

Power supply product

TDK has developed 11kW isolated bidirectional DC-DC Converter, industry highest for its power density

• The EZA11K was designed to be mounted at 1U rack (422.8 × 43.6 (1U) × 530 mm). While this size is similar to current EZA2500, this new model boasts a maximum output power of 11kW which is 4 times than EZA2500 model. It also can be paralleled up to 50kW (5 units).

April 11, 2017

TDK Corporation is pleased to announce that it has expanded its EZA series of isolated DC-DC converters in the TDK-Lambda brand by developing the 11kW model (EZA11K), which boasts more than four times greater output than the current model. By adding this new product to the 2.5kW model lineup, the company will help customers to downsize their large-capacity devices. TDK-Lambda Corporation will begin sales of this product this April.

Currently, lithium ion batteries and other high-performance secondary batteries are more widely used. For example, they are used for vehicles such as PHVs and EVs, industrial purposes such as peak shaving and emergency power supplies and household purposes. In addition, lower prices of solar panels and other equipment have resulted in the growing need for consumption of electricity from renewable energy such as solar power and wind power, in addition to the established practice of selling such electricity to electric power companies. This has also resulted in the growing demand for secondary batteries, which are used with the above equipment.

The EZA series units are isolated DC-DC converters that can handle bidirectional power conversion -- that is, upward conversion and downward conversion between the high-voltage side and the secondary battery side -- without using an additional power supply unit. The EZA11K boasts a maximum output of 11kW, which is more than four times greater than that of the current model, despite its compact, slim dimensions (1U height and full-rack size). Bidirectional conversion is possible with maximum efficiency at 95%. The unit is also capable of operating autonomously, ready to automatically change its conversion direction to stabilize input or output voltage. It is also possible to quickly change its conversion direction, without stopping the converter. The unit can be paralleled for use with a system whose output capacity exceeds 11kW.

By integrating circuit control technologies, including digital control technologies, with low-loss magnetic materials, strength of TDK, the company will further contribute to saving power and reducing CO₂ emissions while moving towards a smart society.

This product will be exhibited at the TDK booth of TECHNO-FRONTIER 2017 (an exhibition of power supply systems), which will be held at Makuhari Messe from April 19 to April 21, 2017.

Major applications

- Energy storage systems for peak shaving and equalization of power consumption/emergency power supplies.
- Energy recycling systems from motors to help reduce peak power consumption or for saving energy.
- Stabilization of DC bus of renewable energy systems.

Main features and advantages

- Capable of handling bidirectional power conversion with a maximum rated output capacity of 11kW, without an additional unit.

- Isolated topology that has the advantage in safety and noise management.
- Compact size and slim dimensions: W: 422.8, H: 43.6 (1U), D: 530 mm
*Current model (2.5kW unit): W: 422.8, H: 43.6 (1U), D: 400 mm
- High efficiency: Maximum conversion efficiency at 95% or greater in both directions (at maximum rating)
- Capable of operating autonomously, ready to automatically change the conversion direction to stabilize input or output voltage.
- Capable of quickly changing conversion direction, without stopping the converter.
- The mode of current, voltage, and conversion direction can be controlled and monitored by external devices through the RS485 serial communication.

Key data: EZA11K

Model	EZA11K-320240	
Item	High-voltage side	Secondary battery side
Input voltage	320V DC (240-400V DC)	240V DC (150-300V DC)
Maximum efficiency	95%	95%
Output voltage	320VDC (240-400VDC)	240VDC (150-300VDC)
Output capacity	11kW	
External control	RS485	
Operation mode	Self-commutating/external control mode (mode can be externally set via RS485)	
Others	Input output isolation; expandable by parallel operation	
Size (W x H x D)	422.8 x 43.6 (1U) x 530 mm	

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2016, TDK posted total sales of USD 10.2 billion and employed about 92,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components, piezo and protection components, and sensors.

About TDK-Lambda Corporation

TDK-Lambda Corporation, a group company of TDK Corporation, is a leading global power supply company providing highly reliable power supplies for industrial equipment worldwide. TDK-Lambda Corporation meets the various needs of customers with our entire range of activities, from research and development through to manufacturing, sales, and service with bases in five key areas, covering Japan, Europe, America, China, and Asia. For more details, please pay a visit to <http://www.tdk-lambda.com>

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