

# Powerbox announces 105 models of DC/DC converters featuring 2xMOPP medical approvals

**Press Release**  
**May 28, 2019**

- Reinforced isolation: 5,000VAC with two means of patient protection (2xMOPP)
- Low leakage current of 2 $\mu$ A, low standby power and no minimum load required
- Wide-input (2:1) and Ultra wide input (4:1) voltage ranges covering from 9V to 75V
- Operating altitude up to 5,000 meters

**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 introduction of three new series of 15W, 20W and 30W board mount DC/DC converters for demanding medical applications, totaling 105 models. The PMM15, PMM20 and PMM30 are certified to the 3rd Edition of the IEC/EN/ANSI/AAMI ES 60601-1 medical safety standard and rated for the highest levels of patient protection - 2xMOPP. With a clearance and creepage distance of 8mm, a typical leakage current of 2 $\mu$ A and a 5,000VAC isolation voltage, the modules ensure operator and patient safety and protection in medical applications. For optimized efficiency and flexibility, all models are available in wide input (2:1) and ultra-wide input (4:1) versions covering from 9V to 75V input voltage and providing seven different output voltages from 5V to +/-15V. The power converters are covered by a five year warranty.**

In medical equipment, safety is an absolute must and as specified in the IEC/EN/ANSI/AAMI ES 60601-1 safety standard, the PMM15, PMM20 and PMM30 have an input to output isolation voltage of 5,000VAC. They integrate a reinforced insulation with two means of patient protection (2x MOPP), have a typical leakage current of 2 $\mu$ A and a clearance and creepage distance of 8mm.

Many countries such as China or those in South America are bringing healthcare to populations based in mountainous regions, and it is very common in those countries for healthcare centers and hospitals to be located at altitudes higher than 3,000 meters. Medical equipment must be designed to guarantee the highest level of safety up to 5,000 meters. Powerbox's PMM15, PMM20 and PMM30 have been designed for this and they also comply with the Chinese Safety Standard GB 4943.1-2011 requirement for operation at altitude.

The PMM15, PMM20 and PMM30 wide input (2:1) units are available in three input voltage ranges, 9-18V, 18-36V, 36-75V, and the ultra-wide input (4:1) versions in two input voltage, 9-36V and 18-75V. All models are fully regulated with a complete range of output voltages comprising 5V, 12V, 15V, 24V, +/-5V, +/-12V and +/-15V.

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No minimum load is required and tight regulation from no load to full load of +/- 0.2% on single output, and +/-0.5% on dual output is provided.

Designed around an optimized topology, the PMM15, PMM20 and PMM30 have an efficiency up 90% and can be operated within an ambient temperature of -40 to +105 degrees C. In the case of natural convection a derating may apply. In cases of excess of heat, an internal over-temperature protection is set at +115 degrees C case.

The PMM15, PMM20 and PMM30 include a number of protections including over-voltage, under-voltage, over-load and short circuit, and thermal-shutdown.

Supplied in a non-conductive black plastic housing and potted with a UL94-V0 silicon compound, the PMM15 and PMM20 are sized at 40.6 x 25.4 x 10.2 mm (1.6 x 1 x 0.4 inch) and weigh 24 grams. The PMM30 is available in a 50.8 x 25.4 x 10.2 mm (2.0 x 1.0 x 0.4 inch) housing and weighs 32 grams.

Without using external components, the PMM15, PMM20 and PMM30 meet EMI levels as specified by EN55011, EN55032 and FCC Part 18, Class A.

According to the MIL-HDBK-217F, at full load and +25 degrees C, the PMM15, PMM20 have an MTBF of 2 million hours, and the PMM30 of 1.1 million hours.

An optional remote control pin (P) for positive logic and (N) for negative logic is available to externally control ON/OFF. All single output voltage modules can be externally adjusted up and down by adding a resistor bridge connected to the trimming pin.

The PMM15, PMM20 and PMM30 are suitable for a very large range of medical applications such as home healthcare auxiliary equipment, ultrasound, assisted ventilation, infusion pumps, dental chair and supervisory systems and many others. In industrial applications, the 5,000VAC reinforced isolation figure makes the PMM an ideal solution to add, at low cost, an IGBT drive channel to any industrial power supply, meeting the safety requirement required by such applications.

The PMM family includes 6 series, 3W PMM03 ; 6W PMM06 ; 10W PMM10 ; 15W PMM15 ; 20W PMM20 and 30W PMM30.

All products conform to the European directive RoHS, REACH and are CE marked.

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Picture source: PRBX

**PRBX PMM series with reinforced isolation, 2xMOPP for medical applications and demanding industrial**

**Related link:**

Powerbox (PRBX) PMM15

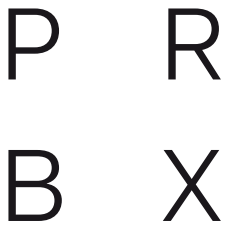
<https://www.prbx.com/product/pmm15-series/>

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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.*

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