

# ESD Pro - ESD Event Indicator Installation, Operation and Maintenance



Made in the  
United States of America



Figure 1. SCS [CTM082](#) ESD Pro - ESD Event Indicator

## Description

The CTM082 ESD Pro - ESD Event Indicator is an easy-to-use hand-held device that is designed to detect and count ESD events that can damage sensitive components and cause tool lockups, erratic behavior and parametric errors.

## Event Counter

A four-digit display counts the number of events equal to or exceeding the threshold. To reset the counter, press the actuator of the “Set” side switch inwards. The counter is also reset when the power is turned off.

## CDM Mode

In a typical industrial environment there are many sources that produce signals similar to those of ESD events. Such signals may include relays, solenoids, stepper motors or similar devices. In order to separate ESD events from non-related EMI (electromagnetic interference) events, the ESD Pro - ESD Event Indicator employs a filter that separates waveforms of the signals and rejects the ones that are different from a “classic” shape of an ESD event. First, try to use the ESD Pro - ESD Event Indicator with CDM filter switch turned off. This allows you to assess the complete environment. If you observe extraneous events, then the turn CDM filter switch on.

The ESD Pro - ESD Event Indicator detects most ESD events by the specific electromagnetic signature these events produce. Therefore, the performance of the ESD Pro - ESD Event Indicator must be looked at in view of wave propagation. Just like with a microphone, the farther away from the source of the signal you are, the weaker the signal will be. When searching for the sources of ESD events, it is advisable to get as close as is practical, considering necessary safety precautions, to the suspected sources. In a typical tool, such as an IC handler or a pick-and-place SMT machine, such sources of ESD events may include places of IC pick-up and IC placement on any conductive or even dissipative surface. When working with the automated equipment, always observe safety precautions as recommended by equipment manufacturer and your company’s practices.

## Operation

When the ESD Pro - ESD Event Indicator is turned on, it is ready to detect, count and measure most ESD events.

## Bar Graph Display

The 10-LED bar graph shows the relative strength of most ESD events. If an ESD event does not exceed the set alarm level, LEDs indicating its strength are green. Whenever the strength of an event exceeds the set threshold, LEDs turn red.

## Event strength is a factor of many variables:

- The accumulated static voltage
- The capacitance of the charged objects (a larger object holds more charge than a smaller one)
- The physical size of discharging objects
- The environment
- The distance from ESD event occurrence

Therefore, one should exercise good judgement in comparing the strength of ESD events captured under different conditions.

## Threshold Adjustment

The ESD Pro - ESD Event Indicator can detect ESD events in a wide dynamic range. For most applications, only the events that exceed certain strengths are of importance. Threshold setting in the ESD Pro - ESD Event Indicator is critical in identifying only ESD events of the strength equal or above the level of importance to you.

Threshold setting is done by a small rotary/push switch on the right side of the ESD Pro - ESD Event Indicator.

### Checking the Current Threshold

Simply push the actuator of the switch inwards. One red LED will show the current ESD event threshold. Any event equal to or exceeding this level will produce a count and a beep, and the LED bar graph will show it in red. An event below this level will still be shown on the bar graph in green, but no count or sound will be produced.

### Setting the Threshold

To set a new threshold, do not press the switch. Rather, move its actuator up or down. Once the switch begins to move, one red LED appears on the bar graph display. As the switch moves up and down, this red LED moves accordingly and its position indicates the new threshold level.

### Saving the Threshold Level

After the new threshold is set, release the switch actuator and then press it inwards. The new current threshold is now saved. The next time you power up your ESD Pro - ESD Event Indicator, this level will be automatically set.

### Features and Components

Refer to the following pages of this User's Guide for a detailed explanation of each control, indicator and connection.

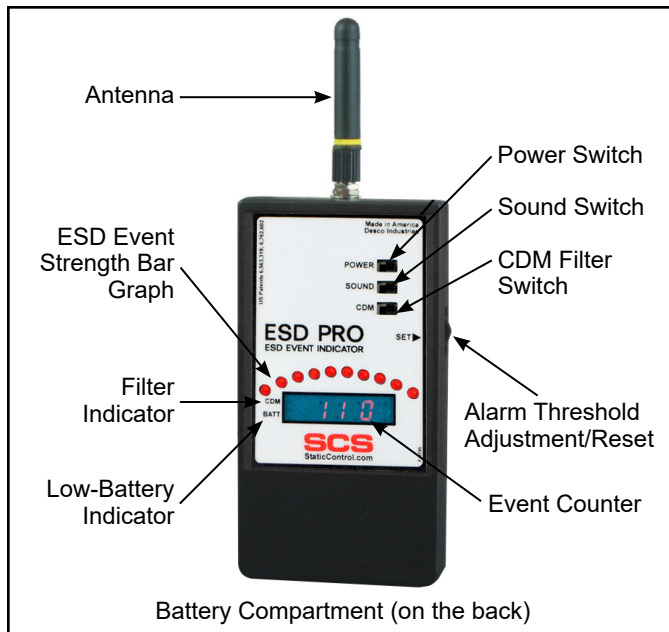


Figure 2. Controls and Indicators.

### Controls and Indicators

- **Power Switch:** Turns power on and off
- **Sound Switch:** Turns the sound on and off
- **CDM Filter Switch:** Turns EMI-rejection mode on and off.
- **Alarm Threshold:** Adjusts alarm threshold up and down. Displays current alarm threshold. Resets the Event Counter.
- **Event Counter:** Counts ESD events above the set threshold.

- **ESD Event Strength Bar Graph:** Displays relative ESD event strength. This graph is solely an indicator, and it does not correspond to any unit of measurement.
- **Filter Indicator:** Shows that ESD Pro - ESD Event Indicator is in filter mode (rejection of EMI most Events).
- **Low Battery:** Shows that the battery needs to be replaced.

### Power

ESD Pro - ESD Event Indicator uses a 9V alkaline battery. Do not use any other type of battery. If you are not using your ESD Pro - ESD Event Indicator for an extended period of time, remove the battery from the unit in order to prevent damage caused by battery leakage.

### Installing the Battery

Remove the battery door at the back of ESD Pro - ESD Event Indicator and attach the 9V battery to the battery clips. Observe the polarity of the battery. Re-install the battery door.

### Low-Battery Indicator

When battery voltage gets low, the low battery indicator on the display appears.

### Turning ESD Pro - ESD Event Indicator On and Off

Move the actuator of the power slide switch to the right. The ESD event counter should display a number of captured events, usually "0" at this point. The events counter is reset when the power is turned off. To turn the power off, move the actuator of power slide switch to the left. The ESD Pro - ESD Event Indicator has no automatic shut-off. Don't forget to turn it off when not in active use.

### Antenna

In order for the ESD Pro - ESD Event Indicator to detect most ESD events, its antenna needs to be properly installed. Screw the antenna using only your fingers—no tools since overtightening the connection may lead to damage to the instrument.

### Sound

The ESD Pro - ESD Event Indicator can produce audible alarm when an event is detected. In order to enable this function, move the actuator of sound slide switch to the right.

### Calibration

The ESD Pro - ESD Event Indicator is solely an indicator and not a meter. Its ESD Event Strength Bar Graph only displays relative ESD event strength, and it does not correspond to any unit of measurement. Calibration is not required.

## Safety Information

Read, understand, and follow all safety information contained in these instructions prior to the use of this device. Retain these instructions for future reference.

**Warning:** To reduce the risks associated with environmental contamination:

- When working with the automated equipment, always observe safety precautions as recommended by equipment manufacturer and your company's practices.

**Caution:** To reduce the risks associated with environmental contamination:

- Dispose of the monitor in accordance with local, state, and federal regulations.

**Notice:** To reduce the risks associated with property damage:

- Periodically check that the indicator is functioning properly.

## Regulatory Information

### WEEE Statement

The following information is only for EU-members States: The mark shown to the right is in compliance with Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE). The mark indicates the requirement NOT to dispose the equipment as unsorted municipal waste, but use the return and collection systems according to local law.



### CE Statement

Meets CE (European Conformity) requirements.

**Important Notice:** All statements, technical information, and recommendations related to SCS's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in SCS's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of SCS.

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

See the SCS Warranty - [StaticControl.com/Limited-Warranty.aspx](http://StaticControl.com/Limited-Warranty.aspx)