



## COSEL's 3-phase, low-profile, 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
- Low profile: 41mm (1.61 inch) including cover meets 1U height
- 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
- Built-in auxiliary 12V/1A power for housekeeping
- Complies with SEMI F47 requirements
- 5 years warranty

COSEL Co, Ltd (6905: Tokyo) today announced the launch of the HFA3500TF, a low-profile 3-phase, 3-wire 3500W AC/DC enclosed power supply design optimized for industrial equipment such as semiconductor manufacturing, laser processing machines and robotics. Addressing worldwide applications and 3-Phase Delta or 3-Phase Star networks, the HFA3500TF input voltage embraces 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 input and 65VDC output. The HFA3500TF is available in two output voltages, 48VDC and 65VDC, these being adjustable in the range +15% to -50% using the trim function. The compact, low-profile design comes in at just 41mm (1.61 inches) high complete with cover, and features two variable speed cooling fans. For higher power applications the HFA3500TF can be connected in parallel up to ten units and deliver up to 31.5kW.

The HFA3500TF's low-profile design fits into the vertical space of a 1U (44.45 mm) rack unit, clearly advantageous in applications where space is at a premium, facilitating easier integration into compact machines, saving valuable floor or rack space in industrial environments. To ensure highest performance and reliability in such a low-profile package, the power supply has been designed for high performance and optimized to eliminate hot spots and facilitate cooling throughout its componentry. To achieve this, the HFA3500TF combines an innovative mechanical layout with the latest developments in power electronics, such as an optimized digitally controlled switching topology and a power stage with Silicon Carbide (SiC) MOSFETs and diodes, providing up to 94% efficiency at 400VAC input for the 65V output model.



Industrial equipment can be installed all over the world and powered from 200V to 400V grids, requiring the power supply to operate within a wide range of input voltages. As well as reducing single-phase peak loads and optimizing load balancing on their networks, system architects prefer 3-phase power solutions, for which COSEL's HFA3500TF is designed to accommodate 3-phase three-wire delta or 3-phase three-wire star installation.

With an input voltage range of 180 to 528VAC, the HFA3500TF is available in two different output voltages, adjustable by using the built-in potentiometer or the trimming function. The 48VDC/73A unit is adjustable from 24.00 to 55.20VDC and the 65VDC/54A model from 32.50 to 74.75VDC. Under nominal working conditions the output power is 3.5kW.

In addition to the main output, the HFA3500TF includes a 12VDC/1A auxiliary output which can be used for remote ON/OFF. The auxiliary output is isolated from the input, output, and Functional Ground.

The HFA3500TF 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 temperature. Two cooling fans with automatic speed control guarantee ventilation of the unit, but depending on the final equipment assembly style and environmental conditions a derating may apply.

For system integration and to reduce conducted noise, the HFA3500TF 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 HFA3500TF 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 IEC62368-1, at its rated load and with 480VAC, 60Hz supply the leakage current is 3mA maximum.

Designed for integrated industrial applications in 1U height, the HFA3500TF measures 110 x 41 x 468mm [4.33 x 1.61 x 18.43 inches] (WxHxD) and weighs 3kg max.

The 48VDC output HFA3500TF-48 is suitable for a wide range of applications including measurement and analysis equipment, machine tools, and semiconductor manufacturing equipment required to sustain sag immunity conditions such as specified by the SEMI F47 standard. The 65VDC model HFA3500TF-65 is ideal for powering Radio Frequency Power Amplifiers (RFPA), as well for 60V Lithium-Ion batteries chargers.

The HFA3500TF complies with safety requirements UL62368-1, EN62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), with the RoHS and Low Voltage directives and carries the CE mark and UKCA.



The HFA3500TF addresses applications allowing fan-cooling but in the case of certain industrial applications such as welding robots, tooling machines and electrolyzers that are often required to operate in harsh environments without ventilation, COSEL offers the HCA3500TF that has been designed for baseplate conduction cooling.



COSEL's new 3-phase, low-profile, high efficiency power supply delivers 3.5kW to highly demanding applications.

**Related links:**

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



**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 \$255 million global company employing some 710 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.

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