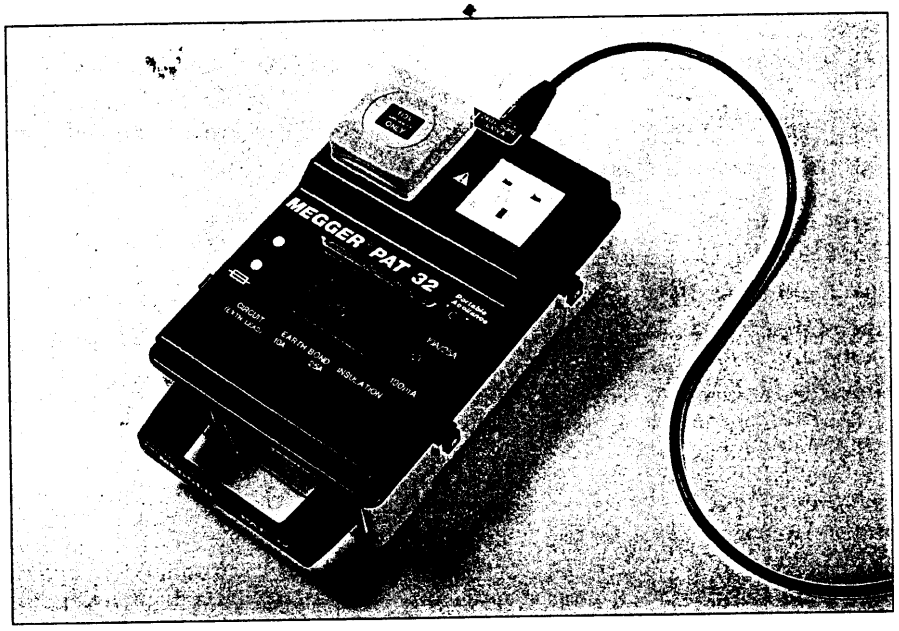

MEGGER® PAT32

- **Wide applications, including the testing of Information Technology (IT) equipment**
- **Easy to use – with range sensitive passbands displayed**
- **Analogue/Digital display – accurate digital readings and rapid response analogue display highlighting fluctuations**

Portable Appliance Tester

DESCRIPTION

The MEGGER® PAT32 Portable Appliance Tester will perform the basic electrical safety tests required for portable appliances and equipment. It can be used to test Information Technology (IT) equipment, domestic appliances, industrial appliances and power tools.

It performs seven tests on an appliance:

- Circuit test
- Fuse check
- Earth continuity test
- 10 A Earth Bond
- 25 A Earth Bond
- Insulation test
- Extension leads (**ELT1** required)

The PAT32 will test appliances and tools rated at 240 V and 110 V a.c. since it is fitted with both BS 1363 and BS 4343/CEE17 appliance test sockets.

The tests are effected by pressing the relevant test switch. The readings from each test are shown on a unique analogue/digital display. The scales for Earth Bond and Insulation are marked with pass bands. This provides a rapid indication of a test pass or failure and allows proper test results to be kept. These records are necessary as part of the appliance's safety monitoring programme.

The instrument is robust, reliable and constructed in a strong plastic case with a moulded carrying handle and a detachable lid. Simple diagrammatic instructions are attached to the inside of the lid for quick reference.

The ELT1 accessory allows extension leads both 110 V, 240 V and IEC mains leads to be tested. It performs Lead Polarity, Earth Bond and Insulation Tests.

TEST SEQUENCE

The tests should be performed in the correct order – starting with the CIRCUIT test. This applies a low voltage across the appliance and checks the d.c. resistance, live to neutral ensuring the relevance of subsequent tests.

FUSE CHECK can be used to check any suspect fuse by placing it on the contacts.

The EARTH CONTINUITY test is a low current test which is used where a higher current Earth Bond test may cause damage to the appliance.

The EARTH BOND test is used for earthed or Class I appliances only and is designed to test the earth lead continuity and the earth bonding to the metal casing of an appliance. The crocodile clip lead supplied with the instrument is connected between the EARTH BOND terminal and the appliance's casing. A choice of two test current levels is provided, 25 A and 10 A. The latter is for use on appliances with light duty cables.

The final test is an insulation test required for both earthed and double insulated appliances. For earthed appliances, a test voltage of 500 V d.c. is established between the mains supply plug live and neutral pins joined together and the earth pin. No additional connection is required. For double insulated appliances, the test voltage is established between the mains supply plug live and neutral pins joined together and earth (which, in this case, is taken to the crocodile clip test lead attached to the EARTH BOND terminal). The clip is attached to the case of the appliance and the test is then performed.

APPLICATIONS

The PAT32 will check the electrical safety of the earthed appliances (BS and IEC Safety Class I) and double insulated appliances (BS and IEC Safety Class II), symbol .

Spheres of use for the PAT32 are:

- Periodic tests of equipment used in factories, offices, local education authorities, hospitals, etc.
- Routine tests before and after hiring electrical equipment.
- Basic tests following equipment repair.
- Tests by manufacturers and distributors.

The instrument may be used to test equipment originally manufactured to a range of specifications including: BS 3456/IEC 335-1, BS 2769, BS 4533, BS 415 and BS 7002.

SPECIFICATIONS

Tests Available
(1) Circuit test
(2) Fuse check
(3) Earth Continuity test
(4) 10 A Earth Bond test
(5) 25 A Earth Bond test
(6) Insulation test
(7) Extension Lead test (**ELT1** required)

Circuit Test

Meter Reading Range: 0 to 9,9 kΩ

Range:	Resolution:
(a) 0 to 1 kΩ	0,01 kΩ
(b) 1 kΩ to 2 kΩ	0,02 kΩ
(c) 2 kΩ to 5 kΩ	0,05 kΩ
(d) 5 kΩ to 9,9 kΩ	0,1 kΩ

Accuracy:
(a) 2,5% of Reading ± 0,01 kΩ
(b) 2,5% of Reading ± 0,02 kΩ
(c) 2,5% of Reading ± 0,05 kΩ
(d) 2,5% of Reading ± 0,1 kΩ

Open Circuit Voltage: 4,5 V d.c.

Short Circuit Current: 1 mA d.c.

Fuse Check

5 V d.c. 0,5 mA Typical

Earth Continuity Test

Range:	Resolution:
(a) 0 to 999 mΩ	1 mΩ
(b) 900 mΩ to 9990 mΩ	10 mΩ

Accuracy
(a) 2,5% of Reading ± 5 mΩ
(b) 2,5% of Reading ± 10 mΩ

Open Circuit Voltage:
Typical 100 mV d.c.

Constant Current (≤ 1 Ω):
Typical 100 mA d.c.

10 A Earth Bond Test

Meter Reading Range: 0 to 1990 mΩ

Range:	Resolution:
(a) 0 to 600 mΩ	1 mΩ
(b) 600 mΩ to 999 mΩ	1 mΩ
(c) 900 mΩ to 1990 mΩ	10 mΩ

Accuracy:
2,5% of Reading ± 5 mΩ
(0 to 600 mΩ range only)

Pass Band Limit: 100 mΩ and 500 mΩ

Open Circuit Voltage:
Typically 3 V rms a.c. 50 Hz

Spec. Point Current:
10 A into 100 mΩ at 240 V
8,7 A into 100 mΩ at 230 V

Short Circuit Current:
Typically 14 A

25 A Earth Bond Test

Meter Reading Range: 0 to 1990 mΩ

Range:	Resolution:
(a) 0 to 999 mΩ	1 mΩ
(b) 900 mΩ to 1990 mΩ	10 mΩ

Accuracy:
(a) 2,5% of Reading ± 5 mΩ
(b) 2,5% of Reading ± 10 mΩ

Pass Band Limit: 100 mΩ and 500 mΩ

Open Circuit Voltage:
Typically 6 V rms a.c. 50 Hz

Spec. Point Current:
Typically 25 A into 100 mΩ (10 A into 500 mΩ)

Short Circuit Current:
Typically 38 A

Insulation Test

Meter Reading Range: 0 to 99 MΩ

Range:	Resolution:
(a) 0 to 10 MΩ	0,1 MΩ
(b) 10 MΩ to 20 MΩ	0,2 MΩ
(c) 20 MΩ to 50 MΩ	0,5 MΩ
(d) 50 MΩ to 99 MΩ	1 MΩ

Accuracy:
(a) 2,5% of Reading ± 0,1 MΩ
(b) 5% of Reading ± 0,2 MΩ
(c) 5% of Reading ± 0,5 MΩ
(d) Indication Only

Pass Band Limit:
2 MΩ (Class I) 7 MΩ (Class II)

Open Circuit Voltage: ≤ 680 V d.c.

Spec. Point Current:
500 V into 2 MΩ

Short Circuit Current:
Typically 2 mA

Extension Lead Test

Polarity Test

Display will indicate:
"YES" if polarity Correct
"POL" if connections crossed
"S.C." if short-circuit L–N
"O.C." if open-circuit L or N
"BAD" if leakage L–N

Earth Bond Test (10 A and 25 A)

Insulation Test

Ranges as the PAT32

Temperature Range

Operation: 5°C to +40°C
Storage: -25°C to + 65°C

Humidity Range

Operation: ≤ 90% RH at 25°C

Safety

The PAT32 meets the requirements of IEC 1010-1(1990) Safety Class I, Installation Category II, Pollution Degree 2, Altitude up to 2000 m.

Supply Voltage

230 V 50 Hz 300 VA (supply voltage not to exceed +10%/-6% of the nominal voltage)

Dimensions

PAT32: 314L x 152H x 206W mm
(12,5L x 6H x 8W in approx.)
ELT1: 123L x 58H x 64W mm
(4,75L x 2,25H x 2,5W in approx.)

Weight

PAT32: 3,75 kg (8,25 lb approx.)
ELT1: 350g (0,75 lb approx.)

ORDERING INFORMATION

Item (Qty)	Order Code
Portable Appliance Tester	PAT32
Included Accessories	
Earth Bond test lead with crocodile clips	6231-043
Accessory Pouch, PVC	6420-089
Operating instruction book	6171-728
Optional Accessories	
Extension lead tester, ELT 1	6111-130
Earth Bond probe, EP 1	6320-225
Safebloc adaptor lead	6331-230
Appliance safety log book, complete	6131-813
Test sheets for log book (pk of 30)	6171-417
Test stickers for log book (pk of 72)	6171-418
Open learning course, "Electricity in the Workplace" & "Portable Appliance Testing"	6131-883
Video on Portable Appliance Testing	6131-999