HT7052
PROFESSIONAL **10kV** INSULATION TESTER

HT7052 is a portable battery/mains powered test instrument intended for the testing of insulation resistance by using high test voltages of up to 10kV. It is a professional high voltage insulation tester with added diagnostics tools such as Polarization Index (PI), Dielectric Absorption Ratio (DAR) and Dielectric Discharge (DD). HT7052 is specially well suited for: 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, etc. Because of its robustness (CAT IV protection), it is best suited for industrial environment. A dot matrix LCD offers easy-to-read results and all associated parameters. The operation is straightforward and clear to enable the user to operate the instrument without the need for special training. Test results can be stored on the instrument and transferred to the PC for further analysis.

FUNCTIONS

- Insulation resistance up to 10TΩ
- Diagnostics tools (PI, DAR, DD)
- Step voltage insulation test
- Test voltage from 500V up to 10kV DC, adjustable in 25V steps
- Maximum charging current 5mA
- Automatic discharge of capacitive loads
- Digital and bar graph results with date and time
- PC software for downloading and analyzing test results and test report printing
- RS232 and USB isolated communication ports
- High quality accessories including shielded test leads in standard set
- Mains and rechargeable battery power supply
- High EM interference protection

GENERAL SPECIFICATIONS

Display:	LCD custom with backlight and bargraph
External power supply:	90-260V AC, 45-65Hz, 70VA
Internal power supply:	rechargeable battery
Battery life:	4h operation at 10kV
Internal memory:	1000 locations
PC connection:	RS232 and USB
Insulation:	double insulation
Pollution degree:	2
Mechanical protection:	IP53 (closed case)
Installation category:	CAT IV 600V
Dimensions (LxWxH):	330x360x160mm
Weight:	5.5kg

ACCESSORIES

Standard
10kV shielded 2m test lead with probe
Set of 2 10kV shielded 2m test leads
Set of alligator clips
Guard 2m test lead (green)
Guard alligator clip (green)
Set of 6 NiMH 1.2V type D batteries
Mains cable
ISO9000 calibration certificate
User manual
PC software + RS232 and USB cables
Optional
Set of 2 10kV shielded 8m test leads
Set of 2 10kV shielded 15m test leads

HT7052
HV007052

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1. ELECTRICAL SPECIFICATION

Uncertainty is indicated as ± [% rdg + (number of dgt) * resolution] at -10°C ÷ 30°C, 40% ÷ 60%HR

INSULATION RESISTANCE

Measurement range	Resolution	Accuracy
120kΩ ÷ 999kΩ	1kΩ	±(5.0%rdg + 3dgt)
1.00MΩ ÷ 9.99MΩ	0.01MΩ	
10.0MΩ ÷ 99.9MΩ	0.1MΩ	
100MΩ ÷ 999MΩ	1MΩ	
1.00GΩ ÷ 9.99GΩ	0.01GΩ	
10.0GΩ ÷ 99.9GΩ	0.1GΩ	
100GΩ ÷ 999GΩ	1GΩ	
1.00TΩ ÷ 10.00TΩ	0.01TΩ	±(15.0%rdg + 3dgt)

The value of insulation resistance FS is defined as: RFS = 1GΩ * Utest [V]

Nominal test voltage: 500 ÷ 10kV DC
Nominal test current : > 1mA
Short circuit current: 5mA ± 10%
Automatic discharge object on test: Yes

Range of test voltage	Resolution	Accuracy
0 ÷ 9999V	1V	±(3.0%rdg + 3V)
≥ 10kV	0.1kV	±3.0%rdg

Nominal test voltage: 500 ÷ 10kV DC programmable in steps of 25V
Output power consumption: 10W max

Range of test current	Resolution	Accuracy
0.00 ÷ 9.99nA	0.01nA	±(5.0%rdg + 0.05nA)
10.0 ÷ 99.9nA	0.1nA	
100 ÷ 999nA	1nA	
1.00 ÷ 9.99µA	0.01µA	
10.0 ÷ 9.99µA	0.1µA	
100 ÷ 999µA	1µA	
1.00 ÷ 5.50mA	0.01mA	

Filter option	Maximum current @ 50Hz (mA rms)
Fil0	1.5
Fil1	2.5
Fil2	4.5
Fil3	5

MEASUREMENT OF DAR, PI, DD PARAMETERS

Measurement range	Resolution	Accuracy
0.01 ÷ 9.99	0.01	±(5.0%rdg + 2dgt)
10.0 ÷ 100.0	0.1	±5.0%rdg

Measurement range capacitance for DD test: 5nF ÷ 50µF

INSULATION MEASUREMENT WITH RAMP TEST VOLTAGE

Measurement range	Resolution	Accuracy
2000 ÷ 9999V	1V	±(3.0% rdg + 3V)
≥ 10kV	0.1kV	±3.0% rdg

Nominal test voltage: 2000 ÷ 10kV DC programmable in steps of 125V

DC WITHSTANDING TEST

Measurement range	Resolution	Accuracy
500 ÷ 9999V	1V	±(3.0% rdg + 3V)
≥ 10kV	0.1kV	±3.0% rdg

Range of discharging current	Resolution	Accuracy
0.000 ÷ 0.009mA	0.001mA	±(3.0% rdg + 3 dgt)
0.01 ÷ 5.50mA	0.01mA	±3.0% rdg

Nominal test voltage: 500 ÷ 10kV DC programmable in steps of 25V
Accuracy of test voltage: -0 / +10% + 20V

AC/DC VOLTAGE

Measurement range	Resolution	Accuracy
0 ÷ 600V	1V	±(3.0% rdg + 4V)

Output impedance: 3MΩ ±10%

Voltage frequency	Resolution	Accuracy
0 e 45.0 ÷ 65.0Hz	0.1Hz	±0.2Hz

Frequency between 0 and 45Hz: visualization < 45Hz
Frequency > 65Hz: visualization > 65Hz

CAPACITANCE

Measurement range	Resolution	Accuracy
0.0 ÷ 99.9nF	0.1nF	±(5.0%rdg + 2dgt)
100 ÷ 999nF	1nF	
1.00 ÷ 50.0μF	0.01μF	

The value of FS capacitance is defined as: CFS = 10μF * Utest [kV]

2. GENERAL SPECIFICATIONS

DISPLAY, MEMORY, SERIAL INTERFACE

- LCD, dot matrix with backlight (160x116pxl):
- Low battery indications
- Memory: 1000 locations
- Serial interface: RS232 optoinsulated (2400,4800,9600,19200 baud, 1, N)
- USB interface: type B standard, 115000 baud

POWER SUPPLY:

- External main supply: 90-260V AC, 45-65Hz, 60VA
- Internal supply: 6 x 1.2V type IEC LR20 NiMH rechargeable battery
- Low battery indication: "▭" symbol at display
- Battery life: approx.. 4 hours (continuous test at 10kV)
- Automatic discharging of object on test, resistance 425Ω ±10%

ENVIRONMENT:

• Ref. Temperature:	10°C ÷ 30°C ; 40 ÷ 60%HR
• Working temperature:	10° ÷ 50°C
• Maximum relative humidity:	<90%HR
• Storage temperature:	-20 ÷ 70°C
• Storage humidity:	<00%HR

MECHANICAL DATA:

• Dimensions:	360(L) x 330(W) x 160(H) mm
• Weight:	5.5kg

GUIDELINES

Instrument's safety	IEC/EN61010-1, IEC/EN61557-2
Accessories safety :	IEC/EN61010-031
Insulation:	Double insulation
Type of Protection:	2
Mechanical protection:	IP44 (closed case)
Over voltage category:	CAT IV 600V to ground, max 600V between inputs
Maximum altitude of use:	2000m

This instrument complies with the requirements of the European Low Voltage Directives 2006/95/EEC (LVD) and EMC 2004/108/EEC