

FEATURES

- RS PRO surface ESD tester
- Powered by 9 V battery
- Comes with 10 LED indicator lights, automatic test voltage selection and built-in 15-second timer for easy on-site usage
- Complies with EN 61340-5-1

RS PRO Surface ESD Tester

RS Stock No.: 821-1264



RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

This RS PRO Surface ESD (Electrostatic Discharge) tester is fitted with built-in parallel electrodes for a quick test of material surface resistivity. Two 4 mm plug sockets and an electrode selection switch allow the connection of external 2.27 kg electrodes to measure surface resistance point to point (Rp-p) or resistance to protective earth ground (Rg).

Resistance is indicated via a row of ten LEDs. As the electrification period is important when measuring surface resistance or resistivity, a 15-second timer has been fitted within the checker. The unit is fitted with an automatic test voltage selection the test voltage will switch from 10 V to 100V should the measured resistance exceed 1×10^5 ohms.

General Specifications

Equipment Type	Surface ESD Tester
Test Point	Surface
Test Range	exceed 1×10^5
Display Type	LED
Test Accuracy	\pm One Decade
Applications	Sensitive electrical and electronic components

Kit Contents

Quantity	Item Name
1	Surface Resistance/Resistivity Checker
1	9V Battery

Electrical Specifications

Power Source	Battery
Supply Voltage	9V PP3 cell, preferably Alkaline
Test Voltage	10V to 100V

Mechanical Specifications

Dimensions	70mm x 130mm x 32mm
Depth	32mm
Height	130mm
Width	70mm
Mass	5.9kg

Approvals

Compliance/Certifications	CE
Complies with EN 61340-5-1	Yes
Standards Met	EN 61340-5-1





Instructions

- There are 2 tests that can be performed for working surface matting tests (“Rp-p” resistance Point to Point, and “Rg” Resistance to ground)
- It is recommended using a 2-.27kg cylindrical external electrode for all tests
- For “Rp-p” point to point connect the external electrodes to the checker with the leads provided and place the 2 probes on the surface of the matting about 10 inches apart if possible. Push and hold down the test button, the LEDs will flash for about 15 seconds and when it finds a stable reading the LEDs will stop flashing and stabilise on one value – this is the value of the surface point to point resistance.
- For “Rg” resistance to ground, take 1 lead out of an external probe and plug to a protective earth ground (usually an EBP plug). Test by holding the test button until the LEDs stop flashing and give a stable value. This is the value of the matting to resistance to ground.

Description

The RS Surface Resistance/Resistivity Checker is a portable battery powered tester fitted with built in parallel electrodes that allows a quick test of material surface resistivity. Two 4mm plug sockets and an electrode selection switch allow the connection of external 2.27 kilogram electrodes measure surface resistance point to point (Rp-p) or resistance to protective earth ground (Rg).

Packaging

Remove the test unit from the carton and inspect for shipping damages.

Each 821-1264 unit should include the following:

- 1 Surface Resistance/Resistivity Checker
- 1 9V Battery

ESD protective products should be tested:

- A. Prior to installation as product qualification for listing in user's ESD control plan. Measuring resistance of working surfaces (including storage racks and trolleys), flooring, seating, and garments.
- B. During initial installation
- C. For compliance verification of installed products as part of EN 61340-5-1 clause 5.2.3 Quality responsibilities In addition: Per EN 61340-5-2 clause 9.4 "When a new EPA is established, or an existing EPA is reconfigured, it should be thoroughly checked by the ESD coordinator and a certificate ... issued."

Features and Components

Resistance is indicated via a row of 10 LED's. As the electrification period is important when measuring surface resistance or resistivity, a 15 second timer has been fitted within the checker. The resistance indication LED's will flash during resistivity/resistance measurement and the correct LED will latch at the end of the timer, giving the tested material resistivity or resistance. This unit is fitted with an automatic test voltage selection; the test voltage will switch from 10 V to 100V should the measured resistance exceed 1×10^5 ohms. The checker is fitted with two sockets so that external electrodes can be used. To do so, connect the electrode to the checker sockets using leads fitted with 4 mm plugs and flick the switch to the position "external probes". At this time the meter's internal parallel electrodes are disabled, allowing the unit to be laid on any type of surface without influencing the resistance

measurement. A battery low indicator will inform the user when the battery needs replacing. Do not use when the battery low indicator is on. It is recommended that any battery triggering the battery low indicator is properly discarded as battery leakage could occur and damage the unit. Care must be taken when handling this checker; it is recommended that the checker be lifted off the surface to be tested and placed on the next area for test rather than sliding the checker along

the surface. This will considerably reduce wear to the internal parallel electrodes. The instrument is CE compliant (i.e. meets European directive on EMI).

What is Resistance and Resistivity?

Theoretically Resistivity is 10 times greater than Resistance, i.e. a material that measures 10^7 ohms Rp-p, Surface Resistivity should measure 10^8 ohms. Ref: ANSI/ESD STM11.11 section 12.0 Conversion to Resistivity states, "When it is appropriate to convert a resistance obtained by this test method to an equivalent resistivity in ohms per square, multiply the resistance measurements obtained by this method by 10. The conversion factor of 10 is derived from the geometry of the electrode assembly." No conversion is required with the RS Surface Resistance/Resistivity Checker. The Checker will latch Surface Resistivity within one decade of accuracy using the internal parallel electrodes, and will display Surface Resistance using the external 2.27 kilogram electrodes.

The unit of measurement is surface resistance ohms for all the EN 61340-5-1 Table 3 EPA requirements ESD control items, not resistivity. Per EN 61340-5-2 clause 5, “point-to-point resistance has been discussed, rather than the surface and volume resistivity which was found in previous standards and reports. This change has been made to cater for nonhomogeneous materials, which are becoming increasingly common in these applications, as well as ease of measurement.”

Resistance in an EPA according to EN 61340-5-1

Resistance below 1×10^5 ohms: the material is conductive. Resistance greater or equal to 1×10^5 ohms and less than 1×10^{11} ohms is static dissipative. Resistance of 1×10^{11} ohms or greater the material is insulative.

Specifications

Power Source: Passive device, no power source

required

Accuracy: \pm one decade

Weight: 5.6 kg before packaging

Dimensions: 70mm x 130mm x 32mm

Power supply: 1 x 9 volt PP3 cell, preferably alkaline