

Professional insulation testing with powerful diagnostic tools

MI 3210 TeraOhmXA 10kV



MI 3210 TeraOhm XA 10 kV is a portable, battery or mains powered test instrument with excellent IP protection (IP65), intended for diagnosing of Insulation Resistance by using high DC test voltages of up to 10 kV. Because of its robustness (CAT IV protection) and high immunity to radiated RF fields it is best suited for industrial environment.



MEASURING FUNCTIONS

- Insulation Measurement;
- Diagnostic Test (PI, DAR, DD);
- Step Voltage Test;
- Withstanding Voltage Test (DC) up to 10 kV;
- Voltage and frequency measurement up to 550 V TRMS.

KEY FEATURES

- Insulation resistance up to 20 TΩ.
- Adjustable test voltage (50 V...10 kV) 50 V and 100 V step.
- Programmable timer.
- Capacitance measurement.
- Charging rate for capacitive load < 3 s / μF at 10 kV.
- Automatic discharge of test object after completion of measurement.

- Guard terminal.
- High voltage breakdown detection.
- Custom defined tests.
- Auto adjustment function.
- Measurement results in numerical and graphical form.
- PC software HVLink PRO for downloading and analysing of the test results and test report printing.
- Isolated RS232 and USB communication ports, BT interface.
- High quality accessories including shielded test leads in standard set.
- High EM interferences protection: Input AC current noise rejection (1 mA@600 V) and additional averaging of the result (5, 10, 30, 60).
- CAT IV / 600 V.
- Mains and rechargeable battery power supply.

APPLICATION

- Power transformers;
- Measuring transducers in distribution networks;
- Testing insulation resistance of rotating machinery and cables;
- Production line periodic testing and maintenance;
- Troubleshooting and analysis of all kinds of insulation problems;
- High voltage generators;
- Surge arrestors.

STANDARDS

Electromagnetic compatibility

- EN 61326 class A

Safety

- EN 61010-1 (instrument);
- EN 61010-2-030;
- EN 61010-2-033;
- EN 61010-031 (accessories)

TECHNICAL SPECIFICATION

FUNCTION	Measuring range	Resolution	Accuracy
Insulation resistance	0.01 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)
	100 GΩ ... 999 GΩ	1 GΩ	±(5% of reading + 3 digits)
	1.0 TΩ ... 9.9 TΩ	100 GΩ	±(5% of reading + 3 digits)
	10 TΩ ... 20 TΩ	1 TΩ	±(15% of reading + 3 digits)
Test voltage	0 V ... 999 V	1 V	±(5% of reading + 3 digits)
	1.00 kV... 9.99 kV	10 V	
	10.0 kV ... 14.0 kV	100 V	
Insulation leakage current	1.00 mA ... 5.00 mA	10 μA	±(5% of reading + 3 digits)
	100 μA ... 999 μA	1 μA	
	10.0 μA ... 99.9 μA	100 nA	
	1.00 μA ... 9.99 μA	10 nA	
	100 nA ... 999 nA	1 nA	
	10.0 nA .. 99.9 nA	100 pA	±(10% of reading + 0.15 nA)
	0.00 nA ... 9.99 nA	10 pA	
Dielectric absorption ratio (DAR)	0.01 ... 9.99	0.01	±(5% of reading + 2 digits)
	10.0 ... 100.0	0.1	
Polarization index (PI)	0.01 ... 9.99	0.01	±(5% of reading + 2 digits)
	10.0 ... 100.0	0.1	
Dielectric discharge (DD)	0.01 ... 9.99	0.01	±(5% of reading + 2 digits)
	10.0 ... 100.0	0.1	
Voltage AC/DC	5.0 V ... 99.9 V	0.1 V	±(2% of reading + 2 digits)
	100 V ... 550 V	1 V	
Frequency	10 Hz ... 500 Hz	0.1 Hz	±(0.2% of reading + 1 digits)
Capacitance	20.0 nF ... 999 nF	1 nF	±(5% of reading + 2 digits)
	1.00 μF ... 9.99 μF	10 nF	
	10.0 μF ... 50.0 μF	100 nF	
Power supply	12 V DC (3.4 Ah Lead – Acid)		
Display	320 x 240 dots matrix display with backlight		
Overvoltage category	CAT IV / 600 V		
Protection class	Double insulation		
COM port	RS232, USB and Bluetooth		
Dimensions	345 x 160 x 335 mm		
Weight	6.5 kg		

OPTIONAL ACCESSORIES

Photo	Order No.	Acc. description
	A 1822 BLK 2M5	10 kV shielded test lead with large black HV test clip
	A 1822 BLK 3M	
	A 1822 BLK 5M	
	A 1822 BLK 10M	
	A 1822 BLK 15M	
	A 1823 RED 2M5	10 kV shielded test lead with large red HV test clip
	A 1823 RED 3M	
	A 1823 RED 5M	
	A 1823 RED 10M	
	A 1823 RED 15M	

METREL D.O.O.

Test and Measurement Equipment
Ljubljanska 77, SI-1354 Horjul, Slovenia
T +386 (0)175 58 200, F +386 (0)175 49 226
metrel@metrel.si, www.metrel.si

Photo	Order No.	Acc. description
	A 1807 2M	10 kV shielded red test lead, HVX
	A 1807 3M	
	A 1807 5M	
	A 1807 8M	
	A 1807 10M	
	A 1807 15M	
	A 1808 2M	10 kV shielded black test lead, HVX
	A 1808 3M	
	A 1808 5M	
	A 1808 8M	
	A 1808 10M	
	A 1808 15M	
	A 1806 2M	Test lead 1000 V CATIII, green, HVX
	A 1806 2M5	
	A 1806 3M	
	A 1806 5M	
	A 1806 10M	
	A 1806 15M	

ORDERING INFORMATION



Standard set MI 3210 ST

- Instrument MI 3210 TeraOhmXA 10 kV
- A 1744 10 kV shielded test lead with probe, 2 m
- A 1807 10 kV shielded test lead, 2 m, red
- A 1808 10 kV shielded test lead, 2 m, black
- S 2036 10 kV crocodile clip, 2 pcs (black, red)
- A 1806 Guard test lead, green, 2 m
- A 1309 Crocodile clip, green
- A 1036 Mains cable
- PC SW HVLink PRO with USB and RS 232 cable
- Handbook "Guide to modern insulation testing" on storage media
- Instruction manual
- Calibration certificate



Euro set MI 3210 EU

- Instrument MI 3210 TeraOhmXA 10 kV
- A 1744 10 kV shielded test lead with probe, 2 m
- A 1822 Large HV Crocodile with shielded cable, 2.5 m, black
- A 1823 Large HV Crocodile with shielded cable, 2.5 m, red
- A 1806 Guard test lead, green, 2.5 m
- A 1309 Crocodile clip, green
- A 1036 Mains cable
- PC SW HVLink PRO with USB and RS 232 cable
- Handbook "Guide to modern insulation testing" on storage media
- Instruction manual
- Calibration certificate