

NTC thermistors

Robust temperature sensor for E-mobility

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TDK Corporation presents the new B58703M1103A* temperature sensor – specially developed for demanding E-mobility applications, which call for high long-term stability. The NTC sensor is designed for a temperature range of -40°C to +150°C, whereby a temporary load of up to 200°C is permitted. At 25°C the rated resistance is 10 kΩ with a B25/100 value of 3625 K and a tolerance of ±1 percent.

The sensor has been subjected to climatic, chemical and mechanical testing according to the service life tests of LV 124 and in doing so has achieved electrical resistance class H3 according to LV 123, which corresponds to 2.5 kV DC. This high and long-term stable electrical strength is required to prevent damage, for example, to control devices throughout the service life of the vehicle.

The connecting cables of the new temperature sensor meet the LV 112-4 standard for electrical cables in motor vehicles and are twisted to improve EMC performance. The cable lengths are 655 mm and 1000 mm as standard. The sensor includes an M4 mounting bracket made from copper alloy for mounting purposes. This choice of material offers excellent thermal coupling and ideal material compatibility with the copper busbar, which prevents contact corrosion.

The field of application of the new sensor is temperature monitoring of busbars, battery modules and connector systems in E-mobility.

Main fields of application

- Temperature monitoring of busbars, battery modules and connector systems in E-mobility applications

Main features and benefits

- Temperature range from -40°C to +150°C
- High electrical strength of 2.5 kV DC according to LV 123 H3 class
- Twisted cables for good EMC performance

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 2020, TDK posted total sales of USD 12.5 billion and employed about 107,000 people worldwide.

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