POWERBOX
Mastering Power

Industry's first high power density and extra wide input bricks - optimized for demanding industries and railway applications

Press Release
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Powerbox, one of Europe's largest power supply companies and a leading force for 4 decades in optimizing power solutions for demanding applications, introduces two new board mounted DC/DC converters to power industrial and railway applications; the extra wide input PQB50U-72S and the ultra-high power density PFB600W-110S. With an unprecedented extra wide input of 12:1 (14V to 160V) the PQB50U-72S delivers 50W in quarter brick packaging, bringing simplicity to power designers addressing EN50155 applications (one unit covering all bus voltages). In full brick packaging, the PFB600W-110S delivers industry's first 600W unit within a 4:1 input voltage range of 43V to 160V, accommodating 72V, 96V and 110V bus voltages. Both products can be operated from -40°C up to +100°C case temperature, matching very demanding and ruggedized requirements such as in construction vehicles, mining equipment & heavy machinery process control.

Demanding Industry and Railway power designers always face challenges to optimize board power solutions when designing standardized equipment for worldwide operation on a very large variety of system bus voltages. In the railway industry, designers are permanently seeking the best power architecture to operate within the overall EN50155 input voltage range, from 24V up to 110V (including continuous operation in the 14.4V brownout condition and 154V transients). To guarantee board power designers the highest level of flexibility, the PQB50U-72S has been developed to deliver full and stable power within an extended input voltage range from 14V up to 160V.

In Demanding Industry and the forthcoming Industry 4.0 applications, system designers have to guarantee full performance in a multitude of applications operating from 24V to 72V and fixed industrial battery backup systems using 110V in which the quality of line is often disturbed. In those applications, the PQB50U-72S is designed to sustain high level of line disturbance within a range as low as 14V to a 200V surge. In such environments, the PQB50U-72S guarantees full output performance, simplifying design for systems architects and by having only one power module covering all ranges of input voltage, thus reducing inventory.

PQB50U-72S comes in a standardized DOSA quarter-brick package. The module is available in four output voltages (5V/6A ; 12V/4.2A ; 24V/2.1A and 48V/1.05A). The device sustains 200V/100ms surge input voltage, includes short circuit and over-voltage protection, meets UL60950-1-2nd edition basic insulation and meets the EN50155 (EN61373) shock and vibration standard. The unit can be operated from -40°C up to +100°C case temperature and has an

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efficiency of 86%. The PQB50U-72S includes an aluminum baseplate, making it possible to fix a heatsink or mount it directly to a cold-wall or chassis.

Used in demanding applications, the PQB50U-72S has an isolation voltage of 3,000VDC (min) between input/output, 1,500VDC input/case and 1,500VDC output to case.

“From the early days, board mounted DC/DC converters simplified the design process, whilst shortening the time to market” says Martin Fredmark, VP Product Management. “With the increased demand from Systems Designers to meet a large variety of bus voltages and from Supply Chain Managers to reduce inventory and fewer product-codes, Powerbox has been working on Swiss-knife power solutions, of which the PQB50U-72S and PFB600W-110S are perfect example of products responding to those needs”

Part of the railway and industry modernization programs introduce more digital communication, entertainment systems, local computers and radio-communication, requiring higher power board mounted converters, able to operate independently of the system bus voltage, such as the EN50155 input bus voltage (72V, 96V, 110V), industrial 48V while delivering 600W output power.

Designed and optimized for railway 110V systems, the new Powerbox PFB600W-110S can be operated from 43V up to 160V input, sustaining 180V/100ms surge voltage. The 4:1 input voltage range makes it easier and simpler for the system designer when developing new equipment for international railway applications.

Packaged in an industry standard full-brick, the PFB600W-110S is available in four output voltages (12V/50A ; 24V/25A ; 28V/21.4A and 48V/12.5A) with an output power up to 600W. The PFB600W-110S is fully regulated and operates at a fixed switching frequency of 250 KHz and includes a PI type input filter reducing the input and noise. PFB600W-110S includes current limiting, continuous short-circuit protection, under/over-voltage lockout and an over-temperature protection with thermal shutdown with automatic recovery. For safety, the module complies with the UL60950-1 2nd edition (Basic isolation) has an input/output and input/case isolation of 2,500VDC and 500VDC output/case.

For additional power or operational redundancy, the PFB600W-110S can be used in parallel. A paralleling control circuit is included within the product, guaranteeing true load-sharing, without the need to add external components. PFB600W-110S has a typical efficiency of 89% and designed carefully to optimize the thermal dissipation through the baseplate.

The product complies with EN50155 (EN61373) shock and vibration standard and environmental EN50155 (EN60068-2-1). PQB50U-72S and PFB600W-110S meet CE Mark 2004/108/EC requirements.

The new comers PQB50U-72S and PFB600W-110S compliment the very large range of Powerbox DC/DC Converters Modules, which include more than 5000 models.

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About Powerbox
Founded in 1974, with headquarters in Sweden and local operations in 15 countries on four continents, Powerbox serves customers around the globe. We focus on four major markets - industrial, medical, railway and transportation, and defense - for which the company designs and markets premium quality power conversion systems for demanding applications. Our mission is to use our expertise to increase our customers' competitiveness by meeting their entire power needs. Every aspect of our business is focused on that goal, from the design of the advanced components that go into in our products to our customer service. Powerbox is recognized for technical innovations that reduce energy consumption and the company's ability to manage the full product lifecycle, minimizing environmental impacts.

For more information

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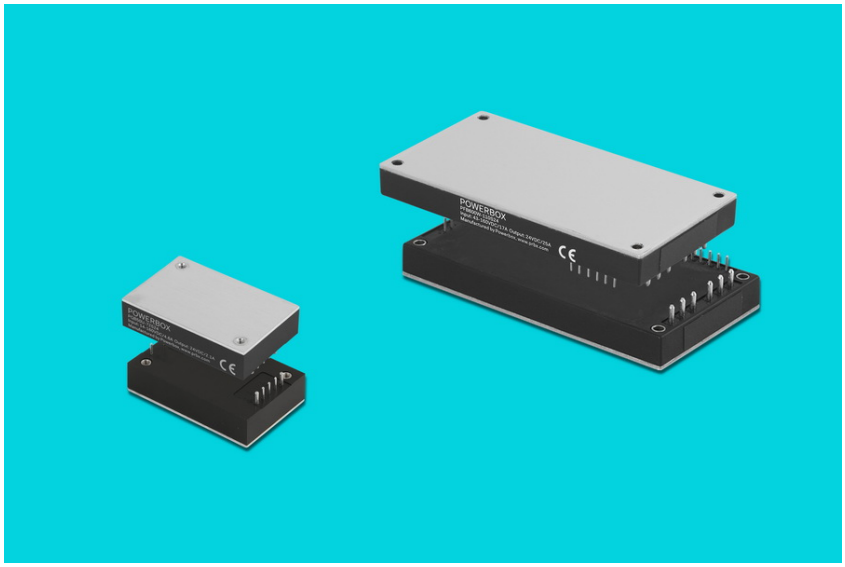

DC/DC for demanding applications PFB600W-110S and PQB50U-72S

Related links:

https://www.prbx.com/product/pfb600w-110s-series/

https://www.prbx.com/product/pqb50u-72s-series/

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