

# **PAC500 PLUS**

## **PORTABLE APPLIANCE CHECKER**

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## READ INSTRUCTIONS FOR USE

Due to the potential hazards associated with any electrical circuit it is important that a user is fully familiar with instructions covering the capabilities, applications and operations of the instrument.

The user should ensure that all reasonable safety procedures are followed and if any doubt exists should seek advice before proceeding.

## INTRODUCTION

The PAC500 has been designed to provide a safe and simple means of checking the major electrical safety features of mains powered portable appliances. Earth continuity and insulation resistance is checked.

The front panel of the instrument is divided into 3 zones, indication, control and connector.

The indication window is translucent red plastic and covers 4 neon indicators. Two indicators show the condition of the earth bond, pass or fail, while the other two show the condition of the insulation between the wiring and earth.

The bond test is performed once only, a short time after pressing the button. This minimises the possibility of any damage occurring in a defective appliance. To re-test, release the test button then press again.

The insulation test is applied all the time the push button is pressed to allow the probe to be applied to all isolated metalwork on class 2 appliances.

The connector output does not have mains available and is only for test purposes.

## OPERATING INSTRUCTIONS

### WARNING

**The tests performed by this instrument involve high voltages. Do not touch the appliance or clip lead while the test is in progress or for 30 seconds after completing the test sequence.**

### TO TEST PORTABLE APPLIANCES

- A. Plug the PAC500 into a correctly wired 230V 50Hz supply.
- B. Plug the appliance into the socket outlet on the PAC500.
- C. Connect the test lead to the PAC500 socket and apply test clip to the exposed metalwork.
- D. Depress and hold down the test button.
- E. Allow one second for testing and display to stabilise.
- F.

<i>Correct Test Results</i>		
	Class I (Earthed)	Class II (Double Insulated)
<u>Earth Bond</u>	PASS	FAIL
	PASS	PASS
<u>Insulation</u>		

Any other test results suggests a defective appliance.

- G. Repeat test for each area of exposed metalwork.
- H. Release test button after each test. Disconnect PAC500 from mains after testing is complete.

Class 2 equipment is marked with a double square symbol and does not require an earth connection. All unmarked equipment should be assumed to be Class 1 and must pass both tests.

If in doubt consult a qualified person.

### **TO TEST LEADS**

A. Check the lead polarity first. For an IEC lead, plug the lead into the IEC socket and power the lead from the mains outlet. For an extension lead, power the lead from the mains outlet and use an IEC lead to connect an extension lead socket to the IEC socket on the tester.

Observe the orange neons:

Correct Wiring Neon only = Polarity OK

Wiring Fault Neon = Phase & Neutral reversed

Both Neons = Earth Disconnected

Note: If Earth and Neutral are reversed, the extension lead will pass the above neon indicator tests but will fail the Earth Bond and Insulation tests.

B. To check the Earth Bond and Insulation of the lead. For an IEC lead, loop the lead between the IEC socket and the mains socket on the tester. For an extension lead, plug the lead into the mains socket of the tester. Then connect an IEC lead between the IEC socket of the tester and an outlet socket on the extension lead.

With the tester powered from its own power cord press the button and observe the Earth Bond and Insulation indicators both should indicate Pass. Any other indication and the lead has failed the test.

### **SPECIFICATION**

Mains input voltage      230V RMS  $\pm$  6% 50/60 Hz

Fuse Rating:              T3.15A

Insulation nominal test voltage is 500VDC  $\pm$  10%.

Insulation between live and neutral joined and earth connection (also probe clip) pass level greater than 2 Mohms.

Earth bonding between socket earth connector and probe tip greater than 0.3 ohms must fail, less than 0.2 ohms must pass.

Test current can reach 25 amps. This specification is valid at 240V mains supply, small variations will occur if the supply voltage varies.

Calibration performed at nominal 20°C.

### **MAINTENANCE**

It is recommended that the PAC500 is checked for accuracy, calibration and correct operation at regular intervals. It is also recommended that a simple check test is carried out prior to and after testing. This check test proves the earth bond operation only.

This may be performed by operating the instrument without an appliance connected and without the test lead connected to the PAC.

Test results should show PASS for insulation and FAIL for earth bond.

Repeat the test with the test lead inserted into the PAC and the clip in contact with the earth pin. The test results should show PASS for both earth bond and insulation.

NOTE: This test does not eliminate the need for calibration at regular intervals.

In the event of the test unit requiring maintenance it should be returned to Seaward (address below) for repair. Unless the instrument is covered by

the guarantee (see section below) a charge will be made for this service.  
Details are available on request.  
Before use ensure the instrument is clean and dry. Check the condition of the mains cable and instrument case.  
Avoid storage in damp conditions and excessive temperature variations.  
Seaward reserve the right to alter specification without notice.

#### **WARRANTY & REPAIR**

Should this instrument require repair or calibration within the U.K., it should be returned to:

Seaward Electronic Limited  
Bracken Hill  
South West Industrial Estate  
Peterlee  
Co. Durham  
SR8 2SW  
England  
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[sales@seaward.co.uk](mailto:sales@seaward.co.uk)  
[calibration@seaward.co.uk](mailto:calibration@seaward.co.uk)

#### **OVERSEAS**

If the instrument owner resides outside the U.K. he may either return the instrument directly to Seaward at Peterlee, or to his local sales agent, a list of whom can be obtained from Seaward. It is important that a copy of the invoice and packing note are sent by airmail to clear the product through customs

Estimated repair charges (where appropriate) and freight charges will be advised to the owner before work is commenced.

#### **ACCESSORIES REPLACEMENT PARTS**

Record Cards	91B 037
Cable Assy.	159A 003