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POWERBOX Marine Line
PT503 Series
250W Single Output
AC/DC DIN-Rail Switch Mode Power Supply
Manual

Features

- GL approved for offshore applications
- GL approved for bridge use
- CE-marked
- EMC acc. to EN60945 and EN61000
- Universal input (90 – 265Vac)
- Adjustable output 24V DC/10A
- Up to 90% efficiency
- Active Power Factor Correction
- Adjustable output
- Overload and overvoltage protection
- Thermal overload protection
- DC OK signal and potential free contact
- Cooling by free air convection
- DIN-Rail mounting on back or side
- RoHS compliant
- Warranty 2 years

Installation and Safety

This Power Supply Unit is to be installed and put into operation by qualified personnel only, while observing national and local regulations.

Read this manual thoroughly to guarantee safe operation and to utilise all features.

This Power Supply Unit is meant for installation as built-in equipment. It must be mounted within an enclosure that is designed to prevent personal injury resulting from accessibility to live parts.

Caution
To prevent the risk of electrical shock, never carry out work on live parts.

Warning
Explosion Hazard - Do not disconnect while circuit is alive unless area is known to be non-hazardous.

Warning
During operation the temperature of the housing can be very high.

To guarantee sufficient convection a minimum distance of 50 mm below and above the device has to be observed.

Manufacturers declaration of conformity
In conformance with EMC guideline 2014/30/EU and Low Voltage Directive 2014/35/EU.

Output connections

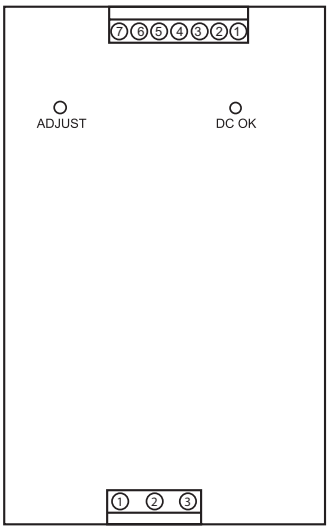
Pin	Function
1	Output DC +
2	Output DC +
3	Output DC -
4	Output DC -
5	DC OK; Potential Free Contact
6	DC OK; Potential Free Contact
7	DC OK; Open Collector

Input and Output Wire Gauge

AWG	24 - 12
Solid	0.2 - 4 mm^2
Flexible	0.2 - 2.5 mm^2

Input connections

Pin	Function
1	Line
2	Neutral
3	Safety Ground



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Specifications

Input	Min.	Typ	Max.	Units	Remarks
Input voltage range	90	-	265	VAC	Single phase
Line frequency	45	-	63	Hz	
Input current	-	-	1.3	A rms	At 230 VAC input voltage
Efficiency	-	90	-	%	At full load and 230 VAC input
Power factor	-	0.97	-		Active PFC stage
Inrush current	-	-	30	A	At 230 VAC input voltage
Input fuse	4 AT, internal, not user serviceable				

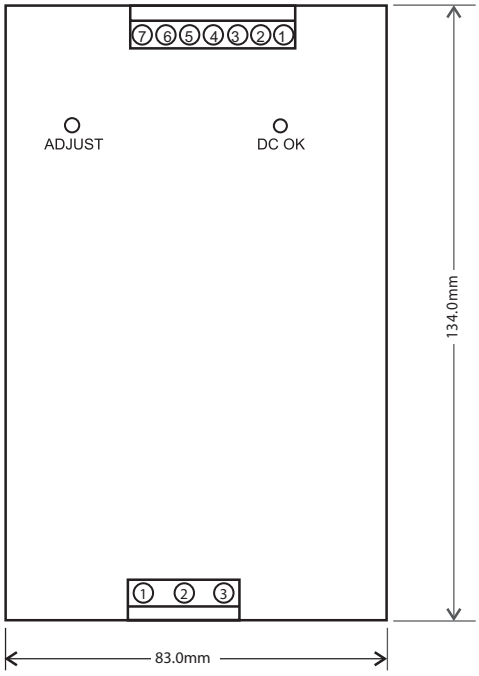
Output	Min.	Typical	Max.	Units	Remarks
Output voltage	23	24	29	VDC	Adjustable
Output power	-	-	250	W	
Minimum load	0	-	-	A	
Load regulation	-	0.5	-	%	Load 10 – 100%
Temp. coefficient	-	0.02	-	%/°C	
Overvoltage protection	-	32	-	V	
Overload protection	11.0	-	12.5	A	Hiccup ; Latching optional
Peak short circuit current	-	20	-	A	Max. 100 ms
Overtemp. Protection	-	90	-	°C	Internal heatsink temp.
Turn-on delay	-	-	2	s	At 90 VAC input voltage

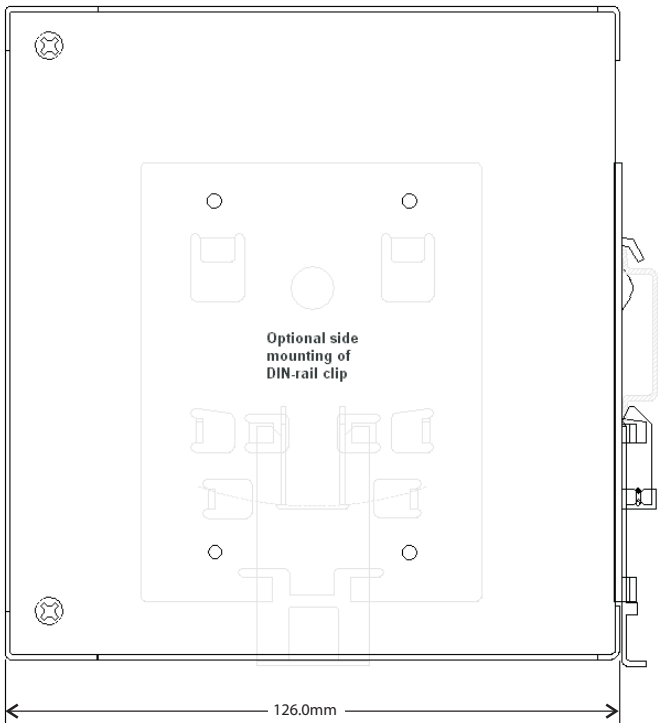
Signals	
Input/Output OK indication	Green LED on front
DC OK signal	Open collector, active low, max. allowed current 25 mA
DC OK contact	Relais contact, active closed, 30 VDC/1A

Environmental	Min.	Typical	Max.	Units	Remarks
Operating temp. range	-25	-	+70	°C	Without derating
Storage temp. range	-40	-	+85	°C	
Humidity	5	-	95	%	Non-condensing at +55°C
Vibration	±1.6mm displacement, 2–25Hz, 4g; 25-100Hz (1 octave/min)				
Cooling	Natural convection				
Safety	Compliant with UL 508C				
Isolation Input-Output	2000	-	-	VAC	
Isolation Input-PE	2000	-	-	VAC	
EMC	Germanischer Lloyd (GL) certification EN 60945 Marine navigation and radiocommunication equipment and systems				
Enviromental incl vibration	GL Guidelines for the performance of Type approval Part 7 Chapter 2 (Electrical/Electronic equipment and systems) and Part 7 Chapter 7 (Statical converters with semiconductors) GL type approval				

Mechanical	
Housing	Alu housing with DIN-rail mounting, Class IP20
Height	134 mm
Width	83 mm
Dept	126 mm Excluding DIN-Rail clip
Weight	< 1.2 kg
Input connector	Screw connector
Output connector	Screw connector

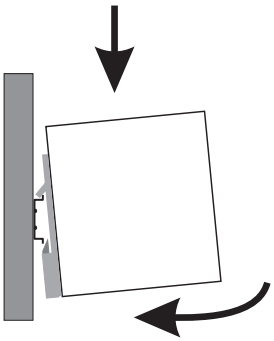
The power supply unit can be snapped onto all mounting DIN-Rails in accordance with EN50022-35. Disconnecting can be carried out by lifting the release clip with a screwdriver.





Mounting and disconnecting of power supply on/from the DIN-rail:

Snap-on:



Disconnect: