

Medical power supply meeting high safety standards for patients and operators, complying with EMC coexistence IEC60601-1-2, 4th Edition

Press Release
March 22, 2016

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, announces the launch of a new series of power supplies for medical applications BF (Body Floating). Complying with the latest EMI coexistence standard IEC 60601-1-2: 2014 (4th edition) and specifically designed with patient and operator safety in mind, the OBS01 series delivers an output power of 1100W (1250W peak), which is market leading power density – OBS01 is available in seven different voltages from 24V to 48V with an efficiency up to 89%. With high focus on “no interference and radio coexistence,” the product meets, conducted and radiated EN55011 class B, without requiring any additional components. Built for patient and operator safety, the OBS01 has an input-to-output isolation of 4000 VAC (2xMOPP), an input to ground of 1500 VAC (1xMOPP) and a 1500 VAC (1xMOPP) output-to-ground when many conventional products offer only 500 VDC isolation.

Whether operated in controlled environments such as hospitals or non-controlled environments such as home healthcare, medical equipment must perform safely to protect the lives of patients and operators. With a growing number of radio applications and connected devices, medical equipment has become more exposed to radio interferences from which critical failures could arise. In order to prevent medical apparatus from being disturbed or to disturb other equipment, in 2014, regulatory bodies released a new revision of the norm IEC 60601; focusing on Electro Magnetic Interference IEC 60601-1-2:2014. In the USA all medical products will have to comply with the 4th edition, by April 2017, which the new Powerbox Medline 1100 OBS01 has been designed for.

To achieve “no-interference and radio coexistence”, by thoroughly selecting filtering components with special attention to the layout, the OBS01 design is optimized to meet EN55011:2009 and CISPR 11:2011 class B conducted and radiated. Class B performance is obtained without requiring external components, making the OBS01 ready to use in medical, radio frequency sensitive applications, shortening time-to-market.

“Considering the amazing evolution of tele-medicine, including remote surgery operated by robots, and a growing number of medical connected devices and IoT, radio interference in medical applications has become a high priority for the industry” says Patrick Le Fèvre, Marketing Director. “Powering those applications with a high level of safety and immunity to radio interferences have required power designers to reconsider the way medical power supplies are designed to meet IEC 60601-1-2:2014, creating a lot of new ways to manage and reduce EMI.”

P R B X

POWERBOX Mastering Power

To guarantee OBS01 will operate, in controlled and non-controlled radio environments, the product successfully passed all immunity tests including ESD 15 KV air and 8 KV contact as well as exposition to radio signals in compliance with the new levels set in the 4th edition such as Magnetic Immunity (IEC 61000-4-8) 30A/m, Radiated Immunity (IEC 61000-4-3) 10V/m complying with the new category Home Healthcare and to the new Proximity Field from Wireless Transmitters 9 V/m to 28 V/m at 15 specific frequencies.

With safety in mind, the OBS01 isolation can withstand 4000 VAC from input to output, providing 2 x MOPP (Means of Patient Protection), 1500 VAC from input to ground (1xMOPP) and to provide designers with the highest isolation possible when integrating within final equipment, the product features 1500 VAC from output to ground (1xMOPP). As part of the high attention to safety and Patients and Operators protection, the product feature a very low earth leakage current, lower than 300 µA, while keeping low EMI.

"The OBS01 is the result of two years of R&D and technical innovations bringing to our customers a power supply which has the highest power density on the market, the lowest EMI, while keeping the leakage current below 300 µA, which requires state-of-the-art technology" says Martin Fredmark, VP – Product Management. "The OBS01 guarantees the best performances to power demanding medical applications, working fully coherently within complex radio environments."

Based on conventional technologies market standard 5x9.5" power supplies are delivering 1KW maximum. The new technology implemented in the OBS01 series raised the bar over 1KW, delivering an operational power of 1100W and up to 1250W peak during 10 seconds under specified conditions.

The series includes seven output voltages 24V / 45.84A (peak 52.10) ; 28V / 39.29A (44.65A) ; 32V / 34.38A (39.07A) ; 34V / 32.35A (36.77A) ; 36V / 30.56A (34.73A) ; 42V / 26.20A (29.77A) and 48V / 22.92A (26.10A). At operational power (1100W) and 230 VAC input the OBS01 as an efficiency up to 89%.

As reported by healthcare organizations, subjective wellbeing is influenced by the hospital noise in general, and more specifically, the noise from clinical sources (e.g. monitors, infusion pumps and other equipment). Reduction of noise in medical equipment is essential and OBS01 has a built-in variable fan speed control, adjusting the airflow to the right level, when required.

Based on MIL-HDBK-217F, at full load and 25°C the OBS01 has an MTBF of 300.000 hours. To OBS01 includes overvoltage and overcurrent protections, thermal shutdown and includes standard PS OFF and DC OK signals.

The OBS01 series is housed in a six sided shielded metal case, with dimensions of 5.91" x 9.25" x 2.4" (150 x 235 x 61 mm) and weight of 6.35 lbs (2.89 Kgs). Two fans with speed control are placed on the rear panel, guaranteeing optimized cooling.

OBS01 series is compliant with RoHS requirements and international safety standards. The leading 24V output OBS01046C is available from stock, other voltages on request.

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

P R
B X

POWERBOX
Mastering Power

focus on four major markets - industrial, medical, railway and transportation, and defense - for which the company designs and market 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

Visit www.prbx.com

Please contact Patrick Le Fèvre, Director Marketing and Communication

+46 (0)158 703 00

marcom@prbx.com



Medline 1100 OBS01 Series

<https://www.prbx.com/product/obs01/>