Deka duration®

BY MK BATTERY

USER MANUAL

DD-T-BOX

Release Date: Jan. 21, 2026

1.Safety

1.1 Statement

Please read the manual carefully before installing, operating, or maintaining the equipment. Pay close attention to all warning labels and safety instructions. Improper handling may result in overheating, fire, rupture, damage, or reduced capacity. MK Battery shall not be responsible for accidents caused by failure to follow operating instructions.

1.2 Use Suggestions

- Use the product only after fully understanding the contents of this manual. Improper use may result in direct, indirect, or accidental losses; MK Battery is not responsible for such damages.
- Information in this manual may change without notice.
- Do not use input voltages or currents outside the specifications, as this may permanently damage the product.
- Installation and wiring must be performed by professional technicians. For any assistance, contact MK Battery technical support promptly.

DD-T-BOX

2.Overview

2.1 Product Overview

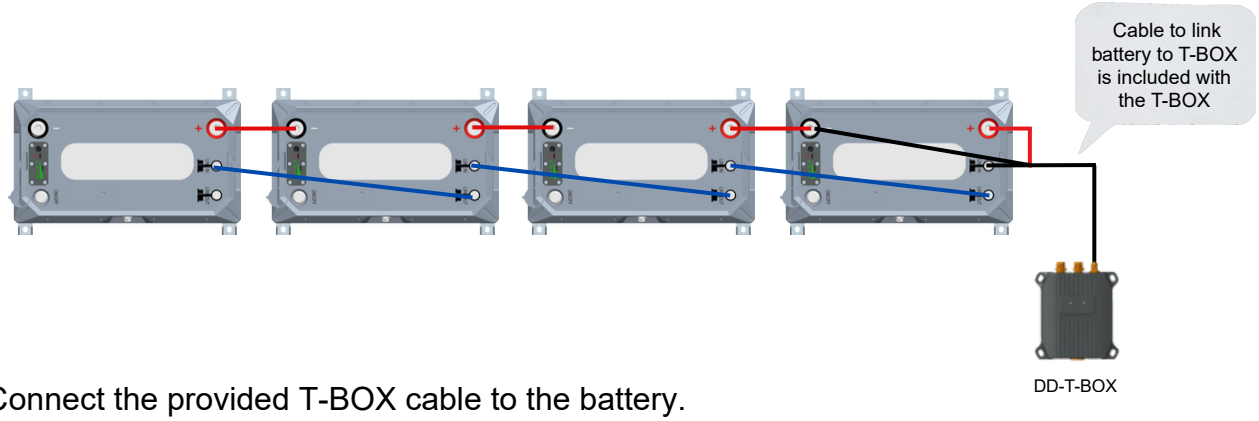
- The T-BOX collects system summary information and sets the inverter protocol through the DD-HIM-TAB or T-Monitor.
- The T-BOX uses CAN communication with the battery to read system data such as voltage, current, capacity, temperature, and configuration. It supports CAN, RS485, and LIN (for CIBUS) communication with inverters.
- The T-BOX serves as the communication interface for MODBUS and CANBUS communication between the batteries and the inverter.
- The T-BOX must be installed when inverter communication is required and the DD-T-MON monitoring device is being used.

2.2 Technical Parameters

NO	Technical Parameters	
1	Rated Input Voltage	9-60V
2	Rated Power	< 0.3W
3	Operating Current Maximum	20mA (VCC=12V)
4	Operating Current Minimum	6mA (VCC=48V)
5	Dimensions	4.61 in × 3.94 in × 1.36 in (117 mm × 100 mm × 34.6 mm)
6	Protective Level	IP65
7	Operating Temperature	-4°F to 158°F (-20~70°C)
8	Storage Temperature	-22°F to 176°F-(30~80°C)
9	Operating Humidity	5%-95% RH

3 Usage Steps

3.1 Connections



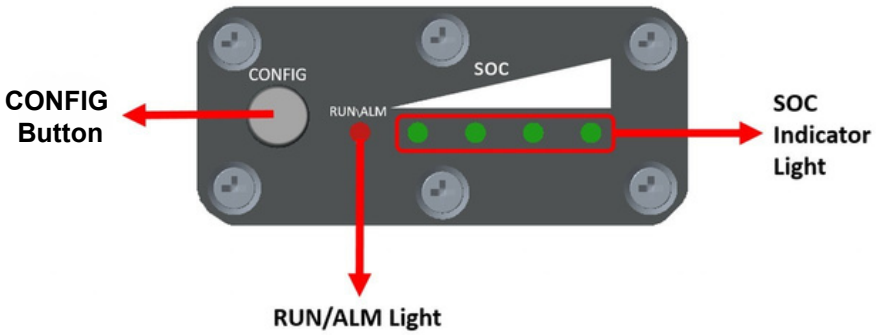
Connect the provided T-BOX cable to the battery.

- Connect the power leads to the battery (match positive and negative).
- Plug the battery communication lead into the LINK IN port on the Master battery.
- Plug the T-BOX communication lead into the port labeled “Battery”.

3.2 Monitor Operations

Connect the communication lines between the batteries:

- LINK OUT of Battery 1 → LINK IN of Battery 2.
- LINK OUT of Battery 2 → LINK IN of Battery 3, and so on.



Power on all batteries, then press the Config button on the first battery for 3+ seconds:

The batteries will enter disconnected mode.

- If the SOC lights flash simultaneously, battery is in disconnected mode.
- If the SOC lights do not flash simultaneously, try again.

Press the Config button on the first battery again for 10+ seconds to enter communication networking mode.

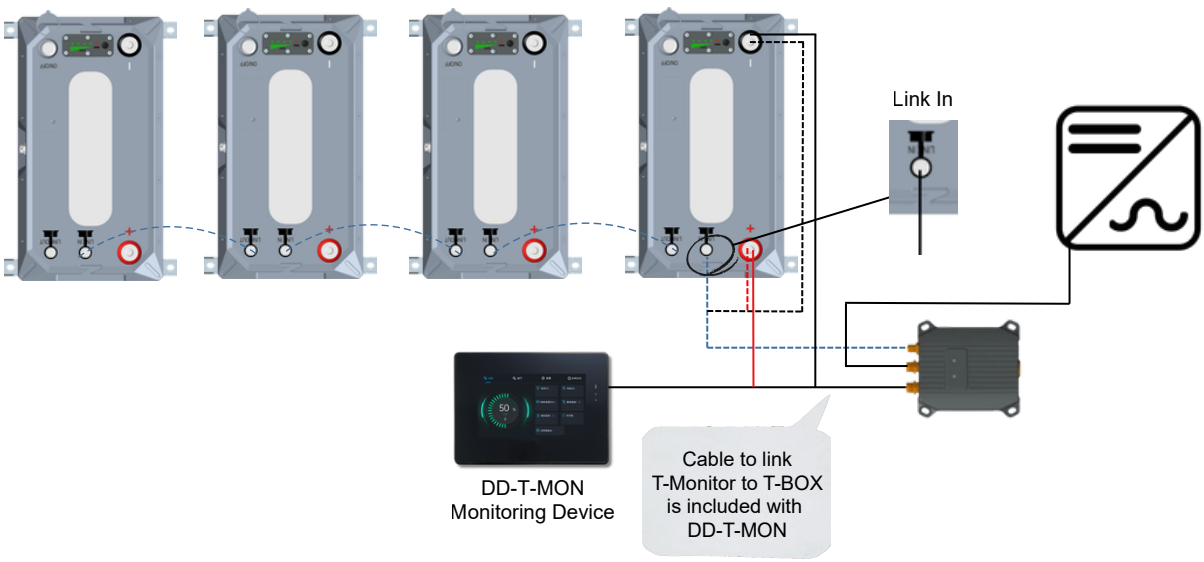
- All battery SOC lights will flash alternately.
- Networking may take 2–3 minutes.
- When finished, the SOC light will stop alternating and show the normal SOC.
- If the lights never stop alternating, networking failed — repeat the step.
    - (If you only have one battery, skip this step).

- Open the **DD-HIM-TAB** select communication networking, and fill in the system information (voltage, number of batteries, series/parallel configuration, etc.).
- Select the first battery as the main battery for communication.
    - Once networking is complete, the T-Monitor will display system information.

3.3 Powering the T-BOX

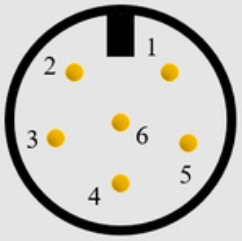
After networking is completed:

1. Power on the T-BOX.
2. Use the DD-HIM-TAB or the T-Monitor to select the correct protocol ID for the inverter.
3. Once the protocol is set, the T-BOX can communicate with one or multiple inverters as needed.

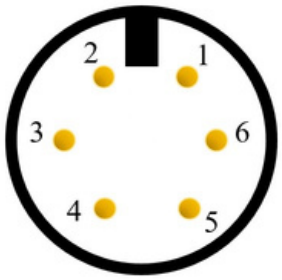


4. Terminal Definitions

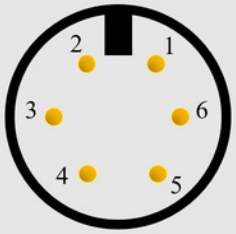
4.1 Battery Terminal Definitions

Port	Terminal Number	Definition	Introduction
BATTERY  M9-6P	1	P+	Positive electrode
	2	P-	Negative electrode
	3	CAN L1	CAN communication low signal
	4	CAN H1	CAN communication high signal
	5	RS485 B1	RS485 communication low signal
	6	RS485 A1	RS485 communication high signal

4.2 Inverter Terminal Definitions

Port	Terminal Number	Definition	Introduction
INVERTER  M12-6P	1	RS485 A2	RS485 communication high signal
	2	RS485 B2	RS485 communication low signal
	3	CAN L2	CAN communication low signal
	4	CAN H2	CAN communication high signal
	5	GND	Negative electrode
	6	LIN	LIN communication (For CIBUS)

4.3 Monitor Terminal Definitions

Port	Terminal Number	Definition	Introduction
MONITOR  M12-6P	1	SPARE	SPARE
	2	SPARE	SPARE
	3	SPARE	SPARE
	4	SPARE	SPARE
	5	RS485 A3	RS485 communication high signal
	6	RS485 B3	RS485 communication low signal

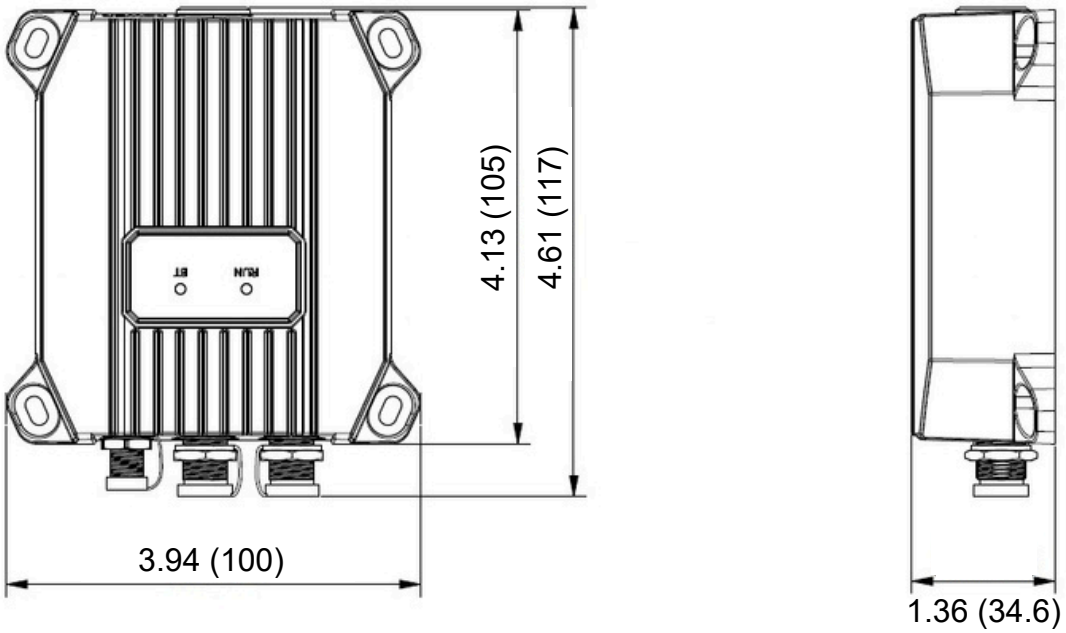
5.Dimensions and Indicator lights

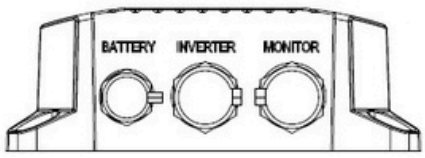
5.1 Dimensions

Dimensions	**L (with terminals)**	4.61 ± 0.08 in (117 ± 2 mm)
	L (without terminals)	4.13 ± 0.02 in (105 ± 0.5 mm)
	D	3.94 ± 0.02 in (100 ± 0.5 mm)
	H	1.36 ± 0.02 in (34.6 ± 0.5 mm)

5.2 Dimensions

- **Inches (mm)**



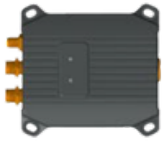
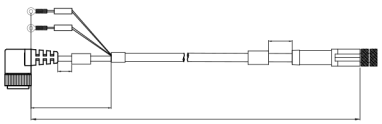


5.3 Indicator Lights

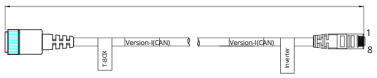
Explanation of Indicator Lights	
Run ●	When T-BOX has power, ‘RUN’ light turns on.
BT ●	When T-BOX is connected to DD-HIM-TAB, ‘BT’ light turns on.

6. Component List

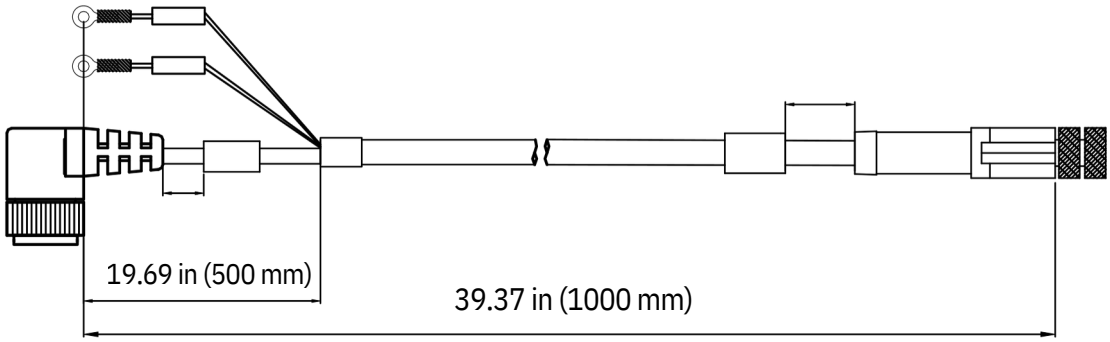
6.1 Included in the Box

SN	Component	Chart	QTY	Description
1	DD-T-BOX Communication Hub		1	Communication device between inverter and batteries
2	Power and Communication Cable		1	Power and communication connector to the battery or the T-BOX

6.2 <u>Not Included</u> in the Box; Must Be Purchased Separately

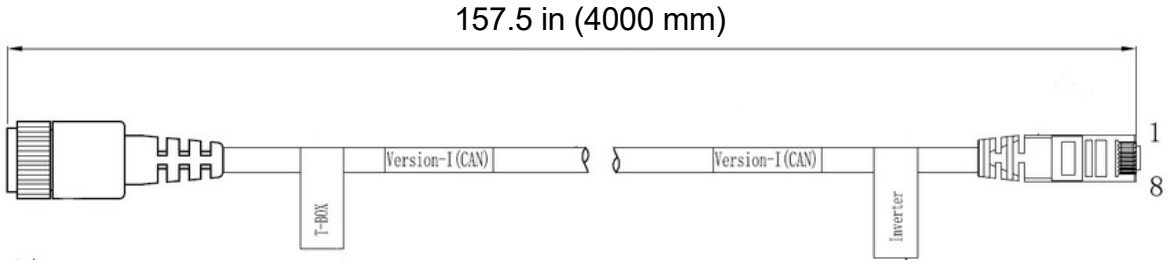
SN	Component	Chart	QTY	Description
1	Inverter Wire M12-RJ45		1	Version 1 Communication cable between T-BOX and Victron
2	Inverter Wire M12-Bare wire		1	Version 4 universal communication cable between T-BOX and inverter

6.3 Battery Connector

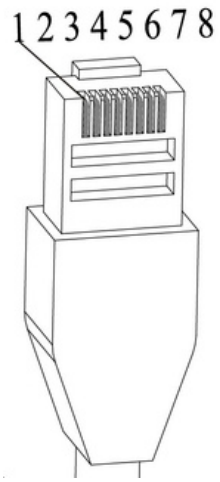


7 Inverter Cables

7.1 M12 to RJ45

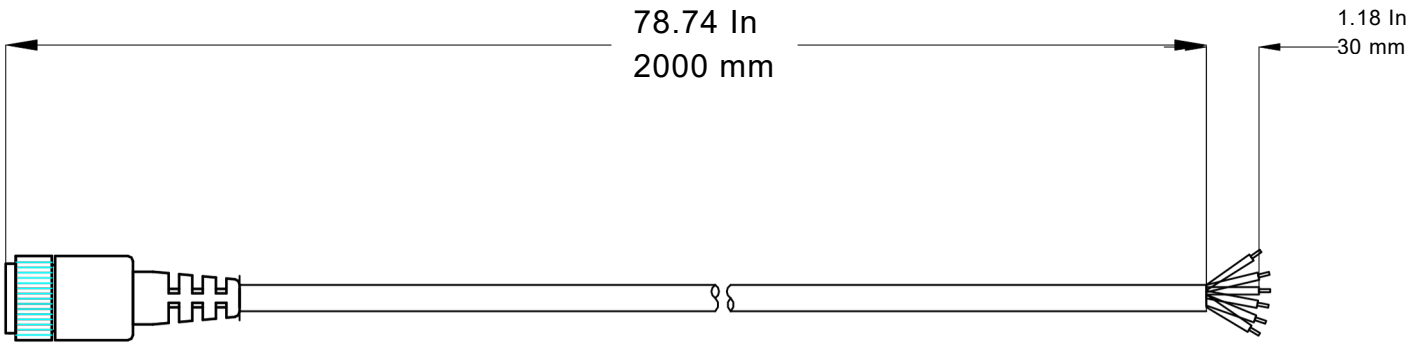


PIN	Wire Color
1	Orange-white
2	Orange
3	Green-white
4	Blue
5	Blue-white
6	Green
7	Brown-white
8	Brown



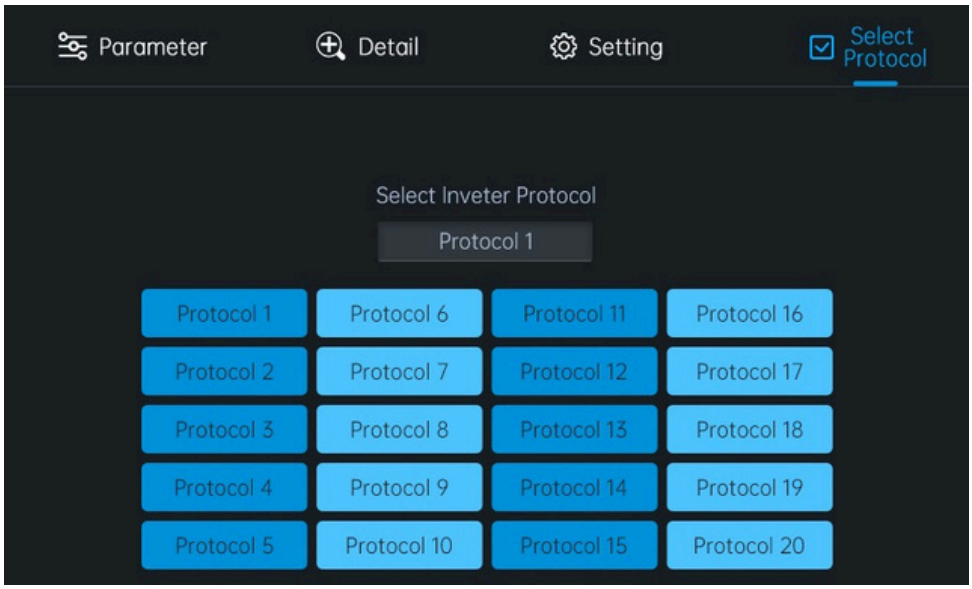
Wire	Signal	Inverter
Version- I (CAN)	7-CAN H 8-CAN L	Victron

7.2 M12 to Bare Wire



Wire	Signal	Wire Color	Inverter
Version-IV	RS485A	Orange	Others (Manual Wiring)
	RS485B	Orange-White	
	CAN L	Blue	
	CAN H	Blue-White	
	GND	Green	
	LIN	Green-White	

8. Inverter Protocol



Protocol ID	Inverter
Protocol 1	Victron / SMA / Studer Innotec / Sofar
Protocol 2	Sol-Ark / Solis / Goodwe / Deye / Growatt / SAJ / LUXPOWER / Megarevo / INVT / Sermatec / TBB / MUST / SUNGOLDPOWER SG / Sunsynk
Protocol 3	Schneider
Protocol 4	NMEA-2000 (Pending)
Protocol 5	CIBUS
Protocol 6	RV-C (Pending)
Protocol 11	Voltronic / SUNGOLDPOWER SPH / RCT / MPP / Alpha outback / Phocos
Others	Pending

MK Battery: 1631 South Sinclair Street • Anaheim, California 92806
Toll Free 800-372-9253 • Tel 714-937-1033 • Fax 714-937-0818 • Website: www.mkbattery.com • Email: sales@mkbattery.com