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Resistance measurement in milliseconds

Milliohmmeter for inline testing

Resistance measurement is an important quality control factor in many fields. With battery pack contact terminals – whether in electromobility, power tools or communication electronics – contact resistances in the milliohm range provide information about the quality of the spot-welded joint and its high-current capability. Similarly, motor or relay coils can be tested quickly and reliably, as can fuses, wire coil heating elements, solenoid coils, plug contacts or switches. For these important tasks, burster präzisionsmesstechnik has developed RESISTOMAT 2311, a high-precision milliohmmeter for the fastest inline measurements in manufacturing processes (see fig. 1). Capable of up to 100 measurements per second, it is ideally suited to 100% checking in mass production. The compact measuring instrument (110 x 110 x 183 mm) offers measuring ranges from 20 mΩ to 200 kΩ with a measurement accuracy of 0.03 % of full scale. Up to 10 individually configurable material temperature coefficients in conjunction with temperature compensation in the range of 0‑100 °C mean that measurements are not temperature-dependent.

For automated inline testing

Fast measurements from 10 ms including evaluation guarantee high throughput. 32 customizable preset measuring programs allow individualized measurements even with frequently changing products on the production line. An integrated data logger stores up to 900 measured values per measuring program. Interfaces such as PROFINET, EtherNet/IP and EtherCat ensure rapid integration into a wide variety of production environments (see fig. 2). A two-way or four-way comparator with switching outputs classifies and selects the test objects. The test leads are monitored by an integrated open-circuit detector. A Pt100 sensor or a pyrometer records the temperature compensation data. A built-in circuit for protecting the measurement input reliably prevents voltage spikes when disconnecting the test object. Specially for measuring contact resistances (dry circuit measurement), the compliance voltage can be limited to 20 mV, which prevents so-called fritting (burning through the contact surface film layers).

Picture captions:

Figure 1: The RESISTOMAT 2311 can perform up to 100 measurements per second (source: burster)

Figure 2: Numerous interfaces for communication and measurement data (source: burster)

Company box: About burster

burster supplies measuring technology ranging from individual sensors to system solutions. Its customers are mainly in mechanical and plant engineering, automation, the automotive industry and its suppliers, electrical and electronic engineering and the chemicals industry. The range includes measuring instruments and testers as well as standard sensors for mechanical and electrical measured values, such as load cells, pressure, torque and displacement sensors, milli- and megohmmeters, and resistance decade boxes. In addition, individual custom OEM solutions are possible, including for many other sectors and future markets such as medical engineering, biotechnology and e-mobility. Many years of experience in designing and building measuring instruments and sensors guarantee optimum solutions every time. Developed and manufactured in Germany, burster sensors, amplifiers and transmitter modules, precision instruments and measuring systems for sensor signal processing are shipped to customers all around the world.

Meta description:

Milliohmmeters for high-speed measurements allow inline measurement of contact resistances and component resistances for quality control.

Further details are available at: [Products: burster.de](https://www.burster.de/de/produkte/p/detail/resistomatr-2311)