

TOROBMS

SPECIFICATION FOR APPROVAL

Customer Name	
Model	TORO – 16 TWEPP-120A
Specification	L140*W70*T15mm MAX
Main configuration	IC: DW01A
PCB	Double layer, Blue oil, Solder coating, ROHS
Document NO.	190701
Rev	00

Department	(R&D) Registered	(R&D) Checked	(Quality) Deliberation	(R&D) Approved
Sign				
DATE				

Customer Approve			
Department	R&D	Quality	Approved
Sign			
DATE			
Approved date	Period of validity 1 year		

If both sides have no dissidence in one month before the maturity of the Approved. It will be considered valid automatically for a one year period.

Company Name	WERER GROUP LTD. ŞTİ.	TEL	
Address	Yıldırım Kule Cevizlidere Mah. Mevlana Blv. No: 221-105 Ofis No:33 Çankaya/Ankara/TÜRKİYE		

1. Product Modified Record List

Product Modified Record List			
Date	Problem and Solution	Principal	
2023.07.20	1.		

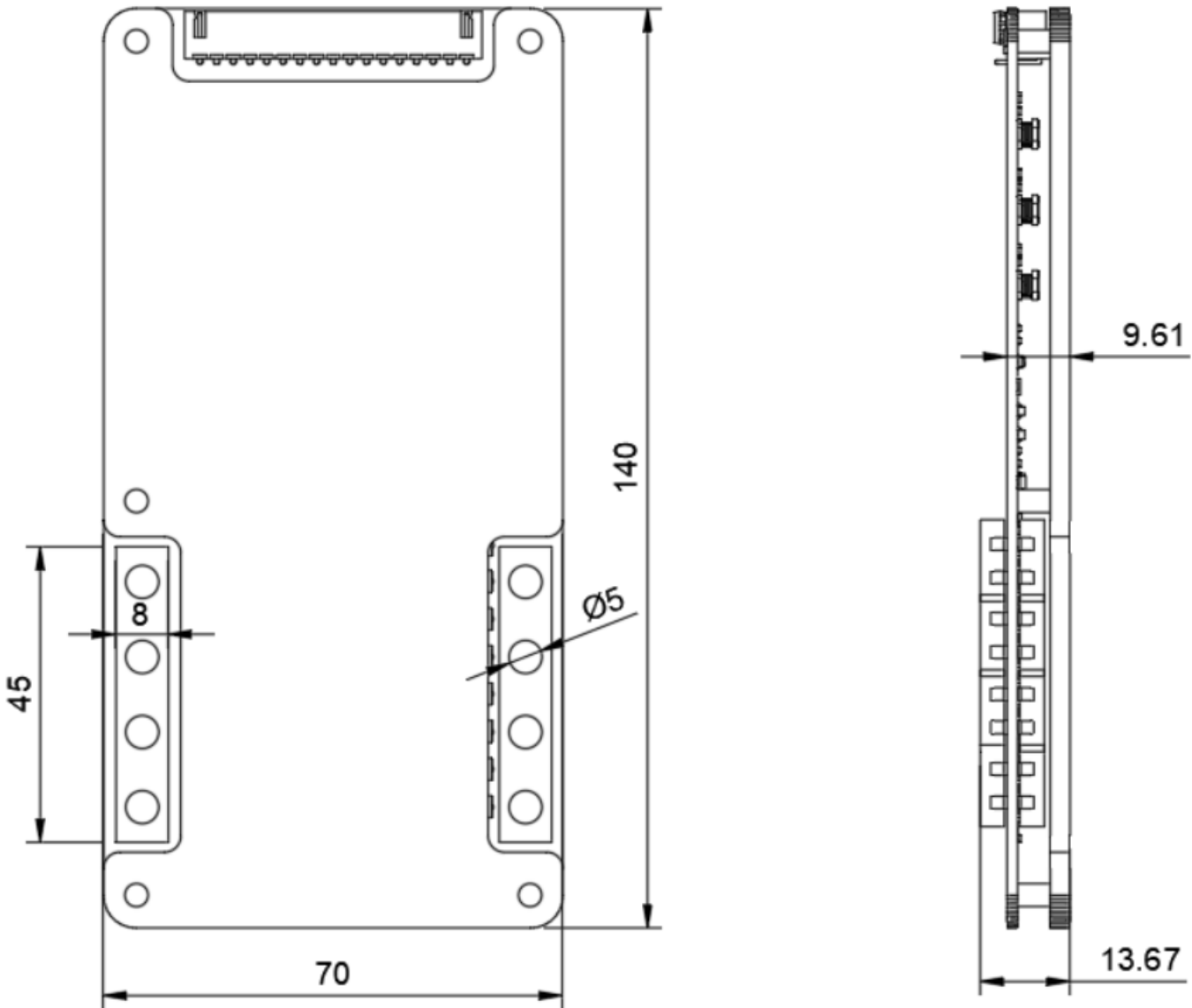
2. Produce Specification

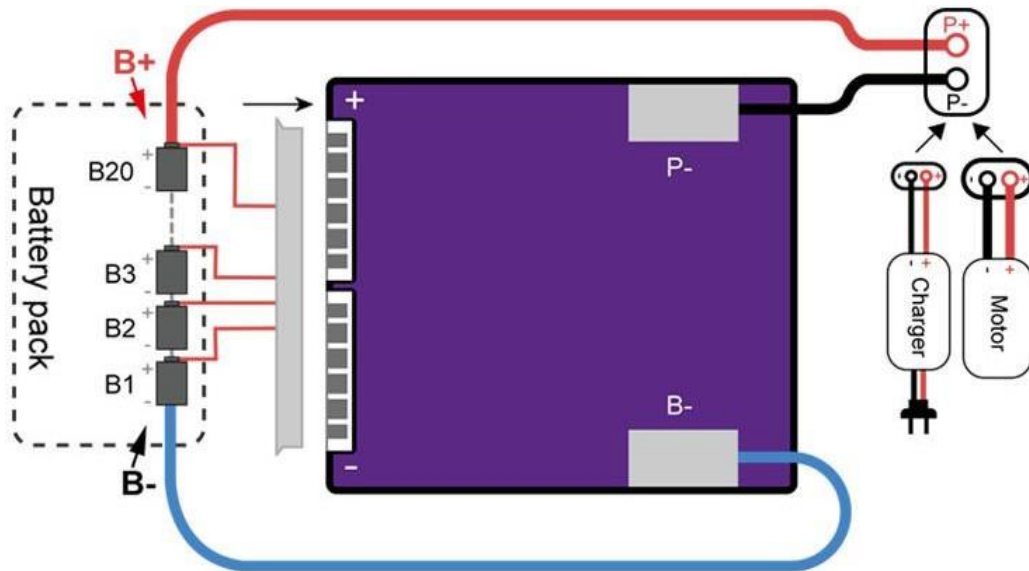
		Rev	0.1
		Date	
		Page	1
TECHNICAL SPECIFICATION FOR APPROVAL			
No	Item	Condition	Specification
1	Input Voltage	Input Voltage B+ to B-	-0.3~+n*4.2V(16S NMC)
2		Detection voltage/1CELL	4.25±0.05V(1-16S)
3	Overcharge	Release voltage/1CELL	4.10±0.05V
4		Detection delay time	0.08~2S
5		Detection voltage/1CELL	2.65±0.1V(1-4S)
6	Over discharge	Release voltage/1CELL	3.0±0.5V
7		Detection delay time	40~100ms
8		Over current	@120A/3s
9	Over discharge current	delay time	10~20ms
10		Short detection delay time	100~600us
11	Short detection	Release Conditions	Cut off load
12	Charge temperature protection	Charge temperature protection	85±10℃ 65±10℃
13	Discharge temperature protection	Discharge temperature protection	85±10℃ 65±10℃
14	Normal current consumption	Normal current consumption of PCM	Max 120.00uA
15	0V charger	Allowed 0V change	YES
16		max continuous charge/discharge current	60A/120A
17	Suggest working conditions	suggest working temperature	-20℃~+55℃
		Balance current	Up to 1200mA
	IR resistance	IR of PCM	≤10.00 mΩ
18	NTC	NTC (20~40)℃	yes
19	PCM	The length of final PCM	140±0.15mm
20			

21	The size of final PCM	The width of final PCM	70±0.1mm
22		The thickness of final PCM	MAX:15mm
21	Appearance	1) Nothing part deflection 2) The status of solder is all right 3) PCM will not crook 4) Settle for TDT Module appearance standard	
22	Reliability test	1) ESD 4KV	8KV / ESD test : contact 4KV Air 8KV

n*: NUMBER OF SERIAL CONNECTED BATTERY

3. Wiring instructions





Signal lines:

B1 connect battery cell's B1+/B2- 3.7V

B2 connect battery cell's B2+/B3- 7.4V

B3 connect battery cell's B3+ 11.1V

B4 connect battery cell's B4+ 14.8V

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B16 connect battery cell's B16+ 59.2V

Power lines:

B- connect battery's B-, wire current >60A 4 lines

P- connect charger-/load-, wire current >60A 4 lines

P+ connect battery's B16+, wire current >60A 4 lines