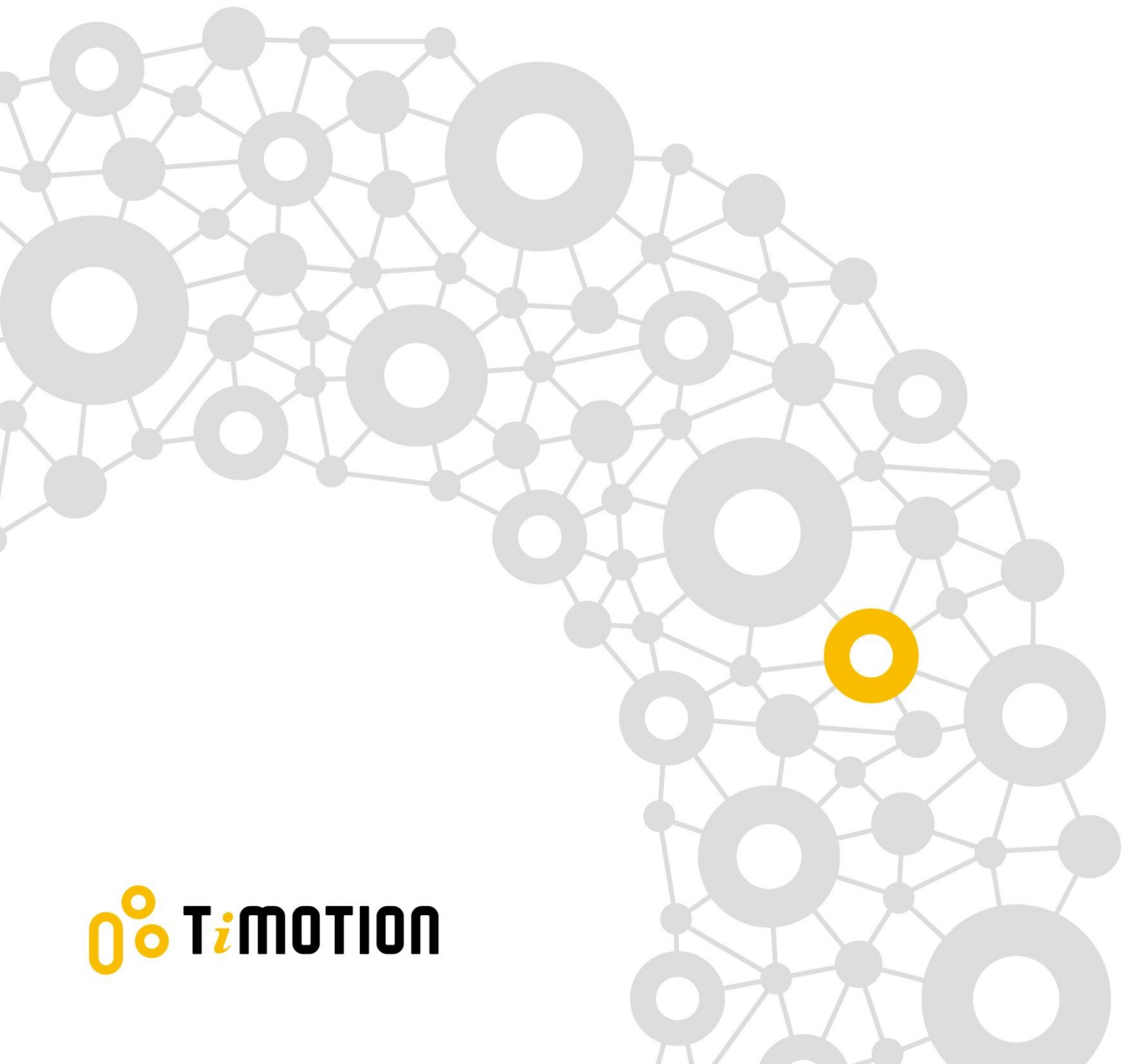


Version: B
20200918

TBB9 User Manual



Content

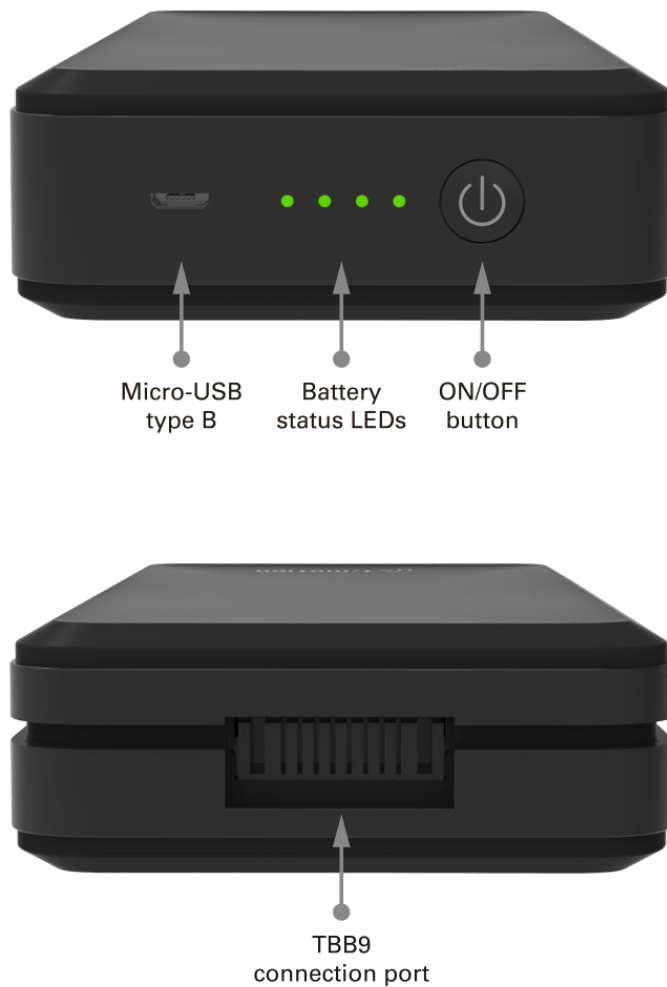
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1.Warning

1. Must follow the rated input voltage.
2. Please store the battery in the non-combustible material environment or keep it from sun exposure.
3. During charging or discharging conditions, the battery may generate high temperature. Please keep the battery from combustible material.
4. When the battery is charging or discharging, please do not place any objects on its surface.
5. Please keep the battery and the related charging accessories away from children.
6. If the battery is broken, please remove or replace the battery immediately.
7. Do not use the battery if smoke is coming out.
8. Don't discard or expose the products into water or heat sources.
9. Recycle with certified depots.
10. Needs to be repaired by original manufacturer or authorized maintenance centers.
11. Always use a TiMOTION charger.

2. Introduction

The TBB9 is a rechargeable battery that provides mobility to height adjustable desk applications.



ON / OFF Button Operation:

- ON: Press continuously for 2 seconds and there will be a short beep.
- OFF: Press continuously for 2 seconds.

Battery capacity indication

Please refer to section 6, page 10.

Charging via Micro USB

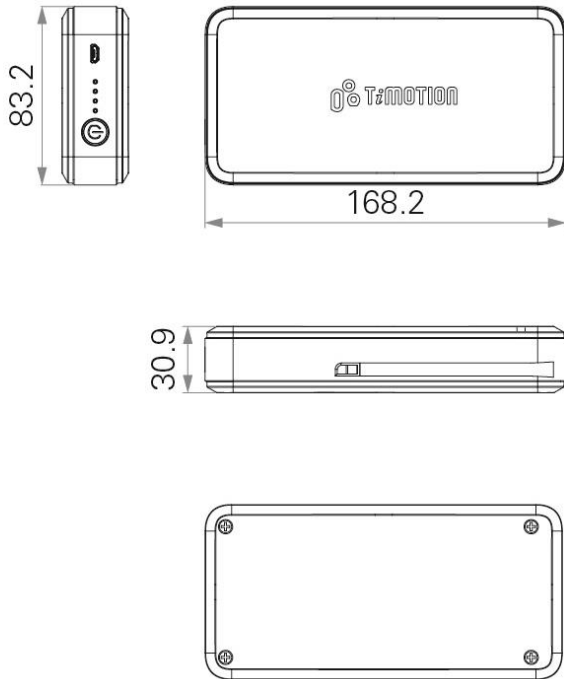
Please refer to section 7.2, page 12.

3. Specifications

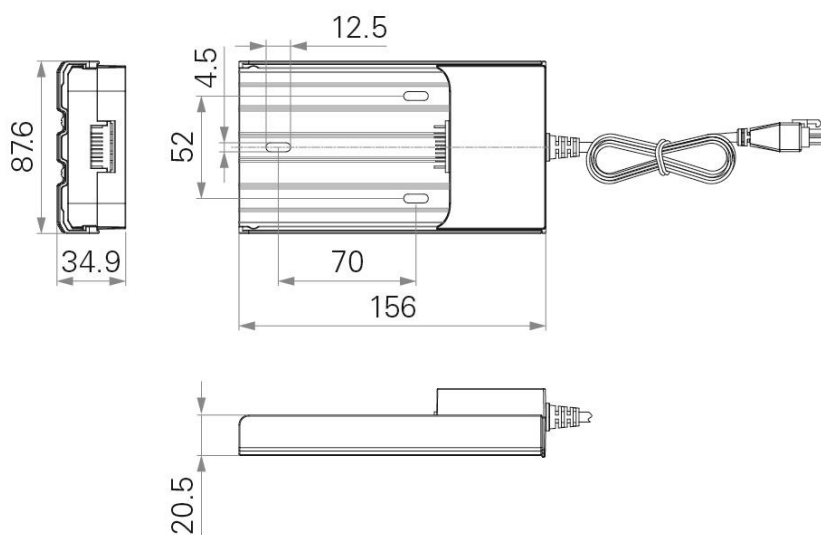
Model name	TBB9
Capacity	2.5Ah / 63Wh
Rated output voltage	25.2V DC
Rated output current	5A
Max. output current	15A
Rated input voltage	32V DC (charging cradle) / 5V DC (Micro USB)
Rated input current	1A (charging cradle) / 1~2A (Micro USB) Note: Micro USB can support up to 2A, which may be varied by the input current and charging connector (output).
Charging current	1A (charging cradle) / 0.3A (Micro USB)
Battery type	Li-Ion battery
Net weight/pc	736g (with charging cradle); 490g (without charging cradle)
Connections	Micro USB type-B / DIN-4PIN / Molex 4PIN
Ambient conditions during operation	0 ~+40°C at 10%~85% relevant humidity
Storage temperature	0 ~+45°C
Compatibility	TC11P / TC15P / TC22
Buzzer	With
LED	With

4.2D Drawings

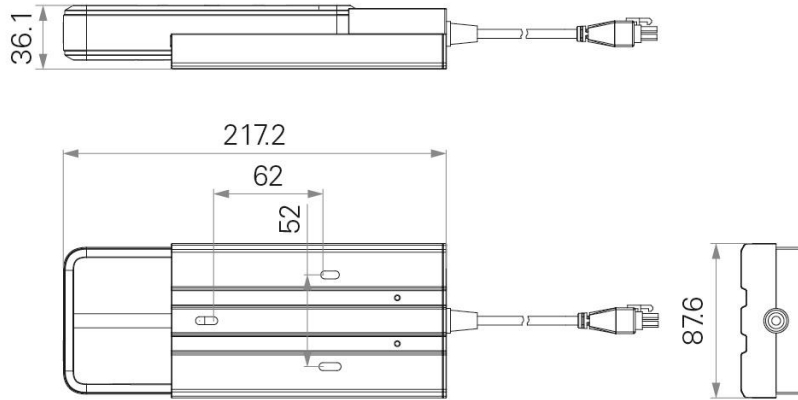
TBB9



Charging cradle

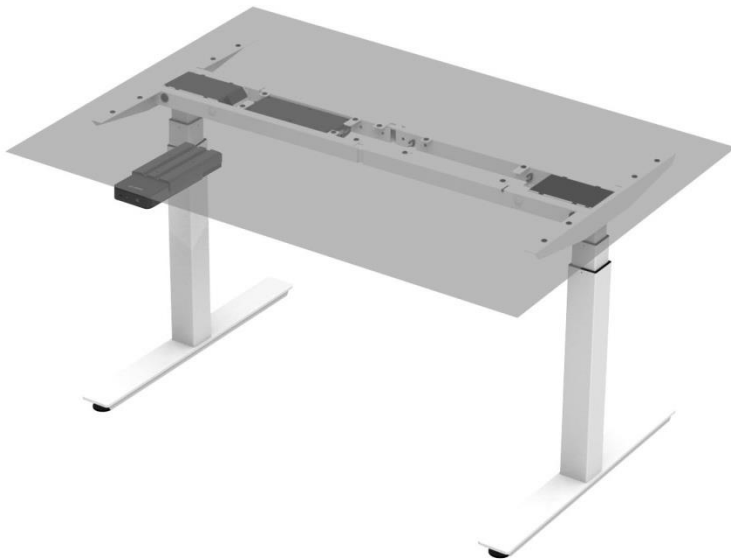


TBB9 with charging cradle



5. Installations

5.1 Mounting position



5.2 Assembly

1. Charge the battery completely.
2. Assemble the whole system (ex: height adjustable desk) completely prior to connecting the battery.
3. Disconnect the control box to AC power.
4. Use M4 screws (3 pieces) to fix the charging cradle into the desired position on the desk. (PIC1)
5. Connect the charging cradle and the control box. (PIC 2)
6. Put the TBB9 into the charging cradle. (PIC 3)
7. Turn on the TBB9.
8. Connect the control box to AC power to charge the desk via control box.



6. Capacity Status and LED Indications

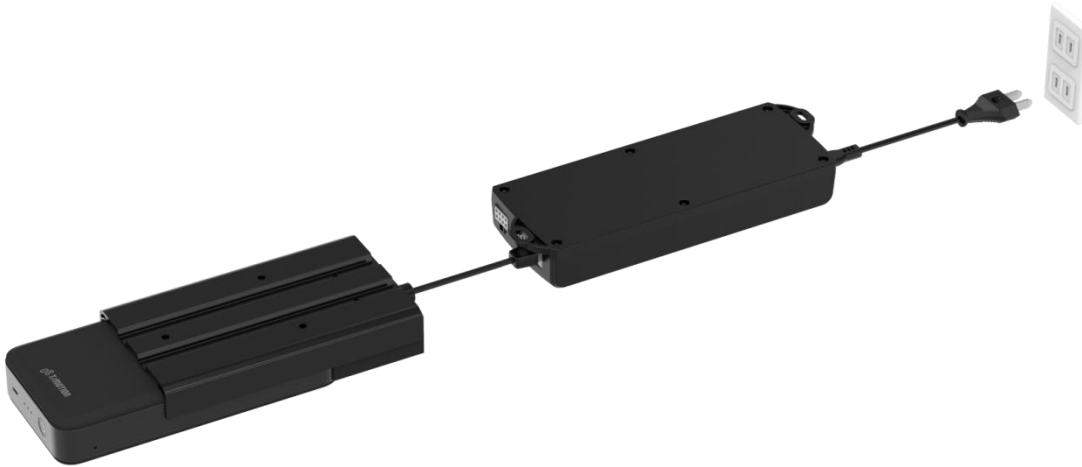
Status	Capacity of TBB9	LED indication- color & mode	
Charging	<25%	One LED shine	Continuously short flashing- blink once for 1 second /1-second interval
	25%~50%	Two LED shine	
	50%~75%	Three LED shine	
	75%~90%	Four LED shine	
Fully charged	>90%	Four LED shine	Shine continuously
Discharging (when using)	>75%	Four LED shine continuously	<ul style="list-style-type: none"> When the TBB9 is in operation, we can press ON/OFF button for 0.5 seconds in order to check the battery capacity status. When the battery capacity is less than 25%, the buzzer will beep for three times.
	50%~75%	Three LED shine continuously	
	25%~50%	Two LED shine continuously	
	10%~25%	One LED shines continuously	
	<10%	No flash light	Battery over discharge protection

7. Charging

TBB9 can be charged directly from the control box or via the standard Micro USB.

7.1 Via control box

- If the control box is connected to the AC power and the TBB9, the TBB9 will charge via the control box.
- It takes about 8 hours to fully charge.



7.2 Via Micro USB

- The TBB9 can be charged independently via the Micro USB.
- It takes about 16 hours to fully charge.



- Recommendations for the Micro USB output specifications:
 1. Voltage: 5 VDC
 2. Current: > 2A (Note: It may take more time if using the charging output with small current.)

7.3 Remarks

1. To avoid losing battery, charge to 75% (4 LED lights) before storing. The battery will display 2 LED lights when lower than 50% capacity.
2. When the TBB9 is not in use, please charge it every six (6) months.
3. The battery life will be affected by use and working environment. After recharging 300 times, the battery may only support 60% capacity.
4. For best performance, charge the TBB9 fully before use.

8. Protections

Item	Protections	Problems	Battery protections and warnings	Solutions
1	Low battery capacity protection	Battery capacity < 25%	Buzzer will beep three times	Charge the battery
2	Over discharge- current protection	Current > 16-23A	The TBB9 will be OFF immediately; no specific warnings	<ul style="list-style-type: none"> Remove the obstacles or solve the interference of mechanism issues which may be the cause of the over current problems. Turn on the TBB9 after full charge.
3	Over discharge-low voltage protection	Voltage < 19~20V		
4	Short circuit protection	The output of TBB9 or control box has short circuit problems		
5	Over charged protection	<ul style="list-style-type: none"> Single cell voltage > 4.25 Battery set voltage > 29.6V 	The TBB9 will stop charging immediately.	<ul style="list-style-type: none"> Operation will not be affected. Need to replace the TBB9 when it begins to not fully charge.

9.Storage

9.1 Requirements

1. Temperature: 0 ~ +40°C
2. Humidity: 10%~93% RH
3. Air pressure: 86~106Kpa
4. Altitude: <2000m
5. Time until recharging is needed due to storage temperature (if battery is fully charged):

Temperature range	Storage time before recharging
45~60°C	<1month
20~45°C	3 months
-20~20°C	12 months

9.2 Self-Discharging

When the TBB9 is packed independently, the storage period and capacity will be shown as below (90% capacity when shipped out from factory):

Period (including shipping)	Capacity	Status
3 months	78%	Usable
6 months	66%	Please charge before use
>6 months	<66%	The battery capacity may be harmed due to long period of storage time. **It is suggested to charge 12 hours continuously every 6 months.

9.3 Packaging and Transportation

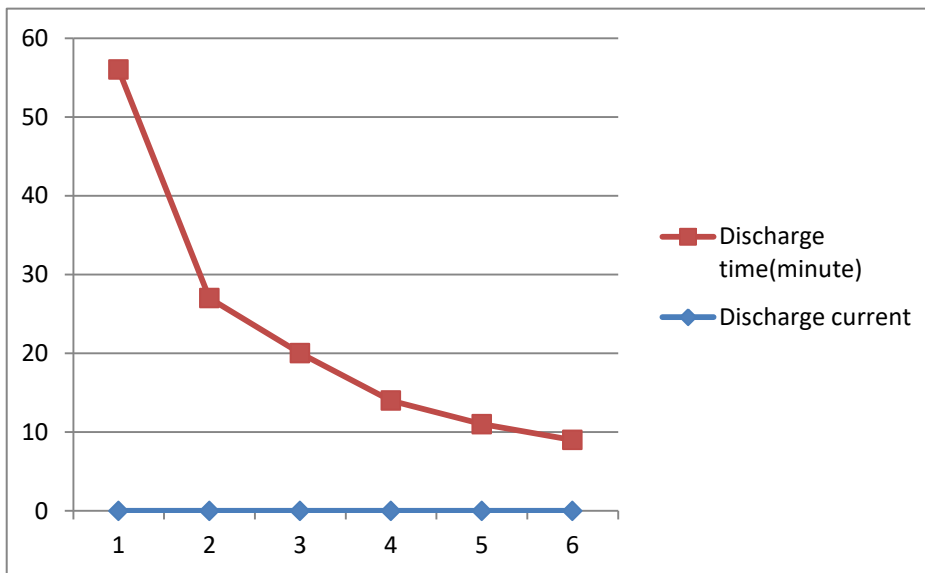
- The TBB9 is packed according to 2017 Lithium Battery Guidance Document by IATA. The packaging is supplied with a label (see image below) stating the package contains lithium ion batteries.



- All the packaging and transportation comply with the regulations within the 2017 Lithium Battery Guidance Document; even re-packaging or returned products.
- Shipping by land, sea or air is allowed. Please contact TiMOTION for the related safety report.

10. Appendix

10.1 Discharge Voltage - Time Curve



TBB9 (2.5A/25.2V/63W) discharge time		
Discharge current		Discharge time (minute)
1C	2.5A	56
2C	5A	27
3C	7.50	20
4C	10A	14
5C	12.5A	11
6C	15A	9