

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 PAT320 and the PAT350. The PAT350 is identical to the PAT320, with the addition of 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 product and lead storage.

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, 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 $\pm 10\%$ ± 1 V @ 50 Hz $\pm 10\%$ ± 0.1 Hz
Instrument accuracy cannot be guaranteed when operated on supply frequencies other than those specified above.

Bond test

Open circuit voltage:
9 V a.c. $\pm 10\%$ ± 0.1 V (supply 230 V 50 Hz)
Earth bond resistance accuracy:
 $\pm 5\%$ ± 3 digits (0 to 0.49 Ω)
 $\pm 5\%$ ± 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

Continuity

(200 mA)
Continuity test voltage:
4.0 V d.c. -0% +10%
Continuity resistance accuracy:
 $\pm 5\%$ ± 3 digits (0 to 0.49 Ω)
 $\pm 5\%$ ± 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

Insulation test

(250 V and 500 V)
Insulation resistance accuracy (230 V):
 $\pm 2\%$ ± 5 digits (0 to 19.99 M Ω)
 $\pm 5\%$ ± 10 digits (20 to 99.99 M Ω)
Insulation resistance resolution:
0.01 M Ω
Display range: 0.10 to 99.99 M Ω

Substitute leakage current

Test voltage and frequency: 40 V a.c. $\pm 10\%$ @ Nominal mains frequency
Leakage current accuracy: $\pm 5\%$ ± 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:
 $\pm 5\%$ \pm digits
Differential leakage current resolution:
0.01 mA
Display range: 0 to 19.99 mA

Touch current test

Test voltage and frequency: Nominal main supply.
Touch current accuracy: $\pm 5\%$ ± 5 digits
Touch current resolution: 0.01 mA
Display range: 0 to 10 mA

Operational test

Test voltage: Nominal mains supply.
Accuracy:
 $\pm 5\%$ ± 10 digits (0 to 99 VA)
 $\pm 5\%$ ± 50 digits (100 VA - 999 VA)
 $\pm 5\%$ ± 100 digits (1000 VA - 3700 VA)
Resolution: 1 VA (0 to 3700 VA)
Display range: 0 to 3.99 KVA

Ext 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:

$\pm 5\%$ ± 5 digits

Flash test breakdown current resolution:

0.01 mA

Display range: 0 to 3.0 mA

RCD tests

RCD test voltage and frequency:

Nominal mains supply

Test current accuracy:

-8% to -2% ($1/2 \times I$)
+2% to +8% ($1 \times I, 1.5 \times I$)

Trip time accuracy: $\pm 1\%$ ± 5 digits

Trip time resolution: 0.1 ms

Display range:

0 to 1999 ms ($1/2 \times I$)

0 to 300 ms ($1 \times I$)

0 to 40 ms ($5 \times I$)

Fuse Test

Test voltage: 3.3 V

Warning: Audible beep if fuse is OK

Operating temperature range and humidity 10 to +50 °C

90% RH @ -10 to +30 °C

75% RH @ +30 to +50 °C

Storage temperature range and humidity -20 to +60° C

90% RH @ -10 to +30 °C

75% RH @ +30 to +50 °C

Weight

PAT310 (with packaging) 3.2 kg

PAT320 (with packaging) 4.9 kg

PAT350 (with packaging) 5.5 kg

Dimensions

210 mm (H) x 280 mm (W) x 390 mm (L)

Dimensions (instrument and case)	PAT310 120 mm (H) x 255 mm (W) x 320 mm (L)
	PAT320 155 mm (H) x 255 mm (W) x 320 mm (L)
	PAT320 155 mm (H) x 255 mm (W) x 320 mm (L)
Maximum altitude	2,000 m
IP rating	IP 40
Safety	IEC 61010-1: CAT II 300V
EMC	IEC 61326-1: 2006
	IEC 61326-2-2: 2005.

ORDERING INFORMATION

Description	Order Code	Description	Order Code
PAT310-AU - Low profile with RCD	1001-379		
PAT320-AU PAT tester with high current bond testing	1000-741		
Included accessories		Optional accessories	
Continuity/earth bond lead	1001-233	Plug adaptor IEC C6 - C13	1001-232
Carry case with lead/document pouch	2000-962	Roll of 1000 PASS test labels	1000-971
Extension lead adaptor Australia	1001-236	Roll of 1000 FAIL test labels	1001-227
		PAT accessory pouch	2001-044
		415 V adaptor lead (4 pin) to AU (AS/NZ253112)16A1000-769	
		415 V adaptor lead (5 pin) to AU (AS/NZ253112)16 A1000-772	
		Screen protector (2)	1002-572

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CERTIFICATION ISO
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