

# Hi-Pot (flash), Earth (ground bond), Insulation resistance and other specific tests MI 3394 CE MultiTesterXA

NEW



The MI 3394 CE MultiTesterXA is a portable instrument intended for electrical safety testing and CE certification of electrical appliances, machines and switchboards during the production. The PC software MES-Manager enables the upload of automated test sequences, projects, downloading of test results to the PC, automatic data storage into a file and printing of test reports. Due to selected test functions, durable construction and accompanying PC SW package CE MultiTesterXA is the perfect instrument for electrical safety testing in the most demanding environments like laboratories, automated production lines or specialized workshops.



## MEASURING FUNCTIONS

- High Voltage, programmed (AC/DC).
- Continuity tests.
- Insulation resistance measurement.
- Substitute leakage current.
- Differential leakage current.
- Touch leakage current.
- PE-leakage current.
- Discharge time.
- Functional test (power P/S/Q, voltage, current,  $\cos\phi$ , frequency, ThdU, ThdI, PF).

## KEY FEATURES

- Data management: the instrument features in unique user friendly data management facility and state of the art memory organizer.
- Multiple test terminals: different test terminals enabling the user to chose from performing single tests or autosequences from single test socket.

- Support for Test Adapter: A 1460 CE ADAPTER enables execution of auto tests from single test terminal.
- MicroSD: support for microSD memory card (8-GB supplied with the instrument) up to 32GB.
- Colour display: 3.4" colour LCD display with touch screen.
- Hi-pot: high voltage AC (5kV at 500VA) and DC (6kV) test.
- Continuity: 4 - wire continuity test with selectable test current (0.2 A, 4 A, 10A, 25A) enabling precise measurements.
- Communication: 4 - RS232, USB and Bluetooth communication ports enabling downloading, uploading and remote control over instrument.
- Multi-system testing: the instrument can be used on TT, TN, IT and 115 V supply systems.

## APPLICATION

- Laboratories,
- Automated production lines,
- Specialized workshops.

## STANDARDS

### Functionality

- IEC 60335 Household and similar electrical appliances
- 61439 Low-voltage switchgear and controlgear assemblies
- IEC 60598 Luminaires
- IEC 60950 Safety of information technology equipment
- IEC 61010 Safety requirements for electrical equipment
- VDE 0701-702 Inspection after repair, modification of electrical appliances - Periodic inspection on electrical appliances General requirements for electrical safety
- EN 50191 Erection and operation of electrical test equipment

### Safety

- EN 61010-1
- EN 61010-2-030
- EN 61010-031
- EN 61557

### EMC

- EN 61326-1

## TECHNICAL SPECIFICATION

| FUNCTION   | Measuring range   | Resolution                         | Accuracy  |
|--|---|------------------------------------|---|
| <b>HVAC, Programmable HV AC</b>  |   |                                    |   |
| - Test voltage (AC)  | 0 ... 1999 V<br>2.00 ... 5.99 kV  | 1 V<br>10 V                        | ±(3 % of reading)<br>±(3 % of reading)  |
| - Test current apparent capacitive resistive   | 0.0 ... 99.9 mA<br>0.0 mA ... 99.9 mA<br>-99.9 mA ... 99.9 mA                       | 0.1 mA<br>0.1 mA<br>0.1 mA         | ±(3 % of reading + 3 digits)<br>Indicative<br>Indicative                                |
| - Short circuit current  | > 200 mA  |                                    |   |
| - Output power   | 500 VArmax  |                                    |   |
| <b>HV DC, Programmable HV DC</b>   |   |                                    |   |
| - Test voltage (DC)  | 0 ... 1999 V<br>2.00 ... 6.99 kV  | 1 V<br>10 V                        | ±(3 % of reading)<br>±(3 % of reading)  |
| - Test current   | 0.01 ... 9.99 mA  | 0.01 mA                            | ±(5 % of reading + 3 digits)  |
| Discharging time   |   |                                    |   |
| - t  | 0.0 ... 9.9 s   | 0.1 s                              | ±(5 % of reading + 3 digits)  |
| - Up   | 0 ... 550 V   | 1 V                                | ±(5 % of reading + 3 digits)  |
| Continuity (0.2A, 4A, 10A, 25A)  |   |                                    |   |
| - R  | 0.00 Ω ... 19.99 Ω<br>20.0 Ω ... 99.9 Ω<br>100.0 Ω ... 199.9 Ω<br>200 Ω ... 999 Ω   | 0.01Ω<br>0.1Ω<br>0.1Ω<br>1Ω        | ±(2 % of reading + 2 digits)<br>±(3 % of reading)<br>±(5 % of reading)<br>Indicative    |
| Insulation resistance (250 V, 500 V, 1000 V), Insulation resistance - S (250 V, 500 V, 1000 V) |   |                                    |   |
| - Riso/Riso-s  | 0.00 MΩ ... 19.99 MΩ<br>20.0 MΩ ... 199.9 MΩ  | 0.01 MΩ<br>0.1 MΩ                  | ±(3 % of reading + 2 digits)<br>±(5 % of reading)                                       |
| - Output voltage   | 0 V ... 1200 V  | 1 V                                | ±(3 % of reading + 2 digits)  |
| Insulation resistance (50 V, 100 V), Insulation resistance - S (50 V, 100 V)                   |   |                                    |   |
| - Riso/Riso-s  | 0.00 MΩ ... 19.99 MΩ<br>20.0 MΩ ... 199.9 MΩ  | 0.01 MΩ<br>0.1 MΩ                  | ±(5 % of reading + 2 digits)<br>±20 % of reading  |
| - Output voltage   | 0 V ... 1200 V  | 1 V                                | ±(3 % of reading + 2 digits)  |
| (open circuit voltage <50 V a.c.)  |   |                                    |   |
| - Isub / Isub s  | 0.00 mA ... 19.99 mA  | 10 μA                              | ±(5 % of reading + 3 digits)  |
| Differential Leakage current   |   |                                    |   |
| - Idiff  | 0.00 mA ... 19.99 mA  | 0.01 mA                            | ±(3 % of reading + 5 digits)  |
| PE leakage current   |   |                                    |   |
| - Ipe  | 0.00 mA ... 19.99 mA  | 0.01 mA                            | ±(3 % of reading + 3 digits)  |
| Touch leakage current  |   |                                    |   |
| - Itou   | 0.00 mA ... 19.99 mA  | 0.01 mA                            | ±(3 % of reading + 3 digits)  |
| Power  |   |                                    |   |
| - P  | 0.00 W...19.99 VA<br>20.0 W...199.9 VA<br>200 W ... 1999 VA<br>2.00 kW ... 3.70 kVA | 0.01 VA<br>0.1 VA<br>1 VA<br>10 VA | ±(5 % of reading + 5 D)<br>±(5 % of reading)<br>±(5 % of reading)<br>±(5 % of reading)  |
| - S  | 0.00 W...19.99 VA<br>20.0 W...199.9 VA<br>200 W ... 1999 VA<br>2.00 kW ... 3.70 kVA | 0.01 VA<br>0.1 VA<br>1 VA<br>10 VA | ±(5 % of reading + 10 D)<br>±(5 % of reading)<br>±(5 % of reading)<br>±(5 % of reading) |
| - Q  | 0.00 W...19.99 VA<br>20.0 W...199.9 VA<br>200 W ... 1999 VA<br>2.00 kW ... 3.70 kVA | 0.01 VA<br>0.1 VA<br>1 VA<br>10 VA | ±(5 % of reading + 10 D)<br>±(5 % of reading)<br>±(5 % of reading)<br>±(5 % of reading) |
| - PF   | 0.00i ... 1.00i<br>0.00c ... 1.00c  | 0.01<br>0.01                       | ±(5 % of reading + 5 digits)<br>±(5 % of reading + 5 digits)                            |
| - THDU   | 0.0% ... 99.9%  | 0.1%                               | ±(5 % of reading + 5 digits)  |
| - THDI   | 0 mA...999 mA<br>1.00 A ... 16.00 A   | 1 mA<br>10 mA                      | ±(5 % of reading + 5 D)<br>±(5 % of reading)  |
| - Cos fi   | 0.00i ... 1.00i<br>0.00c ... 1.00c  | 0.01<br>0.01                       | ±(5 % of reading + 5 digits)<br>±(5 % of reading + 5 digits)                            |
| - U  | 0.1 V ... 199.9 V<br>200 V ... 264 V  | 0.1<br>1 V                         | ±(3 % of reading + 10 digits)<br>±(3 % of reading)                                      |
| - I  | 0 mA...999 mA<br>1.00 A ... 16.00 A   | 1 mA<br>10 mA A                    | ±(3 % of reading + 5 D)<br>±(3 % of reading)  |
| Power supply   | 110 V / 230 V AC, 50 Hz / 60 Hz   |                                    |   |
| Overvoltage category   | CAT II / 300 V, CAT II / 600 V (DISCH1 / DISCH2, only)                              |                                    |   |
| Protection class   | I   |                                    |   |
| HV output  | 5 kV a.c. / 6 kV d.c., double insulation  |                                    |   |
| COM port   | 4 x RS232, 1 x USB, 1 x Bluetooth   |                                    |   |
| Dimensions (w×h×d):  | 43,5 cm x 29,2 cm x 15,5 cm   |                                    |   |
| Weight:  | 17 kg   |                                    |   |

**Note:** Technical specification relates to HW 3 version.

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## ORDERING INFORMATION



### Standard set MI 3394

Instrument MI 3394 CE MultiTesterXA

- HV test pistol with 2 m cable, 2 pcs
- Continuity test lead, 2.5 m, 2 pcs
- Continuity test lead, red, 1.5 m
- Insulation test lead, red, 2.5 m
- Insulation test lead, black, 2.5 m
- Crocodile clip, black, 3 pcs
- Crocodile clip, red, 2 pcs
- Discharge time cable
- Mains cable
- Bag for accessories
- Calibration certificate
- RS232 cable
- USB cable
- CD with instruction manual (full version)
- Metrel ES Manager BASIC license\*

\*Metrel ES Manager can be downloaded free of charge from Metrel Web server.

### OPTIONAL ACCESSORIES

| Photo | Order No. | Acc. decription  |
|-------|-----------|--|
|       | A 1017    | EXT/DOOR IN cable  |
|       | A 1060    | Two way mains adapter  |
|       | S 1058    | CONTINUITY test lead, 10 m, 2 pcs                                    |
|       | S 1072    | CONTINUITY test lead with 2 pole alligator clip, 2.5 m, set of 2 pcs |
|       | A 1458    | SanDisk MicroSD card reader  |
|       | A 1460    | CE adapter supports Auto tests                                       |
|       | A 1495    | Remote control pedal   |
|       | A 1496    | Warning lamp / 2 LED's signal tower with buzzer                      |
|       | A 1497    | Warning lamp / 4 LED's signal tower with buzzer                      |
|       | P 1101    | BASIC to PRO licence key upgrade for Metrel ES Manager               |