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# POWERBOX's COTS/MOTS 1000W IP65 rated power supplies are ideal for defense and harsh environments

**Press Release**  
**April 29, 2024**

**Powerbox (PRBX), one of Europe's largest power supply companies and a leading force for four decades in optimizing power solutions for demanding applications, has announced the release of its new ruggedized series, the ECD1000A for ground-based defense applications and harsh industrial environments. Housed in a metal IP65 enclosure with baseplate conduction cooling, the ECD1000A series delivers 1000W and can be used with a baseplate operating temperature range of -40 up to +75 degrees C. For extremely demanding applications the ECD1000A is mechanically ruggedized according to the MIL-STD-810H standard and interior boards and components are protected with a conformal coating. The product is equally well electrically ruggedized to withstand harsh transients and meet demanding EMC performance levels as required for most common defense and the more demanding industrial applications, according to the MIL-STD- 461 CE102 / RE102 and meeting the MIL-STD-1399-300. The power supply operates with a wide universal input range from 85 to 305VAC with power factor correction (PFC). Designed for high availability, short time-to-market and to meet commercial and military off-the-shelf (COTS/MOTS) business models, the ECD1000A is available in a 28VDC output voltage version, however the series also includes 500W and 700W versions with 12VDC and 28VDC output voltages for use in lower power distribution systems.**

Many defense applications require power supplies to operate with limited or no ventilation cooling. In this respect, we are referring to those operating in harsh environments where electronic equipment is installed in a sealed box, such as radio communication systems subject to adverse weather conditions, outdoor surveillance and access control, and indoor equipment with very strict audible noise restrictions. In addition to environmental requirements, reliability and cost of maintenance are motivating systems designers not to use fans and blowers, privileging conduction cooling enclosed in a box that offers an ingress protection level of IP65 (Dust tight and protected against water jets).

Conduction cooling requires very specific building practices and the ECD1000A has been designed to guarantee optimal heat transfer from the dissipating components to the baseplate, delivering a high level of performance within an operating temperature of -40 to +75 degrees centigrade at the baseplate. Depending on the assembly method and the overall cooling conditions, a derating may apply as specified in the technical documentation.

To cover a large range of applications, the ECD1000A operates with a wide universal input range from 85 to 305VAC (Nominal 100 to 277VAC). The unit includes PFC with a power factor of 0.98/0.95 (110VAC/230VAC).

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To power internal bus distribution systems, the ECD1000A is available in a single output DC voltage of 28V/36A. Using a high efficiency topology, typical efficiency at 28V output and 230VAC input is an excellent 91%.

From defense to demanding industrial applications, the addressable range of applications requiring ruggedized power solutions is extremely large. Accordingly, the ECD1000A series has been designed to meet higher levels of shock and vibration, it has harsh transient protection and additional EMC filtering such as specified by MIL-STD-461E CE102 / RE102, MIL-STD 1399-300A and MIL-STD-810H.

For safety, the ECD1000A has an IN/OUT isolation of 3,000VAC and IN/FG of 2,000VAC. Output isolation to FG is 500VAC. The power supply includes over current protection with auto recovery, over voltage and over temperature protection.

The input, output and signal are interfaced via circular MIL Spec Connectors providing extremely reliable connection and protection against moisture penetration and oxidation.

The ECD1000A includes a Remote Control and a Power Good interface to monitor the unit whether in normal or abnormal operation. It has passed shock and vibration testing as specified in MIL-STD-810H. In that respect the products have been tested to levels far above normal operating conditions and are designed to sustain high, 20G level shocks.

The ECDA platform includes additional embedded functions shortening the Time-To-Market for specific applications requiring different output voltages.

In its IP65 enclosure, the ECD1000A measures 204 x 326 x 50.8mm (8.03 x 12.83 x 2 inches) and weighs 3.5kg max.

Benefiting from a design optimized for conduction cooling, the ECD1000A is suitable for applications requiring a silent power solution such as in a control room. Equally, it is suitable for industrial applications where forced air ventilation is not possible due to environmental constraints. Attached to a chassis or cold plate, the ECD1000A can deliver impressive power levels with a very high level of reliability.

The ECD1000A complies with the 62368-1 standard and, CE and UKCA, and it has a full three-year warranty.

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Related links:

<https://www.prbx.com/product/ecda/>

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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.*

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