



Quick Installation Guide

TCL-GS3K-G1/TCL-GS3.6K-G1/TCL-GS4K-G1
TCL-GS5K-G1/TCL-GS6K-G1

1 GENERAL INFORMATION

This quick installation guide does not replace the description in the user manual. The contents of this guide may be updated or revised due to product development. The information in this guide is subject to change without notice. The latest version of this document and the manual for installation, commissioning, configuration and decommissioning are to be found in PDF format at www.tcl.com/global/en/photovoltaic.

2 SAFETY

2.1 Intended use

The product is a transformerless PV inverter which converts the direct current of the PV generator into grid-compatible single-phase alternating current and then feeds the single-phase alternating current into the public power grid.

The product is intended for indoor and outdoor applications.

The product must only be connected with PV modules of protection class II (in accordance with IEC 61730, application class A). Do not connect any sources of energy other than PV modules to the product.

The product is not equipped with an integrated transformer and therefore has no galvanic isolation. The product must not be operated with PV modules which require functional grounding of either the positive or negative PV conductors. This can cause the product to be irreparably damaged. The product may be operated with PV modules with frames that require protective earthing.

All components must remain within their permitted operating ranges and their installation requirements at all times.

Use the product only in accordance with the information provided in the user manual and with the locally applicable standards and directives. Any other application may cause personal injury or damage to property.

The product must only be used in countries for which it is approved by TCL and the grid operator.

The type label must be permanently attached to the product and must be in a legible condition. This document does not replace any regional, state, provincial, federal or national laws, regulations or standards that apply to the installation, electrical safety and use of the product.

2.2 Important safety instructions

The product has been designed and tested strictly according to the international safety requirements. As with all electrical or electronical devices, there are residual risks despite careful construction. To prevent personal injury and property damage and to ensure long-term operation of the product, read this section carefully and observe all safety information at all times.

DANGER

Danger to life due to high voltages of the PV array!

When exposed to sunlight, the PV array generates dangerous DC voltage which is present in the DC conductors and the live components of the product. Touching the DC conductors or the live components can cause to lethal electric shocks. If you disconnect the DC connectors from the product under load, an electric arc may occur leading to electric shock and burns.

- Do not touch non-insulated cable ends.
- Do not touch the DC conductors.
- Do not touch any live components of the product.
- Do not open the product.
- All work on the product must only be carried out by qualified personnel who have read and fully understood all safety information contained in this document and the user manual.
- Disconnect the product from voltage and energy sources and ensure it cannot be reconnected before working on the product.
- Wear suitable personal protective equipment for all work on the product.

DANGER

Danger to life due to electric shock when touching live system components in case of a ground fault!

If a ground fault occurs, parts of the system may still be live. Touching live parts and cables may result in death or lethal injuries due to electric shock.

- Disconnect the product from voltage and energy sources and ensure it cannot be reconnected before working on the device.
- Only touch the insulation of the cables of the PV modules.
- Do not touch any parts of the substructure or frame of the PV array.
- Do not connect PV strings with ground faults to the product.

WARNING

Danger to life due to electric shock from destruction of the measuring device due to overvoltage!

Overvoltage can damage a measuring device and result in voltage being present in the enclosure of the measuring device. Touching the live enclosure of the measuring device results in death or lethal injuries due to electric shock.

- Only use measuring devices with a DC input voltage range of 1100 Vdc or higher.

CAUTION

Risk of burns due to high temperature.

Some parts of the enclosure can become hot during operation.

- During operation, do not touch any parts other than the enclosure lid of the product.

CAUTION

Risk of injury due to weight of product.

Injuries may result if the product is lifted incorrectly or dropped while being transported or mounted.

- Transport and lift the product carefully. Take the weight of the product into account.
- Wear suitable personal protective equipment for all work on the product.

2.3 Symbols on the label



Beware of a danger zone

This symbol indicates that the inverter must be additionally grounded if additional grounding or equipotential bonding is required at the installation site.



Beware of high voltage and operating current

The inverter operates at high voltage and current. Work on the inverter must only be carried out by skilled and authorized electricians.



Beware of hot surfaces

The inverter may become hot during operation. Avoid contact during operation.



WEEE designation

Do not dispose of the product together with the household waste but in accordance with the disposal regulations for electronic waste applicable at the installation site.



CE marking

The product complies with the requirements of the applicable EU directives.



Certification mark

The product has been tested by TUV and got the quality certification mark.



RCM Mark

The product complies with the requirements of the applicable Australian standards.



Capacitor discharge

Danger to life due to high voltages in the inverter. Do not touch live parts for 5 minutes after disconnection from the power sources.



Observe the documentation

Observe all documentation supplied with the product.

3 EU Declaration Of Conformity

Within the scope of the EU directives

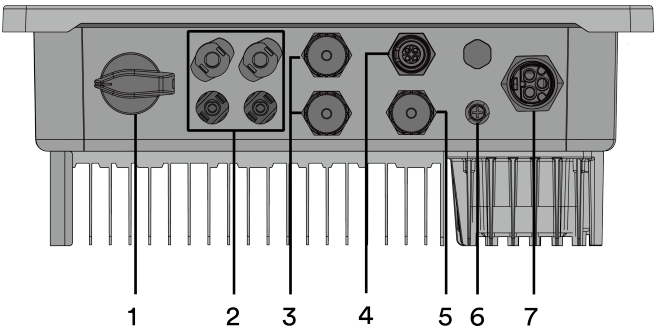
- Radio Equipment Directive 2014/53/EU
(L 153/62-106. May 22. 2014) (RED)
- Restriction of the use of certain hazardous substances 2011/65/EU
(L 174/88, June 8, 2011) and 2015/863/EU (L 137/10, March 31, 2015) (RoHS)



TCL PV Tech (Shenzhen) Co., Ltd. confirms here with that the products described in this document are in compliance with the fundamental requirements and other relevant provisions of the above mentioned directives.

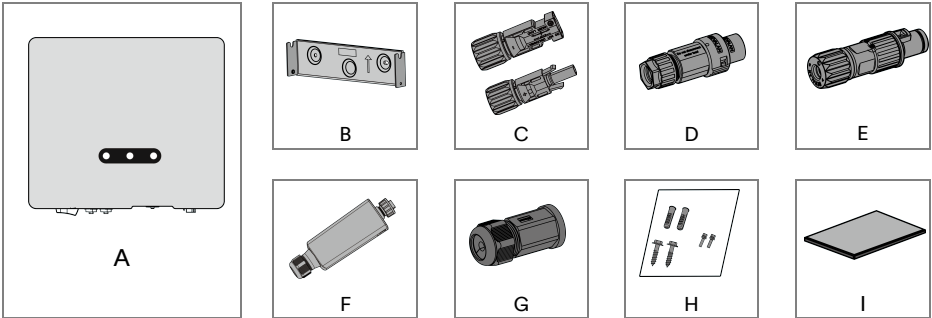
The entire EU Declaration of Conformity can be found at www.tcl.com/global/en/photovoltaic.

4 Overview



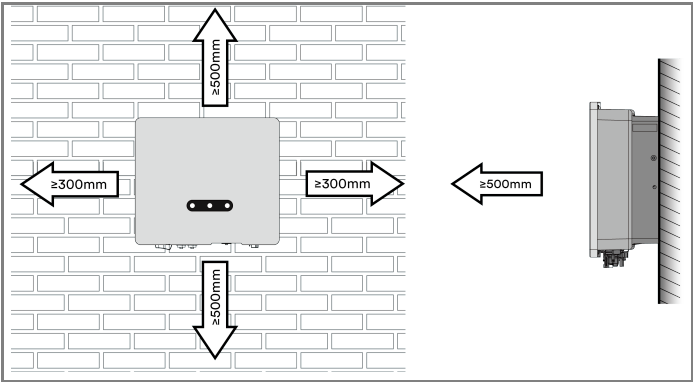
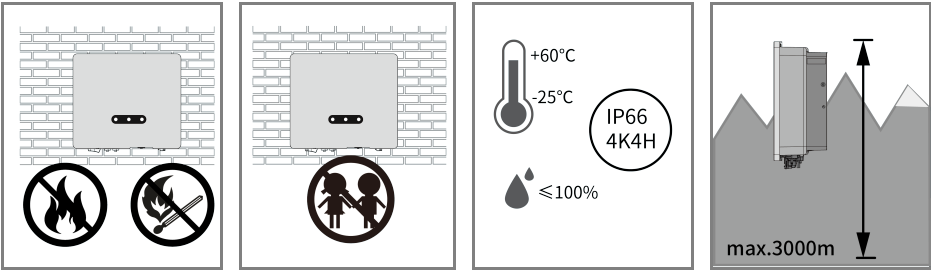
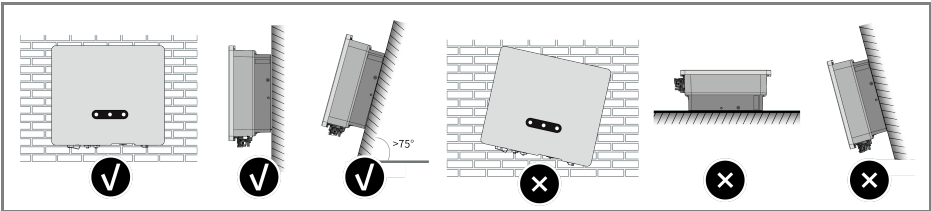
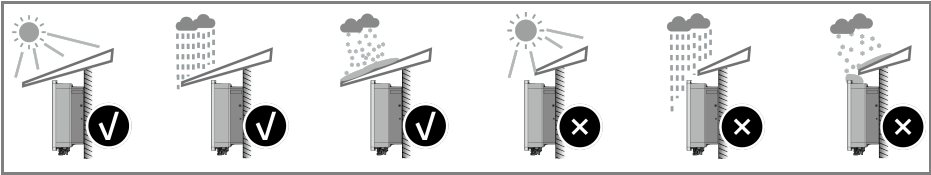
No.	Name
1	DC-switch
2	DC input port
3	COM1&COM2: RS485 communication port
4	COM3:Meter
5	COM4:Communication device port (Ai-Dongle/Wi-Fi Stick)
6	Additional grounding screw
7	AC output port

5 Scope of Delivery

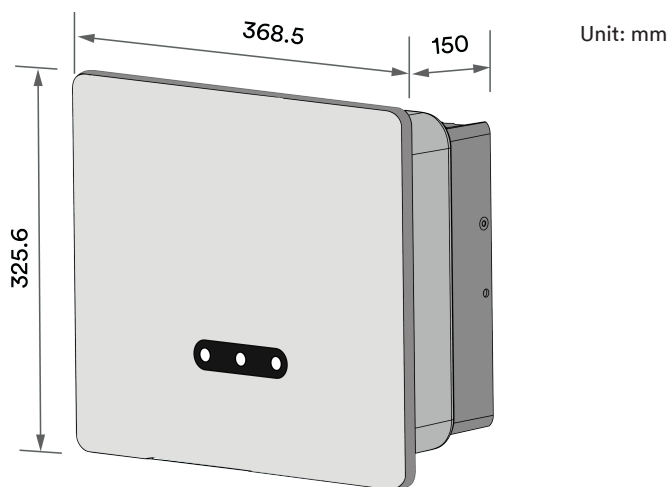


NO.	Name	Quantity
A	Inverter	1
B	Mounting-bracket	1
C	DC connector	2
D	AC connector	1
E	Plug for Meter	1
F	Communication device (Ai-Dongle / Wi-Fi Stick)	1
G	RJ45 Connection waterproof housing	2
H	Screw accessory	1
I	Document package	1

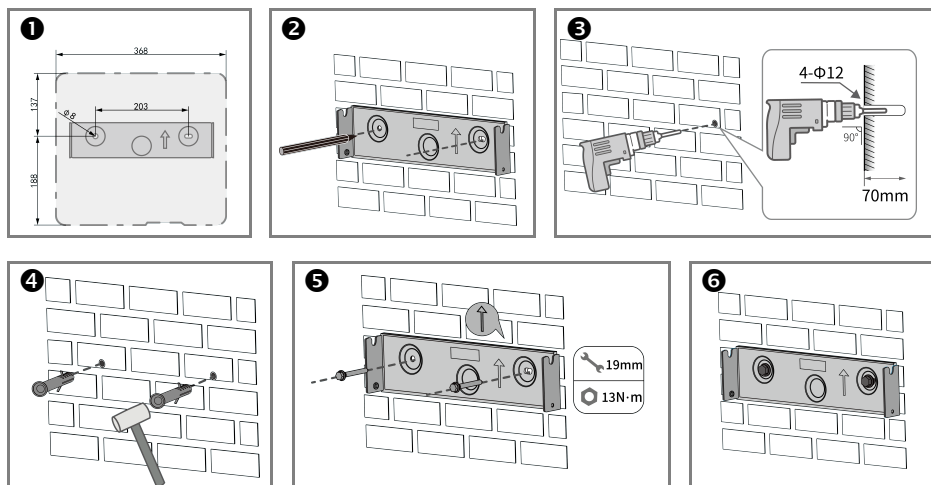
6 Mounting Environment

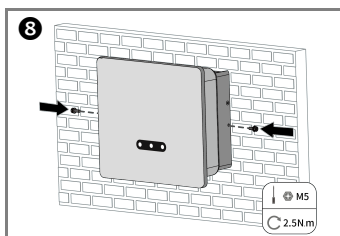
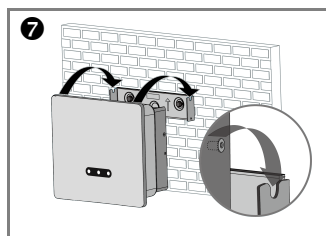


7 DIMENSIONS

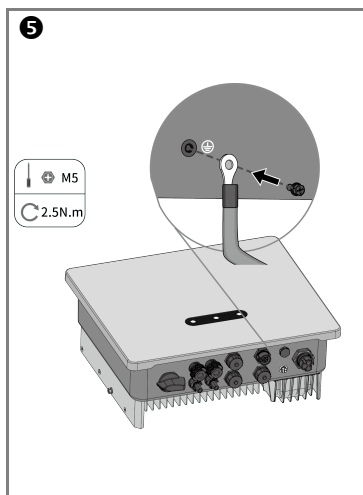
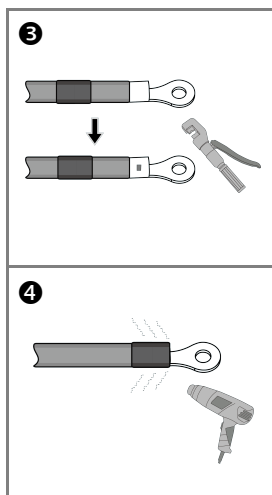
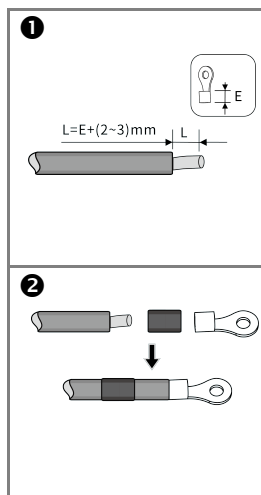


8 Mounting

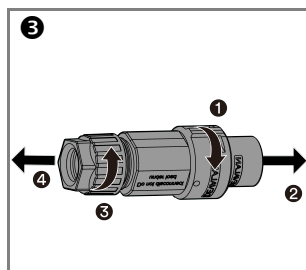
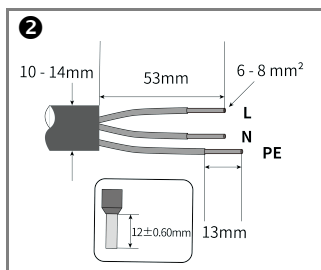
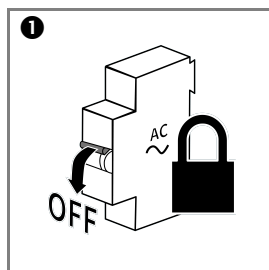


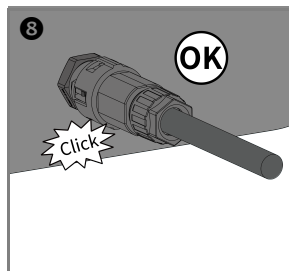
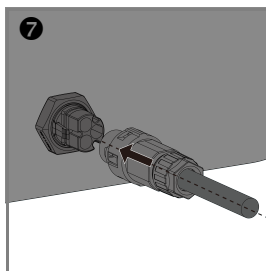
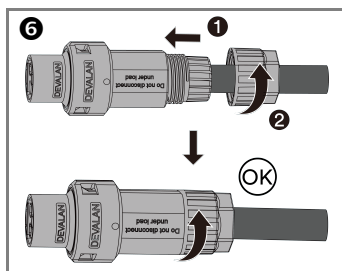
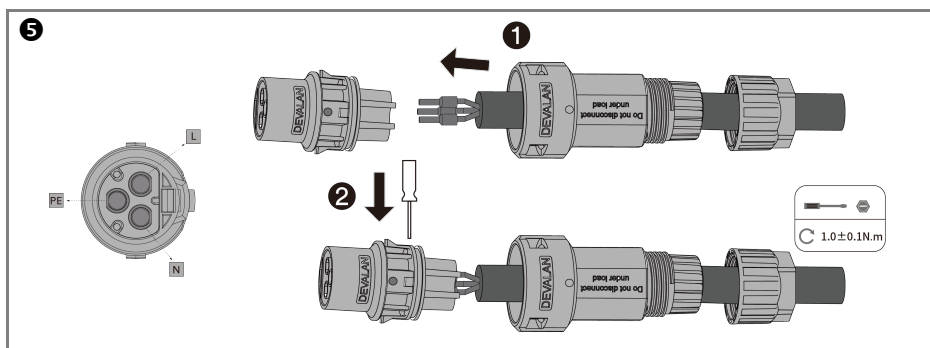
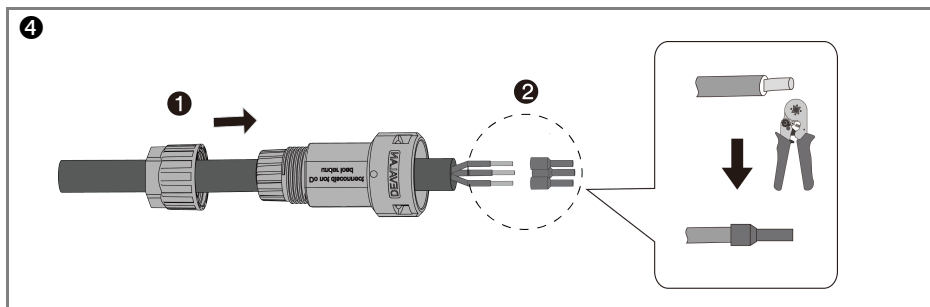


9 Second Protective Grounding



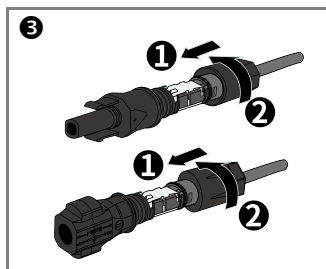
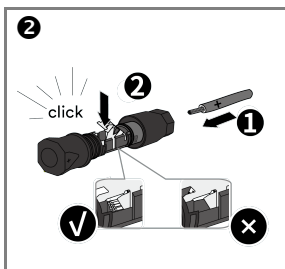
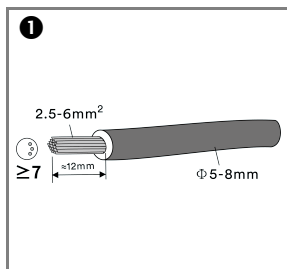
10 AC Connection

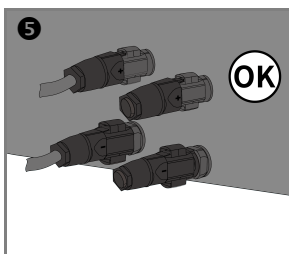
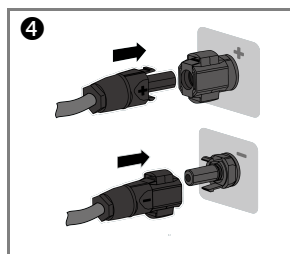




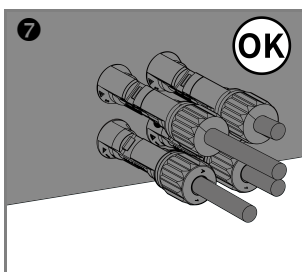
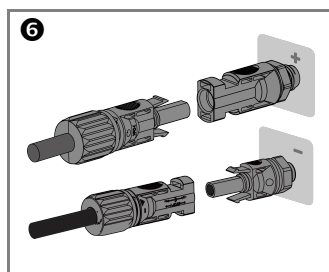
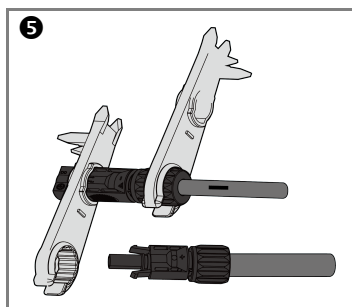
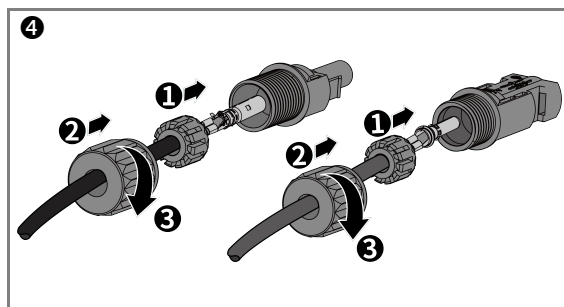
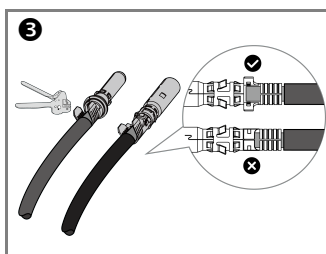
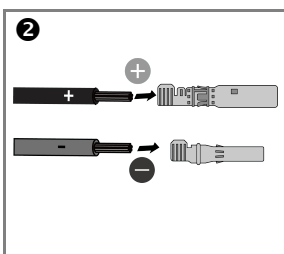
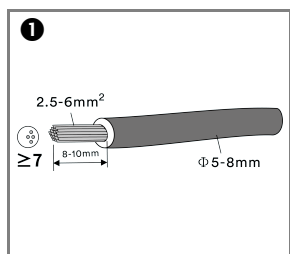
11 DC Connection

TYPE 1



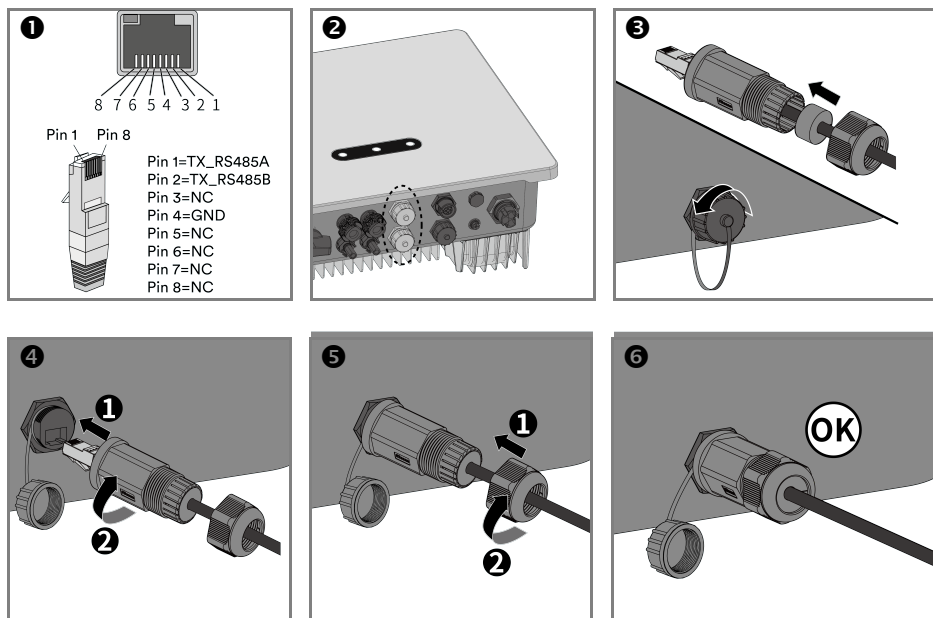


TYPE 2

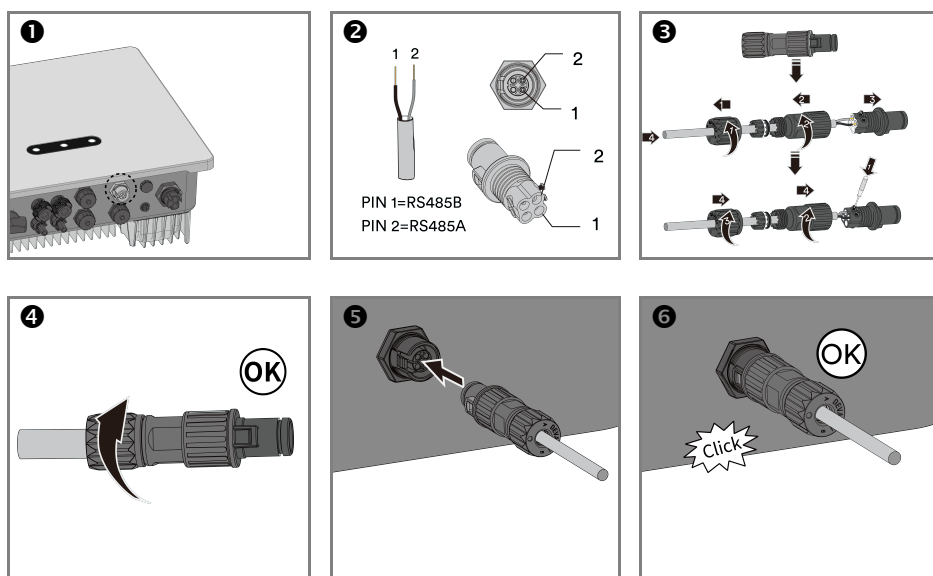


12 Communication Connection

12.1 COM1&COM2: RS485 communication connection

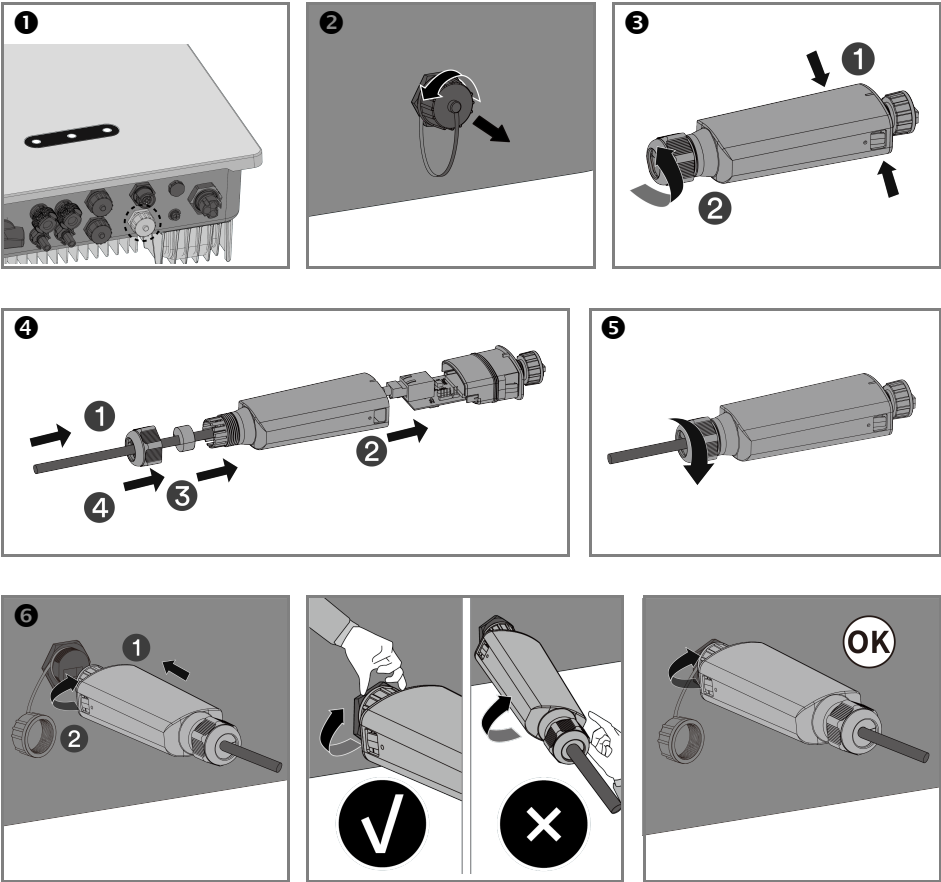


12.2 COM3: Meter connection

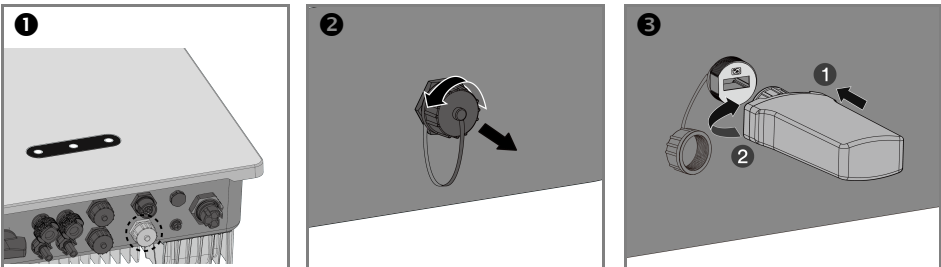


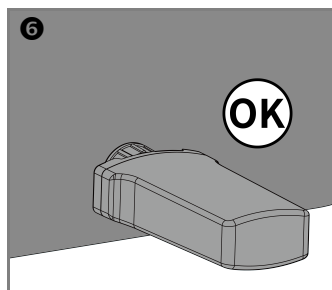
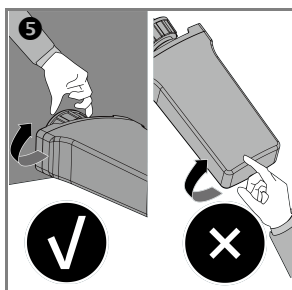
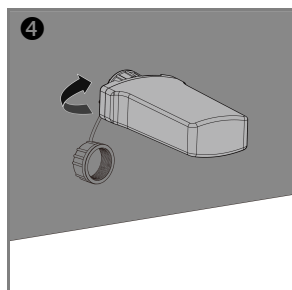
12.3 COM4: Communication device connection

Ai-Dongle connection



Wi-Fi Stick connection (optional)





13 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

TCL PV Tech (Shenzhen) Co., Ltd.

Web: www.tcl.com/global/en/photovoltaic

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iOS



Android

TCL

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PN: 540-500560-00

Quick Installation Guide



TCL-GT12K-G1/TCL-GT15K-G1
TCL-GT17K-G1/TCL-GT20K-G1

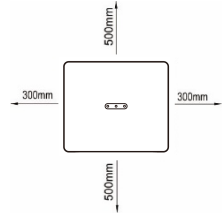
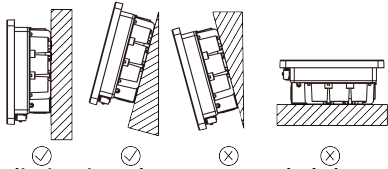
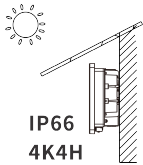


I. Safety Instruction

- 1. The contents of this document may be updated due to product upgrades or other reasons. Unless otherwise specified, this document only works as guide. All statements, information and suggestions in this document do not constitute any guarantee.
- 2. This product can only be installed, commissioned, operated and maintained by technicians who have carefully read and fully understood the user manual.
- 3. This product must only be connected with PV modules of protection class II (in accordance with IEC 61730, application class A). PV modules with a high capacitance to ground must only be used if their capacity does not exceed 1μF. Do not connect any sources of energy other than PV modules to the product.
- 4. When exposed to sunlight, the PV modules generate dangerous high DC voltages which is present in the DC cable conductors and live components. Touching live DC cable conductors and live components can result in lethal injuries due to electric shock.
- 5. All components must remain within their permitted operating ranges at all times.
- 6. The product complies with Electromagnetic compatibility 2014/30/EU, Low Voltage Directive 2014/35/EU and Radio Equipment Directive 2014/53/EU.

II. Mounting environment

- 1. Ensure that the inverter is installed out of the reach of children.
- 2. To ensure best operating status and prolonged service life, the ambient temperature of the location should be ≤40°C.
- 3. To avoid direct sunlight, rain, snow, pooling of water on the inverter, it is suggested to mount the inverter in places which are shaded during the majority of the day or to install an external cover that provides shade for the inverter. Do not place a cover directly on top of the inverter.
- 4. The mounting condition must be suitable for the weight and size of the inverter. The inverter is suitable to be mounted on a solid wall that is vertical or tilted backwards (Max. 15°). It is not recommended to install the inverter on walls made of plasterboards or similar materials. The inverter may emit noise during operation.



- 5. To ensure adequate heat dissipation, the recommended clearances between the inverter and other objects is shown in the image to the right:

III. Scope of delivery

Inverter x1	Wall mounting bracket x1	DC connector 12-15K Pro:3+3 17-20K Pro:4+4	AC connector x1	Documentation x1	Screw accessory x1	GPRS/WiFi stickx1 (optional)	RS485 Communication client x2

1

IV. Inverter's mounting

- 1. Use a Φ10mm bit to drill 3 holes at a depth of about 70mm according to the location of the wall mounting bracket. (Figure A)
- 2. Insert three wall plugs into the wall and fix the mounting bracket to the wall by inserting three Screws (SW10). (Figure B)
- 3. Hang the slot on the back of the inverter to the hook on the top of the mounting bracket. (Figure C)
- 4. Secure the inverter to the mounting bracket on both sides using two M5 screws. Screwdrivertype:PH2, torque:2.5Nm. (Figure D)

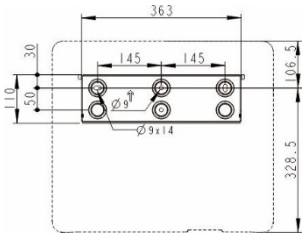


Figure A

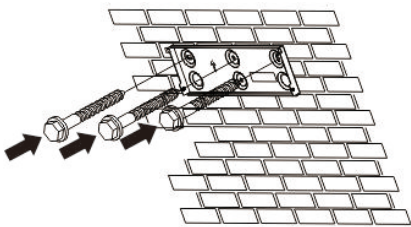


Figure B

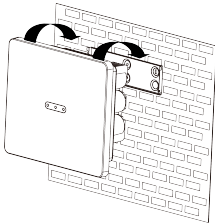


Figure C

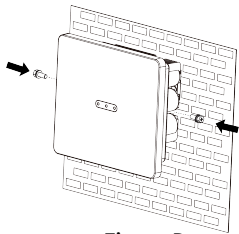


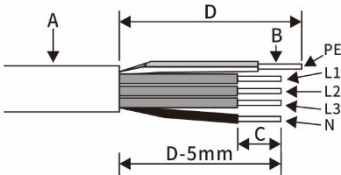
Figure D

V. AC connection



- All electrical installations must be done in accordance with all local and national rules.
- Ensure that all DC switches and AC circuit breakers have been disconnected and all power sources have been electrically isolated before any electrical terminations have been made. High voltages produced by the inverter may lead to electrical shock.
- In accordance with safety regulations, the inverter needs be correctly grounded. When a poor ground connection (PE) occurs, the inverter will report PE grounding error. Please check and ensure that the inverter is grounded firmly or contact TCL service.

- 1. Strip the AC cable as shown in the figure , and crimp the copper wire to the appropriate OT terminal (according to DIN 46228-4, provided by the customer).



Object	Description	Value
A	External diameter	18-21mm
B	Copper conductor cross-section	4-16mm ²
C	Stripping length of the insulated conductors	12mm
D	Stripping length of the cable outer sheath	75mm

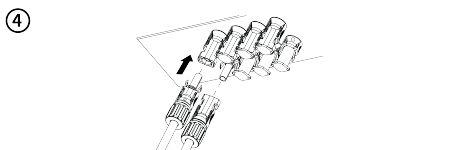
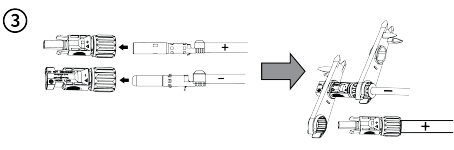
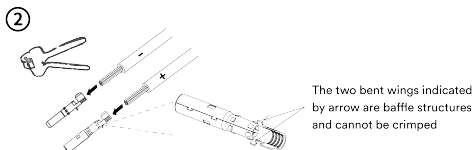
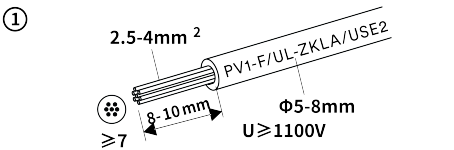
Note: the PE conductor is at least 5mm longer than the L and N conductors.

2

VI.DC connection




- 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.



3

VII. Communication setup

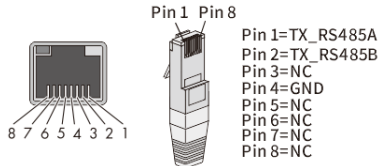


DANGER

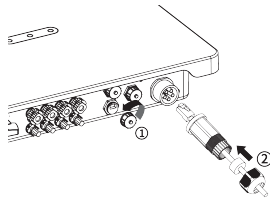
- Separate communication cables from power cables and serious interference sources.
- The communication cables must be CAT-5E or higher-level shield cables. Pin assignment complies with EIA/TIA 568B standard. For outdoor use, the communication cables must be UV-resistant. The total length of communication cable cannot exceed 1000m.
- If only one communication cable is connected, insert a sealing plug into the unused hole of sealing ring of the cable gland.
- Before connecting communication cables, ensure the protective film or communication plate attached to the communication opening on the inverter is sealed tightly.

1. COM1&COM2: RS485

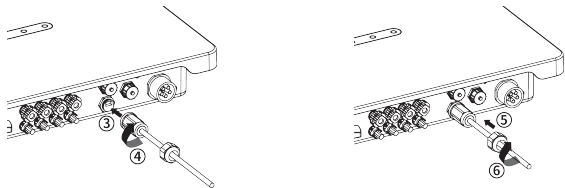
1) Pinout detail of the RJ45 interface on the inverter as follows:



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.



X. Contact

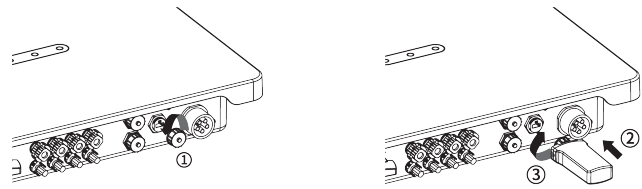
If you have any technical problems with our products, please contact our service. Provide the following information to assist in providing you with the necessary assistance:


- Inverter device type
- Inverter serial number
- Type and number of connected PV modules
- Error code
- Mounting location
- Warranty card

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Community, Fenghuang Street, Guangming District, Shenzhen, Guangdong.
<https://www.tcl.com/global/en/photovoltaic>



2. COM3: WiFi/4G






Notice

- Only applicable to the company's products, can't be connected to other USB devices.
- The connection refers to "4G/ WiFi-stick User Manual".

VIII. Commissioning



Notice

- Check that the inverter is grounded reliably.
- Check that the ventilation condition surrounding the inverter is good.
- Check that the grid voltage at the point of connection of the inverter is within the permitted range.
- Check that the sealing plugs in DC connectors and the communication cable gland are sealed tightly.
- Check that grid connection regulations and other parameter settings meet safety requirements.

1. Switch on AC circuit breaker between the inverter and the grid.
2. Switch on DC switch.
3. Please refer to the AiProfessional/TCL App manual for commissioning of the inverter via Wifi.
4. When there is sufficient DC power and the grid conditions are met, the inverter will start to operate automatically.

IX. EU Declaration of Conformity

Within the scope of the EU directives:
- Electromagnetic compatibility 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)
- Radio equipment directive 2014/53/EU (L 153/62-106 , May 22, 2014)(RED)



TCL PV Tech (Shenzhen) Co., Ltd. confirms herewith that the inverters mentioned in this document are in compliance with the fundamental requirements and other relevant provisions of the above mentioned directives.
The entire EU Declaration of Conformity can be found at <https://www.tcl.com/global/en/photovoltaic>

