HIOKI

BATTERY INSULATION TESTER BT5525

NEW Preview

Special website

Detect contamination that could cause defects. Improve battery cell productivity with early detection.

Product concept

In order to assure the long-term quality of the battery, it's necessary to detect causes of latent defects in inspection processes on production lines. Minuscule insulation defects can eventually degrade battery life and cause fires. The principal causes of insulation defects are contamination (with metallic remnants) and minuscule scratches occurring in production processes.

Market requirements

Safety : Manufacturers need to accurately detect minuscule degradation and failures that have been undetectable previously.

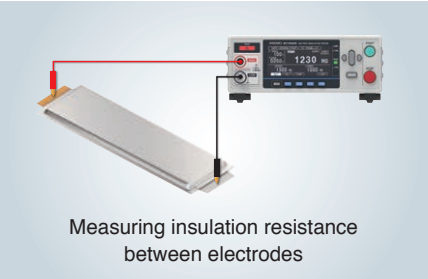
Quality : Manufacturers need to attain high productivity through stable measurement.

The BT5525 is an insulation resistance tester that was developed to meet these battery market requirements.

NEW PRODUCTS 2022 Tentative launch date COMING SOON

CE 3 year Warranty

BT5525 applications

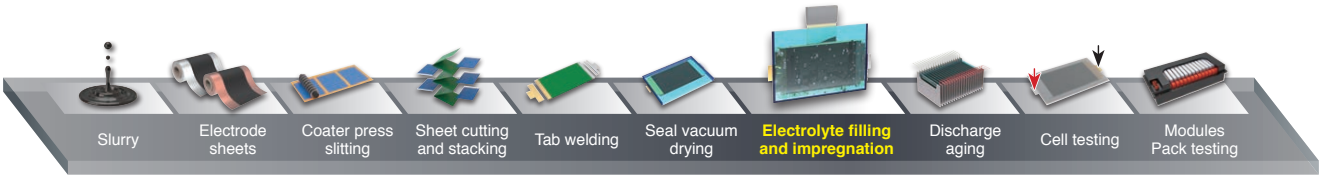


Measuring insulation resistance between electrodes

Insulation resistance testing in battery production processes

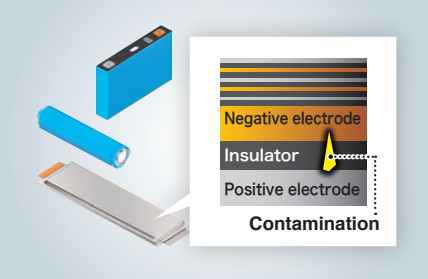
Testing cells' internal resistance state prior to electrolyte injection

On lithium-ion battery (LiB) production lines, the BT5525 can perform tests to determine whether electrodes in battery cells into which electrolyte has not yet been injected are properly insulated. It can also perform insulation testing between module and pack electrodes and battery enclosures. The instrument can detect contamination (with metallic foreign material) and minuscule separator tears that have been difficult to detect in the past.



LIB production line processes

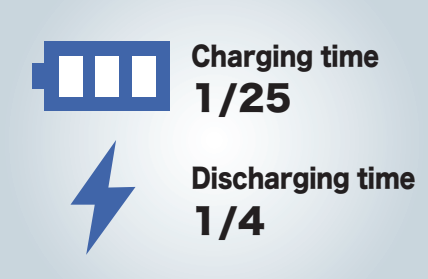
BT5525 benefits



Detecting minuscule insulation defects caused by contamination

Break down detect (BDD) function

Contaminants (metallic foreign material) introduced by production processes can cause insulation defects inside cells, leading to fire or failure. In the past, contamination was detected using waveform measuring instruments like oscilloscopes. However, there was the risk of not being able to detect contamination due to the instruments' sampling speed and resolution performance.
The BT5525 detects contamination with its break down detect (BDD) function, which tracks variations during measurement. Since the function doesn't depend on sampling speed, the instrument can detect contamination more accurately, helping production of highly safe cells improve.

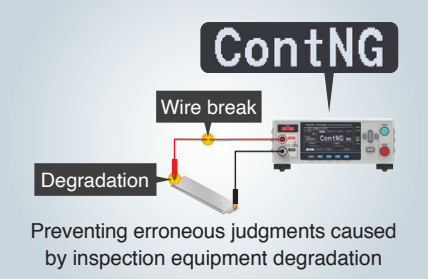


Boosting production by shortening inspection times

50 mA high-speed charging × 40 mA high-speed discharging

In recent years, batteries used in automobiles have been growing in terms of both size and capacity. As a result of this trend, the capacity of test locations (electrodes) in insulation testing processes prior to battery electrode injection has also been increasing.
The BT5525 charges at up to 50 mA and discharges using a 40 mA constant current. Due to significantly improved charging and discharging performance, the instrument has reduced charging times to about 1/25* and discharging times to about 1/4* of previous products.

*Compared to Hioki's Insulation Tester ST5520.



Preventing erroneous judgments caused by inspection equipment degradation

Preventing re-testing by eliminating erroneous judgments

Contact check function

If the tips of the measurement leads have degraded or have breaks in their wiring, resistance values caused by equipment defects will be added to the resistance value of the circuit under test, potentially causing defective parts to be erroneously judged as non-effective parts.
The BT5525's contact check function determines whether the instrument has made proper contact with the circuit under test by measuring the capacitance between the measurement terminals (stray capacitance and the capacitance of the circuit under test). The use of a two-terminal method simplifies system wiring.

DISTRIBUTED BY

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