PAT310 and PAT350
Portable appliance testers

- **Simple manual or automatic testing**
- **Bond testing at 25 A,10 A and 200 mA**
- **Differential, touch and substitute leakage testing**
- **Full colour display**
- **Tests portable RCDs and extension leads**
- **Pre-set test sequences for Class I, Class II and extension leads**
- **Flash testing at 1.5 kV and 3 kV**
- **Tests to DIN VDE 0701-0702**

DESCRIPTION

An easily portable desktop appliance tester for testing the safety of portable electrical equipment to meet health and safety regulations. The PAT300 series are fully featured testers with dedicated test buttons for direct access to tests. They are designed for customers who do not require the complexity of a fully configurable database of clients and results within the tester but do need a complete range of functions to allow automatic or manual testing of the widest range of electrical assets. There are two products in the range – the PAT310 and the PAT350. The PAT310 is a low-profile, lighter instrument designed for greater portability. The PAT350 performs the same functions as the PAT310, with the addition of high current bond testing and flash-test capability for use in environments such as manufacturing, production or tool-hire shops.

Simple push-button operation make the PAT300s fast and intuitive in use. All regulatory test requirements are supported, including Class I and Class II, IEC power leads, extension leads and full tests for portable RCDs. An automatic mode is available for Class I and Class II testing. In automatic mode, the tests proceed sequentially through bond, insulation and operation, indicating a pass or fail at each test. If a fail occurs, testing is stopped. When manual testing, each test is preceded by a selection screen where the test parameters are selected, such as bond test current, insulation test voltage or leakage test type. These diagnostic buttons provide direct access to any test individually, allowing single tests to be performed following repair or a suspect result.

Accessories supplied with all models include a combined earth-bond and insulation test lead, an adaptor for testing extension leads, and a carry-case convenient for product and lead storage.

APPLICATIONS

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, maintenance departments, or facilities management companies.

The PAT300 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. The PAT350 is suitable for use in tool-hire shops where equipment is routinely tested prior to hire, and will perform a flash test in addition to standard PAT tests.

SPECIFICATIONS

Electrical supply range

230 V a.c. 230 V a.c. ±10%

Supply measurement
Voltage: ±2% ±1 V
Frequency: ±1% ±0.1 Hz

Bond test (PAT350)

Open circuit voltage: 9 V a.c. ± 10% ±0.1 V (Supply: 230 V 50 Hz)
10 A Bond test current:
10 A rms ±20% ± 0.5A into 0.1 Ω
25 A Bond test current:
25 A rms ± 5% ± 0.5 A into 0.1 Ω
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
Bond test nulling: Up to 1.00 Ω
Adjustable test duration:
User selectable from 1 sec to 20 sec

Continuity test

Note:
The continuity test is a DC test performed automatically in both positive and negative directions. The average of the two results is shown.
Continuity test voltage:
4.0 V d.c. -0% +10% (open circuit)
Continuity test current:
200 mA -0% +10% ±5 mA (into 2 Ω load)
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
Continuity test nulling:
up to 9.99 Ω
Test duration: User selectable from 1 sec to 20 sec

Insulation test

Insulation test voltage:
250 V d.c. -0%/+25% open circuit
500 V d.c. -0%/+25% open circuit
(500 V d.c. across 0.5 MΩ)
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 (0.10 to 99.99 MΩ)
Display range: 0 to 99.99 MΩ
Test duration: User selectable from 1 sec to 1 minute

Substitute leakage test

Test voltage: 40 V a.c. ±10%
Test frequency: Nominal mains 50/60 Hz
Leakage current accuracy: ±5% ±5 digits
Leakage current resolution: 0.01 mA
Display range: 0 to 19.99 mA
Test duration: User selectable from 1 sec to 1 minute
Reading corrected to 230 V + 10%

Differential leakage current

Test voltage: Nominal mains 230 V a.c.
Test frequency: Nominal mains 50/60 Hz
Differential leakage current accuracy:
±5% ±5 digits
Differential leakage current resolution:
0.01 mA
Display range: 0 to 19.99 mA

Reading corrected to 230 V + 10%

Touch current test

Test voltage: Nominal mains 230 V a.c.
Test frequency: Nominal mains 50/60 Hz
Touch current accuracy: ±5% ±5 digits
Touch current resolution: 0.01 mA
Display range: 0 to 10 mA
Test duration: User selectable from 1 sec to 5 sec

Reading corrected to 230 V + 10%

Operational test

Test voltage: Nominal mains 230 V a.c.
Accuracy: ±5% ±10 digits (0 to 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 3.99 KVA
Reading corrected to 230 V
Results show load VA

Extension lead test

Test includes insulation and bond tests.
Polarity test voltage: 12 V
Polarity: Lead OK
Live neutral S/C
Live neutral reversed
Live/neutral O/C

Flash test (PAT350)

Flash test voltage: 1500 V a.c nominal for Class I
3000 V a.c nominal for Class II
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
Test duration: User controlled

Portable RCD test

RCD test voltage: Nominal mains 230 V
RCD test frequency: 50 Hz
Test current accuracy: -8% to -2% (½ x I)
+2% to +8% (1 xI, 5 xI)
Trip time accuracy: ±1% ±5 digits
Trip time resolution: 0.1 ms
Display range: 0 to 1999 ms (½ 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

Safety

PAT300 series meet the requirements of IEC 61010-1: 2001
Test leads meet the requirements of IEC 61010-031: 2002
Creepage and clearances for 300 volts to Earth Category II

Operating temperature	10 to +50 ºC
Storage Temperature:	-20 to +60 ºC
Humidity	90% RH @ -10 to +30 ºC
	75% RH @ +30 to +50 ºC

Weight

PAT310 (instrument only)	4.5 kg
PAT350 (instrument only)	5.0 kg

Dimesions

Instrument only:	175 mm (H) x 320 mm (D) x 250 mm (W)
With case	190 mm (H) x 400 mm (D) x 290 mm (W)

ORDERING INFORMATION

Product	Order Code
PAT310-EU	1000-742
PAT350-EU	1000-953
Included accessories	
Printed quick start guide	
Full user guide on CD	
Calibration certificate	
Continuity/earth bond lead + probe (black)	2000-870
Extension lead adaptor (ELA) 230 V SC (CEE7/7)	2000-82
Flash test lead 3.0 KV 3.5 mA (red) (PAT350 only)	5310-401
Carry case with lead/document pouch	2000-962

Product	Order Code
Optional accessories	
Plug adaptor IEC C6 - C13 (3 way 5 A PSU)	2000-551
415 V adaptor lead (4-pin) to SC (CEE7/7) (16 A)	1000-768
415 V adaptor lead (5 pin) to SC (CEE7/7) (16 A)	1000-771
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