

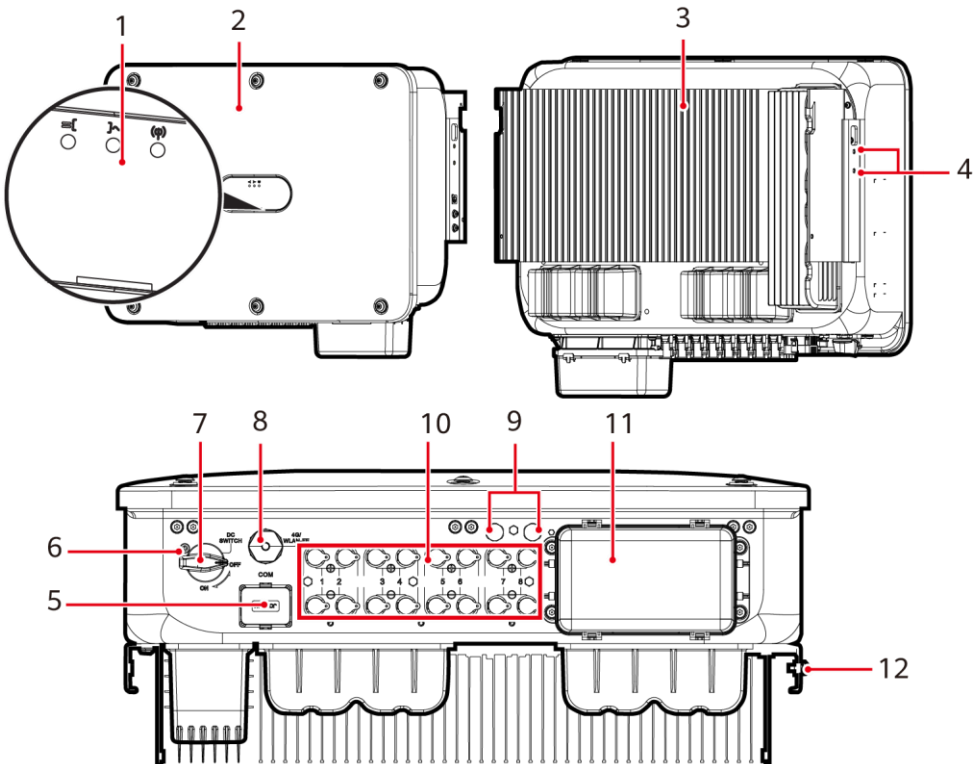
**Smart Solar Inverter (20kW, 29.9kW, 30kW,
36kW, 40kW)**

Quick Guide

NOTICE

- 20kW, 29.9kW, 30kW, 36kW and 40kW indicate the rated output power of an inverter, which can be viewed on the inverter nameplate.
- The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.
- Only certified electricians are allowed to operate the device. Operation personnel should understand the composition and working principles of the grid-tied PV power system and local regulations.
- The warranty does not cover any damage caused by violation of the storage, transportation, installation, and operation regulations specified in this document and the user manual.
- Use insulated tools when installing the device. For personal safety, wear proper personal protective equipment (PPE).

I Overview

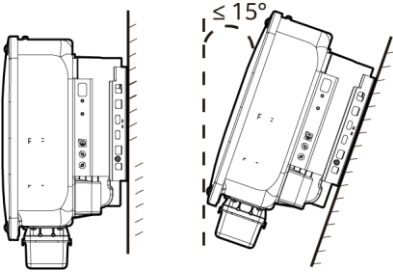


- | | |
|-------------------------------|--|
| (1) LED indicators | (2) Host panel |
| (3) Heat sink | (4) Screws for securing the awning |
| (5) Communications port (COM) | (6) Hole for the DC switch locking screw |
| (7) DC switch (DC SWITCH) | (8) Smart Dongle port (4G/WLAN-FE) |
| (9) Ventilation valve | (10) DC input terminals (PVI-PV8) |
| (11) AC output port | (12) Ground point |

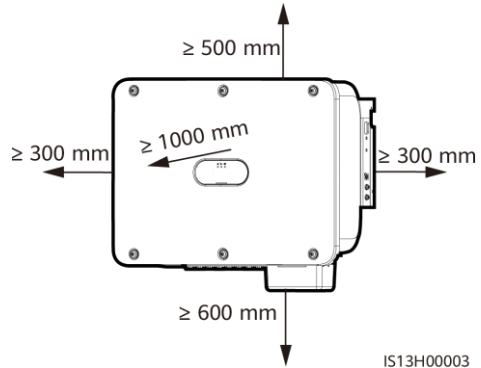
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2 Installation Requirements

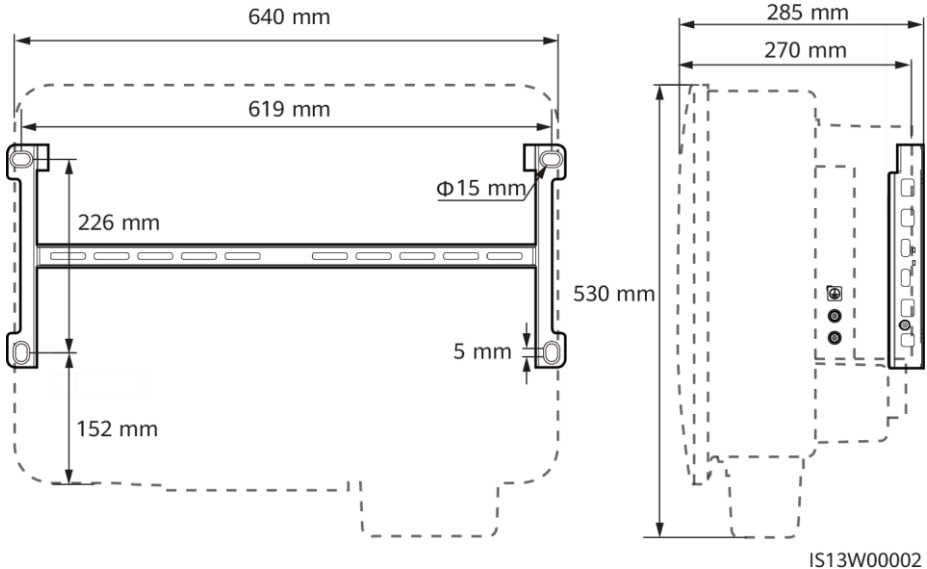
Angle



Space



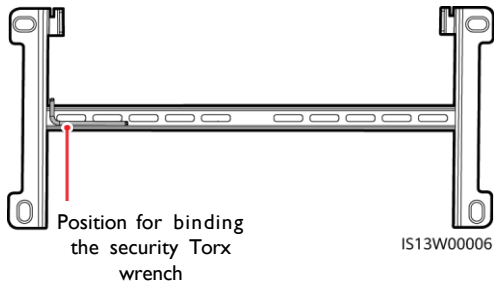
Dimensions



3 Installing a Solar Inverter

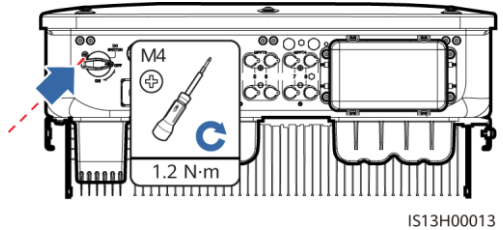
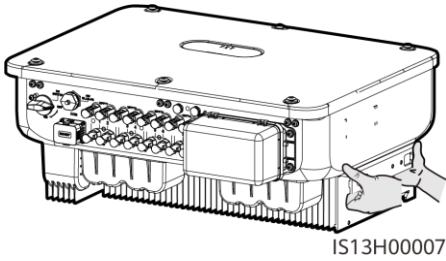
NOTE

- M12x40 bolt assemblies are supplied with the solar inverter. If the bolt length does not meet the installation requirements, prepare M12 bolt assemblies by yourself and use them together with the supplied M12 nuts.
- This quick guide describes how to install a solar inverter on a support. For details about wall-mounted installation, see the user manual.
- For models used in Australia, install the DC switch locking screw according to local standards. The DC switch locking screw is delivered with the solar inverter to prevent the solar inverter from being started by mistake.
- Before installing the mounting bracket, remove the security Torx wrench and set it aside.

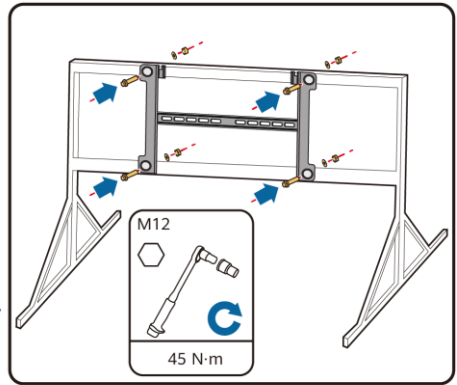
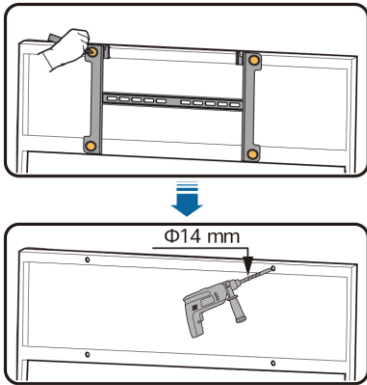


Moving the Solar Inverter

(Optional) Installing the DC Switch Locking Screw

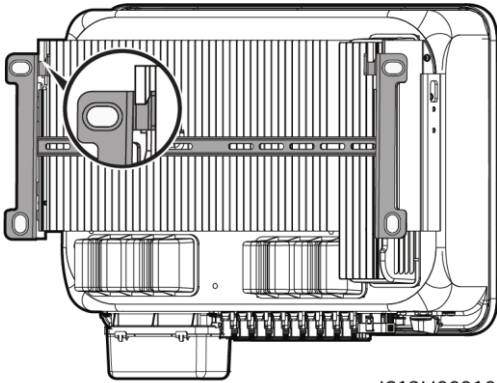


1. Install the mounting bracket.



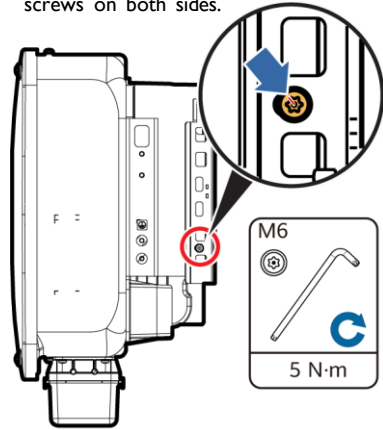
NOTE
It is recommended that anti-rust measures be taken on the positions for drilling holes.

2. Install the solar inverter onto the mounting bracket.



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3. Tighten the security Torx screws on both sides.



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4 Connecting Cables

4.1 Preparations

NOTICE

- Connect cables in accordance with local installation laws and regulations.
- The cable specifications must comply with local standards.
- Before connecting cables, ensure that the DC switch of the solar inverter and all the switches connected to it are set to OFF. Otherwise, the high voltage produced by the solar inverter may cause electric shocks.

No.	Cable	Type	Specifications
1	PE cable	Single-core outdoor copper-core cable	Conductor cross-sectional area $\geq 16 \text{ mm}^2$
2	AC output power cable	Outdoor copper-core/aluminum-core cable	<ul style="list-style-type: none"> • Conductor cross-sectional area: $16\text{-}50 \text{ mm}^2$ outdoor copper-core cable or $35\text{-}50 \text{ mm}^2$ outdoor aluminum-core cable • Cable outer diameter: $16\text{-}38 \text{ mm}$
3	DC input power cable	Common outdoor PV cable in the industry (recommended model: PVI-F)	<ul style="list-style-type: none"> • Conductor cross-sectional area: $4\text{-}6 \text{ mm}^2$ • Cable outer diameter: $5.5\text{-}9 \text{ mm}$
4	(Optional) RS485 communications cable	Two-core outdoor shielded twisted pair (recommended model: DJYP2VP2-2x2x0.75)	<ul style="list-style-type: none"> • Conductor cross-sectional area: $0.2\text{-}1 \text{ mm}^2$ • Cable outer diameter: $4\text{-}11 \text{ mm}$

Note a: Five-core cables with a cross-sectional area of $5 \times 35 \text{ mm}^2$ or $5 \times 50 \text{ mm}^2$ are not supported.

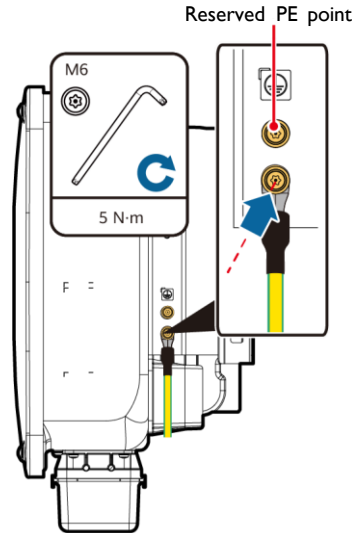
4.2 Connecting a PE Cable

⚠ DANGER

Do not connect the neutral wire to the enclosure as a PE cable. Otherwise, electric shocks may occur.

NOTE

- The PE point at the AC output port is used only as a PE equipotential point, not a substitute for the PE point on the enclosure.
- It is recommended that silica gel or paint be applied around the ground terminal after the PE cable is connected.



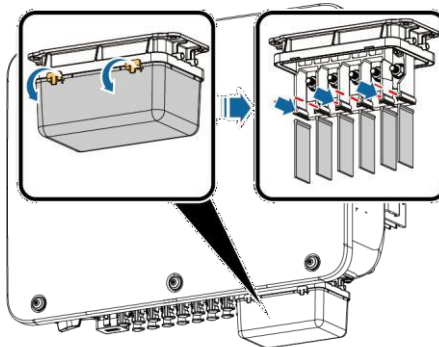
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4.3 Installing the AC Output Power Cable

NOTICE

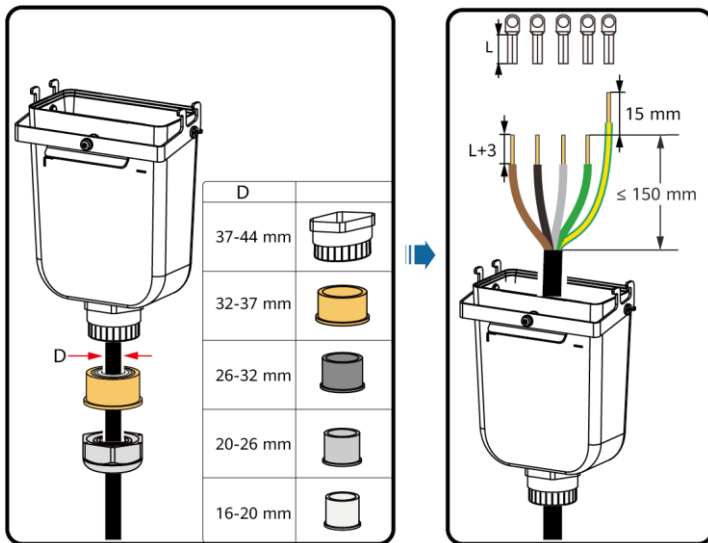
- Use a socket wrench and extension rod to connect the AC power cable. The extension rod must be longer than 100 mm.
- Sufficient slack should be provided in the PE cable to ensure that the last cable bearing the force is the PE cable when the AC output power cable bears pulling force due to force majeure.
- Do not install third-party devices in the AC connection box.
- You need to prepare M8 OT terminals by yourself.

- I. Remove the AC terminal box and install partition boards.



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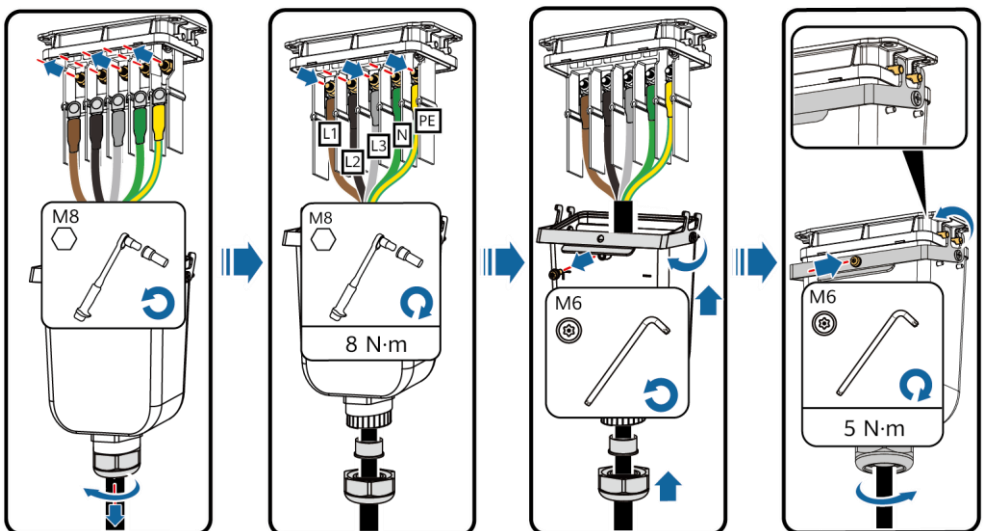
2. Connect the AC output power cable (using a five-core cable as an example).



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NOTE

- To avoid damaging the rubber liner, do not route a cable with a crimped OT terminal directly through it.
- It is recommended that the length of the PE cable to be stripped be 15 mm longer than the length of other cables.
- The cable colors in figures are for reference only. Select appropriate cables according to the local standards.



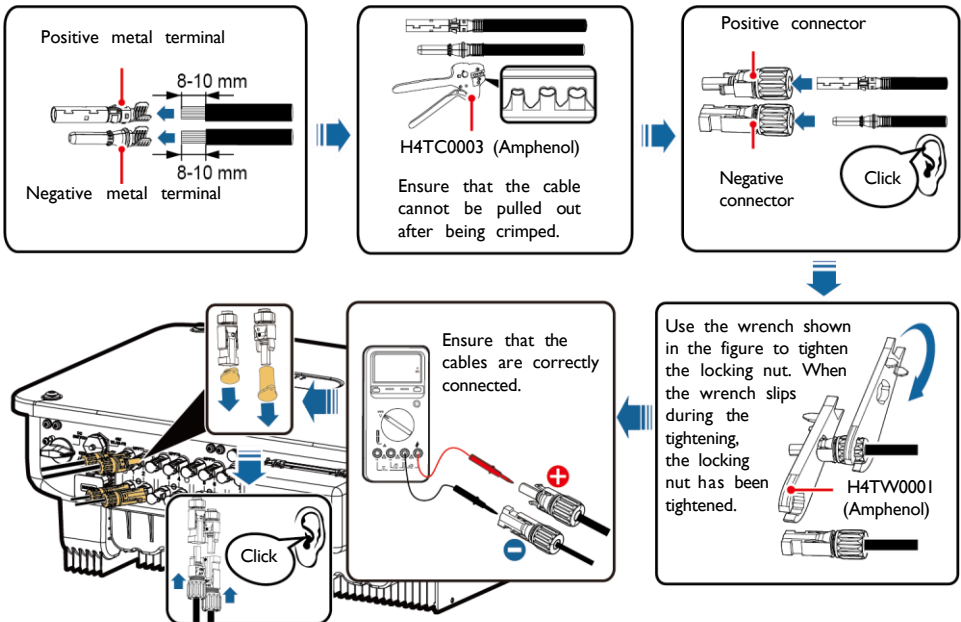
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4.4 Installing DC Input Power Cables

NOTICE

- Use the positive and negative Amphenol Helios H4 metal terminals and DC connectors supplied with the solar inverter. Using incompatible positive and negative metal terminals and DC connectors may result in serious consequences. The caused device damage is not covered under any warranty.
- You are advised to use the H4TC0003 (Amphenol) crimping tool and do not use it with the positioning block. Otherwise, the metal terminals may be damaged. The H4TW0001 (Amphenol) open-end wrench is recommended.
- Ensure that the PV module output is well insulated to ground.
- The DC input voltage of the solar inverter (29.9kW, 30kW, 36kW, 40kW) shall not exceed 1100 V DC under any circumstance.
- The DC input voltage of the solar inverter 20kW shall not exceed 800 V DC under any circumstance.
- Before installing DC input power cables, label the cable polarities to ensure correct cable connections.
- If a DC input power cable is reversely connected and the DC switch is turned on, do not operate on the DC switch or the positive/negative connectors immediately. Otherwise, the device may be damaged. The caused device damage is not covered under any warranty. Wait until the night when solar irradiance declines and the PV string current drops to below 0.5 A. Then set the DC switch to the OFF position, remove the positive and negative connectors, and correct the polarity of the DC input power cable.

I. Connect the DC power cables.



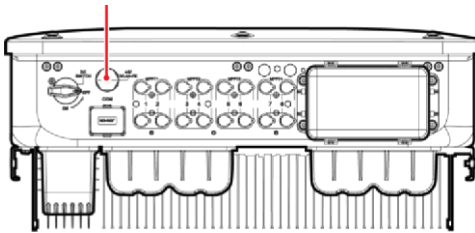
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4.5 (Optional) Installing the Smart Dongle

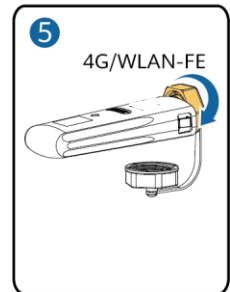
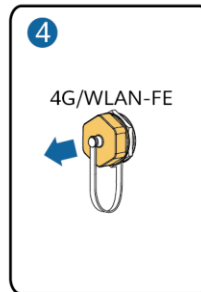
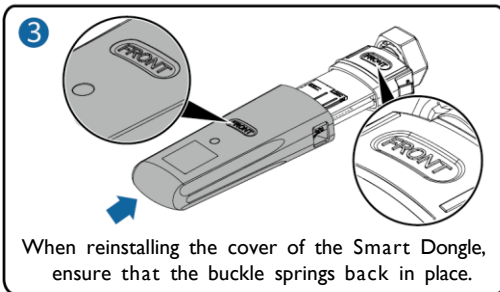
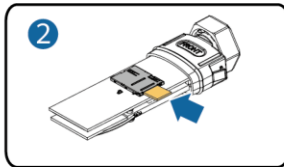
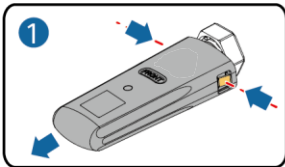
NOTICE

- The WLAN-FE Smart Dongle is not provided in standard configuration.
- If your Smart Dongle is a WLAN Smart Dongle or is configured with a SIM card, skip this step. The configured SIM card can be used only on the Smart Dongle.
- If your Smart Dongle is not equipped with a SIM card, prepare a standard SIM card (size: 25 mm x 15 mm) with the capacity greater than or equal to 64 KB.
- When installing the SIM card, determine its installation direction based on the silk screen and arrow on the card slot.
- Press the SIM card in place to lock it, indicating that the SIM card is correctly installed.
- When removing the SIM card, push it inwards to eject it.

Smart Dongle port (4G/WLAN-FE)

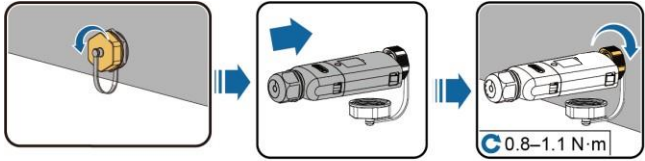


4G Smart Dongle



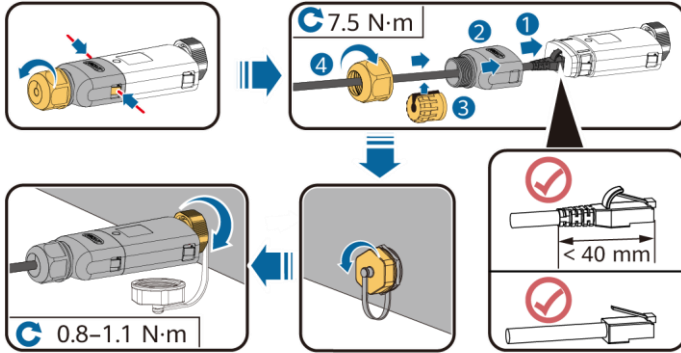
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WLAN-FE Smart Dongle (WLAN Communication)



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WLAN-FE Smart Dongle (FE Communication)



ILO4H00004

NOTICE

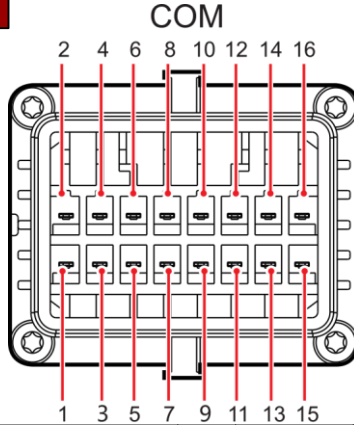
Install the network cable before installing the Smart Dongle on the solar inverter.

4.6 Installing the Signal Cable

NOTICE

- When laying out the signal cable, separate it from the power cable and keep it away from strong interference sources to avoid strong communication interference.
- Ensure that the protective layer of the cable is inside the connector, that excess core wires are cut off from the protection layer, that the exposed core wire is totally inserted into the cable hole, and that the cable is connected securely.

COM Port Pin Definitions

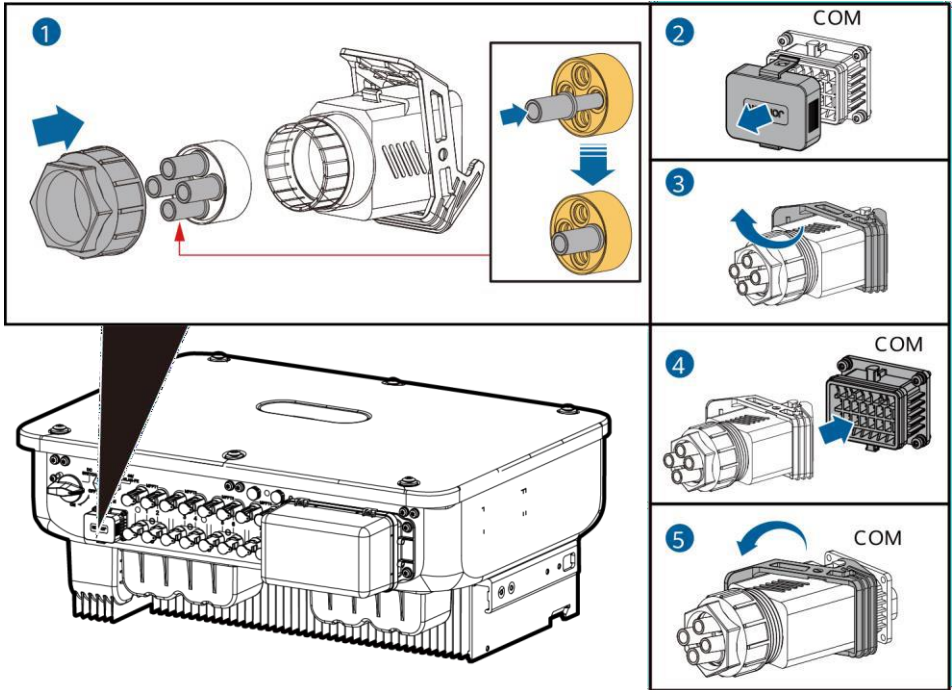


No.	Definition	Function	Description	No.	Definition	Function	Description
1	485A1-1	RS485 differential signal +	Used for inverter cascading or connecting to the RS485 signal port on the SmartLogger	2	485A1-2	RS485 differential signal +	Used for inverter cascading or connecting to the RS485 signal port on the SmartLogger
3	485B1-1	RS485 differential signal -		4	485B1-2	RS485 differential signal -	
5	PE	Ground point on the shield layer	-	6	PE	Ground point on the shield layer	-
7	485A2	RS485 differential signal +	Connects to the RS485 signal port on the power grid scheduling power meter.	8	DIN1	Dry contact for power grid scheduling	-
9	485B2	RS485 differential signal -		10	DIN2		
11	-	-		12	DIN3		
13	GND	GND		14	DIN4		
15	DIN5	Rapid shutdown	Supports AC NS protection shutdown, which can be used as a reserved port for rapid shutdown signals.	16	GND		

Scenarios Where No Signal Cable Is Connected

NOTICE

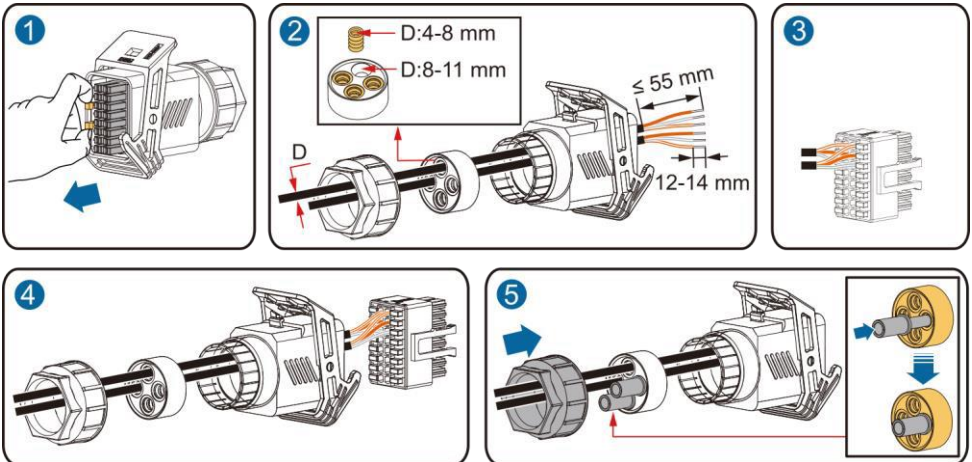
If no signal cable is required for the inverter, use waterproof plugs to block the wiring holes on the signal cable connector and connect the signal cable connector to the communications port on the inverter to improve the waterproof performance of the inverter.



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(Optional) Connecting the Signal Cable

I. Connect the signal cable to the signal connector.

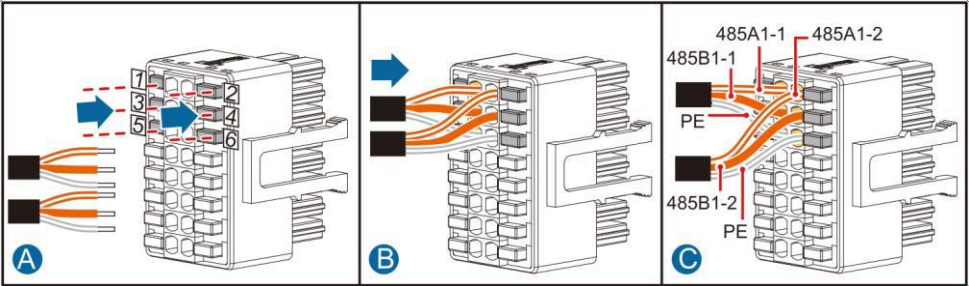


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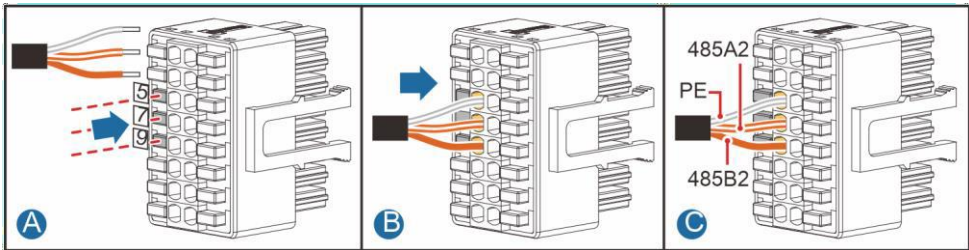
- Connect the RS485 communications cable to the solar inverter.

NOTICE

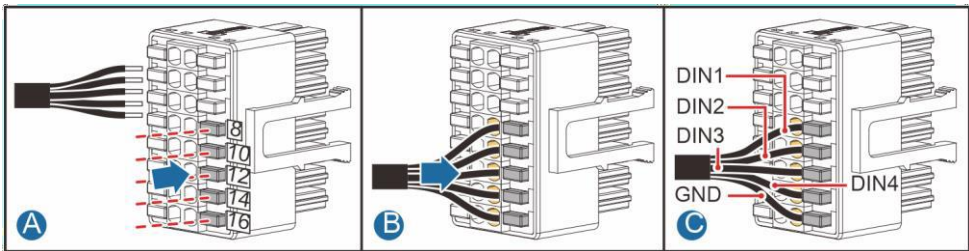
If two or more solar inverters are cascaded, install the RS485 communications cable.



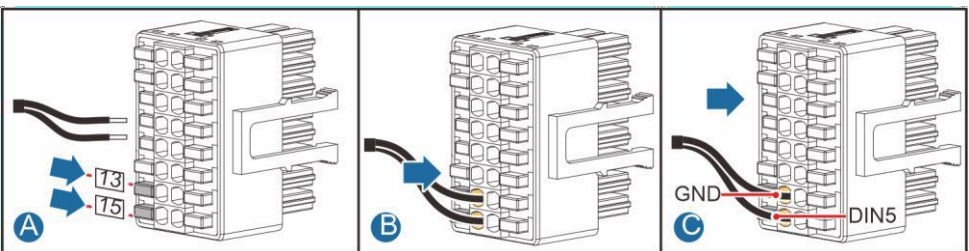
- Connect the RS485 communications cable to the power meter.



- Connect the power grid scheduling signal cable.

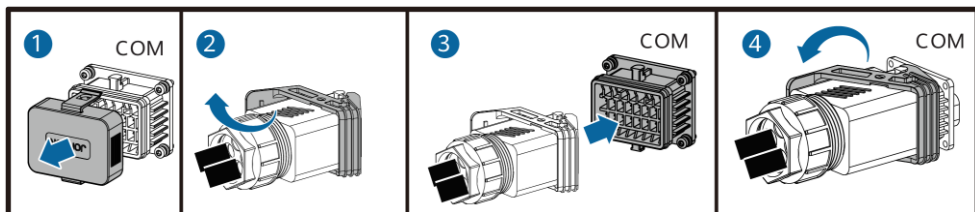
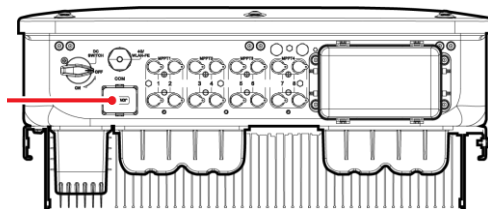


- Connect the rapid shutdown signal cable.



2. Connect the signal cable connector to the communications port.

Communications port (COM)



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5 Verifying the Installation

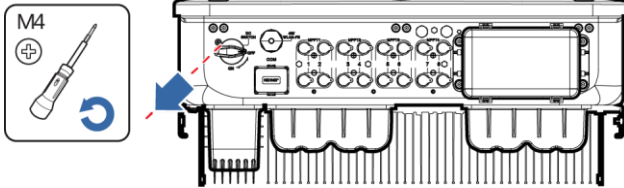
No.	Acceptance Criteria
1	The solar inverter is installed correctly and securely.
2	The cables are routed properly as required by the customer.
3	The communications expansion module is installed correctly and securely.
4	Cable ties are evenly distributed and no burr exists.
5	The PE cable is connected correctly and securely.
6	The DC switch and all the switches connected to the solar inverter are set to the OFF position.
7	The AC output power cable, DC input power cables, and signal cable are connected correctly and securely.
8	Unused terminals and ports are locked by watertight caps.
9	The installation space is proper, and the installation environment is clean and tidy.

6 System Power-On

NOTICE

Before turning on the AC switch between the solar inverter and the power grid, check that the AC voltage is within the specified range using a multimeter set to the AC position.

1. Turn on the AC switch between the solar inverter and the power grid.
2. (Optional) Remove the locking screw beside the DC switch. Store the screws properly for future power-off maintenance.

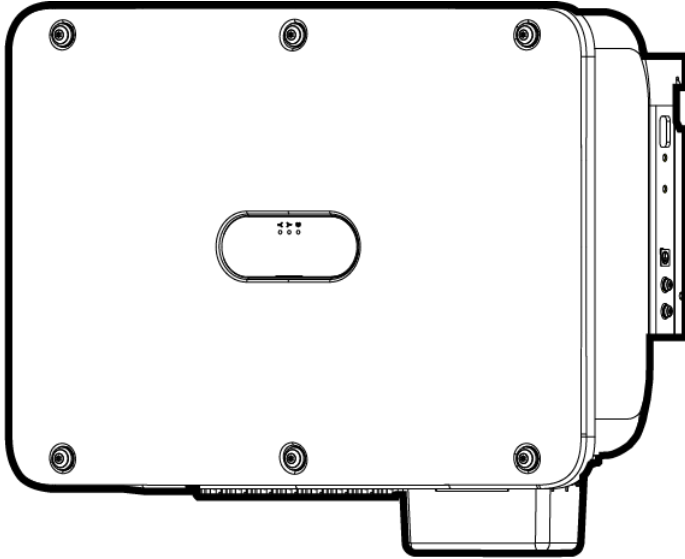


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3. Turn on the DC switch at the bottom of the solar inverter.
4. Observe the LED indicators to check the operating status of the solar inverter.

Category	Status (Blinking Slowly: On for 1s and then Off for 1s; Blinking Fast: On for 0.2s and then Off for 0.2s)		Description
Running indicator			-
	Steady green	Steady green	The solar inverter is operating in grid-tied mode.
	Blinking green slowly	Off	The DC is on and the AC is off.
	Blinking green slowly	Blinking green slowly	Both the DC and AC are on, and the solar inverter is not supplying power to the power grid.
	Off	Blinking green slowly	The DC is off and the AC is on.
	Off	Off	Both the DC and AC are off.
	Blinking red fast	-	DC environment alarm
	-	Blinking red fast	AC environment alarm
Communications indicator			-
	Blinking green fast		Communication is in progress.
	Blinking green slowly		Mobile phone access
	Off		No communication

Note: If LED1, LED2, and LED3 are steady red, the solar inverter is faulty and needs to be replaced.



스마트 태양광 인버터 36kW Quick Guide

버전 : 03

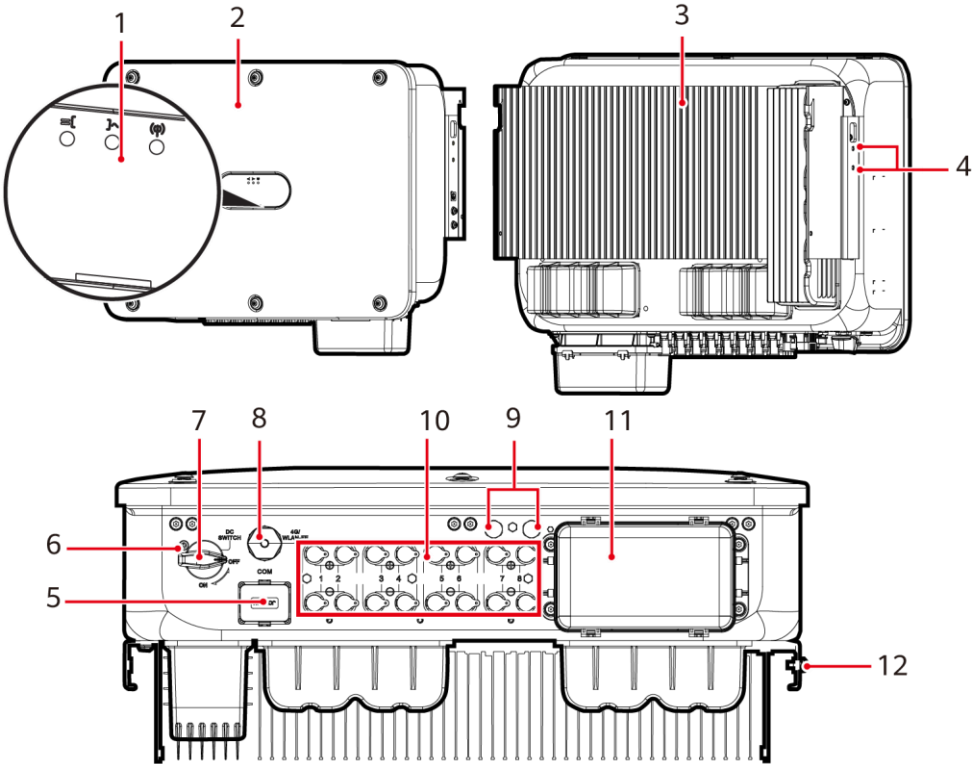
부품 번호 : 31500HLQ

날짜: 2022-05-17

알림

- 36kW 는 인버터 명판에서 볼 수 있는 인버터의 정격 출력 전력을 말합니다.
- 본 문서에 포함된 정보는 고지 없이 변경될 수 있습니다. 당사는 본 문서에 최대한 정확한 내용을 담기 위해 최선의 노력을 다하였습니다. 본 문서에 포함된 모든 설명, 정보 및 권장 사항은 어떠한 경우에도 명시적 또는 묵시적인 보증을 의미하지 않습니다.
- 자격 및 제품에 대해 훈련 받은 전기 기술자만이 인버터를 동작 시켜야 합니다. 인버터 오퍼레이터는 계통 연계 태양광 시스템에 대해 기능과 부품에 대해 이해를 해야합니다.
- 당사는 본 문서 및 사용자 매뉴얼에 명시된 방법에 의하지 않고 보관, 이동, 설치 잘못에 의해 발생한 행위에 대해서 책임이 아님을 알려드립니다.
- 제품을 설치할 때 절연 장비를 사용해야 합니다. 또한 개인 안전을 위해 적당한 보호 장구를 착용해야 합니다.

I 개요

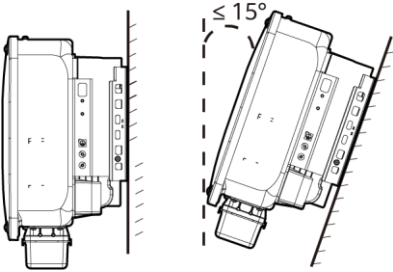


- | | |
|-----------------|---------------------------|
| (1) LED 표시기 | (2) 호스트 패널 커버 |
| (3) 방열판 | (4) 차양 고정용 나사 |
| (5) 통신 포트 (COM) | (6) DC 스위치 잠금 나사 구멍 |
| (7) DC 스위치 | (8) 스마트 동글 포트(4G/WLAN-FE) |
| (9) 환기 밸브 | (10) DC 입력 터미널 (PV1~PV8) |
| (11) AC 출력 포트 | (12) 접지 포인트 |

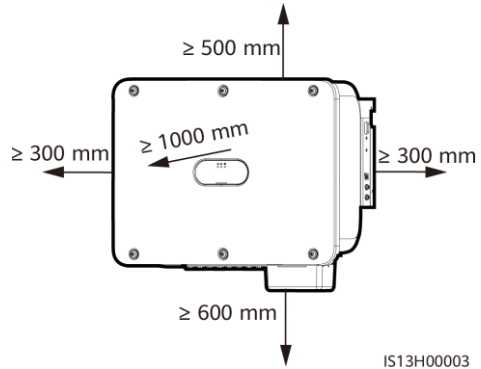
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2 설치 요구사항

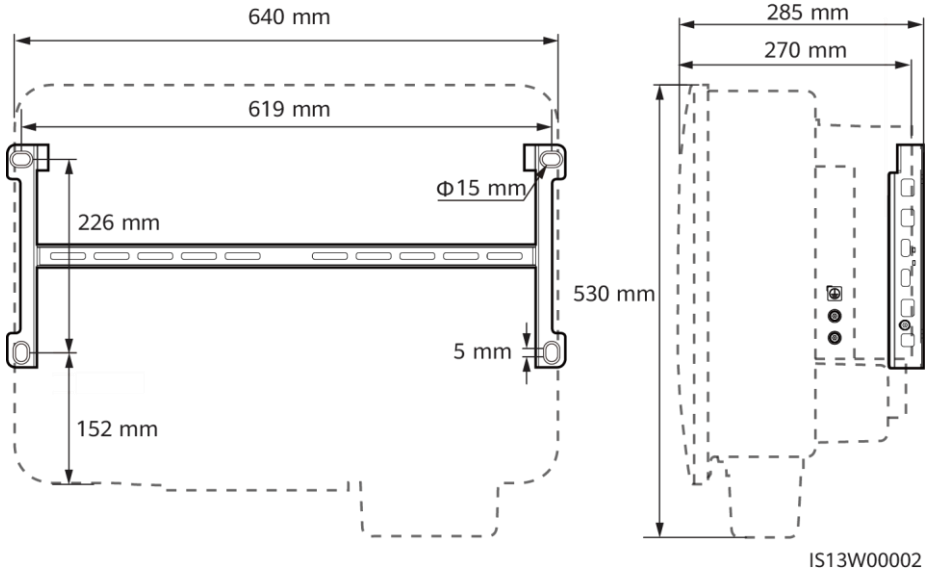
각도



설치 공간



치수



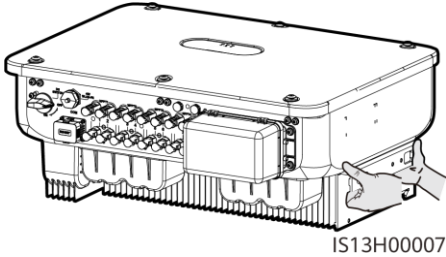
3 인버터 설치

참고

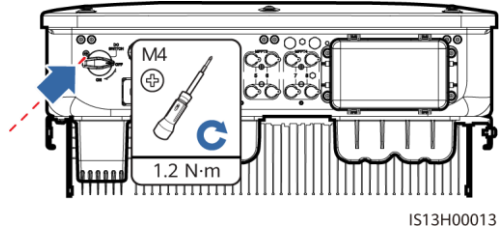
- M12x40 나사가 제공됩니다. 나사 길이가 설치 요구 사항에 맞지 않을 경우, 이에 맞는 M12 나사를 준비하여 제공된 M12 너트와 함께 사용합니다.
- 퀵 가이드에서는 지지대에 태양열 인버터를 설치하는 방법을 설명합니다. 벽걸이형 설치에 대한 보다 자세한 내용은 인버터 유저 매뉴얼을 참조하십시오.
- 호주에서 사용되는 모델의 경우 현지 표준에 따라 DC 스위치 잠금 나사를 설치합니다. DC스위치 잠금나사는 인버터에 동봉되며 인버터가 실수로 가동되는 것을 방지합니다.
- 마운팅 브라켓을 설치하기 전에 브라켓에 동봉된 잠금 별 렌치를 탈거하여 한쪽에 둡니다.



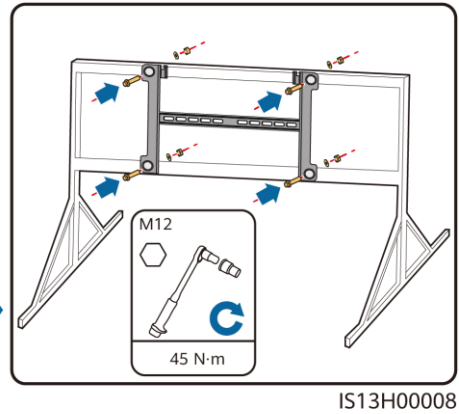
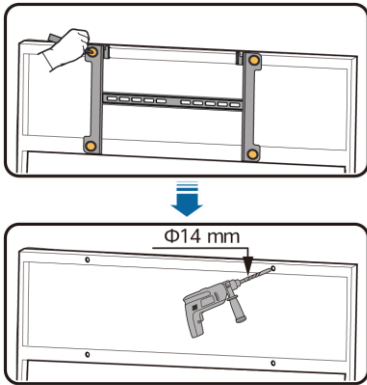
인버터 이동



(선택사항) DC 스위치 잠금 나사 설치



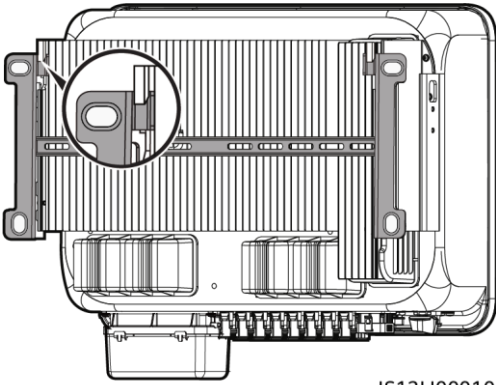
1. 마운팅 브라켓을 설치합니다.



참고

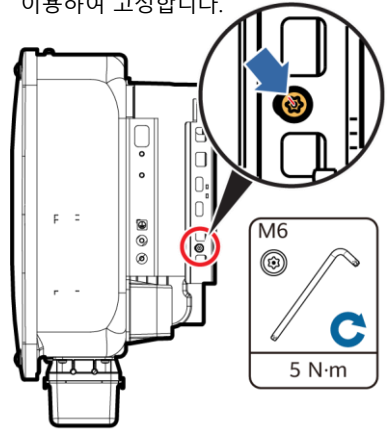
드릴을 뚫는 구멍 위치에는 녹슬지 않게 사전 조치를 취하는 것을 권장합니다.

2. 인버터를 마운팅 브라켓 위로 설치합니다.



IS13H00010

3. 양쪽에 있는 잠금 볼트를 잠금 별렌치를 이용하여 고정합니다.



IS13H00011

4 케이블 설치

4.1 설치 준비

알림

- 현지 설치법 및 규정을 준수하여 케이블을 연결합니다.
- 현지 표준을 준수하는 케이블을 사용합니다.
- 케이블을 연결하기 전 인버터의 DC 스위치 및 연결된 모든 스위치의 상태가 OFF인 것을 반드시 확인하십시오. 인버터에 의해 생성되는 고전압에 의한 감전의 위험이 있습니다.

No.	이름	타입	사양
1	접지 케이블	싱글 코어 옥외형 동 코어 케이블	<ul style="list-style-type: none"> • 도체 단면적 $\geq 16 \text{ mm}^2$
2	AC 출력 파워 케이블	옥외형 동 코어/알루미늄 코어 케이블	<ul style="list-style-type: none"> • 도체 단면적: $16\text{-}50 \text{ mm}^2$의 옥외형 구리 코어 케이블 또는 $35\text{-}50 \text{ mm}^2$ 옥외형 알루미늄 코어 케이블 • 케이블 외경 지름: $16\text{-}38 \text{ mm}$
3	DC 입력 파워 케이블	업계 공통 옥외형 PV 케이블(권장 모델: PV1-F)	<ul style="list-style-type: none"> • 도체 단면적: $4\text{-}6 \text{ mm}^2$ • 케이블 외경 지름: $5.5\text{-}9 \text{ mm}$
4	(선택사항) RS485 통신 케이블	2코어 옥외형 STP케이블 (권장 모델: DJYP2VP2-2x2x0.75)	<ul style="list-style-type: none"> • 도체 단면적 : $0.2\text{-}1 \text{ mm}^2$ • 케이블 외경 지름: $4\text{-}11 \text{ mm}$

참고 : 단면적이 $5 \times 35 \text{ mm}^2$ 또는 $5 \times 50 \text{ mm}^2$ 인 5코어 케이블은 지원되지 않음.

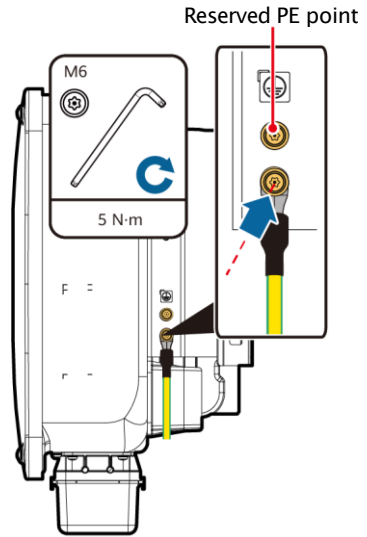
4.2 접지 케이블 설치

⚠ 경고

. 중성선을 외함 접지단자에 접지 케이블로써 연결하면 안됩니다. 감전의 위험이 있습니다.

📖 참고

- AC 출력 포트의 접지 포인트는 단지 접지와 동전위 포인트로만 사용합니다. 이는 외함의 접지단자를 대체하는 것은 아닙니다.
- 접지 케이블 체결 후에는 단자 주변에 실리카 겔이나 페인트를 바르는 것이 권장됩니다.

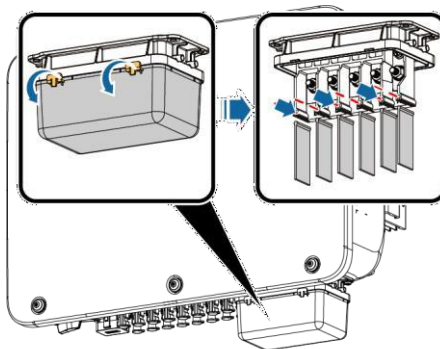


4.3 AC 출력 파워 케이블 설치

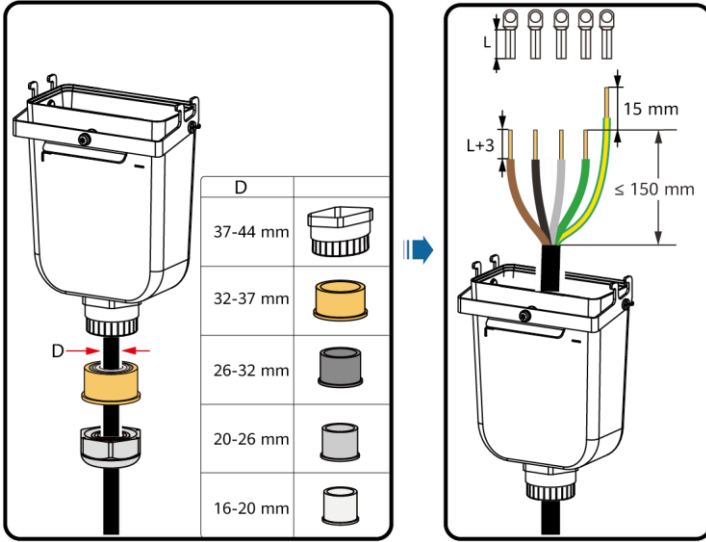
알림

- 소켓 렌치와 연장막대를 사용하여 ac 케이블을 체결하십시오. 연장 막대의 길이는 100mm 이상인 것을 사용합니다.
- AC 출력 케이블은 무리한 힘을 받지 않도록 여유 공간을 가지며 체결되어야 합니다. AC 출력 케이블에 인장력이 가해지는 경우, 스트레스를 받는 마지막 케이블이 PE 케이블인지 확인합니다.
- AC 출력 접속함에 타사의 장비를 설치해서는 안됩니다.
- M8 OT 터미널을 준비합니다.

1. AC 터미널 박스를 분리하고 파티션 보드를 설치합니다.



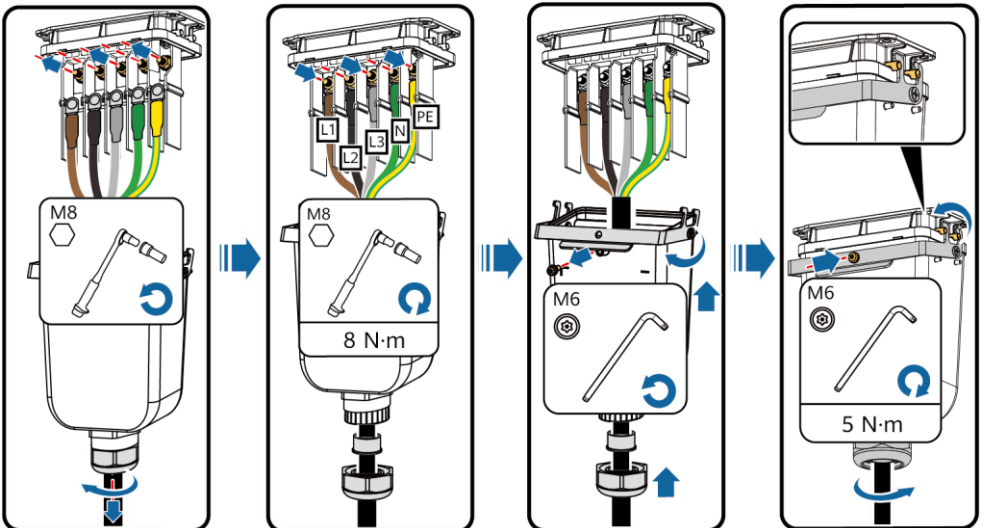
2. AC 출력 전원 케이블을 연결하십시오.(예시: 5코어 케이블 사용)



IS13I20003

참고

- 고무 라이너가 손상되지 않도록 압착된 OT 단자가 있는 케이블을 직접 통과시키면 안됩니다.
- 접지 케이블은 다른 케이블보다 15mm 길게 피복을 벗깁니다.
- 위 그림의 케이블색상은 참고용입니다. 현지 표준에 따른 적절한 케이블을 선정합니다.



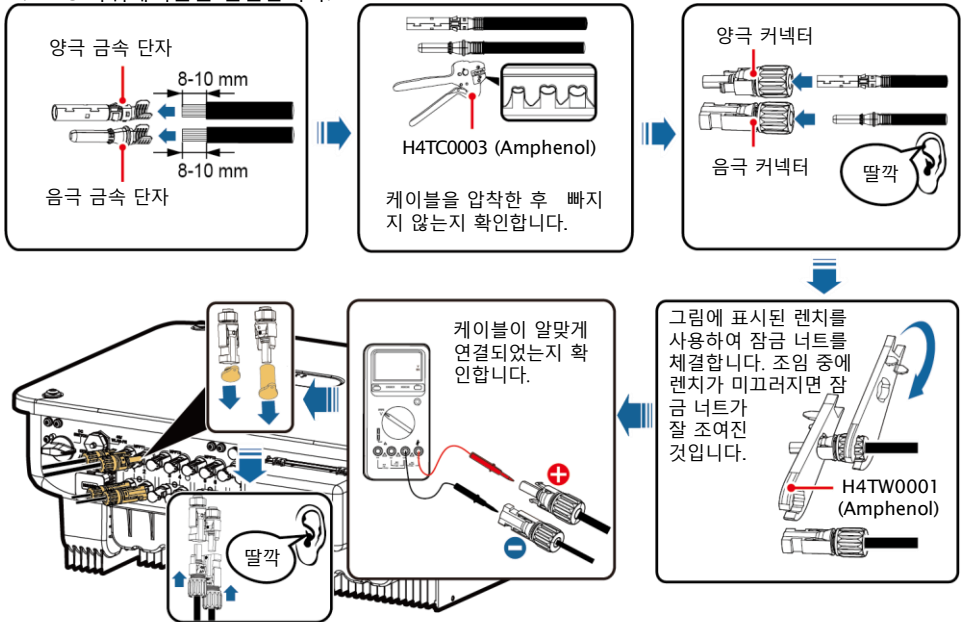
IS13I20002

4.4 DC 입력 케이블 설치

알림

- 태양광 인버터와 함께 제공된 양극 및 음극 Amphenol Helios H4 금속 단자와 DC 커넥터를 사용하십시오. 호환되지 않는 양극 및 음극 금속 단자와 DC 커넥터를 사용하면 심각한 결과를 초래할 수 있습니다. 이와 같은 원인으로 장치가 손상될 경우 보증이 적용되지 않습니다.
- H4TC0003(Amphenol) 압착 공구를 사용하는 것이 좋습니다. 포지셔닝 블록과 함께 사용하지 않도록 합니다. 그렇지 않으면 금속 단자가 손상될 수 있습니다. H4TW0001(Amphenol) 양극 렌치를 사용하는 것이 좋습니다.
- PV 모듈 출력이 접지에 잘 절연되어 있는지 확인합니다..
- 인버터의 DC 입력 전압은 어떤 상황에서도 1100VDC를 초과해서는 안됩니다.
- DC 입력 케이블을 설치하기 전에, 케이블 극성에 라벨을 붙여 올바른 케이블 연결이 되도록 합니다.
- 만일 DC 입력 전원 케이블을 역방향으로 연결하고 DC 스위치를 켜 경우, DC 스위치 또는 양극 음극 커넥터를 즉시 작동해서는 안됩니다. 기기가 손상될 수 있습니다. 일조량이 감소하여 PV 스트링 전류가 0.5A 이하로 떨어질때까지 기다립니다. 그 후 DC 스위치를 OFF로 설정하고 양극 및 음극 커넥터를 제거한 후 DC 입력 전원 케이블의 극성을 보정합니다.

1. DC 파워케이블을 연결합니다.



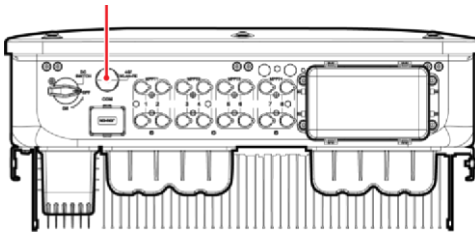
IS13130002

4.5 (선택사항) 스마트 동글 설치

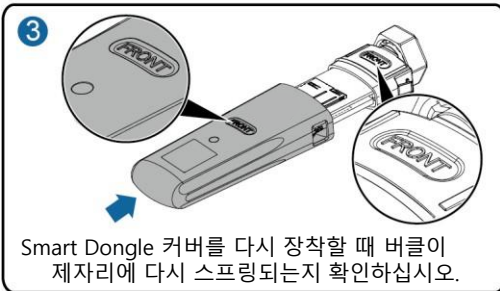
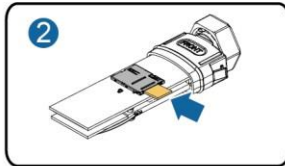
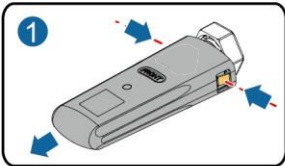
알림

- The WLAN-FE Smart Dongle은 표준 구성에서 제공되지 않습니다.
- Smart Dongle이 WLAN Smart Dongle 이거나 SIM 카드로 구성된 경우 이 단계를 건너뛰십시오. 구성된 SIM 카드는 스마트 동글에서만 사용할 수 있습니다.
- 스마트 동글에 SIM 카드가 장착되어 있지 않은 경우, 용량이 64KB 이상인 표준 SIM 카드(25mm x 15mm)를 준비합니다.
- SIM 카드를 설치할 때는 카드 슬롯에 있는 실크 스크린과 화살표를 기준으로 설치 방향을 결정합니다.
- SIM 카드가 올바르게 설치되었음을 나타내면서 SIM 카드를 잠그려면 SIM 카드를 누르십시오.
- SIM 카드를 분리할 때 SIM 카드를 안쪽으로 눌러 빼냅니다.

Smart Dongle port (4G/WLAN-FE)

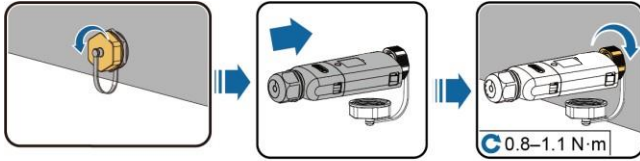


4G Smart Dongle



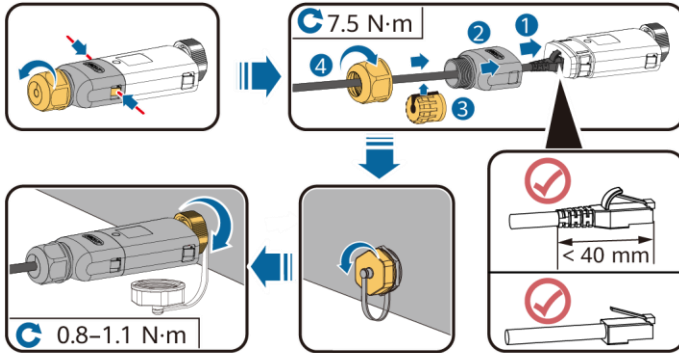
IS10H00016

WLAN-FE 스마트 동글 (WLAN 통신)



ILO4H00005

WLAN-FE 스마트 동글 (FE 통신)



ILO4H00004

알림

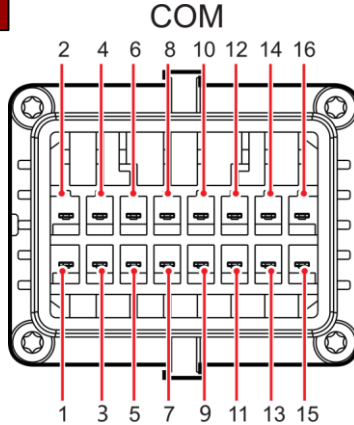
인버터에 스마트 동글을 설치하기 전에 네트워크 케이블을 설치하십시오.

4.6 통신 케이블 설치

알림

- 신호 케이블을 배치할 때 전원 케이블에서 분리하고 강한 통신 간섭을 방지하기 위해 강력한 간섭원으로부터 멀리 둡니다.
- 케이블의 보호 피복이 커넥터 내부에 있는지, 케이블 피복이 과도하게 벗겨지지 않았는지, 케이블이 커넥터에 완전하게 삽입되어 단단히 연결되었는지 확인합니다.

COM Port Pin 정의

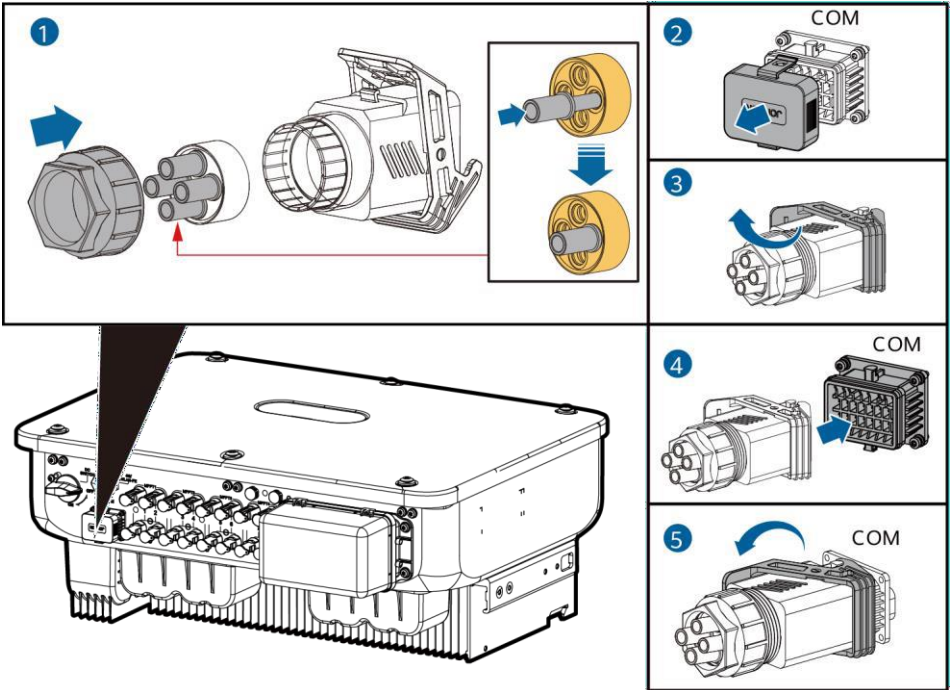


No.	포트	기능	상세	No.	포트	기능	상세
1	485A1-1	RS485 차동신호+	인버터 계단식 연결(Cascading) 또는 SmartLogger의 RS485 신호 포트에 연결하는데 사용	2	485A1-2	RS485 차동신호 +	인버터 계단식 연결(Cascading) 또는 SmartLogger의 RS485 신호 포트에 연결하는데 사용
3	485B1-1	RS485 차동신호 -		4	485B1-2	RS485 차동신호 -	
5	PE	접지 지점 실드층	-	6	PE	접지 지점 실드층	-
7	485A2	RS485 차동신호+	계통 스케줄링 전원 미터의 RS485 신호 포트에 연결.	8	DIN1	계통 스케줄링을 위한 드라이 접점	-
9	485B2	RS485 차동신호 -		10	DIN2		
11	-	-		12	DIN3		
13	GND	GND		14	DIN4		
15	DIN5	Rapid shutdown	빠른 종료를 위한 예약 포트로서 사용할 수 있는 AC NS 보호 종료 지원	16	GND		

신호 케이블이 연결되지 않은 경우

알림

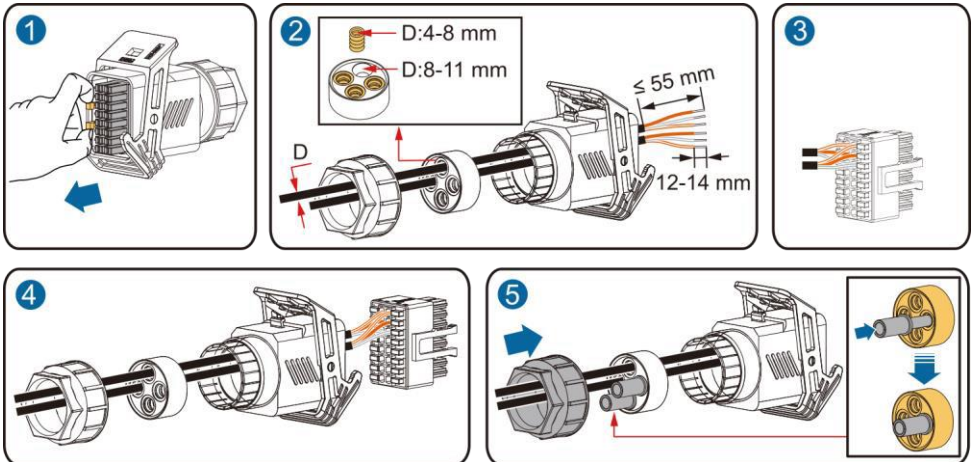
인버터용 신호 케이블이 필요하지 않은 경우 방수 플러그를 사용하여 신호 케이블 커넥터의 배선 구멍을 막고 신호 케이블 커넥터를 인버터의 통신 포트에 연결하여 인버터의 방수 성능을 개선합니다.



(선택사항) 신호 케이블 연결

IS13140003

1. 신호 케이블을 신호 커넥터에 연결합니다.

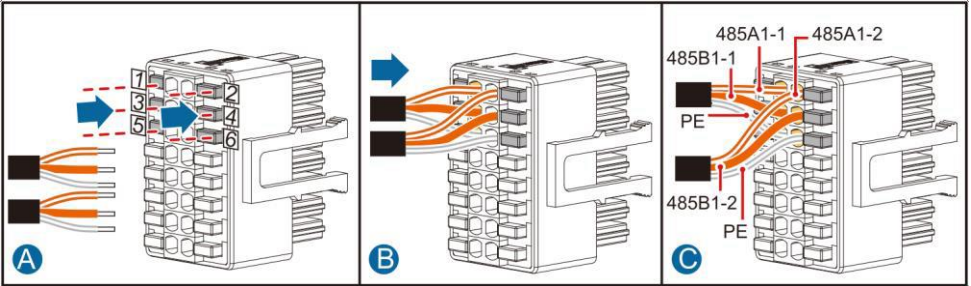


IS13140002

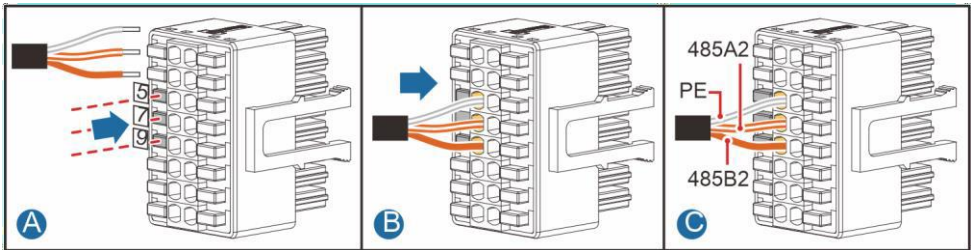
- RS 485 통신 케이블을 인버터에 연결합니다.

알림

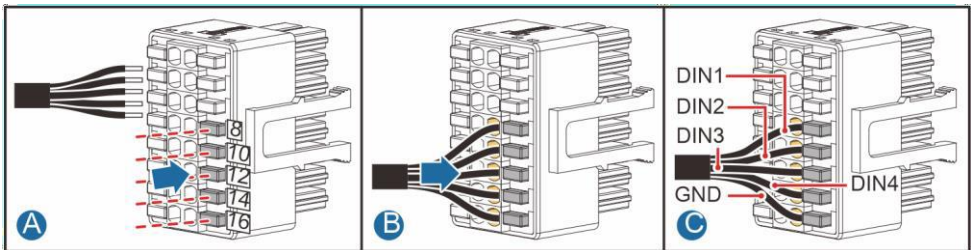
두 개 이상의 인버터가 계단식으로 통신하는 경우, RS 485 통신 케이블을 다음과 같이 연결합니다.



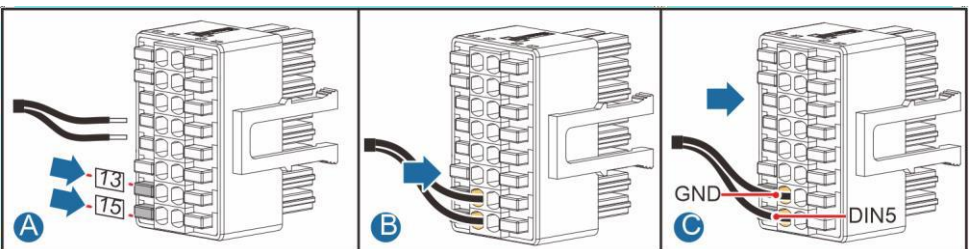
- RS 485 통신 케이블을 파워 메타에 연결합니다.



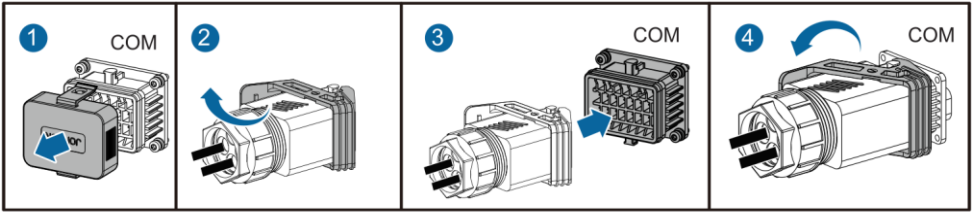
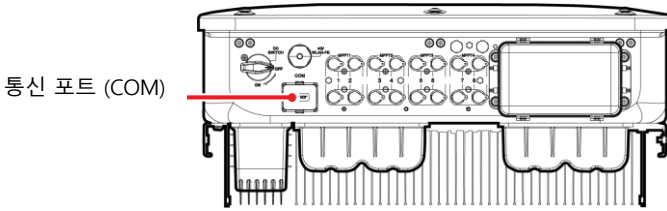
- 계통 스케줄링 신호 케이블을 연결합니다.



- 금속 전원차단 신호 케이블을 연결합니다.



2. 통신 케이블 커넥터를 통신 포트에 연결합니다.



IS13140001

5 설치 검증

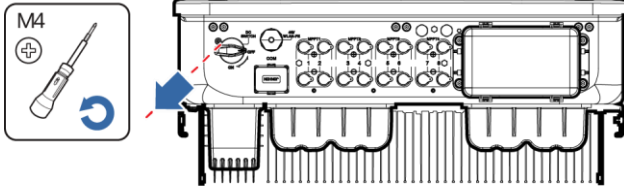
No	합격 기준	
1	인버터가 정확하고 안전하게 설치되어야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2	케이블은 고객의 요구대로 올바르게 설치되어야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3	통신 확장 모듈이 올바르게 안전하게 설치되어야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4	케이블 타이는 균등하게 분포 되어야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
5	PE 케이블이 정확하고 안전하게 체결되어야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
6	인버터에 연결된 DC 스위치와 모든 스위치가 OFF 위치로 설정되어야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
7	DC입력 케이블, AC 출력 케이블, 통신 케이블은 정확하고 안전하게 설치 되어야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
8	사용하지 않는 단자와 포트는 방수 캡으로 잘 닫아야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
9	설치공간이 적절하고, 설치환경이 깨끗하고 먼지가 없어야 합니다.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

6 시스템 전원 켜기

알림

인버터와 전원 계통 사이의 AC 스위치를 켜기 전에 AC 위치에 설정된 멀티미터를 사용하여 AC 전압이 지정된 범위 내에 있는지 확인합니다.

1. 인버터와 전원 계통 사이의 AC 스위치를 켭니다.
2. (선택사항) DC 스위치 옆에 있는 잠금 나사를 제거하십시오. 향후 전원을 끄고 유지보수하기 위해 나사를 올바르게 보관합니다.

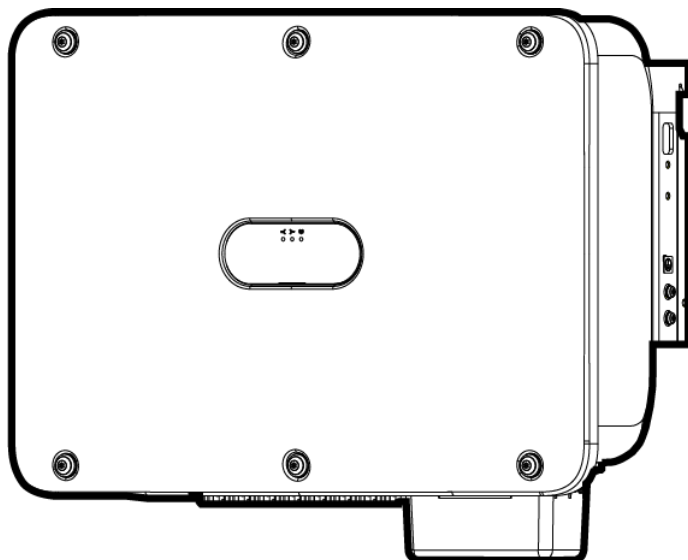


IS13H00012

3. 태양광 인버터 하단에 있는 DC 스위치를 켭니다.
4. LED 표시기를 관찰하여 인버터의 작동상태를 점검합니다.

분류	상태 (늦게 깜빡임: 1초간 켜지고, 1초간 꺼짐; 빨리 깜빡임: 0.2초간 켜지고 0.2초간 꺼짐)		상세
작동 표시기			-
	녹색 켜짐	녹색 켜짐	인버터가 계통 연계모드로 작동중임.
	늦게 깜빡임	꺼짐	DC와 연결되었고 AC는 연결되지 않음.
	늦게 깜빡임	늦게 깜빡임	DC와 AC 둘다 연결되었고 계통으로 송전하지는 않음.
	꺼짐	늦게 깜빡임	DC는 꺼져있고 AC는 연결되었음.
	꺼짐	꺼짐	DC와 AC가 둘다 연결되지 않음..
	빨간불 빠르게 깜빡임	-	DC 환경 알람
	-	빨간불 빠르게 깜빡임	AC 환경 알람
통신 표시기			-
	녹색 빠르게 깜빡임		통신이 진행중임
	녹색 느리게 깜빡임		모바일 폰 접속
	꺼짐		통신 없음.

알림: LED1, LED2, LED3 모두가 빨간색이 켜져있으면 인버터는 폴트 상태이며 교체가 필요합니다.



Inversores Fotovoltaicos (20kW, 30kW, 36kW, 40kW) Guia Rápido

Versão: 03

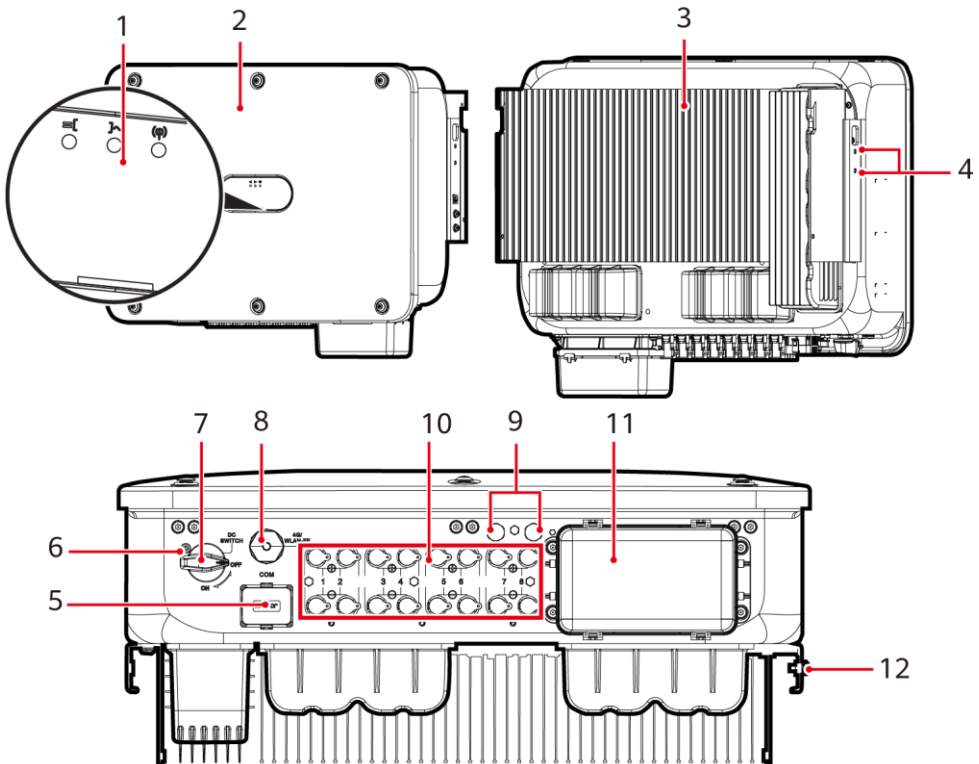
Número de série: 31500HLQ

Data: 17/05/2022

AVISO

- 20kW, 30kW, 36kW e 40kW indicam a potência nominal de saída dos inversores, tais valores podem ser vistos na placa de identificação do inversor.
- As informações contidas neste guia são passíveis de mudanças sem qualquer aviso prévio. Foram tomadas todas as medidas cabíveis para assegurar a fidelidade de seu conteúdo, mas todas as declarações, informações e recomendações neste documento não constituem uma garantia de qualquer tipo, expressa ou implícita.
- Apenas electricistas certificados estão autorizados a operar o dispositivo. O pessoal da operação deve compreender a composição e os princípios de funcionamento do sistema de energia fotovoltaica ligado à rede e dos regulamentos locais.
- A garantia não cobre quaisquer danos causados por violação das regras de armazenamento, transporte, instalação e operação especificadas neste documento e no manual do utilizador.
- Use ferramentas isoladas ao instalar o dispositivo. Para segurança pessoal, use equipamento de proteção individual (EPI) adequado.

Visão Geral

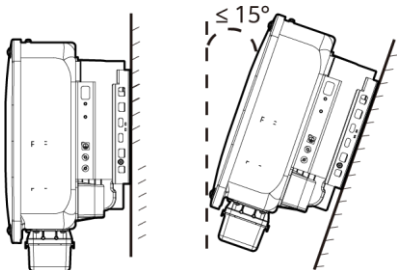


- | | |
|---------------------------------|--|
| (1) Indicadores LED | (2) Painel frontal |
| (3) Dissipador de calor | (4) Parafusos para fixação do revestimento |
| (5) Porta de comunicações (COM) | (6) Furo para o parafuso de bloqueio da chave DC |
| (7) Chave DC (DC SWITCH) | (8) Conexão Smart Dongle(4G/WLAN-FE) |
| (9) Valvula de ventilação | (10) Terminal de entrada DC(PV1-PV8) |
| (11) Porta de saída AC | (12) Ponto para terramento |

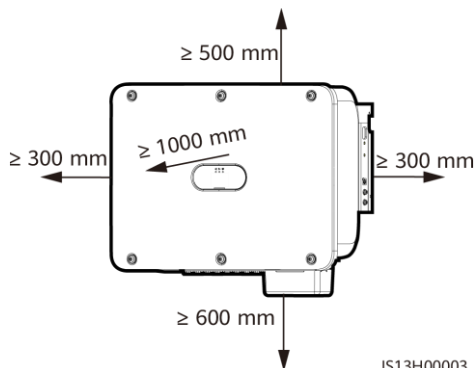
IS13W00001

2 Requisitos para Instalação

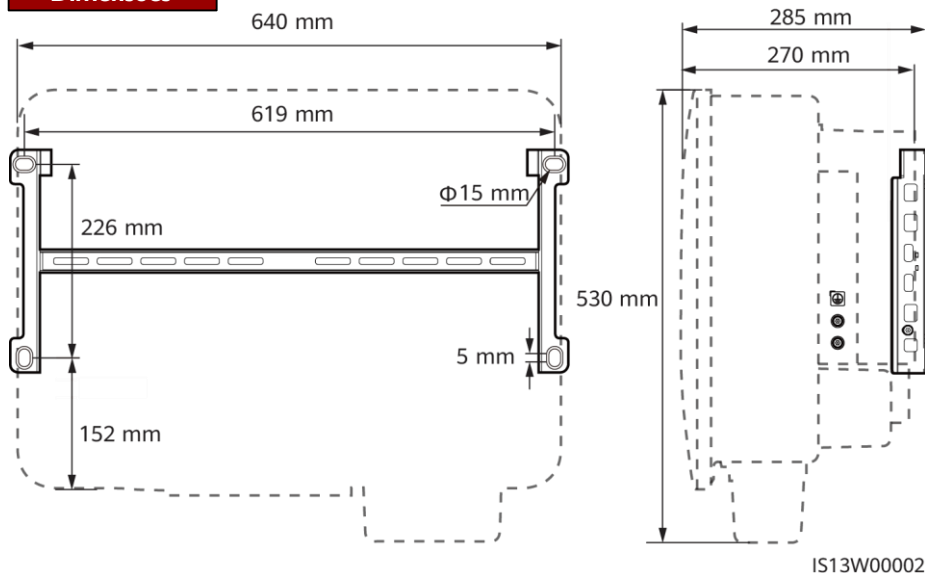
Ângulo



Espaçamento



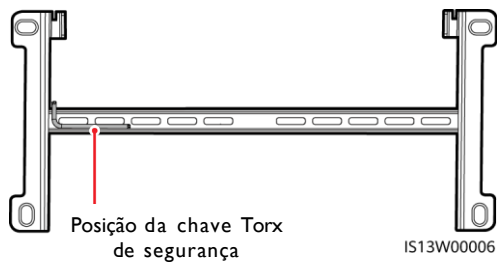
Dimensões



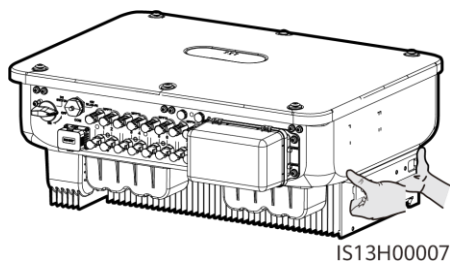
3 Instalando o inversor fotovoltaico

NOTA

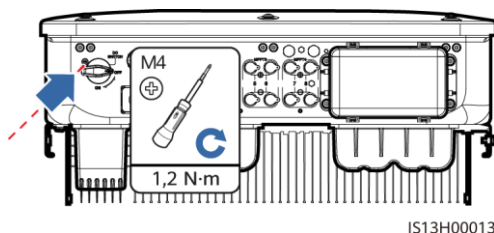
- Os conjuntos de parafusos M12x40 são fornecidos com o inversor fotovoltaico. Se o comprimento dos parafusos não cumprirem os requisitos de instalação, adquira por conta própria os conjuntos de parafusos M12 adequados e utilize-os juntamente com as porcas M12 fornecidas.
- Este guia rápido descreve como instalar o inversor fotovoltaico em um suporte. Para obter detalhes sobre a instalação montada na parede, consulte o manual do utilizador.
- Para modelos usados na Austrália, instale o parafuso de bloqueio do interruptor CC de acordo com as normas locais. O parafuso de bloqueio do interruptor CC é fornecido com o inversor fotovoltaico para evitar que o inversor fotovoltaico seja iniciado acidentalmente.
- Antes de instalar o suporte de montagem, remova a chave Torx de segurança e deixe-a de lado.



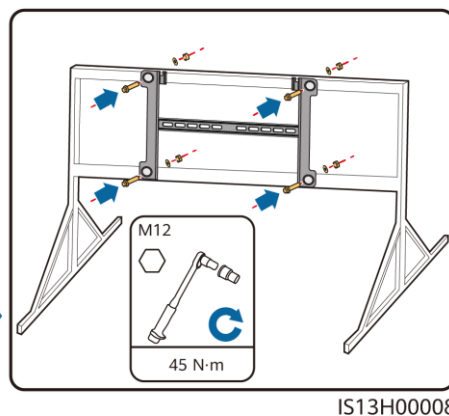
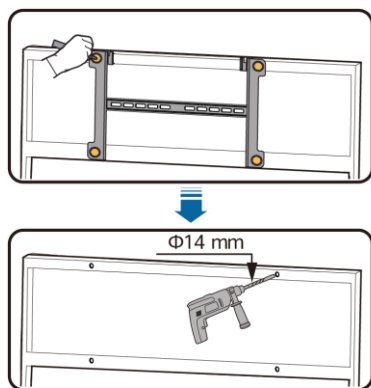
Movimentando o inversor fotovoltaico



Instalando o Parafuso de Travamento da Chave DC (Opcional)



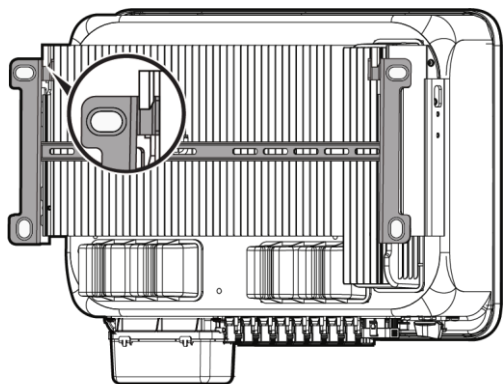
1. Instale o suporte de montagem.



NOTA

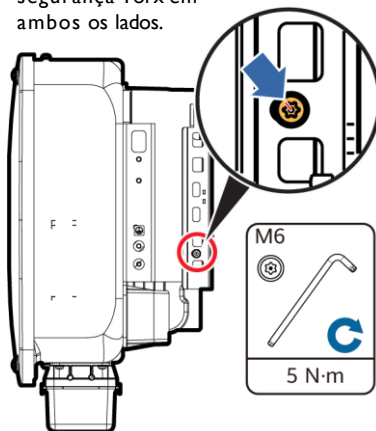
Recomenda-se um tratamento antiferrugem nas as posições dos furos de perfuração.

2. Instale o inversor fotovoltaico no suporte de montagem.



IS13H00010

3. Aperte os parafusos de segurança Torx em ambos os lados.



IS13H00011

4 Conectando os Cabos

4.1 Preparação

AVISO

- Conecte os cabos de acordo com as leis e regulamentos locais de instalação.
- As especificações do cabo devem estar em conformidade com as normas locais.
- Antes de conectar os cabos, certifique-se de que a chave CC do inversor e todos os interruptores conectados a ele estejam DESLIGADOS. Caso contrário, a alta tensão produzida pelo inversor fotovoltaico pode causar choques elétricos.

No.	Cabo	Tipo	Especificação
1	Cabo PE	Cabo de cobre de condutor único, uso externo	Área da secção transversal do condutor $\geq 16 \text{ mm}^2$
2	Cabo de energia saída CA	Cabo de cobre/alumínio, uso externo	<ul style="list-style-type: none"> • Área da secção transversal do condutor: $16\text{-}50 \text{ mm}^2$ para cabos de cobre ou $35\text{-}50 \text{ mm}^2$ para cabos de alumínio • Diâmetro externo do cabo: $16\text{-}38 \text{ mm}$
3	Cabo de energia entrada CC	Cabo PV de uso externo convencional (modelo recomendado: PVI-F)	<ul style="list-style-type: none"> • Área da secção transversal do condutor: $4\text{-}6 \text{ mm}^2$ • Diâmetro externo do cabo: $5.5\text{-}9 \text{ mm}$
4	(Opcional) Cabo de comunicação RS485	Cabo de núcleo duplo par trançado blindado (modelo recomendado: DJYP2VP2-2x2x0.75)	<ul style="list-style-type: none"> • Área da secção transversal do condutor: $0.2\text{-}1 \text{ mm}^2$ • Diâmetro externo do cabo: $4\text{-}11 \text{ mm}$

Nota a: Cabos de cinco condutores com uma área de secção transversal de $5 \times 35 \text{ mm}^2$ ou $5 \times 50 \text{ mm}^2$ não são suportados.

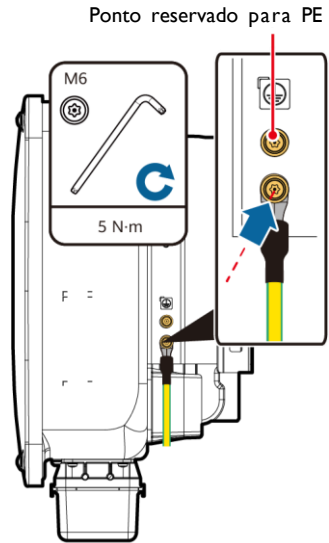
4.2 Conectando o cabo PE

PERIGO

Não utilize o fio neutro como um cabo PE. Caso contrário, podem ocorrer choques elétricos.

NOTA

- O ponto PE na porta de saída de CA é usado apenas como ponto equipotencial de PE e não um substituto para o ponto PE do compartimento.
- Recomenda-se a aplicação de sílica gel ou que tinta seja aplicada em torno do terminal de aterramento após a ligação do cabo PE.



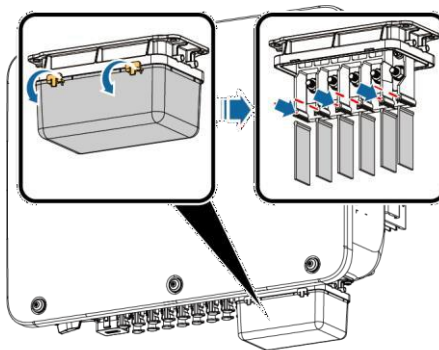
IS13150001

4.3 Instalando o Cabo de Energia Saída CA

AVISO

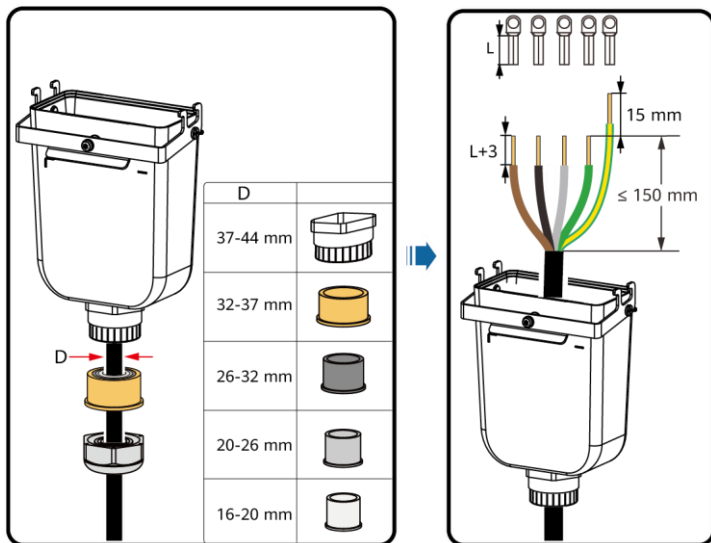
- Utilize uma chave de boca e uma haste de extensão para conectar o cabo de energia CA. A haste de extensão deve ter um comprimento superior a 100 mm.
- Deve ser fornecida folga suficiente no cabo PE para garantir que o último cabo a suportar uma força de tração maior no cabo de energia CA seja o cabo PE.
- Não instale dispositivos de terceiros na caixa de ligação CA.
- Você precisa preparar terminais M8 OT sozinho.

- I. Remova a caixa de terminal de CA e instale placas de partição.



IS13120001

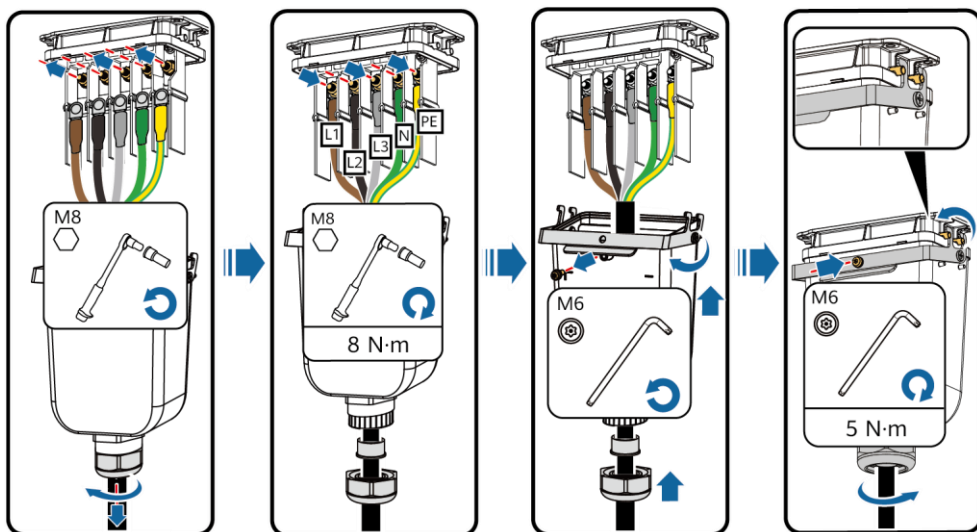
2. Conecte o cabo de energia de saída CA (um cabo de cinco condutores é utilizado como exemplo).



IS13I20003

NOTA

- Para evitar danificar o revestimento de borracha, não passe um cabo com um terminal olhal crimpado diretamente através dele.
- Recomenda-se que o comprimento do cabo PE seja 15 mm maior do que o comprimento dos outros cabos.
- As cores dos cabos nas figuras são apenas para referência. Selecione os cabos apropriados de acordo com as normas locais.



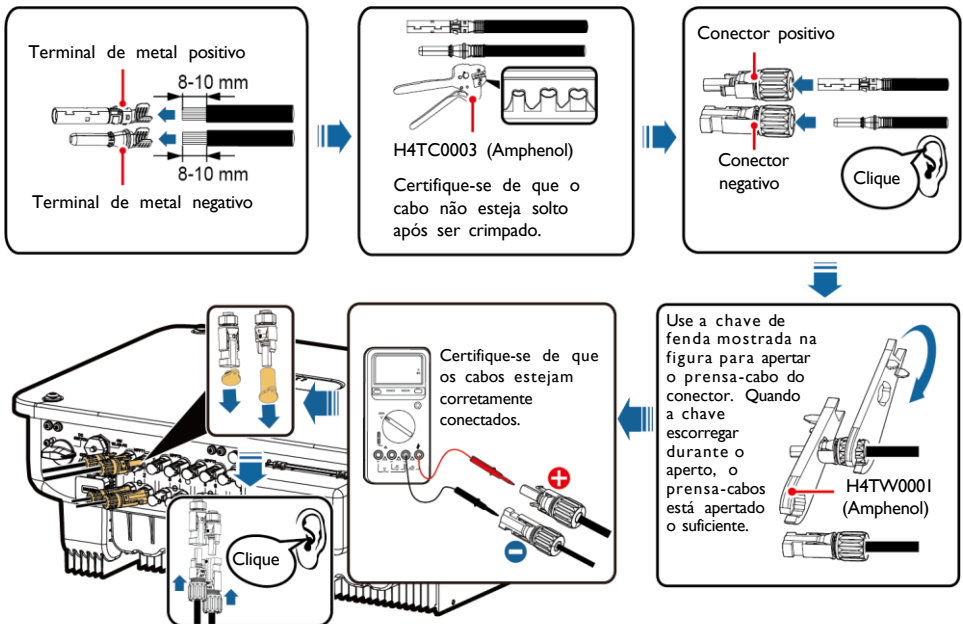
IS13I20002

4.4 Instalando o Cabo de Energia Entrada CC

AVISO

- Use os terminais de metal Amphenol Helios H4 positivo e negativo e os conectores CC fornecidos com o inversor solar. O uso de terminais de metal positivo e negativo e de conectores CC incompatíveis pode resultar em consequências graves. O dano causado ao dispositivo não é coberto por garantia.
- Recomenda-se o uso da ferramenta de crimpagem H4TC0003 (Amphenol). Não a use com o bloco de posicionamento. Caso contrário, os terminais de metal podem ser danificados. A chave de boca H4TW0001 (Amphenol) é recomendada.
- Certifique-se de que os cabos dos módulos fotovoltaicos não estão com falta a terra.
- A tensão CC de entrada do inversor solar (30 kW, 36 kW, 40 kW) não deve, sob qualquer circunstância, exceder 1100 V CC.
- A tensão CC de entrada do inversor solar de 20 kW não deve, sob qualquer circunstância, exceder 800 V CC.
- Antes de instalar os cabos de alimentação CC de entrada, identifique as polaridades dos cabos para garantir as conexões corretas.
- Se um cabo de alimentação CC de entrada for conectado com polaridade invertida e a chave CC estiver ligada, não opere imediatamente a chave CC ou nos conectores positivos/negativos. Caso contrário, o inversor poderá ser danificado. Os danos causados ao dispositivo devido a esse motivo não estão cobertos por qualquer garantia. Espere até a noite para que a irradiação solar diminua e a corrente do módulo caia para menos de 0.5 A. Em seguida, opere o interruptor CC para a posição OFF, remova os conectores positivo e negativo e corrija a polaridade dos cabo CC.

I. Conecte os cabos CC.



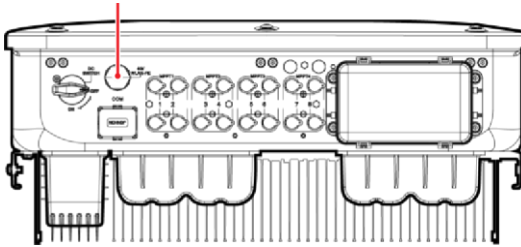
IS13I30002

4.5 Instalar o Smart Dongle (Opcional)

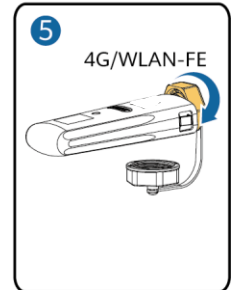
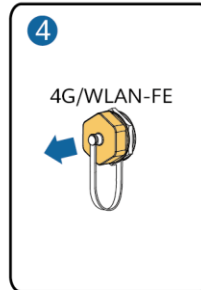
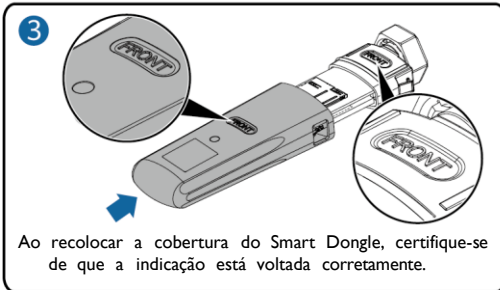
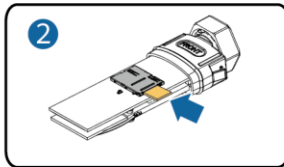
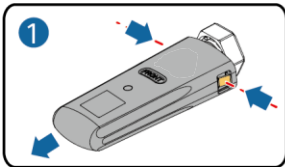
AVISO

- O Smart Dongle-WLAN-FE não está fornecido na configuração padrão.
- Se seu Smart Dongle for do tipo WLAN ou estiver configurado com um cartão SIM, pule esta etapa. O cartão SIM configurado pode ser usado apenas no Smart Dongle 4G.
- Se o seu Smart Dongle não estiver equipado com um cartão SIM, tenha em posse um cartão SIM convencional (tamanho: 25 mm x 15 mm) com uma capacidade igual ou superior a 64 KB.
- Ao instalar o cartão SIM, observe a posição correta indicada no local de entrada no cartão.
- Pressione o cartão SIM no local para travá-lo, indicando que o cartão SIM foi instalado corretamente.
- Ao remover o cartão SIM, empurre-o para dentro para ejetá-lo.

Smart Dongle port (4G/WLAN-FE)

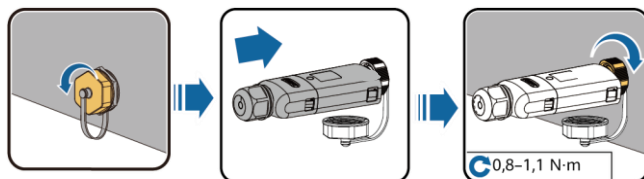


4G Smart Dongle



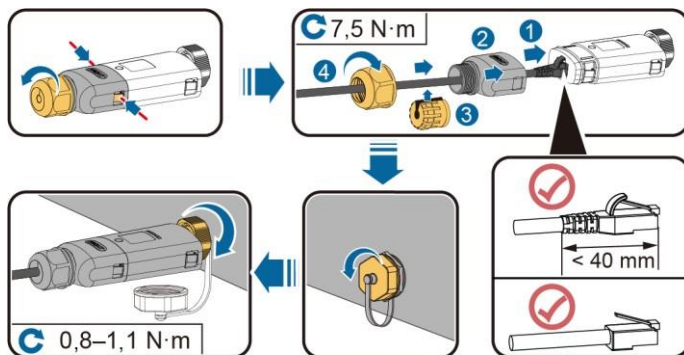
IS10H00016

WLAN-FE Smart Dongle (Comunicação WLAN)



ILO4H00005

WLAN-FE Smart Dongle (Comunicação FE)



ILO4H00004

AVISO

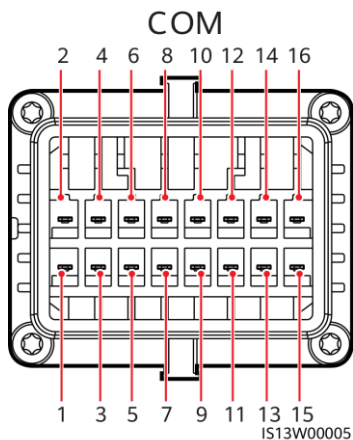
Instale o cabo de rede antes de instalar o Smart Dongle no inversor fotovoltaico.

4.6 Instalando o Cabo de Sinal

AVISO

- Ao instalar o cabo de sinal, separe-o do cabo de energia e mantenha-o afastado de fontes de interferência eletromagnética para evitar ruídos na comunicação.
- Certifique-se de que a camada protetora do cabo está no interior do conector, que os condutores metálicos em excesso estão cortados da camada isolante, que o fio do condutor exposto está totalmente inserido no orifício do conector e que o cabo está conectado de forma segura.

Definições Pinos da Porta COM

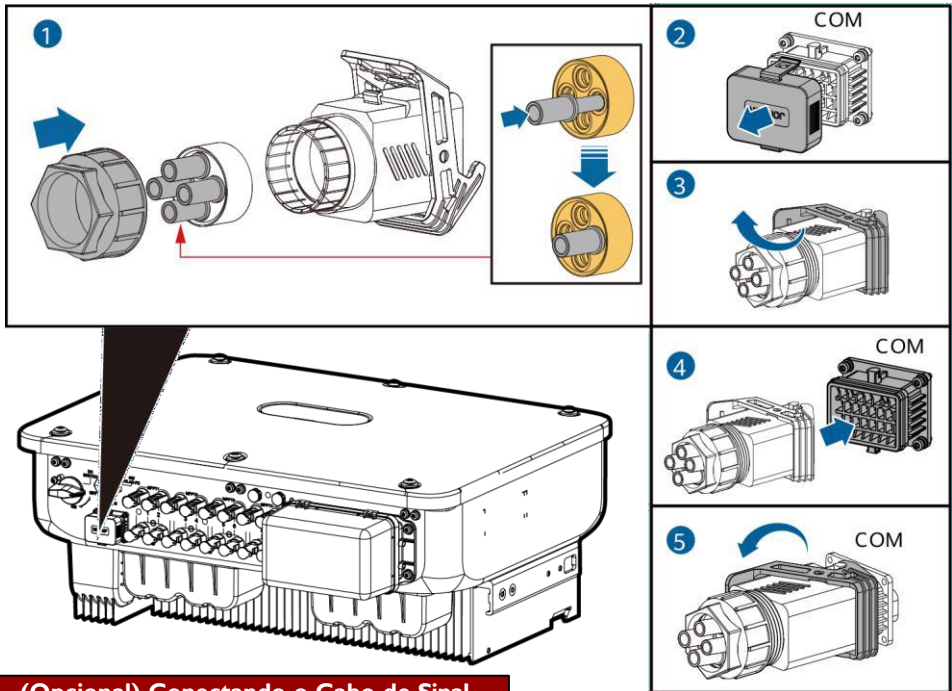


No.	Definição	Function	Description	No.	Definição	Function	Description
1	485A1-1	RS485 sinal diferencial +	Utilizado para ligar inversores em cascata ou conectar a porta de sinal RS485 na SmartLogger	2	485A1-2	RS485 sinal diferencial +	Utilizado para ligar inversores em cascata ou conectar a porta de sinal RS485 na SmartLogger
3	485B1-1	RS485 sinal diferencial -		4	485B1-2	RS485 sinal diferencial -	
5	PE	Ponto de aterramento da blindagem	-	6	PE	Ponto de aterramento da blindagem	-
7	485A2	RS485 sinal diferencial +	Conecta-se à porta de sinal RS485 no medidor de energia da rede elétrica.	8	DIN1	Contacto seco para planeamento da rede de energia	-
9	485B2	RS485 sinal diferencial -		10	DIN2		
11	-	-		12	DIN3		
13	GND	GND		14	DIN4		
15	DIN5	Desligamento rápido	Possibilita a proteção de desligamento NS CA, pode ser usado como uma porta reservada para sinais de desligamento rápido.	16	GND		

Cenários onde nenhum cabo de sinal está conectado

AVISO

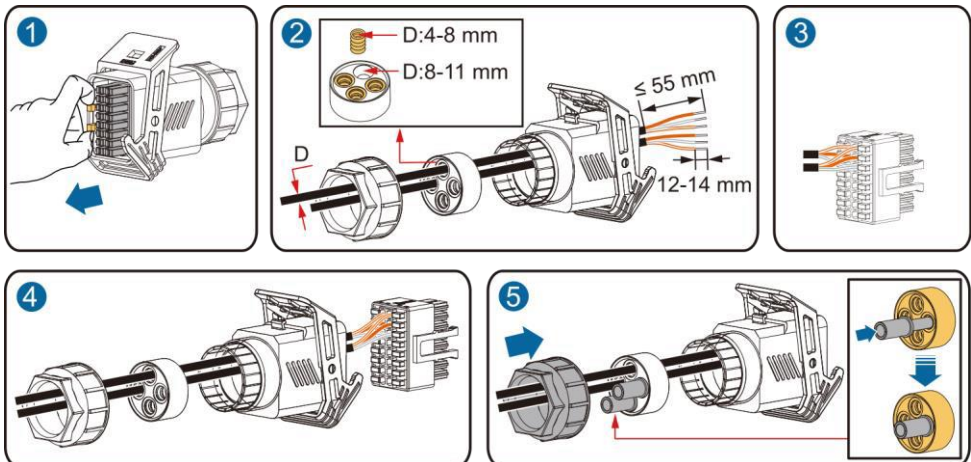
Se não for necessário um cabo de sinal para o inversor, use plugues impermeáveis para bloquear os orifícios da fiação do conector do cabo de sinal e plugue o conector do cabo de sinal à porta de comunicações do inversor para manter a característica impermeável do inversor.



(Opcional) Conectando o Cabo de Sinal

IS13140003

1. Conecte o cabo de sinal ao conector de sinal.

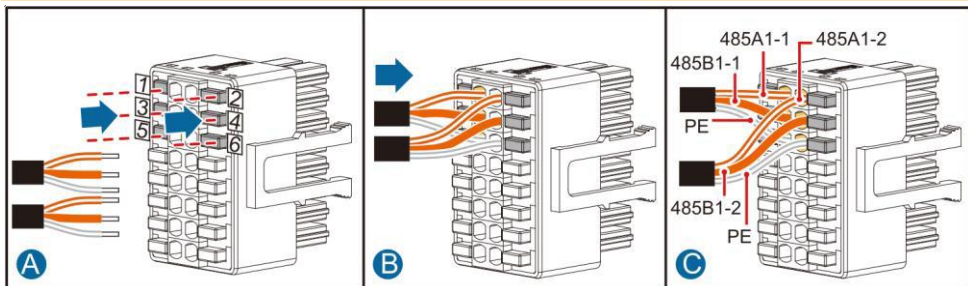


IS13140002

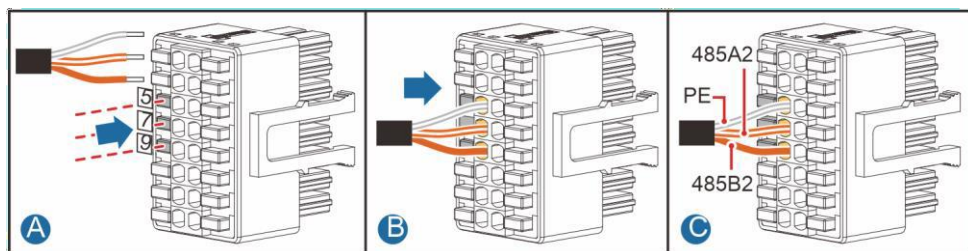
- Conecte o cabo de comunicação RS485 ao inversor fotovoltaico.

AVISO

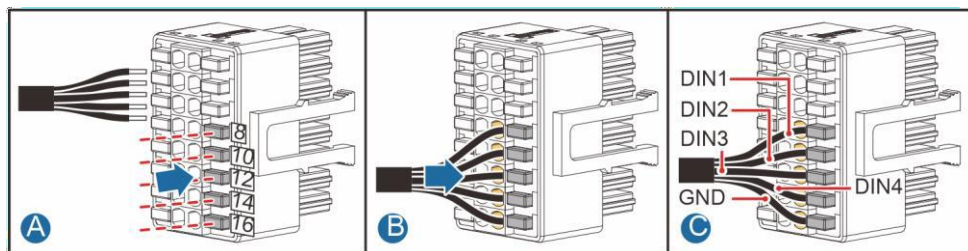
Se dois ou mais inversores solares estiverem em cascata, instale o cabo de comunicações RS485.



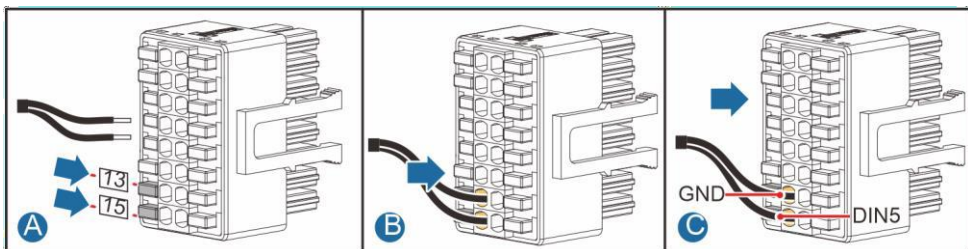
- Conecte o cabo de comunicação RS485 ao medidor de energia.



- Conecte o cabo de sinal de planeamento da rede de energia.

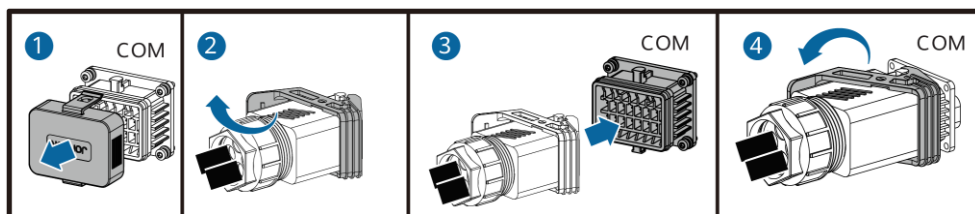
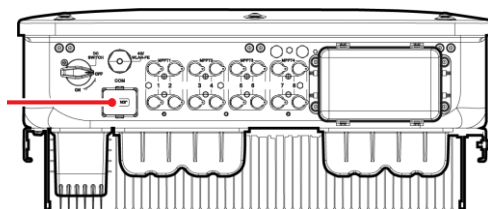


- Conecte o cabo de sinal de deligamento rápido



2. Conecte o conector do cabo de sinal à porta de comunicações.

Porta de comunicações (COM)



IS13I40001

5 Verificando a instalação

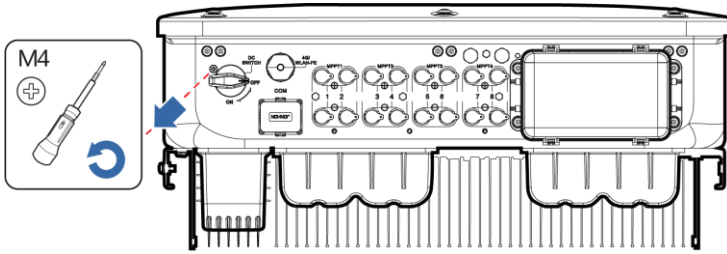
No.	Critérios de adequação
1	O inversor fotovoltaico está instalado de forma correta e segura.
2	Os cabos estão corretamente dispostos conforme exigido pelo cliente e normas locais.
3	O módulo de expansão de comunicações está instalado de forma correta e segura.
4	Os cabos estão distribuídos uniformemente e não existe nenhuma rebarba.
5	O cabo PE está conectado corretamente e de forma segura.
6	A chave DC e todos os interruptores ligados ao inversor fotovoltaico estão na posição OFF.
7	O cabo de alimentação saída CA, os cabos de alimentação entrada CC e o cabo de sinal estão conectados corretamente e de forma segura.
8	Terminais e portas não utilizadas estão bloqueados por tampas à prova d'água.
9	O espaço de instalação é adequado e o ambiente de instalação está limpo e arrumado.

6 Ligando o Sistema

AVISO

Antes de ligar o interruptor CA entre o inversor fotovoltaico e a rede elétrica, verifique se a tensão CA está dentro do intervalo especificado, utilizando um multímetro calibrado na posição CA.

1. Ligue o interruptor CA entre o inversor fotovoltaico e a rede elétrica.
2. (Opcional) Remova o parafuso de bloqueio ao lado do interruptor CC. Armazene os parafusos corretamente para futuros desligamentos e operações de manutenção.

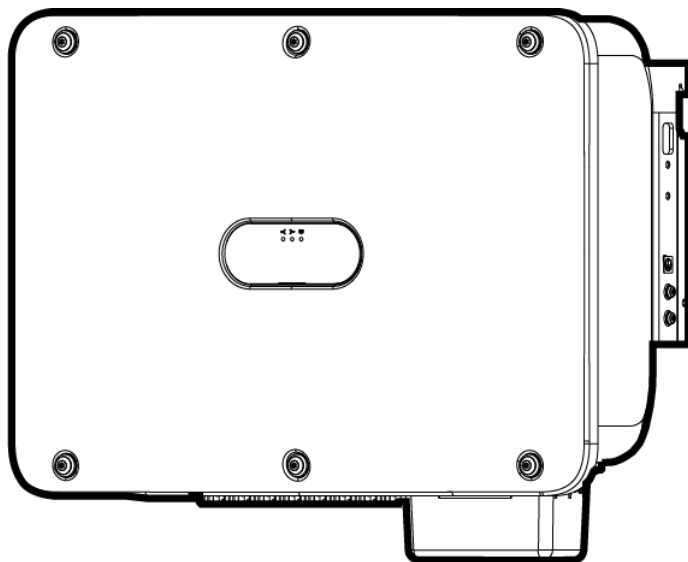


IS13H00012

3. Ligue o interruptor CC na parte inferior do inversor fotovoltaico.
4. Observe os indicadores LED para verificar o status operacional do inversor fotovoltaico.

Categoria	Estado (Piscando lentamente: ligado durante 1 s e, em seguida, desligado durante 1 s; Piscando rapidamente: ligado durante 0.2 s e, em seguida, desligado durante 0.2 s)		Descrição
Indicadores de Funcionamento			-
	Verde contínuo	Verde contínuo	O inversor fotovoltaico está operando conectado à rede.
	Verde piscando lentamente	Desligado	Lado CC ligado e lado CA desligado.
	Verde piscando lentamente	Verde piscando lentamente	Ambas partes CC e CA estão ligadas, o inversor não está fornecendo potência à rede.
	Desligado	Verde piscando lentamente	Lado CC desligado e lado CA ligado.
	Desligado	Desligado	Ambas partes CC e CA estão desligadas.
	Vermelho piscando rapidamente	-	Alarme na parte CC.
	-	Vermelho piscando rapidamente	Alarme na parte CA.
	Vermelho contínuo	Vermelho contínuo	Falta.
Indicador de Comunicação			-
	Verde piscando rapidamente		Comunicação funcionando.
	Verde piscando lentamente		Acesso pelo celular.
	Off		Sem Comunicação .

Nota: Se o LED1, LED2, e LED3 estiverem indicando vermelho contínuo, o inversor fotovoltaico está com defeito e precisa ser substituído.



智能光伏逆变器 (20kW, 29.9kW, 30kW, 36kW, 40kW)

快速指南

文档版本：03

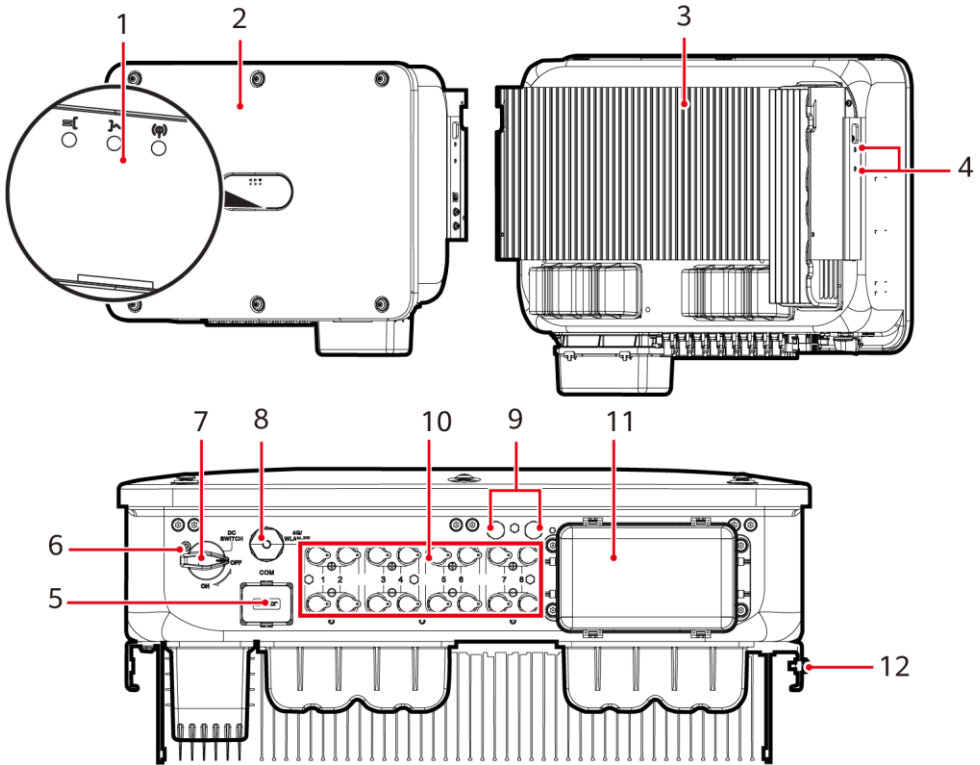
部件编码：31500HLQ发

布日期：2022-05-17

须知

- 20kW、29.9kW、30kW、36kW和40kW为逆变器的额定输出功率，可从逆变器铭牌上查看。
- 由于产品版本升级或其他原因，本文档内容会不定期进行更新。除非另有约定，本文档仅作为使用指导，文档中的所有陈述、信息和建议不构成任何明示或暗示的担保。
- 设备所有操作必须由训练有素的专业电气技术人员进行。操作人员应充分熟悉整个光伏并网发电系统的构成、工作原理及项目所在国家/地区的相关标准。
- 安装设备前请详细阅读用户手册，了解产品信息及安全注意事项。未按照本文档与用户手册的内容存储、搬运、安装和使用设备而导致设备损坏，不在设备质保范围内。
- 安装设备时必须使用绝缘工具。为了人身安全，请佩戴个人防护用品。

1 产品简介

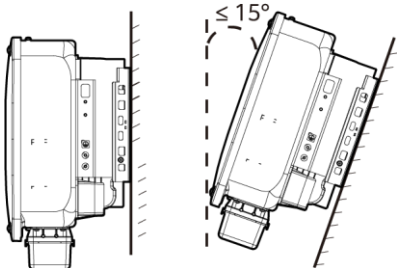


IS13W00001

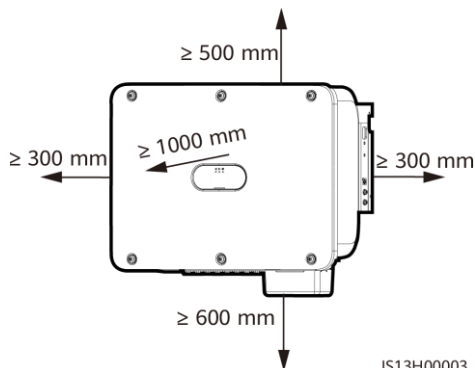
- | | |
|----------------------|--------------------------|
| (1) LED指示灯 | (2) 主机面板 |
| (3) 散热片 | (4) 遮阳棚固定螺钉 |
| (5) 通信接口 (COM) | (6) 直流开关锁定螺钉孔 |
| (7) 直流开关 (DC SWITCH) | (8) 智能通信棒接口 (4G/WLAN-FE) |
| (9) 透气阀 | (10) 直流输入端子 (PV1~PV8) |
| (11) 交流输出接口 | (12) 接地点 |

2 安装要求

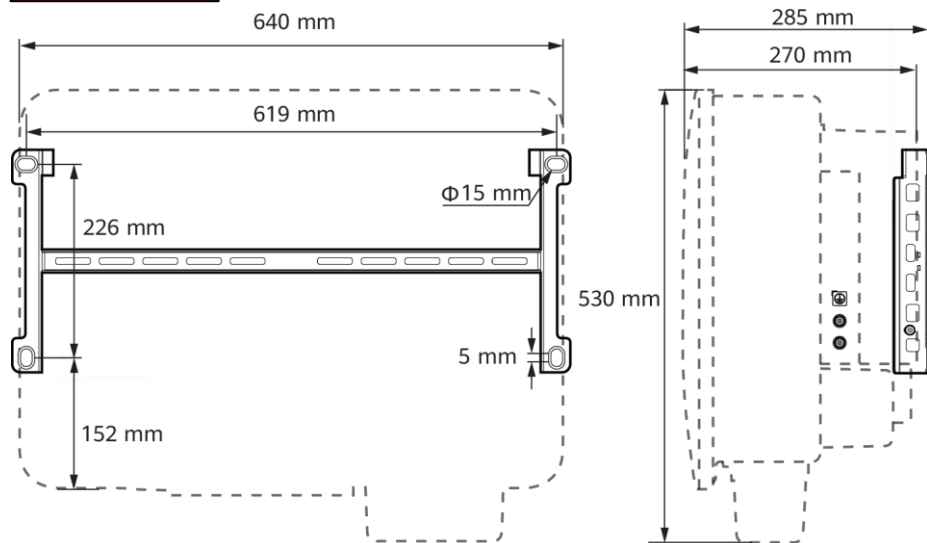
角度



空间



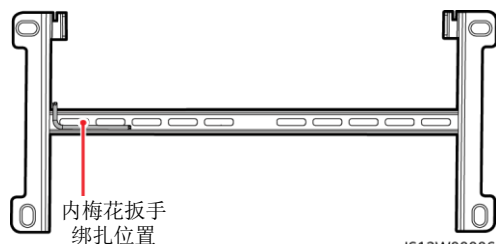
尺寸



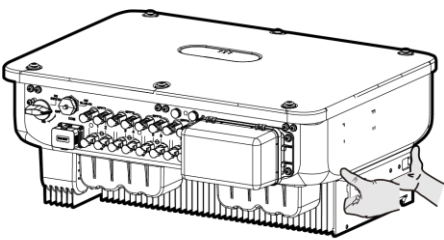
3 安装逆变器

说明

- 逆变器随箱配发M12×40组合螺栓，若长度无法满足安装需求，请自备M12组合螺栓，配合随箱配发的M12螺母进行安装。
- 以支架安装为例，介绍逆变器安装方法。挂墙安装请参见用户手册。
- 澳洲地区使用的机型，根据当地标准，需要安装直流开关锁定螺钉。直流开关锁定螺钉随逆变器配发，防止误开机。
- 安装工程安装件前，请取下内梅花扳手并妥善保存。

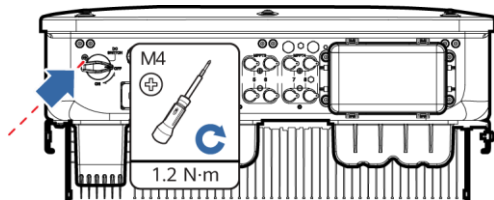


搬运逆变器



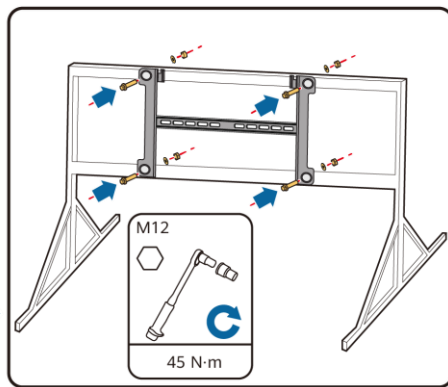
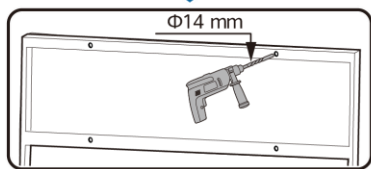
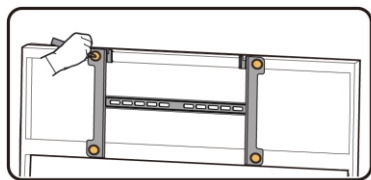
IS13H0007

(可选) 安装直流开关锁定螺钉



IS13H00013

1. 安装工程安装件。



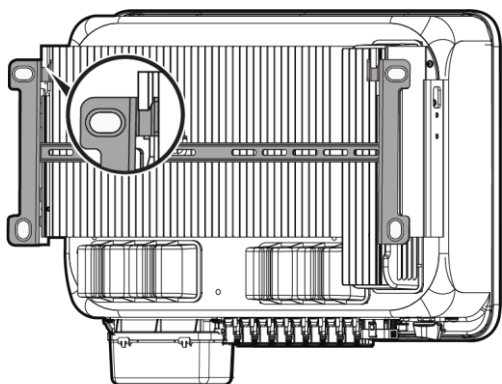
IS13H00008

说明

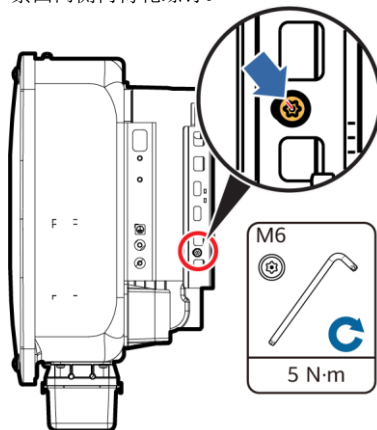
建议对打孔处进行防锈处理。

2. 将逆变器安装到工程安装件上。

3. 紧固两侧内梅花螺钉。



IS13H00010



IS13H00011

须知

必须紧固侧面螺钉后再进行接线。

4 电气连接

4.1 安装前准备

须知

- 电气连接应符合设备所在国家/地区的安装法规。
- 线缆规格选择应符合当地标准要求。
- 在进行电气连接之前，请确保逆变器的“DC SWITCH”以及与逆变器相连的所有开关均处于“OFF”状态，否则逆变器的高电压可能会导致电击危险。

序号	名称	类型	规格
1	保护地线	单芯户外铜芯线缆	导体横截面积 $\geq 16 \text{ mm}^2$
2	交流输出线	户外铜芯线缆/铝芯线缆	<ul style="list-style-type: none">• 导体横截面积: $16 \text{ mm}^2 \sim 50 \text{ mm}^2$ 户外铜芯线缆/$35 \text{ mm}^2 \sim 50 \text{ mm}^2$ 户外铝芯线缆^a• 线缆外径: $16 \text{ mm} \sim 38 \text{ mm}$
3	直流输入线	行业通用的户外光伏线缆（推荐型号: PV1-F）	<ul style="list-style-type: none">• 导体横截面积: $4 \text{ mm}^2 \sim 6 \text{ mm}^2$• 线缆外径: $5.5 \text{ mm} \sim 9 \text{ mm}$
4	（可选）RS485通信线	两芯户外屏蔽双绞线（推荐型号 DJYP2VP2-2x2x0.75）	<ul style="list-style-type: none">• 导体横截面积: $0.2 \text{ mm}^2 \sim 1 \text{ mm}^2$• 线缆外径: $4 \text{ mm} \sim 11 \text{ mm}$

注a: 不支持 $5 \times 35 \text{ mm}^2$ 和 $5 \times 50 \text{ mm}^2$ 的五芯线缆。

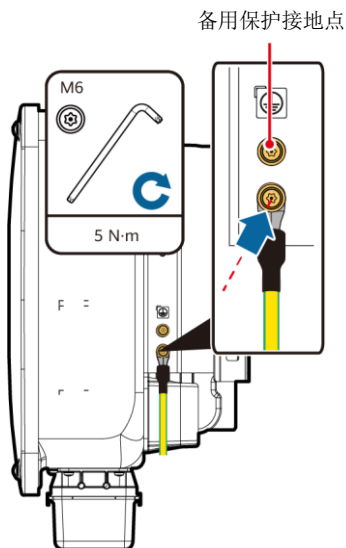
4.2 安装地线

危险

严禁将N线作为保护地线连接到机箱上，否则可能导致电击危险。

说明

- 交流输出接口的PE仅作为保护地的等电位连接点，不能替代机箱外壳的保护接地点使用。
- 建议地线安装完成后，在接地端子外部涂抹硅胶或刷漆进行防护。



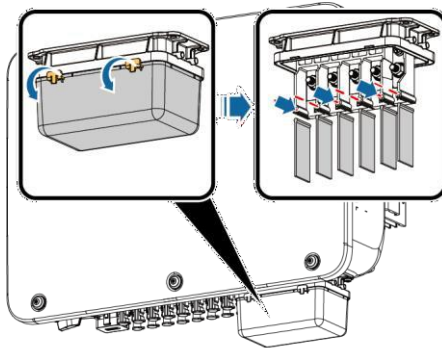
IS13150001

4.3 安装交流输出线

须知

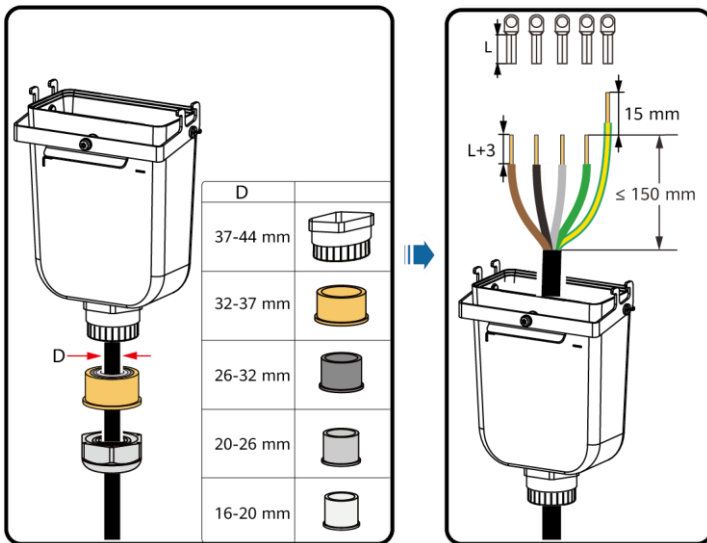
- 连接交流线请使用套筒扳手和加长杆，加长杆长度需大于100mm。
- 保护地线长度应预留余量，在交流输出线因遭受不可抗力而承受拉力时，保证保护地线最后承受应力。
- 禁止在交流接线盒内安装第三方设备。
- 用户需自行准备M8的OT端子。

1. 取下交流端子盒，安装隔板。



IS13I20001

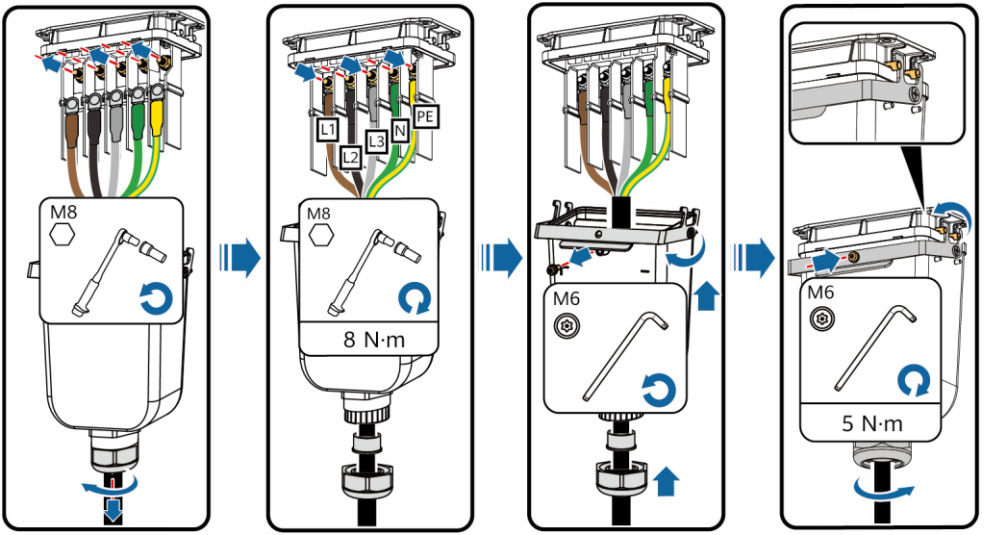
2. 连接交流输出线（以五芯线为例）。



IS13I20003

说明

- 请勿将已压接OT端子的线缆直接穿过橡胶内衬，以免损伤橡胶内衬。
- 剥线时，建议保护地线剥线长度比其余线缆多预留15mm。
- 图中涉及的线缆颜色仅供参考，线缆的选取应符合当地线缆标准。



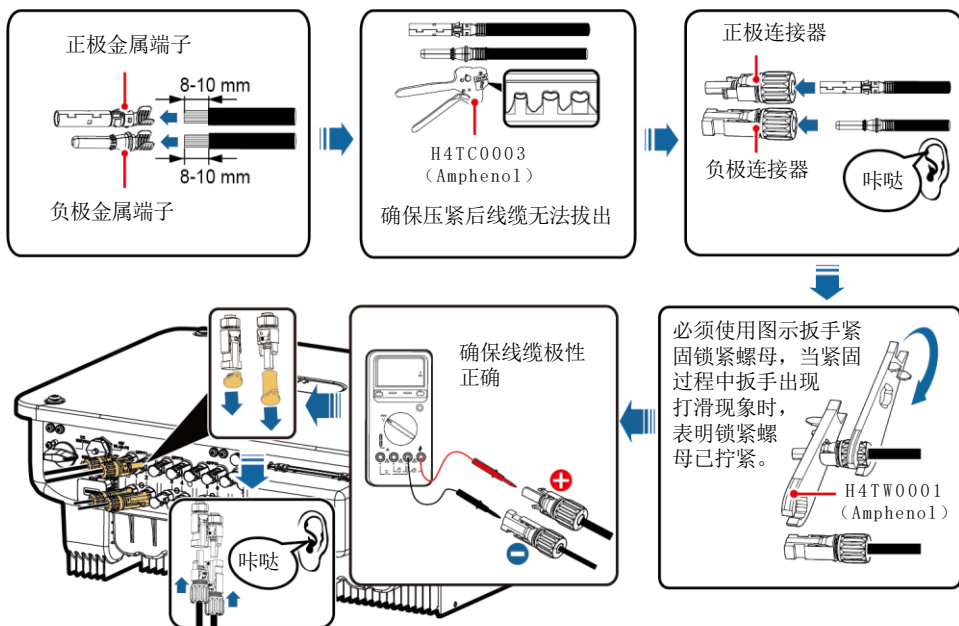
IS13I20002

4.4 安装直流输入线

须知

- 请使用逆变器随箱配发的Amphenol Helios H4正、负极金属端子和直流连接器。使用其他型号的正、负极金属端子和直流连接器可能导致严重后果，由此引起的设备损坏不在设备质保范围内。
- 推荐采用H4TC0003（Amphenol）压线钳，且不能配合工具定位块使用，否则会造成金属端子损坏。推荐使用H4TW0001（Amphenol）型号开口扳手。
- 请确保光伏组件的输出对地绝缘良好。
- 智能光伏逆变器（29.9kW，30kW，36kW，40kW）的直流输入电压，在任何条件下都不得超过1100VDC。
- 智能光伏逆变器20kW的直流输入电压，在任何条件下都不得超过800VDC。
- 在安装直流输入线前，请确保线缆极性正确，做好正、负极线缆标签。
- 如果不慎将直流输入线反接且“DC SWITCH”已置于“ON”的位置，请勿立即对“DC SWITCH”和正、负极连接器进行操作，否则可能会造成设备损坏。由此导致的设备损坏不在设备质保范围内。需等待晚上太阳辐照度降低，光伏组串电流降低至0.5A以下时，再将“DC SWITCH”置于“OFF”的位置，取下正、负极连接器修正直流输入线极性。

1. 连接直流连线。



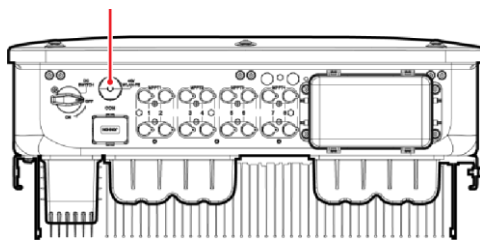
IS13I30002

4.5 (可选) 安装智能通信棒

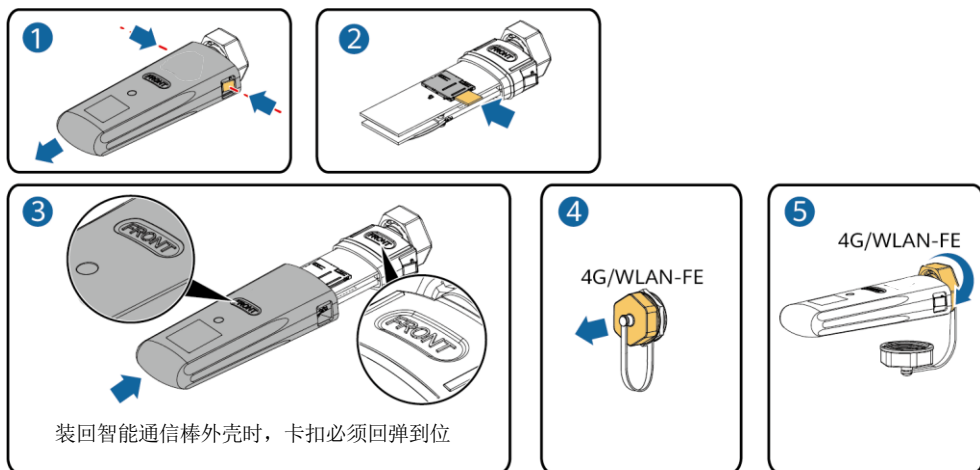
须知

- WLAN-FE 智能通信棒为非标配件。
- 如果用户选购的为WLAN 智能通信棒或配置了SIM卡的智能通信棒, 则无需执行安装SIM卡的相关操作。配置的SIM卡仅可在本Dongle上使用, 内置SIM卡为移动卡。安装前, 请确认当地移动信号是否可有效覆盖, 若否, 请自备其他运营商的SIM卡。
- 如果用户选购的为没有配置SIM卡的智能通信棒, 则需自备标准SIM卡(尺寸: 25mm × 15mm), SIM卡容量 ≥ 64K。
- 安装SIM卡时可根据卡槽上的丝印和指示箭头判断SIM卡安装方向。
- 将SIM卡按压到限制位时SIM卡会锁紧, 表示SIM卡已正确安装。
- 取下SIM卡时可将SIM卡向内推入, SIM卡会自动弹出。

智能通信棒接口 (4G/WLAN-FE)

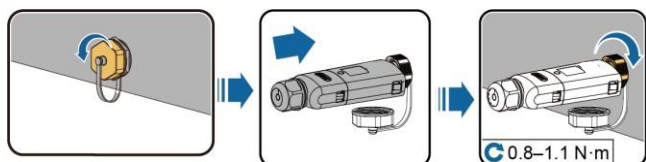


4G智能通信棒



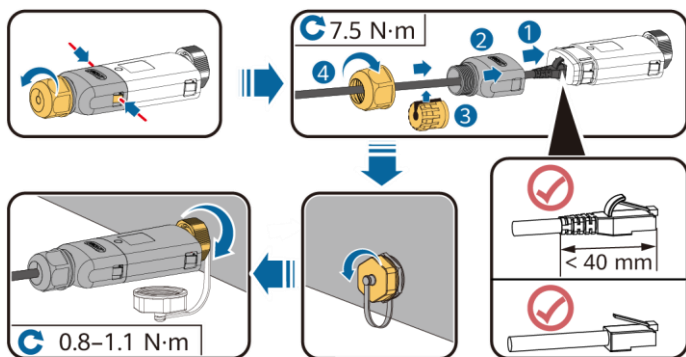
IS10H00016

WLAN-FE智能通信棒(WLAN通信场景)



IL04H00005

WLAN-FE智能通信棒(FE通信场景)



IL04H00004

须知

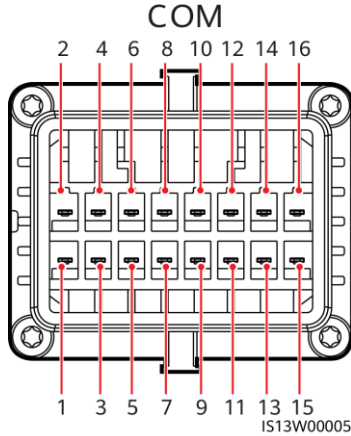
请先安装网线再将智能通信棒安装到逆变器。

4.6 安装信号线

须知

- 在布置信号线时，请注意将信号线与功率线的走线分开，且走线时需避开大干扰源，以免信号受到干扰导致通信受影响。
- 信号线的保护层位于连接器内，多余芯线齐平保护层剪掉。线芯完全进入接线孔，无外漏，且线缆连接紧固。

通信接口信号定义

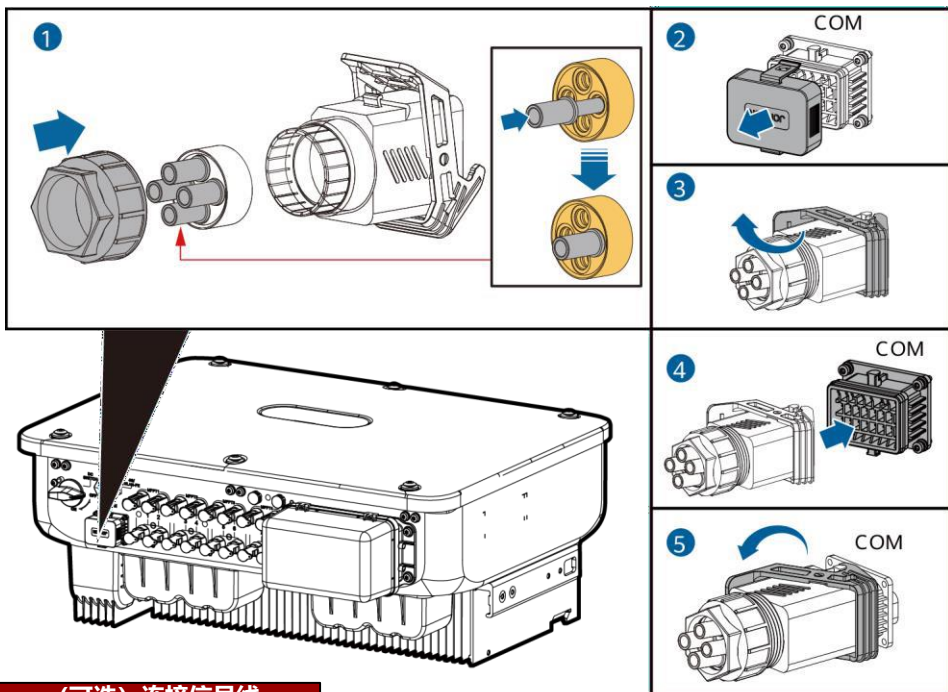


序号	定义	功能	说明	序号	定义	功能	说明
1	485A1-1	RS485 差分信号+	用于逆变器级联或连接数据采集器的RS485信号接口	2	485A1-2	RS485 差分信号+	用于逆变器级联或连接数据采集器的RS485信号接口
3	485B1-1	RS485 差分信号-		4	485B1-2	RS485 差分信号-	
5	PE	屏蔽层接地		6	PE	屏蔽层接地	
7	485A2	RS485 差分信号+		8	DIN1	电网调度干接点	
9	485B2	RS485 差分信号-	10	DIN2			
11	-	-	12	DIN3			
13	GND	GND	14	DIN4			
15	DIN5	快速关断	支持交流NS保护关断，可作为快速关断信号的预留端口	16	GND	GND	

未连接信号线场景

须知

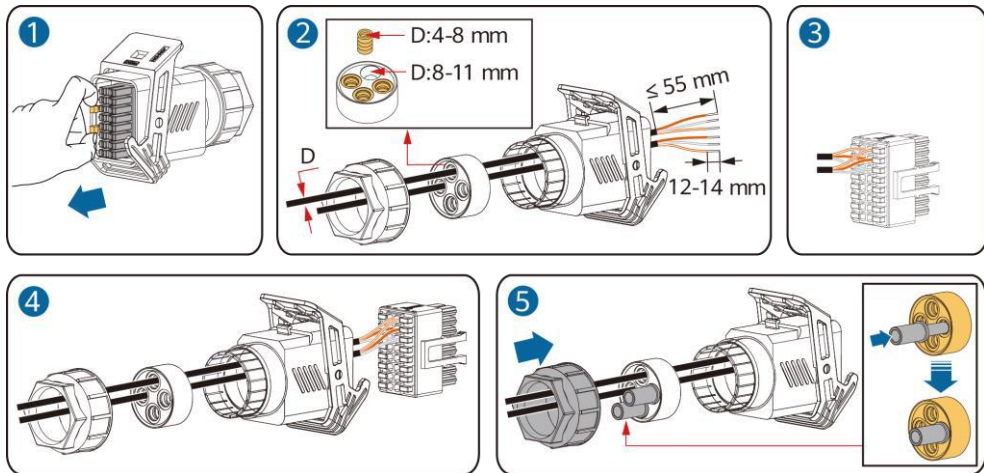
如果逆变器无需连接信号线，请使用防水塞堵住信号线连接器的接线孔，将信号线连接器接至逆变器通信接口，以提高逆变器防水性能。



IS13140003

(可选) 连接信号线

1. 将信号线连接至信号线连接器。

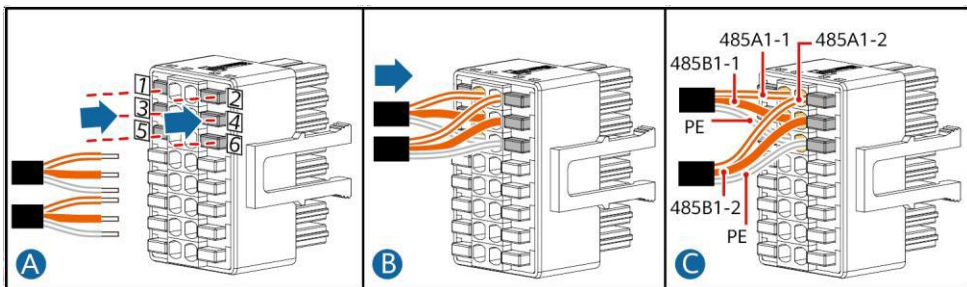


IS13140002

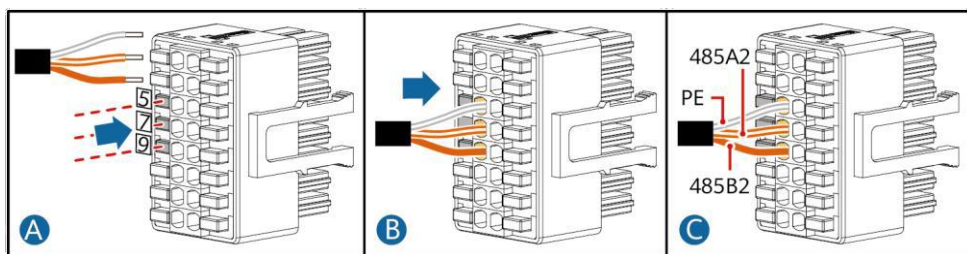
- 连接逆变器RS485通信线。

须知

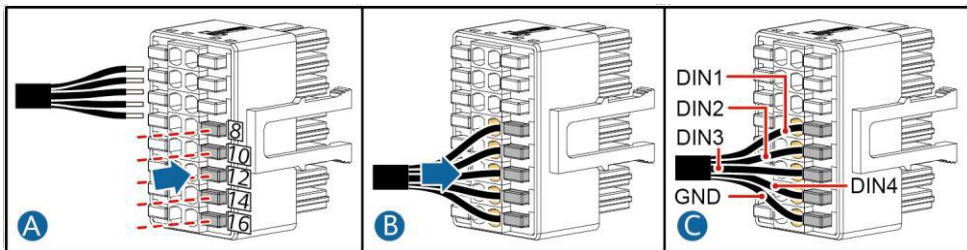
两台及两台以上的逆变器级联时，需要安装RS485通信线。



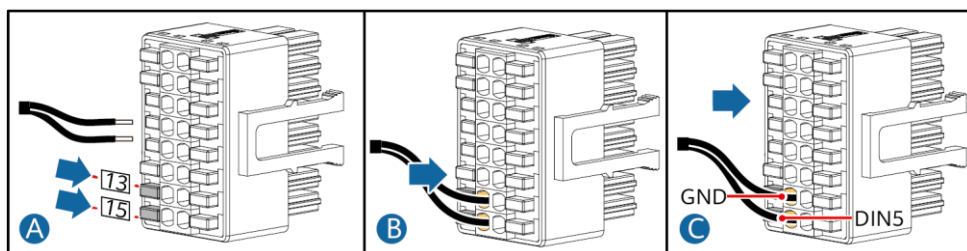
- 连接电表RS485通信线。



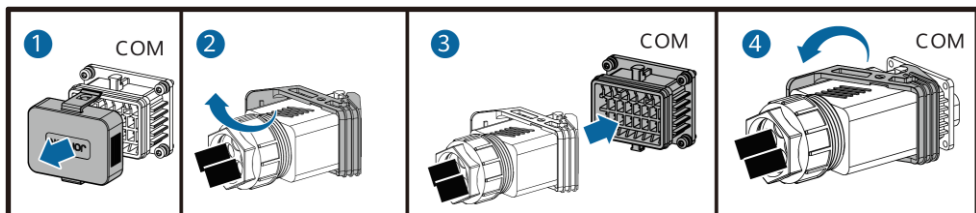
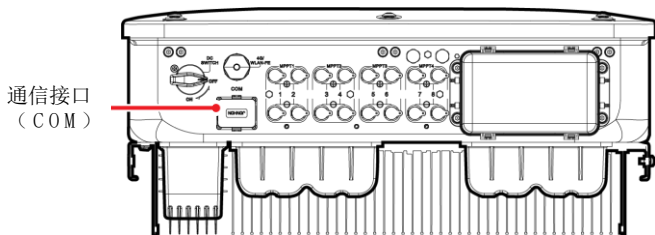
- 连接电网调度信号线。



- 连接快速关断信号线。



2. 将信号线连接器接至通信接口。



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5 安装后检查

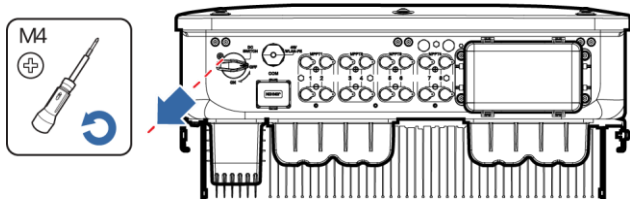
序号	验收标准
1	逆变器安装正确且牢固可靠。
2	线缆布置合理，满足用户要求。
3	通信扩展模块安装正确且牢固可靠。
4	扎线带要均匀，且剪断处不留尖角。
5	地线连接正确且牢固可靠。
6	“DC SWITCH” 以及与逆变器相连的所有开关均处于“OFF” 状态。
7	交流输出线、直流输入线和信号线连接正确且牢固可靠。
8	未使用的端子和接口装上防水盖。
9	安装空间合理，环境干净整洁，无施工遗留物。

6 系统上电

须知

将逆变器与电网之间的交流开关闭合之前，需用万用表交流电压档测量交流电压是否在允许范围内。

1. 将逆变器与电网之间的交流开关闭合。
2. （可选）拆下“DC SWITCH”旁的直流开关锁定螺钉。妥善保存螺钉以备后续下电维护场景使用。



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3. 将逆变器机箱底部的DC SWITCH 置于“ON”的位置。
4. 观察LED 指示灯，查看逆变器运行状态。

分类	状态（慢闪1s亮，1s灭；快闪0.2s亮，0.2s灭）		指示定义
运行指示			-
	绿色常亮	绿色常亮	逆变器处于并网运行状态
	绿色慢闪	灭	直流上电且交流未上电
	绿色慢闪	绿色慢闪	直流上电且交流上电，逆变器未并网
	灭	绿色慢闪	直流未上电且交流上电
	灭	灭	直流未上电且交流未上电
	红色快闪	-	直流侧环境告警
	-	红色快闪	交流侧环境告警
通信指示	红色常亮	红色常亮	故障
			-
	绿色快闪		通信中
	绿色慢闪		手机接入
	灭		无通信

注：若LED1、LED2和LED3均为红色常亮，表示设备故障，需要更换逆变器。