



COSEL's new conduction cooled, fanless 3-phase high efficiency power supply delivers 3.5kW to highly demanding applications

Press Release

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- 3-phase / 3-wire AC input with 180 to 528VAC wide range
- High efficiency up to 94%
- Up to 10 units in parallel (31.5kW) with active current sharing
- Digitally controlled topology and Wide Band Gap semiconductors
- Low profile: 65mm with cover (1.5U)
- Design optimized for conduction water cooled baseplate
- 5 years warranty

COSEL Co, Ltd (6905: Tokyo) today announced the launch of the HCA3500TF, a fanless 3-phase / 3-wire 3500W AC/DC enclosed power supply, design optimized for industrial equipment such as high-frequency amplifiers, laser processing machines and robotics. Addressing worldwide applications and 3-Phase Delta or 3-Phase Star networks, the HCA3500TF input voltage covers a wide operating range of 180VAC to 528VAC. Using the latest energy optimized, digitally controlled switching topology and Wide Band Gap (WBG) semiconductors, the power supply offers an impressive efficiency figure of up to 94% at 400VAC. The HCA3500TF is available in two output voltages, 48VDC and 65VDC, these being adjustable in a range of +15%/-50% using the Trim function. The compact, low profile design comes in at 65mm complete with cover (1.5U) and includes an aluminum plate assisting conduction cooling to the dissipating element e.g., a cold wall or water cooled baseplate. For higher power applications the HCA3500TF can be connected in parallel up to 10 units and to deliver up to 31.5kW.

Industrial applications such as welding robots, high frequency amplifiers, tooling machines, electrolyzers are often required to operate in harsh environments, requiring the power supply to deliver high power without ventilation. In such conditions conduction cooling applies and so the power supply must be designed to guarantee a high level of performance, and optimized to eliminate hot-spots. As well, industrial equipment can be installed all around the world and powered from 200V to 400V grids. In order to reduce single phase peak loading and optimize load-balancing on their networks, systems architects are favoring 3-Phase power solutions, which COSEL's HCA3500TF has been designed for, accommodating 3-phase three wire Delta or 3-Phase three wire Star installation.



With an input voltage range of 180 to 528VAC, the HCA3500TF is available in two different output voltage: 48VDC/73A, adjustable from 33.60 to 55.20VDC using the built-in potentiometer, or from 24.00 to 55.20VDC when using the trimming function and, respectively, for the 65VDC/54A model, from 45.50 to 74.75VDC and 32.50 to 74.75VDC. Under nominal working conditions the output power is 3.5kW.

In addition to the main output, the HCA3500TF includes a 12VDC/1A auxiliary output which can be used for remote ON/OFF and its external control circuit. The auxiliary output is isolated from the input, output and Functional Ground.

To guarantee the highest levels of efficiency and thermal robustness, the HCA3500TF uses an optimized, digitally controlled switching topology and a power stage with Silicon Carbide (SiC) MOSFETs and Diodes, conferring at 400VAC input, up to 94% efficiency to the 65V output model.

The HCA3500TF includes inrush current limiting circuitry, overcurrent and overvoltage protection and thermal protection. Exhibiting versatility and robustness, the power supplies can be operated in an ambient temperature range of -10 to +70C with a 0 to +55C baseplate temperature. Depending on the final equipment assembly style and cooling conditions, a derating may apply.

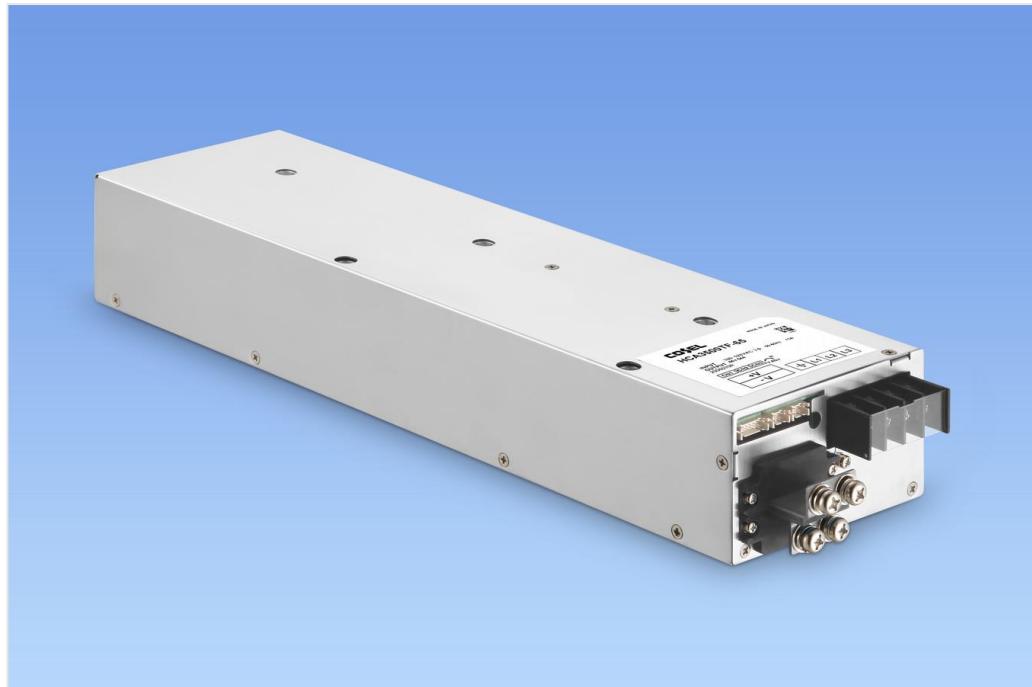
For system integration and to reduce conducted noise, the HCA3500TF includes an input filter and complies with the FCC Part15 class A, VCCI class A, CISPR11 class A, CISPR32 class A, EN55011-A and EN55032-A.

The HCA3500TF has an input to output isolation of 4,243VAC, input to ground (FG) of 2,829VAC and output to ground (FG) of 2,000VAC. Complying with the IEC62368-1, at its rated load and 480VAC, 60Hz, the leakage current is a maximum 3mA.

Designed for integrated industrial applications in 1.5U height, the HCA3500TF measures 110 x 65 x 420mm [4.3 x 2.6 x 16.5 inches] (WxHxD) and weighs 5kg max.

The HCA3500TF is suitable for a wide range of applications including measurement and analysis equipment, machine tools, semiconductor manufacturing equipment and the 65VDC model is ideal for powering Radio Frequency Power Amplifiers (RFPA), as well for 60V Lithium-Ion batteries chargers.

The HCA3500TF complies with safety requirements UL62368-1, EN62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1). The power supplies comply with the RoHS and Low Voltage directives and carry the CE mark and UKCA.



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Related links:

<https://en.cosel.co.jp/product/powersupply/HCA/>

**About COSEL:**

Established in Japan 1969, COSEL is one of the world's leading designers and manufacturers of high performance AC-DC Power Supplies, DC-DC Converters and EMI Filters. With quality, reliability & flexibility as our main focus, we pride ourselves on developing some of the highest quality and most reliable products seen anywhere in the world today. The Cosel Group is a \$210 million global company employing some 690 staff with sales offices throughout Japan, Asia, Europe and North America. Our product range is aimed mostly at demanding applications within the Industrial, Factory Automation, Medical, Telecoms, Lighting, Audio/Broadcast & Renewable Energy sectors. A flexible approach with full in-house design means we deliver products using the very latest technology meeting the growing demands of our customers.

<https://en.cosel.co.jp>

Press contact

Head Office COSEL CO., LTD.

Email:sales@cosel.co.jp

Tel: +81-764-32-8152