

Device for remote measurement of earth resistance



THE IoT SOLUTION FOR REMOTE AND CONTINUOUS MONITORING OF GROUNDING INSTALLATIONS

Regulatory compliance

Automatic records always available for inspections and audits.



Full control from anywhere

Mobile app and web platform accessible 24/7, with no physical presence required.



Reduced maintenance costs

Fewer site visits, fewer incidents, and longer installation lifespan.



GROUNDING SYSTEMS

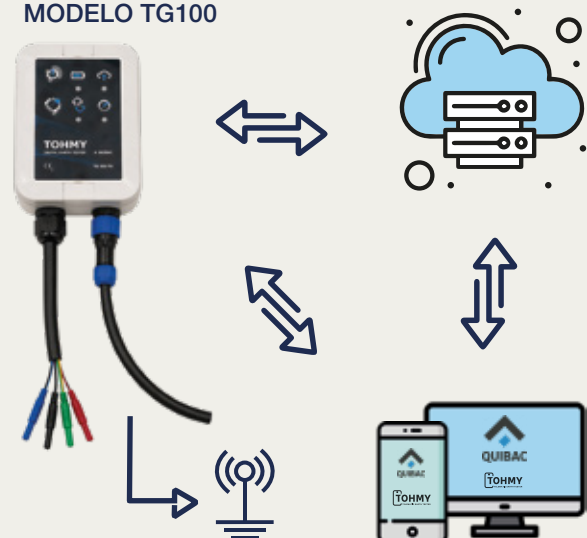


TOHMY® measures the impedance of grounding systems using the fall-of-potential method and automatically transmits the data remotely. The information can be accessed through a mobile app or a **centralized web platform**, where it is recorded and monitored in real time.

It incorporates a **continuity detector** that identifies resistance increases caused by oxidation, poor connection, or an open control bridge, allowing action to be taken before the failure becomes critical.

Thanks to continuous data logging, together with a **machine learning algorithm**, TOHMY® predicts system evolution and anticipates the necessary maintenance interventions.

MODELO TG100



Continuous monitoring

No travel or scheduled inspection visits required.

Immediate alerts

Automatic notification of any detected anomaly.

Failure prevention

Identifies resistance increases before they become critical.

Data-driven maintenance

Act only when the system truly needs it.

Full traceability

Measurement history for audits and regulatory compliance.

Centralized management

All your devices managed from a single web platform.

TECHNICAL SPECIFICATIONS

PHYSICAL CHARACTERISTICS

- Dimensions: 110 x 170 x 40 mm.
- Enclosure: Plastic housing, ASA material, IP68, weather-proof and UV-resistant.
- Measurement connections:
 - 5x female banana connectors.
 - Approx. 300 mm cable length with 5 conductors, 1.5 mm² (15 AWG).

RESISTANCE MEASUREMENTS

- Channels: 2 independent channels, ground (CPE) and continuity.
- Signal generator: sinusoidal waveform.
- Self-calibration and self-test using a precision resistor.
- Measurement range: 0 to 2000 Ω (single scale).
- AC signal frequency: up to 2 kHz. Optimal range from 100 Hz to 1 kHz.
- Error (both channels): $\pm 3\%$ or < 0.5 ohm for working frequency and resistance ranges.
- Reading process duration: approx. 500 ms.

USER INTERFACE

- 2x Push buttons:
 - Button 1: Power on / off.
 - Button 2: Device connection.
- 4x LED indicators:
 - Indicator 1: Operation status LED.
 - Active / inactive mode. Battery level.
 - Indicator 2: Data network connection.
 - Indicator 3: Device connection operation.
 - Indicator 4: Activity (acquisition and measurement).

POWER SUPPLY

- Voltage: 3.3 to 5.5 VDC.
- Power sources:
 - 3x 1.5 VDC AA batteries.
 - External 5 VDC nominal power supply (not included).
 - USB charger connection.

POWER CONSUMPTION

- Off mode: 10 μ A max.
- Inactive mode: average below 100 μ A.
- Active mode:
 - Resistance measurement: 140 mA max.
 - Wi-Fi: 250 mA max.

FEATURES

GENERAL

- Real-time clock (RTC) automatically synchronized via SNTP protocol.
- Schedule planner for measurement programming.

RADIO FREQUENCIES (RF)

- 2.5 GHz band for Wi-Fi (UDP) and optional Bluetooth.
- Integrated antenna.

COMMUNICATIONS & PROTOCOLS

- Virtual COM port via USB.
- Internet access in Wi-Fi station mode:
 - Connection to local access point.
 - RF transmission power level configurable between 10 and 20 dBm.
- SNTP client.
- MQTT client:
 - Connection to AWS broker (default).
 - Secure encrypted layer with certificates.
- Monitoring through mobile application via wireless connection.

EXTENSION PORT

- 5-pin connector for external sensors (humidity, temperature, pH...), communication ports and/or external power supplies.

ENVIRONMENTAL

- RoHS electronics.
- Operating temperature range: -20°C to +45°C.

TESTS & CERTIFICATIONS

- Electromagnetic compatibility testing.
- Conformity assessment: CE marking.



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