

Deka
duration[®]
BY MK BATTERY



USER MANUAL

DD-T-MON

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-MON

2. Overview

2.1 Product Overview

- The T-Monitor is a display device designed for use with **Deka Duration LiFePO4 Monobloc Batteries**.
- T-Monitor uses RS485 communication to provide key information such as voltage, current, remaining capacity, temperature, and system configuration.

2.2 Features

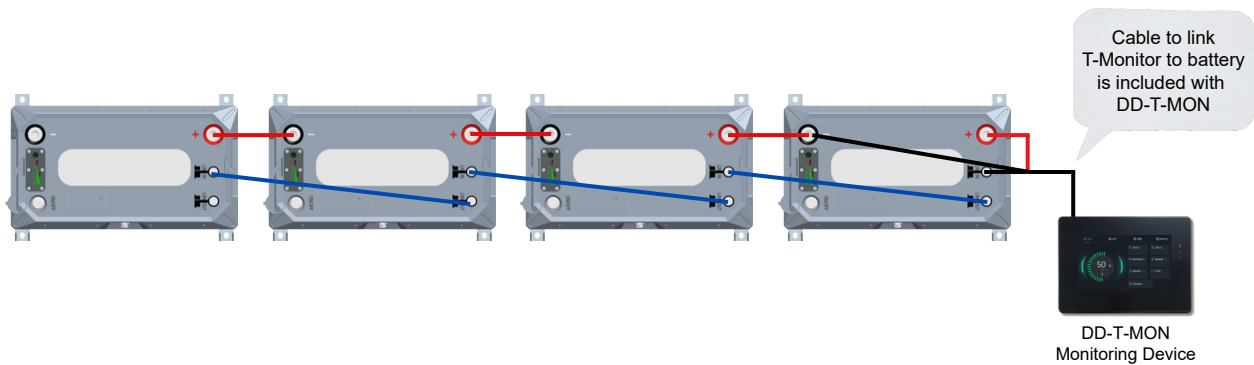
- Direct connection to a Deka Duration battery or through the T-Box.
- 5.0-inch IPS LCD touch screen with 800×480 resolution and 262K color display.
- Protective outer shell with UV resistance.
- Built-in speaker, LED light, and light-sensing (photosensitive) sensor.
 - Provides an audible alarm when the system enters an alarm, protection, or low-state-of-charge (SOC) condition.

2.3 Technical Parameters

NO	Technical Parameters	
1	Rated Input Voltage	9-60V
2	Rated Power	< 5W
3	Operating Current Maximum	170mA (VCC=12V)
4	Operating Current Minimum	55mA (VCC=12V)
5	Resolution	800*480
6	Operating Humidity	10%-90% RH
7	Protective Level	IP65 (Front)
8	Communication	RS485
9	Operating Temperature	-4°F to 158°F (-20~70°C)
10	Storage Temperature	-22°F to 176°F-(30~80°C)
11	Net Weight	0.75 lbs (340 g)
12	Type	LCD
13	Size	5 Inch

3 Usage Steps

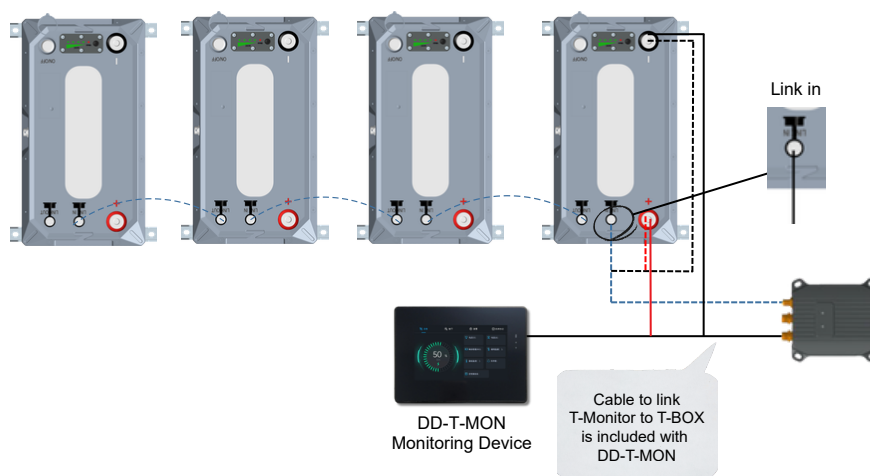
3.1 Connections



- Connect the provided T-Monitor cable to the battery.
 - Connect the T-Monitor power leads to the battery (match positive and negative).
 - Plug the communication lead into the LINK IN port on the Master battery.

Alternatively

- Connect the communication lead to the “T-Monitor” port on the T-BOX. Make sure the T-BOX power and communication cables are already connected to the batteries.

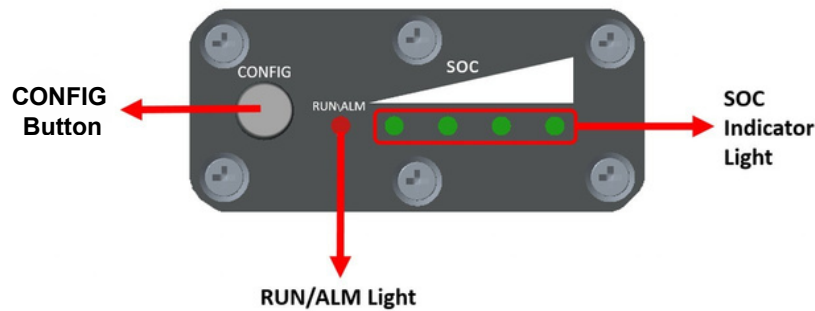


- For the T-Monitor to display information, put the batteries into communication networking mode. Follow section 3.2.

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.

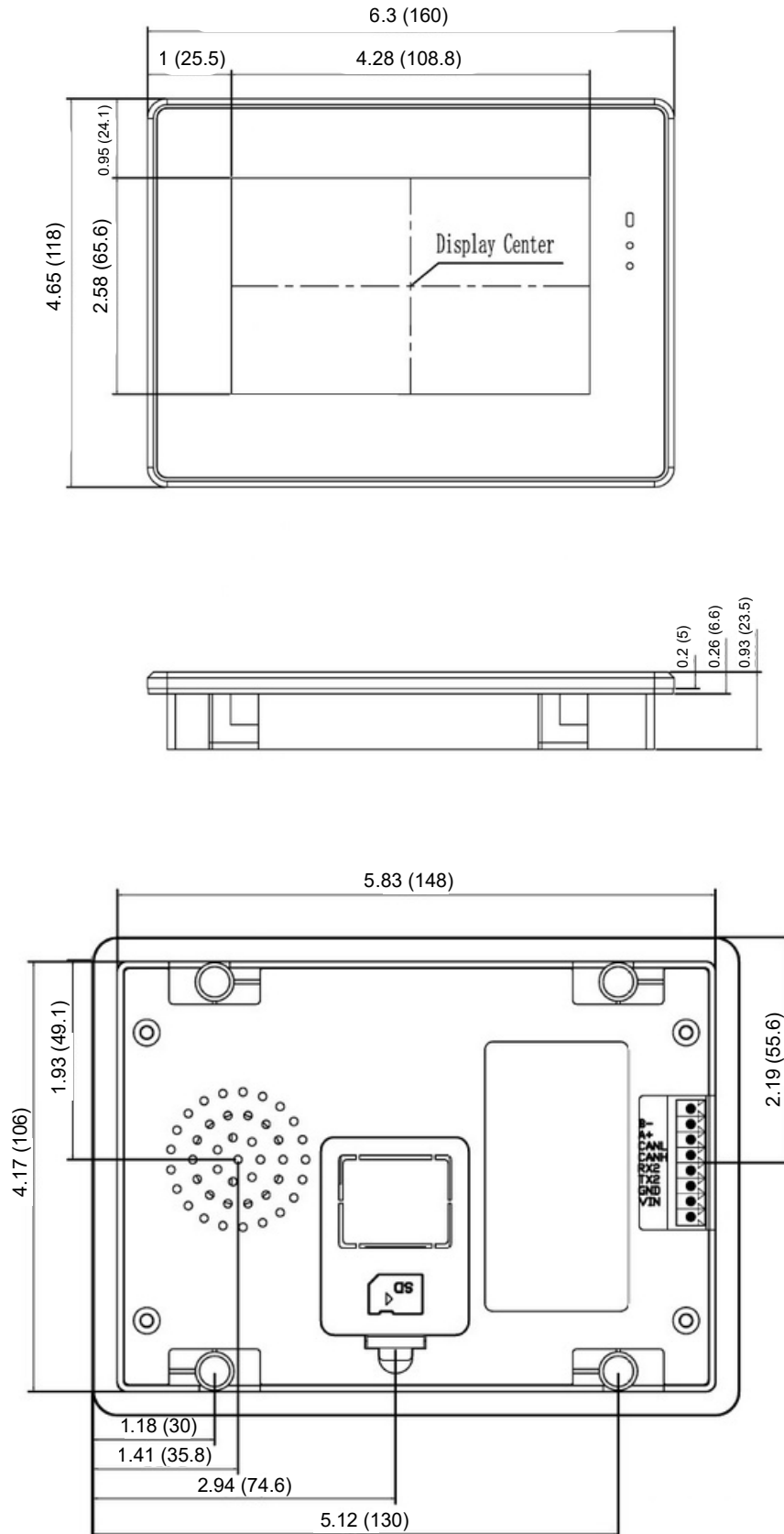
- All battery SOC lights will flash alternately.
- Networking may take 2–3 minutes.
- When finished, the SOC light will stop alternating and show the normal SOC.
- If the lights never stop alternating, networking failed — repeat the step.
 - (If you only have one battery, skip this step).
- Open the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

4. Terminal Definitions

Terminal Number	Definition	Introduction
1	RS485 B	RS485 communication low signal
2	RS485 A	RS485 communication high signal
3	CAN L	CAN communication low signal
4	CAN H	CAN communication high signal
5	RX	RS232 communication receive
6	TX	RS232 communication transmit
7	GND	Negative electrode
8	VIN	Positive electrode (9-60V)

5. Dimensions

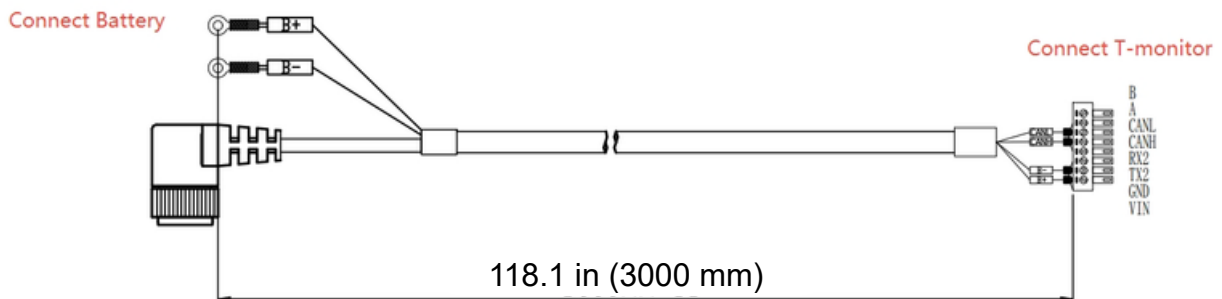
- Inches (mm)



6. Component List

SN	Component	Chart	QTY	Description
1	DD-T-MON Monitoring Device		1	5.0-inch IPS LCD touch screen with 800×480 resolution & mounting bracket
2	Power and Communication Cable		1	Power and communication connector to the battery or the T-BOX

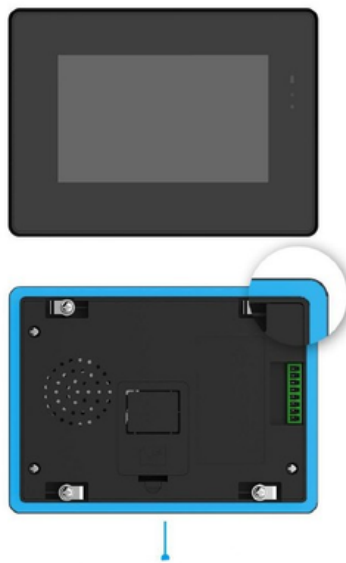
7. Connector



8. Installation Method

8.1 Introduction

A waterproof rubber gasket (illustrated in blue in the schematic but provided in black) is positioned between the display and the housing to prevent water ingress. For outdoor applications, an optional glass adhesive may be applied to further enhance waterproof performance.



8.2 Insert the Screen



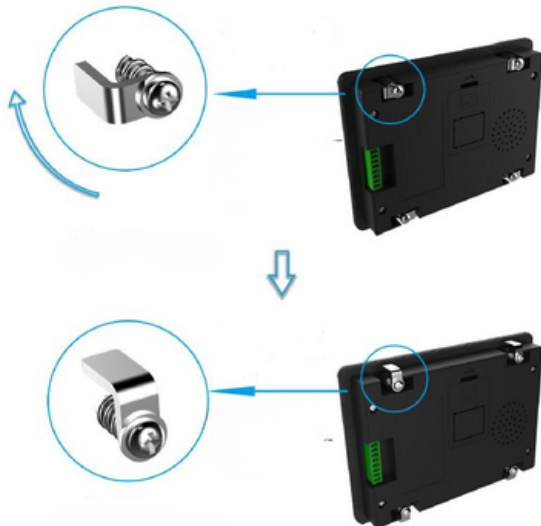
The opening dimensions are shown in the reference diagram.

Required mounting depth: ≥ 18.5 mm (≥ 0.73 in).

Maximum front-panel thickness: ≤ 3.0 mm (≤ 0.12 in).

Insert the screen into the housing opening from the front side.

8.3 Secure the Mounting Clips



Loosen each screw. The mounting clip will automatically rotate approximately 90° clockwise.

After alignment, tighten all four screws to securely fasten the device to the housing.

8.4 Install the Back Cover



Attach the rear housing cover to complete the installation.

Final Assembly.

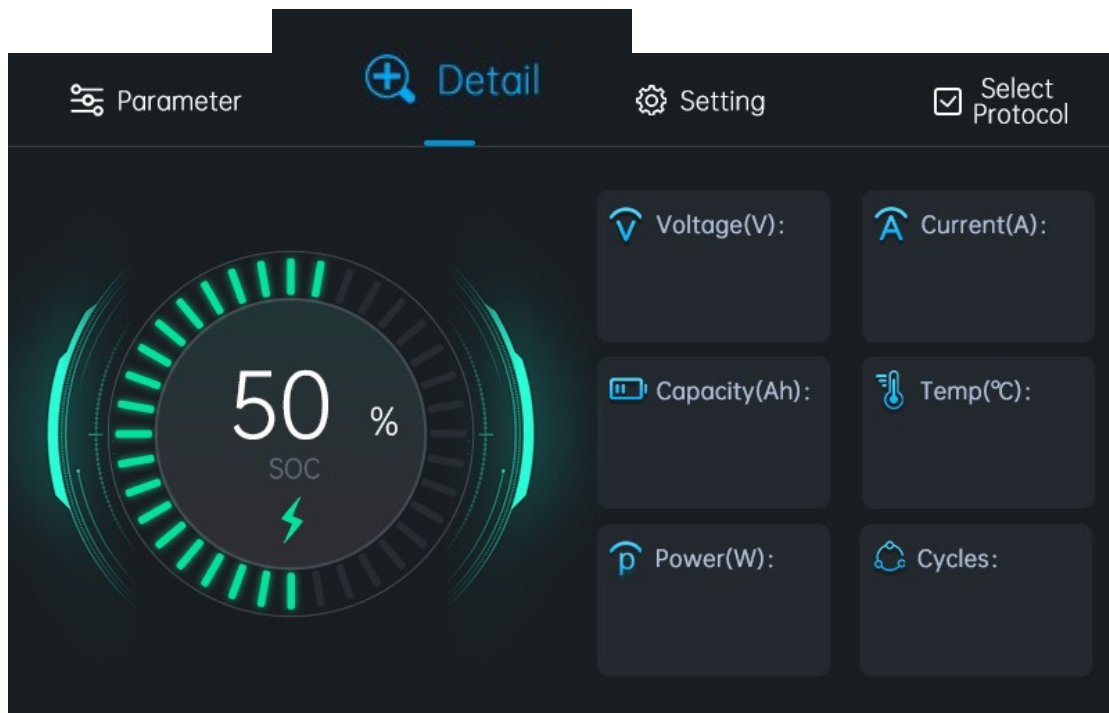
9. T-Monitor Screen Images

9.1 Parameter Overview



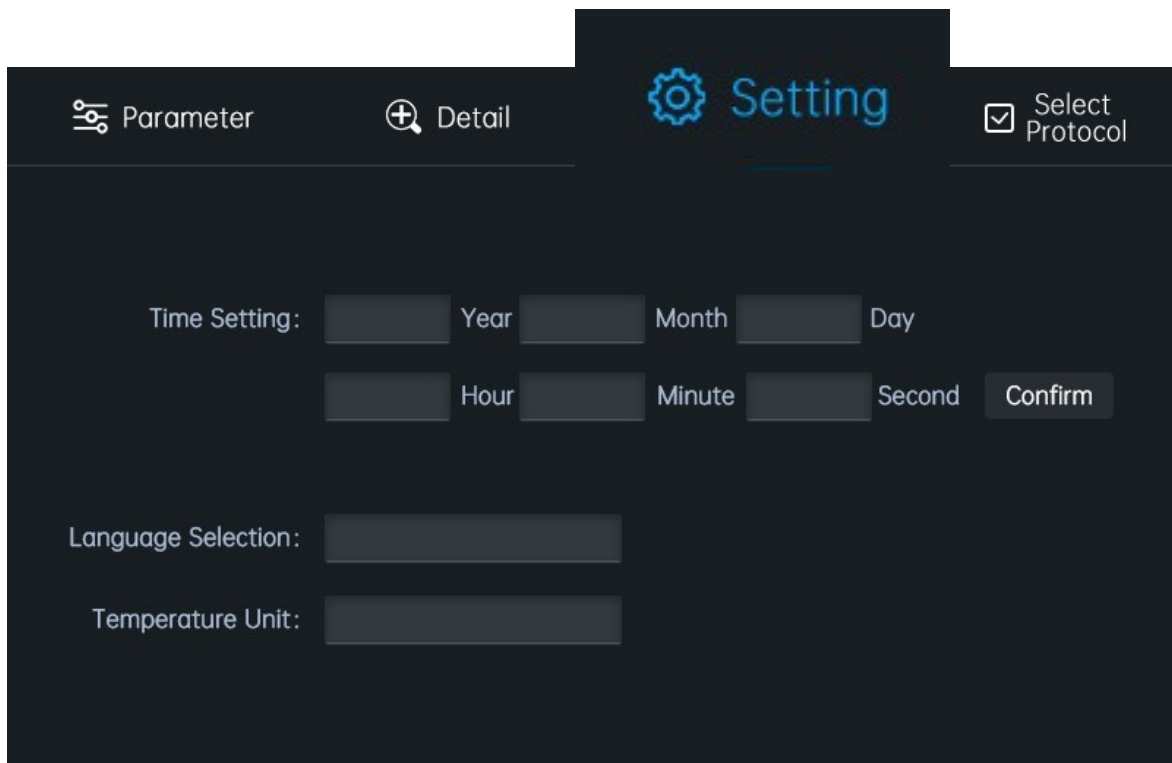
1. SOC (%) – Shows the battery's State of Charge as a percentage.
 - a. If SOC drops below 10%, the display changes from green to yellow.
2. Voltage (V) – Total system voltage.
3. Current (A) – Current flowing through the system.
4. Remaining Capacity (Ah) – Total remaining capacity of the battery.
5. Max Temp (°) – Highest temperature detected in the battery system.
6. Min Temp (°) – Lowest temperature detected in the battery system.
 - a. You can switch between °C and °F in the settings.
7. Configuration – Number of series and parallel connections in the system.

9.2 Detail



1. SOC (%) – State of Charge of the selected pack (if SOC drops below 10%, the display changes from green to yellow).
2. Voltage (V) – Voltage of the selected pack.
3. Current (A) – Current flowing through the selected pack.
4. Capacity (Ah) – Remaining capacity of the selected pack.
5. Temp (°C/°F) – Temperature of the selected pack (°C or °F can be selected in the settings).
6. Power (W) – Power being delivered through the selected pack.
7. Cycles – Total number of cycles.

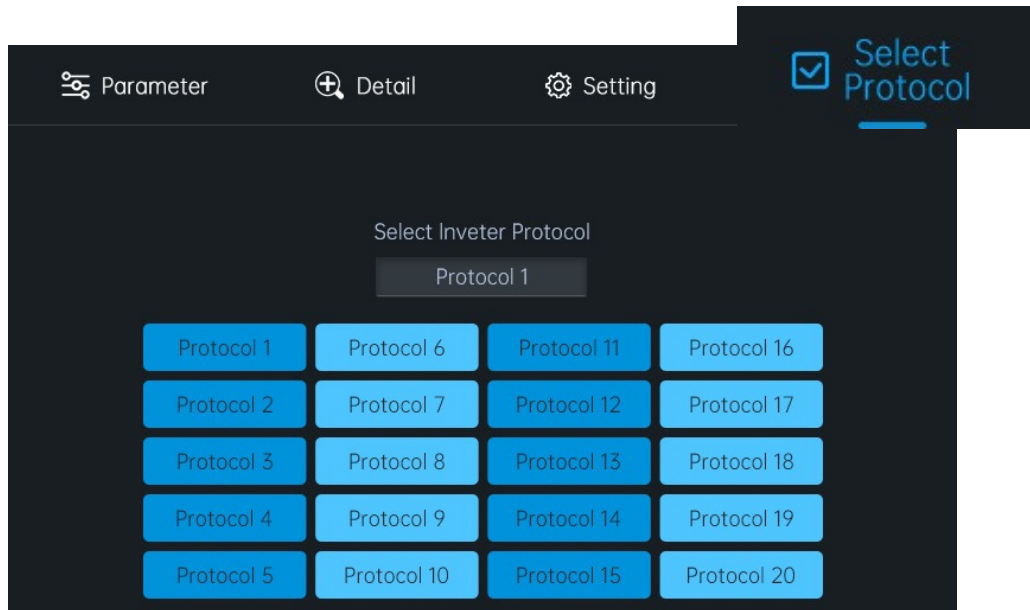
9.3 Settings



The screenshot shows the 'Setting' menu of the Deka T-Monitor. The menu has a dark background with white text and icons. At the top, there are four tabs: 'Parameter' (with a list icon), 'Detail' (with a magnifying glass icon), 'Setting' (with a gear icon and highlighted in blue), and 'Select Protocol' (with a checkmark icon). Below the tabs, the 'Time Setting' section contains input fields for Year, Month, Day, Hour, Minute, and Second, followed by a 'Confirm' button. The 'Language Selection' section has a single input field. The 'Temperature Unit' section also has a single input field.

1. Time Setting – The T-Monitor includes a real time clock with year, month, day, hour, minute, and second. The time can be adjusted in the Settings menu. Be sure to press Confirm after making changes.
2. Language Selection – Choose the display language.
3. Temperature Unit – Select the temperature unit: °C or °F.

9.4 Select 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	TBD

10. Warning and Protection

10.1 Warning signs

WARNING		
Cell under voltage warning	Cell over voltage warning	Battery under voltage warning
Battery over voltage warning	Charge over current warning	Discharge over current warning
Low ambient temperature warning	High ambient temperature warning	Mosfet low temperature warning
Mosfet high temperature warning	Cell charge low temperature warning	Cell charge high temperature warning
Cell discharge low temperature warning	Cell discharge high temperature warning	Low capacity warning
Low insulating resistance warning	Cell disconnected warning	Cell failure warning
Cell heating abnormal warning	Cell/system over voltage warning	Cell/system under voltage warning
Discharge high temperature warning	Discharge low temperature warning	Charge high temperature warning
Charge low temperature warning	Discharge over current warning	Charge over current warning
Internal-net communication failure warning	Cells unbalance warning	

10.2 Protection

PROTECTION		
Cell under voltage protection	Cell over voltage protection	Battery under voltage protection
Battery over voltage protection	Secondary charge over current protection	Secondary discharge over current protection
Short circuit protection	Cell failure protection	Charge over current protection
Discharge over current protection	Low ambient temperature protection	High ambient temperature protection
Mos low temperature protection	Mos high temperature protection	Cell charge low temperature protection
Cell charge high temperature protection	Cell discharge low temperature protection	Cell discharge high temperature protection
Low capacity protection	Low insulating resistance protection	Cell disconnected protection
Mos failure protection	AFE failure protection	Cells voltage difference protection
Cell/system over voltage protection	Cell/system under voltage protection	Charge low temperature protection
Discharge over current protection	Charge over current protection	Mos failure protection
System failure protection	Cells unbalance protection	



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