



**Testing system for testing electrical safety in accordance to  
IEC 60601 / IEC 62353 / IEC 61010 / VDE 0701-0702  
MPG / MPBetreibV / BetrSichV / DGUV Vorschrift 3**

- touch screen or PC operation
- PS2 socket for external PC-keyboard or barcode scanner
- internal memory for 50 test instructions and 200 test protocols
- 25 A PE measure in according to IEC 60601
- robust light metal case
- user specific language setting

# Technical Data

|   |  |   |  |   |
|---|--|---|--|---|
| Line voltage:                           | 230 V / 115 V ac, $\pm 10\%$ , 50/60 Hz                          | Insulation resistance:                              | 0,2 - 4,9 MOhm or<br>5 - 100 MOhm  | $\pm 0,2$ MOhm or $\pm 5\%$ of measurement value  |
| Output power:                           | maximum 3,5 kW   | Leakage current:                                    | 0 - 99 $\mu$ A<br>100 - 20000 $\mu$ A  | $\pm 2$ $\mu$ A or $\pm 1\%$ of measurement value |
| Protection class:                       | II   | Difference current:                                 | 10 - 20000 $\mu$ A   | $\pm 2$ $\mu$ A or $\pm 1\%$ of measurement value |
| Overvoltage category:                   | II   | Output power:                                       | 1 - 3,5 kW   | $\pm 2$ W or $\pm 5\%$ of measurement value       |
| Environmental temperature:              | + 5 - + 40 °C  | Current:  | 0 - 16 A   | $\pm 50$ mA or $\pm 2,5\%$ of measurement value   |
| Storage temperature:                    | - 10 - + 50 °C   | Interface:  | 1 x Centronics for printer<br>1 x USB for PC connection<br>1 x RS-232 for PC connection<br>1 x PS2 for PC keyboard or Barcode Scanner  |   |
| Measurement range Voltages measurement: | 0 - 300 V ac<br><br>(input resistance: 10 MOhm)                  | Test object connections:                            | 1 x protected ground VDE test socket<br><br>5 x safety sockets (4mm) for applied part, groupable into 3 groups<br>1 x safety socket 4mm for test probe<br>1 x safety socket 4mm for PE |   |
| Discrimination:                         | 0,3 V  | Display:  | 4,3" TFT-Display   |   |
| Earth conductor resistance:             | 0,00 - 40 Ohm<br><br>(test voltage 6 V ac, max. 25 A / max. 5 A) | Operation:  | Touch panel  |   |
| Discrimination:                         | 10 mOhm  | Accessories:  | 1 x cable with test probe<br>1 x test adapter PA-X for self-diagnosis test<br>1 x USB cable  |   |
| Insulation resistance:                  | 0,2 - 100 MOhm<br>(test voltage 500 V dc, max. 3,5 mA)           | Mechanical data:                                    | light weight metal case IP20<br>290 x 340 x 87 mm (D x W x H), approx. 6 kg  |   |
| Discrimination:                         | 0,1 - 2 M Ohm  | Selectable languages:                               | german, english,<br>polish, turkish  |   |
| Leakage current:                        | 0 - 10 mA or<br>0 - 20 mA  |   |  |   |
| Resistance:                             | 1000 Ohm $\pm 1\%$ or<br>2000 Ohm $\pm 1\%$                      |   |  |   |
| Discrimination:                         | 1 $\mu$ A or 0,2 $\mu$ A   |   |  |   |
| Difference current:                     | 10 $\mu$ A - 20000 $\mu$ A                                       |   |  |   |
| Discrimination:                         | 1 $\mu$ A or 0,2 $\mu$ A   |   |  |   |
| Output power:                           | 1 - 3,5 kW   |   |  |   |
| Discrimination:                         | 1 W  |   |  |   |
| current:                                | 0 - 16 A   |   |  |   |
| Discrimination:                         | 10 mA  |   |  |   |
| Measurement accuracy                    |  |   |  |   |
| Measurement range                       | range  | error   |  |   |
| Voltage:                                | 0 - 300 V ac   | $\pm 0,3$ V or $\pm 1\%$ of measurement value       |  |   |
| Earth conductor resistance:             | 0,00 - 4,9 Ohm<br>5 - 40 Ohm<br>5 - 40 Ohm                       | $\pm 0,03$ Ohm or<br>$\pm 5\%$ of measurement value |  |   |

GM-610 is a measurement and test device for testing the electrical safety of medical technical and other technical appliances. The measurements and tests correspond to the conditions of IEC 60601, IEC 62353 (VDE 0751), IEC 61010 and VDE 0701-0702.

GM-610 can be used as stand-alone or PC-controlled testing system. You can start individual single measurements or even automatic tests.

The operation of the equipment is touch-controlled and with a few decisions the different functions of the equipment will be activated. In the stand-alone function, the operation takes place by the touch panel which is integrated into the front plate. In addition to that, an alphanumeric keyboard and/or a scanner can be

connected/added. Adding one of them will make the input of texts, like tester name and equipment description, much easier. With GM-610 the separate measurement of direct- and alternating currents (ac/dc measurement, RMS) of the patient leakage current and patient auxiliary current can be carried out accordingly to IEC 60601.

A nonvolatile memory can store up to 200 test protocols. These protocols can be directly put out via the integrated Centronics printer interface from the tester to a standard printer or via the USB or RS-232 interface to an appropriate PC-Software. To control the GM-610 a 100% compatible IBM computer with industrial standards is needed. The communication between the PC and the GM-610 takes place by USB / serial interface (RS-232).

(The specified measuring accuracy refers to the measuring element. Technical modifications and errors reserved. 06/2020)