



TeraOhm 10 kV Professional diagnostic insulation tester

TeraOhm 10 kV is a professional diagnostic insulation tester, which allows measurements on high voltage rated equipment. It is specially well suited for:

- testing insulation resistance of rotating machinery and cables,
- production line periodic testing and maintenance,
- troubleshooting and analysis of all kinds of insulation problems.

Because of its robustness / CAT IV protection / it is best suited for industrial environment.

Main features:

- Insulation resistance up to 10 T Ω
- DC Test voltage 500 V–10 kV in step of 25 V
- The short circuit current is 5 mA
- Auto-calibration of measuring system
- Operates from mains or rechargeable supply
- Automatic discharge of capacitive loads
- Digital and bar graph results with date and time
- User friendly PC software with RS232 or USB isolated communication port
- High quality accessories
- High noise immunity
- The highest protection degree CAT IV 600 V

Powerful features of Diagnostic tests:

- Discharge Current, Voltage and Capacitance measured on the equipment under test.
- Polarization Index (PI) calculation.
- Dielectric Absorption Ratio (DAR) calculation in first minute.
- Dielectric Discharge Ratio (DD) calculation.

Standards applied:

Instruments: EN61557-2, EN61326, EN61010-1, EN61010-31
Applications: EN60345, EN61010, IEEE43:2000

Technical Specification

Measuring range:	0.01 M Ω \div 10 T Ω	(5 % of r. + 3 dig.)
Test voltage ranges (DC):	500 V \div 10000 V	
	in steps by 25 V	(3 % of r. + 3 V)
Bar Graph Trend:	0 \div 1 T Ω	
Withstanding test voltage:	500 V \div 10000 V	(3 % of r. + 40 V)
Leakage current range:	0 \div 5 mA	(3 % of r. + 3 dig.)
Voltage AC/DC range:	0 \div 600 V	(3 % of r. + 3 V)
Capacitance range:	0 \div 50 μ F	(5 % of r. + 2 dig.)
Polarization index (PI) range:	0 \div 99.9	(5 % of r. + 2 dig.)
Dielectric discharge test (DD) range:	0 \div 99.9	(5 % of r. + 2 dig.)
Dielectric absorption ratio (DAR) range:	0 \div 99.9	(5 % of r. + 2 dig.)

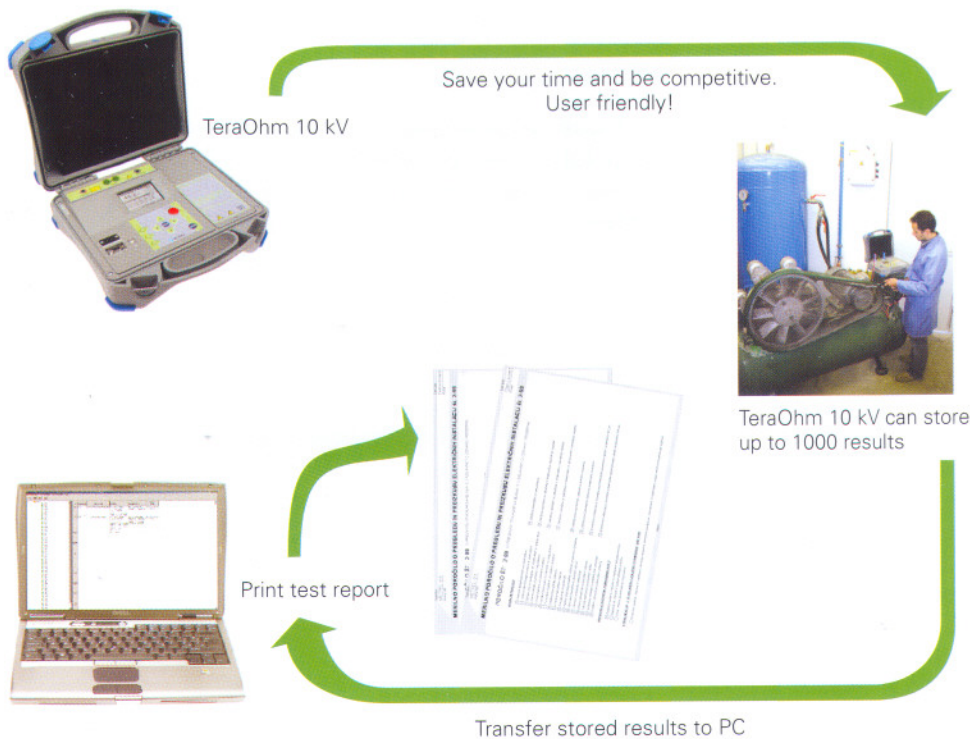
General

Battery power supply:	7.2 V DC (6 x 1.2 V NIMH, IEC LR20, D size)
Mains power supply:	90–260 V AC, 45–65 Hz
Protection classification:	Double insulation
Over-voltage category:	CAT IV 600 V
Pollution degree:	2
Degree of protection:	IP 44
Dimensions:	34 x 26 x 16 cm
Weight:	(with batteries, without accessories) 5.5 kg
Visual and sound warnings:	Yes
Display:	LCD dot matrix with backlight (160 x 116)
Memory:	Non-volatile internal memory, 1000 measurements with time and date
Working temperature range:	0 \div 40 °C
Nominal temperature range:	10 \div 30 °C
Storage temperature range:	-20 \div 70 °C
Maximum humidity:	95 % RH (0 \div 40 °C) non-condensing
Nominal humidity range:	40 \div 60 % RH



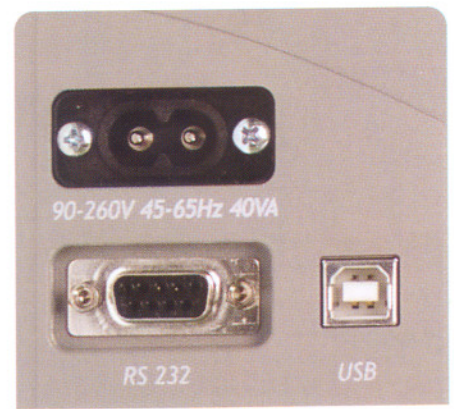
The guard terminal is at the same potential as the negative terminal. Since the leakage resistance is effectively in parallel with the resistance to be measured, the use of guard terminal causes the current flowing through surface to be diverted from the measuring circuit. The unwanted surface leakages are drained by the guard terminal and are not considered in the measuring result. Guard terminals enable reliable measuring of high insulation resistance values. Simple connection of shielded leads.

Recommended procedure for testing of insulation with high voltage



Windows PC SW TeraLink

n	Location	Function	Defaults	Parameters	Date Time
001	001	VOLTAGE	U = 220 V f = 50.0 Hz		15. Jan. 2007 14:31
002	001	IMPUATION RESISTANCE	R = 10.5 GOhm U = 10.2 kV I = 971 nA C = 0.0 nF Pmax = Pmin =	Un = 10000 V time1 = 15 sec time2 = 01 min time3 = 02 min R(t1) = 10.5 GOhm R(t2) = 10.4 GOhm R(t3) = 10.5 GOhm DAB = 0.99 PS = 1.00 DO =	15. Jan. 2007 14:32
003	042	DIAGNOSTIC TEST	R = 10.5 GOhm U = 10.2 kV I = 971 nA C = 0.0 nF R(t1) = 10.5 GOhm R(t2) = 10.4 GOhm R(t3) = 10.5 GOhm DAB = 0.99 PS = 1.00 DO =	Un = 10000 kV time1 = 00min00s time2 = 15 sec time3 = 01 min time4 = 02 min R(t1) = 10.5 GOhm R(t2) = 10.4 GOhm R(t3) = 10.5 GOhm R(t4) = 10.4 GOhm U1 = 2045 V U2 = 4113 V U3 = 6219 V U4 = 8211 V U5 = 10.2 kV	15. Jan. 2007 14:36
004	062	STEP VOLTAGE	R = 10.4 GOhm U = 10.2 kV I = 980 nA C = 0.7 nF R(t01) = 9.97 GOhm R(t02) = 10.0 GOhm R(t03) = 10.0 GOhm R(t04) = 10.4 GOhm R(t05) = 10.4 GOhm U1 = 2045 V U2 = 4113 V U3 = 6219 V U4 = 8211 V U5 = 10.2 kV	Un = 10000 kV time1 = 00min00s U1 = 2000 V U2 = 4000 V U3 = 6000 V U4 = 8000 V U5 = 10 kV time1 = 15 sec time2 = 01 min time3 = 02 min	15. Jan. 2007 14:40
005	081	WITHSTANDING VOLTAGE	U = 10.2 kV I = 0.002 mA	Unstart = 6025 V Unstop = 10000 V Ptest = 2.500 mA Ttest = 00min02s Tmax = 01min00s	15. Jan. 2007 14:49
006	042	DIAGNOSTIC TEST	R = 10.5 GOhm U = 10.2 kV I = 971 nA C = 0.0 nF R(t1) = 10.5 GOhm R(t2) = 10.4 GOhm R(t3) = 10.5 GOhm DAB = 0.99 PS = 1.00 DO =	Un = 10000 kV time1 = 00min00s time2 = 15 sec time3 = 01 min time4 = 02 min R(t1) = 10.5 GOhm R(t2) = 10.4 GOhm R(t3) = 10.5 GOhm R(t4) = 10.4 GOhm U1 = 2045 V U2 = 4113 V U3 = 6219 V U4 = 8211 V U5 = 10.2 kV	15. Jan. 2007 14:36
007	021	IMPUATION RESISTANCE	R = 10.5 GOhm U = 10.2 kV I = 971 nA C = 0.0 nF Pmax = Pmin =	Un = 10000 V time1 = 15 sec time2 = 01 min time3 = 02 min R(t1) = 10.5 GOhm R(t2) = 10.4 GOhm R(t3) = 10.5 GOhm DAB = 0.99 PS = 1.00 DO =	15. Jan. 2007 14:32
008	081	WITHSTANDING VOLTAGE	U = 10.2 kV I = 0.002 mA	Unstart = 6025 V Unstop = 10000 V Ptest = 2.500 mA Ttest = 00min02s Tmax = 01min00s	15. Jan. 2007 14:49
009	042	STEP VOLTAGE	R = 10.4 GOhm U = 10.2 kV I = 980 nA C = 0.7 nF R(t01) = 9.97 GOhm R(t02) = 10.0 GOhm R(t03) = 10.0 GOhm R(t04) = 10.4 GOhm R(t05) = 10.4 GOhm U1 = 2045 V U2 = 4113 V U3 = 6219 V U4 = 8211 V U5 = 10.2 kV	Un = 10000 kV time1 = 00min00s U1 = 2000 V U2 = 4000 V U3 = 6000 V U4 = 8000 V U5 = 10 kV time1 = 15 sec time2 = 01 min time3 = 02 min	15. Jan. 2007 14:40



Mains power supply with built-in battery charger for NiMH batteries enables measurement during the charging. Communication to PC with RS 232 port or USB cable.



Shielded cables ensure better quality of measurements. They provide higher accuracy and immunity to disturbance of measurements in industrial environment.

Ordering information

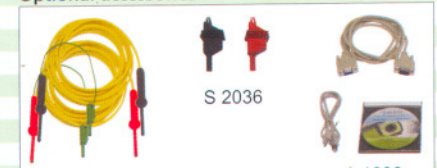
Standard Set

Part No. MI 3200



- Instrument TeraOhm 10 kV
- 12 kV shielded test lead with tip, 2 m
- 12 kV shielded test lead red, 2 m
- 12 kV shielded test lead black, 2 m
- 10 kV alligator red
- 10 kV alligator black
- Test guard lead (green, with alligator clip), 2 m
- Mains cable
- 6 x 1.2 NiMH batteries
- Instruction manual
- Instruction manual on CD
- Handbook "Modern Insulation Testing" on CD

Optional accessories



A 1230 - PC software TeraLink with RS 232 and USB cable

- S 2029 - 12 kV shielded test lead, 8 m
- S 2030 - 12 kV shielded test lead, 15 m
- S 2036 - 10 kV alligator set