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## **Medical And Industrial Power Supplies Feature High Power Density, Extended Communications Bus**

[Cosel's](#) 300-W PCA300F and 1000-W PCA1000F are high power density power supplies with extended communications I/O for demanding medical and industrial applications. These two new models complement the existing 600-W PCA600F and expand the product series to cover a much larger range of applications. The PCA series power supplies have a built-in extended-UART interface supporting up to 83 commands to monitor and control the whole range of power supply parameters (see the figure). A PMBus version will be available in Q4-2019.

Complying with the stringent EN/IEC 60601-1 medical standards, the PCA300F and PCA1000F feature a reinforced input-to-output isolation of 4,000 Vac and a grade of 2X Means of Patient Protection (2xMOPP). The PCA series offer a universal input voltage of 85 to 264 Vac, as well as a dc input of 88 to 370 Vdc. Exhibiting flexibility, the output can be operated in constant voltage (CV) or constant current (CC) mode with either analog or digital control.

All PCA series power supplies are built in 1U height housings and use Cosel's high-density, integrated packaging with optimized cooling. Available in six different output voltages, the PCA series covers the whole range of applications from 5 V to 48 V and embraces 5, 12, 15, 24, 32 and 48 V. All output voltages can be adjusted to near zero volts and operated in constant-voltage or constant-current mode. In addition to the main output, an independent isolated auxiliary voltage of 12 V is provided, which is adjustable in the range of 4.7 to 12.6 V dc using digital control.

Designed for demanding applications, and in line with their predecessor, the PCA600F, the PCA300F and PCA1000F combine the benefits of constant voltage and constant current, simplifying designers' task when developing power systems requiring both modes without adding external circuitry e.g. lead acid battery charging.

For flexibility, the PCA300F and PCA1000F include analog and digital interfaces—the analog interface includes current adjustment (ITRM), voltage adjustment (VTRM), remote control ON/OFF, voltage sensing, LED alarms and current monitoring. For extended flexibility, the extended-UART digital interface supports 83 commands for monitoring and control. Operating data can be stored and locked inside the internal memory, and recorded error codes can be used for analysis and the recording of operational hours for preventive maintenance.

All parameters can be programmed and monitored via COSEL's extended-UART control panel GUI, which can control up to seven units. Extended UART is built-in as standard, and a PMBus option will be available in Q4-2019.

The PCA series can easily be connected in series or parallel for extra power, and in parallel redundant mode N+1 for improved system reliability and availability. The PCA300F and PCA1000F are rated for operation at temperatures from -20°C to +70°C. Cooling is achieved by an internal intelligent fan, the speed of which adjusts automatically to match and work alongside environmental conditions. The fan can also be set to maximum (fixed) speed manually via the digital interface.

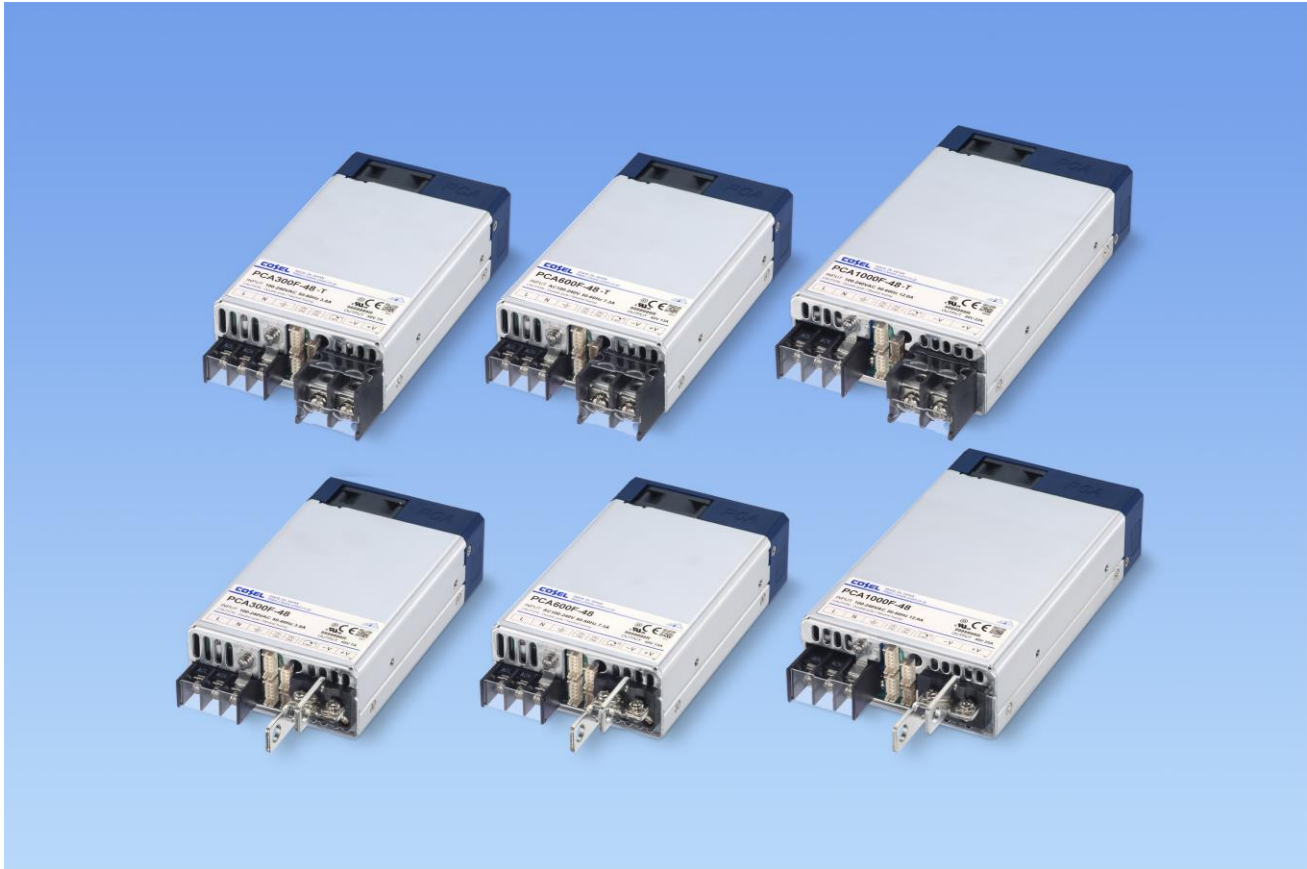
The PCA300F and PCA1000F include inrush current limiting, overcurrent protection, thermal protection and output status alarm. For safety, they have an IN/OUT isolation of 4,000 Vac (2MOPP) and IN/FG of 2,000 Vac (1MOPP). Output isolation to FG and other functional pins is 500 Vac.

The PCA300F and PCA1000F models come with agency approvals UL62368-1, EN62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), ANSI/AAMI ES60601-1, EN60601-1 3rd, C-UL (equivalent to CAN/CSA-C22.2 No.60601-1), and comply with IEC60601-1-2 4th Ed. Conducted noise for PCA300 complies with FCC Part 15 class B, VCCI-B, CISPR32-B, EN55011-B, EN55032-B and PCA1000 complies with FCC Part 15 class A, VCCI-A, CISPR32-A, EN55011-A, EN55032-A. The harmonic attenuator of both models complies with the IEC61000-3-2 (class A).

All units come in 1U height including fan. The PCA300F has a length of 152 mm (5.98 in.) and a width of 89 mm (3.50 in.), while the PCA1000F has a length of 178 mm (7.01 in.) and a width of 102 mm (4.02 in.). The PCA300F weighs 840 g maximum and the PCA1000F, 1.2 kg.

To accommodate application specific requirements, a number of options are available including coating (C), low leakage current (G), terminal block style (T), PMBus interface (I), reverse air exhaust type (F2), master/slave operation (P3), and modified alarm function (W1).

The PCA300F and PCA1000F have a five-year warranty and conform to the European RoHS Directive, REACH Directive, CB-Report and CE Marking. For more information see the PCA series product [page](#).



*Figure. The 300-W PCA300F and 1000-W PCA1000F medical and industrial power supplies feature ultra-compact design combined with high power density; analog control of output voltage and current without additional circuit design; and a digital interface for monitoring, setting and controlling of parameters with up to 83 commands. Also shown here is the previously introduced 600-W PCA600F. The three series are pictured here with the two output connector options.*