

PAT300 series

Portable appliance testers



- Simple manual or automatic testing
- 120 V 60 Hz operation
- User-selectable PASS/FAIL limits
- Fast testing - test times selectable from 1 s
- Ground bond testing at 25 A, 10 A and 200 mA
- Differential, touch and substitute ground leakage testing
- Tests power cords
- Full color QVGA display

DESCRIPTION

An easily portable bench-top appliance tester for testing the safety of electrical equipment by performing a ground bond test, an insulation test, specific ground leakage tests and operational VA tests to international standards. The PAT320 is a fully featured tester 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 equipment.

Simple push-button operation makes the PAT320 fast and intuitive in use. All regulatory test requirements are supported, including Class I (grounded) and Class II (non-grounded), IEC power cords and extension leads. An automatic mode is available for Class I and Class II testing. In automatic mode, the tests proceed sequentially through bond, insulation and operation (VA), 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

The PAT320 can be used on the production line for final verification of electrical safety prior to export to EU or general sale. When exporting to Europe, it is the European importers responsibility to ensure imported items are safe to European standards. However, any testing performed at the destination can prove very costly for the US manufacturer

when faults are found. Testing at the manufacturing plant ensures electrical safety and provides the opportunity to fix faults and problems prior to shipping and export. For example, a poor ground connection would not normally be picked up during operational testing, and the PAT320 provides an excellent means of simple safety verification.

The PAT320 is also suitable for use in the repair shop. Equipment can be checked on receipt in the shop before the technician powers it up, so ensuring he remains safe – the equipment could be in repair for any reason. Additionally, it can (and perhaps should) be checked prior to despatch to make sure the ground bond remains good, and the phase connections remain isolated from the chassis following repair. This maintains full integrity of the repaired item before the customer receives it back.



SPECIFICATIONS

Electrical supply range

120 V a.c. 120 V a.c. $\pm 10\%$

Supply measurement

Voltage: $\pm 2\% \pm 1 V$

Frequency: $\pm 1\% \pm 0.1 Hz$

Bond test

Open circuit voltage: 9 V a.c. $\pm 10\% \pm 0.1 V$

10 A Bond test current:

10 A rms $\pm 20\% \pm 0.5 A$ into 0.1 Ω

25 A Bond test current:

25 A rms $\pm 20\% \pm 0.5 A$ into 0.1 Ω

Earth bond resistance accuracy:

$\pm 5\% \pm 3$ digits (0 to 0.49 Ω)

$\pm 5\% \pm 5$ digits 0.5 to 1.99 Ω)

Earth bond resistance resolution:

10 m Ω (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:

$\pm 5\% \pm 3$ digits (0 to 0.49 Ω)

$\pm 5\% \pm 5$ digits 0.5 to 19.99 Ω)

Continuity resistance resolution:

10 m Ω (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 M Ω)

Insulation resistance accuracy:

$\pm 2\% \pm 5$ digits (0 to 19.99 M Ω)

$\pm 5\% \pm 10$ digits (20 to 99.99 M Ω)

Insulation resistance resolution:

0.01 M Ω (0.10 to 99.99 M Ω)

Display range: 0 to 99.99 M Ω

Test duration: User selectable from 1 sec to 1 minute

Substitute leakage test

Test voltage: 40 V a.c. $\pm 10\%$

Test frequency: Nominal mains 50/60 Hz

Leakage current accuracy: $\pm 5\% \pm 5$ 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 120 V + 10% a.c.

Differential leakage current

Test voltage: Nominal mains 120 V a.c.

Test frequency: Nominal mains 60 Hz

Differential leakage current accuracy:

$\pm 5\% \pm 5$ digits

Differential leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Reading corrected to 120 V + 10% a.c.

Touch current test

Test voltage: Nominal mains 115/230 V a.c.

Test frequency: Nominal mains 50/60 Hz

Touch current accuracy: $\pm 5\% \pm 5$ 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 120 V + 10% a.c.

Operational test

Test voltage: Nominal mains 120 V a.c.

Accuracy: $\pm 5\% \pm 10$ digits (0 to 99 VA)

$\pm 5\% \pm 50$ digits (100 VA - 999 VA)

$\pm 5\% \pm 100$ digits (1000 VA - 3700 VA)

Resolution: 1 VA (0 to 3700 VA)

Display range: 0 to 3.99 KVA

Reading corrected to 120 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

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 °C

Storage Temperature: -20 to +60 °C

Humidity 90%RH @ -10 to +30 °C

75%RH @ +30 to +50 °C

Weight

PAT320 (instrument only) 4.5 kg

PAT350 (instrument only) 5.0 kg

Dimensions

Instrument only: 175mm (H) x 320mm (D) x 250mm (W)

With case 190mm (H) x 400mm (D) x 290mm (W)

ORDERING INFORMATION

Product	Order Code	Product	Order Code
PAT320-US	1000-366	Optional accessories	
Included accessories		Plug adaptor IEC C6 - C13 (3way 5A PSU)	
Carry case		Continuity/earth bond lead	2000-551
Continuity/earth bond lead	2000-870	Roll of 1000 PASS test labels	1000-971
Storage/carry case w/ lead and document pouch	2000-962	Roll of 1000 FAIL test labels	1001-227
Extension Lead Adaptor (ELA) 120V US	2001-290	PAT accessory pouch (attaches to side of case)	2001-044



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CERTIFICATION ISO
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