HIOKI

WELDING RESISTANCE METER
RM3546

NEW Preview

Special website

Assess weld quality.
Improve battery safety through reliable testing.

Product concept

The quality of welds on power lines has a significant impact on energy efficiency and safety.
Weld quality is especially important because EV batteries, which increasingly incorporate super-fast charging performance and handle large currents.

Market requirements

Detection capability : Manufacturers need to detect minuscule weld defects that have gone undetected in the past.

Full automation : Manufacturers need to build fully automated inspection lines with no downtime.

The RM3546 is a weld resistance meter that was developed to meet these battery market requirements.

NEW PRODUCTS 2022 Tentative launch date COMING SOON

CE 3 year Warranty

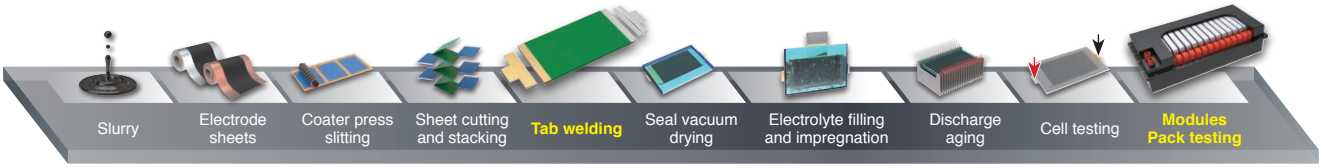
RM3546 applications

Measuring electrode sheet and tab weld resistance

Weld resistance testing in battery production processes

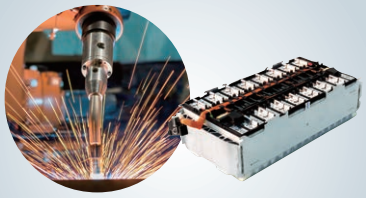
Testing battery cell tab weld and battery pack busbar weld quality

The RM3546 judges weld conditions by measuring minuscule resistance values at weld locations.
Due to its 1000 µΩ range and high resolution, it can display measured microohm-order resistance values accurately.
As an example, the instrument can be used to test the quality of electrode sheets and tab welds and battery pack busbar welds on lithium-ion battery (LiB) production lines. It can also be used to test weld resistance in an array of targets, from large items like motors and aircraft fuselages to compact parts like harnesses, connectors, relays, and electronic components.



LIB production line processes

RM3546 benefits

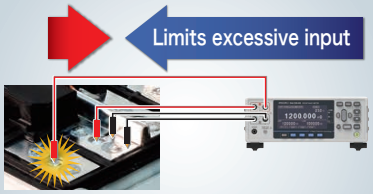


Make measurements, even while welds are hot.

Enabling accurate testing, even immediately after welding

Canceling the effects of heat: A-OVC function

Judging weld resistance involves measuring extremely small resistance values. However, temperature variations immediately after welding have a pronounced effect on resistance. Consequently, in the past it's been necessary to wait for welds to cool so that their temperature has stabilized to make accurate measurement.
The RM3546's new A-OVC function compensates for fluctuations in resistance values caused by temperature variations. The function makes it possible to accurately measure weld resistance, even immediately after welding work has been performed.



A protective circuit prevents failures.

Eliminating downtime from failures

Voltage protection technology (VPT) function

The RM3546's VPT function monitors breakdown voltages and excessive input voltages up to 60 V. When excessive input is detected, a protective circuit is operated to stop measurement and prevent damage in the RM3546. As a result, it's possible to test weld resistance safely in parts that carry a voltage, for example battery pack busbars and motors.
In addition, unanticipated production line downtime can be prevented by using instruments that implement robust protections against failure. The RM3546 helps improve productivity according to plan by eliminating losses caused by unforeseen problems and time-consuming recovery work.

The RM3546 can be paired with automatic testing system.

Multichannel capability and full, problem-free automation in a compact

Ability to measure up to 20 channels and increased tolerances for path resistance

The RM3546 can perform multichannel testing of up to 20 channels when equipped with the internal Multiplexer Unit Z3003. Thanks to an internal design, adding this capability doesn't increase the instrument's footprint. Moreover, easy operation can immediately improve production capacity.
The new instruments feature significantly improved tolerances for path resistance compared to previous models, making it easier to embed them in automatic testing systems with long cable runs. Operators can expect fewer problems and less downtime, both during equipment deployment and after volume production operation has begun.

DISTRIBUTED BY

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