

HT2055

STEP/CONTACT VOLTAGE METER UP TO 50A

HT2055 is composed of a power unit and a meter designed to perform step/contact voltage measurements on electrical installations such as HV power stations (TN systems, electrical substations) with rated test current up to 50A according to international guidelines. Both units, initially synchronized in time and current, can perform an exact calculation of step and contact voltage values applying the real test current measured by the station. A internal DSP filter also performs the automatic compensation of noise voltage disturbances affecting the measuring circuit. The instrument permits also measurement of earth resistance with 3-wire method and ground resistivity with 4-wire Wenner method. All results can be saved into an internal memory and downloaded to PC through Windows software.

GENERAL SPECIFICATIONS

Power unit

- Power supply: 110/230V AC, 50/60Hz
- Output power: 900VA
- Output current: max 55A
- Test frequency: 55Hz
- Voltage measurement: 0.1 ÷ 999V
- Resolution: 0.1 ÷ 1V
- Basic accuracy: ±2% reading
- Display: LCD 240x128 counts + backlight
- Memory: 2000 locations
- Communication interface: RS-232
- Measurement category: CAT II 300V
- Protection: fuse T 6.3A/250V
- Pollution degree: 2
- Mechanical protection: IP40 (closed cover)
- Dimensions (L x W x H): 335x335x160mm
- Weight: 28kg

Voltmeter unit

- Voltage measurement: 0.1 ÷ 999V
- Resolution: 0.1 ÷ 1V
- Resistance measurement: 0.001 ÷ 99.99Ω
- Resolution: 0.01Ω
- Basic accuracy: ±2% reading
- Input impedance: 1kΩ /1MΩ selectable
- Display: LCD 240x128 counts + backlight
- Memory: 2000 locations
- Communication interface: RS-232/USB
- Power supply: 6x1.2V rechargeable batteries type AA
- Pollution degree: 2
- Mechanical protection: IP40
- Dimensions (L x W x H): 230x115x103mm
- Weight: 1.3kg

ACCESSORIES

Standard

- Power unit
- Voltmeter unit
- Power cord for power station
- Metal current probe, 1m length
- Metal voltage probe, 60cm length
- Metal plate (200x100mm), 2 pcs
- Test cable, 50m, 10mmq, with alligator clip on reel
- Test cable, 10m, 10mmq, with alligator clip
- Black test cable, 3 m, with industrial plugs, 2 pcs.
- Red test cable, 50m
- Green test cable, 10m
- Black test cable, 1.5m
- Red test cable with crocodile, 1m
- Alligator clips, 4 pcs
- USB cable
- RS-232 cable
- Soft carrying bag, 2 pcs
- Neck strap
- 6 x 1.2V rechargeable batteries NiMH type AA, LR03
- External adapter 100-240V AC / 12V DC
- Windows software on CD-ROM
- User manual
- ISO9000 calibration certificates

Optional

- Metal current probe, 1m length
- Metal voltage probe, 60cm length

FUNCTIONS

- Measurement of Step/Contact voltage through separate units
- Synchronization between units
- Test current up to 50A
- LCD dot matrix display on both units
- Earth resistance measurement
- Internal memory for data storage
- USB and RS-232 ports for communication between units and PC
- DSP filtering for compensation of noise disturbances
- Windows software



HT2055
HN002055



1. ELECTRICAL SPECIFICATIONS

Accuracy is given as \pm [% readings + (number of dgt * resolution)] at reference conditions

Step/Contact voltage measurements

Measure voltage range	Resolution	Accuracy
0.01 ÷ 19.99mV	0.01mV	$\pm(2.0\% \text{ rdg} + 2 \text{ dgt})$
20.0 ÷ 199.9mV	0.1mV	
200 ÷ 1999mV	1mV	
2.00 ÷ 19.99V	0.01V	
20.0 ÷ 59.9V	0.1V	

Calculated voltage range	Resolution	Accuracy
0.0 ÷ 199.9V	0.1V	Calculated value (*)
200 ÷ 999V	1V	

(*) The calculated value of step/contact voltage is obtained by the relationship: $U_s = U_{\text{meas}} \cdot I_{\text{ft}} / I_{\text{gen}}$; $U_c = U_{\text{meas}} \cdot I_{\text{ft}} / I_{\text{gen}}$

Range of fault current (selectable):

10A ÷ 200kA

Input resistance(selectable):

1k Ω , 1M Ω

Noise reducing/erasing:

DSP filtering 55Hz, 64dB rejection on noise at 50/60Hz

Generated current range	Resolution	Accuracy
0.00 ÷ 9.99A	0.01A	$\pm(3.0\% \text{ rdg} + 5 \text{ dgt})$
10.0 ÷ 99.9A	0.1A	$\pm(3.0\% \text{ rdg} + 3 \text{ dgt})$

Generated current:

55A max

Test voltage:

<55V

Test frequency:

55Hz

Earth resistance measurement

Measurement range	Resolution	Accuracy
0.001 Ω ÷ 1.999 Ω	0.001 Ω	$\pm(2.0\% \text{ rdg} + 5 \text{ dgt})$
2.00 Ω ÷ 19.99 Ω	0.01 Ω	
20.0 Ω ÷ 99.9 Ω	0.1 Ω	$\pm(5.0\% \text{ rdg})$
100.0 Ω ÷ 199.9 Ω		

Open voltage:

< 50V AC

Test current:

< 7.5A

Frequency of test signal:

55Hz

Influence of probe resistance:

 $\leq \pm(10\% \text{ rdg} + 10 \text{ dgt})$

(Rc, Rp)max

(10 Ω + 100R) o 2k Ω considering the lower value

Automatic test on the probe resistance:

Yes

Automatic detection of voltage noise

Earth resistivity measurement

Measurement range	Resolution	Accuracy
0.00 Ωm ÷ 9.99 Ωm	0.01 Ωm	Calculated value, consider accuracy of Resistance to earth function
10.0 Ωm ÷ 99.9 Ωm	0.1 Ωm	
100 Ωm ÷ 999 Ωm	1 Ωm	
1.00k Ωm ÷ 9.99k Ωm	0.01k Ωm	
10.0k Ωm ÷ 99.9k Ωm	0.1k Ωm	

Measurement principle:

Wenner method $\rightarrow \rho = 2 \cdot \pi \cdot \text{distance} \cdot R$



2. GENERAL SPECIFICATIONS

Power unit

Power supply:	230V AC ($\pm 10\%$), 50/60Hz
Max. power consumption:	750VA
Protection on power supply:	fuse T 5A / 250V (5mm x 20mm)
Safety condition on meter:	IEC/EN61010-1
Safety condition on test leads:	IEC/EN61010-031
Installation over 1kVAC:	HD 637 S1
Eart/resistivity measurements:	ANSI/IEEE Std 81
Italian guideline:	CEI 11-1
Spanish guideline:	RAT 2008
Insulation:	class I
Measurement category:	CAT II 300V, CAT IV 50V
Pollution degree:	3
Mechanical protection:	IP30
Display:	LCD dot matrix (128 x 64) with backlight
Internal memory:	1000 locations
Generated current:	values storage for min 24h
Communication interface:	RS-232 (with voltmetric unit)
Dimensions (LxWxH):	563 x 257 x 275mm
Weight (without accessories):	29.5kg

Voltmetric unit

Power supply:	6x1.2V rechargeable batteries NiMH type AA LR03 6x1.5V alkaline batteries type AA LR03
Battery (chargeable) life:	12 hours (typical)
External power supply:	100-240V AC, 50-60Hz / 12V DC
Safety condition on meter:	IEC/EN61010-1
Safety condition on test leads:	IEC/EN61010-031
Insulation:	double insulation
Measurement category:	CAT IV 50V
Pollution degree:	2
Mechanical protection:	IP40
Display:	LCD dot matrix (128 x 64) with backlight
Auto Power OFF:	after 15 minutes of idleness (not disable)
Internal memory:	1500 locations
Communication interface:	RS-232 and USB (to PC)
Dimensions (LxLaxH):	230 x 115 x 103mm
Weight (with batteries):	1.3kg

ENVIRONMENTAL CONDITIONS:

Reference temperature:	10°C ÷ 30°C
Reference humidity:	35% ÷ 65%RH
Working temperature:	0° ÷ 40°C
Working humidity:	<80%HR
Storage temperature:	-10 ÷ 60°C
Storage humidity:	< 80%HR

This instrument complies to the prescriptions of the European directive on low voltage 2006/95/CE (LVD) and EMC 2004/108/CE

