

### MI 3201 TeraOhm 5 kV Plus

The new insulation tester MI 3201 TeraOhm 5 kV Plus is a portable instrument intended to measure insulation resistance by using high DC test voltages up to 5 kV. TeraOhm 5 kV Plus enables insulation resistance measurements up to 10 TΩ, step voltage test, withstanding voltage test, PI, DD and DAR calculation and capacitance measurement. The large LCD screen enables real-time graph R(t) to be displayed. Results can be stored and downloaded to a computer via USB or RS232 connection with the help of the optional HVLink PRO software. The high quality instrument, shielded test leads and quality accessories included in the standard set enable to perform insulation testing quickly and effectively.

#### MEASURING FUNCTIONS:

- Insulation resistance measurement;
- Step voltage insulation resistance testing;
- Withstanding voltage testing;
- Diagnostic test (PI, DD, DAR);
- R(t) graph plotting;
- Capacitance measurement;
- Voltage measurement;
- Frequency measurement.

#### KEY FEATURES:

- **Measuring range** up to 10 TΩ.
- **Wide range of DC test voltages:** from 250 V up to 5000 V in steps of 25 V.
- **Withstanding voltage:** testing of insulation with programmable ramp test voltage from 250 V up to 5 kV and programmable threshold current.
- **Step voltage:** insulation resistance measurement with five discrete proportionately set test voltages and programmable timer per step.
- **Automated testing:** PI, DD, DAR calculations with automated resistance ranging. All data is displayed during one single measurement.
- **Guard test terminal:** for elimination of potential surface leakage currents.
- **Fault finding:** fully programmable step voltage and withstanding voltage test functions assist in diagnosing faults in insulation.
- **Graph R(t):** real time resistance against time graph plotting facility to graphically illustrate the response of a material to an applied test voltage.
- **Built-in timer:** programmable timer from 1 s up to 10+0 min.
- **Automatic discharge** of tested object after test.
- **Fast testing:** 5 mA current source for quick charging of capacitive load.
- **Accurate:** selectable noise rejection filters and shielded test leads included in a standard set ensure accurate measurement.



- **Safe:** high CAT IV / 600 V voltage protection.
- **Built-in charger & rechargeable batteries:** instrument has a built-in charger and comes complete with a set of rechargeable NiMH batteries.
- **Portable:** lightweight 3 kg design with carry handle and shoulder strap.

- Production line periodic testing and maintenance;
- Troubleshooting and analysis of all kinds of insulation problems;
- Diagnostic testing.

#### STANDARDS:

**Functionality:**  
IEC/EN 61557-2  
**Electromagnetic compatibility:**  
EN 61326 class B  
**Safety:**  
EN 61010-1; EN 61010-031

#### APPLICATION:

- Testing insulation resistance of rotating machinery, cables, transformers, HV generators, surge arresters;

#### TECHNICAL SPECIFICATION:

Function	Measuring range	Resolution	Accuracy
Insulation resistance	5 kΩ ... 999 kΩ	1 kΩ	±(5 % of reading + 3 digits)
	1.00 MΩ ... 9.99 MΩ	10 kΩ	±(5 % of reading + 3 digits)
	10.0 MΩ ... 99.9 MΩ	100 kΩ	±(5 % of reading + 3 digits)
	100 MΩ ... 999 MΩ	1 MΩ	±(5 % of reading + 3 digits)
	1.00 GΩ ... 9.99 GΩ	10 MΩ	±(5 % of reading + 3 digits)
	10.0 GΩ ... 99.9 GΩ	100 MΩ	±(5 % of reading + 3 digits)
Test voltage	1.00 TΩ ... 10.00 TΩ	1 GΩ	±(5 % of reading + 3 digits)
	0 V ... 5500 V	1 V	±(3 % of reading + 3 V)
Insulation leakage current	0.00 nA ... 9.99 nA	0.01 nA	±(5 % of reading + 0.05 nA)
	10.0 nA ... 99.9 nA	0.1 nA	
	100 nA ... 999 nA	1 nA	
	1.00 μA ... 9.99 μA	10 nA	
	10.0 μA ... 99.9 μA	100 nA	
	100 μA ... 999 μA	1 μA	
Dielectric absorption ratio (DAR)	1.00 mA ... 5.50 mA	10 μA	±(5 % of reading + 2 digits)
	0.01 ... 9.99	0.01	
Polarization index (PI)	10.0 ... 100.0	0.1	±5 % of reading
	0.01 ... 9.99	0.01	
Dielectric discharge (DD)	10.0 ... 100.0	0.1	±5 % of reading
	0.01 ... 9.99	0.01	
Voltage AC / DC	0 V ... 600 V	1 V	±(3 % of reading + 4 V)
Frequency	45.0 Hz ... 65.0 Hz	0.1 Hz	±0.2 Hz
Capacitance	0.0 nF ... 99.9 nF	0.1 nF	±(5 % of reading + 4 nF)
	100 nF ... 999 nF	1 nF	
	1.00 μF ... 50.00 μF	10 nF	
Power supply	6 × 1.2 V NiMH rechargeable batteries, type C		
Display	Matrix LCD with backlight, 160 x 116 dots		
Overvoltage category	CAT IV / 600 V		
Protection class	Double insulation		
COM port	RS232 and USB		
Dimensions	310 x 130 x 250 mm		
Weight	3 kg		

#### STANDARD SET:

- Instrument TeraOhm 5 kV Plus
- Small soft carrying bag
- Mains cable
- 10 kV shielded test lead with probe, black, 2 m
- 10 kV shielded test lead with probe, red, 2 m
- 10 kV crocodile clip, 2 pcs (black, red)
- Guard lead, green, 2 m
- Crocodile clip, green
- 6 × 1.2 V NiMH rechargeable batteries, type C
- Handbook on CD
- Instruction manual
- Calibration certificate

