

# SmartLog Pro™ with Turnstile Installation, Operation and Maintenance

Made in the  
United States of America

Figure 1. EMIT SmartLog Pro™ with Turnstile

## Description

The EMIT SmartLog Pro™ with [Alvarado EDC Waist High Turnstile](#) verifies the functionality of an operator's wrist strap and footwear, logs the test results, and controls access to an ESD Protected Area. The turnstile unlocks after the operator's wrist strap and/or footwear is determined to act as a path-to-ground. All operator test activity is logged into a database to meet the ANSI/ESD S20.20 requirements for on-going quality control purposes. Each log entry includes operator identification, test results, resistance measurements, time, temperature and humidity.

See [TB-6594](#) for more information on the patented\* EMIT SmartLog Pro™.

The [Alvarado EDC Waist High Turnstile](#) features a rugged industrial grade controller, optical rotation detection (no mechanical microswitches to break or continually adjust), and adjustable time out functionality (turnstile relocks if there is no passage through the unlocked turnstile). An adjustable dampener slows and cushions the rotation and self-centers the turnstile arms to the home position. Stainless steel internal and external components make the turnstile durable and easy to maintain.

The turnstile is configured to Fail-Safe Loss-of-Power Operation. Should loss of power occur, the turnstile's arms will unlock and rotate freely in both directions to allow operators to pass through.

The SmartLog Pro™ with Turnstile is available as the following item numbers:

Item	Input Voltage
50781	120 VAC
50782	220 VAC

## ESD Association Information

"Compliance verification should be performed prior to each use (daily, shift change, etc.). The accumulation of insulative materials may increase the foot grounder system resistance. If foot grounders are worn outside the ESD protected area testing for functionality before reentry to the ESD protected area should be considered." ESD SP9.2 APPENDIX B - Foot Grounder Usage Guidance

"Process monitoring (measurements) shall be conducted in accordance with a Compliance Verification Plan that identifies the technical requirements to be verified, the measurements limits and the frequency at which those verifications shall occur...Compliance verification records shall be established and maintained to provide evidence of conformity to the technical requirements.

The test equipment selected shall be capable of making the measurements defined in the Compliance Verification Plan." (ANSI/ESD S20.20) section 7.3

ANSI/ESD S20.20 Table 1 Flooring-Footwear Systems Technical Requirements Recommended Range "less than  $3.5 \times 10^7$  ohms measured per ANSI/ESD STM 97.1."

"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 knowledge of a continuous, reliable ground is needed, and then continuous monitoring should be considered or even required." (ESD Handbook ESD TR 20.20 section 5.3.2.4.4)

Note: SmartLog Pro™ provides wrist strap test per IEC 61340-5-1 Clause A.1 and footwear testing per IEC 61340-5-1 Clause A.2 with upper limits  $< 3.5 \times 10^7$  ohms.

\*US Patents 6,078,875 and 6,809,522

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## Packaging

- 1 SmartLog Pro™
- 1 Turnstile
- 1 Wall Mounting Bracket
- 1 Dual Independent Foot Plate
- 2 Slanted Standoffs
- 1 Socket Head Cap Screw, 10-32 thread
- 1 Internal Tooth Lock Washer
- 1 Allen Wrench, 5/32"
- 1 Turnstile Anchor Kit
- 8 Turnstile Keys
- 1 Certificate of Calibration

## Installation

### Installing the Turnstile

110 VAC / 220 VAC and Ethernet access are needed at the location of every SmartLog Pro™ with Turnstile prior to installation.

[Click here](#) to download the Alvarado EDC Installation and Maintenance Manual and see instructions on anchoring and wiring the turnstile. Do not install the SmartLog Pro™ and its mounting hardware to the turnstile until it is properly anchored and wired.

### Installing SmartLog Pro™ to the Turnstile

See [TB-6594](#) to learn more about the features and components of the SmartLog Pro™.

1. Open the turnstile's lid using the included keys.
2. Install the SmartLog Pro™ onto the turnstile's lid using the 2 slanted standoffs, 1 socket head cap screw and 1 internal tooth lock washer. See Figure 2.
3. Connect the Ethernet cable, terminal block, foot plate cable, and power adapter to the back of the SmartLog Pro™.
4. Locate the power switch inside the turnstile cabinet, and set it to ON.
5. Locate the power switch on the back of the SmartLog Pro™, and set it to ON.
6. Locate the foot plate cable at the base of the turnstile and connect it to the Dual Independent Foot Plate, so operators can place their feet on it while performing tests at the turnstile's entrance.
7. Complete the installation by establishing communication to the SmartLog Pro™ via the Ethernet cable. See the "Network Setup" procedure in [TB-6594](#) for more information.

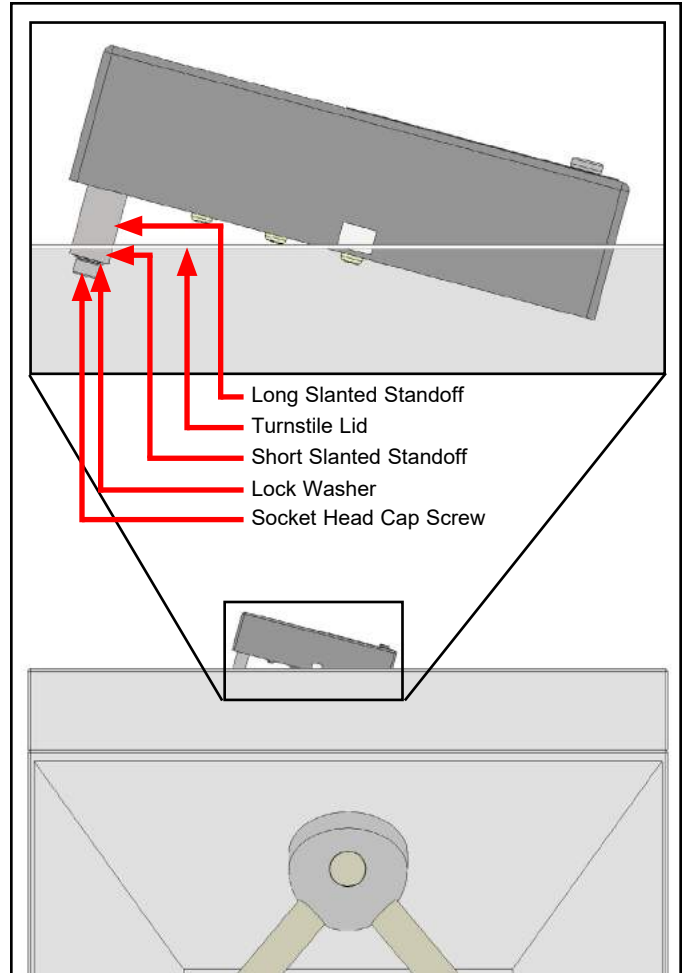


Figure 2. Installing the SmartLog Pro™ to the turnstile's lid



Figure 3. Installing the Dual Independent Foot Plate

## Operation

NOTE: The SmartLog Pro™ must first be programmed with the user ID table using the TEAM5 Software before being deployed for employee use, or the default test settings will be applied.

See the [TEAM5 User Manual](#) for more information.

If the SmartLog Pro™ 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. A circling light around the test switch indicates when the SmartLog Pro™ is on standby and ready to perform a test.
2. Initiate the test procedure by identifying yourself to the SmartLog Pro™. 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. See Figure 5.

3. Follow the prompt on the SmartLog's display.
4. 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.

5. 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 metal other than the SmartLog Pro™ or the turnstile while performing your test as this will affect your results.



Figure 4. Using the barcode scanner



Figure 5. Holding a proximity badge in front of the RFID icon on the SmartLog Pro™



Figure 6. Performing a footwear test

6. The relay terminal will activate and unlock the turnstile if the defined tests are passed.

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.



Figure 7. Performing a single-wire wrist strap test

7. Pass through the turnstile. The turnstile will re-lock after one rotation.

NOTE: By default, the turnstile will remain unlocked until either the operator passes through or 20 seconds expire. See the "Turnstile Control Board Layout" section in the [Alvarado EDC Installation and Maintenance Manual](#) for instructions on modifying the turnstile's relock setting.

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

## 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™. The Limit Comparator can be used to check the test limits of the SmartLog Pro™ without removing it from the turnstile or factory floor.

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



Figure 8. EMIT 50424 Limit Comparator



Figure 9. EMIT 50784 5-Pound Electrode for Limit Comparator

## Specifications

### SmartLog Pro™ with Turnstile

SmartLog Pro™ 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)
Turnstile Input Voltage and Frequency	110VAC, 50/60 Hz (50781) 220VAC, 50/60 Hz (50782)
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 (Crated)	42" x 40" x 49" (107 cm x 102 cm x 124 cm)
Dimensions (Uncrated)	See Figure 10
Weight (Crated)	385 lbs (175 kg)
Weight (Uncrated)	285 lbs (129 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 kiloohms - 1 gigohm)

### Dual Independent Foot Plate

Dimensions	14.0" x 16.0" x 0.9" (35.6 cm x 40.1 cm x 2.3 cm)
Weight	7.5 lbs (3.4 kg)

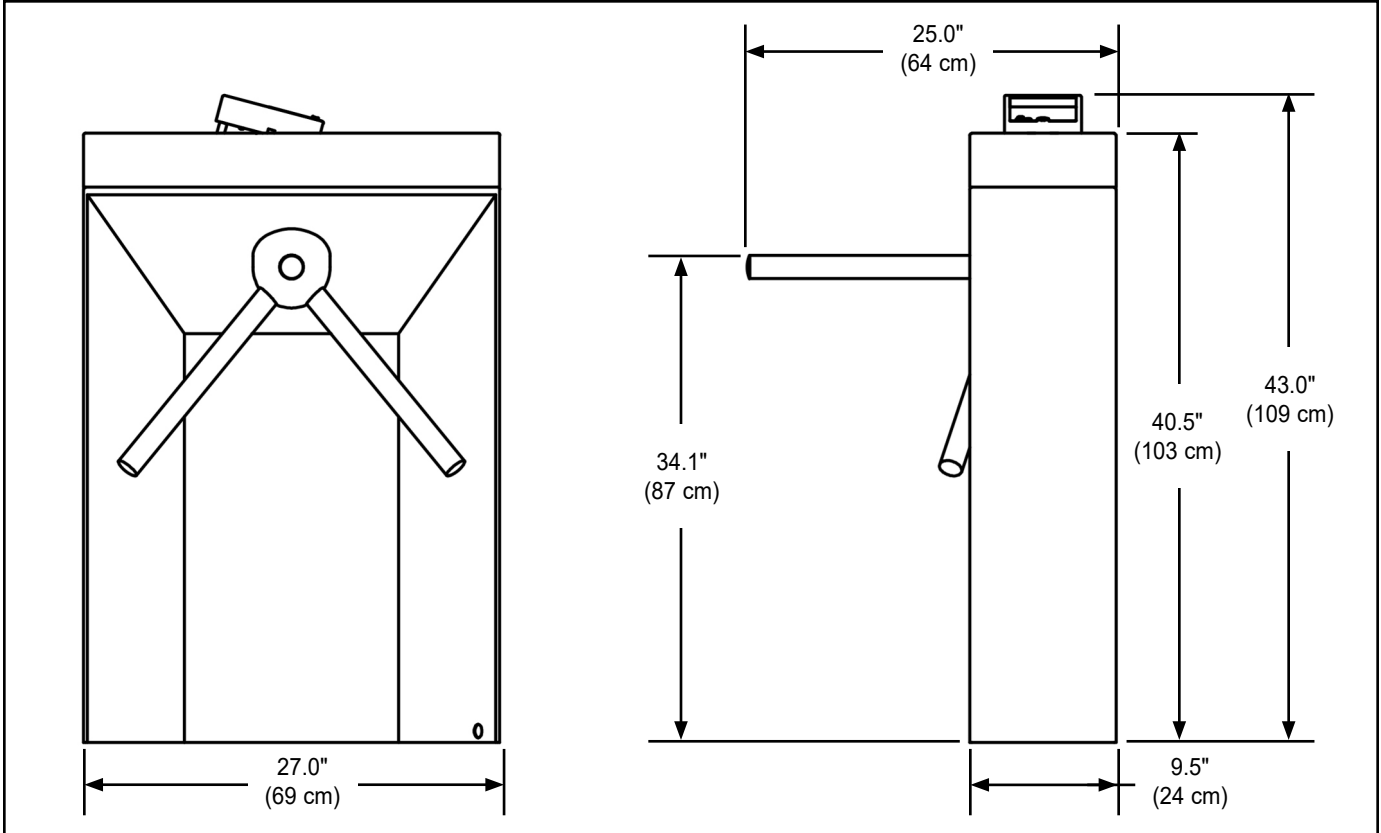


Figure 10. Dimensions of the EMIT SmartLog Pro™ with Turnstile

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

See the EMIT Warranty -

<http://emit.descoindustries.com/Limited-Warranty.aspx>