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DESCO TECHNICAL BULLETIN TB-2004

Touch Tester - Operation, Installation and Calibration Instructions

Pass Range: 750 kilohms to 10 megohms



Made in the
United States of America



Figure 1. Model 19350 Wrist Strap Tester / Common Point Ground

Description

Per ANSI/ESD S20.20, test equipment is required to enact Compliance Verification Plan Requirement. Test equipment shall be selected to make measurements of appropriate properties of the technical requirements that are incorporated into the ESD program plan.

The Touch Tester is an "on demand" wrist strap tester that also functions as a common-point ground for two wrist straps and a mat. When the wearer of a wrist strap touches the metallic surface of the Touch Tester, a path for current flow is completed from the wearer's skin, through the wrist strap, to the metallic surface to ground. This action will cause the green "test good" LED to light (and the optional audible signal to sound) as long as the resistance of the circuit path is between 750k ohms and 10 megohms.

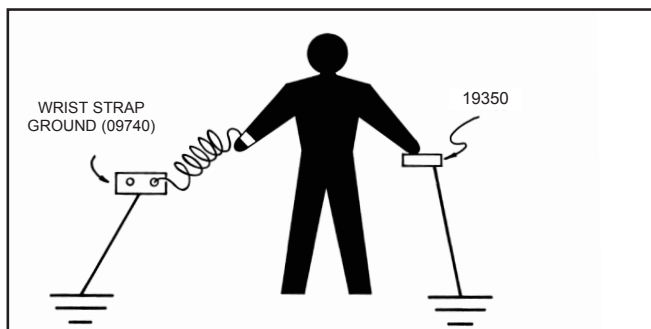


Figure 2. 19350 Testing Circuit

The wrist strap being tested may be plugged directly to the tester or any convenient common ground point. The wrist strap will test properly as long as both the Touch Tester and the wrist strap are connected to a common ground. Therefore, any number of wrist strap wearers may use the Touch Tester if they can conveniently reach it. Desco item 09740 provides two banana jacks for grounding wrist straps.

When the Touch Tester and a 09740 are tied to a common ground (utility ground) wrist straps plugged into the 09740 can also be tested.

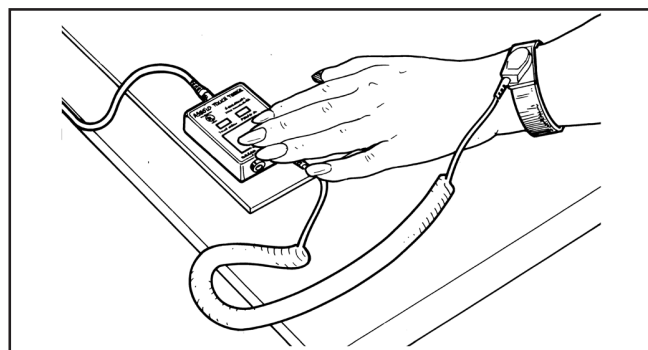


Figure 3. Testing a wrist strap

Installation

The Touch Tester is easily attached at the workstation. A snap stud at ground reference is provided on the back of the unit, allowing it to be snapped directly to a mat. In this configuration, the unit provides a common-point ground for both the mat and the wrist strap, and is easily accessible for frequent testing. A piece of adhesive backed hook and loop fastener is provided for the user as an alternative mounting method preventing the tester from rotating.

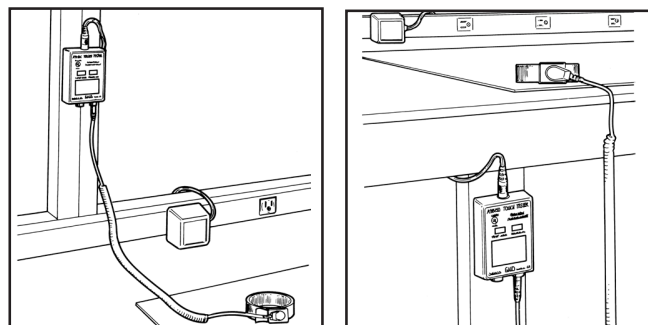


Figure 4. Installation of Touch Tester

The hook-and-loop type fastener also allows fast mounting to smooth surfaces. This method is convenient for mounting the tester on a workstation leg or on an upright support for shelving or lights. (Note - the snap does not have to be connected for proper grounding).

Equipment Rating:

AC Adapter rated 120 Vac, 60 Hz, 6 W.
Ground Touch Tester rated 6.5 Vdc, 50 mA.

Environmental Conditions

- Suitable for indoor use only at altitudes not exceeding 6500 ft. (2Km)
- Temperature range of 41°F (5°C) to 104°F (40°C)
- Maximum relative humidity of 80% up to 88°F (31°C) decreasing linearly to 50% @ 104°F (40°C)
- Pollution degree 2 per IEC 664
- Installation Category II

CAUTION: If this equipment is used in a manner not specified by the manufacturer, the protection provide by the equipment may be impaired.

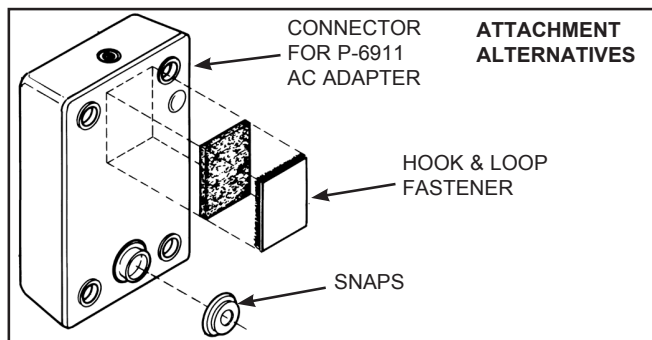


Figure 5. Attachment alternatives

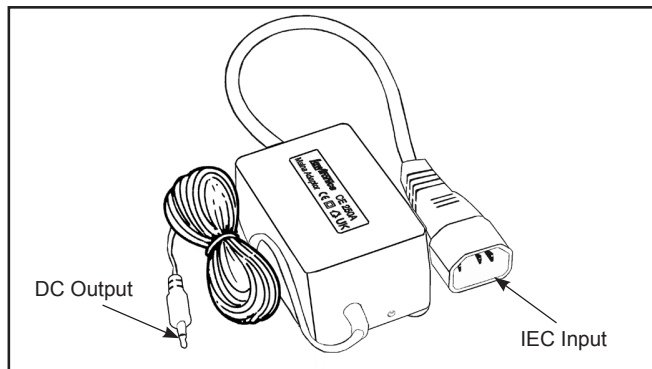


Figure 6. AC Adapter, 220 Volt

Operation

When the Touch Tester's power supply is plugged into a grounded outlet the red LED will be on, indicating that the unit is powered. The utility ground is internally connected to the .395" (10mm) snap stud on the back of the unit and to the 2 banana jacks at the bottom edge of the tester.

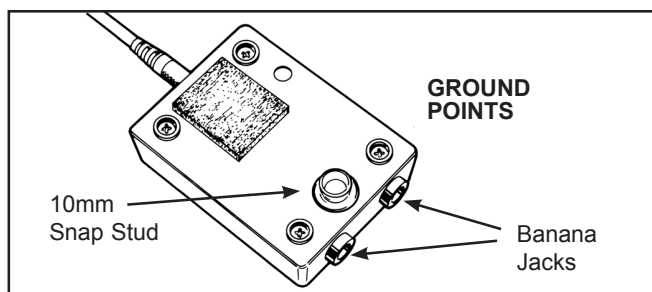


Figure 7. Ground points

A wrist strap is plugged into one of the banana jacks or into any common grounding point. When the wearer of a wrist strap touches the metallic test surface, the green "test good" LED will light if the operator-to-ground resistance is between 750k ohms and 10 megohms.

Proper Ground

The integrity of the utility ground must be tested before the Touch Tester is plugged in. The Touch Tester utilizes the "green wire" ground as the static ground. Each outlet must be tested for proper grounding prior to use. Outlets can become ungrounded over time due to corrosion, wear, or vibration.

Desco recommends the [98132](#) AC Outlet Analyzer & Wrist Strap Tester when testing electrical outlets for proper grounding and wiring. See Technical Bulletin [TB-2099](#) for more information.

Audible Option

If desired, the Touch Tester will augment the visual "test good" indicator with an audible signal. In the "on" position, the tester will beep when the green "test good" LED is on, thereby allowing the operator to frequently test the wristband and cord without having to look at the tester.

To enable/disable the signal, a slide switch is accessible through the hole on the back of the unit. First, unplug the power supply. Actuate the switch with a small probing tool, being careful to avoid internal damage.

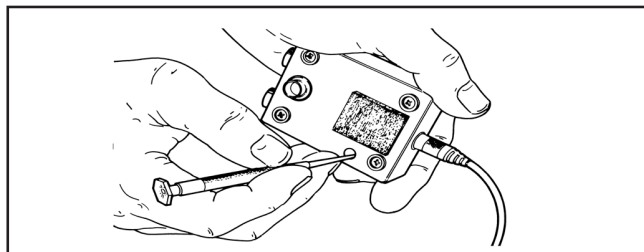


Figure 8. Accessing the audible signal

Calibration

We recommend annual calibration of our testers. The model [19350](#) is calibrated to NIST traceable standards. Calibration may be performed to ensure that the tester is operating within limits.

Desco offers a calibration unit that is specifically designed to simplify the calibration procedure. This unit is sold as item [07010](#). The [07010](#) comes calibrated to NIST traceable standards. Ask for Technical Bulletin [TB-2039](#) for detailed procedure to calibrate the [19350](#).

Specifications

Operating Voltage	6 VDC
Operating Temperature	32°F to 104°F (0 to 40°C)
Wrist Strap Test Limit:	750 kilohms to 10 megohms
Test Accuracy:	±20%
Test Voltage	4 VDC
Dimensions	2.9" x 2.1" x 0.8"
Weight	0.1 lbs

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

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