

TECHNICAL BULLETIN TB-3063

Concentric Ring Probe Installation, Operation and Maintenance



Figure 1. Desco [50005](#) Concentric Ring Probe

Description

The Desco [50005](#) Concentric Ring Probe is an instrument to be used in conjunction with a resistance meter, such as the Desco [19787](#) Digital Surface Resistance Meter, to measure surface resistance per ANSI/ESD STM11.11 the test method listed in Packaging standard ANSI/ESD S541 for surface resistance of planar materials.

The Concentric Ring Probe (Ref: ANSI/ESD STM11.12) can measure the volume resistance of planar materials using a flat conductive metal plate (not included).

The Concentric Ring Probe may be used for the resistance measurements of ESD packaging including static shielding and other bags.

The Desco Concentric Ring Probe is compatible with the following Desco Surface Resistance Meters:

Item	Description
19787	Digital Surface Resistance Meter Kit
19788	Digital Surface Resistance Meter
19784	Analog Surface Resistance Meter Kit
19786	Analog Surface Resistance Meter
19640	Surface Resistance Checker

Resistivity and Resistance

Per ANSI/ESD STM11.11 section 12.0 "CONVERSION TO RESISTIVITY, 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 ten. The conversion factor of ten is derived from the geometry of the electrode assembly. NOTE: Conversions to resistivity may not be valid for materials that are laminated, plated or metallized with conductive materials. This fact should be understood when users of this test procedure are required to satisfy specifications given in "ohms/square."

Repeatability

Per ANSI/ESD STM11.11 section 4.0 "REPEATABILITY, This test method has been shown to have a repeatability of approximately one half order of magnitude" in controlled environments.

Packaging

- 1 Concentric Ring Probe
- 1 BNC / Banana Jack Adapter

Operation

1. Connect the Concentric Ring Probe to a resistance meter using the included BNC / banana jack adapter and the meter's test leads.
2. Place the material to be tested on an insulative surface.
3. Place the Concentric Ring Probe on top of the material to be tested.
4. Take a resistance measurement using the resistance meter.



Figure 2. Using the Concentric Ring Probe with the Desco Digital Surface Resistance Meter



Figure 4. Using the Concentric Ring Probe with the Desco Surface Resistance Checker



Figure 3. Using the Concentric Ring Probe with the Desco Analog Surface Resistance Meter

Specifications

Weight	5.8 lbs (2.6 kg)
Dimensions	2.8" diameter x 6.5" height (7.1 cm diameter x 16.5 cm height) (with BNC / banana jack adapter)
Outer Probe Diameter	2.5" (63 mm)
Inner Probe Diameter	1.2" (30 mm)
Insulation Resistance Between Probes	>1 x 10 ¹² ohms @ 500V
Probe Resistance of Carbon Pads	<100 ohms at low test voltage

Limited Warranty

Desco expressly warrants that for a period of one (1) year from the date of purchase Desco Concentric Ring Probes will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a credit for purchase of replacement Desco Concentric Ring Probes, or, at Desco's option, the Concentric Ring Probe will be repaired or replaced free of charge. If product credit is issued, the amount will be calculated by multiplying the unused portion of the expected one year life times the original unit purchase price. Call our Customer Service Department at 909-627-8178 (Chino, CA) or 781-821-8370 (Canton, MA) for a Return Material Authorization (RMA) and proper shipping instructions and address. Please include a copy of your original packing slip, invoice, or other proof of date of purchase. Any unit under warranty should be shipped prepaid to the Desco factory. Warranty replacements will take approximately two weeks.

If your unit is out of warranty, call our Customer Service Department at 909-627-8178 (Chino, CA) or 781-821-8370 (Canton, MA) for a Return Material Authorization (RMA) and proper shipping instructions and address. Desco will quote repair charges necessary to bring your unit up to factory standards.

Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

Limit of Liability

In no event will Desco or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.