



Research & Development



Lagerung



Begin/Middle of Line



End of Line



Service



Second Life

Testing

Experts in measurement and control

With over 30 years of experience, burster Italia has made precision measurement its specialization, offering instruments and control systems along with a high-value-added support service

by Gianandrea Mazzola

burster Italia offers a complete ecosystem of measurement solutions for the e-mobility sector

The advent of e-mobility has introduced new challenges across many sectors, including precision measurement, demanding increasingly sophisticated solutions to ensure the efficiency and reliability of electrical components. This is where burster Italia excels, specializing in precision measurement technologies and providing some of the world's leading brands with sensors, instruments, and systems for process signal measurement. Over time, the company has expanded its offerings from micro-resistance measurement to a comprehensive portfolio of solutions across various sectors, with a particular focus on automotive. This diversified product offering is complemented by its



Laboratory battery tester

ability to provide high-value-added customer-focused sales support, assisting clients throughout all stages, from pre-purchase guidance to post-sales support.

Evolution of precision measurement technologies

Founded over thirty years ago by Alberto Acquati, burster Italia has always focused its expertise on precision electrical resistance measurement, with a particular emphasis on micro-resistance, becoming the exclusive distributor in Italy for solutions designed and manufactured by the German company burster.

«Our expertise in micro-resistance measurement – explains Acquati – has evolved into a range of applications, with instruments ranging from portable devices to laboratory systems, from compact solutions without displays, ideal for integration into automatic machinery, to versions equipped with full touchscreen interfaces».

The acquired expertise formed the foundation for the development of increasingly advanced solutions, offering multiple application possibilities. In the automotive sector, the company has implemented compact solutions with high data transmission speeds, optimized for integration into automated production systems.

«These technologies – Acquati emphasizes – are used, for example, in end-

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Alberto Acquati, owner and founder burster Italia



Eng. Federico Acquati, business development executive burster Italia

of-line testing for critical components such as electric motors and alternators, enabling verification of winding resistance in stators and rotors. Another common application involves various types of contact testing, verified using instruments like micro-ohmmeters».

The accuracy of burster Italia's instruments achieves measurement levels down to the nano-Ohm range, allowing for detailed analysis of electrical junctions and contacts.

«The well-known RESISTOMAT® series – confirms Acquati – in production for over three decades, is also used in Accredia-accredited calibration centers as a secondary standard for verifying battery connections».

Over the years, technological advancements and product development have enabled burster Italia to bring strain gauge sensors to the market, which convert resistance variations into measurable electrical signals.

«These sensors – says business development executive Federico Acquati, representing the second generation in the company – are used for force, torque, and pressure measurements, further expanding analytical capabilities in the automotive sector, especially within e-mobility».

Advanced technologies for battery testing

With the improving demand for electric vehicles, burster Italia has focused its resources on developing specific instrumentation for the monitoring and testing of electric batteries.

«In 2020-2021 – confirms Eng. Acquati – we introduced an instrument for measuring the real component of impedance, allowing for detailed analysis of the electrode, electrolyte, and internal diffusion phenomena, effectively enabling a deeper evaluation of battery efficiency».

These advanced measurement systems go beyond traditional charge and discharge tests by analyzing complex parameters such as impedance. Moreover, using force and displacement sensors, it is possible to assess the mechanical deformations experienced by the cells during operational cycles.



Coretec Japan nutrunners, burster Italia partner for EMEA region



Coretec Japan servopresses, burster Italia partner for EMEA region

HIGH-PRECISION UNIVERSAL MEGAOHMMETER FOR AUTOMATION END TESTING

The new RESISTOMAT® 2411 aims to set a benchmark in the field of universal ohmmeters for production automation, testing, and laboratory applications. Designed to ensure fast, reliable, and precise measurements, with high compatibility with fieldbus systems, its versatility makes it

Mega-ohmmeter RESISTOMAT® 2411 offers measurement ranges from 100 kΩ to 100 TΩ, up to 1,000 V, with measurement times starting from just 50 ms

the ideal choice for applications requiring resistance measurements on various insulating materials. It is also suitable for testing electronic components such as electric motors, turbines, pumps, and generators, as well as for critical measurements during battery assembly or production stages. One key feature of this instrument is its ability to enhance productivity through very short measurement times and easy integration with control systems. The measurement method ensures accurate results, while the test voltages can be adjusted according to the latest DIN standards, ensuring compliance and safety in the most demanding industrial applications. Insulation measurement is, in fact, a critical test for safety and functionality across nearly all industrial sectors, as defective materials or inadequate insulation can severely compromise the durability, functionality, and safety of devices. Distributed in Italy by burster Italia, the RESISTOMAT® 2411 offers measurement ranges from 100 kΩ to 100 TΩ, with measurement times starting from just 50 ms. The accuracy of measurements is guaranteed starting from 0.1% of the reading, and the test voltages can be adjusted from 10 V DC up to 1,000 V DC, with 1 V increments and 0.1% full-scale accuracy. To adapt to different types of tests, the device supports up to 32 configurable measurement programs, offering great flexibility in use.



FAST IMPEDANCE MEASUREMENTS OF BATTERY CELLS WITHIN AUTOMATION SYSTEMS

The new Model 2511 from burster Italia is a high-performance instrument designed for rapid, multi-channel measurement of battery cells within automation systems. Thanks to its reliable four-wire measurement method, this device combines the functionalities of a tester and an impedance spectrum analyzer for batteries, enabling quick and precise testing of batteries of any technology. Within just a few milliseconds, the module can measure and evaluate the main battery parameters, providing results in as little as 73 milliseconds. Additionally, the testing process is customizable thanks to the ability to individually adjust measurement parameters. Designed according to the latest CE directives, the

new Model 2511 is suitable for both laboratory operations and use in challenging industrial environments. Its variable communication interfaces, compatible with major communication protocols such as EtherCAT or PROFINET, allow for easy integration into industrial processes. This enables fully automated testing, ensuring precision and reliability. Noteworthy technical features include a wide range of internal resistance (from 10 to 300 mΩ), multiple operating frequencies (1 kHz, 100 Hz, 10 Hz, and 1 Hz), and a resolution down to 0.01 μΩ. The device can be used in both single and multi-channel



New model 2511 is designed for rapid, multi-channel measurement of battery cells within automation systems

applications and includes a function for temperature measurement using a PT100 sensor. Moreover, it offers high precision, with a tolerance range from ±0.2% of the reading to ±0.4% deviation.

The communication interfaces of the RESISTOMAT® 2311, 2411 and Battery Measuring Module 2511 are compatible with major communication protocols, such as EtherCAT and PROFINET, and allow easy integration into industrial processes



Micro-ohmmeter RESISTOMAT® model 2311 has been designed and optimized for high-speed applications in automation systems



«Our equipment – explains Eng. Acquati – allows for monitoring the mechanical deformations of batteries induced by both thermal variations and charge-discharge cycles».

This multidimensional approach to battery testing provides electric vehicle manufacturers with critical data to optimize performance and extend the longevity of power units, significantly contributing to technological advancements in the e-mobility sector.

Integrated solutions for e-mobility

burster Italia offers a complete ecosystem of measurement solutions for the e-mobility sector. The company's portfolio includes a trio of essential instruments: micro-ohmmeters, battery test modules, and megaohmmeters, covering the entire range of measurement needs within the electric vehicle field. The new Model 2411 of the RESISTOMAT® series, soon to be launched, represents the latest innovation in electrical insulation measurement.

«In particular, the Model 2411 – highlights Federico Acquati – is capable of measuring resistances ranging from 100 megaohms up to 100 teraohms, with adjustable test voltages from 1 to 1,000 volts».

In addition to electrical measurements, the company provides sensors and instruments for the assembly of electric motors, including load cells and control systems for assembly operations. These devices are crucial to ensure precise mounting of critical components like shafts and bearings in motor rotors. Also related to e-mobility, the company represents Coretec Japan's electric screwdrivers and servo presses for the EMEA region, with products widely used in battery production.

«This network of collaborations, alongside other partner companies – concludes Acquati – allows burster Italia to provide comprehensive and integrated solutions for every stage of electric vehicle development and production, solidifying our company as a qualified technology partner in the e-mobility sector».