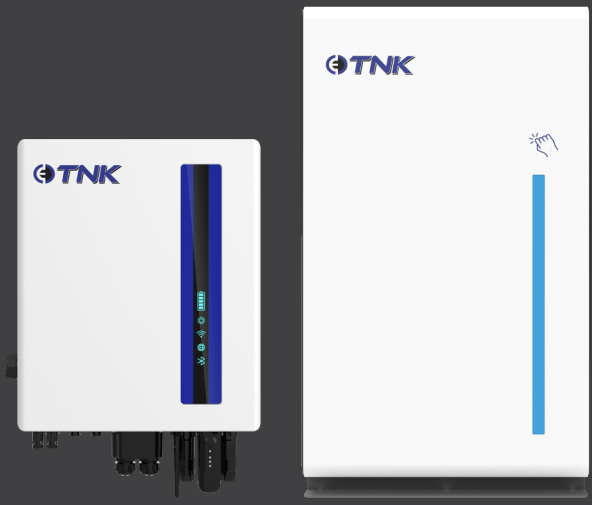
·TNK PV5/6
·TNK LV10



INSTALLATATION QUICK GUIDE

Inverter User Manual

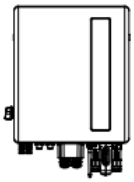
Battery User Manual

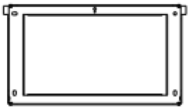
Commissioning Quick Guide

Ver. 1.0 / Last Updated - Mar. 2025

WHAT'S IN THE BOX

Inverter

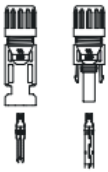

Inverter x 1


Back plate x 1


Fastening screw x 4

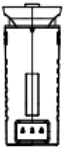

AC grid terminal x 1


AC backup terminal x 1


DC connector x 2


RJ45 connector x 8


Amphenol Plugs x 2

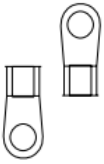

Wi-Fi Data Logger x 1


RS485 Meter cable x1
(For Eastron Meter)


Eastron Meter and CT x 1


Connector x 1

User Manual x 1


DC cable lugs x 2

Battery


Battery x 1


Battery bracket kit x 1


RJ45 Waterproof connector x 2


120Ω CAN resistor x 1


DC Power cable pair x 1


Communication cable x 1

User manual x 1


Expansion screw x 9


Positioning cardboard x 2

Tools Required


Technician Screwdriver


Torqx T20 Screwdriver


Wire Strippers 12AWG to 6AWG


Wire Strippers 20AWG to 10AWG


Crimping Tool


Channel Locks

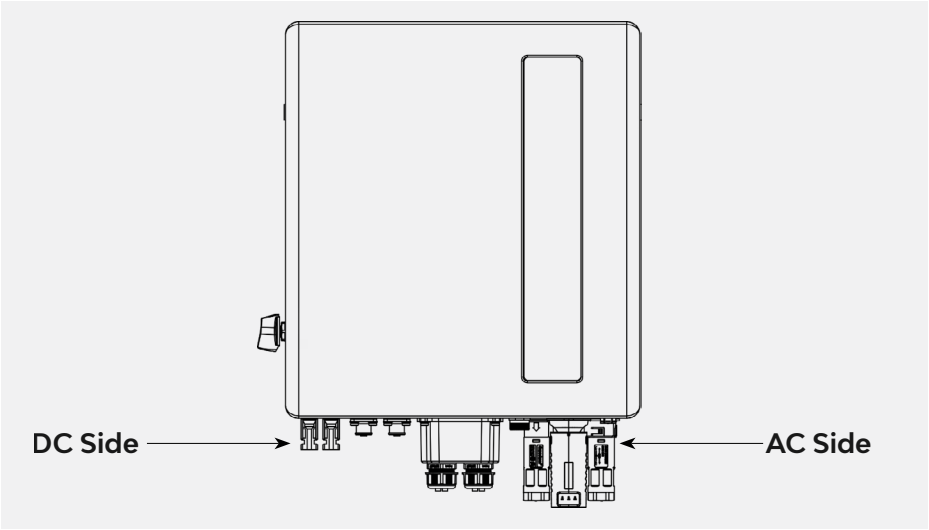

Multimeter (AC/DC amps)


Drill and Impact Driver

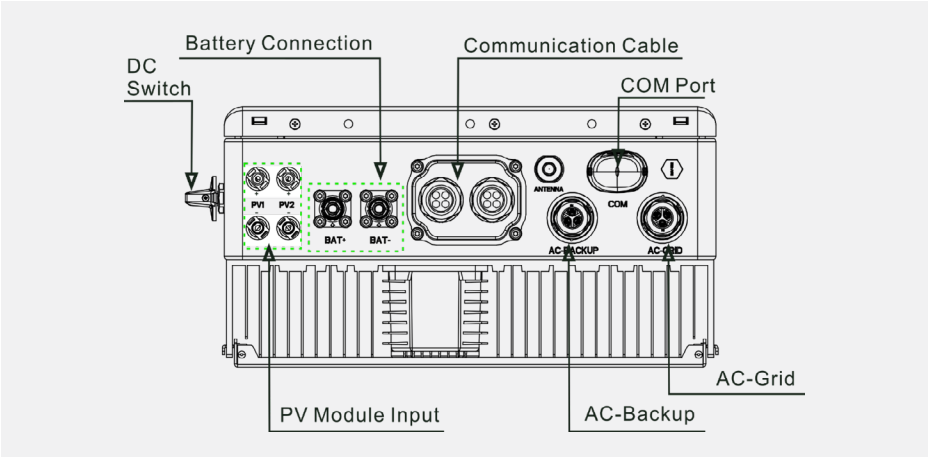

Torque Wrench Screwdriver


Smart Phone

INVERTER OVERVIEW

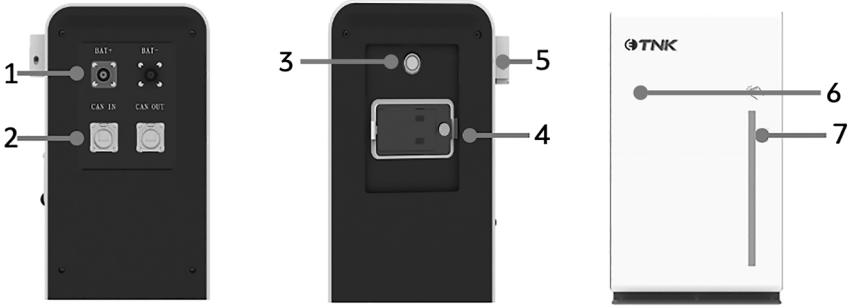


Front View



Bottom View

BATTERY OVERVIEW

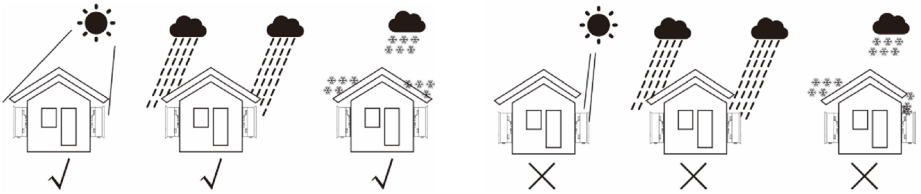


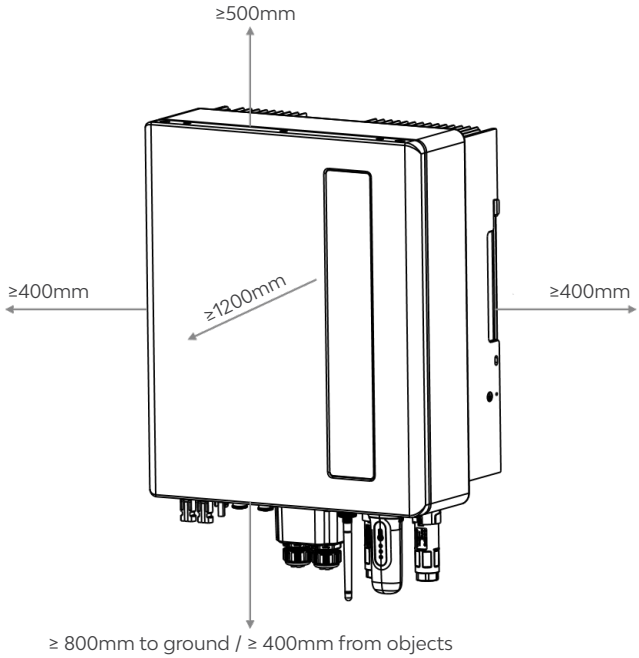
No.	Label	Description
1	BAT +	Positive DC battery connector
2	CAN IN	CAN/RS485 port that connects to inverter's CAN/ RS485 port via communication cable
3	BAT -	Negative DC battery connector
4	CAN OUT	Currently unused
5	Power Button	Toggles battery ON or OFF
6	DC Circuit Breaker	Inbuilt circuit protection
7	SOC LED Indicator	Indicates current battery state of charge – to enable, knock on top of battery slightly above LED indicator

Indicator status	Description
Blue light on	Regular operation
Red light on	Fault - discontinue use and contact technical support
Red light flashes	Temperature of voltage out of range - reset device
Red light flashes quickly	Fault - discontinue use and contact technical support
Blue and red lights flash alternately	Communication between BMS and light controller has been lost

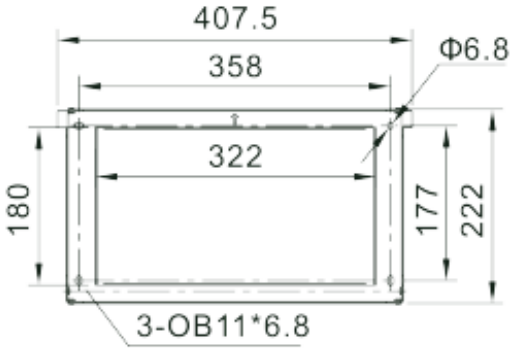
Step 1 : Select a suitable Location for the Inverter

• It is recommended to install the Inverter in a location which has no exposure to direct sunlight. Exposure to sunlight can affect the IP Protection rating of the Inverter and degrade the performance of the inverter.
• The Inverter should be installed with adequate clearances. It is recommended to allow a minimum of 400mm between the Inverters & 800mm between the Inverter & the ground.



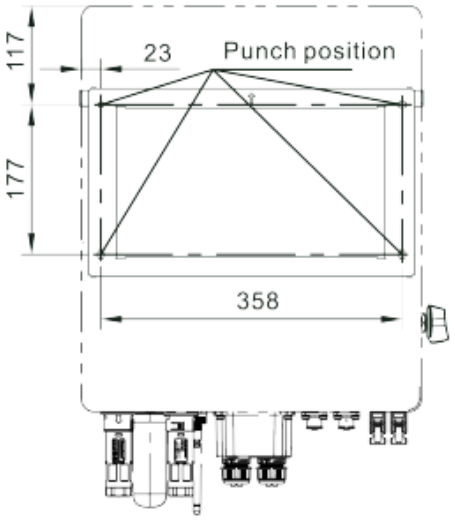


Step 2 : Mounting the Inverter



- The Inverter should be mounted vertically (+/- 5)
- The inverter can be installed on a backwards tilt up to 15
  • Do not mount the inverter tilted forward greater than 5
  • Do not mount the inverter horizontally.

- Adjust the mounting height of the Bracket & mark the mounting holes. Lift the Inverter & align the bracket so that the Inverter sits properly on the convex section of the Mounting bracket.
- Secure the inverter to the mounting bracket by fastening 2x screws (one on each side)



Step 3 : DC Cable installation

	Before connecting inverter, please make sure the PV array open circuit voltage is with in the limit of the inverter.
	Before connection, please make sure the polarity of the output voltage of PV array matches the "DC+" and "DC-" symbols.
	Please use approved DC cable for PV system.

1. Select a suitable DC cable and strip the insulation by 7±0.5mm.
2. Retrieve the DC terminal from the accessory bag, unscrew cap to disassemble, then remove the waterproof rubber ring.
3. Pass the stripped DC cable through the nut and waterproof rubber ring.
4. Connect the cable to the DC terminal and crimp it with a hydraulic crimping tool.
5. Insert the crimped cable firmly into the DC terminal, then insert the waterproof rubber ring into the DC terminal and tighten the nut.
6. Verify polarity is correct using a Multimeter.

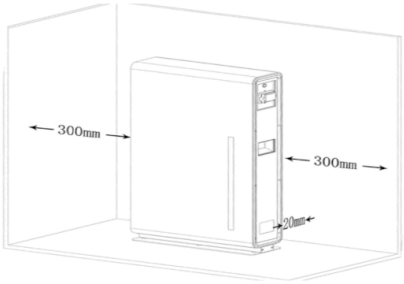
Step 4 : Battery Installation

IMPORTANT: Confirm battery is powered OFF before commencing electrical work
NOTE: An overcurrent protection and isolation device that operates both positive and negative conductors simultaneously is required between the inverter and the battery system and between parallel battery systems.

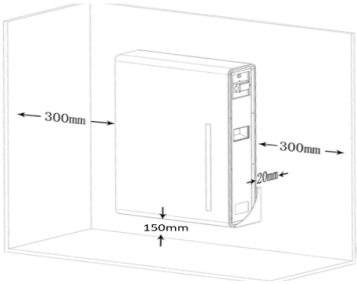
[ZJ Beny BDM-125 | DC Breaker 500V 125A]

	Caution: Make sure to connect the battery cables to the inverter in the correct polarity. The positive battery cable (Red Amphenol connector) is connected to the positive socket, and the negative battery cable (Black Amphenol connector) is connected to the negative socket. When the terminal is inserted into the corresponding socket, press the circular button on the terminal lightly and pay attention to the direction of the limit pin and the socket slot.

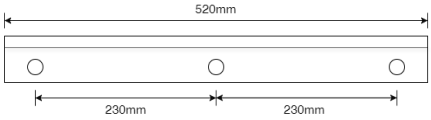
1. Ensure the installation surface can bear the total weight of the battery and appropriate fixings are used based in the surface being mounted to.
2. Ensure the battery meets the minimum spacing requirements.



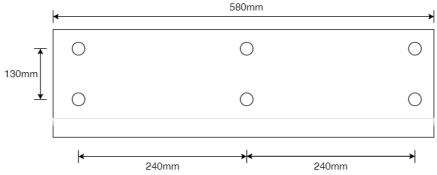
Floor installation



Wall-mounted installation



Top Wall Mount Bracket



Bottom Wall Mount Bracket

3. Perform the electrical installation:

- Earth Cable

  Connect crimped ground cable to battery and torque screw to 6NM – Connect the other side of the ground cable to a grounding point to 6NM.

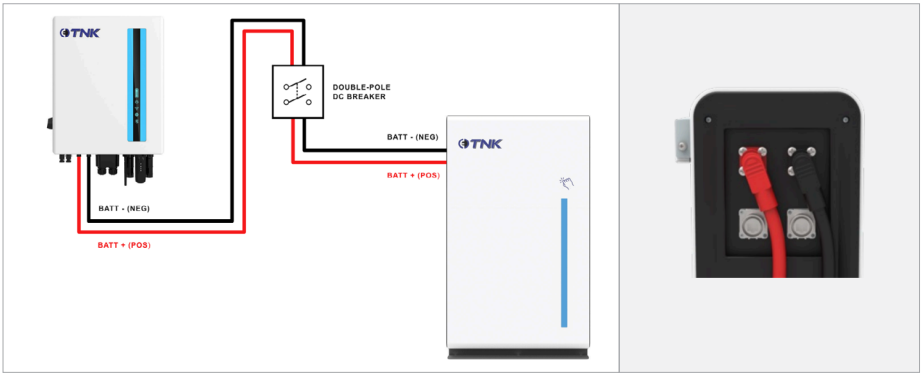
- DC cable

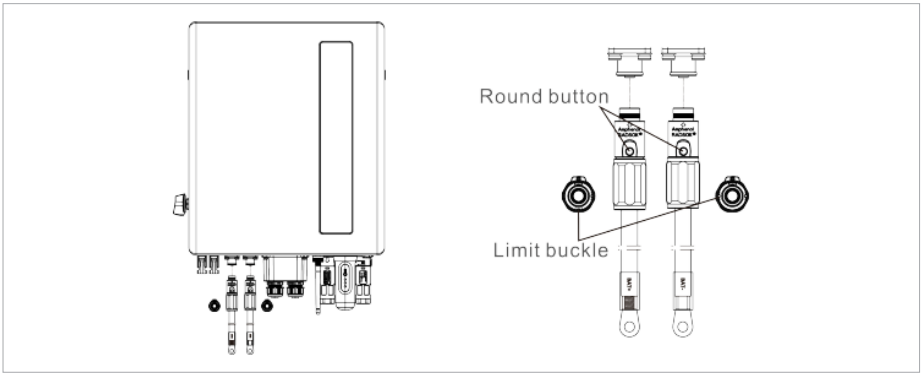
  • Use a suitable crimping tool for the DC Battery connections – follow the video link below for crimping the DC battery cable.

  'Temporary Link to the video'

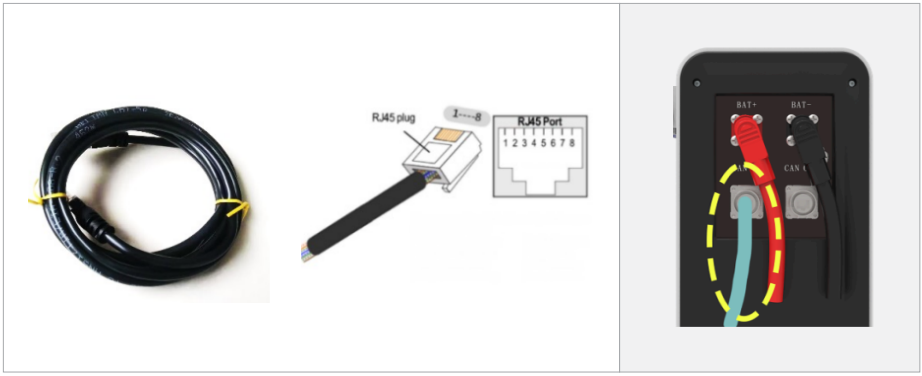
  • Connect the provided DC POS and NEG cables to the corresponding battery BATT+ (POS) and BATT- (NEG) quick connectors. Connect the other side of the DC POS and NEG cables to the external DC isolator/breaker.

  • Connect the other side of the external DC breaker/isolator to the DC POS and NEG connectors on the inverter.



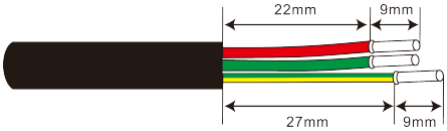


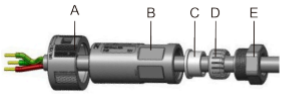
- Communication cable
  Connect the provided RJ45 communication cable between the CAN IN connector of the battery and the battery CAN/RS485 port of the inverter.



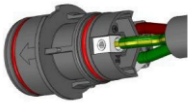
Step 5 : AC Cable Installation

- The AC conductors should be stripped with a minimum length of 9mm.
- Bootlaces may be required to prevent the escape of individual strands. Crimp the wires & tighten with a torque of 0.8 Nm.
- Push the plug into the socket completely, then rotate the lock ring in the direction indi cated by the marks on the lock ring.





A: Locker
B: Body
C: Seal body
D: Claw
E: Nut



Danger:
Do not connect the grid cables to the AC-BACKUP port. Doing so may expose hazardous voltages on the grid in the event of a local grid outage, which could lead to death or serious injury

Step 6 : Communication Cable Installation

- Loosen the cable gland & remove the rubber seal inside the cable gland based on the number of cables required.
- Please keep the unused holes sealed with the watertight caps.
- Insert the cables through the holes. (Maximum diameter: 6mm)
- Crimp the RJ45 connectors on to the cables according to the pin definitions

Installer Tip:

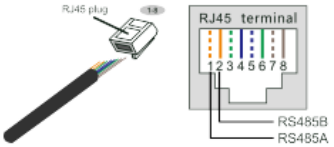
- The 4-hole fastening rings inside the cable gland have openings on the side.
- To install the cables, bend each slot open by hand and insert into the holes through the side openings

Described in the below section.

Meter Connection

Note:
'Meter' Port pin definition (EIA/TLA 568B):

- RS485 A on Pin 1
- RS485 B on Pin 2



RS485:

- Pin 9 – RS485B – Orange

Meter ⟵ Pin 9 ⟵ RS485B ⟶ Orange ⟶ RJ45 Terminal

- Pin 10 – RS485A – Orange white

Meter ⟵ Pin 10 ⟵ RS485A ⟶ Orange white ⟶ RJ45 Terminal

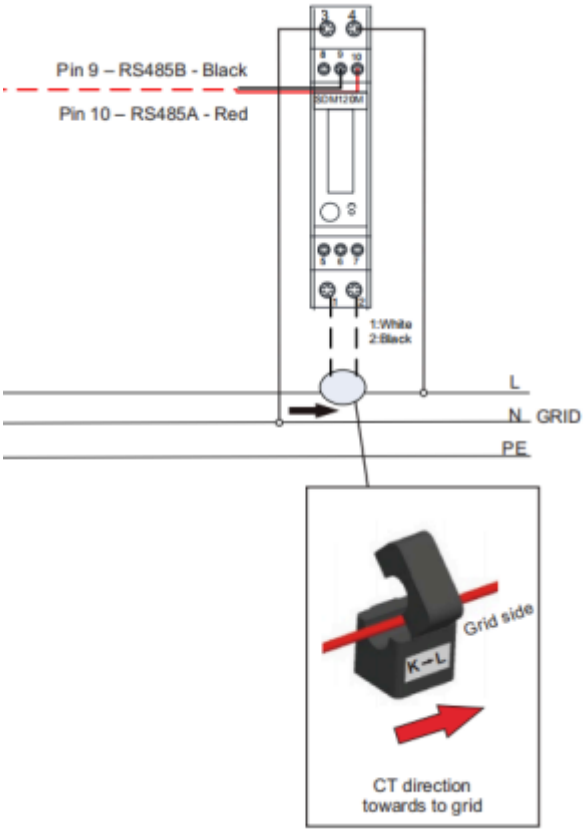
CT Connection:

- White – 1 (Left)

CT ⟵ White Cable ⟷ Pin 1 ⟶ Meter

- Black – 2 (Right)

CT ⟵ Black Cable ⟷ Pin 2 ⟶ Meter

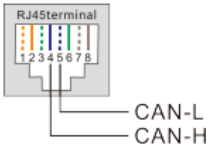


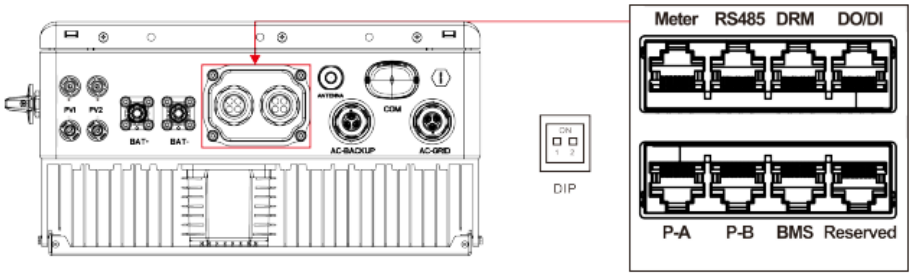
Installer Tip:
- Meter installation is mandatory.
- The smart meter with CT is pre-configured. Do not change any settings on the smart meter. Each smart meter can be used with only one TNK inverter.

BMS Connection

Note:
BMS port pin definition (EIA/TIA 568B):

- CAN-H on Pin 4
- CAN-L on Pin 5



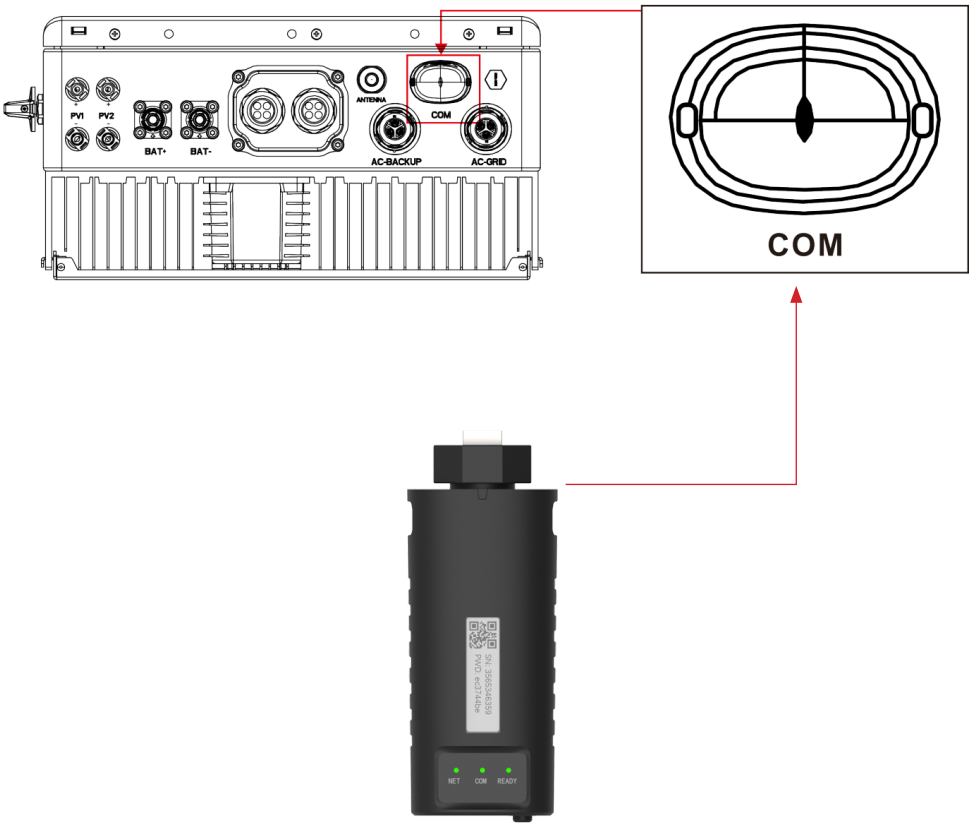


Installer Tip:
- RS485 connection between the Inverter & Meter can go up to 250m long. The maximum length of the CT cable is limited to 10m.
- 0.3mm2 cable is generally required for RS485 communication wiring.

Installer Tip:
If extending/fabricating a new metering communications cable, use shielded CAT6 cable, ensuring to terminate the drain wire at one end only.

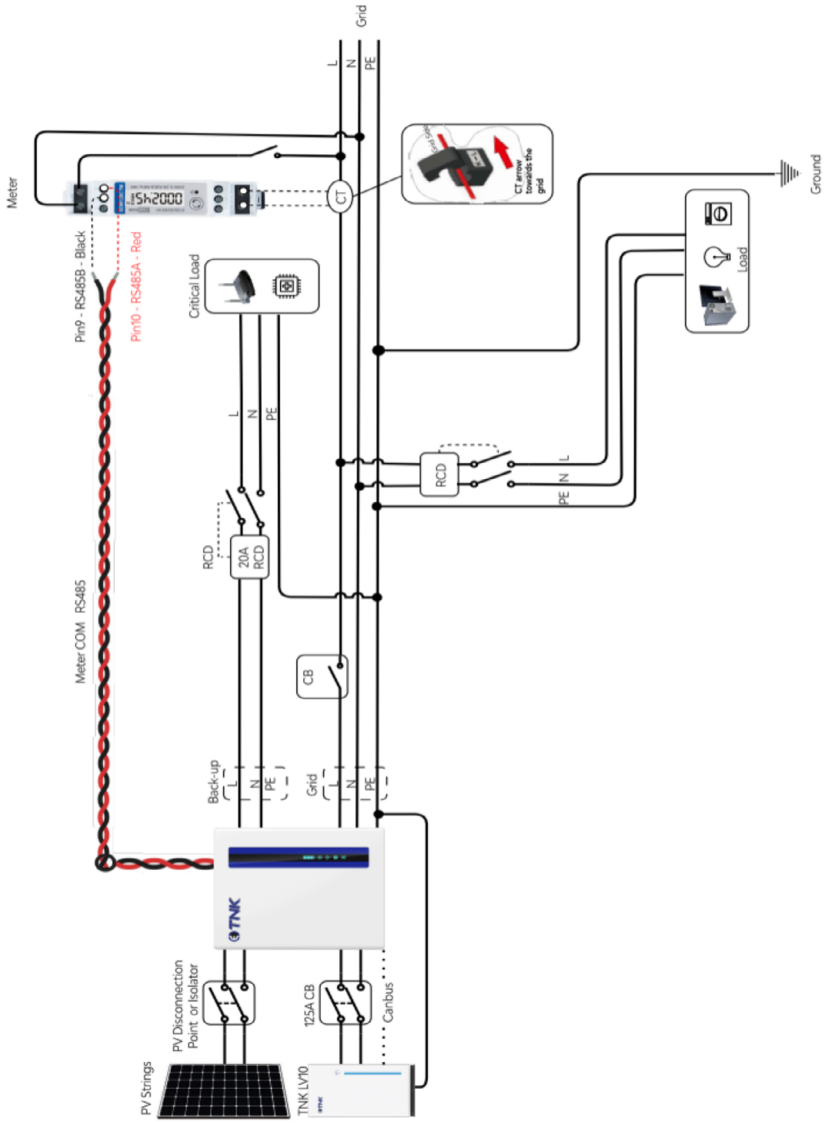
Monitoring Connection/Communication

To enable remote monitoring, connect the Clenergy Datalogger to the COM port at the bottom of the inverter.
This will allow you to track system performance remotely and ensure everything is running smoothly after commissioning.



Clenergy Datalogger

Single Phase Backup Wiring Diagram



A Clenergy Technologies Company

China: 999 -1009 Min'an Rd, Xiang'an District 361101, Xiamen, Fujian, China
Australia: 3/10 Duerdin Street, Clayton VIC 3168

Technical Support Contact

Phone: 1800 255 269
Email: support@cenergyess.com

Global Contact Numbers

CN: +86 592 311 0088 | **AU**: +61 3 9239 8088 | **JP**: +81 45 228 8226
DE: +49 (0) 40 3562 389 00 | **TH**: +66 (0) 2 277 5201 | **PH**: +63 977 840 7240

Global Partners

UK: +44 (0) 1604 877573

@ClenergyGlobal @ClenergyClub @ClenergyAUS @ClenergyJP @ClenergyThailand
@Clenergy @Clenergy_global @ClenergyClub @clenergy-japan
@Clenergy @クリーンエナジージャパン

MADE IN CHINA | DESIGNED IN AUSTRALIA