

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

Appliance / Machine / Switchboard safety



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 XA 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:** 4.3" colour LCD display with touch screen.
- **Hi-pot:** high voltage AC (5.1kV 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/EN 60335
- IEC/EN 60204-1 Ed.5 (VDE 0113-1)
- IEC/EN 61439-1 (VDE 0660-600-1)
- IEC/EN 62368-1 (IEC/EN 60950-1)
- IEC/EN 60598

- IEC/EN 61010
- IEC/EN 61180
- EN 50191 (BGI 891)
- EN 50699
- EN 50678
- VDE 0701-0702
- AS/NZS 3760
- NEN 3140
- IET COP 5th Ed

### Safety

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

### EMC





- EN 61326-1

## TECHNICAL SPECIFICATION












| FUNCTION   | Measuring range   | Resolution                         | Accuracy  |
|--|---|------------------------------------|---|
| HVAC, Programmable HV AC, Output voltage 100 V – 5100 V, 10 V steps                            |   |                                    |   |
| - 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  | 0.0 ... 99.9 mA   | 0.1 mA                             | ±(3 % of reading + 3 digits)  |
| - Capacitive   | 0.0 mA ... 99.9 mA  | 0.1 mA                             | Indicative  |
| - Resistive  | -99.9 mA ... 99.9 mA  | 0.1 mA                             | Indicative  |
| - Short circuit current  | > 200 mA  |                                    |   |
| - Output power   | 500 VA <sub>max</sub>   |                                    |   |
| HVDC, Programmable HV DC, Output voltage 500 V – 6000 V, 50 V steps                            |   |                                    |   |
| - 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>1 Ω       | ±(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>±(10 % 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.)  |   |                                    |   |
| - I <sub>sub</sub> / I <sub>sub</sub> s  | 0.00 mA ... 19.99 mA  | 10 μA                              | ±(5 % of reading + 3 digits)  |
| Differential Leakage current   |   |                                    |   |
| - I <sub>diff</sub>  | 0.00 mA ... 19.99 mA  | 0.01 mA                            | ±(3 % of reading + 5 digits)  |
| PE leakage current   |   |                                    |   |
| - I <sub>pe</sub>  | 0.00 mA ... 19.99 mA  | 0.01 mA                            | ±(3 % of reading + 3 digits)  |
| Touch leakage current  |   |                                    |   |
| - I <sub>tou</sub>   | 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.

## ORDERING INFORMATION

|   | MI 3394<br>EURO SET   | MI 3394<br>LINE SET   | MI 3394<br>ST SET  | MI 3394<br>LAB SET  |
|---|---|---|--|---|
|   |  |  |  |  |
| MI 3394 Instrument CE MultiTesterXA       | •   | •   | •  | •   |
| A 1460 CE Test adapter                    |   | •   |  |   |
| S 2073 HV test lead 5m, without pistols   |   |   | •  |   |
| A 1560 Burn Link adapter                  |   |   |  | •   |
| A 1105 Barcode scanner                    |   | •   |  |   |
| A 1511 Tip Comander                       |   | •   |  |   |
| HV test pistol with 2 m cable, 2 pcs      | •   |   |  | •   |
| Continuity test lead, 2.5 m, 2 pcs        | •   | •   | •  | •   |
| Continuity test lead, red, 1.5 m, 1pcs    | •   | •   | •  | •   |
| 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                                 | •   | •   | •  | •   |
| A 1521 USB isolator                       |   | •   |  |   |
| CD with instruction manual (full version) | •   | •   | •  | •   |
| Metrel ES Manager BASIC license           | •   | •   | •  | •   |

## OPTIONAL ACCESSORIES

| Photo   | Order No. | Acc. decription   | Photo   | Order No. | Acc. decription                                 | Photo   | Order No.     | Acc. decription  |
|---|-----------|---|---|-----------|---|---|---------------|--|
|  | A 1017    | EXT/DOOR IN cable   |  | A 1458    | SanDisk MicroSD card reader                     |  | A 1496<br>MAG | Warning lamp / 2-LED signal tower HV ready for magnetic mounting |
|  | A 1060    | Two way mains adapter   |  | A 1460 XA | CE adapter supports Auto tests                  |  | A 1497        | Warning lamp / 4 LED's signal tower with buzzer                  |
|  | S 1058    | CONTINUITY test lead, 10 m, 2 pcs                                   |  | A 1495    | Remote control pedal                            |  | P 1101        | Lizenzschlüssel für Advanced Metrel ES Manager                   |
|  | S 1072    | CONTINUITY test lead with 2 pole aligator clip, 2.5 m, set of 2 pcs |  | A 1496    | Warning lamp / 2 LED's signal tower with buzzer |   |               |  |

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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.

