

LiFePO4

3.2V-
44.8VDC

3A max.

50W

Turtle Charger (50W) - LiFePO4

Pre-programmed Battery Charger for Lithium Iron Phosphate



DESCRIPTION

The TSB002-LFP series offer a wide range of single output DC chargers up to 50 Watts.

It is custom programmed by our engineers to fit specific design requirements for LITHIUM IRON PHOSPHATE.

Pre-programming includes functions setting, charging current and charging voltage, constant current, constant voltage, pre-conditioning, float charging, charge termination methods and setting. Input and output cabling and connector options for all international markets are available upon request.

Features:

- Choice of 50 different models.
- Wide input voltage range.
- Single voltage output up to 50W.
- Constant current limiting overload.
- Proven field reliability and performance.
- Status LED indicator.
- High operating temperature +71°C.

MOUNTING OPTIONS:

Modules available as options below:

PCB: PCB stand-alone charger.

ENCLOSURE: Housed enclosure for environmental protection.

GENERAL SPECIFICATIONS

Input Voltage	10-75VDC
Input Connector	2.1mm DC jack (enclosure)
Output Voltage	3.7V-50V for battery packs up to: – 14 cells in series (LiFePO4)
Output Current	3A max.
Voltage Accuracy	<1%
Voltage Limit	3.65V ±1% p/cell
Current Accuracy	<5%
Tolerance on Timing	±5%
Temp. Accuracy	Internal: <1°C
	External: <1%, resolution 0.01°C
Dimensions	L112mm x W66mm x H40mm (enclosure)
Weight	140 grams (enclosure)

LED PATTERNS - ROUTINE

Traffic light (red-orange-green):	System reset. Occurs at power on and battery connection.
Slow orange blink:	System waiting. Battery disconnected.
Solid orange:	Constant current phase. (inc. pre-condition if programmed)
Orange with green blink:	Constant voltage phase
Solid green	Charge Complete. Float Charge continues (if programmed)

LED PATTERNS - EXCEPTIONS

Three red flashes:	Charge suspended. Battery volts too low.
Two red flashes:	Charge suspended. Battery volts too high.
Slow red blinking: (1 flash every 5 sec)	Charge suspended. Battery or PCB too hot (PCB self protected to 75°C)
Fast red blinking:	Thermistor Error. (Needs Power Reset)
Orange blinking: (1 flash every ½ sec)	Timeout. Time limit is customisable on request
Solid red:	Fault. (Needs Power Reset)

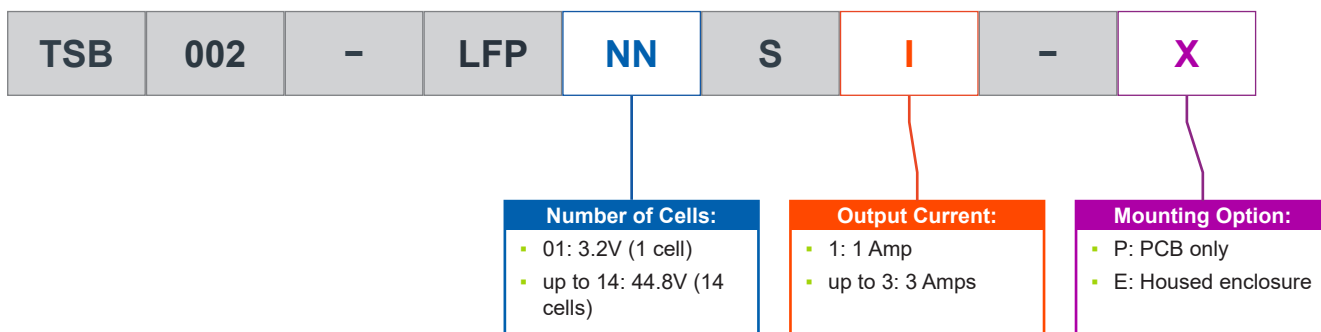
PCB



ENCLOSURE



PART NUMBER SELECTION KEY



*Termination of choice available.

SELECTION TABLE

Part Number	Chemistry	Battery Pack Voltage	Input Voltage	Output Current	Mounting Option
TSB002-LFP01S1	LiFePO4	3.2VDC (1 cell)	10-75VDC	1A (3.65W)	
TSB002-LFP01S2	LiFePO4	3.2VDC (1 cell)	10-75VDC	2A (7.3W)	
TSB002-LFP01S3	LiFePO4	3.2VDC (1 cell)	10-75VDC	3A (10.95W)	
TSB002-LFP02S1	LiFePO4	6.4VDC (2 cells)	10-75VDC	1A (7.3W)	
TSB002-LFP02S2	LiFePO4	6.4VDC (2 cells)	10-75VDC	2A (14.6W)	
TSB002-LFP02S3	LiFePO4	6.4VDC (2 cells)	10-75VDC	3A (21.9W)	
TSB002-LFP03S1	LiFePO4	9.6VDC (3 cells)	10-75VDC	1A (10.95W)	
TSB002-LFP03S2	LiFePO4	9.6VDC (3 cells)	10-75VDC	2A (21.9W)	
TSB002-LFP03S3	LiFePO4	9.6VDC (3 cells)	10-75VDC	3A (32.85W)	
TSB002-LFP04S1	LiFePO4	12.8VDC (4 cells)	10-75VDC	1A (14.6W)	
TSB002-LFP04S2	LiFePO4	12.8VDC (4 cells)	10-75VDC	2A (29.2W)	
TSB002-LFP04S3	LiFePO4	12.8VDC (4 cells)	10-75VDC	3A (43.8W)	
TSB002-LFP05S1	LiFePO4	16VDC (5 cells)	10-75VDC	1A (18.25W)	
TSB002-LFP05S2	LiFePO4	16VDC (5 cells)	10-75VDC	2A (36.5W)	
TSB002-LFP05S3	LiFePO4	16VDC (5 cells)	10-75VDC	2.74A (50W max.)	
TSB002-LFP06S1	LiFePO4	19.2VDC (6 cells)	10-75VDC	1A (21.9W)	
TSB002-LFP06S2	LiFePO4	19.2VDC (6 cells)	10-75VDC	2A (43.8W)	
TSB002-LFP06S3	LiFePO4	19.2VDC (6 cells)	10-75VDC	2.28A (50W max.)	
TSB002-LFP07S1	LiFePO4	22.4VDC (7 cells)	10-75VDC	1A (25.55W)	
TSB002-LFP07S2	LiFePO4	22.4VDC (7 cells)	10-75VDC	1.96A (50W max.)	
TSB002-LFP08S1	LiFePO4	25.6VDC (8 cells)	10-75VDC	1A (29.2W)	
TSB002-LFP08S2	LiFePO4	25.6VDC (8 cells)	10-75VDC	1.71A (50W max.)	
TSB002-LFP09S1	LiFePO4	28.8VDC (9 cells)	10-75VDC	1A (32.85W)	
TSB002-LFP09S2	LiFePO4	28.8VDC (9 cells)	10-75VDC	1.52A (50W max.)	
TSB002-LFP10S1	LiFePO4	32VDC (10 cells)	10-75VDC	1A (36.5W)	
TSB002-LFP10S2	LiFePO4	32VDC (10 cells)	10-75VDC	1.37A (50W max.)	
TSB002-LFP11S1	LiFePO4	35.2VDC (11 cells)	10-75VDC	1A (40.15W)	
TSB002-LFP11S2	LiFePO4	35.2VDC (11 cells)	10-75VDC	1.25A (50W max.)	

Select from options above

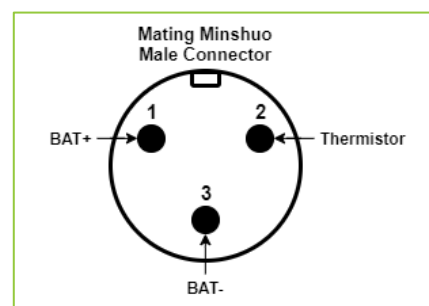
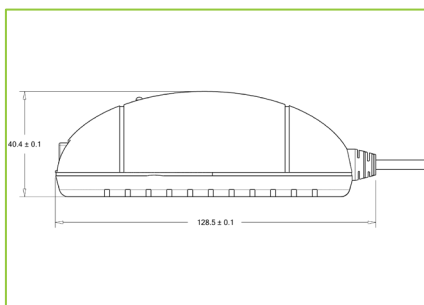
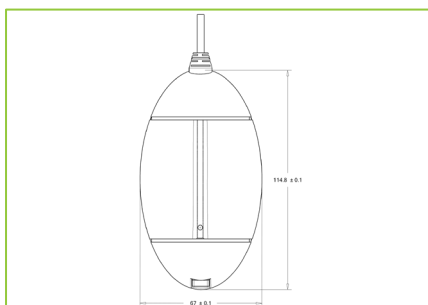
All specifications are correct at time of creation. All specifications and operation conditions contained in this datasheet are subject to change or improvement without prior notice to the user. This data is for evaluation purposes only. No guarantee is intended or implied by this data. For clarification and updated information, please contact us.

Part Number	Chemistry	Battery Pack Voltage	Input Voltage	Output Current	Mounting Option
TSB002-LFP12S1	LiFePO4	38.4VDC (12 cells)	10-75VDC	1A (43.8W)	Select from options above
TSB002-LFP12S2	LiFePO4	38.4VDC (12 cells)	10-75VDC	1.14A (50W max.)	
TSB002-LFP13S1	LiFePO4	41.6VDC (13 cells)	10-75VDC	1A (47.45W)	
TSB002-LFP13S2	LiFePO4	41.6VDC (13 cells)	10-75VDC	1.05A (50W max.)	
TSB002-LFP14S1	LiFePO4	44.8VDC (14 cells)	10-75VDC	0.98A (50W max.)	

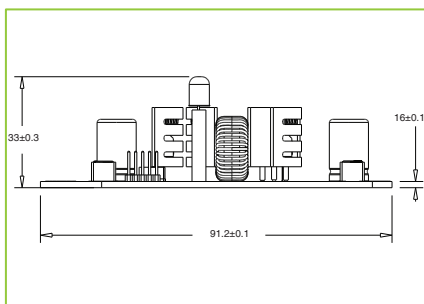
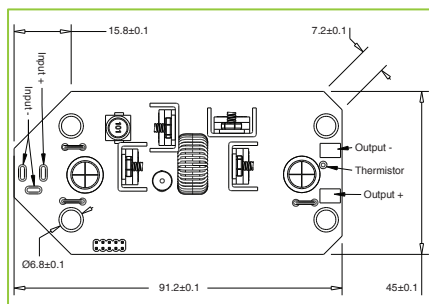
*****IMPORTANT:** The Part Number must have the mounting option code (-P, or -E) your project requires.

TECHNICAL DIAGRAMS (2D)

ENCLOSURE



PCB



All dimensions in millimeters (mm).