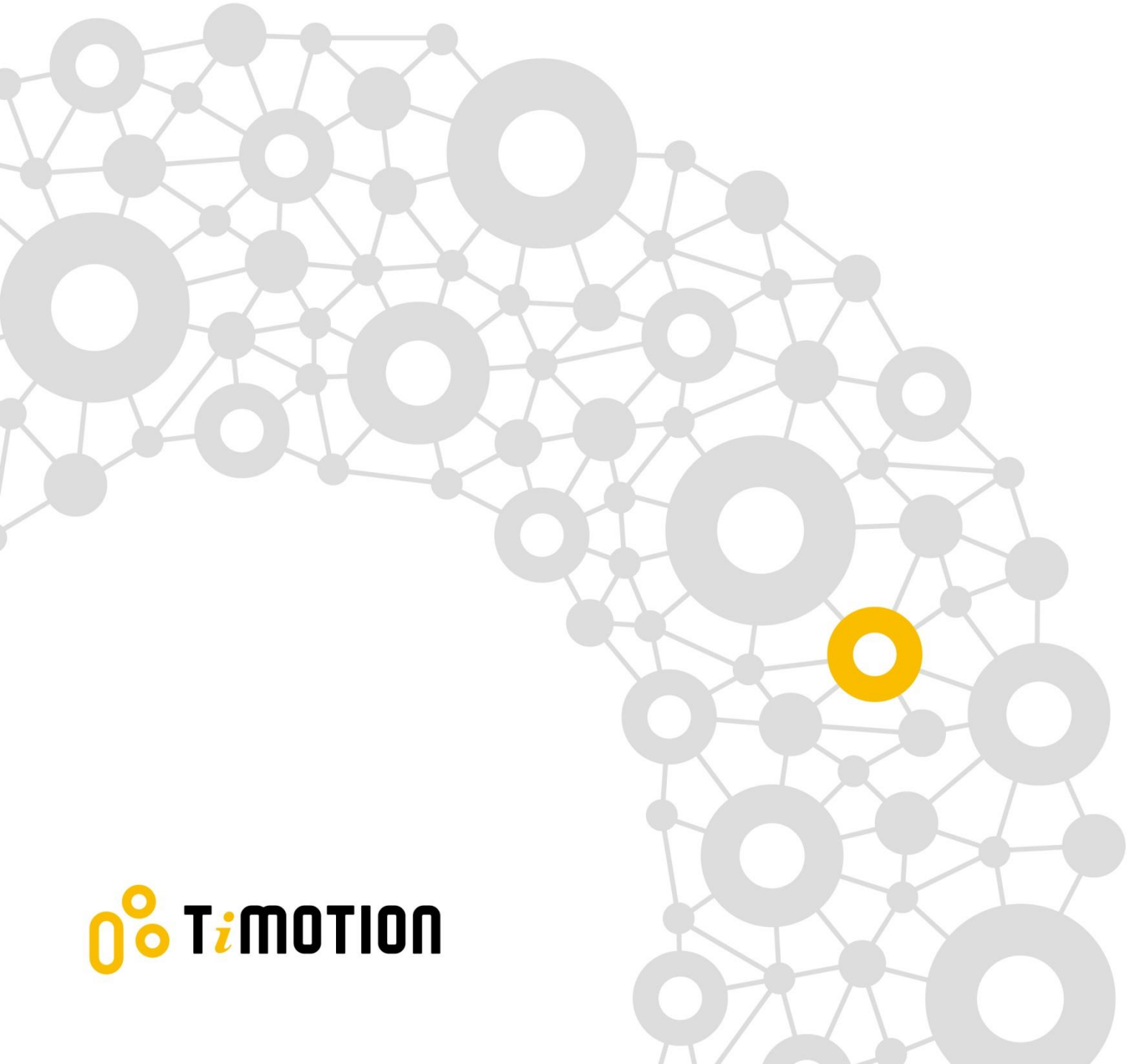
VERSION: E
20200514

TBB4
USER MANUAL



TiMOTION

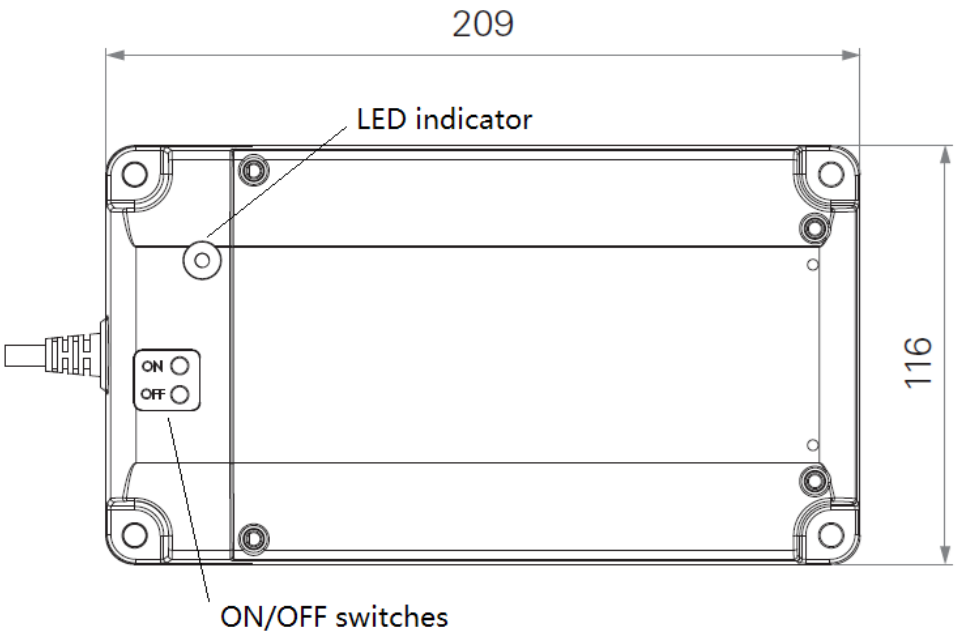
Contents

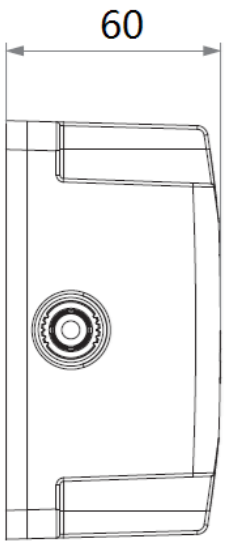
1.Warning

- Must follow the rated input voltage
- Don’t discard or expose the products into water or heat source
- Recycle with certified depots
- Repair by authorized maintenance centers

2.Specifications

Model name	TBB4	
Battery capacity	2.0Ah (0.1C discharge, 200mA)	1.2Ah (0.1C discharge, 120mA)
Input	29~45V DC	
Output	24VDC, 2.0A	24VDC, 1.2A
Duty cycle	10% (2 min on / 18 min off)	
Operation temperature	5~45°C	
IP rating	Up to IP66W (optional)	
Dimension	209 * 116 * 60 mm	
Net weight/pc	2.0kg	1.6kg
ON/OFF switches	With	





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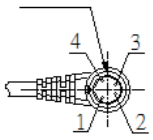


A

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.Indications

4.1 Status

Process	Status	
When charged	Hi charging	Charging
Discharging	Hi battery	Low battery
Others	Protection	Failure

4.2 Table

Status	Capacity	LED	
Hi charging	>80%	Green	Continuous on
Charging	<80%	Green	Short dimming (1 sec /1 sec)
Hi battery	>25%	Green	Long dimming (0.5 sec / 4 sec)
Low battery	<25%	Orange	Long dimming (0.5 sec / 4 sec)
Protection	<20%	-	Off
Failure	-	Orange	Continuous on

4.3 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 liaise with the seller

5.Protect

Under below protection status- LED continuous off

Protection type	When	Lasting for
Discharge- Over current protection	Current > 7.5A	10 sec
Discharge- Low voltage protection	Voltage <16.0VDC	15 sec
Standby - Low voltage protection	Voltage <22.5VDC	10 min

6.Maintenance

The product should be charged continuously at least 24hrs under following circumstances-
First operation

- Before long period storage without AC-in
- First operation after long period storage

6.1 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

6.1 Repair

Same spec/dimension, lead-acid maintenance free battery cell. Please consult to the seller

6.2 Transportation

By sea or inland shipment

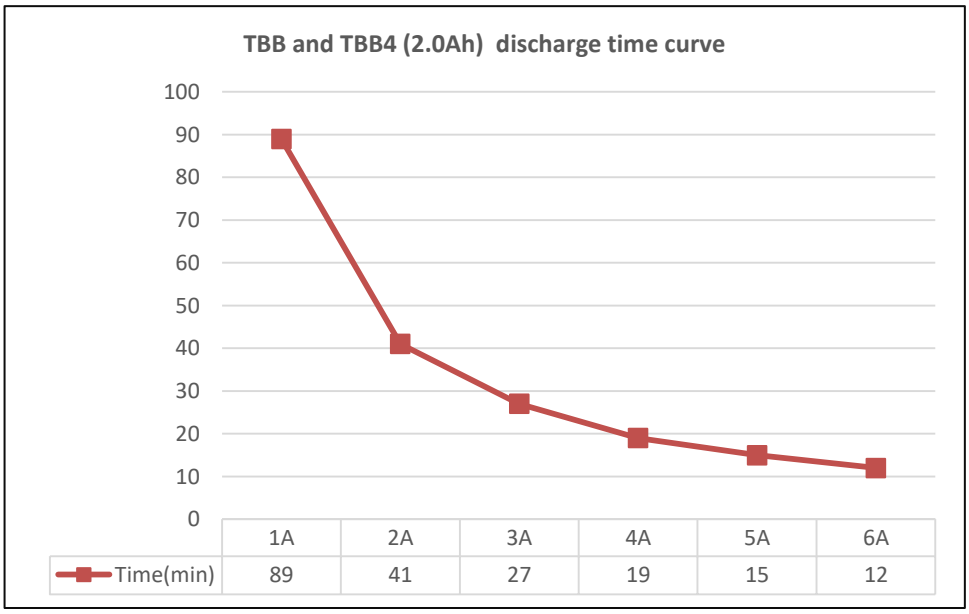
6.3 Storage

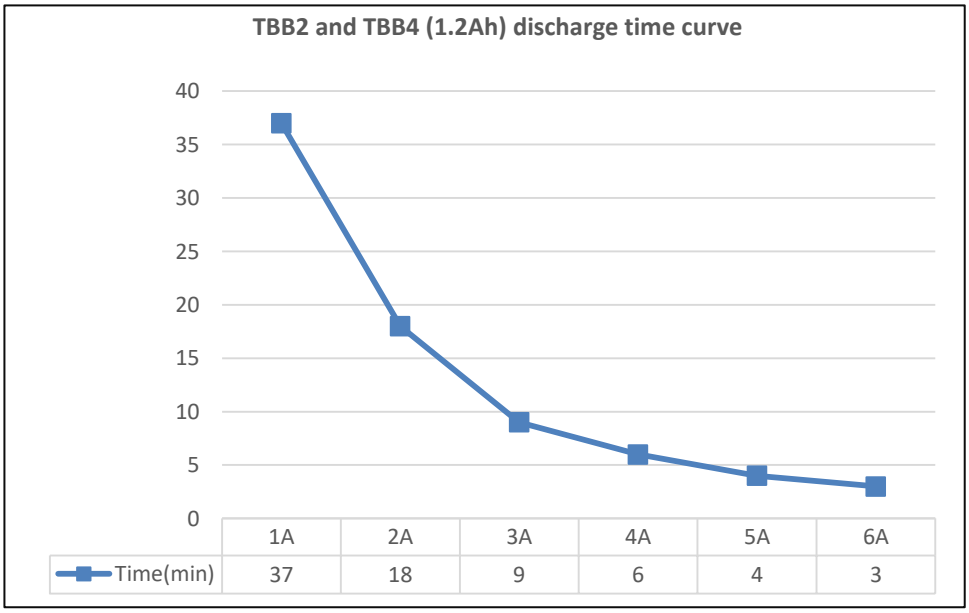
Temperature: 0 ~40°C
Humidity: 10%~ 93%
Atmosphere: 86kPa~ 106kPa

7.Appendix

7.1 Discharge time curve

Sample	12V battery cell
Status	From full capacity (100%) to protect (20%)
X axis	Discharge current (A)
Y axis	Discharge time (min)
Remark	In real situation the discharge varies- this test is only for reference





7.2 Cycle test curve

Sample	12V battery cell	Steps	1-49th times	2.0Ah	1.2Ah
Cycle	300 times (memo each 50th times)		Discharge for 2hrs	500mA	300mA
X axis	Cycle (times)		Charge for 6hrs	200mA	120mA
Y axis	Max capacity (Ah)		50th times	2.0Ah	1.2Ah
Remark	In real situation the discharge/ charge varies- this test is only for reference		Discharge until protect	500mA	300mA
			Charge until max capacity	200mA	120mA
			*Repeat since 51 times