



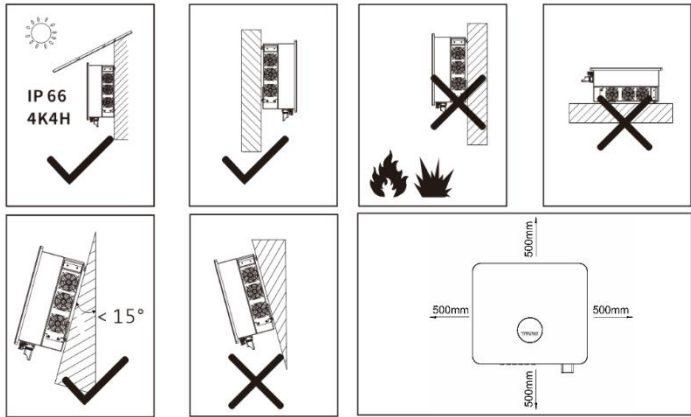
Quick Installation Guide

TS25KTL-A20 / TS27KTL-A20 / TS30KTL-A20 / TS33KTL-A20 /
TS36KTL-A20 / TS40KTL-A20

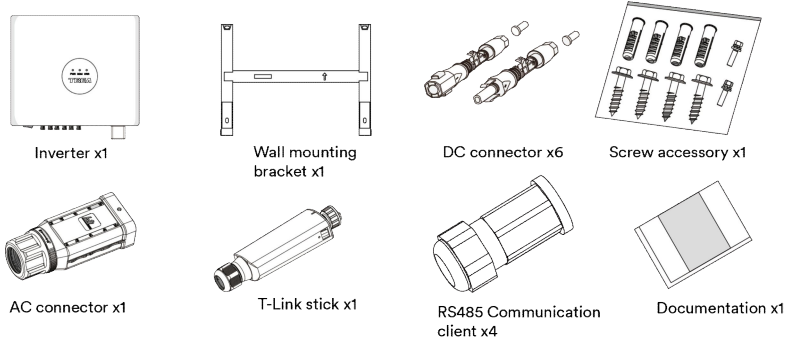
1. Safety Tips

- Contents in this document are updated at irregular intervals due to product version upgrade or other reasons. Unless otherwise agreed, this document can be used as a guide only, and all statements, information, and suggestions in this document do not constitute any warranty in express or implication.
- Installation, trial run, operation, and maintenance of this product should be carried out by professional personnel after reading and fully understanding the detailed user manual.
- This product should be connected to photovoltaic modules with level II protection class (conforming to Application Class A in Standard GB/T 20047-1) only.
This product should be connected to photovoltaic modules with parasitic capacitance less than 5μF to earth only.
It is prohibited to connect any power source other than the photovoltaic module to this product.
- Dangerous DC voltage will be caused to the DC wires and electric devices of the product by the exposure of photovoltaic module under sunlight, and the touch of these DC wires or electric devices can cause fatal electric shock.
- All components of the product should be ensured that always to be operated within the permitted operating range.
- The product complies with EU standards Electromagnetic Compatibility Directive 2014/30/EU, Low Voltage Directive 2014/35/EU and RED directive 2014/53/EU.

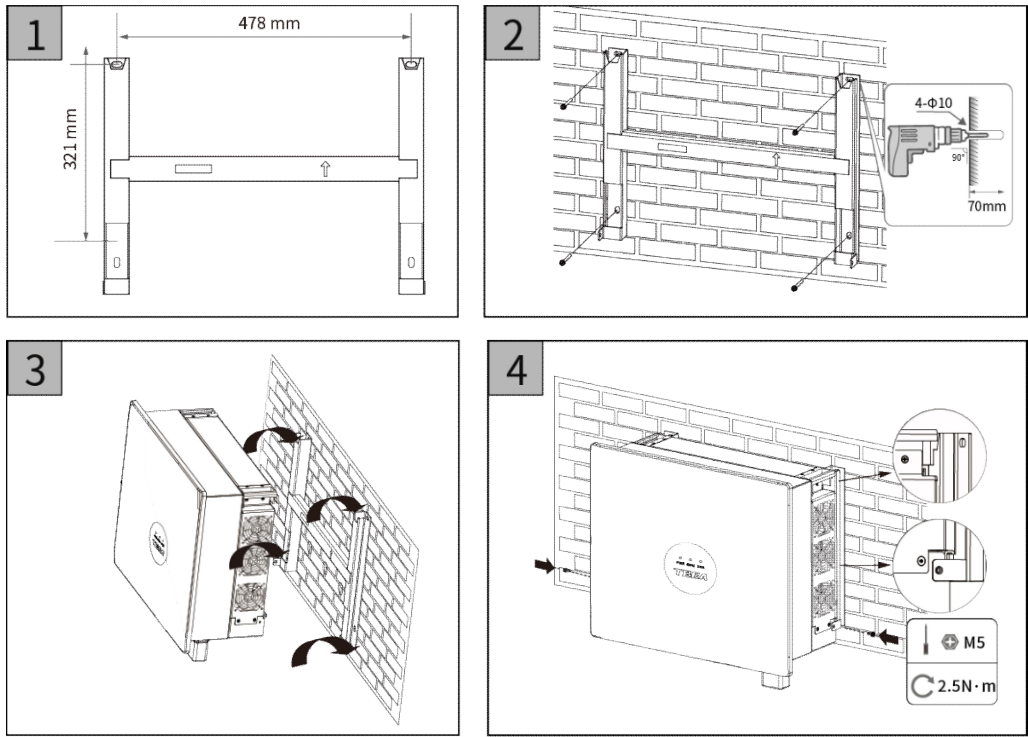
2. Installation Environment



3. Delivery List



4. Inverter Installation



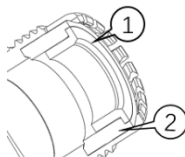
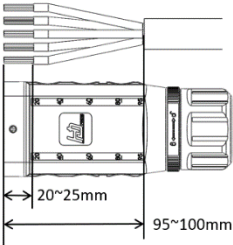
5. AC connection



Attention

- Electrical connection should comply with national/regional installation regulations.
- It is required to ensure that all DC switches and AC circuit breakers are disconnected before establishing an electrical connection, or the high voltage in the inverter may lead to electric shock hazard.
- The inverter should be reliably grounded (PE) as required in order to connect the inverter to the grid for working according to the requirements of safety regulations.
- The inverter will report a PE grounding error when the grounding (PE) is poor or the live wire grounding (PE) of the power grid occurs. In this case, the inverter should be check to ensure that it is reliably grounded or contact with the Service Department of TBEA.

- YJV copper line or YJVR copper line are recommended for using.
- For the use of aluminum wire, please contact with the Service Department of TBEA.
- The digital scale of the connector housing can be used as the wire stripping length reference.



A: Applicable outer diameter of the cable for part 1: 20-24mm;
B: Applicable outer diameter of the cable for part 2: 24.5-30mm;
Note: Part 1 should be removed when the outer diameter of the cable is greater than 24 cm.

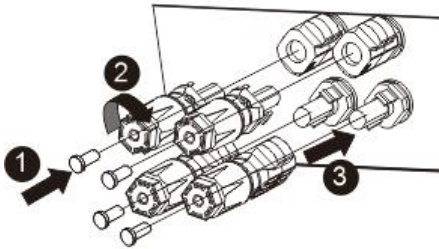
6. DC connection



Attention

- Make sure PV modules have good insulation against ground.
- On the coldest day based on statistical records, the Max. open-circuit voltage of the PV modules must not exceed the Max. input voltage of the inverter.
- Check the polarity of DC cables.
- Ensure that DC switch has been disconnected.
- Do not disconnect DC connectors under load.
- To ensure the optimal power generation of the system, the voltage difference between different MPPT circuits shall be less than 200V.

1. Please refer to “DC Connector Installation Guide”.
2. Before DC connection, insert the DC plug connectors with sealing plugs into DC input connectors of the inverter to ensure protection degree.



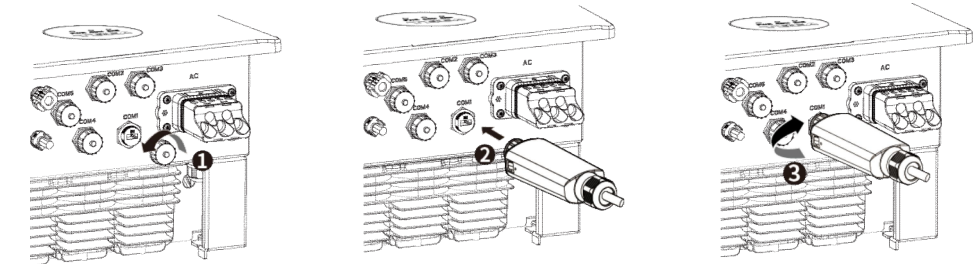
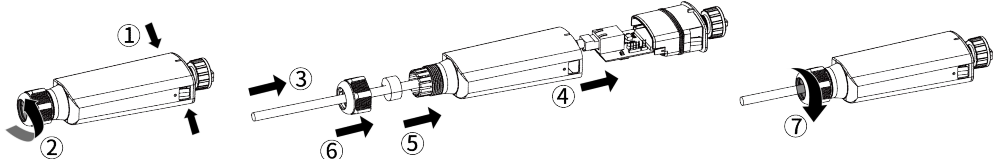
7.Communication Connection

Attention

- Communication cables and power cables should be separated for running and large interference sources should be avoided to prevent signal from interfering.
- CAT-5E or higher-level shielded cables should be adopted as RS485 communication cables between inverters. The pin allocation at both ends of the cable should comply with EIA/TIA568B standards. UV-resistant cables should be used when it is used outdoors.
- The total length of RS485 communication cables should not exceed 1000m.

1. COM1: Connecting the T-Link stick

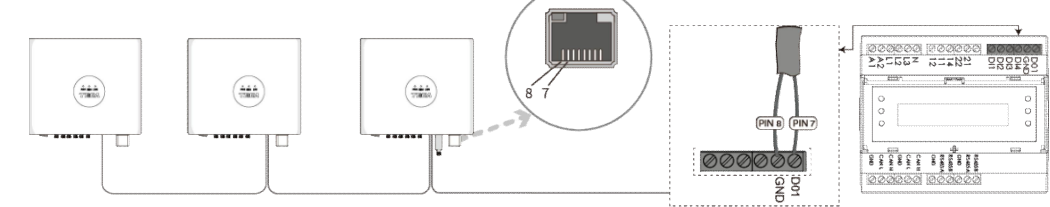
- It is only applicable the Company’s products, and cannot be connect to other USB devices.
- See the data acquisition stick user manual for the connection procedures.



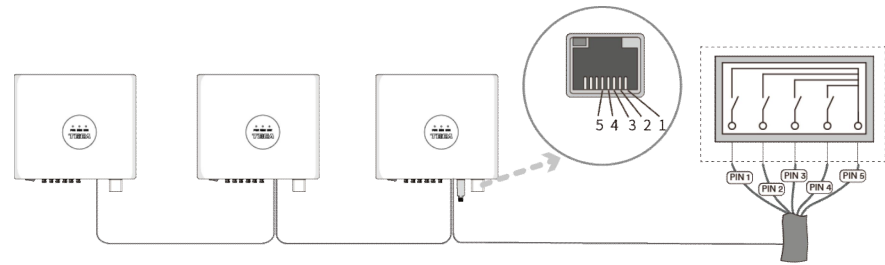
2. COM2&COM3: RS485 connection

- 1) RS485 cable pin assignment as below, strip the wire as shown in the figure, and crimp the copper wire to the appropriate OT terminal (according to DIN 46228-4, provided by the customer)

NS protection connection



Ripple control connection



8. Startup Operation

Attention

- Check whether the inverter is grounded reliably.
- Check whether the ventilation around the inverter is good.
- Check whether the AC voltage on the power grid side is within the permitted operating range of the inverter.
- Check whether the vacant DC connector input terminal/communication terminal on the inverter is reliably.

1. Close the AC circuit breaker between the inverter and the power grid.
2. Close the DC switch.
3. The inverter will start automatically when the dc input voltage and grid conditions meet the requirements of grid-connection.

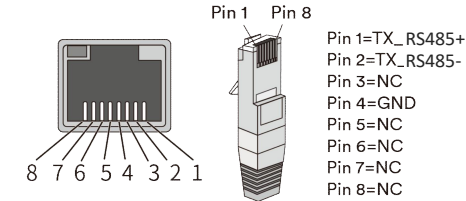
9. EU Standards Conformity

The EU Standard Directive covers the following contents:

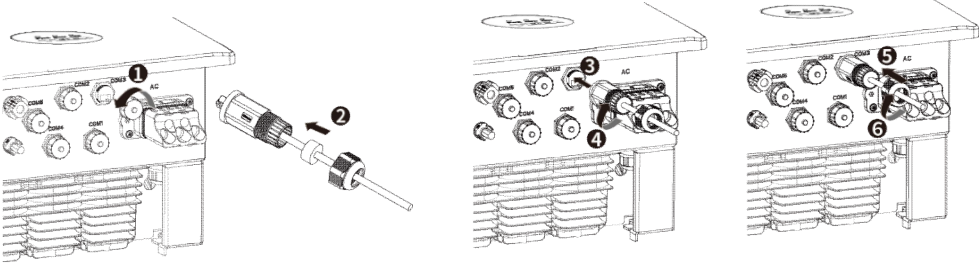
- Electromagnetic Compatibility Directive 2014/30/EU (L 96/79-106, March 29, 2014) (EMC)
- Low Voltage Directive 2014/35/EU (L 96/357-374, March 29, 2014) (LVD)
- RED directive 2014/53/EU 2014/53/EU (L 153/62-106, May 22, 2014) (RED)



TBEA Xi'an Electric Technology Co., Ltd. confirms that the inverter mentioned in the document meets the basic requirements of the above directives and other relevant regulations. The entire EU Declaration of Conformity available through our Sales Managers.

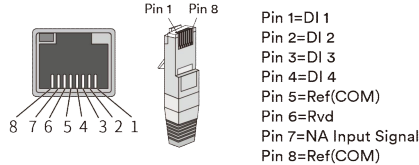


- 2) Unscrew the communication port cover cap in the following arrow sequence and insert the network cable into the RS485 communication client attached.
- 3) Insert the network cable into the corresponding communication terminal of the machine according to the arrow sequence, tighten the thread sleeve, and then tighten the forcing nut at the tail.

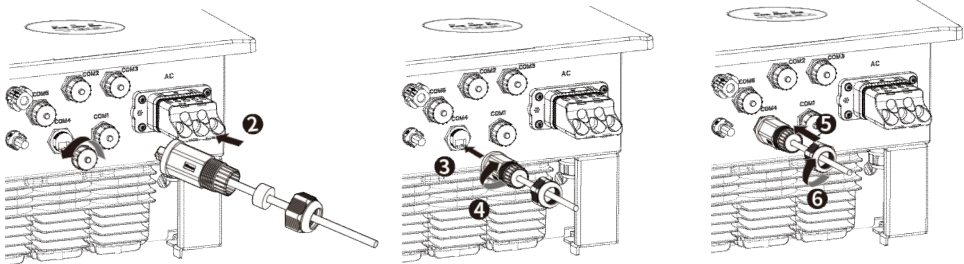


3. COM4&COM5: Connection of Ripple control receiver /NS protection device

- 1) RS485 cable pin assignment as below, strip the wire as shown in the figure, and crimp the copper wire to the appropriate OT terminal (according to DIN 46228-4, provided by the customer)



- 2) Unscrew the communication port cover cap in the following arrow sequence and insert the network cable into the RS485 communication client attached.
- 3) Insert the network cable into the corresponding communication terminal of the machine according to the arrow sequence, tighten the thread sleeve, and then tighten the forcing nut at the tail.



- COM 4&5 is standard on European machines only. It is optional on other markets.

10. Contact

Please contact our Service Department if you have any technical questions about our products. The following information is needed to provide necessary assistance:

- Inverter model
- Inverter serial number
- Photovoltaic module model
- Photovoltaic modules number and strings number connected to each MPPT
- Fault code
- Installation location
- Warranty card

TBEA Xi'an Electric Technology Co., Ltd.
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