

PAT300 series

Portable Appliance Testers



- **Simple manual or automatic testing**
- **230 V and 110 V operation**
- **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**

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 a.c. $\pm 10\%$ ± 1 V @ 50 Hz $\pm 10\%$ ± 0.1 Hz
110 V a.c. $\pm 10\%$ ± 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

(10A and 25A)

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

(200mA)

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

(250V and 500V)

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

Display range: 0 to 19.99 mA

Display range: 0 to 19.99 mA

Leakage current

Test voltage and frequency: Nominal mains supply.

Differential leakage current accuracy:

$\pm 5\%$ ± 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: $\pm 5\%$ ± 5 digits

Display range: 0 to 10 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

Tests performed: Bond, insulation and polarity.

Polarity test voltage: 12 V dc

Polarity:

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 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

Test voltage and frequency:

230 V 50 Hz

Test current accuracy:

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

+2% to +8% ($1 \times I, 5 \times I$)

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 -10 °C to +50 °C

and humidity 90% RH @ -10 to +30 °C

75% RH @ +30 to +50 °C

Storage temperature range

and humidity

-20 °C to +60 °C

90% RH @ -10 to +30 °C

75% RH @ +30 to +50 °C

Weight

PAT310 (with packaging) 3.3kg

PAT320 (with packaging) 4.9 kg

PAT350 (with packaging) 5.5 kg

Dimensions

PAT310 145 mm (H) x 255 mm

(W) x 320 mm (L)

PAT320 175 mm (H) x 320 mm

(D) x 250 mm (W)

PAT350 175 mm (H) x 320 mm

(D) x 250 mm (W)

Dimensions (instrument and case)

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

Maximum altitude

2000 m

IP rating

IP 40

Safety

IEC 61010-1: CATIII 300 V

EMC

IEC 61326-1: 2006

IEC 61326-2-2: 2005.

ORDERING INFORMATION

Description	Order Code	Description	Order Code
PAT320-UK 110 V and 230 V	1000-740		
PAT320-UK 110 V and 230 V	1000-743		
Included accessories for PAT320		Optional accessories	
Carry case		110 V mains lead adaptor	1000-766
Continuity/earth bond lead	1001-233	Plug adaptor IEC C6 - C13	1001-232
Extension lead adaptor BS1363	1001-234	110 V Extension lead adaptor	6220-639
Included accessories for PAT350		415 V adaptor lead (4-pin) to BS1363 (16 A)	1000-767
Carry case		415 V adaptor lead (5 pin) to BS1363 (16 A)	1000-770
Continuity/earth bond lead	1001-233	Screen protector (2)	1002-572
Extension lead adaptor BS1363	1001-234		
Flash test lead	5310-401		

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