

Power Supplies

20W 2"x1" DC-DC converters have an ultra-wide 8.5V to 160V input for rail and industrial applications

May 2023

TDK Corporation (TSE:6762) announces the introduction of the 20W rated TDK-Lambda PYD20 series of 2" x 1" footprint DC-DC converters. Capable of operating from an ultra-wide 18:1 input of 8.5 to 160Vdc, the converters are compatible with 12V, 24V, 48V, 72V and 110Vdc nominal system voltages. Applications include railroad rolling stock and trackside equipment, robotics, power generation and scientific research equipment.

These converters are available with 5V, 12V, 15V single and +/-12V, +/-15V and +/-24 dual outputs. The dual models can be configured to provide a 20W single 24V, 30V or 48V output. Using the trim function, they can be adjusted using a resistor or an external voltage to compensate for voltage drops, or to accommodate non-standard system voltages. The PYD20 models have overvoltage, overcurrent and overtemperature protection.

Remote on/off is also included as standard. Overall dimensions of the converters are 10.2mm high, 25.4mm wide and 50.8mm in length. The plastic case is silicone potted to provide a high resistance to shock and vibration. To meet demanding high voltage requirements for transients and a 5,000m altitude, the power modules have an input to output isolation of 3,000Vac. With efficiencies of up to 90%, power losses are minimized allowing the products to operate with case temperatures of up to -40°C to +105°C, with derating at high temperatures and convection or forced air cooling.

All models carry the CE and UKCA marks for the Low Voltage and RoHS Directives and are certified to the IEC/UL/CSA/EN 62368-1 safety standards. With external components the PYD20 series has been tested or designed to meet EN 50155 (railroad standard for electronic equipment in railroad vehicles), EN 45545-2 (fire safety) and EN 61373 (railroad vibration standard).

More information on the PYD20 series, including distributor inventory, can be obtained from the TDK-Lambda Americas website at <https://www.us.lambda.tdk.com>.

Main applications

- Railroad rolling stock and trackside equipment, robotics, power generation and scientific research equipment.

Main features and benefits

- Wide 8.5 to 160Vdc input range
- 2"x1" industry standard package
- Tested or designed to meet EN 50155, EN 45545-2 and EN 61373 railroad standards
- 3000Vac input to output isolation



Key data

Model		PYD20
Input voltage range	Vdc	8.5 to 160
Output voltages	Vdc	Single: 12, 15 and 24. Dual: +/-12, +/-15V and +/-24
Maximum output power	W	20
Efficiency	%	Up to 90
Isolation	Vac	Input - output 3,000
Size (L x W x H)	mm	50.8 x 25.4 x 10.2
Safety certification		IEC/UL/CSA/EN 62368-1 (Tested or designed to meet EN 50155, EN 45545-2 and EN 61373)

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 2022, TDK posted total sales of USD 15.6 billion and employed about 117,000 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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