

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			



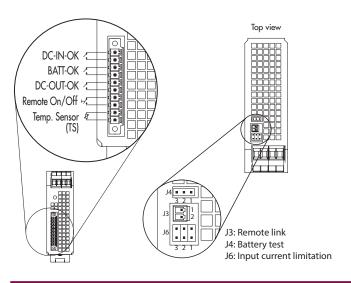
Post current limitation - TSP-BCM21 12.8 A 12.8 A 13.7 B 13.5	Input Specifications			
Output Voltage range adjustable with potentiometer)		– TSP–BCM24 – TSP–BCM48 – TSP–BCM24A	12.8 A 6.4 A 10.7 A	
codjustable with polentiometer	Output Specifications			
Capacitive load General Specifications Operating temperature - TSP-BCM24 & TSP-BCM24A certaing above +40°C: 1.5 %/K derating above +40°C: 1.5 %/K derating above +40°C: 1.67 %/K Storage temperature - 25°C to +85°C max. Temperature coefficient - 25°C to +85°C max. - 25°C to 40°C + 10°C + 1		r) - TSP-BCM24 & TSP-BCM24A	24-28 VDC	
General Specifications Operating temperature -TSP-BCM24 & TSP-BCM24 A TSP-BCM24 deroting above +40°C: 1.5 %/K deroting 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 Pollution 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)C) Degree of protection IP 20 (IEC/EN 60529) Altitude during operation tba. Safety approvals - CSA - CB test certificate - CB test cert	Ripple and noise (20 MHz b	andwidth)	200 mVp-p max.	
Operating temperature -TSP-BCM24 & TSP-BCM24 & TSP-BCM24 derating above +40°C: 1.5 %/K derating above +40°C: 1.67 %/K Storage temperature -25°C to +85°C max. Temperature coefficient 0.02 %/K Humidity (non condensing) 8elicibility, calculated MTBF at +25°C acc. to IEC 61709 8attery protection 9attery protection 9att	Capacitive load		unlimited	
Operating temperature -TSP-BCM24 & TSP-BCM24 & TSP-BCM24 derating above +40°C: 1.5 %/K derating above +40°C: 1.67 %/K Storage temperature -25°C to +85°C max. Temperature coefficient 0.02 %/K Humidity (non condensing) 8elicibility, calculated MTBF at +25°C acc. to IEC 61709 8attery protection 9attery protection 9att	General Specification	S		
Temperature coefficient O.02 %/K Humidity (non condensing) P5 % rel. H max. Reliability, calculated MTBF at +25°C acc. to IEC 61709 > 1.5 Mio. h against over voltage, deep discharge, overcharge, short circuit and reverse connection (builtin 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)C) Degree of protection IP 20 (IEC/EN 60529) Altitude during operation Safety standard IEC/EN 60950-1, UL 60950-1, UL 60950-1, UL 508 IEC 60950-1 (SIQ for EN) - CB test certificate - Certification documents Electromagnetic compatibility in correspondence to connected units (no internal switching device) Environment - Vibration acc. IEC 60068-2-6; - Shock acc. IEC 60068-2-7 - Shock acc. IEC 60068-2-7 For IN-rail mounting - Vill mounting - Vill mounting - Vill mounting - Vill mounting (option) detachable screw terminals (plugs included)	•	– TSP–BCM24 & TSP–BCM24A	derating above +40°C: 1.5 %/K	
Humidity (non condensing) Reliability, calculated MTBF at +25°C acc. to IEC 61709 Pattery protection Battery protection Status signals Color injury, DC OK output, DC OK OK OK OK OK OR OK OK OR OK OK OR OK OK OK OR OK OK OK OK OR OK	Storage temperature		−25°C to +85°C 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, C 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 TSPJC) Degree of protection IP 20 (IEC/EN 60529) Altitude during operation ba. Safety approvals CB at est certificate CB BES	Temperature coefficient		0.02 %/K	
Battery protection against over voltage, deep discharge, overcharge, short circuit and reverse connection (built-in fuse) Status signals 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 sext. contact: contact open = On, contact closed = Off Remote link cable (0.5 m) 2 cables included (order code TSPIC) Degree of protection IP 20 (IEC/EN 60529) Altitude during operation tba. Safety standard IEC/EN 60950-1, UL 60950-, UL508 Safety approvals CB Lest certificate EC 60950-1 (SIQ for EN) Electromagnetic compatibility in correspondence to connected units (no internal switching device) Environment Vibration acc. IEC 60068-2-6; 3 axis, sine sweep, 10 - 55 Hz, 1 g, 1 oct/min 3 axis, 15 g halfs in 11 ms Enclosure material oluminium (chassis) / stainless steel (cover) Mounting Vall mounting (option) with wall mounting bracket - see page 4 Connection detachable screw terminals (plugs included)	Humidity (non condensing)		95 % rel. H max.	
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) Degree of protection IP 20 (IEC/EN 60529) Altitude during operation Safety standard IEC/EN 60950-1, UL 60950-, UL 508 Safety approvals - CSA - CB test certificate - Certification documents Electromagnetic compatibility in correspondence to connected units (no internal switching device) Environment - Vibration acc. IEC 60068-2-67 - Shock acc. IEC 60068-2-27 Mounting - DIN-rail mounting - Wall mounting (option) with wall mounting bracket - see page 4 Connection	Reliability, calculated MTBF a	ıt +25°C acc. to IEC 61709		
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 - Certification documents Electromagnetic compatibility in correspondence to connected units (no internal switching device) Environment - Vibration acc. IEC 60068-2-6; 3 axis, sine sweep, 10 - 55 Hz, 1 g, 1 oct/min saxis, 15 g half sine, 11 ms Enclosure material aluminium (chassis) / stainless steel (cover) Mounting - DIN-rail mounting 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)	Battery protection			
Polution degree Remote On/Off By ext. contact: contact open = On, contact closed = Off Remote link cable (0.5 m) Degree of protection IP 20 (IEC/EN 60529) Altitude during operation Safety standard IEC/EN 60950-1, UL 60950-, UL508 Safety approvals CB test certificate Certification documents Electromagnetic compatibility in correspondence to connected units (no internal switching device) Environment Vibration acc. IEC 60068-2-6; Shock acc. IEC 60068-2-7 3 axis, sine sweep, 10 – 55 Hz, 1 g, 1 oct/min 3 axis, 15 g half sine, 11 ms Enclosure material Mounting DIN-rail mounting Tor 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)	Status signals		DC OK input, DC OK output, BAT OK all relay contact closed at status OK	
Remote On/Off Remote link cable (0.5 m) Degree of protection Altitude during operation Safety standard Condest cartificate Certification documents Electromagnetic compatibility Environment Ovibration acc. IEC 60068-2-6; Shock acc. IEC 60068-2-27 Mounting Degree of protection IP 20 (IEC/EN 60529) IEC/EN 60950-1, UL 60950-, UL508 IEC 60950-1, UL 60950-, UL508 IEC 60950-1 (SIQ for EN) In correspondence to connected units (no internal switching device) Environment Ovibration acc. IEC 60068-2-6; Shock acc. IEC 60068-2-27 A axis, sine sweep, 10 – 55 Hz, 1 g, 1 oct/min A swis, 15 g half sine, 11 ms Enclosure material Mounting Output DIN-rail mounting For DIN-rails as per EN 50022-35x15/7.5 (snap-on with self-locking spring) with wall mounting bracket - see page 4 Connection	Rating per relay contact		30 VDC / 0.6A or 60 VDC / 0.3A	
Remote link cable (0.5 m) 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 Electromagnetic compatibility in correspondence to connected units (no internal switching device) Environment - Vibration acc. IEC 60068-2-6; - Shock acc. IEC 60068-2-7 3 axis, sine sweep, 10 – 55 Hz, 1 g, 1 oct/min 3 axis, 15 g half sine, 11 ms Enclosure material Mounting - DIN-rail mounting - Wall mounting - Wall mounting (option) Cables included (order code TSPJC) IP 20 (IEC/EN 60529) IB 20 (IEC/EN 60529) UL 60950-1, UL 60950-, UL508 IEC 60950-1 (SIQ for EN) In correspondence to connected units (no internal switching device) a axis, sine sweep, 10 – 55 Hz, 1 g, 1 oct/min 3 axis, 15 g half sine, 11 ms Enclosure material Mounting - DIN-rail mounting - Wall mounting (option) with wall mounting bracket - see page 4 Connection	Polution degree		2	
Degree of protection Altitude during operation Safety standard IEC/EN 60950-1, UL 60950-, UL508 Safety approvals - CSA - CB test certificate - Certfication documents 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 - Shock acc. IEC 60068-2-27 3 axis, 15 g half sine, 11 ms Enclosure material Mounting - DIN-rail mounting - Wall mounting - Wall mounting (option) Connection detachable screw terminals (plugs included)	Remote On/Off		by ext. contact: contact open = On, contact closed = Off	
Altitude during operation tba. Safety standard IEC/EN 60950-1, UL 60950-, UL508 Safety approvals - CSA - CB test certificate - Certification documents Electromagnetic compatibility in correspondence to connected units (no internal switching device) Environment - Vibration acc. IEC 60068-2-6; 3 axis, sine sweep, 10 - 55 Hz, 1 g, 1 oct/min - Shock acc. IEC 60068-2-27 3 axis, 15 g half sine, 11 ms Enclosure material aluminium (chassis) / stainless steel (cover) Mounting - DIN-rail mounting 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)	Remote link cable (0.5 m)		2 cables included (order code TSPJC)	
Safety standard Safety approvals - CSA - CB test certificate - Certification documents Electromagnetic compatibility in correspondence to connected units (no internal switching device) Environment - Vibration acc. IEC 60068-2-6; - Shock acc. IEC 60068-2-27 Source material Mounting - DIN-rail mounting - Wall mounting (option) Connection	Degree of protection		IP 20 (IEC/EN 60529)	
Safety approvals - CSA - CB test certificate - Certification documents Connection Connection	Altitude during operation		tba.	
- CB test certificate - Certfication documents 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 Mounting - DIN-rail mounting for DIN-rails as per EN 50022-35x15/7.5 (snap-on with self-locking spring) with wall mounting bracket - see page 4 Connection Connection	Safety standard		IEC/EN 60950-1, UL 60950-, UL508	
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 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 Connection	Safety approvals	- CB test certificate		
- Shock acc. IEC 60068-2-27 3 axis, 15 g half sine, 11 ms 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)	Electromagnetic compatibility	(
Mounting - DIN-rail mounting for DIN-rails as per EN 50022-35x15/7.5 (snap-on with self-locking spring) - Wall mounting (option) with wall mounting bracket - see page 4 Connection detachable screw terminals (plugs included)	Environment			
(snap-on with self-locking spring) - Wall mounting (option) with wall mounting bracket - see page 4 Connection detachable screw terminals (plugs included)	Enclosure material		aluminium (chassis) / stainless steel (cover)	
Connection detachable screw terminals (plugs included)	Mounting	G	(snap-on with self-locking spring)	
	Connection			
Installation instructions				

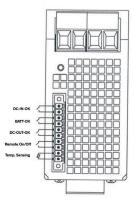
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

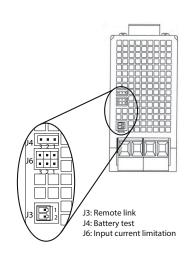


Connector Position

TSP-BCM12 TSP-BCM24 TSP-BCM48 TSP-BCM24A TSP-BCM48A



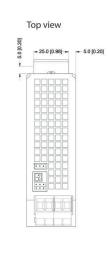


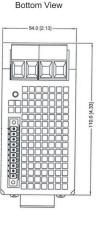


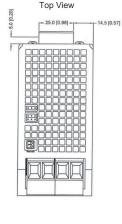
Outline Dimensions

TSP-BCM12 TSP-BCM24 TSP-BCM48 TSP-BCM24A TSP-BCM48A

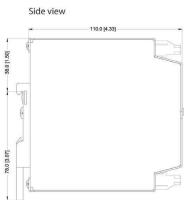




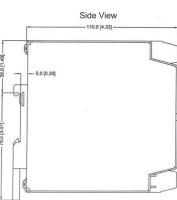










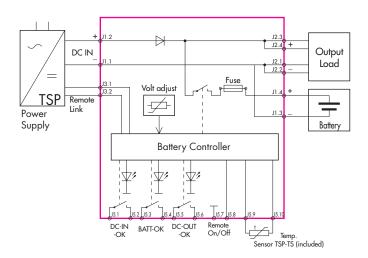


Page 3 of 6



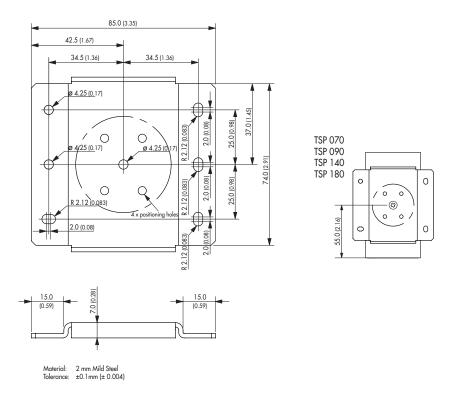
Function

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

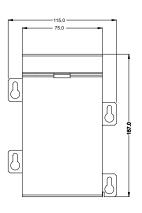
during dischargewhen charging / chargedstorage		-15° C to $+50^{\circ}$ C max. 0° C to $+40^{\circ}$ C max. -15° C to $+40^{\circ}$ C max.
		3 – 5 years see general battery information for details & warranty limitations
		1 cable included (order code TSP-JC)
	TSP-BAT24-072	5.8 kg (12.9lb)
	- when charging / charged	– when charging / charged

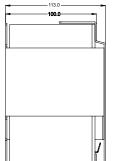
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.



TSP-BAT Battery Pack

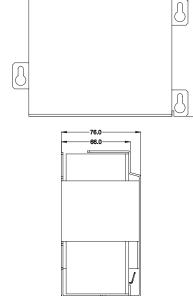
TSP-BAT12-072





TSP-BAT24-034

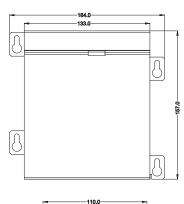
137.0

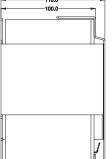


TSP-BAT24-012



TSP-BAT24-072





TSP-BAT24-120

