

## SmartLog Pro® SE Installation, Operation and Maintenance



Made in the  
United States of America



Figure 1. EMIT 50170 SmartLog Pro® SE

### Description

The EMIT SmartLog Pro® SE verifies the functionality of an operator's wrist strap and footwear, logs the test results, and controls access to an ESD Protected Area.

The default test limits are set to:

Wrist Strap: 750 kilohms to 10 megohms

Footwear: 750 kilohms to 35 megohms

All operator test activity is logged into the SmartLog Pro® Manager Web App to meet the ANSI/ESD S20.20 requirements for an ESD Control Plan. The app is installed onto one server and accessed via a web browser. Each log entry includes operator identification, test results, resistance measurements, time, temperature, and humidity. Operator identification and access control is initiated with the embedded HID OMNIKEY® proximity reader, barcode scanner or touchscreen keypad. Access control to an ESD Protected Area can be further enforced by using the relay terminal and connecting to an electronic door lock or turnstile to grant access only to those who have passed their pre-defined ESD tests and are authorized to be in the ESD Protected Area.

The five-inch color touchscreen on the SmartLog Pro® SE provides an intuitive user interface for easy test operation and a clear indication of test results. The operator average test time is 2 seconds. Internal flash memory allows operators to continue using the tester even if network failure were to occur. All test transactions download to the database once the network connection is restored.

The SmartLog Pro® SE is calibrated to NIST traceable standards.



### SmartLog Pro® Manager Web App

SmartLog Pro® Manager automates the collection of ESD personnel grounding tests and maintains records for a Compliance Verification Plan as required by ANSI/ESD S20.20. It includes functions for tracking employee leave time, shift and department assignments, and ESD training accreditation. SmartLog Pro® Manager generates automated reports that may be e-mailed to track short term and long term corrective actions. Test limits and test parameters (wrist strap only, footwear only, wrist strap and footwear, etc.) may be customized with the web app to meet special requirements.

SmartLog Pro® Manager is only compatible with the SmartLog Pro® SE, and it is required for every SmartLog Pro® SE system installation. Contact EMIT Customer Service to schedule an installation session.

See technical bulletin [TB-6605](#) for more information.

### ESD Association Information

For more information on ESD Control Plan requirements, please visit the ESD Association website at [esda.org](http://esda.org).

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# System Overview

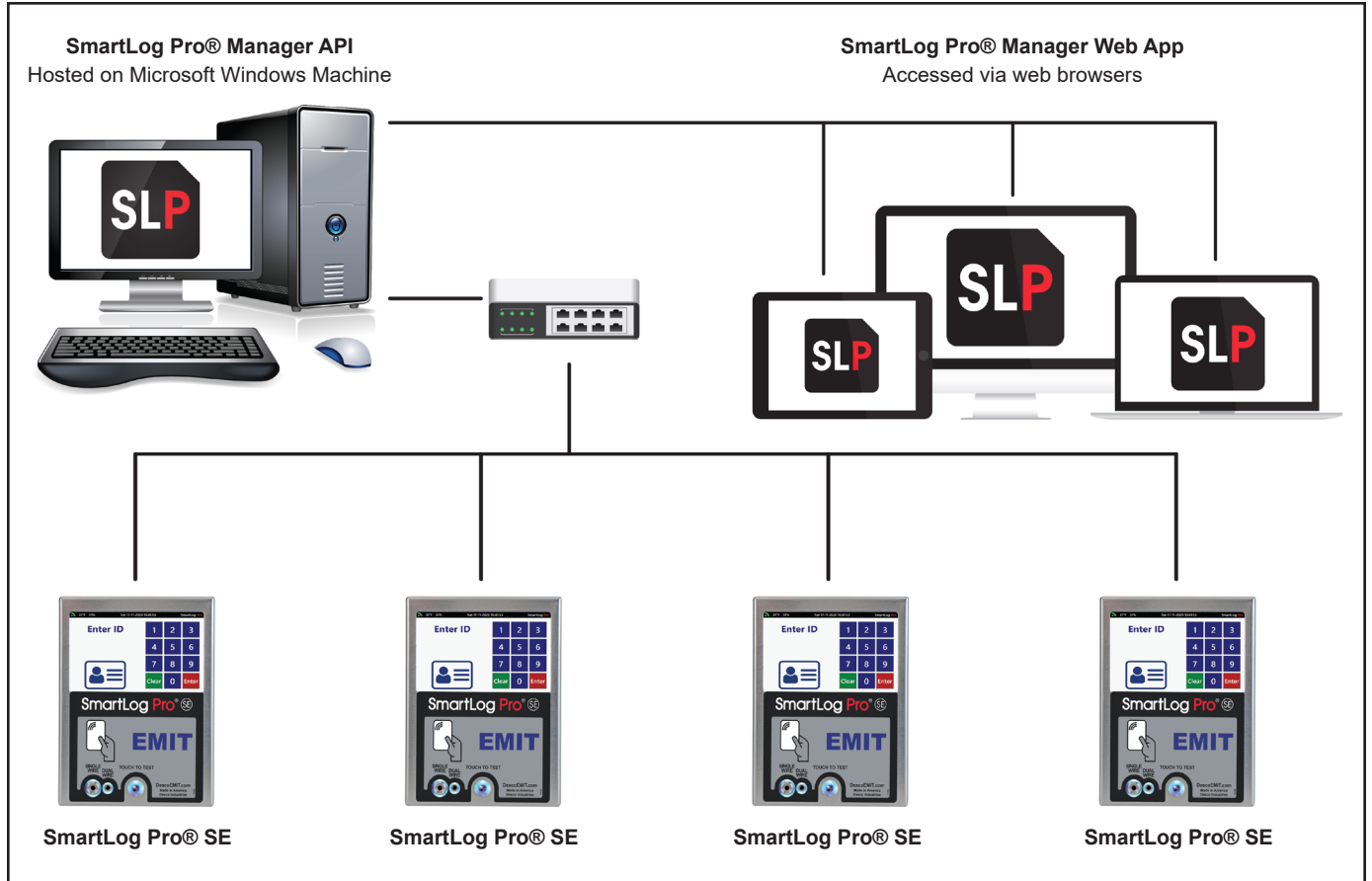


Figure 2. SmartLog Pro® SE and SmartLog Pro® Manager system overview

## Items and Accessories

Item	Description
50170	SmartLog Pro® SE
50172	SmartLog Pro® Manager Web App
50173	SmartLog Pro® SE with Motorized Turnstile, 100-120 VAC
50174	SmartLog Pro® SE with Motorized Turnstile, 220 VAC
50416	Stand
50783	Turnstile Mounting Kit
50755	ESD Glove Test Fixture
50756	Contactless Test Switch
50424	Limit Comparator for Testers
50784	5-Pound Electrode for Limit Comparator
50785	Power Adapter, 5VDC, with interchangeable plugs
50786	Replacement Dual Foot Plate
50787	Replacement Foot Plate Cable
50788	Handheld QR Code Scanner, USB

## Packaging

### 50170 SmartLog Pro® SE

- 1 SmartLog Pro® SE
- 1 Mounting Bracket
- 1 Dual Independent Foot Plate
- 1 Power Adapter, 5VDC 3.0A center positive, with interchangeable plugs (North America, UK/Asia, Europe)
- 1 Foot Plate Cable, 6.5 feet
- 1 Ground Cord
- 1 Thumb Screw
- 2 Mounting Anchors
- 2 Mounting Screws
- 2 Zip Ties
- 1 Plunger and Spring Assembly for 10 mm Wrist Cord Adapter
- 1 Certificate of Calibration

# Features and Components

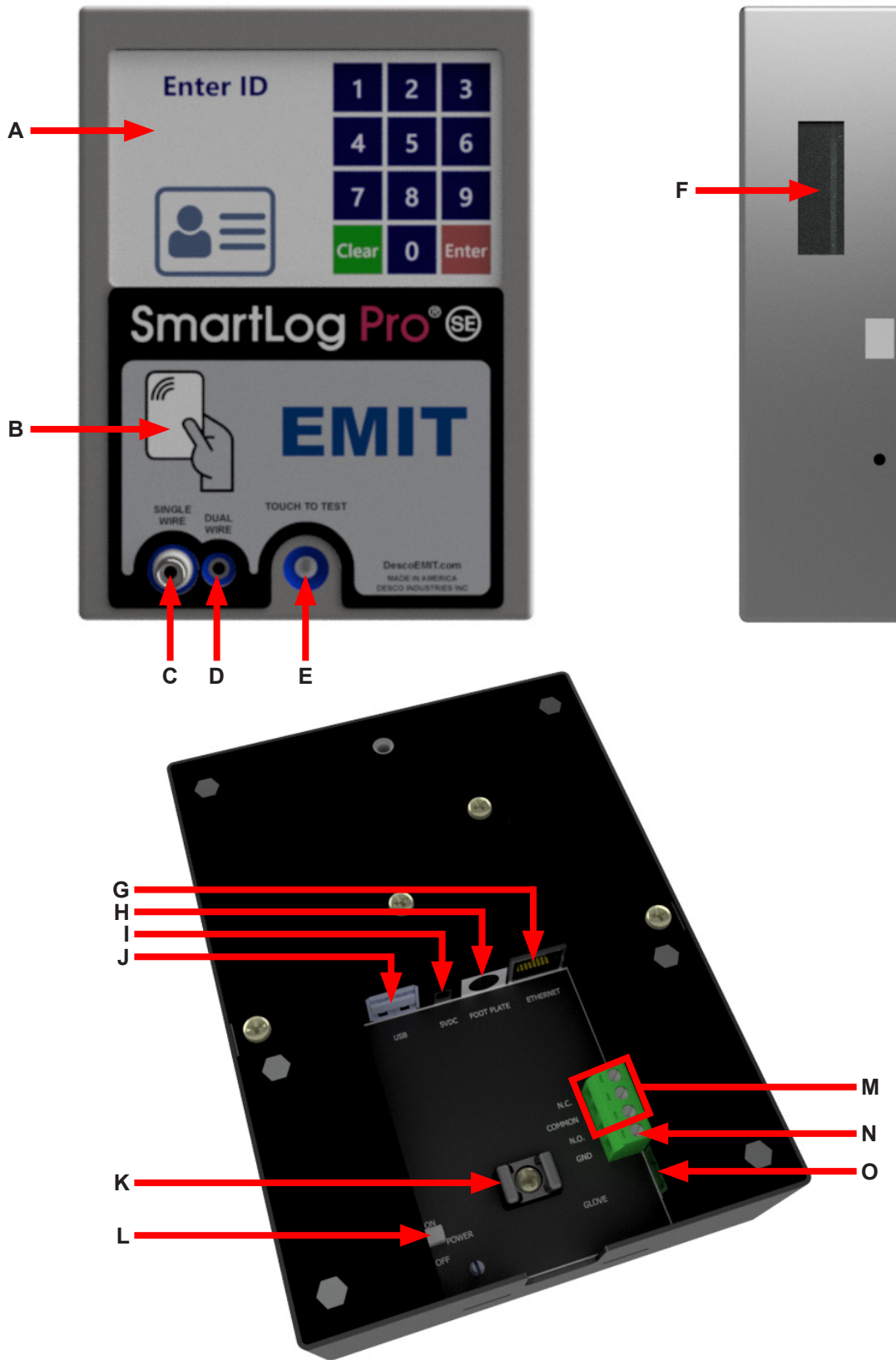


Figure 3. SmartLog Pro® SE features and components

EMIT - 3651 Walnut Avenue, Chino, CA 91710 • (909) 664-9980 • Website: [DescoEMIT.com](http://DescoEMIT.com)

**A. Touchscreen Display:** Displays the keypad, time, date, temperature, humidity, command prompts, test results and settings.

**B. Embedded HID OMNIKEY® Proximity Reader:** Users can begin the test by holding a proximity badge in front of the proximity reader symbol. The HID OMNIKEY® reader is compatible with the following badge formats: HID Prox®, Indala Prox, MIFARE® Classic, MIFARE DESFire® EV1, iCLASS®.

Contact EMIT Customer Service if a different proximity badge format is to be used.

**C. Single-Wire Wrist Strap Jack:** Connect the single-wire wrist cord here to test.

See “10 mm Wrist Cord Adapter” on page 7 if using single-wire wrist cords with a 10 mm snap termination.

**D. Dual-Wire Wrist Strap Jack:** Connect the dual-wire wrist cord here to test.

**E. Solid-State Test Switch:** Place and hold your finger here to begin the test.

**F. CCD Barcode Scanner:** Reads Code 39 and 128 barcode symbologies by default. Other barcode symbologies are available upon request.

**G. Ethernet Jack:** Provides communication to the SmartLog Pro® SE over a network. See “Network Setup” on page 8 for more information.

**H. Foot Plate Jack:** Connect one end of the foot plate cable here and the other end to the dual foot plate.

**I. 5VDC Power Jack:** Connect the included power adapter here to power the SmartLog Pro® SE.

**J. Dual USB Ports:** Used for EMIT certified external readers and accessories.

**K. Cable Tie Mount:** Use the included zip ties to secure all cables and cords connected to the SmartLog Pro® SE.

**L. Power Switch:** Slide the switch to the top position to turn ON the SmartLog Pro® SE. Slide the switch to the bottom position to turn OFF the SmartLog Pro® SE.

**M. Relay Terminal:** Integrates with electronic door locks, lights, buzzers, etc. See “Relay Terminal” on page 8 for more information.

**N. Ground Terminal:** Secure the tinned wire termination of the included ground cord to this terminal. Connect the ring terminal termination of the cord to equipment ground. This connection will remove any static charge from the user before the test.

**NOTE:** Failure to correctly ground the SmartLog Pro® SE may result in damage not covered under warranty.

**O. ESD Glove Test Fixture Port:** Used for connecting the EMIT 50755 ESD Glove Test Fixture. See [TB-6586](#) for more information.

## Installation

### Hardware Setup

If the SmartLog Pro® SE is located near a restroom, sink or other water source, operators will need to be instructed to thoroughly dry their hands before testing. Wet hands may cause inaccurate test results and damage to the tester.

1. Connect the ground cord, foot plate cable, Ethernet cable and power adapter to the SmartLog Pro® SE.
2. Route all cables through the U-shaped opening located at the bottom of the SmartLog Pro® SE and secure them to the cable tie mount with the included zip tie.
3. Connect the ground cord's ring terminal to a known ground point. Connect the foot plate cable to the foot plate. Verify that the Ethernet cable is connected to your network.
4. Connect the power adapter to an appropriate power outlet, and power the SmartLog Pro® SE by sliding its power switch to the ON position. The display will turn on, and the boot sequence will initiate. “Scan or Enter ID” will display on the SmartLog Pro® SE after the boot sequence has completed. The blue LEDs will continuously cycle around the test switch when the ESD tester is on standby.
5. Use the included screws and anchors to secure the mounting bracket to the desired location. The screws may be used in any of the four holes shown below. Be sure to locate the bracket where users can read the display and use the tester.

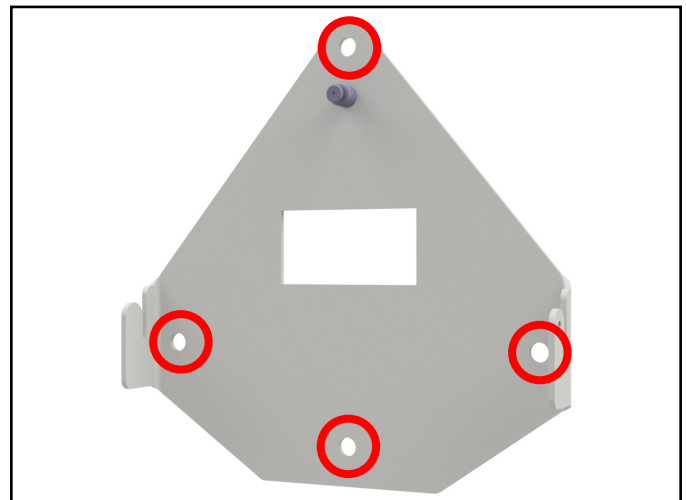


Figure 4. Mounting holes on the SmartLog Pro® SE mounting bracket

6. Connect the SmartLog Pro® SE to the bracket. Use the included thumbscrew to secure the SmartLog as shown below.



Figure 5. Securing the SmartLog Pro® SE to the mounting bracket



Figure 6. Use the EMIT 50416 SmartLog Stand as a mounting alternative

### 10 mm Wrist Cord Adapter

A plunger and spring assembly is included with every SmartLog Pro® SE. Use this assembly to retrofit the single-wire jack on the SmartLog Pro® SE to test wrist cords with a 10 mm termination instead of a banana plug. NOTE: This assembly cannot be removed once installed.

1. Insert the plunger assembly into the single-wire jack on the face of the SmartLog Pro® SE. Be sure to clear the clip at the base of the plunger's shaft when inserting into the jack.

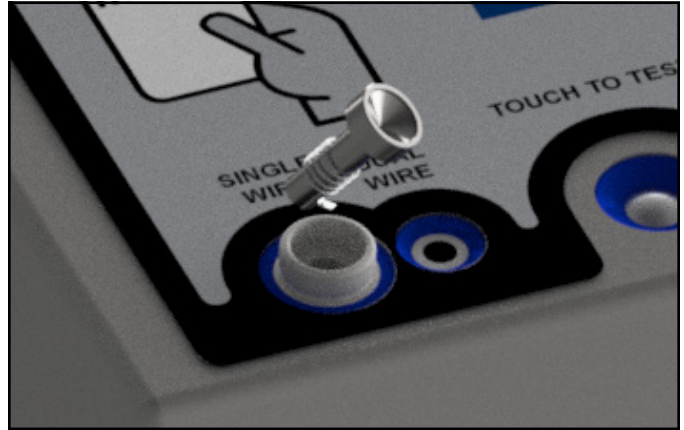


Figure 7. Inserting the plunger and spring assembly into the single-wire jack

2. The plunger will slightly protrude out of the single-wire jack when installed. Test its installation by pushing down on the plunger. It should dip and then spring back up when released.



Figure 8. Completed installation of the plunger and spring assembly

## Relay Terminal

The SmartLog Pro® SE features a relay terminal that can be integrated with electronic door locks, lights, buzzers, etc. to control access to an area.

The relay open and close (activation) time may be modified using the SmartLog Pro® Manager Web App.

Contact Rating	1A @ 30VDC, .5A @ 125VAC
Maximum Switching Power	30W
Maximum Switching Voltage	250VAC, 220VDC
Maximum Switching Current	1A

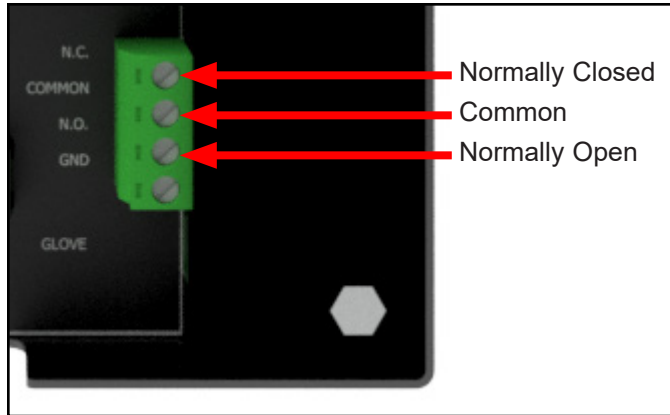


Figure 9. Relay terminal contacts located on the back of the SmartLog Pro® SE

## Sync Internet Time

The SmartLog Pro® SE can automatically set the time and date based on the location of its installation.

1. Access the Admin Menu by entering an administrator ID number on the keypad. The default administrator ID number is 0. Use SmartLog Pro® Manager to change the ID number if desired.
2. Tap the Misc button.

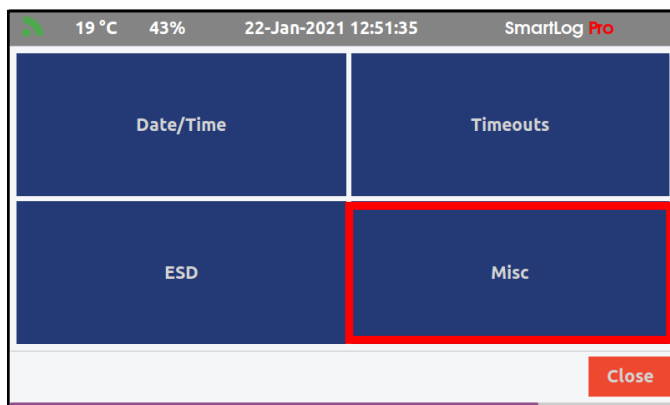


Figure 10. Locating the Misc button in the Admin Menu

3. Tap the Sync Internet Time toggle switch to enable the feature.

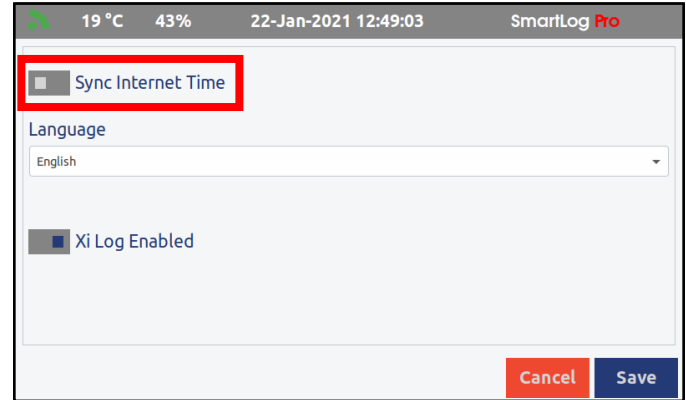


Figure 11. Locating the Sync Internet Time toggle switch

## Test Limit Configuration

The following footwear and wrist strap resistance limits are available in the SmartLog Pro® SE:

Wrist Strap	
Low Limit	High Limit
100 kilohms ( $1.0 \times 10^5$ )	10 megohms ( $1.0 \times 10^7$ )
750 kilohms ( $7.5 \times 10^5$ )	35 megohms ( $3.5 \times 10^7$ )
Footwear	
Low Limit	High Limit
100 kilohms ( $1.0 \times 10^5$ )	10 megohms ( $1.0 \times 10^7$ )
750 kilohms ( $7.5 \times 10^5$ )	35 megohms ( $3.5 \times 10^7$ )
	100 megohms ( $1.0 \times 10^8$ )
	1 gigohm ( $1.0 \times 10^9$ )**

\*\*A dirty foot plate could result in a false test result when using this test limit. Keep the foot plate clean by using 99% isopropyl alcohol. This test limit is not recommended in environments with a relative humidity greater than 50%.

1. Access the Admin Menu by entering an administrator ID number on the keypad.
2. Tap the ESD button.

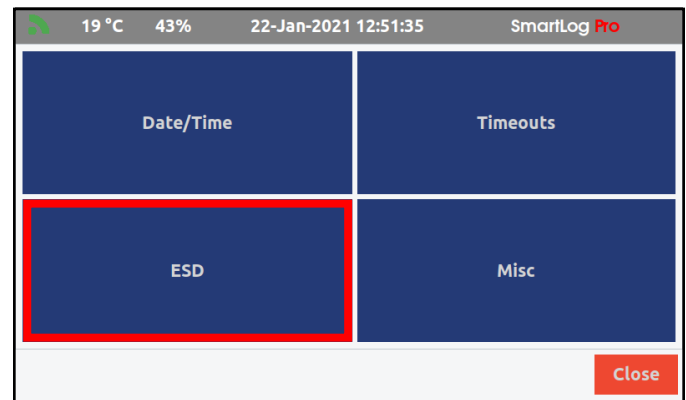


Figure 12. Locating the ESD button in the Admin Menu



- Adjust the Wrist Strap and Footwear Limits by selecting their respective drop-down lists. Tap the Save button when complete.

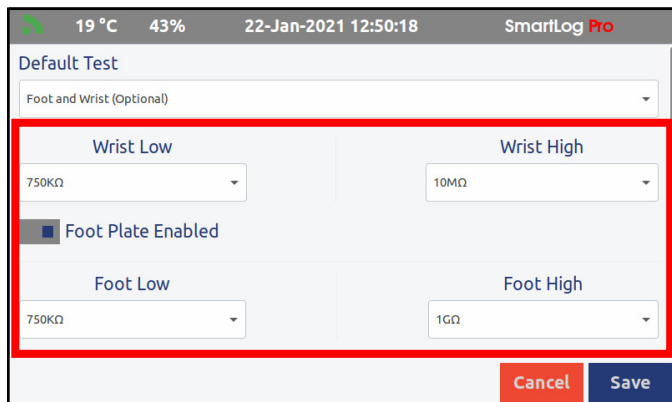


Figure 13. Locating the Wrist and Footwear test limits

## Operation

NOTE: The SmartLog Pro® SE must first be programmed with the user ID table using the SmartLog Pro® Manager Web App before being deployed for employee use, or the default test settings will be applied.

See technical bulletin [TB-6605](#) for more information.

If the SmartLog Pro® SE is located near a restroom, sink or other water source, operators will need to be instructed to thoroughly dry their hands before testing. Wet hands may cause inaccurate test results and damage to the tester.

- A circling light around the test switch indicates when the SmartLog Pro® SE is on standby and ready to perform a test.
- Initiate the test procedure by identifying yourself to the SmartLog Pro® SE. This may be done using the touchscreen keypad, barcode scanner or proximity reader.

NOTE: Hold the proximity badge in front of the RFID icon for a full second if using proximity badges.



Figure 14. Using the barcode scanner



Figure 15. Holding a proximity badge in front of the RFID icon on the SmartLog Pro® SE

- Follow the prompt on the SmartLog's display.
- When performing a footwear test, be sure to place both feet on the dual foot plate (one foot per plate).

NOTE: Keep the foot plate clean with 99% isopropyl alcohol when using the 1 Gigohm high test limit. A dirty foot plate could yield a false pass.

When performing a wrist strap\* test, be sure to completely plug in the wrist cord into the tester's jack.

- To begin the test, use your finger to bridge the test switch's inner and outer contacts. The blue standby LED will become solid to indicate that the test has been initiated. Hold your finger down until the test results are displayed on the touchscreen.

If your finger is removed too early, the tester's blue LEDs will blink three times to indicate that the test was not completed. DO NOT touch any other metal while performing your test as this will affect your results.



Figure 16. Performing a test with the SmartLog Pro® SE

- The relay terminal will activate if the defined tests are passed (if applicable).

NOTE: Failures may be caused by dry skin or minimal sweat layer. For wrist straps, try using an approved dissipative hand lotion such as [Menda Reztore™ ESD Hand Lotion](#) prior to use. Footwear test results can be improved by taking a short walk to build a sweat layer for better conductivity.

\*The SmartLog Pro® SE may also be used to test smocks or garments that feature a grounding mechanism for operators using a coiled cord connection.

## Maintenance

To maintain optimum performance, cleaning should be performed on a regular basis. Use 99% isopropyl alcohol to clean the foot plate and test switch. Other cleaners are susceptible to leaving residue on these surfaces.

NOTE: Avoid wetting or mopping the foot plate. This may yield false test results and cause damage to its internal circuitry.

## Calibration

Frequency of recalibration should be based on the critical nature of those ESD sensitive items handled and the risk of failure for the ESD protective equipment and materials. In general, EMIT recommends that calibration be performed annually.

Use the EMIT 50424 Limit Comparator and EMIT 50784 5-Pound Electrode to perform periodic verification (once every 6-12 months) of the SmartLog Pro® SE. The Limit Comparator can be used to check the test limits of the SmartLog Pro® SE without removing it from the factory floor.

See technical bulletin [TB-6581](#) for more information.

NOTE: Calibration is not required for the temperature and humidity sensor embedded within the SmartLog Pro® SE.



Figure 17. EMIT 50424 Limit Comparator



Figure 18. EMIT 50784 5-Pound Electrode for Limit Comparator

# Specifications

## SmartLog Pro® SE

Input Voltage and Frequency (External Adapter) AC/DC Power Adapter  
Power Input: 100-240VAC, 50/60 Hz  
Power Output: 5VDC, 3.0A  
Cable Length: 5 ft. (1.5 m)

Operating Temperature 70°F to 85°F (21°C to 30°C) for 1 gigohm test limit  
41°F to 85°F (5°C to 30°C) for all other test limits

Environmental Requirements Indoor use only at altitudes less than 6500 ft. (2 km)  
Maximum relative humidity of 80% up to 85°F (30°C) decreasing linearly to 50% @ 85°F (30°C)  
Maximum relative humidity of 50% at 1 gigohm setting

Dimensions 6.75" x 5.00" x 1.75" (17.1 cm x 12.7 cm x 4.4 cm)

Weight 1.8 lbs (0.8 kg)

Test Accuracy ±20% for 1 gigohm footwear test limit  
±10% for all other test limits

Test Switch Voltage 5 VDC @ open circuit

Wrist Strap and Footwear Test Voltage 30 VDC @ open circuit  
Test current is limited by resistors and varies on the test range setting (100 kilohms - 1 gigohm)

Temperature Accuracy ±0.5°C

Humidity Accuracy ±5%

Available Languages English, Spanish, Japanese, Chinese (Simplified), Turkish

## Dual Independent Foot Plate

Dimensions 13.25" x 15.25" x 1.125" (337 mm x 387 mm x 29 mm)

Weight 5.5 lbs (2.5 kg)

**Limited Warranty, Warranty Exclusions, Limit of Liability and RMA Request Instructions**  
See the EMIT Warranty - [DescoEMIT.com/Warranty.aspx](http://DescoEMIT.com/Warranty.aspx)