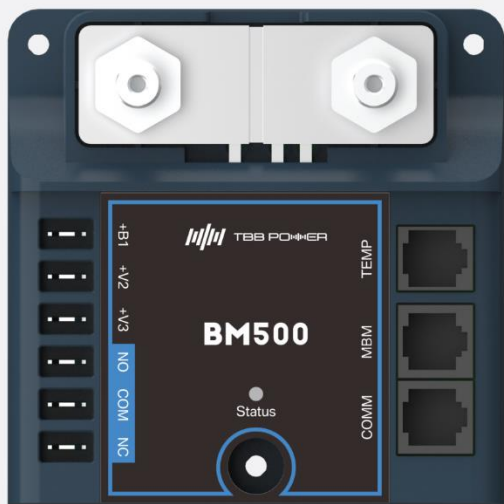




BATTERY SHUNT

USER MANUAL

BM500



Preface

Thanks for choosing our products and this manual is suitable for battery shunt BM500. This manual contains important safety and operation instructions. Read it before any operation/installation and keep it well for future reference.

Product installation and maintenance need to be conducted by a well trained technician or electrician. Please pay more attention to below items:

1. Please use correct voltage to power this product.
2. Please insure DC positive and negative are connected correctly. No reversed polarity connection is allowed.
3. Please use power cable as short as possible for connection and ensure all connection is well.
4. Only TBB engineer or authorized electrician can open the case.



All products has been well inspected before delivery from manufacturer. If there is faulty for example housing swelling is found when open product box, please contact TBB or TBB's re-seller immediately. The environment condition will also has influence to product performance, please make sure product is used in proper environment condition.

Remarks: As continuous update on product, this manual might not reflect latest version of product. Please contact TBB or TBB's re-seller if wants to learn most update on product.

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1. General Safety Instruction

1.1 Safety instruction

- Please read this manual and remark, sticker on product before installation or operation.
- Please abide by required electrical safety procedure and requirement to prevent any damage or injury. Safety instruction in this manual is not equal to these safety procedure and requirement.
- Manufacturer takes no responsibility for any consequence of break above safety procedure or requirement.
- A warning mark as below represents potential risk or important information.



Warning: The operation is critical to system running, please be careful before operation.

1.2 General Precaution

- Do not expose product to dust, rain, snow or liquids of any type, it is designed for indoor use.
- To avoid fire and electric shock, make sure all cables selected with right gauge and being connected well. Smaller diameter and broken cable are not allowed to use.

2. Product introduction

2.1 General introduction

TBB's BM500 is a battery shunt to measure battery current, voltage etc. It's working voltage range is 6-95Vdc, so it can be used to measure battery of 12V, 24V or 48V. Works with TBB's monitor or display, it can provide battery information like voltage, charge current, discharge current, SoC, Time to go, temperature etc.

2.2 Features

- Rated to measure current up to 500A.
- Compatible with 12V DC, 24V DC or 48V DC batteries.
- Compatible with AGM, GEL, WET and Lithium batteries.
- Contact ratings 2A@30V DC or 0.5A@125V AC.
- Measurement accuracy
 - Current: +/- 0.4%
 - Voltage: +/-0.3%
- Supports CAN and RS485

2.3 Product outlook and dimension

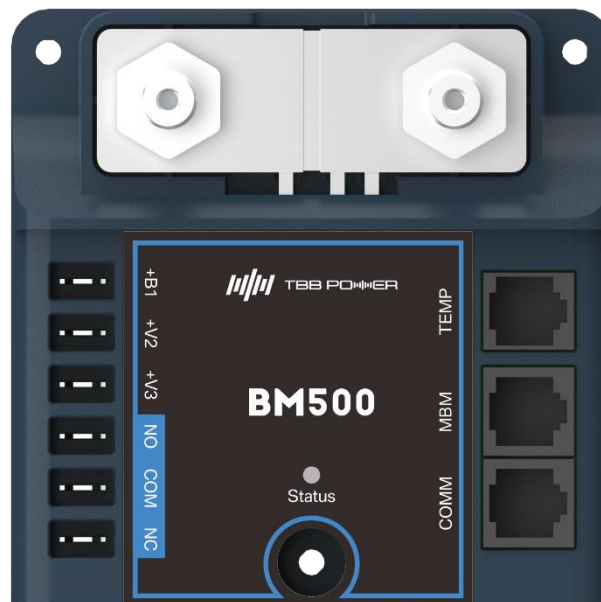


Fig.2-1 Outlook of BM500

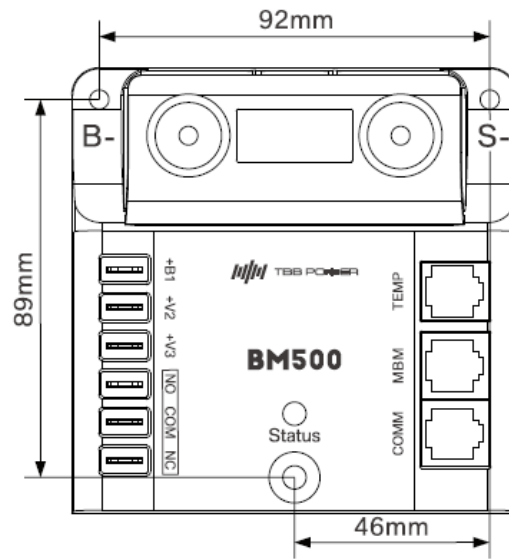


Fig.2-2 Product dimension (Unit: mm)

2.4 Ports and terminals

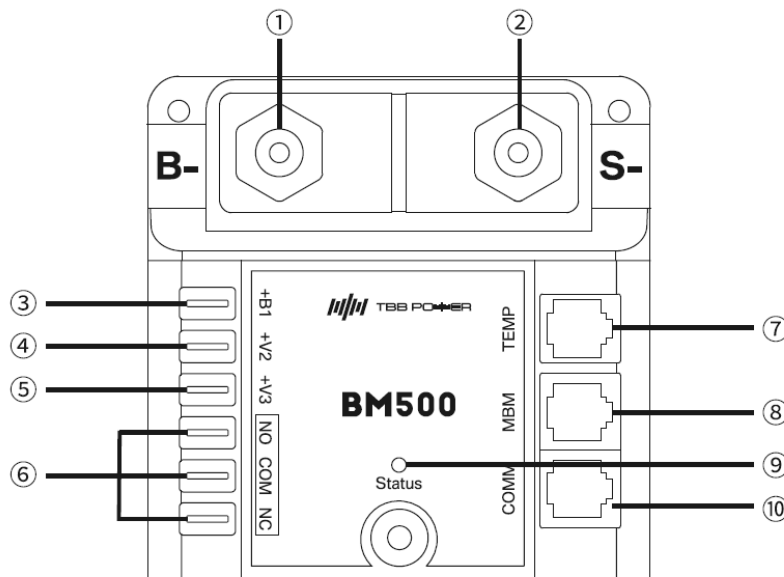


Fig.2-3 Ports and terminals

Table 2-1 Definition of ports and terminals

NO.	Print	Description
1	B-	Connect to auxiliary battery negative
2	S-	Connect to DC load(s) (and starter battery) negative
3	+B1	Connect to auxiliary battery positive
4	+V2	Connect to starter battery positive
5	+V3	Connect to the second starter battery positive
6	NO COM NC	Programmable dry contacts
7	TEMP	Connect with temperature sensor cable
8	MBM	Connect to MBM
9	Status	LED indicator (See Chapter 2.5)
10	COMM	485 and CAN communication port

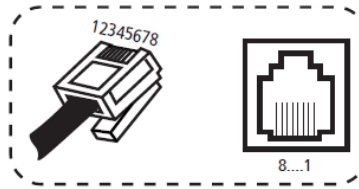
2.5 LED Indicators

Table 2-2LED indicators

Status	Status flash interval	Description
Power on initialization state	The red alternated with the green one	Power on initialization state. When the BM500 is being powered ON, the battery must be in the static status
Operation	Green flashing	Normal
	Red flashing	Error
	Red ON	The charge or discharge current of the auxiliary battery exceeds 500A

2.6 COMM Port

TBB's BM500 battery shunt is compatible with RS485 and CAN communication. It allows the user to connect with an external device by either RS485 or CAN protocol. The COMM port is defined as below:



COMM

Fig.2-4 COMM port

Table 2-3COMM port definition

PIN	Color	Description
Pin1	Orange / white	Reserved
Pin2	Orange	Reserved
Pin3	Green / white	485_A
Pin4	Blue	CAN_H
Pin5	Blue / white	CAN_L
Pin6	Green	485_B
Pin7	Brown / white	Reserved
Pin8	Brown	Reserved

3.Specification

Model	BM500
Communication	RS485, CAN
Nominal battery voltage	7~95V
Nominal current	±500A
Auxiliary battery voltage (+B1)	7~95V
Starter battery voltage (+V2,+V3)	1~95V, max support 2 batteries
Battery capacity	10~10000Ah
Battery type	AGM / GEL / Semi traction / Traction / Lead Carbon / LFP
Temperature sensor	1
Working temperature	-20~50℃
Storage temperature	-30~70℃
Voltage accuracy	±0.3%
Current accuracy	±0.4%
Dimension	105mm x 105mm x 63mm
IP rating	IP20
Certificate	CE certified (Safety: EN60335-1:2012, EN62233:2008 EMC:EN61000-6-3:2012, EN50498 Automotive EMC)

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