POWERBOX
Mastering Power

Powerbox reveals its high reliability power solution for subsea applications

Press Release
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Powerbox, one of Europe's largest power supply companies and a leading force for four decades in optimizing power solutions for demanding applications, has announced a new technology platform to power industrial applications requiring high reliability and resilience in extreme environments. Designed to power subsea equipment such as gas and oil monitoring and control systems situated on the seafloor, fed from an AC or DC high voltage line feeder the PRBX VB410-380 power solution delivers 48V DC with very high reliability and resilience. The unit comprises a pre-stage converter and a secondary stage with redundant power modules and for monitoring and control, a full set of communications and interfaces.

Industrial applications such as gas and oil situated on the seafloor, or long distance transmission cables require very specific power solutions to supply a subset of electronic equipment operating 24/7 with no downtime, and where maintenance is either very expensive or simply not an option. These applications are usually powered from the shore or from a technical platform generator via a high voltage line, which depending on the power station could be AC or DC voltage within the range of 300 to 900VAC, or 400 to 1500VDC, ultimately requiring a 48V DC intermediate bus voltage to power electronic equipment. Outputs need to be able to operate in parallel in order to increase the power or to offer redundancy.

Equipment deployed in extreme environments such as the seafloor must be designed for very high reliability and resilience and able to operate within a temperature range of -25 to +80 degrees C without derating, using conduction cooling only. Subsea electronic equipment is often contained within a very tight tubular container fixed to the cable. Powerbox's PRBX VB410-380 is designed to guarantee the maximum level of isolation between the high-voltage input and the low-voltage output, but with sufficient physical isolation between the different components to allow for tight integration.

"Delivering power to extreme applications such as subsea ones is always a challenge for designers. But in developing standardized, easily reusable sub-systems such as the VB410-380 we have shortened the design cycle and time-to-market for our customers" said Patrick Le Fèvre, Powerbox's Chief Marketing and Communication Officer. "Expanding sales opportunities, its design philosophy makes it eminently suitable for other applications such as the chemical industry and in highly restricted areas where human intervention is both complicated and risky."

Using an advanced switching topology the complete system (high voltage input to low voltage output) energy efficiency is over 85%, which compared to earlier generation, similar products is some 10% higher. The PRBX VB410-380 layout is designed and optimized to conduct heat from the dissipative elements to the cold plate, reducing the possibility of internal hot spots and contributing to higher reliability.

Powerbox International AB
Västra Storgatan 22
PO Box 148
SE-646 22 Gnesta Sweden
www.prbx.com

The VB410 primary module converts the line voltage to an internal voltage of 380VDC. It includes an active Power Factor Corrector (PFC) and an RS-232 communication bus for the network manager to supervise the power unit. The module is designed with an 'inrush current free topology', cleverly reducing peaks on the main line and reducing component stress.

The secondary stage of the PRBX VB380 includes four independent output modules each delivering 95W (48V / 2A). Each output has its own current limiting capability, and an integrated digital controller, used to monitor voltage and current that is readable through a CAN-Bus. Each output can be ON/OFF controlled or made redundant. The CAN-Bus is also used for diagnostic and predictive actions (e.g. to shutdown modules when not required or enable in order to maintain peak power).

Designed to meet specific systems' requirements, Powerbox's PRBX VB410-380 complies with all safety, EMI and other regulations relevant to the system.

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.

For more information
Visit www.prbx.com
Please contact Patrick Le Fèvre, Chief Marketing and Communications Officer
+46 (0) 158 703 00
marcom@prbx.com

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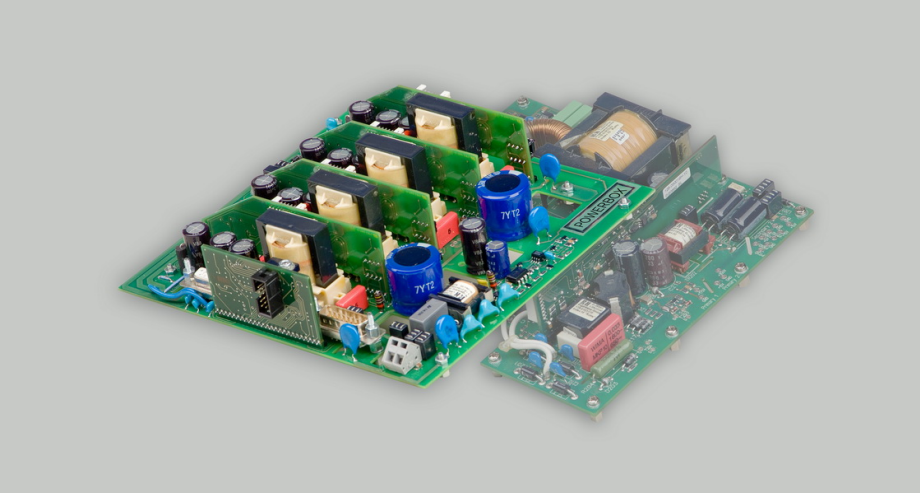

PRBX VB410-380 system to power extreme applications

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