

# Quick Test

Safety with Simplicity



microPAT  
user manual

# microPAT Calibration

Your microPAT is calibrated for twelve months from the date of purchase.

Have your microPAT re-calibrated with Quick Test any time during the twelfth month and the calibration will be valid for a full twelve months from the due date.

Contact [calibration@quick-test.biz](mailto:calibration@quick-test.biz) for details.

# PAT Test Training

The Quick Test training team have successfully trained thousands of people with all levels of experience.

We provide training in a professional and friendly manner.

Contact [training@quick-test.biz](mailto:training@quick-test.biz) for details

## Contents

Contents	-	-	-	1
Introduction	-	-	-	2
Features	-	-	-	2
In-service Inspection & Testing				2
Overview	-	-	-	3
Getting Started	-	-	-	4
Accessories	-	-	-	4
Charging	-	-	-	4
Battery Indication	-	-	-	4
Controls	-	-	-	5
Results Display	-	-	-	5
Switched On Indicator	-	-	-	5
Tests	-	-	-	6
Test Table	-	-	-	6
Identifying Class 1 and Class 2				7
Testing a Class 1 Appliance				7
Testing a Class 2 Appliance				8
Testing an Extension Lead				9
Testing an IEC Lead	-	-	-	10
User Cal Check	-	-	-	10
110V & 3-Phase Equipment				11
Specifications	-	-	-	12
Regulatory Information	-	-	-	12

For your future reference please record your tester serial number:

<b>MPAT -</b>					
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Issue 1

## **Introduction**

The microPAT Portable Appliance Tester provides the following features in an attractive compact unit:-

- Testing of Class 1 and Class 2 Appliances
- Testing of IEC Leads
- Testing of Extension Leads

It uses high tech electronics to ensure accurate and reliable operation while being extremely simple and user friendly.

## **Features**

In addition to carrying out the standard tests, the microPAT includes a number of features:-

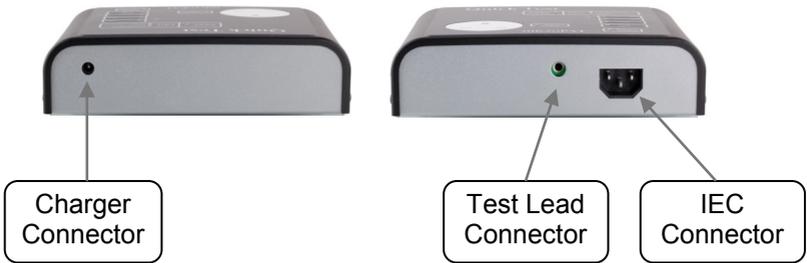
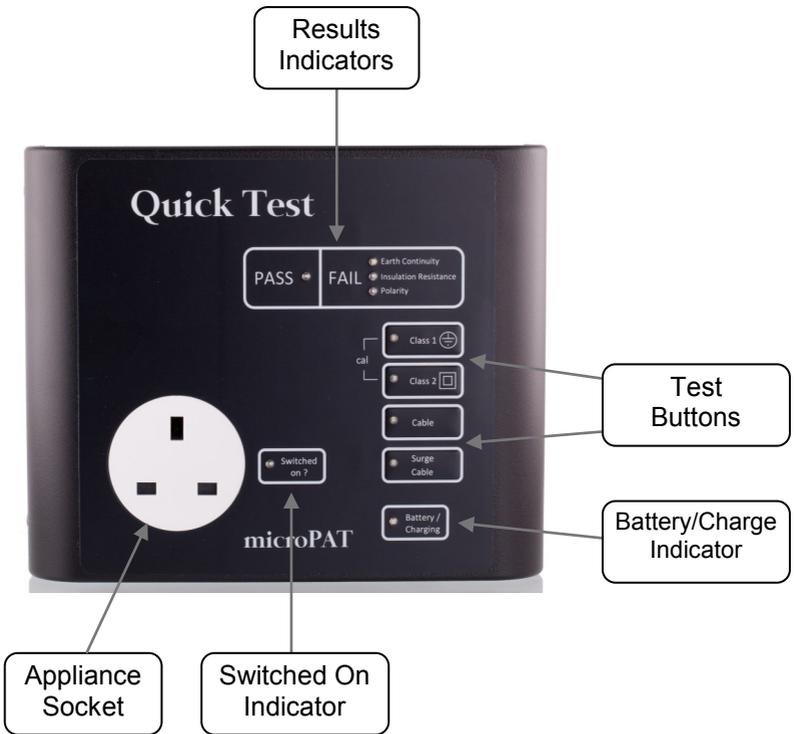
- Additional 250V insulation test for surge protected extension leads
- Tests different lengths of extension leads
- Appliance 'switched on' check
- User calibration check

## **In-service Inspection & Testing**

Always carry out a full visual inspection of the appliance before undertaking any tests. Although the microPAT is easy to operate, the HSE recommend training to correctly carry out a regime of PAT testing. Training with Quick Test will include guidance on what to look for when carrying out a formal visual inspection, how to operate a PAT tester and how often to carry out formal visual inspection and tests on appliances in different environments.

**Please contact Quick Test to arrange your training.**

# Overview



## Getting Started

### **WARNING**

Under no circumstance must mains voltage be connected to the microPAT

## Accessories

The microPAT is supplied with the following accessories:-

- Charger
- Test Lead Set
- Short IEC Lead ( used for testing extension leads )

## Charging

The microPAT must only be charged with the supplied charger. It is supplied partly charged but we suggest you charge your tester for at least 1 hour to boost the charge before using for the first time.

Your MicroPAT tester will perform in excess of 2000 tests per full battery charge. It can also be used while plugged into the charger.

## Battery Indicator

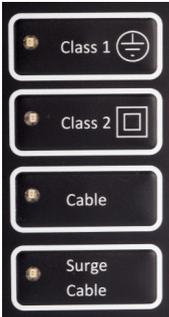
The Battery/Charging indicator will flash green for the first hour when connected to the charger. This is a fast charge period. After this the indicator will be a steady green. To fully charge the microPAT it needs to be charged for 24 hours. It is ok to leave it connected to the charger.



If an incorrect charger is connected the indicator will flash red and green.

During testing if the battery is low, the indicator will flash red. When the battery is too low for the microPAT to operate correctly the indicator will be steady red and the test will stop.

## Controls



The microPAT is very simple to operate. The only controls are four buttons used to select the required test.

To operate, simply press and release the appropriate test button.

The indicator next to the test button will flash amber while the test is being performed.

The test results are displayed for ten seconds after the test is completed, the microPAT then shuts down.

## Results Display



When the test is complete the results appear on the results display.

If all the required tests pass, the green PASS indicator will light up.

If any of the required tests are a fail, the corresponding red FAIL indicator will light up.

Additionally the indicator next to the test button will be green or red.

A new test can be started as soon as the results are being displayed, there is no need to wait until the microPAT has shut down.

## Switched On Indicator



Any appliance switch must be in the 'on' position during testing.

When testing Class 1 or Class 2, the microPAT will attempt to determine if the appliance is switched on.

If it is unable to detect the appliance is switched on, the 'Switched on ?' indicator will flash red. If the appliance is then switched on within five seconds the test will continue.

However because of the design of some appliances it is not always possible for the tester to determine if it is switched on. In this case pressing the corresponding test button will continue the test immediately.

## Tests

The microPAT carries out three different types of test. The actual tests carried out depend on the equipment connected to the tester.

### Earth Continuity

The earth continuity test measures the electrical resistance from the earth pin of the mains plug to an earthed point on the appliance. This has to have a very low electrical resistance to provide safe earth protection.

### Insulation Resistance

The insulation resistance applies a high voltage ( 500V ) to the live and neutral connections. This is then used to measure the electrical resistance of the appliance to earth, or any exposed metal part. This resistance has to be very high to protect the user.

### Insulation Resistance - Surge Protected Extension Leads

The microPAT features an option to perform this test at 250V, this avoids false fail indications when testing surge suppressed extension leads.

### Polarity

This is used for extension leads and IEC leads. It checks that there is correct connection between the live and neutral conductors through the lead.

## Test Table

Test Selected	Earth Continuity	Insulation Resistance	Polarity
Class 1	Y	500V	N
Class 2	N	500V	N
Cable	Y	500V	Y
Cable Surge	Y	250V	Y

## Identifying Class 1 and Class 2

Class 1 appliances use an earth connection as a means of protection.

Class 2 appliances do not use an earth connection. They are frequently referred to as 'double insulated'.

Class 2 appliances display the 'double box' symbol.



Class 2 Symbol

### Testing a Class 1 appliance



1. Plug the test lead into the tester
2. Plug your class 1 appliance into the socket on top of the tester
3. Connect the crocodile clip or probe to some exposed metal on the appliance
4. Press the Class 1 button

If the appliance is not switched on, the ' Switched on? ' indicator will flash to prompt you to do so. If the appliance is then switched on the tester will proceed with the test. If it is not possible to switch the appliance on, press the Class 1 button again to proceed with the test. The Class 1 test button will flash amber while the test is underway.

When the test is finished, either the green PASS indicator will light up, or the appropriate red FAIL indicators will light up. The Class 1 button will also be green or red.

If the Class 1 appliance has no accessible metal part (including fixing screws), then test as Class 2.

## Testing a Class 2 appliance



1. Plug the test lead into the tester
2. Plug your class 2 appliance into the socket on top of the tester
3. Connect the crocodile clip or probe to any exposed metal on the appliance
4. Press the Class 2 button

If the appliance is not switched on, the ' Switched on? ' indicator will flash to prompt you to do so. If the appliance is then switched on the tester will proceed with the test. If it is not possible to switch the appliance on, press the Class 2 button again to proceed with the test. The Class 2 test button will flash amber while the test is underway.

When the test is finished, either the green PASS indicator will light up, or the appropriate red FAIL indicators will light up. The Class 2 button will also be green or red.

## Testing an Extension Lead



1. Plug the extension lead into the socket on top of the tester
2. Plug the IEC end of the short IEC lead into the IEC socket on the front of the microPAT
3. Plug the 13A plug end of the short IEC lead into the first socket of the extension lead
4. Press the Cable button, or Surge Cable button if the extension lead is surge protected

The Cable or Surge Cable test button will flash amber while the test is underway.

When the test is finished, either the green PASS indicator will light up, or the appropriate red FAIL indicators will light up. The test button will also be green or red.

The test must be repeated for ALL sockets on the extension lead.

If the extension lead has an earth connection, but the reading is high because the lead is exceptionally long, the green PASS indicator will light up, however the Earth Continuity FAIL indicator will flash amber. In this case the extension lead should only be used in exceptional circumstances where the risks are clearly understood.

## Testing an IEC Lead

An IEC ( kettle ) lead is tested in exactly the same way as an extension lead.

1. Plug the 13A plug end of the IEC lead into the socket on top of the tester
2. Plug the IEC end of the IEC lead into the IEC socket on the front of the microPAT
3. Press the Cable button

The Cable test button will flash amber while the test is underway.

When the test is finished, either the green PASS indicator will light up, or the appropriate red FAIL indicators will light up. The test button will also be green or red.

## User Cal Check

In order to ensure that PAT testing equipment operates correctly, the IEE Code of Practice for In-service Inspection & Testing of Electrical Equipment states that *'The accuracy of a test instrument should be verified and recorded annually or in accordance with the manufacturer's instructions.'* The microPAT should be formally calibrated annually. Please contact Quick Test to arrange calibration.

While formal calibration is required on an annual basis, the IEE recommend that PAT testing equipment is checked on a regular basis to confirm correct operation.

The microPAT incorporates a unique feature to perform this.

1. Plug the 13A plug end of the short IEC lead into the socket on top of the tester
2. Plug the IEC end of the short IEC lead into the IEC socket on the front of the microPAT
3. Press both the Class 1 and Class 2 buttons simultaneously

The Class 1 and Class 2 buttons will both flash amber and all three FAIL indicators will flash red, but will turn off as each test passes. If the Cal check passes the green PASS indicator will light up as well as the Class 1 and Class 2 buttons.

## **110V and 3-Phase Equipment**

110V and 3-Phase equipment is tested in exactly the same way as any other equipment.

The only additional requirement is the use of appropriate adapters to connect to the microPAT.

**Please contact Quick Test for details.**

## Specifications

### Earth Continuity Test

Current	Approx 120mA
OC Voltage	5V
Tolerance	5% +/- 10mΩ
Limits:	
Class 1	<=200mΩ
Normal Ext	<=300mΩ
Long Ext	<=640mΩ

### Insulation Resistance Test

Test Voltage	500V / 250V
SC Current	1mA
Tolerance	5%
Limits:	
Class 1 & Cable	>=2MΩ
Class 2	>=4MΩ

### Supply

Voltage	12V +/-5%
Current	400mA max

## Regulatory Information



The microPAT is produced by a registered WEEE producer:  
Registration number WEE/HB3434XT.

This product should not be disposed of with household waste, it should be handed over to an authorised collection site for recycling waste electrical & electronic equipment.

LVD	EN 61010
EMC	EN 55011

# **Need Labels? Accessories?**

Quick Test can supply tested labels, adapters, and spares for your microPAT.

Contact [sales@quick-test.biz](mailto:sales@quick-test.biz)

# **Warranty Information**

Quick Test warrants your microPAT against defects in materials and workmanship for a period of one year from the date of purchase.

This warranty covers only those defects which arise as a result of normal use of the product, and does not apply to improper use, modification, or maintenance.

This warranty does not affect your statutory rights.

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[www.quick-test.biz](http://www.quick-test.biz)