PAT300 series
Portable appliance testers



- **Simple manual or automatic testing**
- **User-selectable PASS/FAIL limits**
- **Fast testing - test times selectable from 1s**
- **Earth bond testing at 25 A, 10 A and 200 mA**
- **Tests portable RCDs**
- **Differential, touch and substitute earth leakage testing**

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 PAT320. The PAT320 is identical to the PAT310, but in addition to the 200 mA earth bond test available on the PAT310, provides high-current test capability at 10 A and 25 A. Without the weight and size of the high current earth bond transformer, the PAT310 is lighter with a low-profile case design providing a more convenient instrument for more mobile applications.

Simple push-button operation makes 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 for convenient 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 maintain all electrical equipment accessible by tenants, employees or the public 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.



SPECIFICATIONS

Electrical supply range

240 V a.c. 240 V a.c. ± 10%

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

Bond Test (not available on PAT310)

Open circuit voltage: 9 V a.c. ± 10% ± 0.1 V (Supply: 240 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 0.5MΩ)
Insulation resistance accuracy (230 V):
±2% ±5 digits (0 to 19.99 MΩ)
±5% ±10 digits (20 to 99.99 MΩ)
Insulation resistance accuracy (110 V):
±5% ±5 digits (0 to 10 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 240 V + 10%

Differential leakage current

Test voltage: Nominal mains 240 V a.c.
Test frequency: Nominal mains 50/60Hz
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 240 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 240 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 240 V or 110 V a.c.
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

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 x I, 5 x I)
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 deg C
Storage Temperature: -20 to +60 deg C
Humidity 90%RH @ -10 to +30 deg C
75%RH @ +30 to +50 deg C

Weight

PAT310 (instrument only) 3.0 kg
PAT320 (instrument only) 4.5 kg

Dimesions

PAT310: 120 mm (H) x 320 mm (D) x 250 mm (W)
PAT320: 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-AU Portable Appliance Tester – low profile with RCD	1001-379
PAT320-AU PAT tester with high current bond testing	1000-741
Included accessories	
Continuity/earth bond lead	2000-870
Storage/ carry case w/ lead and document pouch	2000-962
Extension lead adaptor (ELA) AU	2000-883

Product	Order Code
Optional accessories	
Plug adaptor IEC C6 - C13	2000-551
Roll of 1000 PASS test labels	1000-971
Roll of 1000 FAIL test labels	1001-227
PAT accessory pouch (attaches to side of case)	2001-044
415 V adaptor lead (4 pin) to AU (AS/NZ253112) 16 A	1000-769
415 V adaptor lead (5 pin) to AU (AS/NZ253112) 16 A	1000-772

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CERTIFICATION ISO
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