

PAT-96 Portable Appliance and Welding Machine Tester

index: WMGBPAT96



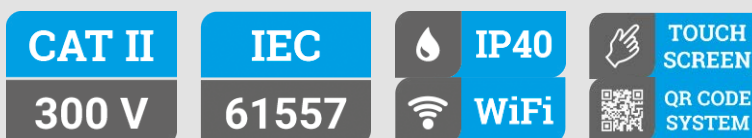
Modern testing of appliances, power tools and welding machines

PAT-95 Portable Appliance Tester

index: WMGBPAT95



Ensure the safety of appliances and power tools

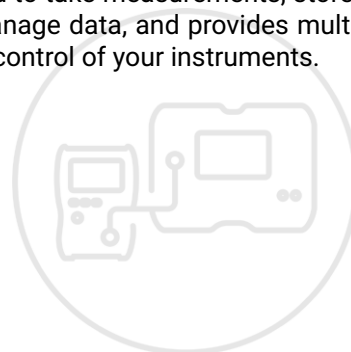


Features

- Power supply 95...265 V
- Measurement of devices with 110 V and 230 V 50/60 Hz power supply
- Measuring system that enables:
 - **PAT-96** | measurement of welding equipment parameters:
 - » rated voltage of welding devices in no-load condition,
 - » welding circuit leakage current,
 - » primary leakage current,
 - protective conductor resistance measurement,
 - **PAT-96** | measurement of insulation resistance in three points,
 - measurement of substitute, differential and touch leakage current,
 - functional test,
 - test of RCD and PRCD switches,
 - ...and much more.
- Built-in measurement procedure wizard.
- Intuitive user interface.
- Cooperation with a label printer and QR code scanner.

Sonel MeasureEffect™

The meters are part of the **Sonel MeasureEffect™** platform. It is a comprehensive system that enables you to take measurements, store and manage data, and provides multi-level control of your instruments.





Application

Sonel PAT-96/95 is an ideal choice for professionals involved in the maintenance and repair of power tools and other appliances. Thanks to its accurate testing, it provides a detailed analysis of the technical condition of the equipment under examination. It guarantees both the safety of users and the long-term maintenance of equipment in optimal technical condition. Developed on the basis of the experience gained, the Sonel PAT-96/95 tester is designed for both field and industrial challenges.

Versatility

The device is used wherever safety is the most important thing. Ideally suited to situations where it is necessary to check welders, power tools, three-phase devices and household appliances.

PAT-96 | Welding machines

PAT-96 was created for testing welding equipment in compliance with EN 60974-4 standard.

Capabilities

Thanks to the extensive measuring part, PAT-96/95 enables comprehensive checking of electrical devices. The touch screen and autoprotocols section make testing quick and efficient. The automatic procedure wizard means even more flexibility for the instrument. The meter has a built-in help system.

The meter cooperates with a label printer and QR scanner, which greatly facilitates the recordkeeping of tools. The following printouts are available:

- initial measurement report,
 - QR code, where, which stores unique data to identify the device in the database.
- These data can be read and added to the meter memory using the optional QR code scanner.

The whole picture is complemented by a compact and durable housing. It provides instrument protection during both measurements and transport.

Memory

The memory has a tree structure, built from folders, objects and devices. For each device tested it contains its description, location of measurements, customer data and registration number.

Standards

The instrument can be used to test equipment according to standards, among others:

- EN 50699
- EN 50678
- EN 60974-4
- VDE 0701-0702
- VDE 0404-1
- VDE 0404-2
- EN 60745-1
- EN 62841
- EN 60335-1
- EN 60950
- EN IEC 62368-1
- AS/NZS 3760



Technical specification

Measurement functions	Range	Resolution	Accuracy $\pm(\% \text{ m.v.} + \text{digits})$
Resistance of protective conductor (PE) $I = 200 \text{ mA} / 10 \text{ A} / 25 \text{ A}$	up to 19.99 Ω	from 1 m Ω	from $\pm(3\% \text{ m.v.} + 4 \text{ digits})$
Insulation resistance $U_{\text{ISO}} = 100 \text{ V} / 250 \text{ V} / 500 \text{ V} / 1000 \text{ V}$	up to 599.9 M Ω	from 1 k Ω	$\pm(5\% \text{ m.v.} + 8 \text{ digits})$
Current (clamp measurement)	up to 24.9 A	from 1 mA	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$
Visual test		✓	
Continuity check of protective conductor (PE)		✓	
Insulation resistance measurement at three points		✓	
IEC cable test		✓	
Functional test			
Apparent power S	up to 3.99 kVA	from 1 VA	$\pm(5\% \text{ m.v.} + 3 \text{ digits})$
Active power P	up to 3.99 kW	from 1 W	$\pm(5\% \text{ m.v.} + 3 \text{ digits})$
Reactive power Q	up to 3.99 kvar	from 1 var	$\pm(5\% \text{ m.v.} + 3 \text{ digits})$
Power Factor (PF)	up to 1.00	0.01	$\pm(10\% \text{ m.v.} + 5 \text{ digits})$
Current consumption for power measurement	up to 15.99 A	0.01 A	$\pm(2\% \text{ m.v.} + 3 \text{ digits})$
THD for voltage and current	up to 999.9%	0.1%	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$
$\cos\phi$	up to 1.0	0.1	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$
PAT-96 Voltage measurement for welding machines			
RMS voltage U_{RMS}	up to 170.0 V	0.1 V	$\pm(2.5\% \text{ m.v.} + 5 \text{ digits})$
DC and AC peak voltage	up to 240.0 V	0.1 V	$\pm(2.5\% \text{ m.v.} + 5 \text{ digits})$
Voltage U_0	up to 240.0 V	0.1 V	$\pm(2.5\% \text{ m.v.} + 5 \text{ digits})$
Leakage current measurement			
PAT-96 Welding circuit leakage current I_L	up to 14.99 mA	0.01 mA	$\pm(5\% \text{ m.v.} + 2 \text{ digits})$
PAT-96 Leakage current of the welding machine's primary circuit I_p	up to 14.99 mA	0.01 mA	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$
PE leakage current and differential leakage current	up to 19.9 mA	0.01 mA	$\pm(5\% \text{ m.v.} + 2 \text{ digits})$
Substitute leakage current	up to 19.9 mA	0.01 mA	$\pm(5\% \text{ m.v.} + 2 \text{ digits})$
Touch leakage current	up to 4.999 mA	0.001 mA	$\pm(5\% \text{ m.v.} + 3 \text{ digits})$
RCD and PRCD switch test			
Measurement of RCD parameters according to IEC 61557	up to 300 ms	1 ms	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$
Measurement of RCD tripping current I_A for sinusoidal residual current (AC type)	up to 30 mA	0.1 mA	$\pm 5\% I_{\Delta n}$
Measurement of power network parameters			
Voltage	up to 265.0 V	0.1 V	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$
Frequency	up to 65.0 Hz	0.1 Hz	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$

m.v. - measured value

Technical specification

Technical data	
Technical data	LCD 5" 1280 x 720 px
Power supply	mains: 95...265 V, 45...70 Hz rechargeable battery: Ni-MH 7.2 V / 2 Ah
Load current	max. 16 A (230 V)
Safety and work conditions	
Measuring category according to EN 61010	II 300 V
Ingress protection	IP40
Type of insulation according to EN 61010-1 and IEC 61557	double
Dimensions	318 x 257 x 152 mm
Weight	ca. 5 kg
Operating temperature	-10...+50°C
Storage temperature	-20...+70°C
Humidity	20...80%
Nominal temperature	23°C ± 2°C
Reference humidity	40%...60%
Altitude a.s.l.	≤2000 m
Memory and communication	
Memory of measurement results	9999 results
Data transmission	USB-B, Wi-Fi, LAN
Other information	
Measurement standards	EN 50678 EN 50699 ISO 9001
Quality standard - development, design and production	ISO 14001 ISO 45001
The product meets the EMC (emission for industrial environment) requirements according to standards	EN 61326-1 EN 61326-2-2



Standard accessories



Power cord
WAPRZZAS1



L-11 carrying case
WAFUTL11



**2x 5x20 mm,
16 A fuse**
WAPOZB16PAT
USB cable
WAPRZUSB



Test lead
1.8 m (crocodile clip)
WAPRZ1X8ORKS
PAT-96 | 1.5 m (PAT
plug/banana plugs)
WAPRZ1X5DZBB



PAT-96 | Crocodile
clip 1 kV 20 A
red
WAKRORE20K02
blue
WAKROBU20K02



**Factory calibration
certificate**

Optional accessories



**Three-phase socket
adapter 16 A**
5P
WAADAPAT16P
5P switchable
WAADAPAT16PR
4P
WAADAPAT16C
4P switchable
WAADAPAT16CPR



**Three-phase socket
adapter 32 A**
5P
WAADAPAT32P
5P switchable
WAADAPAT32PR
4P
WAADAPAT32C
4P switchable
WAADAPAT32CPR



**3P industrial
socket adapter**
16 A
WAADAPAT16F1
32 A
WAADAPAT32F1
PAT-96 | PAT-3F-
PE adapter for
leakage current
measurement
WAADAPAT3FPE



**Pin probe 1 kV
CAT III/1000 V
CAT IV/600 V
(banana socket) red**
WASONREOGB1



**Pin probe 1 kV
CAT III/1000 V
CAT IV/600 V
(banana socket) blue**
WASONBUOGB1



**High-current
pin probe (ba-
nana sockets)**
WASONSPGB1



Kelvin clip 1 kV 25 A
WAKROKELK06



Test lead
PAT-95 | 1.5 m (PAT
plug/banana plugs)
WAPRZ1X5DZBB



**Double-wire test
lead 2.1 m
(IEC C13/ba-
nana plugs)**
WAPRZ2X1DZIECB



**C-3 current clamp
(Ø 52 mm)**
WACEGC30KR



**IEC 60320 C6 to
C13 adapter**
WAADAPATIEC1



**Barcode scan-
ner (USB)**
WAADACK2D



**Report / barcode
printer (Wi-Fi /
D3, portable)**
WAADAD3



**IEC/Uni Schuko
adapter for exten-
sion cords testing**
WAADAPATIEC2



Sonel PAT Analysis
WAPROSONPAT3



**Accessories for
Brother printer**
Ink tape
WANAKD3



**Calibration cer-
tificate with
accreditation**