

## TM25t

### Features

- Intended for measurement of earth resistance of electricity pylons
- Minimizes the influence of adjacent pylons, connected by the guard cable
- Operation frequency: 25 kHz
- Resistance reading: up to 300  $\Omega$
- Automatic compensation of inductive component
- Automatic current injection
- USB interface
- Built-in memory and printer
- Rechargeable LFP battery



Remote control through an Android App

Illustrative Image.



### Description

Testing of the power transmission towers grounding (G) quality poses a serious problem as they are all electrically interconnected by means of Ground Wires which act as lightning rods, protecting the lines from atmospheric discharges. Due to the existence of this connection, any attempt to measure a tower grounding (G) resistance using a conventional earth meter leads to wrong results as what is really being measured is all the shunt towers grounding (G) resistance (or, more precisely, its impedance at low frequency).

To make this kind of test feasible, which is of vital importance to ensure the transmission of the electrical power without interruptions, **TENTECH TM25t** grounding resistance meter for high frequency has been developed. This is the appropriate tool for a fast, safe and reliable grounding resistance measurement in each tower of a working line transmission, without disconnecting the ground wire.

Its operation is based on the use of a high-frequency measurement current (25 kHz), for which ground wire inductive impedance - taking into account a typical length span - is reasonably high, making it possible to reduce the effect of the adjacent towers under measurement. The equipment only measures the ground resistance of the surveyed tower, including its base. The extensive G systems, such as meshes, buried wires, metal pipes, etc, are measured only considering the closest section to the connection point, so that the measured value represents the performance against a pulse signal similar to an atmospheric discharge. Thus, values that better represent the system capacity to ground lightning currents than the ones obtained with low frequency conventional equipments, even when disconnecting the ground wire, are obtained. **TM25t** is a strong equipment, easy to carry, resistant to the hard weather and geographical features of the tropical and high-mountain regions, that is why it is described as an excellent product for field works under the most severe environmental conditions.

### LFP Rechargeable battery

**Expected lifetime** : 2000 charge / discharge cycles (average).

**Low self-discharge** : When the equipment is not in use, battery charge decreases with time at a much lower rate than other battery technologies.

**Safety** : In contrast to other lithium battery technologies commonly used, LFP batteries are thermally and chemically stable, significantly improving battery safety.

### Remote control by App



**Increased safety and comfort** : Set up, start and stop tests in an even safer and more comfortable way

**Automatic reports** : Generate test reports directly on the App

**Smartphone / tablet features** : Incorporate smartphone features into your reports (photo, GPS coordinates and test location map)

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### Technical specifications

ELECTRICAL	
Measurement ranges	0 - 300 Ω
Operation frequency	25,000 Hz
Test current	20 mA automatic
Inductive component compensation	<ul style="list-style-type: none"> <li>Through bank of capacitors integrated to the equipment</li> <li>Maximum capacity: 4.2 μF</li> <li>Resolution: 10 nF</li> </ul>
Measurement accuracy	± 2.5 % of reading ± 1 digit
Max. earth resistance of auxiliary rods	2,000 Ω (current rod) 2,000 Ω (voltage rod)
FEATURES	
Display	Alphanumeric LCD display, 4 lines / 20 characters (Big Number)
Printer	Built-in thermal printer
Built-in memory	It allows for the storage of 2,000 tests readings in its internal NVRAM memory
COMMUNICATION	
Protocol	Modbus
USB	For configuration, control and download the stored values
Bluetooth	For configuration, control and download the stored values
STANDARDS	
Overvoltage protection	CAT IV - 300 V
Safety	IEC 61010-1
SOFTWARE	
Desktop (PC/Notebook)	TLogger software: for remote control, allowing to configure, run tests and generate reports
Android (Smartphone/ Tablet)	TENTECH Remote Control app: for remote control, allowing to configure, run tests and generate reports
ENVIRONMENTAL	
IP rating	IP65 (with closed lid)
Operating temperature	23 °F to 122 °F (-5 °C to 50 °C)
Storage temperature	-13 °F to 158 °F (-25 °C to 70 °C)
Humidity	95 % RH (non condensing)

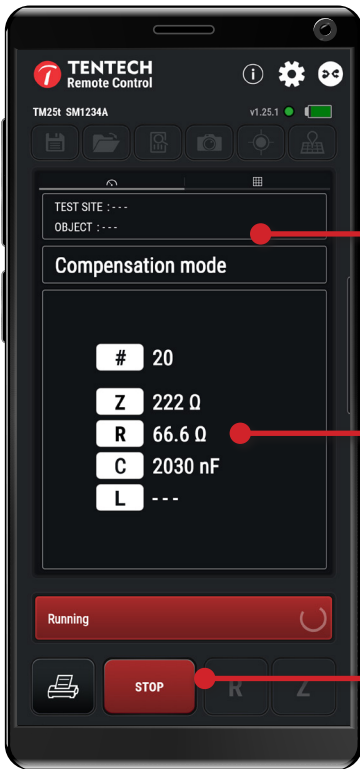
POWER SUPPLY	
Rechargeable battery	Internal rechargeable battery (LFP 12 V 6000 mA)
Battery charger	12 V - 2 A
MECHANICAL (OF THE INSTRUMENT)	
Weight	Approx. 10.80 lb (4.9 kg)
Dimensions	13.6" x 10.7" x 6.3" (345 x 272 x 159 mm)

### Included accessories

- 8x 19.6" (50 cm) long steel core rods with copper coating
- 6x 6.5 ft (2 m) cables for interconnection of extra auxiliary rods
- Rod extractor
- 229.6 ft (70 m) shielded cable
- 164 ft (50 m) shielded cable
- 98.4 ft (30 m) cable to current rod
- 229.6 ft (70 m) cable to auxiliary potential rod
- 164 ft (50 m) cable to auxiliary potential rod
- Cable adapter for current electrode
- AC Adapter
- Cable for connection to the unknown electrode (Tower)
- USB cable
- User guide
- TLogger software (download)
- TENTECH Remote Control app (download)
- Case to carry accessories

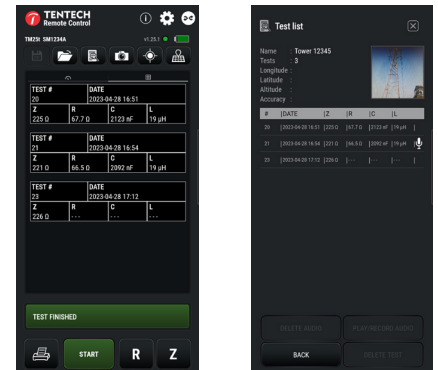
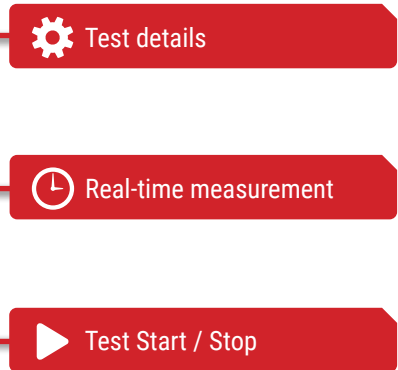


Illustrative Image



## Remote control by App

TENTECH equipment that has Bluetooth® interface can be controlled remotely via an Android™ smartphone / tablet running the TENTECH Remote Control application. Set the parameters, start / stop a test, save the data and generate reports.



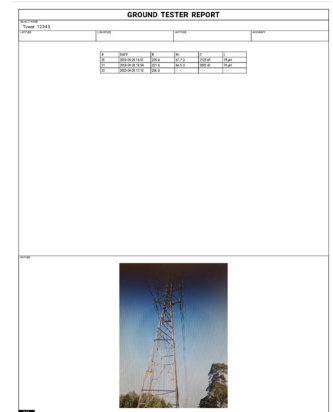
## Increased safety

TENTECH Remote Control communicates with the equipment through a Bluetooth® connection, allowing remote control of the tests, further increasing user safety in tests with potential risks.



## Smartphone features and automatic reporting

Record voice annotation for each measurement, generate automatic test reports directly on the App. Incorporate smartphone / tablet features into the report (photo, GPS coordinates and test location map).



Using the remote control does not require Internet connection (the Internet is only necessary if you want to see a map of the test site or send reports by email).



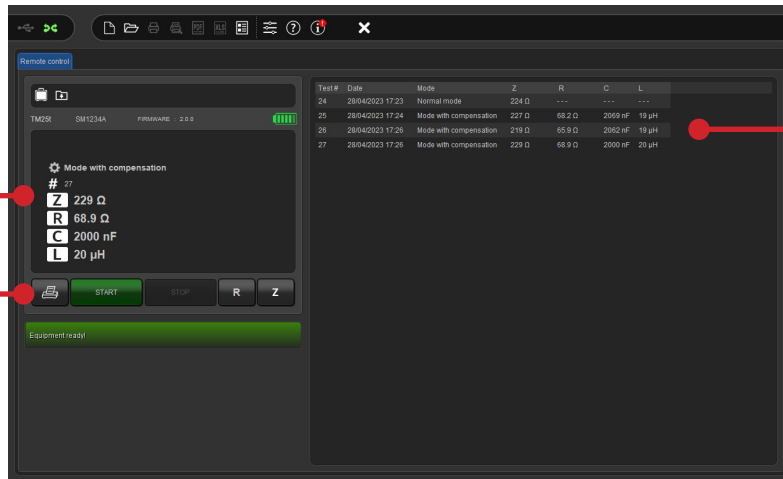
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- Bluetooth is a registered trademark of the Bluetooth SIG, Inc. Worldwide



# TLogger

## Software for remote control and reporting

TLogger communicates with the equipment through a USB connection. Set the parameters, start / stop a test, save the data and generate reports.

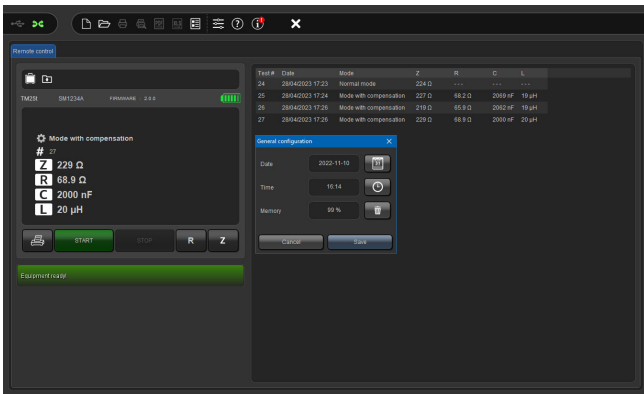


Real-time measurement

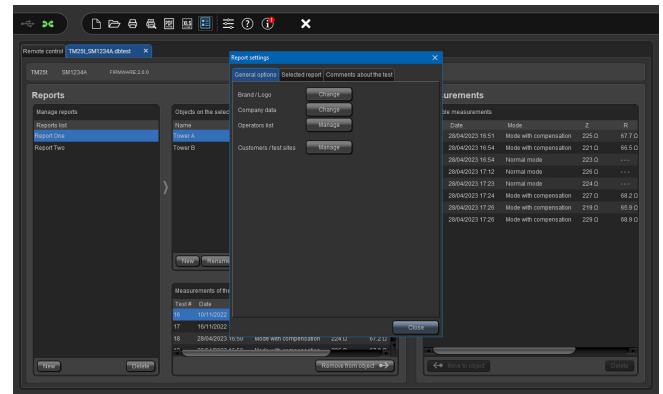
Remote control

Test results

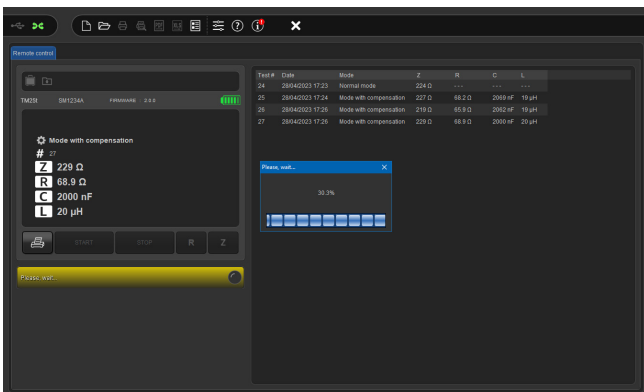
Available for download at: [www.tentech.com/tlogger](http://www.tentech.com/tlogger)



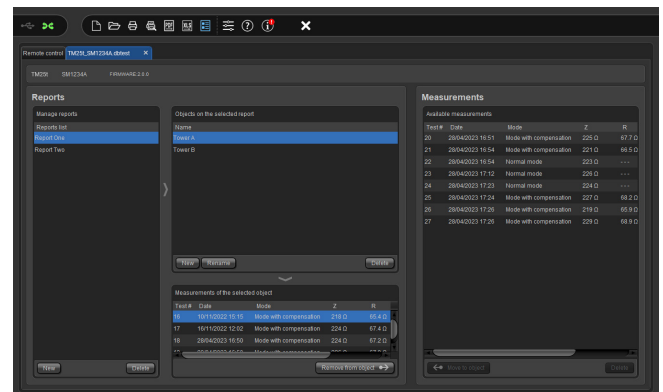
Equipment settings



Report settings



Memory download



Report generation

**TENTECH instruments are made in the USA and used in over 40 countries worldwide.**



### Test & Measurement equipment

- Earth ground testers
- Hipots
- Insulating glove tester
- Insulation testers
- Kilovoltmeters
- Micro-ohmmeters



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