MAP Power Supply 150W

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BOSCH
Invented for life

- Provides two independent power ports with fixed 28 VDC regulated output
- Provides 150 W for battery charging and system power
- Provides controlled 500 mA, 24 VDC nominal auxiliary output
- Provides color-coded terminal for easy installation
- Provides two dry relay contacts for AC and DC trouble signaling

This power supply and battery charger unit converts 230 VAC input into 24 VDC nominal and 28 VDC fixed outputs.

Input

Mains Power
230 VAC
-15%, +10%
47 Hz to 63 Hz AC

Battery Power
24 VDC nominal

Converted Output

- Two regulated and supervised 28 VDC ±1 VDC fixed outputs
- 24 VDC nominal switched output
- Dedicated 24 VDC nominal panel output

The unit independently maintains and supervises two 24 VDC batteries[1] for a combined rating of 80 Ah. The power supply is designed to work locally and remotely. In remote applications, the installer can place MAP Power Enclosure Kits (ICP-MAP0115) or MAP Expansion Enclosure Kits (ICP-MAP0120) containing power supply units anywhere on the Bosch Data Bus.

[1]*Or four 12 VDC batteries, with each pair connected in series.*

Functions

Firmware upgrades
The firmware of all devices in the MAP system can be upgraded or updated with the Bosch Remote Programming Software (RPS). This allows for on-site or off-site (IP through Ethernet) upgrades or updates.

Ground fault detection
The power supply detects ground faults of 25 kΩ or less in the system wiring, and reports the faults to the panel over the Bosch Data Bus.

Supervision Monitoring
The software monitors and communicates status information over the Bosch Data Bus for the following:

- AC input power
- Battery power
- Battery charger
- 28 VDC outputs (Output A, Output B)
- 24 VDC nominal switched auxiliary output

Indicators
Yellow and green light-emitting diodes (LEDs) and signal outputs indicate AC, battery, and BDB communication status.

Battery Charging Circuit
The battery charger provides 4.85 A nominal (5 A maximum) for all the outputs. The current available for recharging the batteries is this 4.85 A nominal current minus the current being supplied to all the other outputs (A and B outputs, Switched Auxiliary Output, and Panel Output).
If the AC power fails, the batteries must supply sufficient power to maintain operation for a specified period of time. The time for the delayed indication of AC power failure must be considered. With respect to 24VDC battery voltage the battery current is factor 1.3 higher than the load current. When AC power is restored, the batteries must be recharged within a specified period of time to 80% respective 100% of nominal capacity. The following table indicates the maximum available current for panel + consumers in consideration of the used battery configuration and recharge time:

Recharge time in 100%	24 hrs to 80%	24 hrs to 100%	48 hrs to 100%
24V / 18 Ah	3 A	3 A	3 A
24V / 36 Ah	3 A	2.7 A	3 A
24V / 40 Ah	2.9	2.5 A	3 A
24V / 72 Ah	1.5 A	1.2 A	2.4 A
24V / 80 Ah	1.2 A	0.8 A	1.5 A

Load-shed, Overvoltage Protection and Recovery
All connected batteries are permanently monitored for under voltage (<25VDC). Following an extended AC power failure, the power supply hardware and software disconnects a battery from all outputs if the battery voltage falls below 20 VDC. The load-shed eliminates the possibility of permanent degradation in the batteries. After AC power is restored to an appropriate operating voltage, the battery charger recharges the batteries.
The overvoltage protection prevents the output voltage from rising above the value of >30 VDC. Connected consumers are thereby protected against damage by overvoltage.

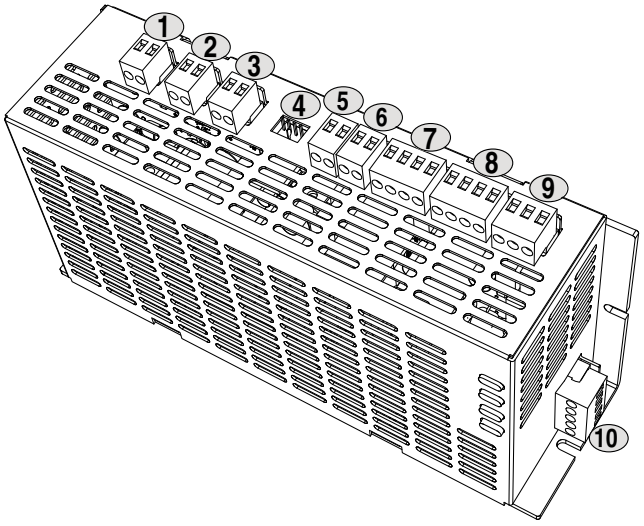
Temperature Compensation
The power supply adjusts the battery charge voltage to compensate for the air temperature around the batteries.

Certifications and approvals

Region	Certification	
Germany	VdS-S	S 112016 [MAP 5000]
	VdS	G111040 [ICP-MAP-5000]
Europe	CE	[MAP 5000 Modules]
Poland	TE-CHOM	03-16-o [ICP-MAP5000]
France	AFNOR	N1133400003A0 ICP-MAP5000-2 [MAP5000]

Installation/configuration notes

Terminals and Connectors



1. Battery Circuit 2
2. Battery Circuit 1
3. Thermal Compensation Circuit
4. Power connection to main panel (Panel Output)
5. Tamper switch input
6. Switched Auxiliary Power Output
7. Bosch Data Bus connector (Output A)
8. Bosch Data Bus connector (Output B)
9. Trouble outputs – AC Main Fail and Power Supply Summary Trouble (optional)
10. Main power connector

Parts included

Quantity	Component
1	IPP-MAP0005-2 Map Power Supply 150W
1	Accessory pack, cables • Two Bosch Data Bus (BDB) cables, long (with 4-pin terminal plug) • One thermistor cable (with 2-pin terminal plug) • One battery cable (with ring terminal) • One battery jumper cable (with ring terminal)

Quantity	Component
1	Accessory pack, hardware • Two 2-pin terminal plugs (dark blue) • One 2-pin terminal plug (white) • One 3-pin terminal plug (orange) • One 4-pin terminal plug (green) • One 5-pin terminal plug (black)
1	Literature, Installation Instructions

Technical specifications

Electrical

Maximum operating voltage in VAC	230 (-15 %, + 10%)
Minimum AC line frequency in Hz	47
Maximum AC line frequency in Hz	63
Minimum output voltage in VDC	16
Maximum output voltage in VDC	30
Minimum current consumption in mA	1070 at rated load and 230 VAC
Maximum current consumption in mA	100 at no-load and 24 VDC
Battery	
Battery configuration in VDC	12
Battery type	Lead battery, maintenance - free
Min. ampere hour rating in Ah	18
Max. ampere hour rating in Ah	80
Battery charge voltage in VDC	27.6 (with thermal compensation)
Nominal battery charger output in A	4.85
Maximum battery charger output in A	5
Outputs	
Maximum sum of output (field-accessible or user-accessible) power in W	≤ 109
Maximum ripple of all voltage outputs in mV	≤ 250
A and B output	
Type	Supervised, independently short-circuit protected
Minimum output voltage in VDC	26
Maximum output voltage in VDC	30
Rated voltage in VDC	28 ± 1
Rated current in mA (A or B)	2000
Rated current in mA (sum of A and B)	3000
Switched auxiliary output	
Type	Supervised
Minimum output voltage in VDC	24
Maximum output voltage in VDC	30
Rated voltage in VDC	24
Rated current in mA	500
Panel output	
Type	Unsupervised
Maximum output voltage in VDC	27.6
Rated voltage in VDC	24
Rated current in mA	500
Trouble output dry contacts	
Maximum operating voltage in VDC	30
Rated current in mA	1000

Mechanical

Dimension in cm (H x W x D)	11.43 x 22.23 x 6.67
Dimension in inch (H x W x D)	4.5 x 8.75 x 2.63
Weight in g	590
Weight in oz	20.8
Indicators	Green LEDs indicate: • AC good • Operation monitor 2x yellow LEDs indicate: • BAT1/2 (on = missing battery, blinking = low battery)
Number of inputs	
Tamper switch input	1
Thermal compensation circuit*	1

* If supplied thermistor is not used, a leaded 10 kΩ, 1%, ¼ W resistor must be placed across the trim terminals (does not comply with VdS). Out of tolerance high condition of the battery voltage is an indication of a missing trim resistor.

Environmental

Minimum operating temperature in °C	-10
Maximum operating temperature in °C	55
Minimum storage temperature in °C	-20
Maximum storage temperature in °C	60
Min. temperature compensation (Trim) in °C	-10
Max. temperature compensation (Trim) in °C	55
Minimum relative humidity in %	5 (non-condensing)
Maximum relative humidity in %	95 (non-condensing)
Protection class	IP30 IP31 (built into the MAP Panel Enclosure with an edge protection profile)
Security level	IK04 IK06 (built into the MAP Panel Enclosure with an edge protection profile)
Environmental class	II: EN50130-5, VdS 2110
Design type as per EN 50131	A
Usage	Indoor

Ordering information

MAP Power Supply 150W
Power supply and battery charger unit; converts 230 VAC input into 24 VDC nominal and 28 VDC fixed output.
Order number **IPP-MAP0005-2**

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1427989131 | en, V22, 24. Feb 2017