

PAT 250 series

Handheld portable appliance testers with Bluetooth®



- CertSuite PAT software included (1 year licence*)
- Control of testing from CertSuite PAT
- Save results to the cloud and produce reports quickly
- Simple tick or cross for pass or fail indication
- Battery powered with rechargeable options
- Safe 250 V insulation and leakage test for surge-protected and IT equipment
- Continuity test 200 mA
- Substitute leakage testing
- Mains powered and 10 mA and 30 mA portable RCD lead testing
- Fast testing and report generation
- Tough, rubber armour with built-in front cover and lightweight for portability

DESCRIPTION

The PAT250 series of hand-held portable appliance testers enables simple, fast safety testing in all environments including offices, shops and business units. Its tough, reliable functionality is ideally suited for training organisations with high turnover, intensive courses.

With rubber armoured cases and hardened, scratch-proof glass, the PAT250s are exceptionally tough instruments.

Battery powered operation makes the PAT250s perfect for those locations where an electrical supply is not available, inconvenient or unsafe, especially building sites and warehouses. The PAT250 series conforms to all UK and European requirements for electrical safety testing.

CERTSUITE PAT SOFTWARE

The PAT250 series is supplied with CertSuite PAT as standard (1 year licence, subscription applies after 1 year). With CertSuite PAT, recording PAT test results and producing professional quality test reports is quick and easy. Unlimited reports and jobs are supported.

For more information on CertSuite PAT please visit megger.com or scan the QR code →



*After 1 year a subscription charge applies please see megger.com for further information.

Test groups

Test groups enable the correct sequence of tests to be performed automatically with minimum intervention by the user. This keeps testing simple, reduces test times to a minimum and helps to prevent testing errors.

THE PAT250:

- The PAT250 has additional tests available for testing portable RCDs (PRCDs) of 10 mA and 30 mA.
- Separate tests for continuity, insulation, mains powered leakage testing and SELV measurements can be made using the Quick Test (QT) button.
- Test group pass limits and test duration can be configured by the user.
- Bond lead resistance can be nulled to reduce measurement errors.
- Live circuit measurement is available for testing the mains supply and socket polarity or electrical circuit voltage to 300 V AC.
- Can be used for testing fixed appliances.

Continuity test

Used for measuring the proper bonding of all metal parts of a class I device to the protective conductor.

Tests are performed at 200 mA DC in both polarities to be compliant with international and UK regulation or recommendations. This test is safe to perform on equipment where higher test currents could cause damage.

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Insulation testing

Used for measuring the separation of conductive parts or conductors from earth. This test is usually performed at 500 V dc. The PAT250 series maintains the necessary test voltage down to 0.5 MΩ.

Substitute leakage testing

Substitute leakage testing enables the measurements of AC leakage currents, which could differ significantly from the DC Insulation test results.

Substitute leakage testing is performed at less than 40 V ac. and does not require a mains supply.

Substitute leakage testing is used for measuring protective conductor current and touch current, in addition to an insulation test, or where it is considered an insulation test may damage equipment.

The Substitute leakage test will not operate equipment and so can be used where the operation of the equipment under test is undesirable.

Portable RCD testing (PRCD)

Portable RCDs can be tested using the PAT250SX. There is no need to find a non-RCD protected supply as the PAT150 will not trip external RCDs.

Both 10 mA and 30 mA RCDs can be tested both for disconnection times and the manual test button function.

Separated Extra Low Voltage (SELV) supplies

SELV supplies should be tested to ensure the output voltage does not exceed maximum limits as defined in the international regulations for Extra Low voltage systems. The PAT250SX permits up to 50 V AC measurement, with a PASS or fail indication for SELV.

Differential Leakage (Protective Conductor Current), Touch Current and operational test

The PAT150 includes the facility for mains powered leakage test. This test has the benefit that equipment under test will function during the test sequence.

Battery life

The PAT250SX operates from AA Alkaline or NiMH cells. Battery life is typically four days, based on one hundred and twenty assets per day.

The PAT250SRX can be re-charged with NiMH batteries fitted.

SPECIFICATIONS

Environmental Condition

Operating ambient	20 °C
Humidity	45% rh ± 20 points

Continuity Test

Test voltage	Compliance voltage: +4 V DC -0% / +30% (open circuit)
Test current	Bi-directional +200 mA -0 % + 50 mA (into 2 Ω load)
Continuity accuracy	Resistance: ± 5% ± 3 digits (0 to 19.99 Ω)
Resolution	Resistance 10 mΩ
Display range	0.01 to 19.99 Ω
Continuity	test nulling up to 9.99 Ω
Test time	User selectable from 2 s to 20 s or selected during test to 180 s

Insulation Test

Insulation test	250 V DC -0% +25% open circuit 500 V DC -0% +25% open circuit ≥ 500 V 0% DC across 0.5 MΩ load
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Short circuit/charge current	< 2mA DC
Insulation accuracy	± 3% ± 10 digits (0 to 19.99 MΩ)
Resolution	0.01 mA
Display range	0.10 MΩ to 99.99 MΩ
Test duration	User selectable from 2 s to 20 s or selected during test to 180 s

Substitute Leakage Test

Leakage current	Accuracy ± 5% ± 3 digits
Test frequency	Nominal mains frequency 50 Hz
Test voltage	< 50V ac
Resolution	0.01 mA
Display range	0.10 to 19.99 mA
Test duration	0.01 mA
Display range	User selectable from 2 s to 5 s Reading corrected to 230 V AC

Differential Leakage Current

Test voltage	Nominal supply voltage 230 V AC
Test frequency	Nominal mains frequency 50 Hz
Test accuracy	± 5% ± 3 digits ± 3 uA/A
Resolution	0.01 mA
Display range	0.10 to 19.99 mA
Test duration	User selectable from 2 s to 5 s

Touch Current Test

Test voltage	Nominal mains 230 V AC
Test frequency	Nominal mains 50 Hz
Test accuracy	± 5% ± 3 digits
Resolution	0.01 mA
Display range	0.10 to 3.99 mA
Test duration	User selectable from 2 s to 5 s

SELV Device Test

Test voltage	0 to 300 V AC
Test accuracy	± 3% ± 3 digits
Resolution	0.1 V AC
Display range	0.1 to 300 V AC

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Extension Lead Test

Test voltage	5 V
Polarity	Lead OK Live/neutral shorted Live/neutral reversed Live/neutral open circuit

Extension Portable RCD Test

Test voltage	Nominal mains 230 V
Test frequency	50 Hz
Test current accuracy	+2 % to +9 % (1 x I, 5 x I)
Test accuracy	Trip time $\pm 1 \% \pm 1 \text{ ms}$
Resolution	Trip time 0.01 ms
Display range	0 to 200 ms (1 x I) 0 to 40 ms (5 x I)

Main Supply Test

Frequency measurement range	50 Hz
Test voltage	40 to 300 V AC
Test accuracy	$\pm 3 \% \pm 3 \text{ digits}$
Resolution	0.1 V AC
Display range	40 to 300 V AC

Circuit Test

(Carried out automatically, not available to user)

Test voltage	5 V
Test frequency	Nominal mains 50 Hz
Test current	<100mA short-circuit

Safety

Instrument designed to IEC 61010-1: 2010
Test leads designed to IEC 61010-031: 2008

PAT250

300 V to Earth Category II
Mains fuse protection to 250 V rms AC

EMC

Design to meet IEC 61326-1: 2012 and IEC 61326-2-2: 2005.

Performance standard

BS EN 50678:2020
BS EN 50699:2020

User replaceable fuse	13 A fused mains plug (PAT250-UK only) One F 100 mA 250 V 5x20 mm HBC
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Operating temperature	0 °C to +40 °C
Storage temperature	-20 °C to +60 °C
Humidity	90 % rh @ +10 °C to +30 °C 75 % rh @ +10 °C to +60 °C
Operating altitude	up to 2,000 m
IP rating	IP40 (with front cover closed)

Mechanical

Battery life	Over 1000 full Class 1 tests using 3400 mAh Alkaline battery
Battery type	eight AA LR6 cells 12 V DC (Alkaline cells) 9.6 V DC (NiMH cells)

Weight

PAT250 (instrument)	1300g (45.8 oz)
(shipping)	2795g (98.6 oz)
PAT250SRX (instrument)	1300g (45.8 oz)
(shipping)	2975g (104.9 oz)

Dimensions

Dimensions	Instrument and case 203 (L) x 148 (W) x 78 mm (H) (8 x 5.7 x 3.2 inches) Instrument and packaging 456 (L) x 178 (W) x 89 mm (H) (18 x 7.1 x 3.5 inches)
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Product Selection Table:	UK	Germany	Netherlands Spain Belgium	France Belgium Poland	Switzerland	Australia New Zealand
Connector Interfaces						
Mains test socket	BS1363	CEE 7/4 Schuko	CEE 7/4 Schuko	CEE 7/5 French	Swiss SEV 1011	AS/NZS 3112 (15A)
Power Supply						
AA alkaline/NiMH	■	■	■	■	■	■
Rechargeable	■	■	■	■	■	■
Testing						
Protective Earth Resistance	■	■	■	■	■	■
250V insulation	■	■	■	■	■	■
500 V insulation	■	■	■	■	■	■
Cable test	■	■	■	■	■	■
Live protective conductor current	■	■	■	■	■	■
Live touch current	■	■	■	■	■	■
Substitute leakage	■	■	■	■	■	■
Functional test (part of Live leakage test)	■	■	■	■	■	■
10 mA PRCD	■	■	■	■	■	■
30 mA PRCD	■	■	■	■	■	■
SELV voltage	■	■	■	■	■	■
Lead resistance nulling	■	■	■	■	■	■
Function Keys						
Class 1	■	■	■	■	■	■
Class 2	■	■	■	■	■	■
Lead/cord	■	■	■	■	■	■
PRCD	■	■	■	■	■	■
Single test	■	■	■	■	■	■
LCD Backlight	■	■	■	■	■	■
Setup	■	■	■	■	■	■
On/Off	■	■	■	■	■	■
Standard Accessories						
4m plug lead probe + croc clip	2	2	2	2	2	2
Extension lead adaptor	BS1363	IEC 83:1975 Std C 1b	IEC 83:1975 Std C 1b	IEC 83:1975 Std C 1b	SN SEV 1011	AS/NZS 3112:2000
AC Charger Adaptor						
Mains Supply Cord						
Carry case						

Note: The rechargeable version of the PAT250 has the identifier (R)

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ORDERING INFORMATION

Description	Order Code	Description	Order Code
PAT250SX-UK PAT & SOFTWARE	1016-040	Included accessories for PAT250	
PAT250SX-AU PAT & SOFTWARE	1016-041	Extension lead adaptor	
PAT250SX-CH PAT & SOFTWARE	1016-042	Mains plug test lead	
PAT250SX-DE PAT & SOFTWARE	1016-044	Continuity/earth bond lead	1001-233
PAT250SX-EU PAT & SOFTWARE	1016-045	SELV/mains voltage test lead Red x1	1005-077
PAT250SX-FR PAT & SOFTWARE	1016-046	Carry case 1005-075	
		Included accessories for PAT250SRX	
PAT250SRX-UK PAT & SOFTWARE	1016-047	AC Mains charger – multi-country	1003-436
PAT250SRX-AU PAT & SOFTWARE	1016-048	Optional accessories	
PAT250SRX-CH PAT & SOFTWARE	1016-049	Plug adaptor IEC C6 - C13	1001-232
PAT250SRX-DE PAT & SOFTWARE	1016-050	110 V Extension lead adaptor	6220-639
PAT250SRX-EU PAT & SOFTWARE	1016-051	415 V adaptor lead (4-pin) to BS1363 (16 A)	1000-767
PAT250SRX-FR PAT & SOFTWARE	1016-052	415 V adaptor lead (5 pin) to BS1363 (16 A)	1000-770
		Extension lead adaptor BS1363	1001-234
PAT250SRX-UK-RS PAT & SOFTWARE	1016-053	Extension lead adaptor Schuko	1001-235
PAT250SX-UK-RS PAT & SOFTWARE	1016-054	Extension lead adaptor Australia	1001-236
		Extension lead adaptor Switzerland	1005-081
		Mains plug test lead	6231-601
		Mains plug test lead (CEE 7/7)	1005-078
		Mains plug test lead (AS/NZS 3112)	1005-080

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