

POWERBOX
Mastering Power

New high performance power supplies ready to power Industry 4.0

Press Release
August 30, 2016

Powerbox, one of Europe's largest power supply companies and a leading force for 4 decades in optimizing power solutions for demanding applications, introduces four new power supplies designed to power Industry 4.0 applications. As part of Powerbox Industrial Line, the four series are based on the latest power switching technologies ; LLC, synchronous rectification, active PFC, low leakage current and energy optimization. From 80W up to 400W, the OBM33, OBM35, OBP37 and OBP38 deliver single output voltages from 12V to 48V suitable for the new generation of applications deployed in Industry 4.0 applications. The new series are designed and optimized for high performance in industrial applications.

Industry 4.0 goes live and over the Internet of Things, cyber-physical industrial systems will communicate and cooperate with each other and with humans in real time and via the Internet of Services. The very high level of interaction within Industry 4.0 will require efficient and reliable power supplies to guarantee all-time-on operation and no latency in communication, which the new Powerbox series OBM33, OBM35, OBP37 and OBP38 have been designed.

Preserving energy is very important and the products have been developed for high performance, low power dissipation and long lifetime. The OBM33, OBM35, OBP37 and OBP38 utilise an LLC half bridge topology, complemented by synchronous rectification and low standby power consumption. These technologies contribute to characteristics such as high efficiency (up to 93%) high energy density, high peak output current but also very low power consumption at no load, below 0.5W and below 1W when using the Power Fail Detect signal.

The launch includes more than 28 models delivering a single output voltage of 12V, 15V, 18V, 24V, 30V, 36V and 48V within a power range of 80W to 400W.

Combining efficient topology and optimized layout for EMI performance, the OBM33, OBM35, OBP37 and OBP38 meet and surpass EN55022B radiated and conducted Class B. The units are built to sustain industrial environments such as surges of $\pm 1\text{KV}$ differential, 2KV common; magnetic field immunity of 1A/m, conducted immunity 3Vrms; fast transient/burst 1KV; ESD $\pm 8\text{KV}$ air and 4KV contact.

The fourth industrial evolution is rapidly expanding around the world, requiring power supplies to meet regional line voltages and be able to operate in unstable power grids. With an input voltage of 90 to 264 VAC and line frequency of 47 to 63Hz, the OBM33, OBM35, OBP37 and OBP38 will reassure end users their systems operate in all regions with the highest performance and no disruption.

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“Internet of Things” is everywhere and Industry 4.0 happening faster than expected. In that environment, business continuation and energy saving is a must, requiring power supplies designed to meet demanding and complex requirements” says Martin Fredmark, VP Product Management. “The new series include a number of technical innovations contributing to reduce power consumption and to offer a high degree of flexibility to systems architects.”

Considering Safety, the range of applications deployed in the Industry 4.0 require power supplies to meet high isolation voltages. The new series can withstand 3000 VAC (4000 VAC for the OBM33) input to output , 1500 VAC input to ground and 500 VAC output to ground. Designed to provide designers with safety margins at 264 VAC and 63 Hz, the maximum leakage current is below 275 μ A, which is very unique for an industrial power supply and four times lower than normal average.

Accommodating system integration requirements, the new series include different mechanical options, open frame, L and U bracket & fully enclosed with fan. The OBM33 (80-150W) is available in 2 x 4 inch footprint (1.3 inch low profile). The OBM35 (200W) fits into a 3 x 5 inch footprint (1.5 inch height) and available in U-bracket or fully enclosed. Addressing a very large segment, the OBP37 (300W) has a 3 x 6 inch footprint (1.5 inch height) and available in open-frame, L-bracket & fully enclosed with fan. The OBP38 (400W) has a 4 x 7 inch footprint (1.58 inch height) and packaged in U-bracket or fully enclosed with fan.

Products can be operated from -10°C to +70°C. Without extra cooling, up to 75% of the maximum power is available. Additional forced air cooling will allow 100% power up to 50°C, then a slight power derating will allow operation up to 70°C.

The new series include short circuit protection, over-voltage and over-temperature protection. Depending on the model, additional features such as power fail detect (PFD) signal, output voltage inhibit, DC OK and PS OFF are available.

At full load and 25°C ambient, based on the calculation method MIL-HDBK-217F, the OBM33, OBM35, OBP37 and OBP38 MTBF reach up to 300,000 hours.

Products comply to RoHS requirement and designed to minimize environmental impact.

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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.

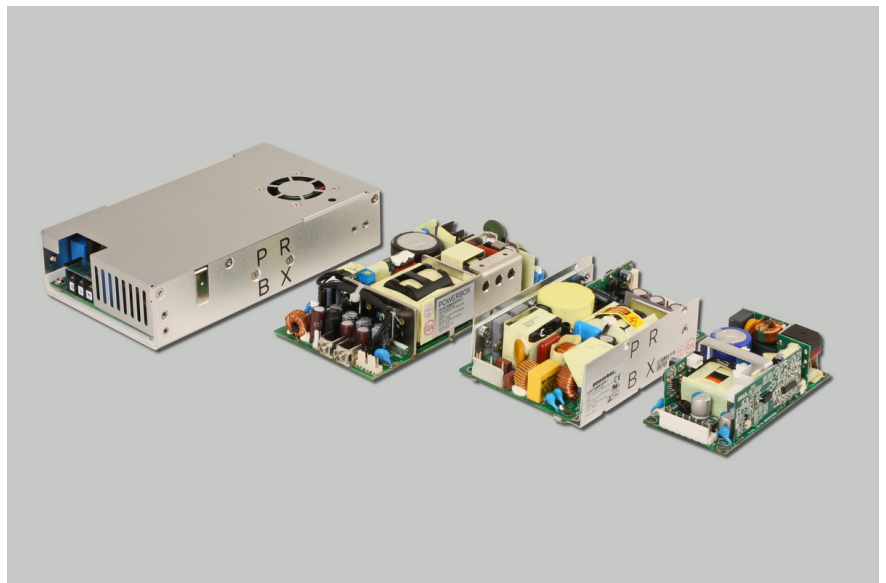
For more information

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Industrial line OBM33 - 35 / OBP37 – 38 ready for Industry 4.0

Related links:

<https://www.prbx.com/product/obm33-series/>

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