PAT400 series
Portable appliance testers

- **10,000 memory storage with USB download**
- **Large 5.7" 1/4 VGA backlit full colour screen for clear results**
- **200 mA; 10 A and 25 A Bond Test with high duty cycle for repetitive testing (PAT410 - 200 mA only)**
- **Selectable PASS/FAIL limits provide instant indication of a faulty asset**
- **Optional barcode scanner and printer available to save time typing asset IDs**
- **230 V and 110 V operation for industrial, commercial and residential applications**

DESCRIPTION

The PAT400 series from Megger is a new generation of downloading portable appliance testers, fully testing portable electrical equipment to the latest edition of the Code of Practice for the In-Service Inspection and Testing of Electrical Equipment. There are 3 products in the range; the PAT410 providing a low-profile 230 V only solution without the added weight required of 110 V operation, plus a database capacity for up to 10,000 test results. The PAT420 provides the same extensive memory and downloading capability, and has the added features of 110 V operation, and also 10 A and 25 A earth bond testing. The PAT450, the top of the range, has all of these features and includes 1.5 kV and 3 kV flash testing, ideal for tool hire outlets and service workshops where flash testing is routine. All products in the range have a high duty-cycle, with the design tailored to fast testing, easy operation, and all-day use. The PAT400s feature a unique fast-re-start, so that when moving the tester from one room to another, it re-starts instantly from the same menu where it was unplugged. This is a significant timesaver, so allowing more tests per day.

USB communication provides convenient download to a standard USB memory stick., and an on-board 10,000 record memory provides interruption-free testing for improved efficiency, with a large QWERTY keypad for fast data entry. Data is directly compatible with Megger PowerSuite® software for professional certification, and all products have the option of a barcode scanner and a thermal transfer barcode label printer operating directly from the USB port. Thermal transfer labels are highly resistant, stable and easily available. The PAT420 and PAT450 have dual 230 V and 110 V operation for complete industrial, commercial and residential applications.

5 soft-keys give direct access to frequently used functions, accelerating navigation through menus and therefore increasing productivity, where time is money. Both standard and customer configurable test groups are available for fast, flexible asset testing.

Tests available in the range include 250 V and 500 V insulation tests, 200 mA, 10 A and 25 A earth bond tests, differential, touch and alternative (substitute) leakage tests, operational VA tests, RCD trip-tests for portable RCDs, anti-surge and RCD protected extension leads and power cords. RCD testing is now a requirement of the UK Code of Practice.

Accessories supplied with all models include a combined earth-bond and insulation test lead, an adaptor for testing 230 V extension leads, a laptop power supply adaptor, and a carry-case for convenient product and lead storage. All instruments also include Download Manager software, to enable data to be converted into a CSV format which can be read directly on a PC using Microsoft® Excel.

Megger PowerSuite software can be purchased to compliment any PAT400, providing full databased asset management and professional electronic certificate generation, providing options for multiple clients and locations.

APPLICATION

There is a legal requirement for any landlord, employer or owner of a place of work or public place, to ensure that all electrical equipment accessible by tenants, employees or the public is maintained in a safe condition, and an acceptable method of ensuring this is by routine electrical testing. This can be performed by electrical contractors, specialist PAT testing organisations,

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maintenance departments, or facilities management companies.

The PAT400 range is suitable for performing portable appliance testing in locations such as hotels, public houses, schools, colleges, nurseries, shops, offices, theatres, banks, restaurants, cafés, sports and leisure facilities, cinemas, factories and hair salons etc. where high volume testing requires that accurate records may be difficult to maintain, or aided by, on-board memory and download to management software. The PAT450 is particularly suitable for use in tool-hire shops where equipment is routinely tested prior to hire, or service workshops where deep disassembly is routine, and will perform a flash test in addition to standard PAT tests.

	PAT410	PAT420	PAT450
SUPPLY			
230 V	■	■	■
Supply measurement	■	■	■
EARTH BOND/CONTINUITY			
200 mA	■	■	■
10 A		■	■
25 A	■	■	■
INSULATION TEST			
250 V	■	■	■
500 V	■	■	■
ALTERNATIVE LEAKAGE TESTS			
Substitute	■	■	■
Differential	■	■	■
Touch current	■	■	■
OPERATION TEST			
VA Measurement	■	■	■
EXTENSION LEAD TEST			
Earth bond	■	■	■
Insulation	■	■	■
Polarity	■	■	■
Portable RCD test	■	■	■
FLASH TEST			
1.5 kV and 3 kV			■
OTHER FEATURES			
Low-profile light weight	■		
Auto test routine	■	■	■
Manual testing	■	■	■
Fuse check	■	■	■
Colour display	■	■	■
Configurable tests times	■	■	■
Selectable pass limits	■	■	■
Lead storage pouch	■	■	■
10,000 record on-board storage	■	■	■
Download to USB memory stick	■	■	■

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SPECIFICATIONS

Electrical supply range

PAT410 230 V ± 10% @ 50/60 Hz
PAT420, PAT450 110 V ± 10% + 110 V ±10% @ 50/60 HZ

Bond test

(10 A and 25 A) (not PAT410)
Open circuit voltage:
9 V a.c. ± 10% ± 0.1 V (Supply: 230 V 50Hz)
Earth bond resistance accuracy:
±5% ±3 digits (0 to 0.49 Ω)
±5% ±5 digits 0.5 to .99 Ω)
Earth bond resistance resolution:
10 mΩ (0 to 1.99 Ω)
Display range: 0 to 1.99 Ω

Continuity

(200mA)
Continuity test voltage:
4.0 V d.c. -0% +10%
Continuity resistance accuracy:
±5% ±3 digits (0 to 0.49 Ω)
±5% ±5 digits 0.5 to .99 Ω)
Continuity resistance resolution:
10 mΩ (1 to 19.99 Ω)
Display range: 0 to 19.99 Ω

Insulation test

(250 V and 500 V)
Insulation resistance accuracy (230 V):
±2% ±5 digits (0 to 19.99 MΩ)
±5% ±10 digits (20 to 99.99 MΩ)
Insulation resistance resolution:
0.01 MΩ
Display range:
0 to 99.99 MΩ

Substitute leakage current

Test voltage and frequency:
40 V a.c. ±10% nominal mains frequency
Leakage current accuracy:
±5% ±5 digits
Leakage current resolution:
0.01 mA
Display range: 0 to 19.99 mA

Leakage current

Test voltage and frequency:
Nominal mains supply
Differential leakage current accuracy:
±5% ±5 digits
Differential leakage current resolution:
0.01 mA
Display range: 0 to 19.99 mA

Touch current test

Test voltage and frequency:
Nominal mains supply
Touch current accuracy:
±5% ±5 digits
Touch current resolution:
0.01 mA
Display: 0 to 10 mA

Operational test

Test voltage and frequency:
Nominal mains supply
VA rating: 230 V 3700 VA
110 V 1800 VA
VA accuracy: ±5% ±10 digits (0 - 99 VA)
±5% ±50 digits (100 VA - 999 VA)
±5% ±100 digits (1000 VA - 3700 VA)
Resolution: 1 VA (0 to 3700 VA)
Display range: 0 to 3990 VA

Ext Lead Test

Tests performed: Bond, insulation and polarity
Polarity test voltage: 12 V
Polarity checks: Lead OK
Live neutral S/C
Live neutral reversed
Live/neutral O/C

Flash test

Flash test voltage:
1500 V a.c. nominal for Class 1
3000 V a.c. nominal for Class 2
Flash test current:
<3.5 mA short circuit @ 253 V primary supply voltage
Flash test breakdown current accuracy:
±5% ±5 digits
Flash test breakdown current resolution:
0.01 mA
Display range:
0 to 3.0 mA

RCD tests

Test voltage and frequency:
Nominal mains supply
Test current accuracy:
-8% to -2% (1/2 x I)
+2% to +8% (1 x I, 5 x I)
Trip time accuracy: ±1% ±5 digits
Trip time resolution: 0.1 ms
Display range: 0 to 1999 ms (1/2 x I)
0 to 300 ms (1 x I)
0 to 40 ms (5 x I)

Fuse Test

Test voltage:
3.3 V
Warning:
Audible beep if fuse is OK

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ORDERING INFORMATION

Description	Order Code
PAT410-BE/FR DLOADING LOW PROFILE	1002-500
PAT410-CH DLOADING LOW PROFILE	1002-458
PAT410-DE	1001-748
PAT410-DE + PROTOKOLLMANAGER SOFTWARE	1001-845
PAT410-IL DLOADING LOW PROFILE	1002-501
PAT410-NL-ES DOWNLOADING LOW PROFILE	1000-747
PAT410-PL DLOADING LOW PROFILE	1002-499
PAT420-CH	1005-128
PAT420-DE	1005-019
PAT450-CH DLOADING 25A BOND+FLASH	1002-459
PAT450-DE	1000-751
PAT450-NL-ES DLOADING 25A BOND+FLASH	1000-750
Optional accessories	
110 V Extension lead adaptor	6220-639
110 V mains lead adaptor	1000-766
415 V adaptor lead (4-pin) to BS1363 (16 A)	1001-769
415 V adaptor lead (5 pin) to BS1363 (16 A)	1001-772
Barcode reader, USB	1001-047
Pass/fail barcode label printer (USB)	1001-046
USB cable	25970-041
Barcode printer label refills (cartridge)	90001-010
Appliance bar-code labels (1-1000)	6121-483
Roll of 1000 FAIL test labels	1001-227
Roll of 1000 PASS test labels	1000-971
PAT accessory pouch	2001-044
PAT test certificate book	1001-299
Screen protector (2)	1002-572
Included accessories	
Printed quick start guide	
Full user guide on CD	
Calibration Certificate	
Screen protector	
Continuity/earth bond lead	1001-233
Extension lead adaptor BS1363	1001-234
Flash test lead	5310-401
Carry case with lead/document pouch	2000-962
Plug adaptor IEC C6 - C13	1001-232

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