

# Quick Start guide (English UK)

## PAT300 Series Portable Appliance Testers

# Megger<sup>®</sup>



### Safety Warnings and symbols used

The following safety warnings and precautions **must** be read and understood before the instrument is used. They must be observed during use.

- For safety, only connect the PAT to a supply that is properly earthed. If in doubt, the supply should be checked by a qualified electrician.
- Do not use the instrument if there are any signs of damage.
- All test leads, probes and clips must be in good order, clean and with no broken or cracked insulation.
- Probes and clips should be held behind the finger guard.
- Test leads not used during a measurement should be disconnected from the appliance tester.
- For dual voltage testers, both sockets can be live simultaneously.
- Only connect one asset to the PAT during testing.
- Tests should be carried out in the order recommended below. An appliance that fails a test should be repaired before further testing is carried out.

### Recommended Sequence:

1. Earth Bond/ Continuity of the protective earth conductor (Class I devices)
2. Insulation test (or earth leakage)

### In addition further tests can be performed

3. Operation test
4. Leakage test

- Only perform an operational test after the earth bond and insulation tests have been completed, as this test operates at mains voltage.
- During testing, ensure no hazard will exist as a result of normal running or under fault conditions.
- During testing the unit under test (asset) should not be touched, other than using the appropriate accessories, as faulty appliances can present a shock hazard.
- Do not touch the exposed parts of test leads during tests as hazardous voltages may be present due to a potentially faulty appliance.
- Do not touch the IEC extension lead socket pins especially during a test, as hazardous voltages may be present due to a potentially faulty appliance
- Assets should not be routinely Flash tested. Where flash testing is required, refer to further guidance on Flash testing, section 4.5 in the user guide.
- Replacement fuses must be of the correct rating and type. Refer to section 6.3 in the user guide.
- The USB connection should only be used by approved service personnel, nothing should be connected to the USB port during testing.
- Only use NiMH rechargeable 9V PP3 battery, do not use a non rechargeable type as this could become dangerous if charged by the instrument.
- Serviceable fuses should only be replaced with those that are suitably rated
- In case of an emergency use an easily accessible power point

### Safety symbols used on the instrument

- Caution: risk of electric shock
- Caution: refer to accompanying notes. When displayed at the start of an insulation test, warns that a hazardous voltage may exist at the test lead probes
- Equipment complies with the relevant EU Directives
- Fuse
- HV test lead in unlocked position
- HV test lead in locked position
- Battery type fitted
- DO NOT connect to 230 V supply

**Battery function** - A 9 V PP3 rechargeable NiMH battery is supplied to allow fast restart should the PAT be unplugged and reconnected to an electrical supply in less than 5 minutes.

### Battery replacement

**Warning:** Do not switch the instrument on with the battery cover removed or test leads connected.

### Only use NiMH rechargeable batteries.

1. Switch off the instrument and disconnect the instrument from any electrical circuits.
2. Remove the battery cover.
3. Remove the old battery and refit a new one, observing the terminal polarity.
4. Replace the cover and retaining screw.

### Fuse replacement

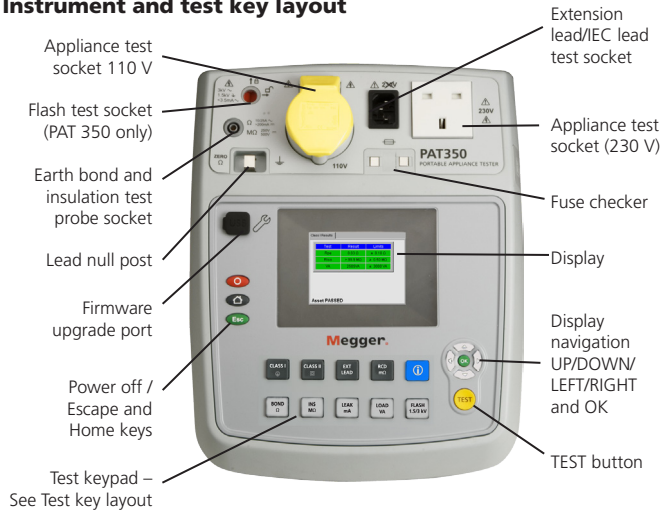
**Warning:** Do not switch the instrument on with the fuse cover removed or test leads connected.

1. Switch off the instrument and disconnect (the instrument) from any electrical circuits.
2. Remove the fuse cover.
3. Replace the blown fuse with the correct type and rating.
4. Replace the fuse cover.

## Getting started

**NOTE: Do not connect any equipment until the PAT tester has been switched on and passed a self test.**

### Instrument and test key layout



**Note:** The PAT320 does not include the Flash test option.

## Test key layout

### Test groups summary



### Test group 1 to 5 .....Description

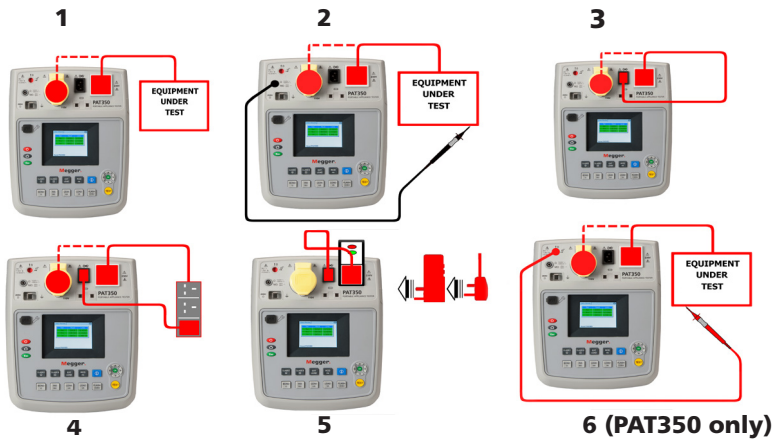
- 1 **Class I test** ..... For testing assets with an earth return conductor
- 2 **Class II test** ..... For testing assets without an earth return conductor
- 3 **IEC lead and** ..... For testing extension leads and IEC type power leads  
**Extension lead test** ..... (found on computers, kettles etc)
- 4 **RCD tests** ..... For testing Plug-in RCDs and extension leads fitted with RCDs
- 5 **Information**..... Provides technical support details

### Individual tests 6 to 10

- 6 **Bond  $\Omega$**  .....Performs an earth bond/continuity test at 200 mA, 10 A or 25 A
- 7 **INS  $M\Omega$**  .....Performs an insulation test at either 250 V or 500 V
- 8 **LEAK mA** .....Performs an earth leakage test
- 9 **LOAD VA** .....Performs a RUN test and measures the power drawn
- 10 **1.5 kV/3 kV** .....Performs a flash test at the required voltage

# Testing Assets

## Connection options for 230 V equipment



Note: 110 V equipment connects to the 110 V socket. The PAT must be supplied from 110 V to test 110 V appliances. An optional adaptor is available to allow the fixed lead of the PAT to be connected to a 110 V socket.

## Test options – Class I, Class II, RCDs, IEC leads and extension leads

All tests assume the PAT is operating in AUTO mode. For manual mode and test options refer to the full user manual.

TEST options	Tests run:	Connection required:	TEST options:	Tests run:	Connection required:	TEST options:	Tests run:	Connection required:
<b>CLASS I</b>			<b>RCD</b>			<b>LOAD VA</b>		
	BOND	(2)		$\frac{1}{2} \times I$	(5)		Load test	CLASS I CLASS II
	INS	(1)		$1 \times I 0^\circ$				(1) (2)
	LOAD			$1 \times I 180^\circ$				
	LEAK		$5 \times I 0^\circ$					
			$5 \times I 0^\circ$					
<b>CLASS II</b>			<b>INS mΩ</b>			<b>LEAK mΩ</b>		
	INS	(2)	Select Class/voltage and supply type	Insulation	CLASS I CLASS II	Select leakage type and Class type	Leakage current	CLASS I CLASS II
	LOAD	(1)		250 V	(1)		I-diff	(1)
	LEAK (Touch)	(2)		500 V	(2)		I-touch	(2)
							I-sub	
<b>IEC LEAD</b>			<b>BOND Ω</b>			<b>FLASH</b>		
	BOND	(3)	Select test current	Earth continuity	CLASS I CLASS II	Select test voltage and Class type	1500 V	CLASS I CLASS II
	INS			25 A	(1)		3000 V	
	Polarity			10 A	(2)		Flash test	(6) (6)
				200 mA	(1) (2)			
<b>EXT LEAD</b>								
	BOND	(4)						
	INS							
	Polarity							

**Warning:** Flash testing is a destructive test. Repetitive use can cause damage to the equipment. Flash testing should not be used for routine testing.