

Power Supplies

43 to 160Vdc input rail and industrial DC-DC converter series expanded with 50W, 100W, and 150W quarter brick models

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TDK Corporation (TSE:6762) announces the expansion of the TDK-Lambda brand CN-B110 series with 50W, 100W, and 150W rated quarter-brick DC-DC converters. Capable of operating from a wide input voltage of 43 to 160Vdc, the converters are compatible with 72Vdc or 110Vdc nominal railway systems for applications such as rail rolling stock and trackside equipment.

These additional converters are available with 5V, 12V, 15V, 24V, and 48V outputs and expand the CN-B110 series from 50W to 300W. 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.

To meet demanding high voltage requirements for transients and 5000m altitude, the CN-B110 series has sufficient spacing between the primary input and baseplate for a 2500Vac isolation voltage. The input-to-output isolation is 3000Vac and 500Vac between the output and baseplate. With efficiencies of up to 92%, power losses are minimised, allowing the products to operate at baseplate temperatures of -40°C and up to +100°C, with very minimal to no derating at high temperatures. Cooling is achieved using the optional heatsinks or a cold plate via the module's aluminium baseplate.

The 50W to 150W CN-B110 models have remote on/off as standard, with an optional 7 to 11V 10mA auxiliary output (replacing the negative remote sense function). Other options include board coating, unthreaded mounting holes, a short 3mm pin length, and no encapsulation (50 and 100W models only). The quarter-brick converter's overall dimensions are 12.7mm high, 37.2mm wide, and 58.3mm in length.

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. In addition, the series meets the rolling stock IEC 61373 Category 1, Class B shock/vibration standards, and is designed to meet EN 45545-2 (Fire protection on railway vehicles) and EN 50155(1) (Electronic equipment in railroad vehicles) in certified systems.

Further information on the products can be found at <https://product.tdk.com/en/power/cn-b>

Main applications

- Rail rolling stock, trackside equipment, robotics, Automated Guided Vehicles (AGVs), scientific research, and power generation equipment.

Main features and benefits

- Wide 43 to 160Vdc input range
- Quarter brick industry package
- Certified to IEC/UL/CSA/EN 62368-1 safety standards, designed to meet EN45545-2
- Very minimal derating at high ambient temperatures

Key data

Model		CN50-150B110
Input voltage range	Vdc	43 to 160
Output voltages	Vdc	5, 12, 15, 24 and 48
Maximum output power	W	50 to 150
Efficiency	%	88 to 92
Isolation	Vac	Input - baseplate 2500, input - output 3000, output - baseplate 500
Size (L x W x H)	mm	58.3 x 37.2 x 12.7
Safety certification		IEC/UL/CSA/EN 62368-1 (designed to meet EN 45545-2)

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 2024, TDK posted total sales of USD 14.6 billion and employed about 101,000 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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