

Power Supplies

12V Output 2040W 3-Phase Industrial Power Supply Operates From 400/440/480Vac Delta and Wye Inputs

October 2023

TDK Corporation (TSE 6762) announces the addition of the TDK-Lambda brand TPS4000-12 power supply, further extending the existing 3kW to 4kW rated TPS series. Delivering up to 2040W output power (12V at 170A) in a 2U high package, the TPS4000 series operates from a wide range Delta or Wye 350 - 528Vac three phase input. These industrial power supplies are ideal for use in many applications including test and measurement equipment, semiconductor fabrication, additive manufacturing, printers, lasers and RF power amplifiers. The high voltage, three-phase input avoids the requirement for costly step down transformers and assists phase load current balancing.

The TPS4000 series is fully featured with isolated AC Fail, DC Good and dropped phase signals, remote on/off, remote sense and a 12V 0.3A standby supply. A PMBus™ communications interface allows remote monitoring of the output voltage, output current, internal temperature, status signals and fan speed. In addition, the output voltage, over current limit and the remote on/off can be programmed by the PMBus™. The output voltage can also be adjusted from 9.6 to 14.1V and the current limit point by 70-105% using front panel potentiometers or an analog 0-5Vdc voltage. Up to eight units can be connected in parallel for higher power and internal ORing FETs allow redundant operation.

The TPS4000-12 can operate at full load in ambient temperatures of up to 50°C and deliver up to 55% load at 70°C. Cooling is provided by an internal temperature controlled fan to reduce acoustical noise. The case measures 107 x 84.4 x 335mm, making it suitable for 2U high racking systems. The weight of the product is just 4kg.

The power supply has 3kVac input to output, 2kVac input to ground and 500Vdc output to ground isolation. All TPS models are certified to IEC/EN/UL/CSA 62368-1 and carry the CE and UKCA marks for the Low Voltage, EMC and RoHS Directives. The TPS4000 also complies with EN55032-A (conducted and radiated emissions), SEMI F47-0706 (line dips), IEC 61000-3-2 (harmonics), IEC 61000-4 (immunity), and is designed to meet the MIL-STD-461F/G CS101, CS114 (Army Ground), CS115, and CS116 immunity standards.

More information on the TPS series, including distributor inventory, can be obtained from the TDK Product Center website at <https://product.tdk.com/en/power/tps>.

Main applications

- Test and measurement equipment, semiconductor fabrication, additive manufacturing, printers, lasers, RF power amplifiers.

Main features and benefits

- Suitable for 400/440/480Vac 3-phase Delta and Wye inputs
- Compact 2U high package size
- Fully featured
- PMBus™ communications interface for remote programming and monitoring
- Adjustable current limit

Key data

Model		TPS4000-12
Input voltage range	Vac	350 - 528VAC, Delta or Wye 3 phase
Output voltage	Vdc	12V, adjustable from 9.6 – 14.1V
Maximum output power	W	2040
Communications	-	PMBus™ interface for remote programming and monitoring
Paralleling	-	Up to 8 units (internal ORing FETs provided)
Safety certifications	-	IEC/UL/CSA/EN 62368-1. (CE and UKCA Marked to the LV, EMC and RoHS Directives)
Size (W x H x L)	mm	107 x 84.4 x 335mm (excluding output busbars)

About TDK Corporation

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately “Attracting Tomorrow.” It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK’s comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2023, TDK posted total sales of USD 16.1 billion and employed about 103,000 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/

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