

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 & Battery voltage	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 Controller Module	Possible TSP input source	Battery Controller 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

Output 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.
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Capacitive load	unlimited
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General Specifications

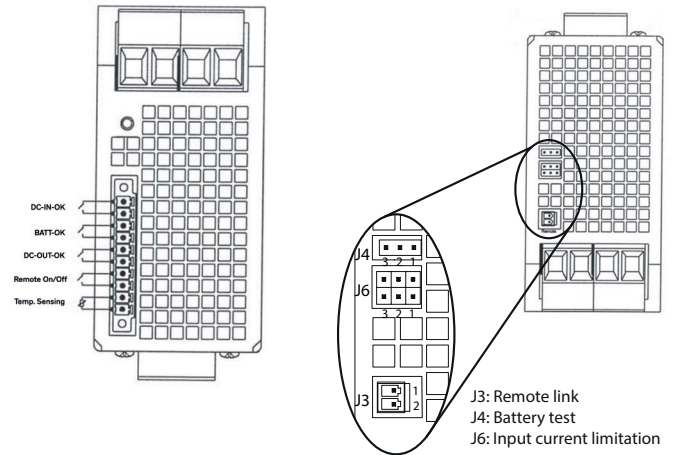
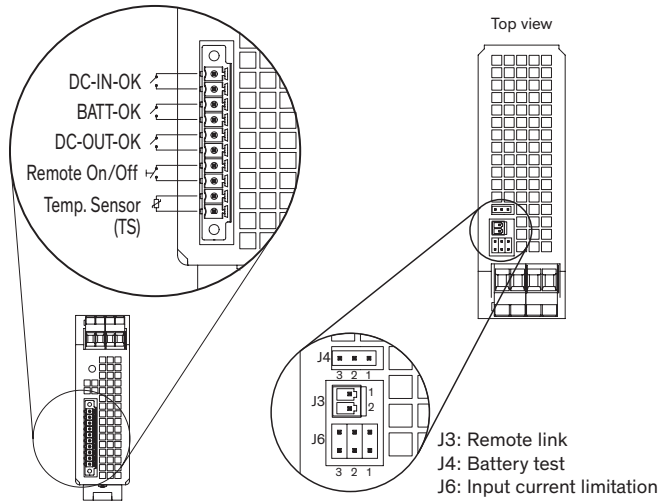
Operating temperature	– TSP-BCM24 & TSP-BCM24A	–25°C to +70°C max. derating above +40°C : 1.5 %/K
	– other models	derating above +40°C : 1.67 %/K
Storage temperature		–25°C to +85°C max.
Temperature coefficient		0.02 %/K
Humidity (non condensing)		95 % rel. H max.
Reliability, calculated MTBF at +25°C 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) www.tracopower.com/products/tsp-jc.pdf
Degree of protection		IP 20 (IEC/EN 60529)
Safety standard		IEC/EN 60950-1, UL 60950-, UL508 IEC/EN 61010-1, IEC/EN 61010-2-201
Safety approvals	– CSA	UL 60950, UL 508
	– CB test certificate	IEC 60950-1 (SIQ for EN)
	– Certification documents	IEC/EN 61010-1, IEC 61010-2-201 www.tracopower.com/overview/tsp
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 50022-35×15/7.5 (snap-on with self-locking spring)
	– Wall mounting (option)	with wall mounting bracket - see page 4
Connection		detachable screw terminals (plugs included)
Installation instructions		www.tracopower.com/overview/tsp-bcm

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

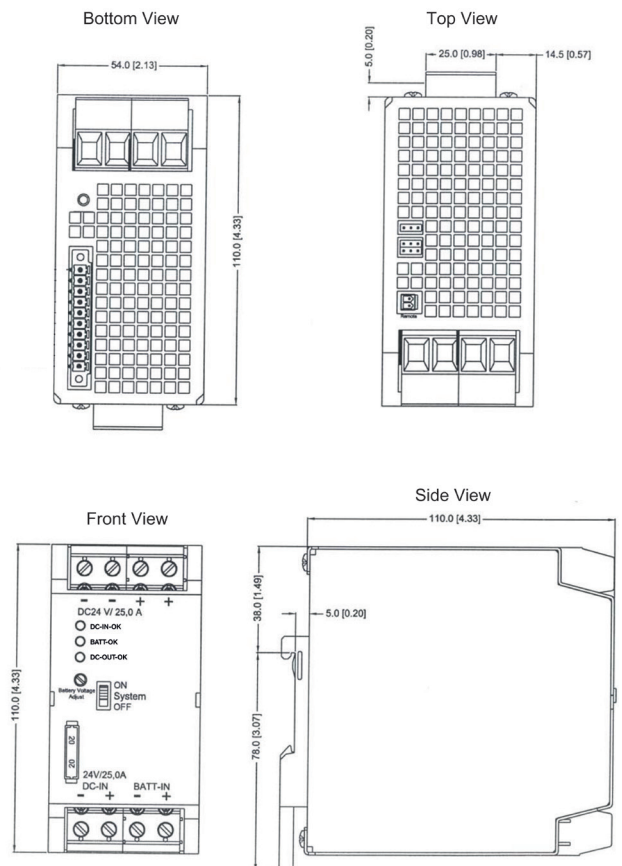
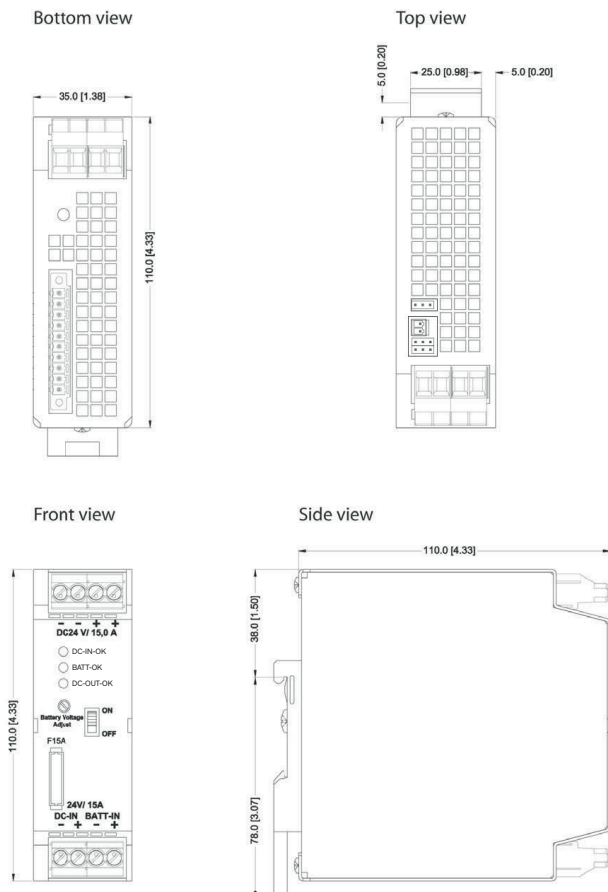
TSP-BCM24A
TSP-BCM48A



Outline Dimensions

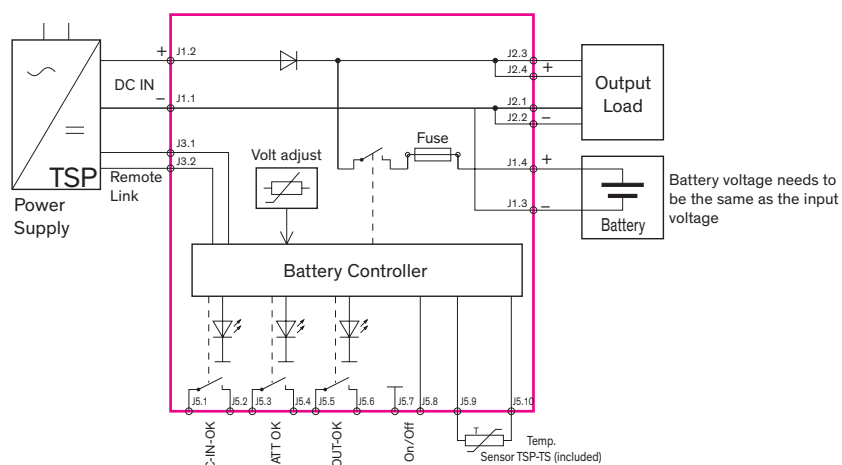
TSP-BCM12
TSP-BCM24
TSP-BCM48

TSP-BCM24A
TSP-BCM48A



Function

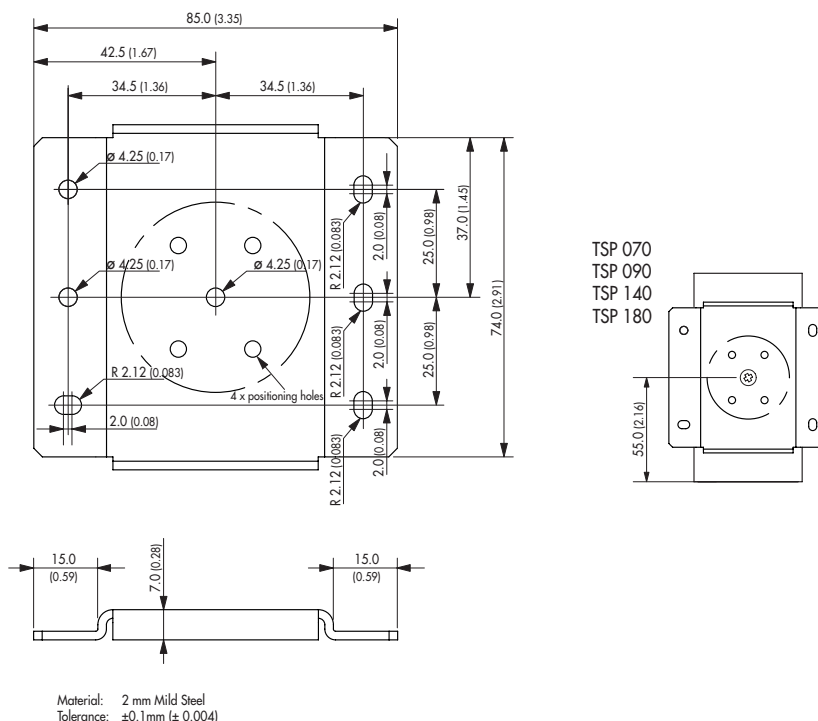
Function Diagram:



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		

Note * End of life

Specifications

Temperature ranges (max)	– during discharge – when charging / charged – storage	–15°C to +50°C max. 0°C to +40°C max. –15°C to +40°C max.
Battery lifetime		3 – 5 years see general battery information for details & warranty limitations www.tracopower.com/products/tsp-panas_gen.pdf
Remote link cable (0.5 m)		1 cable included (order code TSP-JC) www.tracopower.com/products/tsp-jc-cable.pdf
Weight	TSP-BAT24-034 TSP-BAT24-072 TSP-BAT24-120	3.2 kg (7.1lb) 5.8 kg (12.9lb) 9.0 kg (20.0lb)
Battery datasheets	TSP-BAT12-072 TSP-BAT24-012 TSP-BAT24-034 TSP-BAT24-072 TSP-BAT24-120	www.tracopower.com/products/tsp-panas_072.pdf www.tracopower.com/products/tsp-powers_012.pdf www.tracopower.com/products/tsp-panas_034.pdf www.tracopower.com/products/tsp-panas_072.pdf www.tracopower.com/products/tsp-panas_120.pdf

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

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Technical drawing of the BSH BT 2500 refrigerator showing front, side, and top views with dimensions in mm.

Front View Dimensions:

- Width: 51.8
- Height: 141.0

Side View Dimensions:

- Depth: 104.6
- Height (top section): 152.0
- Height (bottom section): 130.0

Top View Dimensions:

- Width: 26.8
- Radius (corner): R 2.5
- Radius (corner): R 4.7
- Radius (corner): R 2.5

Front View Details:

- Three circular holes are visible on the front panel.
- Two rectangular handles are visible at the bottom.

Side View Details:

- Four circular holes are visible along the side panel.
- Two rectangular handles are visible on the side panel.

Top View Details:

- Two rectangular handles are visible on the top panel.
- A rectangular label is visible on the right side of the top panel.

Legend:

- Two symbols are shown: a triangle and a circle with a cross inside.

All dimensions in mm

Technical drawing of the front and side views of the 1000 Series 1000mm wide cabinet. The front view shows a width of 168.8mm and a height of 139.3mm. The side view shows a depth of 79.2mm. Dimensions are in mm.

Technical drawing of the Ecolab 1000 cabinet, showing front and side views with dimensions in mm.

Front View Dimensions:

- Overall width: 164.8
- Overall height: 104.6
- Internal width (between side panels): 149.3
- Top panel thickness: 6.0
- Side panel thickness: 32.4
- Bottom panel thickness: 104.6
- Radius of bottom corners: R 2.5 and R 5.0

Side View Dimensions:

- Overall depth: 112.5
- Overall height: 156.5

All dimensions in mm

Technical drawing of the 1000 Series cabinet, showing front and side views with dimensions in mm.

Front View Dimensions:

- Overall width: 231.8
- Internal width: 216.3
- Overall height: 104.6
- Top panel thickness: 6.0
- Right side panel thickness: 32.4
- Bottom panel thickness: 104.6
- Radius R 2.5
- Radius R 5.0

Side View Dimensions:

- Overall depth: 112.5
- Overall height: 156.5

All dimensions in mm