

MI 3310 SigmaPAT

Easy to use



- Checkbox

- Unique PRCD testing technology

Multifunctional
tester

NEW
mains and battery
powered



The multifunctional portable test instrument SigmaPAT is intended to perform all measurements for testing the electrical safety of portable electrical equipment. The operation of the unit is clear and simple, the operator does not need any special training to operate the instrument. The instrument has a powerful test data management system where auto tests and single tests can be stored in approximately 6000 memory locations.

The instrument can operate from mains power or batteries, it has built-in battery charger, soft Qwerty keypad, and large bright graphic display. Instrument's extended communication facility supports use of RS232 label printer and RS232 barcode scanner. 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.

Active polarity function allows to test cords / leads with integrated RCD protection while voltage is applied to the tested item.

This function enables RCD operation during the test, since most of PRCDs must be powered to be switched ON.

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

These functions 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.
- Three communication ports (USB and 2 x RS232C) for communication with PC, barcode scanner and printer.
- Soft touch keyboard with cursor keys.
- Built-in real time clock.
- Fully compatible with PATLink PRO PC software package.

POWERFUL FUNCTIONS FOR FAST AND EFFICIENT PERIODIC TESTING:

- Preprogrammed test sequences.
- Test data can be uploaded from PC.
- Comparison between old and new test results can be performed on site.
- On-site printing of test labels.

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

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}
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

Ordering information:

Standard set

Part No. MI 3310



- Instrument MI 3310 SigmaPAT (with checkbox)
- Small soft carrying bag
- Test lead with crocodile, black 1.5 m
- 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
	A 1276	Label printer (RS232)
	A 1295	Labels for A 1276, A 1318 printers
	A 1328	HI-Q Labels for A 1276, A 1318 printers
	A 1105	Barcode scanner
	A 1203	A 1203 Upgrade code PAT Link PRO to PAT Link PRO Plus
	A 1289	Soft carrying bag
	A 1014	Test probe, black
	A 1062	Test probe, green
	A 1298	Test probe, brown
	A 1013	Crocodile clip, black
	A 1309	Crocodile clip, green
	A 1297	Crocodile clip, brown
	A 1340	Test lead, black 1.5 m
	A 1341	Test lead, green 1.5 m
	A 1342	Test lead, brown 1.5 m



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