

P R B X

POWERBOX Marine Line
ENMA500D24/2X27-CC
540W Dual Output redundancy
D/DC Converter

ENMA500D24/2x27-CC – is built in a robust IP56 case, resistant to high-pressure and heavy sprays of water. Converters have been designed and optimized for conduction cooling. Two lateral heatsinks facilitate the thermal exchange between the inner dissipating components and the ambient outside. Typically used for safety equipment requiring redundant power sources, when redundancy is not required but the application requires two independent isolated outputs. In that case the total output power remains 540W though it can be balanced from 540W on one output and no load on the second to any mix between the two outputs whilst remaining within the maximum power allowed.



Features

Designed according to DNV/GL for marine use
Efficiency > 85% → IP56 for harsh environment
EMC according to Marine standards
Environmental according to EN60068-2-x
OTP, OVP, OCP
Input polarity protection

Input

Input voltage range	18-36VDC, <10s 10-36VDC. Two channel, separate inputs.
Nominal input voltage	24VDC
Inrush current	230A typ.
Input current	25A typ. (45A 10s)
Hold up time	3ms (24VDC, Full load)
Input fuse	External 25A circuit breaker. ¹
Turn on time	50ms

Output

Output voltage	2x27VDC/20A ²
Output accuracy	±1.5% max.
Output power	540W max. total.
Minimum load	0A
Line regulation	±0.5% mV max. 10-36VDC
Load regulation	±1% mV max. 0-100% load change
Temp. coefficient	±0.03%/°C
Ripple & noise (20MHz BW)	300mV p-p
Output voltage adj.	No
Paralleling	Contact Powerbox

Environmental

Operating temperature	-25°C to +55°C
Derating	See below
Operating humidity	20-95%RH (Non condensing)
Storage temperature	-40°C to +85°C
Storage humidity	20-95%RH (Non condensing)
Vibration	IEC60068-2-6 Sine.

Mechanical

Size WxHxD	170x300x95mm
IP class	IP56
Weight	4.5kg
Connector	TE Deutsch HDP24-18-8-PN (mates with HDP26-18-8-SN)

General

Efficiency	>85%
Life time expectations	>40000 h @ 40°C 10 years, 4000 h operation (10A load and 40°C) + 5000 h stand by (2A and load 25°C)

Note

1. 25A circuit breaker not included
2. See derating

Protection Circuit and Others

Over current protection	Yes. 26-33A
Type of current limit	Latching
Constant current mode	No
Over voltage protection	Yes. 32.2-39.2V
Over temp. protection	Yes. 110°C shut down
Remote sensing	No

Control and Communication

Power Good	No
VTRM, ITRM	No

Isolation

Input -Output	1500 VDC
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Maritime DNV/GL

Temperature	C
Humidity	B
Vibration	A
EMC	A
Enclosure	B (IP56)
Cold	IEC60068-2-1
Dry heat	IEC60068-22
Damp heat cyclic	IEC60068-2-30

Certifications

Certification mark	CE, DNV/GL
RoHS	Yes

EMC

Conducted noise	DNVGL-CG-0339:2016. EMC: A
Radiated noise	DNVGL-CG-0339:2016. EMC: A
EMS immunity	EN61000-4-2, 3, 4, 5, 6

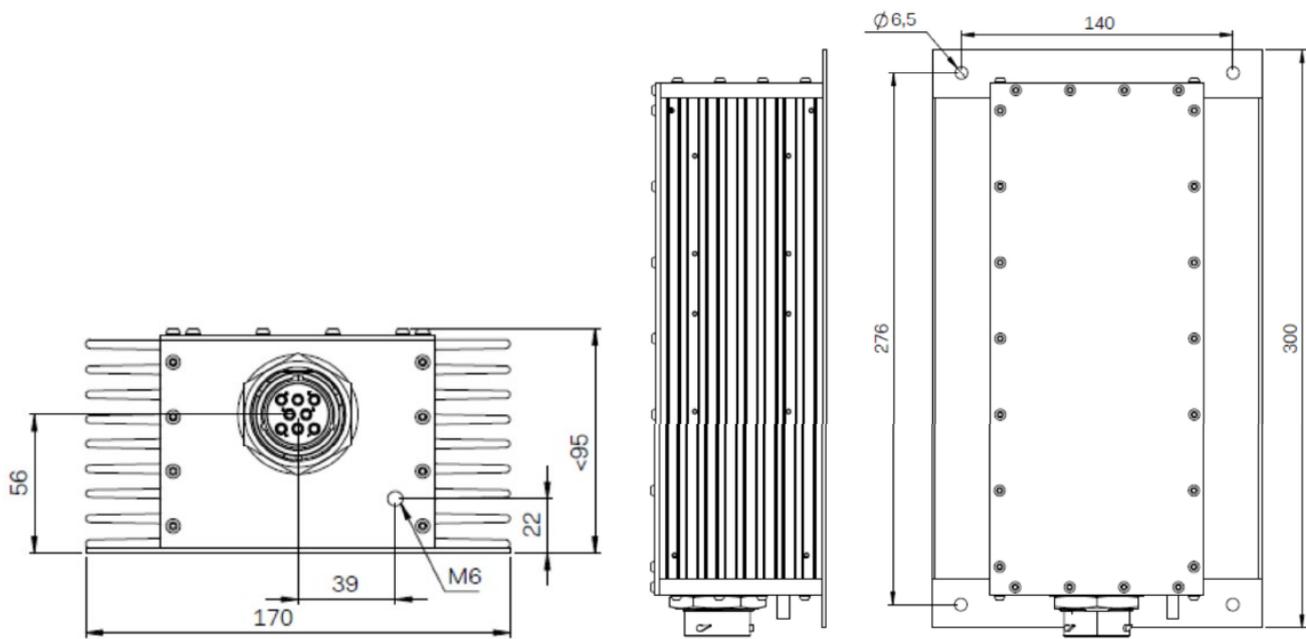
Derating

Input voltage	Max. cont. o/p current one channel loaded	Peak output current (10s) from each channel	Max. cont. output current from each channel, both loaded
10-18VDC	7.5A	11A	7.5A
18-36VDC	14A	20A	12A
26-36VDC	21.4A	21,4A	12A

Block diagram

TBD

Mechanical dimensions



Connector pinout

Signal	Position in the connector
Channel 1, +24 input	E
Channel 1, 0V input	A
Channel 1, +27V output	F
Channel 1, 0V output	G
Channel 2, +24V input	C
Channel 2, 0V input	D
Channel 2, +27V output	B
Channel 2, 0V output	H