

AC Outlet Analyser and Wrist Strap Tester Installation, Operation and Maintenance



Made in the
United States of America



Figure 1. Charleswater [99142](#) AC Outlet Analyser and Wrist Strap Tester

“Wrist straps should be tested periodically. The frequency of testing, however, is driven by the amount of usage, wear and ESD risk exposure that can occur between tests. For example, what is the quantity of product handled between test periods?”

Typical test programs recommend that wrist straps that are used daily should be tested daily. However, if the products that are being produced are of such value that a guarantee of a continuous, reliable ground is needed then continuous monitoring should be considered or even required.” (CLC/TR 61340-5-2 user guide wrist strap clause 4.7.2.4.4 test frequency)

The AC Outlet Analyser and Wrist Strap Tester is available in the following models:

Item	Input Voltage	Plug
99142	220VAC	UK
99149	220VAC	Europe



Figure 2. Charleswater [99149](#) AC Outlet Analyser and Wrist Strap Tester

Packaging

- 1 AC Outlet Analyser and Wrist Strap Tester
- 1 Certificate of Calibration

Installation

Plug the tester into an AC outlet. The Outlet Pass LED will illuminate green if the outlet's wiring is correct and the path to earth ground via the equipment grounding conductor (green wire) is intact. The tester will alarm and Outlet Fail LED will illuminate red if either condition is not met.

Operation

1. Fit the wristband snugly onto your wrist and attach the wrist cord to it.
2. Connect your wrist cord to the wrist strap jack located on the face of the tester.
3. Touch and hold the metal test plate on the tester to perform the test. The green Test Pass LED will illuminate if the wrist strap contains adequate current limiting resistance and continuity from their skin to earth ground. Failure is indicated by a non-illuminated Test LED.

The tester may also be used to check the sleeve-to-sleeve conductive path integrity of ESD protective garments.

Description

The Charleswater AC Outlet Analyser and Wrist Strap Tester is an easy-to-use, low cost, plug-in tester. It is designed to confirm the proper orientation of hot, neutral and protective earth ground. The product can also be used as a wrist strap tester per IEC 61340-5-1 clause A.1.

Calibration

The AC Outlet Analyser and Wrist Strap Tester is calibrated to NIST traceable standards. Calibration may be performed to ensure that the tester is operating within limits. We recommend annual calibration of our testers.

TESTING THE WRIST STRAP TESTER

A. LOW FAIL

Connect a 675 kilohm resistor @ 5% tolerance between the Wrist Strap Test Jack and the Test Plate. The Wrist Strap Test LED will momentarily illuminate then turn off. This test confirms the LOW FAIL point.

B. LOW PASS

Connect a 825 kilohm resistor @ 5% tolerance between the Wrist Strap Test Jack and the Test Plate. The Wrist Strap Test LED will remain illuminated until the resistor is removed from the Test Plate. This test confirms the LOW PASS point.

C. HIGH PASS

Connect a 32 megohm resistor @ 5% tolerance between the Wrist Strap Test Jack and the Test Plate. The Wrist Strap Test LED will remain illuminated until the resistor is removed from the Test Plate. This test confirms the HIGH PASS point.

D. HIGH FAIL

Connect a 40 megohm resistor @ 5% tolerance between the Wrist Strap Test Jack and the Test Plate. The Wrist Strap Test LED should not illuminate. This test confirms the HIGH FAIL point.

TESTING THE AC OUTLET ANALYZER

NOTE: The following procedure should only be done by someone familiar with voltage hazards. This procedure will work for 220VAC as long as the neutral and ground are referenced. 220VAC produced with out of phase 110VAC-Ground-110VAC will produce a FAIL result.

Isolate the ground plug from the tester by inserting it into a 3 to 2 plug adapter.

A. PASS OUTLET

Connect a 5 kilohm resistor @ 5% tolerance between the supply ground and tester ground. The PASS LED should remain illuminated until the resistor is removed. This test confirms the PASS point for the neutral-to-ground resistance.

B. FAIL OUTLET

Connect a 12.5 kilohm resistor @ 5% tolerance between the supply ground and tester ground. The FAIL LED should remain illuminated until the resistor is removed. This test confirms the FAIL point for the neutral-to-ground resistance.

Specifications

Input Voltage:

220VAC \pm 15%

Current Drain:

< 10mA

Operator Resistance Limits (nominal):

750 kilohms - 35 megohms

Test Voltage, Open Circuit:

27 VDC (nominal)

Long Term Drift:

< .1% / decade

Dimensions:

5.1 cm x 7.6 cm x 5.1 cm (Item [99142](#))

5.0 cm x 10.1 cm x 4.1 cm (Item [99149](#))

Operating Temperature:

0° to 40°C

Limited Warranty, Warranty Exclusions, Limit of Liability and RMA Request Instructions

See the Charleswater Warranty -

<http://www.charleswater.co.uk/LimitedWarranty.aspx>