

# MI 3295 Step Contact Voltage Measuring System

**DENVER**  
metrología electrónica, S.L.



**MI 3295 Step Contact Voltage Measuring System is a voltage measuring system for testing and verification of protective earthing of power stations, substation and other power systems.**

## MEASURING FUNCTIONS:

- Measurement of step voltage and contact voltage.
- Measurement of earthing resistance with resolution of 1 mΩ.
- Measurement of specific earth resistance.

## KEY FEATURES:

- **High accuracy** of the measurements due to a high current of up to 50 A and effective suppression of noise.
- **Excellent immunity** even against changing earth currents.
- **Autonomous Step Voltage meter:** no need for long voltage leads.
- **Low weight.**
- **High safety** due to low output voltage (55 V).
- **Downloads** test results directly to the PC with the help of the professional PC SW package HVLink which enables analysis and documentation of test results.

## APPLICATION:

Measurement of protective earthing of:

- Power stations,
- Substations,
- Distribution towers,
- Other power systems



- **Safe**
- **Low weight**
- **High accuracy**
- **Autonomous meter**
- **Excellent noise immunity**

**NEW**  
Step / Contact Voltage,  
Earth Resistance Measurements



## STANDARDS / REGULATIVES:

Functionality:

- RAT 2008;
- HD 637 S1;
- ANSI/IEEE Std 81;
- EN 61557-5

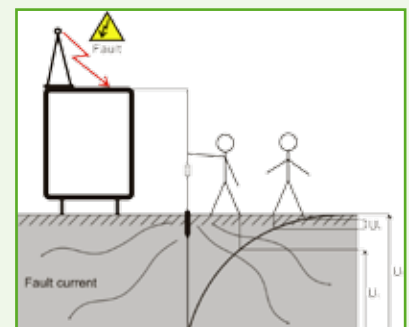
Electromagnetic compatibility (EMC):

- EN 61326

Safety (LVD):

- EN 61010-1;
- EN 61010-031

**Step and Contact Voltages in case of failure**



# Technical Specification

Function	Measuring range	Resolution	Accuracy
Step voltage, Contact voltage (measuring range $U_m$ )	0.01 ... 19.99 mV 20.0 ... 199.9 mV 200 ... 1999 mV 2.00 ... 19.99 V 20.0 V ... 59.9 V	0.01 mV 0.1 mV 1 mV 0.01 V 0.1 V	$\pm(2\%$ of reading + 2 digits)
Step voltage, Contact voltage (calculated measuring range U)	0.0 ... 199.9 V 200 ... 999 V	0.1 V 1 V	calculated value*
Test current	55 A max		
Test voltage	< 55 V		
Test frequency	55 Hz		
Input resistance	Selectable 1 M $\Omega$ / 1k $\Omega$		
Current	0.00 ... 9.99 A 10.0 ... 99.9 A	0.01 A 0.1 A	$\pm(3\%$ of reading + 5 digits) $\pm(3\%$ of reading + 3 digits)
Resistance to earth	0.001 ... 1.999 $\Omega$ 2.00 ... 19.99 $\Omega$ 20.0 ... 99.9 $\Omega$ 100.0 ... 199.9 $\Omega$	0.001 $\Omega$ 0.01 $\Omega$ 0.1 $\Omega$ 0.1 $\Omega$	$\pm(2\%$ of reading + 5 digits) $\pm(2\%$ of reading + 5 digits) $\pm(2\%$ of reading + 5 digits) $\pm(5\%$ of reading)
Specific earth resistance	0.00 ... 9.99 $\Omega$ m 10.0 ... 99.9 $\Omega$ m 100 ... 999 $\Omega$ m 1.00 k ... 9.99 k $\Omega$ m 10.0 k ... 99.9 k $\Omega$ m	0.01 $\Omega$ m 0.1 $\Omega$ m 1 $\Omega$ m 10 $\Omega$ m 100 $\Omega$ m	Calculated value, consider ac- curacy of Resistance to earth function.
Open circuit voltage	< 50 V <sub>AC</sub>		
Test current	< 7.5 A		
Test frequency	55 Hz		
<b>General</b>			
<b>STATION</b>			
Power supply	230 V / 50 or 60 Hz		
Communication port	RS232		
Memory	1000 memory locations		
Overvoltage category	CAT II / 300 V		
Measuring category	CAT IV / 50 V		
Protection degree	IP 30		
Display	LCD, 128 x 64 dots, with backlight		
Dimensions	563 x 275 x 257 mm		
Weight	29.5 kg		
<b>METER</b>			
Power supply	6 x 1.2 V rechargeable battery, type AA		
Operation time	12 h (typical)		
Communication ports	USB, RS232		
Memory	1500 memory locations		
Measuring category	CAT IV / 50 V		
Protection degree	IP 40		
Display	LCD, 128 x 64 dots, with backlight		
Dimensions	230 x 103 x 115 mm		
Weight	1.3 kg		

\*Note:

Displayed Step / Contact voltage is obtained on base of calculation:

$$U_s = U_{meas} \cdot I_{fault} / I_{meas}; U_c = U_{meas} \cdot I_{fault} / I_{meas};$$

$I_{fault}$  (selectable)..... 1 A ... 200 kA

## ORDERING INFORMATION:

MI 3295

Standard set



- Instrument MI 3295M
- Instrument MI 3295S
- Mains cable
- Step voltage probe (25 kg), 2 pcs
- Current earth spike
- Potential earth spike
- Current test lead, 50 m, black, 10 mm<sup>2</sup>, with crocodile clip, on wheel
- Current test lead, 10 m, black, 10 mm<sup>2</sup>, with crocodile clip
- Test lead, black, 2 x 3 m
- Test lead, green, 10 m
- Test lead, black, 1.5 m
- Test lead, red, 50 m
- Connection lead with crocodile clip, red, 1 m
- Crocodile clip, 4 pcs
- RS232 cable
- USB cable
- Soft carrying bag, 2 pcs
- Soft carrying neck belt
- NiMH battery cells, type AA, 6 pcs
- Power supply adapter
- CD with instruction manual and PC SW HVLink PRO
- Instruction manual
- Calibration certificate

## Optional accessories:

Photo	Order No.	Description
	A 1323	Current and voltage earth spikes (with 3 m lead)
	A 1324	Hand trolley
	A 1353	Step voltage probe (25 kg), 2 pcs
	MI 3295M Set	<b>Step Contact Meter Measuring Set</b> - Instrument MI 3295M - Test lead, 2 x 3 m - Soft carrying bag - Soft carrying neck belt - NiMH battery, type AA, 6 pcs - Power supply adapter



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Note! Photographs in this catalogue may slightly differ from the instruments at the time of delivery. Subject to technical change without notice.