

LiFePO4

3.2V-
44.8VDC

5A max.

100W

Turtle Charger (100W) - LiFePO4

Pre-programmed Battery Charger for Lithium Iron Phosphate



DESCRIPTION

The TSB003-LFP Series offer a wide range of single output DC **LITHIUM IRON PHOSPHATE** battery chargers up to 100 Watts.

It is custom programmed by our engineers to fit specific design requirements.

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 100W.
- Constant current limiting overload.
- Proven field reliability and performance.
- Status LED indicator (NOT available in DIN-V version).
- Chassis and DIN rail mounting options.
- High operating temperature +71°C.

MOUNTING OPTIONS:

Modules available as PCB stand-alone or DIN mounting case. See options below.

PCB: PCB stand-alone charger with 5 (five) electric isolated screw terminals for panel mounting.

ENCLOSURE: Housed enclosure for environmental protection.

DIN-V: DIN Rail mounting case in vertical format. Suitable for Top hat IEC/EN 60715 and G section rail types.

DIN-H: DIN Rail mounting case in horizontal format. Suitable for Top hat IEC/EN 60715 and G section rail types.

GENERAL SPECIFICATIONS

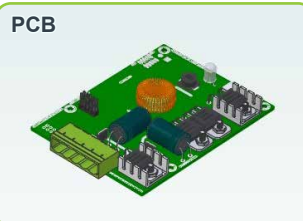
Input Voltage	10-75VDC
Output Voltage	3.2V-50V for battery packs up to: – 14 cells in series (LiFePO4)
Output Current	5A (Buck) 60W (Boost)
Voltage Accuracy	<1%
Voltage Limit	3.65V ±1% p/cell
Current Accuracy	<5%
Tolerance on Timing	±5%
Temp. Accuracy	Internal: <1°C
	External: <1%, resolution 0.01°C
Dimensions	L80mm x W61mm x H14.5mm (PCB only)
Weight	60 grams (PCB only)

LED PATTERNS - ROUTINE

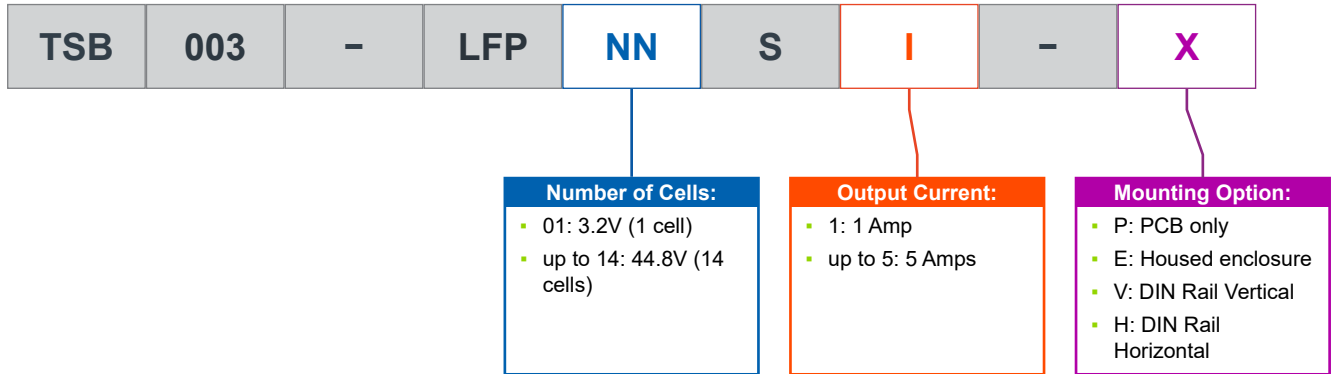
Traffic light (red-orange-green):	System reset. Occurs at power on and battery connection.
Slow orange blink:	System waiting. Battery disconnected.
Solid orange:	Constant current phase. (inc. pre-condition if programmed)
Orange with green blink:	Constant voltage phase
Solid green	Charge Complete. Float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



PART NUMBER SELECTION KEY



*Termination of choice available.

SELECTION TABLE

Part Number	Chemistry	Battery Pack Voltage	Input Voltage	Output Current	Mounting Option
TSB003-LFP01S5	LiFePO4	3.2VDC (1 cell)	10-75VDC	5A max.(18.25W)	<i>Select from options above</i>
TSB003-LFP01S4	LiFePO4	3.2VDC (1 cell)	10-75VDC	4A (14.6W)	
TSB003-LFP01S3	LiFePO4	3.2VDC (1 cell)	10-75VDC	3A (10.95W)	
TSB003-LFP01S2	LiFePO4	3.2VDC (1 cell)	10-75VDC	2A (7.3W)	
TSB003-LFP01S1	LiFePO4	3.2VDC (1 cell)	10-75VDC	1A (3.65W)	
TSB003-LFP02S5	LiFePO4	6.4VDC (2 cells)	10-75VDC	5A max.(36.5W)	
TSB003-LFP02S4	LiFePO4	6.4VDC (2 cells)	10-75VDC	4A (29.2W)	
TSB003-LFP02S3	LiFePO4	6.4VDC (2 cells)	10-75VDC	3A (21.9W)	
TSB003-LFP02S2	LiFePO4	6.4VDC (2 cells)	10-75VDC	2A (14.6W)	
TSB003-LFP02S1	LiFePO4	6.4VDC (2 cells)	10-75VDC	1A (7.3W)	
TSB003-LFP03S5	LiFePO4	9.6VDC (3 cells)	10-75VDC	5A max.(54.75W)	
TSB003-LFP03S4	LiFePO4	9.6VDC (3 cells)	10-75VDC	4A (43.8W)	
TSB003-LFP03S3	LiFePO4	9.6VDC (3 cells)	10-75VDC	3A (32.85W)	
TSB003-LFP03S2	LiFePO4	9.6VDC (3 cells)	10-75VDC	2A (21.9W)	
TSB003-LFP03S1	LiFePO4	9.6VDC (3 cells)	10-75VDC	1A (10.95W)	
TSB003-LFP04S5	LiFePO4	12.8VDC (4 cells)	10-75VDC	5A max.(73W)	
TSB003-LFP04S4	LiFePO4	12.8VDC (4 cells)	10-75VDC	4A (58.4W)	
TSB003-LFP04S3	LiFePO4	12.8VDC (4 cells)	10-75VDC	3A (43.8W)	
TSB003-LFP04S2	LiFePO4	12.8VDC (4 cells)	10-75VDC	2A (29.2W)	
TSB003-LFP04S1	LiFePO4	12.8VDC (4 cells)	10-75VDC	1A (14.6W)	
TSB003-LFP05S5	LiFePO4	16VDC (5 cells)	10-75VDC	5A max.(91.25W)	
TSB003-LFP05S4	LiFePO4	16VDC (5 cells)	10-75VDC	4A (73W)	
TSB003-LFP05S3	LiFePO4	16VDC (5 cells)	10-75VDC	3A (54.75W)	
TSB003-LFP05S2	LiFePO4	16VDC (5 cells)	10-75VDC	2A (36.5W)	
TSB003-LFP05S1	LiFePO4	16VDC (5 cells)	10-75VDC	1A (18.25W)	
TSB003-LFP06S5	LiFePO4	19.2VDC (6 cells)	10-75VDC	4.57A (100W max.)	
TSB003-LFP06S4	LiFePO4	19.2VDC (6 cells)	10-75VDC	4A (87.6W)	
TSB003-LFP06S3	LiFePO4	19.2VDC (6 cells)	10-75VDC	3A (65.7W)	

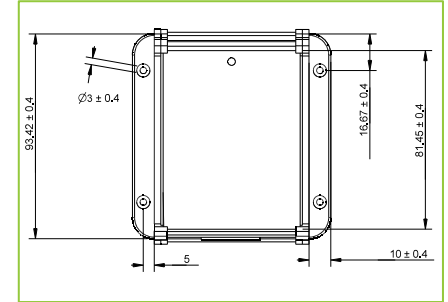
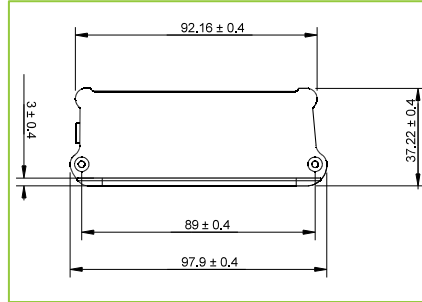
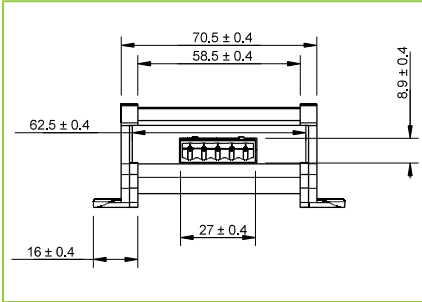
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Part Number	Chemistry	Battery Pack Voltage	Input Voltage	Output Current	Mounting Option
TSB003-LFP06S2	LiFePO4	19.2VDC (6 cells)	10-75VDC	2A (43.8W)	<i>Select from options above</i>
TSB003-LFP06S1	LiFePO4	19.2VDC (6 cells)	10-75VDC	1A (21.9W)	
TSB003-LFP07S4	LiFePO4	22.4VDC (7 cells)	10-75VDC	3.91A (100W max.)	
TSB003-LFP07S3	LiFePO4	22.4VDC (7 cells)	10-75VDC	3A (76.65W)	
TSB003-LFP07S2	LiFePO4	22.4VDC (7 cells)	10-75VDC	2A (51.1W)	
TSB003-LFP07S1	LiFePO4	22.4VDC (7 cells)	10-75VDC	1A (25.55W)	
TSB003-LFP08S4	LiFePO4	25.6VDC (8 cells)	10-75VDC	3.42A (100W max.)	
TSB003-LFP08S3	LiFePO4	25.6VDC (8 cells)	10-75VDC	3A (87.6W)	
TSB003-LFP08S2	LiFePO4	25.6VDC (8 cells)	10-75VDC	2A (58.4W)	
TSB003-LFP08S1	LiFePO4	25.6VDC (8 cells)	10-75VDC	1A (29.2W)	
TSB003-LFP09S3	LiFePO4	28.8VDC (9 cells)	10-75VDC	3.04A (100W max.)	
TSB003-LFP09S2	LiFePO4	28.8VDC (9 cells)	10-75VDC	2A (65.7W)	
TSB003-LFP09S1	LiFePO4	28.8VDC (9 cells)	10-75VDC	1A (32.85W)	
TSB003-LFP10S3	LiFePO4	32VDC (10 cells)	10-75VDC	2.74A (100W max.)	
TSB003-LFP10S2	LiFePO4	32VDC (10 cells)	10-75VDC	2A (73W)	
TSB003-LFP10S1	LiFePO4	32VDC (10 cells)	10-75VDC	1A (36.5W)	
TSB003-LFP11S3	LiFePO4	35.2VDC (11 cells)	10-75VDC	2.49A (100W max.)	
TSB003-LFP11S2	LiFePO4	35.2VDC (11 cells)	10-75VDC	2A (80.3W)	
TSB003-LFP11S1	LiFePO4	35.2VDC (11 cells)	10-75VDC	1A (40.15W)	
TSB003-LFP12S3	LiFePO4	38.4VDC (12 cells)	10-75VDC	2.28A (100W max.)	
TSB003-LFP12S2	LiFePO4	38.4VDC (12 cells)	10-75VDC	2A (87.6W)	
TSB003-LFP12S1	LiFePO4	38.4VDC (12 cells)	10-75VDC	1A (43.8W)	
TSB003-LFP13S3	LiFePO4	41.6VDC (13 cells)	10-75VDC	2.11A (100W max.)	
TSB003-LFP13S2	LiFePO4	41.6VDC (13 cells)	10-75VDC	2A (94.9W)	
TSB003-LFP13S1	LiFePO4	41.6VDC (13 cells)	10-75VDC	1A (47.45W)	
TSB003-LFP14S2	LiFePO4	44.8VDC (14 cells)	10-75VDC	1.96A (100W max.)	
TSB003-LFP14S1	LiFePO4	44.8VDC (14 cells)	10-75VDC	1A (51.1W)	

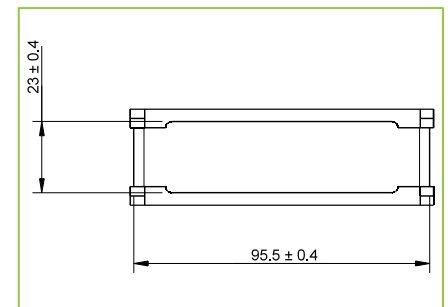
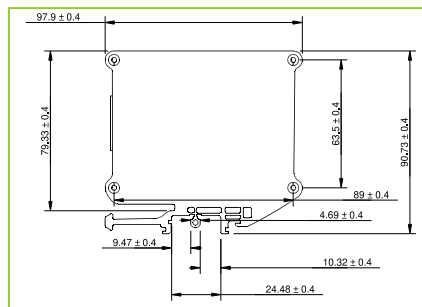
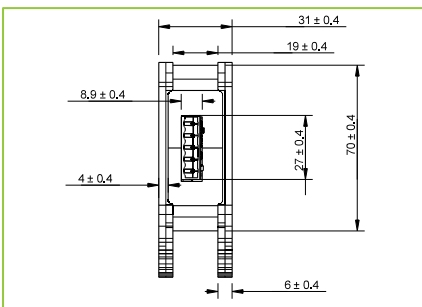
*****IMPORTANT:** The Part Number must have the mounting option code (-P, -E, -V, or -H) your project requires.

TECHNICAL DIAGRAMS (2D)

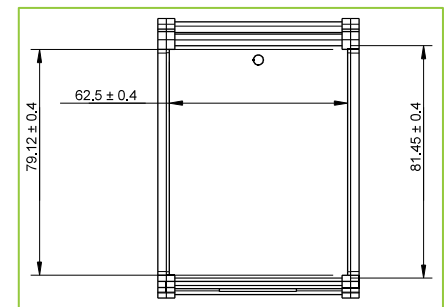
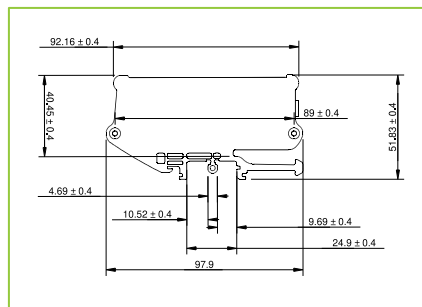
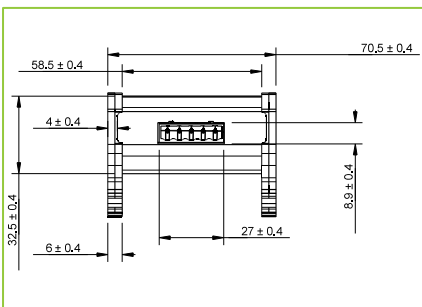
ENCLOSURE



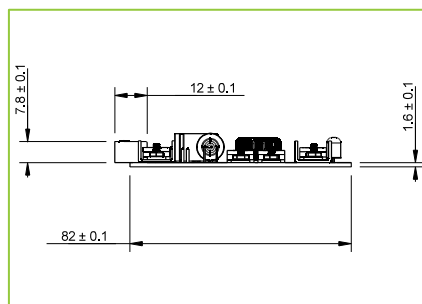
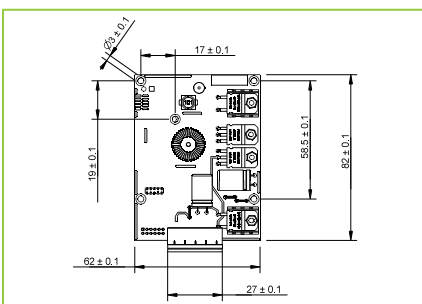
DIN-V



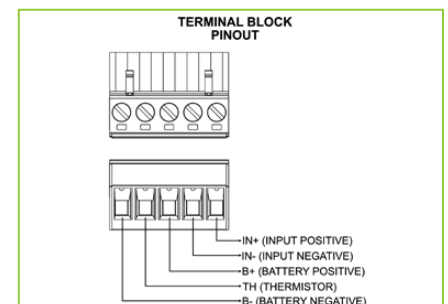
DIN-H



PCB



TERMINAL BLOCK PINOUT



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