



PAT-806

Indeks: WMGBPAT806

Portable appliance and welding machines tester

Description

PAT-806 digital meters are used to measure the parameters of portable electrical equipment (power tools, white goods, etc.) which determine their safety: resistance of protective conductors, insulation resistance, continuity of connections, leakage current, power.

Specifically the instrument is dedicated to measure the welding equipment.

PAT-806 can be used to test the equipment performed in accordance with standards:

EN 60974-4: Arc welding equipment - Part 4: Periodic inspection and testing.

EN 60745-1: Hand-held motor-operated electric tools. Safety. General requirements.

EN 61029: Safety of transportable motor-operated electric tools. General requirements.

EN 60335-1: Household and similar electrical appliances -Safety -Part 1: General requirements.

EN 60950: Safety of information technology equipment (IT Equipment).

VDE 0404-1: Prüf- und Messeinrichtungen zum Prüfen der elektrischen

Sicherheit von elektrischen Geräten. Teil 1: Allgemeine Anforderungen. VDE 0404-2: Prüf- und Messeinrichtungen zum Prüfen der elektrischen Sicherheit von elektrischen Geräten. Teil 2: Prüfeinrichtungen für Prüfungen nach Instandsetzung, Änderung oder für Wiederholungsprüfungen.

VDE 0701-0702 Prüfung nach Instandsetzung, Änderung elektrischer Geräte. Wiederholungsprüfung elektrischer Geräte. Allgemeine Anforderungen für die elektrische Sicherheit.

Technical Specification

Basic functions:

- measurement of parameters of arc welding machines (EN 60974-4):
 - welding machine no-load voltage measurement,
 - UP voltage (peak),
 - welding circuit leakage current measurement,
- measurement of protective conductor resistance with the currents: 200mA, 10A, 25A (protection class I),
- measurement of insulation resistance – three measurement voltages: 100V, 250V and 500V
- measurement of equivalent leakage current,
- measurement of PE leakage current,
- measurement of residual leakage current,
- measurement of touch leakage current,
- measurement of equivalent leakage current,
- measurement of power,
- measurement of current consumption,
- IEC lead test,
- fuse test,
- check of the L-N circuit test,
- measurement of mains voltage and frequency.

Other:

- automatic measurement range selection,
- 990 memory cells for measurement results with option of uploading to a PC through a USB port or printing,
- professional software for data processing and reporting,
- cooperation with a barcode reader and printer,
- supports pendrive flash memory,
- large and clear display with backlight,
- ergonomic operation.

Measurement of protective earth conductor resistance
I=200mA

(protection class I)

Display range	Resolution	Accuracy
0,00...0,99 Ω	0,01 Ω	$\pm(4\% \text{ m.v.} + 2 \text{ digits})$
1,00...19,99 Ω		$\pm(4\% \text{ m.v.} + 3 \text{ digits})$

- test current: $\geq 200 \text{ mA}$ for $R = 0,2...1,99 \Omega$
- upper limit adjustable in the $10 \text{ m}\Omega \dots 1,99 \Omega$ range with the $0,01 \Omega$ resolution
- measurement time adjustable in $1...60 \text{ s}$ range, with the 1 s resolution

Measurement of protective earth conductor resistance $I=10 \text{ A}$ (protection class I)

Display range	Resolution	Accuracy
0...999 $\text{m}\Omega$	1 $\text{m}\Omega$	$\pm(3\% \text{ m.v.} + 4 \text{ digits})$ $\pm(3\% \text{ m.v.} + 40 \text{ digits})^*$
1,00...1,99 Ω	0,01 Ω	

*for two-wire measurement

- technical method
- test current: $\geq 10 \text{ A}$ for $R \leq 0,5 \Omega$
- limit adjustable in the $10 \text{ m}\Omega \dots 1,99 \Omega$ range with the $0,01 \Omega$ resolution
- measurement time adjustable in $1...60 \text{ s}$ range, with the 1 s resolution

Measurement of protective earth conductor resistance $I=25 \text{ A}$ (protection class I)

Display range	Resolution	Accuracy
0...999 $\text{m}\Omega$	1 $\text{m}\Omega$	$\pm(3\% \text{ m.v.} + 4 \text{ digits})$

1,00...1,99 Ω 0,01 Ω $\pm(3\% \text{ m.v.} + 40 \text{ digits})^*$

*for two-wire measurement

- technical method

• **measurement with sinusoidal current of the mains frequency, test current: $\geq 25 \text{ A}$ for $R \leq 0,2 \Omega$**

- limit adjustable in the 10 m Ω ...1,99 Ω range with the 0,01 Ω resolution

- measurement time adjustable in 1...60 s range, with the 1 s resolution

Measurement of L-N circuit resistance

Display range	Resolution	Accuracy
0...999 m Ω	1 m Ω	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$
1,00...4,99 Ω	0,01 Ω	

- test voltage: 4...8 V AC
- short-circuit current: max. 5 mA

Measurement of insulation resistance

Measurement range according to IEC 61557-2 for:

$U_N=100\text{V}$: 100k Ω ...99,9M Ω

$U_N=250\text{V}$: 250k Ω ...199,9M Ω

$U_N=500\text{V}$: 500k Ω ...599,9M Ω

U_N	Display range	Resolution	Accuracy
100V	0...1999 k Ω	1 k Ω	
	2,0...19,99 M Ω	0,01 M Ω	
	20,0...99,9 M Ω	0,1 M Ω	

250V	0...1999 kΩ	1 kΩ	±(5% m.v. + 8 digits)
	2,00...19,99 MΩ	0,01 MΩ	
	20,0...199,9 MΩ	0,1 MΩ	
500V	0...1999 kΩ	1 kΩ	
	2...19,99 MΩ	0,01 MΩ	
	20,0...599,9 MΩ	0,1 MΩ	

- limit adjustable in the: 0.01...9.9 MΩ range with the 0.1 MΩ resolution
- adjustable measurement time: continuous measurement (Cont), or from 4 s to 3 min with 1 s resolution
- automatic discharge of the capacity of the tested device after measurement
- protection against measuring live devices
- output current max. 1.4 mA

Measurement of PE and residual leakage current:

Display range	Resolution	Accuracy
0,00...3,99mA	0,01mA	±(5% m.v. + 2 digits)
4,0...19,9mA	0,1mA	

- limit adjustable in the 0.01...9.9 mA range with the 0.01 mA/0.1 mA resolution
- adjustable measurement time: continuous measurement (Cont), or 1...60 s with 1 s resolution
- in the middle of the measurement time, the meter automatically switches the polarity at the measuring terminal and displays the greater value

- current measurement band 40 Hz...100 kHz (for leakage current) or 20 Hz...100 kHz (for residual leakage current)

Measurement of equivalent leakage current:

Display range	Resolution	Accuracy
0,00...3,99 mA	0,01 mA	±(5% w.m. + 2 digits)
4,0...19,9 mA	0,1 mA	

- limit adjustable in the 0.01...9.9 mA range with the 0.01 mA/0.1 mA resolution
- adjustable measurement time: continuous measurement (Cont), or 1...60 s with 1 s resolution
- open circuit voltage 25...50 V

Measurement of touch leakage current:

Display range	Resolution	Accuracy
0,00...4,999 mA	0,001 mA	±(5% m.v. + 3 digits)

- limit adjustable in the 0.01...1.99 mA range with the 0.01 mA resolution
- adjustable measurement time: continuous measurement (Cont), or 4...60 s with 1 s resolution

No-load voltage measurement for welding machines:

Voltage measurement UR (r.m.s.):

Display range	Resolution	Accuracy
5,0...170,0 V	0,01 V	±(2,5% m.v. + 5 digits)

- upper limit adjustable in the 5,0...170,0 V range with the 1 V resolution

U_p (peak) voltage measurement:

Display range	Resolution	Accuracy
5,0...240,0 V	0,1 V	±(2,5% m.v. + 5 digits)

- upperlimit adjustable in the 5,0...240,0 V range with the 1 V resolution

Welding circuit leakage current measurement I_L:

Display range	Resolution	Accuracy
0,00...14,99 mA	0,01 mA	±(5% m.v. + 2 digits)

- current measurement range results from the applied measurement system which is in accordance with EN 60974-4
- upperlimit adjustable in the 0,10 mA...14,90 mA range with 0,1 mA resolution
- adjustable time of measurement: 3 s...60 s with 1 s resolution

Measurement of power S:

Display range	Resolution	Accuracy
0...999 VA	1VA	±(5% m.v. + 3 digits)
1...3,99 kVA	0,01kVA	

- adjustable measurement time: continuous measurement (Cont), or 1...60 s with 1s resolution

Measurement of current consumption:

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Display range	Resolution	Accuracy
0,00...15,99 A	0,01 A	$\pm(2\% \text{ m.v.} + 3 \text{ digits})$

- adjustable measurement time: continuous measurement (Cont), or 1...60 s with 1s resolution

Voltage measurement:

Display range	Resolution	Accuracy
187,0...265,0V	0,01V	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$

Display range	Resolution	Accuracy
45,0 Hz...55,0 Hz	0,1 Hz	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$

PE network voltage measurement:

Display range	Resolution	Accuracy
0,0...59,9 V	0,1 V	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$

Conforms to the EMC requirements according to EN 61326-1:2009 and EN 61326-2-2:2006

Electrical safety:

- insulation according to: EN 61010-1 and IEC 61557
- measurement category: II 300V acc.to EN 61010-1
- enclosure protection rating acc. to EN 60529: IP40

Other technical specification:

- power supply: 187...265 V, 50 Hz
- load current: max. 16 A (230 V)
- measurement results memory: 990 cells
- data transmission to PC USB
- dimensions: 330 x 235 x 120 mm
- weight: 4,75 kg
- operating temperature: 0...+40°C
- storage temperature: -20...+70°C
- humidity: 20...80%