

 Press Information

Power Supplies

TDK launches non-isolated 12.5 kW three-phase power supplies for Distributed Power Architectures

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TDK Corporation (TSE:6762) launches the TDK-Lambda TPF12500-385 series of non-isolated three-phase power supplies delivering up to 13.1 kW, with a nominal rating of 12.5 kW. With a regulated output voltage of 385 Vdc and an efficiency of 97.5 %, the series is designed for Distributed Power Architectures (DPA) and is capable of providing power to isolated high voltage DC-DC converters or DC Microgrids. Low internal losses enable cooling by two internal fans, providing a compact and efficient thermal management solution.

The TPF12500 models operate from wide-range Delta or Wye 360 - 528 Vac three-phase inputs. This enables global operation, removes the need for costly step-down transformers, and helps engineers maintain balanced phase loading for improved system reliability. To accommodate higher power requirements, up to two power supplies can be connected in parallel via droop-mode current sharing, allowing engineers to increase output capacity without redesigning the system.

With board-to-board connectors and reduced wiring, the TPF12500 improves system efficiency and lowers electrical losses for design engineers, enabling better thermal performance. The reduced cable and mechanical interfaces provide more space and greater reliability, reducing potential failure points from cable fatigue, loose connections, and vibration-related failures.

The TPF12500 models are designed for a wide array of applications, including semiconductor manufacturing equipment, data centers, RF power amplifiers in radars, industrial automation, and burn-in or other test systems.

The TPF12500 series is available with isolated DC OK, dropped phase signals, remote on/off, over temperature warning and a 13 V, 0.2 A standby supply. The RS-485 communications interface enables comprehensive remote monitoring for real-time visibility of key parameters such as input voltage, output current, internal temperature, fan fail, and status signals. The power supply can cold start in -20 °C and operate in ambient temperatures from -10 to +40 °C. The TPF12500 series' enclosure measures 202.6 x 111.1 x 711.2 mm (W x H x D) and can be used in 3U high racking systems.

Safety certifications include IEC/UL/CSA/EN62368-1 and carry the CE and UKCA marking for the Low Voltage, EMC and RoHS Directives. The units also comply with EN55032-A conducted and radiated emissions standards in the end system, meet IEC 61000-4 immunity standards, plus SEMI F47-0706 at 480 Vac nominal (Criteria C). The power supply has 2 kVac input to ground and 2 kVac output to ground isolation.

The TPF12500 series is designed to withstand high shock and vibration, ensuring exceptional durability and reliable operation in demanding industrial environments.

Main applications

- Semiconductor manufacturing equipment, data centers, RF power amplifiers in radars, industrial automation, and burn-in or other test systems

Main features and benefits

- 97.5 % efficiency (typical)
- 360 - 528 Vac, Delta or Wye three-phase inputs
- RS-485 communications interface for remote monitoring
- Board-to-board type connectors to reduce system losses

Type		TPF12500-385
Nominal input voltage	Vac	360 - 528, Delta or Wye three-phase
Output voltages	Vdc	385
Output power	W	12,500 (13,100 from 380 – 504 Vac)
Efficiency	%	Up to 97.5
Size (W x H x D)	mm	202.6 x 111.1 x 711.2
Safety certifications		IEC/EN/UL/CSA 62368-1

About TDK Corporation

TDK Corporation (TSE:6762) is a global technology company and innovation leader in the electronics industry, based in Tokyo, Japan. With the tagline “In Everything, Better” TDK aims to realize a better future across all aspects of life, industry, and society. For over 90 years, TDK has shaped the world from within; from the pioneering ferrite cores to cassette tapes that defined an era, to powering the digital age with advanced components, sensors, and batteries, leading the way towards a more sustainable future. United by TDK Venture Spirit, a start-up mentality built on visions, courage and mutual trust, TDK’s passionate team members around the globe pursue better—for ourselves, customers, partners, and the world. Today, the state-of-the-art technologies of TDK are in everything, from industrial applications, energy systems, electric vehicles, to smartphones and gaming, at the core of modern life. TDK’s comprehensive, innovative-driven portfolio includes cutting-edge passive components, sensors and sensor systems, power supplies, lithium-ion and solid-state batteries, magnetic heads, AI and enterprise software solutions, and more—featuring numerous market-leading products. These are marketed under the product brands TDK, InvenSense, Micronas, Tronics, TDK-Lambda, TDK SenseEI, and ATL. Positioning the AI ecosystem as a key strategic area, TDK leverages its global network across the automotive, information and communication technology, and industrial equipment sectors to expand its business in a wide range of fields. In fiscal 2026, TDK posted total sales of USD 16.6 billion and employed about 107,000 people worldwide.

About TDK-Lambda Corporation

TDK-Lambda Corporation is a trusted, innovative leader and global supplier of highly reliable power conversion products for industrial and medical equipment worldwide.

TDK-Lambda Corporation is aligned for fast responses to any customer need with R&D, manufacturing, sales and service locations in five key geographic regions, namely Japan, EMEA, Americas, China and ASEAN. For more details, please pay a visit to: www.jp.lambda.tdk.com/en/

Further information on the products can be found under
product.tdk.com/system/files/dam/doc/product/power/switching-power/ac-dc-converter/catalog/tpf12k5_e.pdf

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