

VOLTAGE WITHSTAND TESTER



Voltage Withstand Tester — ToronFT™ VW

ToronFT™ VW Voltage Withstand Tester is a precision high-voltage electrical safety testing instrument designed to verify the dielectric strength and safety withstand voltage of a broad range of electrical and electronic products. By applying a defined AC high voltage across the insulation of a device under test and measuring the resulting leakage current, the ToronFT™ VW evaluates whether the insulation system can safely withstand the voltage stresses encountered in normal and fault conditions — making it an indispensable instrument for product safety certification, production-line quality assurance, and laboratory research programs.

The voltage withstand tester is equally suited for testing household appliances, power switches, wires and cables, transformers, terminal blocks, high-voltage bakelite appliances, motors, medical devices, chemical instrumentation, and other electrical and electronic products. Its dual-level leakage current detection and programmable alarm function further establish the ToronFT™ VW as an essential withstand voltage test instrument for scientific research laboratories and technical supervision departments.

APPLICATIONS

Voltage Withstand Tester — ToronFT™ VW Applications

- Consumer electronics and household appliance manufacturers: dielectric strength and safety withstand voltage qualification
- Wire and cable manufacturers: insulation withstand voltage testing in conjunction with thermal conditioning
- Transformer and motor manufacturers: winding-to-core and winding-to-winding dielectric strength verification
- Medical device manufacturers: electrical safety withstand voltage testing per IEC 60601 requirements
- Fire protection equipment manufacturers: electrical insulation withstand voltage qualification of control boards and actuation devices

- Technical supervision departments and scientific research laboratories: general-purpose withstand voltage and leakage current measurement



FEATURES

Voltage Withstand Tester — ToronFT™ VW Key Features

- Voltage test range: AC 0–5 kV with $\pm 5\%$ (5% F.S.) accuracy — covering the full range of standard withstand voltage test levels
- Dual-level leakage current detection: 0–2 mA and 2–20 mA, each with 5% F.S. accuracy — precise, application-matched leakage measurement
- Independently settable alarm thresholds: 0.3 mA–2 mA (low level) and 2 mA–20 mA (high level), continuously settable — flexible go/no-go configuration for any product type
- Programmable test time: 1–99 seconds, continuous setting and manual mode — accommodating all standard test duration requirements
- Suitable for household appliances, power switches, wires and cables, transformers, terminal blocks, bakelite appliances, motors, medical devices, chemical instrumentation, and other electrical products
- Also serves as an indispensable withstand voltage test instrument for scientific research laboratories and technical supervision departments
- Compact bench-top design for efficient production-line and laboratory integration
- Fast, stable, and reliable measurement for high-throughput production quality assurance workflows

THEORY & METHOD

Theory and Method

Voltage withstand (dielectric strength) testing applies a high AC voltage across the insulation barrier of the device under test for a defined period, then measures the leakage current flowing through the insulation. If the leakage current remains below

the alarm threshold throughout the test duration, the insulation is confirmed to withstand the applied voltage without breakdown. If the leakage current exceeds the alarm threshold, the insulation is deemed to have failed the withstand voltage test.

The ToronFT™ VW applies AC voltages from 0 to 5 kV with $\pm 5\%$ accuracy across the DUT, while the dual-level leakage current detection system monitors leakage in two independently settable ranges: 0–2 mA (for sensitive, low-current applications) and 2–20 mA (for higher-current products). Each range has independently settable alarm thresholds (0.3 mA–2 mA for the low range; 2 mA–20 mA for the high range), providing precise, application-appropriate go/no-go determination. The programmable time range (1–99 seconds, continuous setting and manual modes) accommodates any standard-specified test duration.

TECHNICAL SPECIFICATIONS

Voltage Withstand Tester — ToronFT™ VW Technical Specifications

Parameter	Specification
Model	ToronFT™ VW
Voltage Test Range	AC 0 – 5 kV
Voltage Accuracy	5% F.S.
Leakage Current Range — Level 1	AC 0 – 2 mA
Leakage Current Range — Level 2	AC 2 – 20 mA
Leakage Current Accuracy	5% F.S. (both levels)
Alarm Threshold — Level 1	0.3 mA – 2 mA (continuous setting)
Alarm Threshold — Level 2	2 mA – 20 mA (continuous setting)

Parameter	Specification
Test Time Range	1 - 99 seconds (continuous setting and manual)



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