

PR BX

POWERBOX Marine Line PT578 Series 500W Single Output AC/DC Switch Mode Power Supply

Preliminary datasheet

Features

DNV-GL Approved for bridge use (pending)
EN60945 compliant
Universal input (90 – 265Vac)
Efficiency above 93%
Active Power Factor Correction
Adjustable output
Overload and overvoltage protection
Thermal overload protection
Conformal coating
DC OK signal and potential free contact
Cooling by free air convection
DIN-Rail mounting on back or side
RoHS compliant
Internal redundancy diode
Single or parallel mode user selectable

Input

Input range	90-265VAC, 125-375VDC.
Frequency	47-63Hz, 440Hz with reduced PFC.
Inrush current	30A, cold start @ 230VAC/25°C.
Input current	<1.3A @ 230VAC.
Input fuse	10AT, internal, not user serviceable.
Efficiency	>93%.
Leakage current	<3.5 mA.

Output

Output voltage	24V, adjustable 23-29V.
Output power	500W. Peak power 750W (10s).
Minimum load	0A.
Load regulation*)	±0.5%.
Temperature coefficient	±0.02%/°C.
Overvoltage protection	32V.
Overload protection	User selectable (see table 1).
Peak short circuit current	40A (<100ms).
Overtemp. protection	±90°C internal temp.
Turn-on delay	<2s @ 90VAC.
DC OK signalling	LED on front: Green = DC OK Flashing Red = Overload Red = DC Fail Potential free contact; active closed; I < 1 A open voltage < 30V

*)Load regulation is specified with single/parallel DIP switch (SW3) in the OFF position. With DIP switch SW3 in the ON position the load regulation is 2% typical.



Environmental

Thermal performance	
Operating temperature	-25°C to +50°C without derating.
Storage temperature	-40°C to +85°C.
Humidity	Up to 100% condensing at all relevant temperatures. Conformal coating.
Vibration	DNV-GL table 7 High vibration strain, class B, ±1.6mm displacement, 2-25Hz, 4g; 25-100Hz (1 octave/min).
Altitude	10,000 feet operating, 30,000 feet non-operating.

General

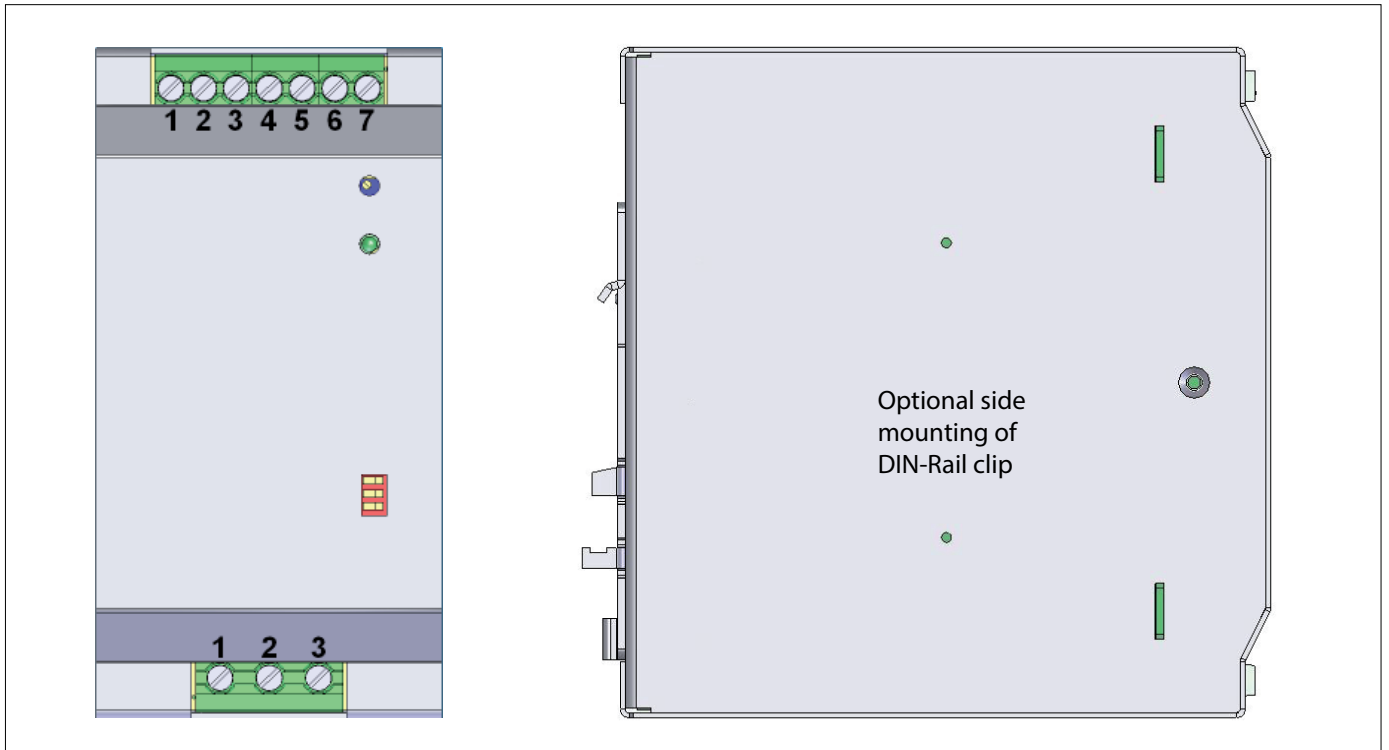
Isolation voltage	3000VAC Input/Output. 2000VAC Input/Chassis.
Weight	<1.8 kg.
Dimensions (HxWxD)	132 x 67 x 128 mm. Excluding DIN-Rail mounting device. Add 10mm for standard mounting device and EN50022 DIN-Rail.
Warranty	2 years.

Standards

EMC Emissions	EN60945 conducted & radiated.
Harmonics	EN61000-3-2 compliant.
ESD	EN61000-4-2 Air ±8kV, Contact ±6kV.
Electromagnetic fields	EN61000-4-3 10V/m 8MHz-2GHz.
EFT/Burst	EN61000-4-4 2kV.
Surge	EN61000-4-5, Line-Line 0.5kV, Line-GND 1kV.
Conducted immunity	EN61000-4-6 3VRMS, 150kHz-80MHz.
Conducted LF	IEC60533 3VRMS, 50Hz-12kHz.
HV immunity	IEC60947-2 2kV, 60s.
Pending	DNV-GL. Temperature, class D -25°C to +55°C. Humidity, class B, up to 100%. Vibration, class B, ±1.6mm displ. 2-25Hz, 4g 25-100Hz.
EMC	Class B, bridge and open deck.
Class guideline	DNVGL-CG-0339, November 2015.
CE	EMC Directive 2014/30/EU. Low Voltage Directive is 2014/35/EU.

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Mechanical



Pin Connection

Input Connector	
Pin	Function
1	Line
2	Neutral
3	Safety Ground

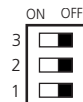
Output Connector	
Pin	Function
1	DC OK
2	DC OK; Potential Free Contact
3	DC OK; Potential Free Contact
4	Output DC +
5	Output DC +
6	Output DC -
7	Output DC -

Wire Gauge	
AWG	24-12
Solid	0,2-4mm ²
Flexible	0,2-2,5mm ²

DIP Switch Settings

Table 1			
SW1	SW2	SW3	
OFF	OFF	X	OPTION 1
OFF	ON	X	OPTION 2
ON	OFF	X	OPTION 3
ON	ON	X	OPTION 4

Table 2			
SW1	SW2	SW3	
X	X	OFF	SINGLE OPERATION
X	X	ON	PARALLEL OPERATION



OPTION 1: overload results in latched switch off
 OPTION 2: overload results in hiccup mode
 OPTION 3: overload results in current limit, with latched switch off short circuit protection
 OPTION 4: overload results in current limit, with latched switch off short circuit protection

Specifications are subject to change without notice.