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Ruggedized and ready to use - Powerbox's COTS/MOTS ratified 50W to 1200W power solutions

Press Release
February 17, 2021

Powerbox, one of Europe's largest power supply companies, and for more than four decades a leading force in optimizing power solutions for demanding applications, now offers a comprehensive ruggedized product line for defense applications and demanding industrial. The product line includes seven series of new power supplies, comprising three DC/DC (DAA-DAB-DAC), four AC/DC (DBA-DBB-DBC-DBD) and embracing a power range from 50W up to 1,200W. In metal chassis format with a baseplate for conduction cooling, the DAx and DBx series can be used with a baseplate operating temperature range of -40 up to +100 degrees C. For extremely demanding applications they can be configured with a conformal coating and mechanically ruggedized as well as electrically ruggedizing to withstand harsh transients and demanding EMC performance requirements as required with most common defense, marine, avionics, rugged industrial and railway standards. Designed for high availability, short time-to-market and to meet commercial and military off-the-shelf (COTS/MOTS) business models, the modular build style of the DAx and DBx series allows up to six outputs which can be connected in serial, parallel or used as a standalone output – they're very versatile products.

Ready to use 'out of the box', Defense Line DC/DC DAA/DAB/DAC power supplies include a very efficient input filter, reverse voltage protection internal diode, input transient protection and an internal fuse to protect against damage in the event of failure. Each output is protected against accidental and permanent short-circuit situations. An internal over-temperature circuit (OTP) protects the units in the case of over-heating, with automatic recovery.

To cover the large range of applications in defense or ruggedized industrial areas, the DAA/DAB/DAC series is available for use with five input bus voltages of 12, 24, 48, 72, and 110VDC and with a large range of output voltages from 3.3VDC up to 48VDC. Each output voltage is adjustable, and higher power outputs are compensated using the provided senses.

For safety and galvanic insulation purposes, the DAA/DAB/DAC has an electrical strength of 1,500Vrms input to ground, 3,000Vrms input to output and 500Vrms output to ground. The series complies with safety standards IEC and EN60950-1 and for railway applications it is designed to meet EN50155 and EN50121.

The DAx series units can also be configured for harsh transient performance on 12V and 28V platforms according to MIL-STD-1275 and DEF STAN 61-5 as well as for avionics applications according to MIL-STD-704, DO-160 and ABD100. For environmental protection the DAx series can be configured to meet MIL-STD-810 along with the railway, avionics and marine

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requirements. The DAX series' EMC performance is designed according to 55022 class A and optionally can also meet MIL-STD-461 conducted emission.

Housed in a metal chassis, the DC/DC DAX series' physical measurements are: DAA 150-500W 225 x 61 x 35mm (8.86 x 2.40 x 1.38 inch); DAB 75-300W 140 x 61 x 35mm (5.50 x 2.40 x 1.38 inch) and the DAC 50-150W 100 x 61 x 35mm (3.93 x 2.40 x 1.38 inch).

The Powerbox AC/DC Defense Line series includes four conduction-cooled models suitable for applications in the 150W to 1200W power range. As for DC/DC, the AC/DC DBX series is design-optimized for ready to use power solutions in ruggedized applications. The DBA-DBB-DBC-DBD series includes an input filter, active inrush current limiter and a power factor corrector (PFC).

The input voltage complies with the universal 85 to 264VAC with up to 440Hz source frequency and thanks to the modular concept a large combination of output voltages, from 2.0V up to 54V can be ordered, with many possible configurations from single to six outputs. The DBX series has an input to ground isolation of 1,500Vrms, input to output of 3,000Vrms and output to ground of 500Vrms.

Using high efficiency topology, the DBX series has a typical efficiency of 85% and low standby power consumption. To comply with system integrators' specifications, all products have a limited height of 40mm (1.57 inch). Overall mechanical dimensions for the DBX series are: DBA 1200W 255 x 127 x 40mm (10.0 x 5.0 x 1.57 inch); DBB 600W 200 x 127 x 40mm (7.87 x 5.0 x 1.57 inch); DBC 300W 200 x 82 x 40mm (7.87 x 3.23 x 1.57 inch) and for the DBD 150W 165 x 61 x 35mm (6.49 x 2.40 x 1.38 inch).

All products have embedded input and output safety protection (e.g. short-circuit, current limiting) and over-temperature protection with automatic restart.

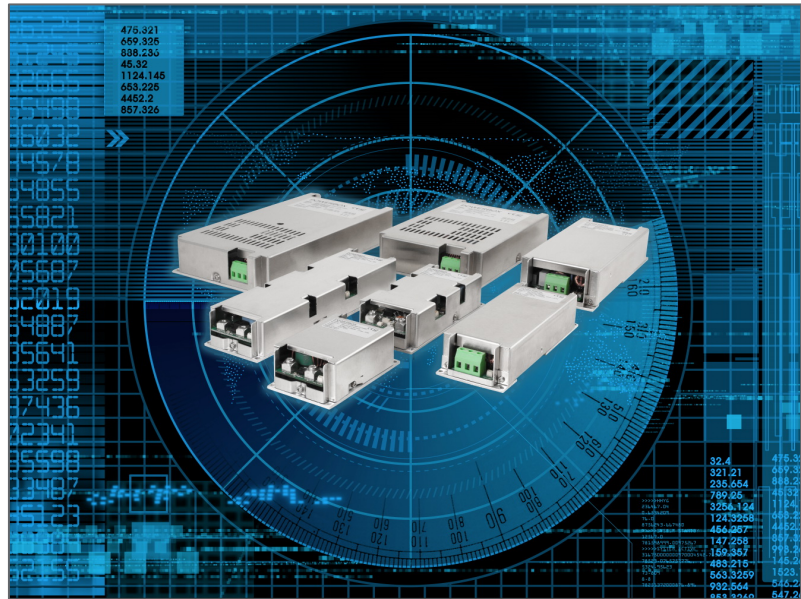
The DBX series is designed and built to meet general IEC/EN60950 safety standards and can be configured for shipboard AC systems according to MIL-STD-1399, and conducted emissions according to MIL-STD-461. The optional mechanical ruggedizing and conformal coating according to MIL-STD-810 are highly regarded features in the defense, marine, avionics and other demanding and portable or mobile applications.

From defense to industrial, the addressable range of applications requiring ruggedized power solutions is extremely large. Accordingly, Powerbox's DAX and DBX series include additional options to meet higher levels of environmental standards and requirements. Option 'M' for electrical and mechanical ruggedizing covers higher levels of shock and vibration, harsh transient protection and additional EMC filtering such as specified by MIL-STD 461E CE102, MIL-STD 1275, MIL-STD 1399-300A and MIL-STD 810E. Option 'T' includes qualified products guaranteeing full operation at temperature as low as -40 degrees C. For application exposed to high humidity, salt mist, diesel fumes, sand, dust or other contaminants, option 'V' includes a conformal coating. In cases where convection cooling is required, a range of heatsinks have been developed for the DAX and DBX series, these are known as option 'H'.

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The products are RoHS lead free compliant and manufactured with full respect for, and in accordance with environmental regulations.



Ready to use COTS/MOTS 50W to 1200W ruggedized power solutions for defense and industrial applications

Related links:

DAA: <https://www.prbx.com/product/daa500-series/>

DAB: <https://www.prbx.com/product/dab300-series/>

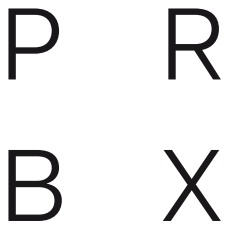
DAC: <https://www.prbx.com/product/dac150-series/>

DBA: <https://www.prbx.com/product/dba1200-series/>

DBB: <https://www.prbx.com/product/dbb600-series/>

DBC: <https://www.prbx.com/product/dbc300-series/>

DBD: <https://www.prbx.com/product/dbd150-series/>



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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.

For more information

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