CE EMC LVD
CB Scheme IEC 60950-1

Features

- Battery protection for over voltage, deep discharge, short circuit and reverse connection
- Alarm outputs for input, output and battery condition
- Remote On/Off for battery and power supply
- Controlled end of charge voltage by temperature sensor
- International safety approval package
- 3-year product warranty

This module provides a professional battery management system to charge and monitor an external lead-acid battery. Together with a power supply of the TSP series, a perfect DC-UPS system can be configured. The connected battery will be charged and held in charged mode by the power supply. In the event of a mains power failure the battery will supply the output power until the battery is discharged. As a consequence, the output voltage of the system is equivalent to the battery voltage. To avoid overcharging the battery, an external temperature sensor adjusts the battery voltage automatically to the required end of charge voltage. This can extend the battery life.
The battery is protected against deep discharge. Mains power and battery status are monitored regularly and failures indicated by corresponding LED's and alarm outputs. The module also provides an external On/Off input to switch-off both, power supply and battery.

Models

Order Code	Input	Max Power per Input	Output Voltage	Output Current max.*	Output Power max.
TSP–BCM12	12 VDC	144 W	12 VDC	12.0 A	144 W
TSP–BCM24	24 VDC	360 W	24 VDC	15.0 A	360 W
TSP–BCM48	48 VDC	360 W	48 VDC	7.5 A	360 W
TSP–BCM24A	24 VDC	600 W	24 VDC	25.0 A	600 W
TSP–BCM48A	48 VDC	600 W	48 VDC	12.5 A	600 W

* Maximum current at nominal Vout

Battery Controler Module	Possible TSP input source	Battery Controler Module	Possible TSP input source
TSP–BCM12	TSP 70-112 TSP 140-112	**TSP–BCM24A**	TSP 600-124
TSP–BCM24	TSP 90-124 TSP 180-124(-WR) TSP 360-124(-WR)	**TSP–BCM48A**	TSP 600-148
TSP–BCM48	TSP 90-148 TSP 180-148 TSP 360-148		

Input Specifications

Input current limitation (factory setting)	– TSP–BCM12	10.5 A
	– TSP–BCM24	12.8 A
	– TSP–BCM48	6.4 A
	– TSP–BCM24A	10.7 A
	– TSP–BCM48A	6.4 A

Output Specifications

Ouput Voltage range (adjustable with potentiometer)	– TSP–BCM12	12-14 VDC
	– TSP–BCM24 & TSP–BCM24A	24-28 VDC
	– TSP–BCM48 & TSP–BCM48A	48-56 VDC
Ripple and noise (20 MHz bandwidth)		200 mVp-p max.
Capacitive load		unlimited

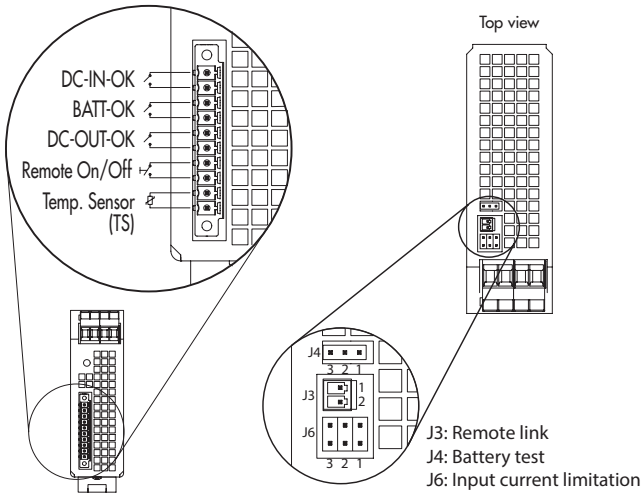
General Specifications

Operating temperature		–25°C to +70°C max.
	– TSP–BCM24 & TSP–BCM24A	derating above +40°C : 1.5 %/K
	– other models	derating above +40°C : 1.67 %/K
Storage temperature		–25°C to +85°C max.
Temperature coefficient		0.02 %/K
Humidity (non condensing)		95 % rel. H max.
Reliability, calculated MTBF at +25°C acc. to IEC 61709		> 1.5 Mio. h
Battery protection		against over voltage, deep discharge, overcharge, short circuit and reverse connection (built-in fuse)
Status signals		DC OK input, DC OK output, BAT OK all relay contact closed at status OK
Rating per relay contact		30 VDC / 0.6A or 60 VDC / 0.3A
Polution degree		2
Remote On/Off		by ext. contact: contact open = On, contact closed = Off
Remote link cable (0.5 m)		2 cables included (order code TSP-JC)
Degree of protection		IP 20 (IEC/EN 60529)
Altitude during operation		tba.
Safety standard		IEC/EN 60950-1, UL 60950-, UL508
Safety approvals	– CSA – CB test certificate – Certfication documents	UL 60950, UL 508 IEC 60950-1 (SIQ for EN)
Electromagnetic compatibility		in correspondence to connected units (no internal switching device)
Environment	– Vibration acc. IEC 60068-2-6; – Shock acc. IEC 60068-2-27	3 axis, sine sweep, 10 – 55 Hz, 1 g, 1 oct/min 3 axis, 15 g half sine, 11 ms
Enclosure material		aluminium (chassis) / stainless steel (cover)
Mounting	– DIN-rail mounting – Wall mounting (option)	for DIN-rails as per EN 50022-35x15/7.5 (snap-on with self-locking spring) with wall mounting bracket - see page 4
Connection		detachable screw terminals (plugs included) 2 terminals per output
Installation instructions		

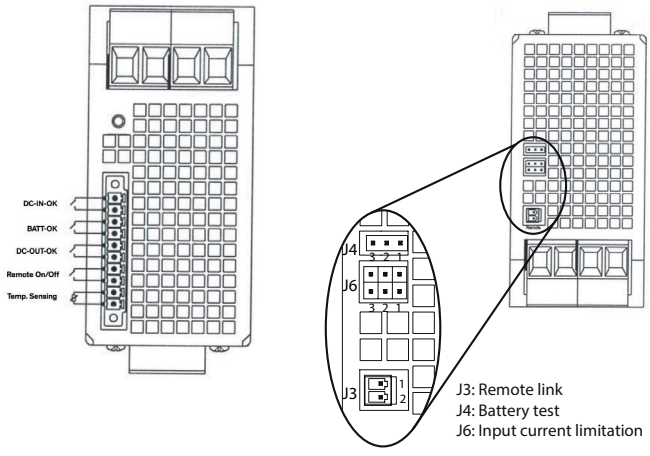
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Connector Position

TSP-BCM12
TSP-BCM24
TSP-BCM48

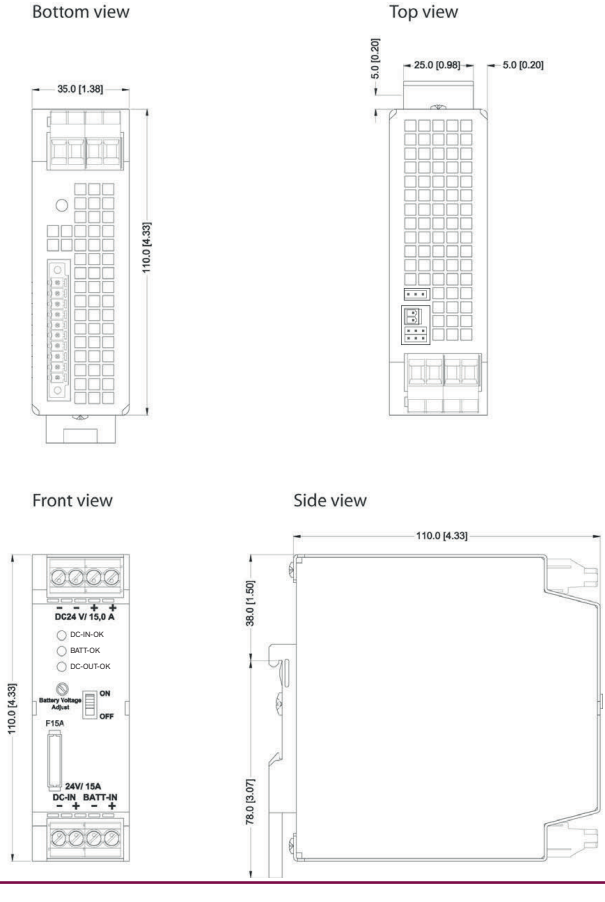


TSP-BCM24A
TSP-BCM48A

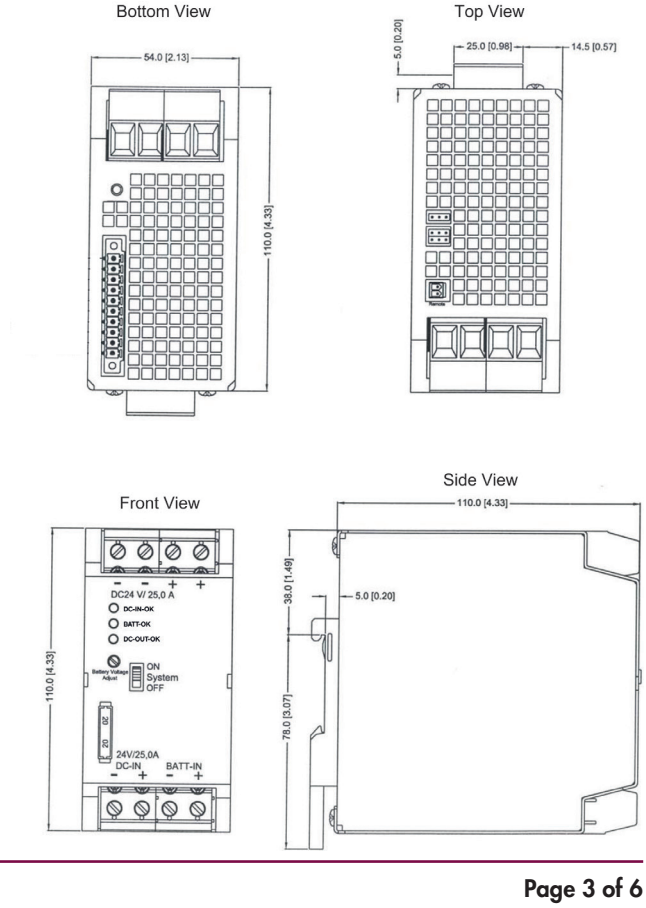


Outline Dimensions

TSP-BCM12
TSP-BCM24
TSP-BCM48

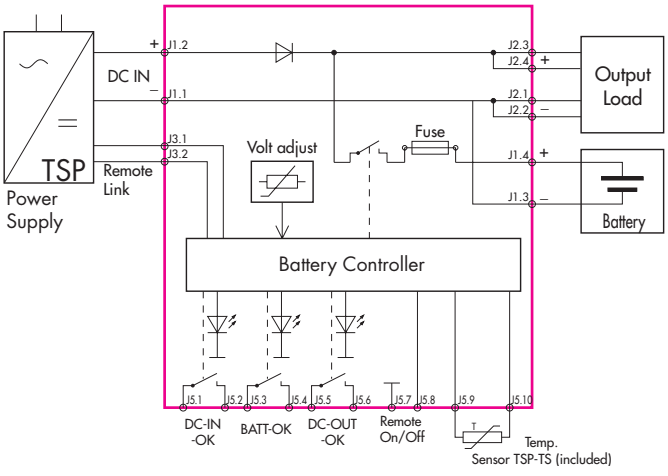


TSP-BCM24A
TSP-BCM48A



Function

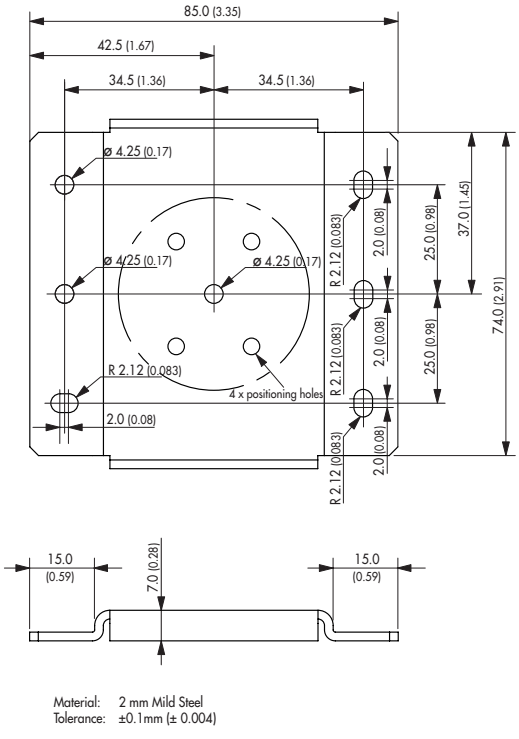
Function Diagram:

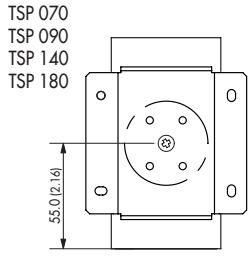


TSP–WMK Wall Mounting Bracket

Ordercode of Kit	For Models	Content of Kit
TSP-WMK03	TSP-BCMxx & TSP–BCMxxA	1 bracket

TSP-WMK03





All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

TSP–BAT Battery Pack

The TSP battery packs are designed to build, in connection with the TSP-BCM battery controller module, a complete DC-UPS system. The entire range utilizes 12 V maintenance free VRLA (valve regulated lead acid) batteries made by PANASONIC. These are not spillable lead gel type batteries. Two 12 V batteries are connected in series and assembled into a stainless steel enclosure, with integrated connector and connection cable.

Models

Order code (includes mating connectors)	Nominal Voltage	Charge current max.	Nominal Capacity (at 25°C, 77°F)
TSP-BAT12-072	12	1.08 A	7.2 Ah
TSP-BAT24-012	24 VDC	0.30 A	1.2 Ah
TSP-BAT24-034		0.51 A	3.4 Ah
TSP-BAT24-072		1.08 A	7.2 Ah
TSP-BAT24-120		1.80 A	12.0 Ah
TSP-BAT24-072KIT **TSP-BAT24-120KIT**	Installation rack without batteries		

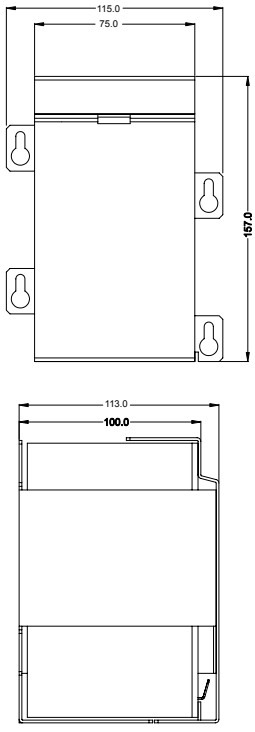
Specifications

Temperature ranges (max)	– during discharge	–15°C to +50°C max.
	– when charging / charged	0°C to +40°C max.
	– storage	–15°C to +40°C max.
Battery lifetime		3 – 5 years see general battery information for details & warranty limitations
Remote link cable (0.5 m)		1 cable included (order code TSP-JC)
Weight	TSP–BAT24–034	3.2 kg (7.1lb)
	TSP–BAT24–072	5.8 kg (12.9lb)
	TSP–BAT24–120	9.0 kg (20.0lb)

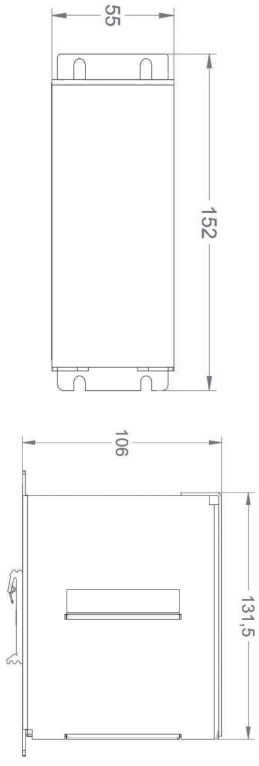
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

TSP–BAT Battery Pack

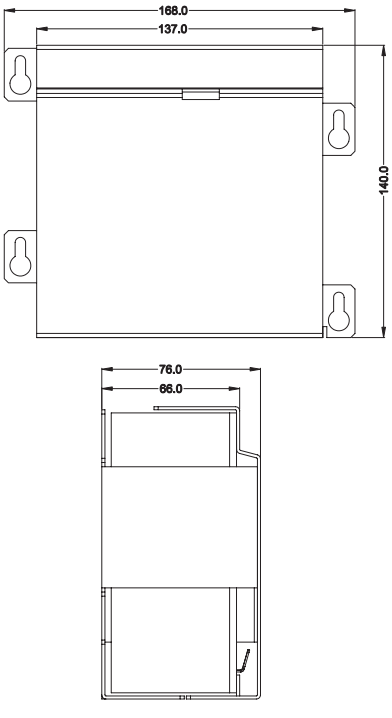
TSP-BAT12-072



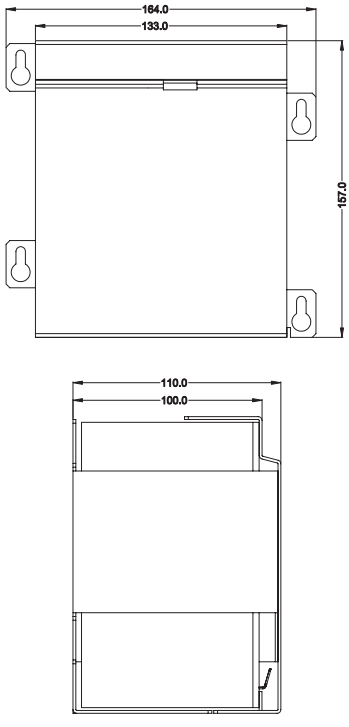
TSP-BAT24-012



TSP-BAT24-034



TSP-BAT24-072



TSP-BAT24-120