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POWERBOX  
ENMA500D24/2x27-CC



## Dual channel power supply for Marine engine control

From local low power DC/DC converters powering sensors to high power DC generators powering the whole boat, ships and vessels are full of electrical and electronic equipment requiring robust and safe power supplies. Although many applications can be powered by marine certified commercial off-the-shelf (COTS) power supplies, others are very specific, requiring unique power solutions designed to pair with the final application.

One example being the servo-motors used to operate Fast Switched Valves (FSV) like the ones used for safety purposes in fuel injection pumps, orientable propellers, engine control.

FSV operation is based on servo motors ensuring that fluids are transferred or interrupted with the highest level of safety. As failure is simply not an option in such types of equipment, FSV manufacturers often use two



independent power supplies to guarantee redundancy. However, considering the equipment is installed in very compact and harsh environments, this can be a challenge for the installer.

With high levels of expertise in designing power solutions for the marine industry to DNV/GL standards, PRBX has developed a highly integrated, isolated, dual channel DC/DC converter, the ENMA500D24/2x27-CC.

Because they are often used in harsh environments, the ENMA500D24/2x27-CC is built in a robust IP56 case, resistant to high-pressure and heavy sprays of water. Being sealed to comply with IP56, the ENMA500D24/2x27-CC DC/DC 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.

Powered by the low voltage 24V distributed supply to electronics equipment, the ENMA500D24/2x27-CC can tolerate a wide operating range of 18 to 36V, and is able to accommodate a large voltage drop down to 10V for 10 seconds. The ENMA500D24/2x27-CC delivers 27VDC / 20A and a total power of 540W.

Typically used for safety equipment requiring redundant power sources, when redundancy is not required but the application requires two independent outputs, the ENMA500D24/2x27-CC offers two 27VDC fully 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
- Electrical safety EN 60950
- OTP, OVP, OCP
- Input polarity protection

### Input

- Nominal 24 VDC - 18-36V DC, <10s 10-36 V DC

### Output

- 2x27 Vdc/20A
- Max. tot. output power 540W

### Environmental

- Operating temperature: -25°C to + 55°C

### Isolation

- Input / Output: 1500 VDC Min
- Input/case, output case: 1500 VDC Min
- Output 1 / Output 2: 1500 VDC Min

### Safety

- EN60950

### General

- Dimensions: 300(H) X 170(W) X 95(D)

### About Powerbox

Founded in 1974, with headquarters in Sweden and operations in 15 countries across four continents, Powerbox serves customers all around the globe. The company focuses on four major markets - industrial, medical, transportation/railway and defense - for which it designs and markets premium quality power conversion systems for demanding applications. Powerbox's mission is to use its expertise to increase customers' competitiveness by meeting all of their power needs. Every aspect of the company's business is focused on that goal, from the design of advanced components that go into products, through to high levels of customer service. Powerbox is recognized for technical innovations that reduce energy consumption and its ability to manage full product lifecycles while minimizing environmental impact. Powerbox is a Cosel Group Company.

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