



**Testing system for testing electrical safety in accordance to
IEC 60601 / IEC 62353 / IEC 61010 / EN 50678 / EN 50699
MPBetreibV / BetrSichV / DGUV Vorschrift 3**

- ☒ touchscreen 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	Leakage current:	0 - 99 μ A	$\pm 2\ \mu$ A or $\pm 1\%$ of measurement value
Output power:	maximum 3,5 kW	Differential current:	100 - 20000 μ A	$\pm 2\ \mu$ A or $\pm 1\%$ of measurement value
Protection class:	I	Output power:	1 - 3,5 kW	$\pm 2\ \text{W}$ or $\pm 5\%$ of measurement value
Overvoltage category:	II	Current:	0 - 16 A	$\pm 50\ \text{mA}$ or $\pm 2,5\%$ of measurement value
Environmental temperature:	+ 5 - + 40 °C	The specified intrinsic uncertainties relate to the respective measuring circuit. The operating uncertainty at the test object connections is $\pm 5\%$. The displayed value is normalized according to the documentation / standard requirement, if required.		
Storage temperature:	- 10 - + 50 °C			
Measurement range		Interface:	1 x Centronics for printer	
Voltages measurement:	0 - 300 V ac (input resistance: 10 MOhm)		1 x USB for PC connection	
Discrimination:	0,3 V		1 x RS-232 for PC connection	
Earth conductor resistance:	0,00 - 40 Ohm (test voltage 6 V ac, max. 25 A / max. 5 A)	Test object connections:	1 x PS2 for PC keyboard or Barcode Scanner	
Discrimination:	10 MOhm			
Insulation resistance:	0,2 - 100 MOhm (test voltage 500 V dc, max. 3,5 mA)	Display:	4,3" TFT-Display	
Discrimination:	0,1 - 2 M Ohm	Operation:	Touchscreen	
Leakage current:	0 - 10 mA or 0 - 20 mA	Accessories:	1 x measurement line with test probe, 1 m length	
Resistance:	1000 Ohm $\pm 1\%$ or 2000 Ohm $\pm 1\%$		1 x test adapter PA-X for self-diagnosis test	
Discrimination:	1 μ A or 0,2 μ A		1 x USB cable	
Differential current:	10 μ A - 20000 μ A		1 x power cord 16 A	
Discrimination:	1 μ A or 0,2 μ A	Mechanical data:	light weight metal case IP20	
Output power:	1 - 3,5 kW		343 x 88 x 280 mm (W x H x D), approx. 6 kg	
Discrimination:	1 W	Selectable languages:	german, english, polish, turkish	
Current:	0 - 16 A			
Discrimination:	10 mA			
Intrinsic uncertainty				
Measurement				
Voltage:	Range	Error		
	0 - 300 V ac	$\pm 0,3\ \text{V}$ or $\pm 1\%$ of measurement value		
Earth conductor resistance:	0,00 - 4,9 Ohm	$\pm 0,03\ \text{Ohm}$ or		
	5 - 40 Ohm	$\pm 5\%$ of measurement value		
Insulation resistance:	0,2 - 4,9 MOhm	$\pm 0,2\ \text{MOhm}$ or $\pm 5\%$ of measurement value		
	or			
	5 - 100 MOhm			

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, IEC 61010, EN 50678 and EN 50699.

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 non-volatile 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 as PC-controlled testing system a 100% compatible IBM computer with industrial standards is required. The communication between the PC and the GM-610 takes place by USB / serial interface (RS-232).

(Technical modifications and errors reserved. 12/2020)