

VERSION: B
20190313

TBB5 USER MANUAL



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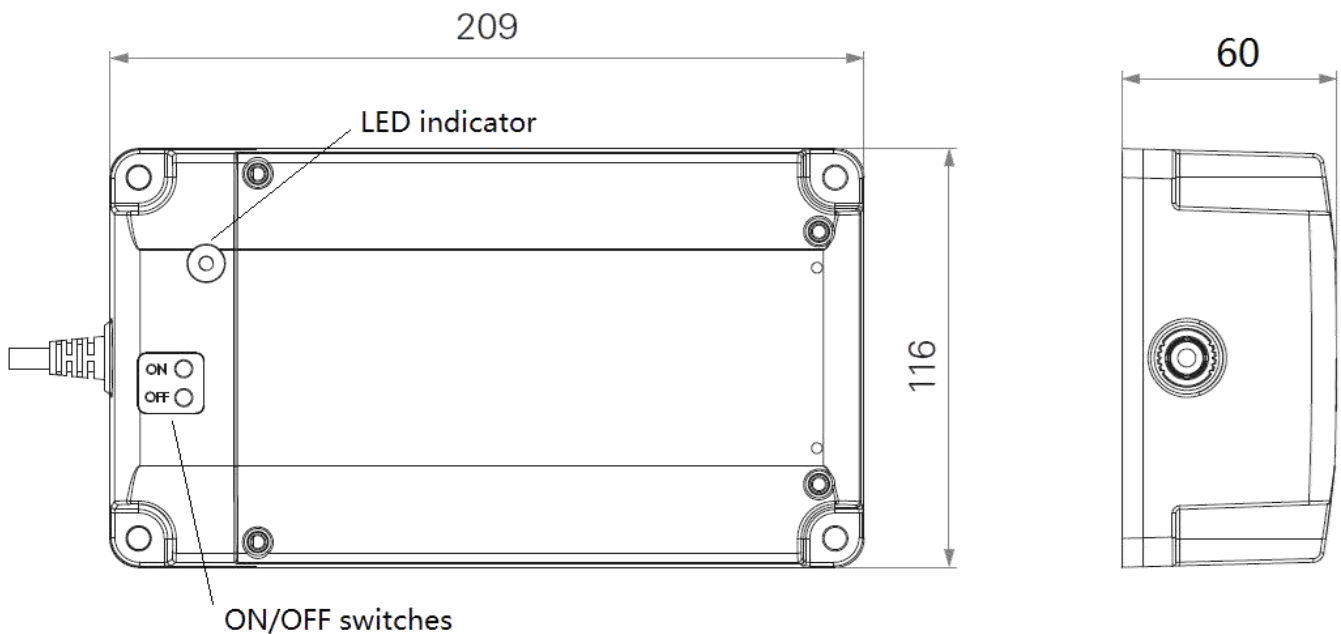
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1.Warning

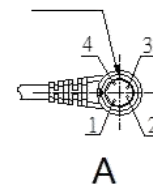
- Must follow the rated input voltage
- Don't discard or expose the products into water or heat source
- Recycle with certified depots
- Need to be repaired by original manufacturer or authorized maintenance centers

2. Specifications

Model name	TBB5
Battery capacity	4.0Ah (0.1C-discharge by 400mA)
Input	30VDC (29-45VDC)
Output	25.6VDC, 4.0A (Max. 10A)
Duty cycle	10% (2 min on / 18 min off)
Operation temperature	0 - 40°C
IP rating	Up to IP66W (optional)
Dimension	209 * 116 * 60 mm
Net weight/pc	1.6kg
ON/OFF switches	With
Battery cell	Lithium iron phosphate (LiFePO4)



DIN 4P



接線 Wiring

PIN	功能	function
1	電源負極	-
2	信號線	Signal
3	信號線	Signal
4	電源正極	+

3.Button Operation

When there is no AC-in

Button	Operation	Action
ON	Press>1 sec	Turned on and discharging
OFF	Press>3 sec	Turned off and stop discharging

4.Capacity Status and LED Indications

There are four (4) kinds of LED indication status for the TBB5 power capacity:

- When charging: charging or fully charged.
- When discharging: high electricity capacity or low electricity capacity.

Above LED indications status, please refer to the following chart as Figure A:

Figure A

Status	Capacity of TBB5	LED indication- color & mode	
When charging- (when system is connecting to AC power)			
Charging	<100%	Green	Continuously short flashing- blink once for 1 second /1-second interval
Fully Charged	=100%	Green	Shine continuously
When discharging- (TBB5 provides electricity when the system is unplugged)			
High electricity	25%-100%	Green	Constantly long flashing – blink once for 0.5 seconds / 4-second intervals
Low electricity	<25%	Orange	Constantly long flashing – blink once for 0.5 seconds / 4-second intervals
When TBB5 under protection			
Under protection	<20%	No flash light	
Failure			
Failure	---	Orange	Constantly on

Note 1: Green light will shine continually which means the capacity is around 70%; it will take another extra 10 hours to be fully charged. (Within warranty>90%)

Note 2: When TBB5 is under protection mode, the LED indication is continuously off.

Note 3: If the orange light shines continually, it means disconnection of TBB5 or electrical circuit failure. If any related condition occurs, please contact our authorized sales agent or TiMOTION.

4.1 Remarks

- From Hi charging status (around 80%) to fully charged (in warranty period > 90% max capacity), it needs around additional 10hrs charging
- When seeing the failure status indication, please contact manufacturer or distributor

4.2 Under Protection

Under below protection status- the LED indication light on TBB5 is always off

Under protection type	Situation	Time Period
Discharging - Over current protection	Current > 10A	0.1 sec
Discharging - Low voltage protection	Voltage <16.0-20.0VDC	0.1 sec
Standby - Low voltage protection	Voltage <25.2VDC	5 min

5. Protect & Maintenance

It is highly recommended that TBB5 should be charged continuously at least 24hrs+ in the following situations:

- First operation
- Before long time storage (long period of time when disconnected to AC power)
- First operation after long time storage (long period of time when disconnected to AC power)

5.1 Storage

Storage period when without AC-in V.S estimated capacity (100% capacity when shipped out from factory)

Period (including shipping)	Capacity	Status
3 months	79%	usable
6 months	58%	please charge before use
>6 months	<58%	too long storage period, battery capacity harmed * Be sure to charge 24hrs every 6 months least

5.2 Repair

If the battery in TBB5 is defective, please use equivalent LiFePO4 battery for replacement or contact original manufacturer for battery replacements.

5.3 Transportation

By land, sea or air is allowed. Please contact TiMOTION for the related safety report.

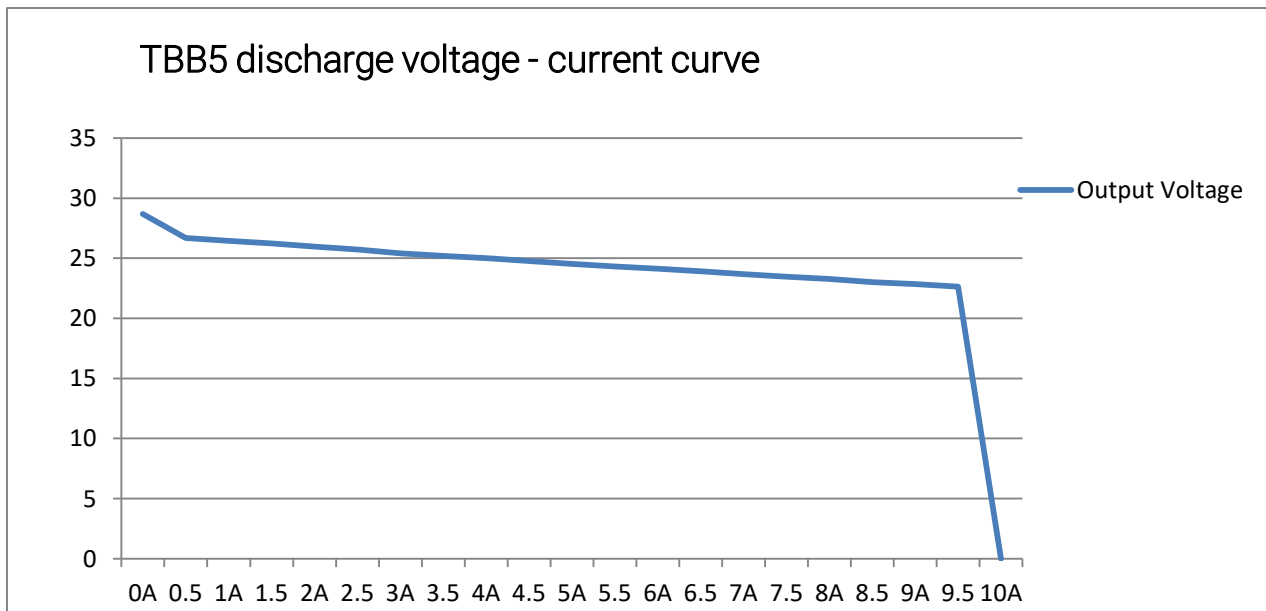
5.4 Storage

- Temperature: 0 ~ 40°C
- Humidity: 10% ~ 93%
- Atmosphere: 86KPa ~ 106Kpa

6. Appendix

6.1 Discharge Voltage - Current curve

Sample	12V battery cell
Status	From fully Charged (100%) to protection (20%)
X axis	Discharging current (A)
Y axis	Discharging voltage (V)
Remark	This figure represents theoretical values which are only for reference. The battery life varies upon the actual charging and discharging currents.



6.2 Discharge Voltage - Time curve

Sample	12V battery cell
Status	From fully Charged (100%) to protection (20%)
X axis	Discharging time (h)
Y axis	Discharging voltage (V)
Remark	This figure represents theoretical values which are only for reference. The battery life varies upon the actual charging and discharging currents.

