LIVOLTEK

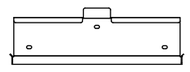
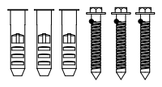
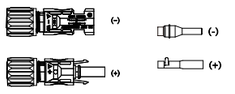
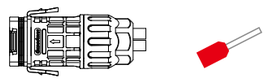
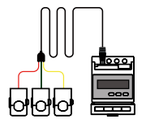
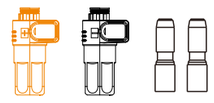
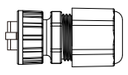
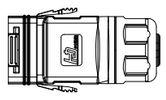
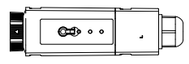
Quick Installation Guide

Hybrid Inverter(Three Phase)

HP3-5K/6K/8K/10K/12K D2

Scan the QR code to view more information

I Packing List

 Inverrter *1	 Wall Mounting Bracket *1	 Expansion Bolts *3	 Spare Screws *2
 AC Plug for EPS *1 AC Plug for Grid *1 PIN Terminals for Grid/EPS *10	 PV Connector *3 pairs PV Terminal *3 pairs	 MULTI Connector (16 pin) *1 16pin Terminals *16	 PE Cable Terminal *1 Fixed Screw *1
 Smart Meter *1	 Battery Connector *1 pairs Battery Terminal *1 pairs	 RJ45 Connector for BMS & DRM & Meter *3	 PAL Terminal *1
 Wi-Fi Logger	 L-type Hexagon Wrench *1	 Documents*3	

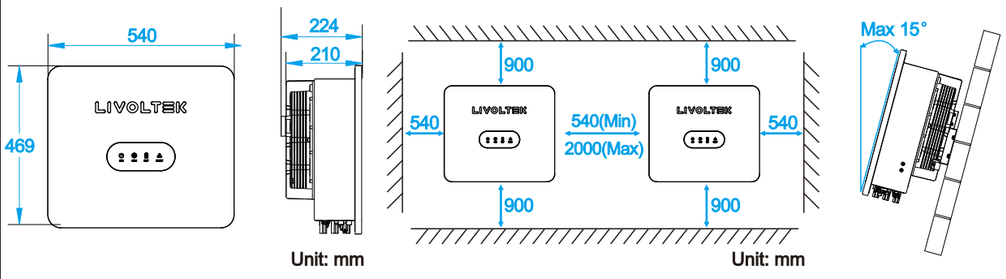
⚠ **Notice:** The number of PV connectorrs/terminals for HP3-5K/6K/8K are 2 pairs, and for HP3-10K/12K are 3 pairs.
On receiving the inverter, please check to make sure the packing and all components are not missing or damaged. Please contact your dealer directly for supports if there is any damage or missing components.

II Preparation Tools

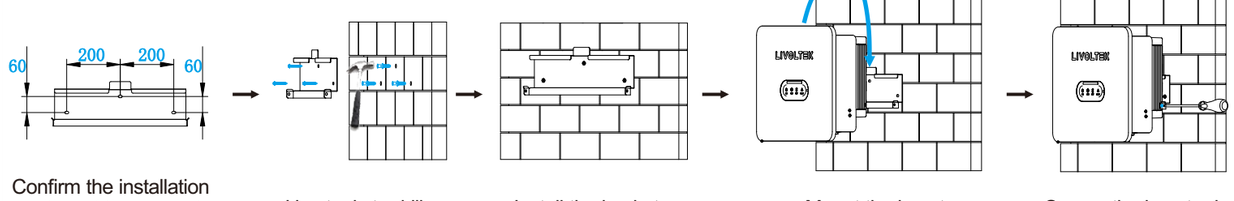
 Bit ⌀10 Hammer drill	 Rubber hammer	 Claw safety hammer	 Cross screwdriver	 Slotted screwdriver
 Spirit level	 Tape ruler	 Insulation tape	 Dustproof cover	 Protective glasses
 Euro terminal crimping tool	 Wire stripper	 Diagonal pliers	 OT terminals press clamp	Multifunction terminal  Crimping tool (RJ45)
 Utility knife	 Marker pen	 Hydraulic tong	 (Range ≥1100V DC) Multimeter	 AC/DC clamp-on ammeter

III Mounting

A Installation requirments



B Wall Mounting



Confirm the installation position of the bracket and mark the spots for drilling.

Use tools to drill holes at the pre-installation positions.

Install the backet.

Mount the inverter on the backet.

Secure the inverter by tightening the fixing screws on both sides.

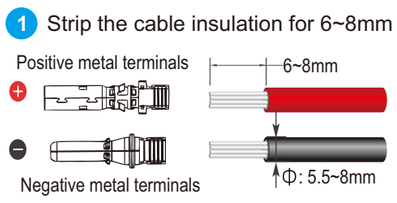
IV PV Connection

Materials Preparation
- PV connector (in accessories)
- PV pin terminal (in accessories)

Recommended Wire Specification

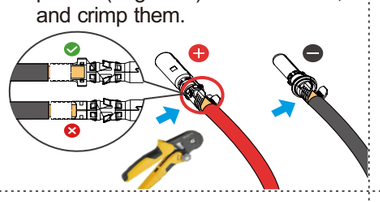
Model	Wire Size	Cable	Breaker
5~30kW	10~12AWG	4~6mm²	1100V/25A

1 Strip the cable insulation for 6~8mm

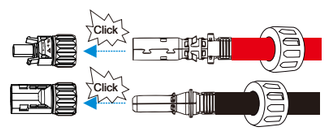


Notice
- Do not connect the AC circuit breaker before finishing electrical connection.
- The 15 - 30kW inverter is designed with 3 MPPT trackers, if the inputs of the PV panels are paralleled, please consult with your local distributor for technical support.

2 Connect the red(black) wire to the positive(negative) metal terminal, and crimp them.



3 Insert the crimped positive and negative power cables into the corresponding connectors until a “click” sound is heard.



Tighten the locking nuts on the positive and negative connectors.

5 Measure the voltage of every route Strings using a multimeter.

6 Insert the positive and negative connectors into their corresponding terminals of the inverter until a click sound is heard.

V PE Connection

Materials Preparation
- PE cable
- PE cable terminal (in accessories)

Recommended Wire Specification

Wire Size	Cable
10~12AWG	4~6mm²

1 Strip the cable insulation for 5~7mm

2 Insert the stripped wire through the heat shrink tube and into the terminal.

3 Insert the stripped wire through the heat shrink tube and into the terminal. And then heat the shrink hube.

4 Connect the PE cable to the inverter.

Notice
- Ensure that the PE cable is securely connected. Otherwise, electric shocks may occur.
- Do not connect the neutral wire to the enclosure as a PE cable. Otherwise, electric shocks may occur.
- The PE point at the AC output port is used only as a PE equipotential point, and cannot substitute for the PE point on the enclosure. Make sure the two terminals are both grounded reliably.

VI Grid Connection

Recommended Wire Specification

Model	Wire Size	Cable	Breaker
5~6kW	10~12AWG	4~6mm²	400/25A
8~12kW	10~12AWG	4~6mm²	400/32A

1 Strip the cable and crimp the terminals with crimping pliers

2 Set the parts on the cable, insert the terminal holes in sequence

3 Crimp the wire with a hexagonal screwdriver and turn the screw.

1.2±0.1 N.m

4 Combine the various parts of the terminal.

5 Unscrew the cap on the grid port and insert the connector into it.

Notice
- Make sure inverter is totally isolated from any DC or AC power before connecting AC cable.
- Only with the permission of the local grid department, the inverter can be connected to the grid.
- DO NOT connect the AC grid terminal and AC Backup (EPS) terminal together.
- When you want to use both gird power and backup power, please connect both with Grid output and EPS output. When you want to use gird only, please connect with Grid output and cover EPS output with the dust plug. When you want to use backup only, please connect with EPS output and cover Grid output with the dust plug.

VII EPS Connection

Recommended Wire Specification

Model	Wire Size	Cable	Breaker
5~6kW	10~12AWG	4~6mm²	400/25A
8~12kW	10~12AWG	4~6mm²	400/32A

1 Strip the cable and crimp the terminals with crimping pliers

2 Set the parts on the cable, insert the terminal holes in sequence

3 Crimp the wire with a hexagonal screwdriver and turn the screw.

1.2±0.1 N.m

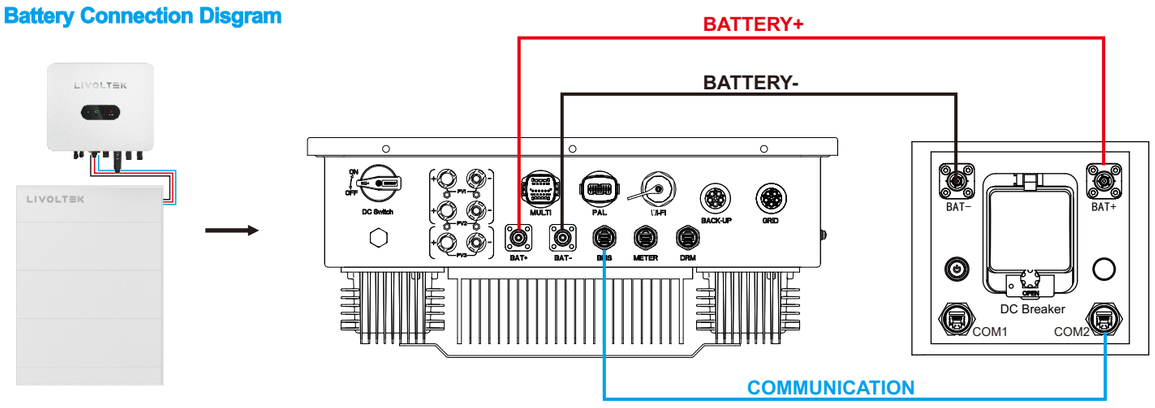
4 Combine the various parts of the terminal.

5 Unscrew the cap on the back-up port and insert the connector into it.

Notice
- Make sure inverter is totally isolated from any DC or AC power before connecting AC cable.
- DO NOT connect the AC grid terminal and AC Backup (EPS) terminal together.
- DO NOT connect the AC Backup (EPS) terminal to grid.
- When you want to use both gird power and backup power, please connect both with Grid output and EPS output. When you want to use gird only, please connect with Grid output and cover EPS output with the dust plug. When you want to use backup only, please connect with EPS output and cover Grid output with the dust plug.

VIII Battery Connection

A Battery Connection Disgram



Notice
- For batteries without a built-in DC breaker, make sure that an external DC breaker (800V/63A) connected.
- This inverter can only be connected with LIVOLTEK high-voltage lithium batteries with nominal voltage now.

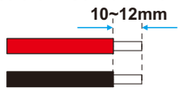
B Battery Cable Connection

Materials Preparation
- Battery cable
- A pair of battery cable connector and terminal (in accessories)

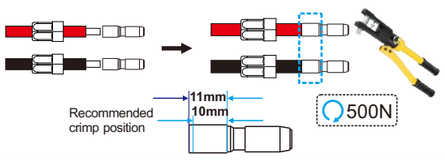
Recommended Wire Specification

Wire Size	Cable
5AWG	16mm²

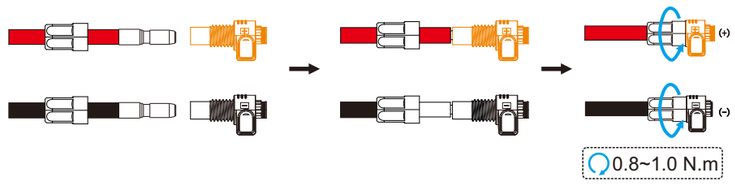
1 Strip the cable insulation for 10~12mm



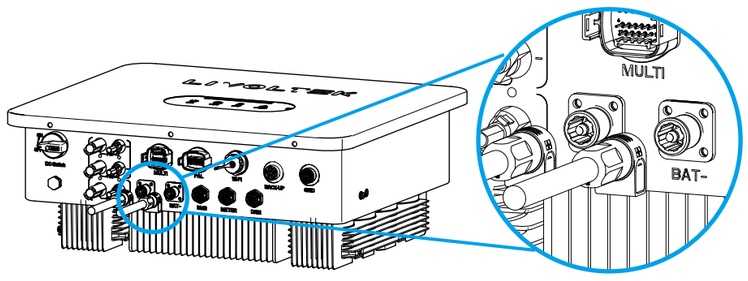
2 Insert the exposed areas into the BAT terminal and crimp them.



3 Insert the crimped cable into the connector, and thighten the plug end cap.



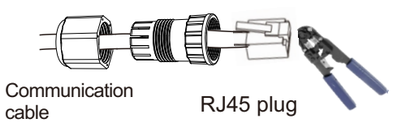
4 Connect the Battery cable to the Battery and make sure the positive and negative poles are correct.



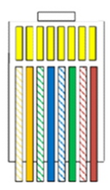
C BMS Connection

Materials Preparation
- A communication cable
- the RJ45 plug (in accessories)

1 Pass the connmunication cable through the connector
Insert the communication cable into the RJ45 plug in correct sequence and crimp it.

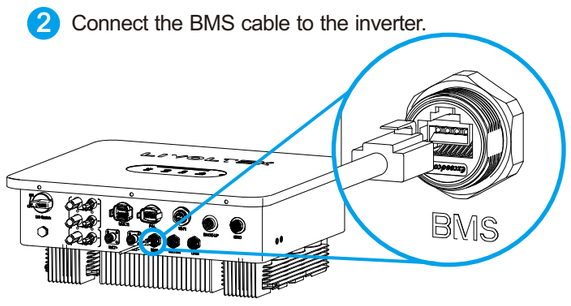


BMS Pin Definition for LIVOLTEK Li-Ion Battery



Color	Definition
orange white	BMS_CAN_H
orange	BMS_CAN_L
green white	NULL
blue	NULL
blue white	NULL
green	NULL
brown white	NULL
brown	NULL

2 Connect the BMS cable to the inverter.

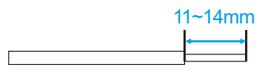


Notice
- After inserting the communication terminal, to ensure waterproofing, please tighten the nut on the terminal.

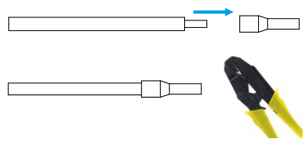
IX Multi COM Connection

Materials Preparation
- COM cable
- COM cable terminal (in accessories)
- COM cable connector (in accessories)

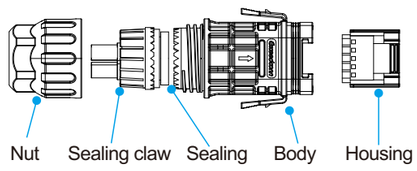
1 Strip the cable insulation for 11~14mm.



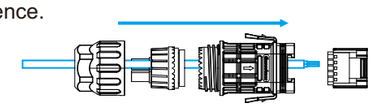
2 Insert the stripped cable into the connectors and crimp it.



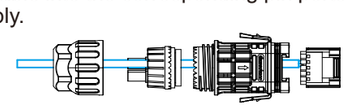
3 Understand the terminal construction.



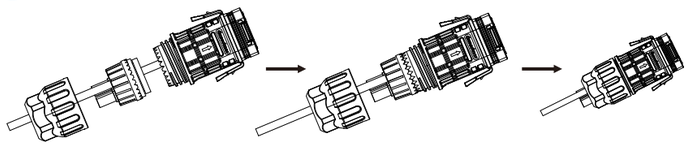
4 Pass the cable through “nut-sealing claw-sealing-body-housing” in sequence.



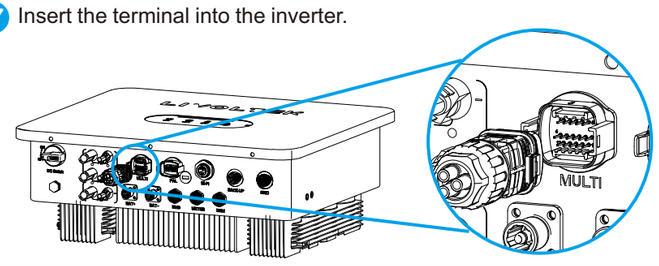
5 Insert cable into the corresponding pin ports, and complete the terminal assembly.



6 Complete the terminal assembly.



7 Insert the terminal into the inverter.

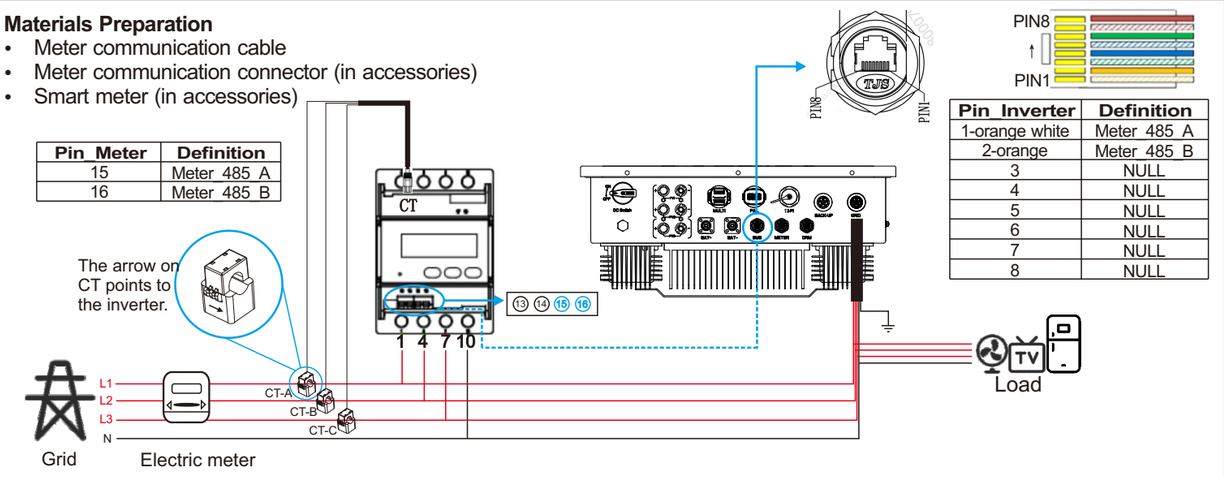


X Meter Connection

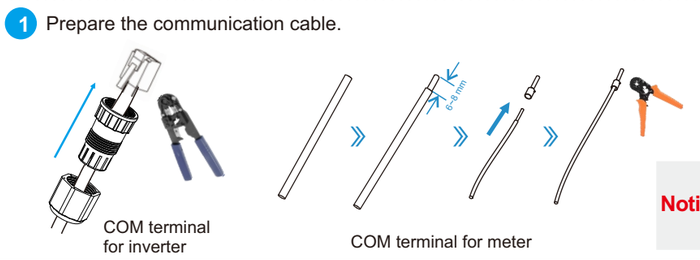
Materials Preparation
- Meter communication cable
- Meter communication connector (in accessories)
- Smart meter (in accessories)

Pin_Meter	Definition
15	Meter_485_A
16	Meter_485_B

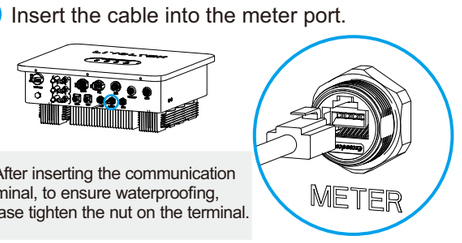
Pin_Inverter	Definition
1-orange white	Meter_485_A
2-orange	Meter_485_B
3	NULL
4	NULL
5	NULL
6	NULL
7	NULL
8	NULL



1 Prepare the communication cable.



2 Insert the cable into the meter port.



Notice
- After inserting the communication terminal, to ensure waterproofing, please tighten the nut on the terminal.

XI System Operation

Powering on the System

Step 1: Powe on the Grid;
Step 2: Power on the Battery;
Step 3: Power on the PV;
Step 4: Switch on the loads;
Step 5: Configure the Wi-Fi stick;
Step 6: Self-test in accordance with CEI 0-21 (Italy Only).

Powering off the System

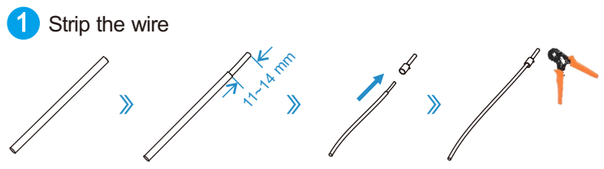
Step 1: Turn off the loads;
Step 2: Turn off the PV;
Step 3: Turn off battery;
Step 4: Turn off the main grid switch;
Step 5: Wait for at least 5 minutes after the LED and graphical display black out for the internal circuits to discharges energy;

Indicator	Color	Status	Description
SYS	Green	Always on	The inverter is in normal operation (on -grid or off -grid)
		Slow Flash	The inverter is in standby or startup
		Fast Flash	Upgrading
		Always off	System off
COM	Green	Always on	The meter and dongle are online
		Slow Flash	The meter is online and dongle is offline
		Fast Flash	The meter is offline and dongle is online, system is in upgrading
		Always off	The meter and dongle are both offline
BAT	Green (battery symbol)	Always on	Battery connect ion and BMS communicat ion are both normally
		Slow Flash	Battery is connected normally but BMS communication is abnormal
		Fast Flash	SOC is lower than 10 or battery is in upgrading
		Always off	Battery is not connected
BAT	Green (capacity symbol)	From bottom to t op	Battery is charging
		From top to botto m	Battery is discharging
		No cells on	SOC < 10
		One cell on	Battery is not charging or discharging and 10 ⩽ SOC < 25
		Two cells on	Battery is not charging or discharging and 25 ⩽ SOC < 50
		Three cells on	Battery is not charging or discharging and 50 ⩽ SOC < 75
		All cells on	Battery is not charging or discharging and 75 ⩽ SOC ⩽ 100
FAULT	Red	On	System failure
		Flash	EPS port overload
		Off	System is working normally

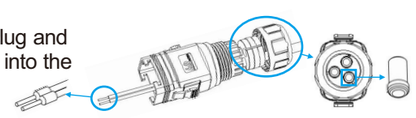
PAL Connection

Materials Preparation
- PAL cable
- PAL terminal (in accessories)

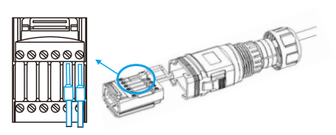
1 Strip the wire



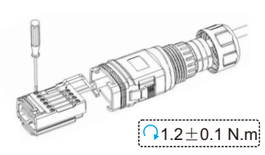
2 Remove the plug and insert the wire into the terminal.



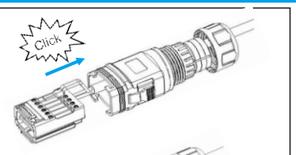
3 Insert the COM wire into the corresponding port.



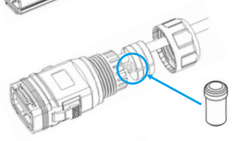
4 Use a flat-head screwdriver to press and connect the wire.



5 The rubber core should be loaded into the main body with an accompanying "click" sound

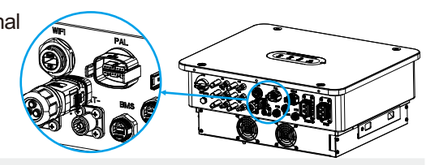


6 Load the plug into the main body and use a stopper to block the holes where no wires are installed.



7 Screw on the lock nut onto the main body.

8 Insert the terminal to the inverter



Notice
- This terminal is for parallel operation or generator function; if the user does not require this, it can be left uninstalled.
- The parallel communication cable requires a 4-core cable (network cable or twisted pair cable is recommended), to be provided by the user, with a length not exceeding 2m.
- When inserting the wire into the terminal, the rubber core area must not exhibit the phenomenon of straddling the line.

XIII Wi-Fi Connection

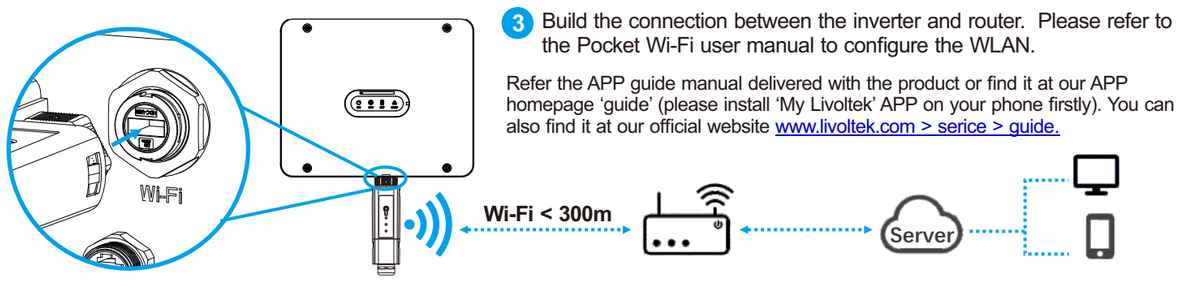
Materials Preparation
- LIVOLTEK PSD300 Wi-Fi Logger

1 Remove the waterproof lid from the Wi-Fi terminal.

2 Insert the Wi-Fi stick into the communication port.
Slightly shake it by hand to determine whether it is installed firmly.

3 Build the connection between the inverter and router. Please refer to the Pocket Wi-Fi user manual to configure the WLAN.

Refer the APP guide manual delivered with the product or find it at our APP homepage ‘guide’ (please install ‘My Livoltek’ APP on your phone firstly). You can also find it at our official website www.livoltek.com > serice > guide.



‘My Livoltek’ is a platform to communicate with your device via Wi-Fi, you can login on our web (link as below) on your computer, also you can scan the QR code to download the APP on your phone.

APP: Search for ‘My Livoltek’ on Apple App Store, Google Play.

Web Link1: https://www.livoltek-portal.com/
For Asia, Latin Ameriacan, Australia and others.

Web Link2: https://evs.livoltek-portal.com/
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