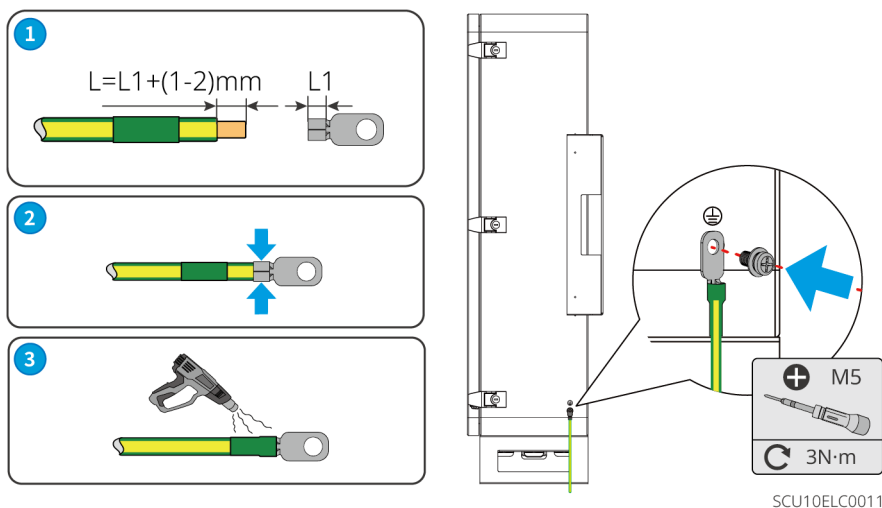
NOTE

- Please use the enclosure grounding OT terminal and fastening screws from the accessories.
- Please prepare the Protection ground wire yourself.

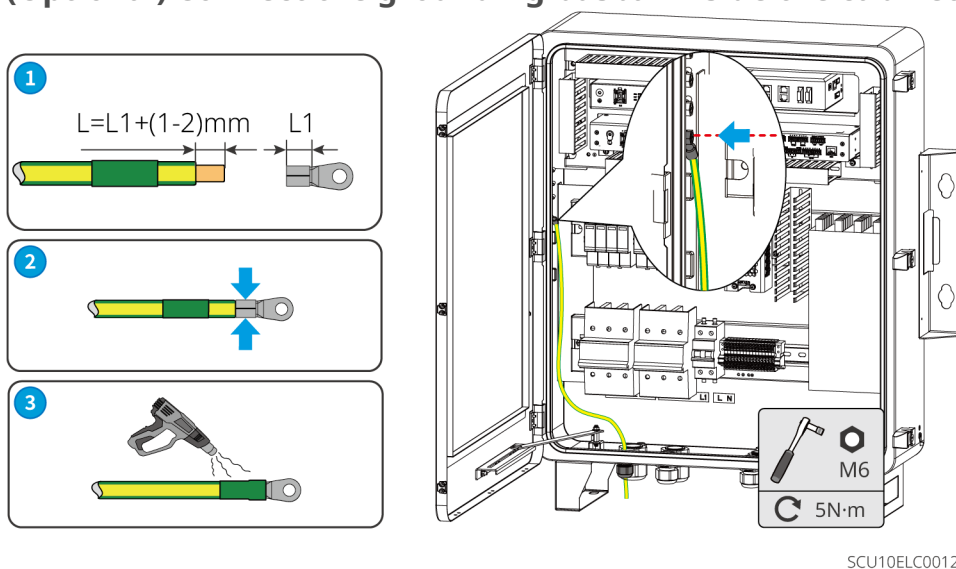
Operating steps:

1. Strip the cable insulation to an appropriate length.
2. Crimp the OT terminal.
3. Cover the crimping area with an insulating sleeve.
4. Connect the grounding cable to the grounding busbar inside the enclosure.

Connect the outer enclosure Protection ground wire



(Optional) Connect the grounding busbar inside the cabinet.



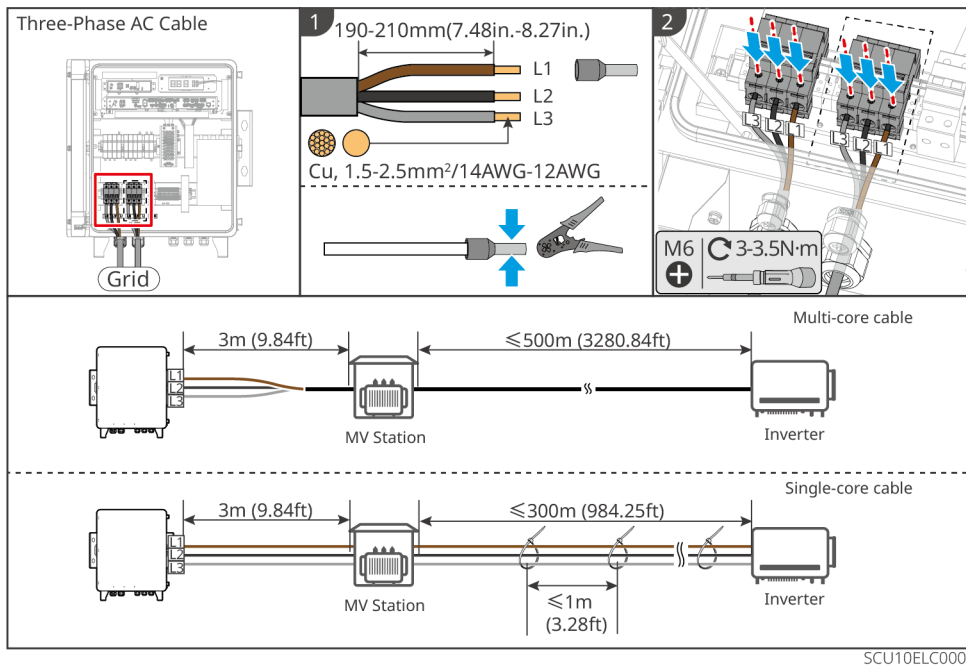
5.2 Connect the Three-Phase AC Input Cables

NOTE

- When using PLC communication, multi-core cables are recommended. The maximum communication distance between the inverter and the box-type transformer is 1000 m.
- When using single-core cables, the three-phase cables must be bundled at intervals of 1 m. The maximum communication distance between the inverter and the box-type transformer is 500 m.
- The distance between the data communication box and the busbar sampling cable of the box-type transformer should be as short as possible and not exceed 3 m.
- When the inverter is connected to a two-winding transformer, only one set of PLC communication needs to be connected.
- When the inverter is connected to a double-split transformer, two sets of PLC communication need to be connected.
- The following takes the connection of a double-split transformer as an example to introduce how to connect the three-phase AC input cables.

Operating steps

1. Strip an appropriate length of cable insulation.
2. Crimp the OT terminal.
3. Cover the crimping area with an insulating sleeve.
4. Connect the L1, L2, L3 cables to the three-phase AC Switch.



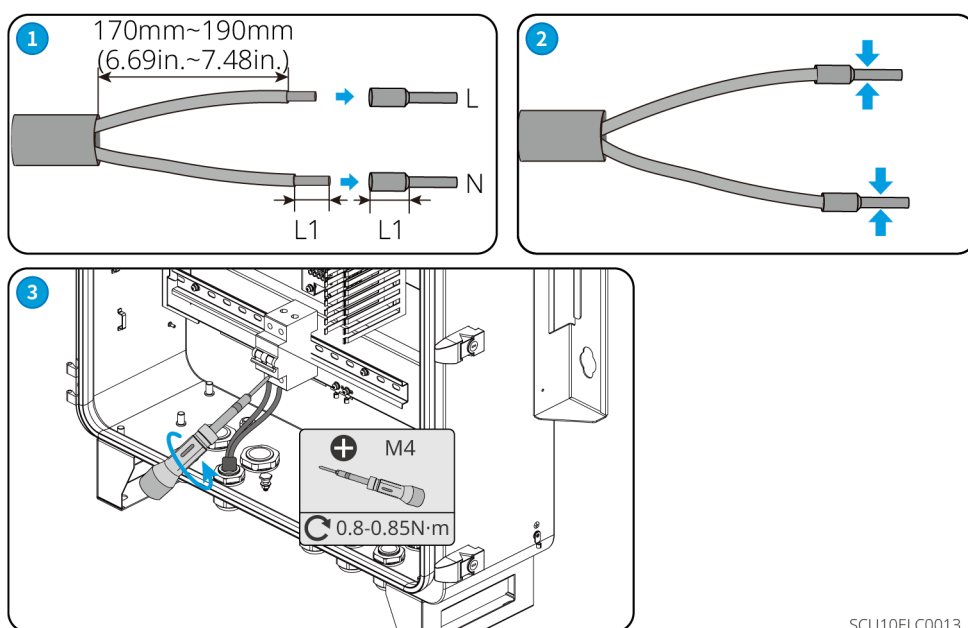
5.3 Connect the Single-Phase Power Cable

NOTE

Connect the L and N cables to the L and N of the box-type transformer station service power supply via the miniature circuit breaker.

Operating steps

1. Strip an appropriate length of cable insulation.
2. Crimp the tubular terminals.
3. Connect the L and N cables to the single-phase AC Switch.



5.4 Connect the RS485 Communication Cable

NOTE

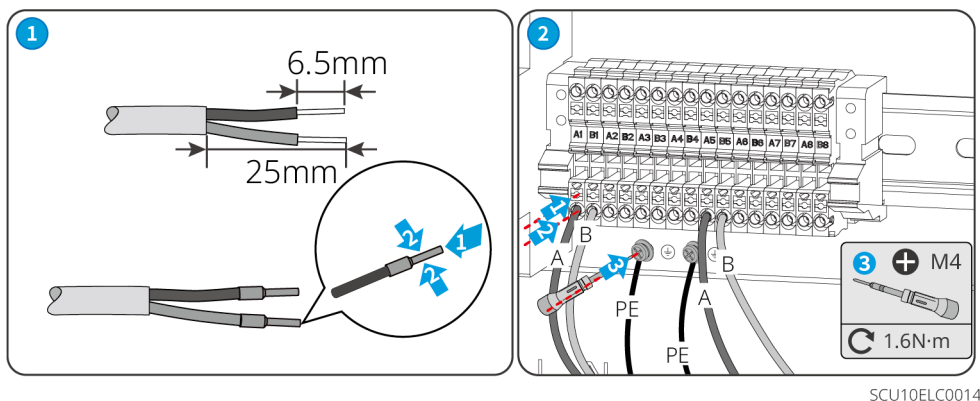
- When using shielded twisted pair cables, the maximum communication distance to external devices is 1000 meters.
- The smart communication box is equipped with an RS485 communication terminal block for connecting RS485 communication devices. The RS485 communication cables are connected in the same way; the following uses a group of two cables as an example.

Operating steps

1. Strip the cable insulation to an appropriate length and crimp pin terminals.
2. Connect the shield layer to the RS485 grounding point.
3. Plug the communication terminals into the RS485 terminal block.

Port	Silkscreen	Port definition	Port	Silkscreen	Port definition
RS485_1	A1	RS485_A1	RS485_5	A5	RS485_A5

Port	Silkscreen	Port definition	Port	Silkscreen	Port definition
	B1	RS485_B1		B5	RS485_B5
RS485_2	A2	RS485_A2	RS485_6	A6	RS485_A6
	B2	RS485_B2		B6	RS485_B6
RS485_3	A3	RS485_A3	RS485_7	A7	RS485_A7
	B3	RS485_B3		B7	RS485_B7
RS485_4	A4	RS485_A4	RS485_8	A8	RS485_A8
	B4	RS485_B4		B8	RS485_B8

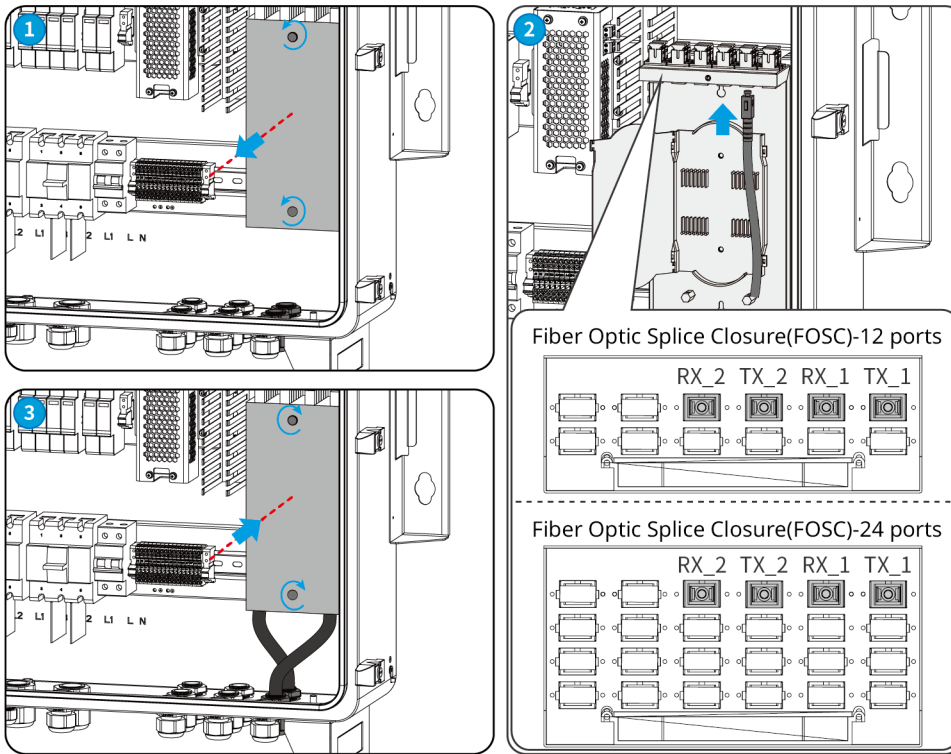


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5.5 Connect the Fiber Optic Cable

NOTE

- Please use the fiber optic connector terminals and cables supplied with the unit.
- Fiber optic cable connection and splicing must be performed by professional technical personnel.



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5.6 Connect the DI/ETH Signal Cables

The smart communication box is pre-reserved with "DI" and "ETH" cable waterproof glands, providing cable routing channels and outlet holes for the corresponding signal cables. For signal cable requirements, wiring steps and memory card installation steps, refer to the "Ezlogger3000U, Ezlogger3000U-A User Manual".

6 System Commissioning

6.1 Pre-Power-on Checks

No.	Inspection item
1	The equipment is installed securely, the installation position is convenient for operation and maintenance, the installation space allows ventilation and heat dissipation, and the installation environment is clean and tidy.
2	Protection ground wire, AC input wiring, and communication cables are connected correctly and securely.
3	Cable bundling complies with routing requirements, is reasonably arranged, and has no damage.
4	Unused ports are plugged.
5	The inside of the smart communication box is clean and tidy, free of dust, dirt, and construction debris.
6	The exterior paint of the smart communication box is intact. If damaged, repaint immediately to prevent corrosion.
7	The upstream switch and the internal switch of the smart communication box are disconnected.
8	The input voltage and frequency of the smart communication box are within the operating voltage and Frequency Range of the smart communication box.

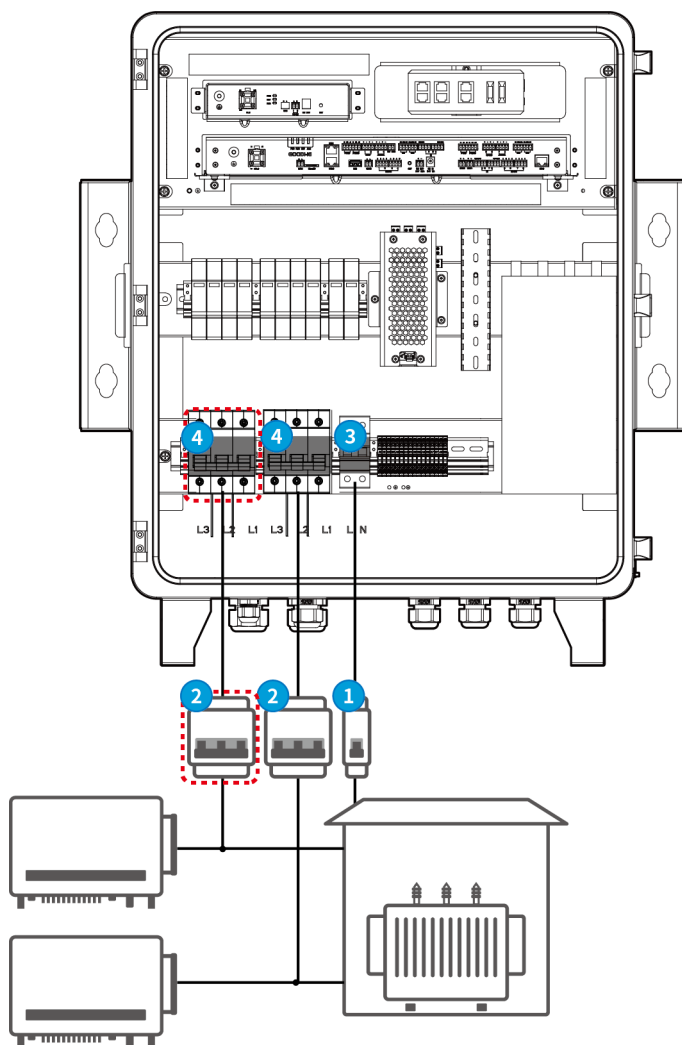
6.2 System Power-On

WARNING

- When operating the smart communication box, wear personal protective equipment.
- Ensure that the smart communication box is properly grounded.

Operating steps

1. Close the single-phase power switch on the remote box-type transformer that supplies power to the smart communication box.
2. Close the three-phase power switch connecting the remote box transformer to the smart communication cabinet.
 - If the smart communication box is connected for single-channel PLC communication, close the corresponding single-channel three-phase power switch.
 - If the smart communication box is connected for dual-channel PLC communication, close the corresponding dual-channel three-phase power switch.
3. Close the single-phase input switch inside the smart communication box.
4. Close the three-phase input switch inside the smart communication cabinet.
 - If the smart communication box is connected for single-channel PLC communication, close the corresponding single-channel three-phase power switch.
 - If the smart communication box is connected for dual-channel PLC communication, close the corresponding dual-channel three-phase power switch.



7 System Debugging

7.1 Commissioning the Smart Communication Box

NOTE

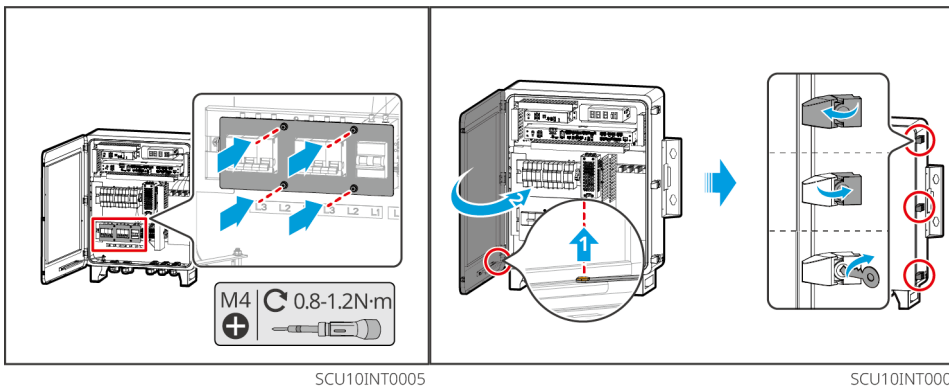
The parameters of the smart communication box must be set by professionals to avoid incorrect settings affecting system operation and Energy Generation.

For device configuration steps, refer to the "Ezlogger3000U, Ezlogger3000U-A User Manual". For more detailed instructions, scan the QR code below to view the user manual.

7.2 Close the Cabinet Door

NOTE

Please use the key to lock the smart communication cabinet door. After the door is locked, keep the key in a safe place for future use.



8 System Maintenance

8.1 System Power-Off

DANGER

- When performing operation and maintenance on the smart communication box, power off the smart communication box first. Operating the equipment while energized may damage the smart communication box or cause an electric shock hazard.
- After the smart communication box is powered off, it takes some time for the internal components to discharge. Please wait until the equipment is fully discharged according to the label time requirement.
- When operating the smart communication box, wear personal protective equipment.

Operating steps

1. Disconnect the single-phase power switch on the remote box-type transformer that supplies power to the smart communication box.
2. Open the three-phase power switch connecting the remote box transformer to the smart communication cabinet.
 - If the smart communication box is connected for single-channel PLC communication, disconnect the corresponding single-channel three-phase power switch.
 - If the smart communication box is connected for dual-channel PLC communication, disconnect the corresponding dual-channel three-phase power switch.
3. Disconnect the single-phase input switch inside the smart communication box.
4. Open the three-phase input switch inside the smart communication cabinet.
 - If the smart communication box is connected for single-channel PLC communication, disconnect the corresponding single-channel three-phase power switch.
 - If the smart communication box is connected for dual-channel PLC communication, disconnect the corresponding dual-channel three-phase power switch.

8.2 Equipment Removal

DANGER

- Ensure that the equipment is powered off.
- Wear personal protective equipment when operating the equipment.

Operating steps

1. Disconnect all electrical connections of the smart communication box, including single-phase AC wires, three-phase AC wires, communication cables, and Protection ground wire.
2. Remove the smart communication box from the carrier.
3. Store the smart communication box properly. If the smart communication box is to be put into service again later, ensure that the storage conditions meet the requirements.

8.3 Equipment Disposal

If the equipment can no longer be used and needs to be scrapped, dispose of it according to the electrical waste disposal requirements of the country/region where the equipment is located. Do not dispose of the equipment as household waste.

8.4 Periodic Maintenance

DANGER

When performing operation and maintenance on the equipment, power off the equipment first. Operating the equipment while energized may damage the equipment or cause an electric shock hazard.

Maintenance contents	Maintenance method	Maintenance cycle
System cleaning	Check the air inlet/outlet for foreign objects or dust.	Once every six months to once a year
Electrical Connection	Check whether the electrical connections are loose, whether the cable appearance is damaged, and whether copper conductors are exposed.	Once every six months to once a year
Environmental inspection	Check whether there are strong electromagnetic interference devices or heat sources around the EzLogger.	Once every six months to once a year

8.5 Fault

Please perform troubleshooting according to the following methods. If the troubleshooting methods cannot help you, please contact the after-sales service center.

When contacting the after-sales service center, please collect the following information to facilitate quick problem resolution.

1. Product information, such as serial number, software version, device installation time, fault occurrence time, fault occurrence frequency, etc.
2. Device installation environment, such as weather conditions, whether modules are obstructed or shaded, etc. For the installation environment, it is recommended to provide photos, videos, and other files to assist in problem analysis.
3. Grid conditions.

No.	Fault symptom	Fault cause	Solution
1	The device cannot power on	• The device power input port connection is not secure • The power adapter is not firmly connected to the socket • Power adapter abnormality • Device fault	• Reconnect the power input port. • Reconnect the power adapter and the socket. • Replace the power adapter. • If the problem persists, please contact your dealer or after-sales service center.
2	ETH communication abnormal	• The Ethernet cable connection is Not Connected properly • The device cannot communicate successfully with the peer device IP address • Switch or router abnormal • Device fault • ETH port damaged	• Reconnect the network cable. • Recheck and set the device IP address to ensure successful communication. • Replace the switch or router. • Reconnect the network cable to another ETH port. • If the problem persists, please contact your dealer or after-sales service center.

No.	Fault symptom	Fault cause	Solution
3	RS485 communication abnormal	• RS485 wiring abnormal • RS485 communication parameter setting abnormal • Device fault	• Check whether the cable connection port is correct and secure. • Re-check the RS485 communication parameter settings. • If the problem persists, please contact your dealer or after-sales service center.
4	HPLC/PLC communication abnormal	• HPLC/PLC wiring abnormal • HPLC/PLC communication parameter setting abnormal • Device fault	• Ensure the HPLC/PLC cable is connected correctly and the switch is closed properly. • Check whether the Modbus address and box transformer number in the network are correct. • Check whether the HPLC/PLC communication mode is set correctly, including the device ID, etc. • Check the HPLC and PLC versions of the master and slave devices. • Check the inverter ARM version. • If the problem persists, please contact your dealer or after-sales service center.

No.	Fault symptom	Fault cause	Solution
5	The WEB homepage shows the device offline or shows it online, but data is not refreshed.	• The detection time for determining whether the device is offline is long. • Device switch, program, wiring, and other issues.	• Check whether the box transformer number and device RS485 address are configured correctly. • Check whether all communication link switches are turned on. • Check whether the inverter has failed. • Check whether the inverter ARM version meets the requirements. • If the problem persists, please contact your dealer or after-sales service center.
6	Embedded WEB login failure.	• Incorrect IP and port information entered. • Incompatibility between new and old program versions.	• Check whether the IP address is on the same subnet and in the same LAN. • Clear the browser cache. • Log in via https://XXX:443. • Check whether the IP and port number are entered correctly. • Restart the device. • If the problem persists, please contact your dealer or after-sales service center.

No.	Fault symptom	Fault cause	Solution
7	When networking via HPLC or PLC, the inverter cannot be found	- Abnormal device wiring - Data collector model mismatch - Inverter firmware version is too low	- Check the device wiring status. - Check the HPLC and PLC versions of the master and slave devices. - Check the data collector model and confirm whether the communication mode matches HPLC/PLC. - Ensure that the device is currently in the networking state.
8	The inverter's actual Energy Generation is inconsistent with the web interface	Inverter time setting is abnormal	Set time synchronization via the web, calibrate several times, or use the APP module to set the inverter time
9	The Web homepage displays abnormal MQTT connection status	Not connected to the router or MQTT server	- When the server refuses the connection, check whether the router network is connected properly. - When the server connection fails, check whether the MQTT configuration parameters are correct, and confirm whether Internet is checked in the LAN configuration in the web interface.

9 Technical Specifications

Technical Specifications	SCU3000-S	SCU3000	SCU3000A-S	SCU3000A
Communication Interface				
Maximum Number of Supported Connected Devices	200	200	200	200
RS485 Interface	8	8	8	8
Ethernet Interface	2*RJ45, 10/100 Mbps	2*RJ45, 10/100 Mbps	2*RJ45, 10/100 Mbps	2*RJ45, 10/100 Mbps
Number of PLC Modules	1*PLC	2*PLC	1*HPLC	2*HPLC
PLC Input Voltage (V)	800	800	800	800
Basic Configuration				
Built-in Data Collector	EzLogger3000 U*1	EzLogger3000 U*1	EzLogger3000 U-A*1	EzLogger3000 U-A*1
Built-in Ring Network Switch	2 optical ports and 6 electrical ports	2 optical ports and 6 electrical ports	2 optical ports and 6 electrical ports	2 optical ports and 6 electrical ports
Built-in Fiber Optic Splicing Box	24 ports, SC single-mode	24 ports, SC single-mode	24 ports, SC single-mode	24 ports, SC single-mode

Technical Specifications	SCU3000-S	SCU3000	SCU3000A-S	SCU3000A
AC Input Voltage (V)	100~240, 50/60 Hz	100~240, 50/60 Hz	100~240, 50/60 Hz	100~240, 50/60 Hz
Power Consumption (W)	≤20	≤35	≤20	≤35
Mechanical Parameters				
Dimensions (W×H×T mm)	723*780*226	723*780*226	723*780*226	723*780*226
Weight (kg)	25	28	25	28
Mounting Method	Bracket, pole, wall mounting	Bracket, pole, wall mounting	Bracket, pole, wall mounting	Bracket, pole, wall mounting
Environmental Parameters				
Operating Temperature Range (°C)	-30~+60	-30~+60	-30~+60	-30~+60
Storage Temperature Range (°C)	-40~+70	-40~+70	-40~+70	-40~+70
Relative Humidity	5~95%	5~95%	5~95%	5~95%
Max. Operating Altitude (m)	5000	5000	5000	5000
Ingress Protection Rating	IP65	IP65	IP65	IP65

10 Appendix

10.1 Glossary

Overvoltage Category Definitions

Overvoltage Category I: Equipment connected to circuits with measures to limit transient overvoltages to a relatively low level.

Overvoltage Category II: Energy-consuming equipment supplied by fixed power distribution installations. Such equipment includes appliances, portable tools, and other household and similar loads. If special requirements for reliability and suitability are imposed on such equipment, Overvoltage Category III is adopted.

Overvoltage Category III: Equipment in fixed power distribution installations, where the reliability and suitability of the equipment must meet special requirements. It includes switching devices in fixed power distribution installations and industrial equipment permanently connected to fixed power distribution installations.

Overvoltage Category IV: Equipment used at the power supply side of the power distribution installation, including measuring instruments and primary overcurrent protection devices.

Damp Location Category Definitions

Environmental Parameters	Level		
	3K3	4K2	4K4H
Humidity Range	0~+40°C	-33~+40°C	-33~+40°C
Temperature Range	5% to 85%	15% to 100%	4% to 100%

Environmental Category Definitions

Outdoor inverter: ambient air temperature range of -25~+60°C, suitable for Pollution Degree 3 environment;

Indoor Type II inverter: ambient air temperature range of -25~+40°C, suitable for Pollution Degree 3 environment;

Indoor Type I inverter: ambient air temperature range of 0~+40°C, suitable for Pollution Degree 2 environment;

Pollution Degree Category Definitions

Pollution Degree 1: No pollution or only dry, non-conductive pollution;

Pollution Degree 2: Normally only non-conductive pollution occurs, but occasional temporary conductive pollution caused by condensation must be taken into account;

Pollution Degree 3: There is conductive pollution, or non-conductive pollution becomes conductive due to condensation;

Pollution Degree 4: Persistent conductive pollution, e.g., pollution caused by conductive dust or rain and snow.

11 Contact Information

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service@goodwe.com