

MI 3310 SigmaGT/PAT

NEW
mains and battery
powered

**Multifunctional
PAT tester**

-PRCD type
AC, A, B, S, K

-Support for active
3-phase Adapter
A 1322, A 1422

Easy to use



The MI 3310 SigmaGT is a multifunctional portable test instrument intended to perform all measurements for complete testing the electrical safety of portable electrical equipment. The instrument can operate from mains power or batteries.

Built-in Bluetooth technology enables support of aPAT, revolutionary Portable Appliance Testing software tool. An Android device with the aPAT application creates flexibility by serving as a link between PAT tester, QR code scanner and /or QR code printer. The application also uses a smart phone's built in camera as a barcode reader.

Powerful data management system PC SW PATLink PRO enables upload and download of test results and parameters for further data handling, trend analysis and test report creation.

INNOVATIVE TEST FUNCTIONS:

New solution for testing of portable RCDs and RCD protected cables.

Simple connection for PRCD test - via mains test socket and IEC cord.

A complete testing (Earth Bond + Leakage + PRCD test + Polarity) can be performed without reconnection of tested item.

Insulation-S and Substitute-S subfunctions for testing Class II devices.

These function enable consistent testing of Class II parts of combined (Class I + Class II) appliances.

RCD test + Voltage function for checking properness of mains connection point.

Instrument has also the solution for measurements on fixed installed appliances due to the installed test terminals and clamp current test.

KEY FEATURES:

- Large graphic LCD display with resolution of 240 x 128 dots with backlight.
- Over 6000 memory locations in data flash memory for storing test results and parameters.
- Bluetooth communication with aPAT application.
- Soft touch keyboard with cursor keys.
- Built-in real time clock.
- Fully compatible with PATLink PRO PC software package.
- Support for Android application aPAT.

POWERFUL FUNCTIONS FOR FAST AND EFFICIENT PERIODIC TESTING:

- Preprogrammed test sequences.
- Fast testing with QR code identification systems.
- Test data can be uploaded from android application aPAT or from PC.
- Comparison between old and new test results can be performed on site.
- On-site printing of QR test labels.



THE FOLLOWING TESTS CAN BE PERFORMED:

- Earth bond / continuity resistance,
- Insulation resistance,
- Insulation resistance of isolated accessible conductive parts,
- Substitute leakage current,
- Substitute leakage current of isolated accessible conductive parts,
- Differential leakage current,
- Touch leakage current,
- IEC cord polarity test,
- Leakage and TRMS load currents with current clamp,
- Portable RCD testing,
- RCD testing,
- Functional test.

APPLICATION:

- Professional portable appliance testing
- General portable appliance testing
- Multi-location portable appliance testing
- Professional 3-phase portable appliance testing (with 3-phase adapter)
- Testing of single and 3-phase ARC
- Welding equipment (with 3-phase adapter)

STANDARDS APPLIED

Electromagnetic compatibility (EMC)

EN 61326-1

Safety (LVD)

EN 61010-1; EN 61010-031; EN 61010-2-032

Functionality

VDE 0404-1; VDE 0404-2; VDE 0701-0702; EN 60204-1 Ed.5; EN 60439

EN 61439-1; AS / NZS 3760; NEN 3140

Technical specifications

Earth bond resistance (200 mA)

Range	Resolution	Accuracy
0.00 Ω ÷ 1.99 Ω	0.01 Ω	±(5 % of reading + 3 digits)
2.00 Ω ÷ 9.99 Ω	0.01 Ω	±10 %
10.0 Ω ÷ 19.9 Ω	0.1 Ω	±10 %

Insulation resistance, Insulation – S resistance (250 V_{DC}, 500 V_{DC})

Range	Resolution	Accuracy
0.000 MΩ ÷ 0.500 MΩ	0.001 MΩ	±(10 % of reading + 5 digits)
0.501 MΩ ÷ 1.999 MΩ	0.001 MΩ	±(5 % of reading + 3 digits)
2.00 MΩ ÷ 19.99 MΩ	0.01 MΩ	
20.0 MΩ ÷ 199.9 MΩ	0.1 MΩ	

Differential leakage current (230 V_{AC})

Range	Resolution	Accuracy
0.00 mA ÷ 19.99 mA	0.01 mA	±(5 % of reading + 5 digits)

Touch leakage current (230 V_{AC})

Range	Resolution	Accuracy
0.00 mA ÷ 3.99 mA	0.01 mA	±(10 % of reading + 5 digits)

Subleakage current, Subleakage – S current (40 V_{AC})

Range	Resolution	Accuracy
0.00 mA ÷ 19.99 mA	0.01 mA	±(5 % of reading + 5 digits)

Power / Functional test (230 V_{AC})

Range	Resolution	Accuracy
0.00 kVA ÷ 4.00 kVA	0.01 kVA	±(5 % of reading + 3 digits)

Clamp current

Range	Resolution	Accuracy
0.00 mA ÷ 9.99 mA	0.01 mA	±(5 % of reading + 10 digits)
10.0 mA ÷ 99.9 mA	0.1 mA	±(5 % of reading + 5 digits)
100 mA ÷ 999 mA	1 mA	±(5 % of reading + 5 digits)
1.00 A ÷ 9.99 A	0.01 A	±(5 % of reading + 5 digits)
10.0 A ÷ 24.9 A	0.1 A	±(5 % of reading + 5 digits)

(P)RCD testing - single, autotest (10 mA, 15 mA, 30 mA)

Range	Resolution	Accuracy
0 ms ÷ 300 ms (½ x IΔN)	1 ms	±3 ms
0 ms ÷ 300 ms (IΔN)	1 ms	
0 ms ÷ 40 ms (5 x IΔN)	1 ms	

Polarity test Standard test (<50 V_{AC}); Active test (230 V_{AC})

General data

Power supply voltage:	9 V _{DC} (6x1.5 V battery or accu, size C), 230 V _{AC} , 50 Hz/60 Hz
Operation:	10 h
Working temperature range:	0 °C ÷ 40 °C
Maximum relative humidity:	85 % RH (0 °C ÷ 40 °C), non-condensing
Display:	240 x 128 dots matrix display with backlight
Memory:	6000 memory locations
Communication port:	2 x RS232 (9 pin D sub, female) USB (connector Typ B)
Overvoltage category:	CAT II / 300 V
Protection classification:	Double insulation
Protection degree:	case IP 50 /connectors IP 20
Dimensions (w x h x d):	31 cm x 13 cm x 25 cm
Weight (with st. accessories):	5 kg



Measuring and Regulation Equipment Manufacturer
 METREL d.d.
 Ljubljanska 77
 SI-1354 Horjul
 Tel: + 386 (0)1 75 58 200
 Fax: + 386 (0)1 75 49 226
 E-mail: metrel@metrel.si
 http://www.metrel.si

Ordering information:

Standard set

Part No. MI 3310



- Instrument MI 3310 SigmaGT
- Small soft carrying bag
- Test lead, black, 1.5 m
- Crocodile clip, black
- Test probe, black
- PC software PATLink PRO
- RS232 cable, USB cable
- Instruction manual, short instruction manual
- Calibration certificate
- NiMH rechargeable batteries, type C, 6 pcs
- IEC test cable, 2 m
- Mains cable 16 A

Optional accessories:

Photo	Order No.	Acc. description
	A 1283	Leakage current clamp
	S 2062	Zebra BT label printer set
	A 1450	Spare label role for S 2062
	A 1321	Barcode scanner (Bluetooth)
	A 1105	Barcode scanner
	A 1107	RFID reader / writer
	A 1108	RFID tags, self-stick, 25 pcs RFID tags, key-tag, 25 pcs
	A 1207	Three phase adapter
	A 1203	A 1203 Upgrade code PAT Link PRO to PAT Link PRO Plus
	A 1331	Test lead with crocodile black 1.5 m
	A 1316	Three phase adapter (16A CEE-Schuko)
	A 1317	Three phase adapter (32A CEE-Schuko)
	A 1322	Active 3-phase Adapter
	A 1422	Active 3-phase Adapter Plus
	A 1434	A 1434 aPAT Android
	A 1488	BT LABEL PRINTER Able
	A 1520	Labels for Able printer, (250 labels per roll)

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