

High-voltage contactors

TDK presents HVC50 for high-power systems with up to 750 A at 1500 V

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TDK Corporation (TSE:6762) announces the HVC50, a high-voltage DC contactor designed for connecting or disconnecting lithium-ion batteries with up to 1500 V in traction applications, energy storage systems (ESS), and megawatt charging systems (MCS). With this component, TDK enables its customers to drive the green transformation towards an all-electric society and reduce carbon footprint.

In a single event, the HVC50 can disconnect DC voltages of up to 1500 V and DC currents of up to 1000 A in less than 30 ms. Continuously, it can carry up to 750 A. Weighing 1.7 kg and measuring 97.8 x 140 x 94.2 mm, this component is designed for the demanding requirements of industrial applications and commercial vehicles, combining reliability, safety, and easy integration.

The HVC50 features a ceramic arc chamber with a gas-filled design, ensuring rapid and safe current disconnection even under extreme conditions. Its integrated mirror contact, compliant with IEC 60947-4-1, enhances operational safety by providing precise switching feedback. Thanks to the bidirectional capability of the contactor, currents can flow both ways seamlessly, making it exceptionally versatile. A dual-coil design for operating voltages of 12 or 24 V ensures energy-efficient operation. The making power is 50 W, whereas the steady-state power is just 6 W, because after some 200 ms, one of the two coils can be switched off.

Certified to CE, UKCA, and UL standards, the HVC50 contactor aligns with global safety and performance benchmarks, supporting its use in various regions, including Europe, the US, and Asia. By addressing the growing demand for efficient and reliable power in ESS and MCS, the HVC50 is poised to accelerate the adoption of sustainable energy solutions and high-capacity charging infrastructures worldwide.

Main applications

- Traction battery systems
- Energy storage systems (ESS)
- Megawatt charging systems (MCS)

Main features and benefits

- Maximum cut-off: 1000 A (DC) at 1500 V (DC)
- Continuous operation: up to 750 A (DC) at 1500 V (DC)
- Main terminals without polarity (bi-directional)
- Auxiliary contact is a mirror contact (acc. to IEC 60947-4-1)
- Dual coil
- Coil termination with TVS diode
- RoHS compatible

Key parameters

Type	Ordering Code	Coil voltage [V]	Continuous current [A]	Temporary overcurrent (1 min) [A]
HVC50-400B-12MCE2	On request	12	400	650
HVC50-400B-24MCE2	On request	24	400	650
HVC50-600B-12MCE2	B88269X7630C011	12	600	1000
HVC50-600B-24MCE2	B88269X6140C011	24	600	1000
HVC50-750B-12MCE2	B88269X8020C011	12	750	1000
HVC50-750B-24MCE2	B88269X7910C011	24	750	1000

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.

You can download this text and associated images from www.tdk-electronics.tdk.com/en/250422.
Further information on the products can be found at www.tdk-electronics.tdk.com/en/hvc_presentation.

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