

3M™ ESD Pro ESD Event Indicator CTM082

User's Guide



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Safety Information

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

Explanation of Signal Word Consequences



WARNING Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury and/or property damage.



CAUTION Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury and/or property damage.

NOTICE Indicates a potentially hazardous situation, which, if not avoided, may result in property damage.



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.

The 3M™ ESD Pro ESD Event Indicator CTM082 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 CTM082 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 CTM082 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 CTM082 detects most ESD events by the specific electromagnetic signature these events produce. Therefore, the performance of the ESD Pro ESD Event Indicator CTM082 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 3M™ ESD Pro ESD Event Indicator CTM082 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 CTM082 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 CTM082 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 CTM082.

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 3M™ ESD Pro ESD Event Indicator CTM082, this level will be automatically set.

Brief Tour of your ESD Pro ESD Event Indicator CTM082

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



Battery Compartment (on the back)

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: Bar Graph Shows relative ESD event strength

Filter Indicator: Shows that 3M™ ESD Pro ESD Event Indicator

CTM082 is in filter mode (rejection of EMI most Events)

Low Battery: Shows that the battery needs to be replaced

General

Power

3M™ ESD Pro ESD Event Indicator CTM082 uses a 9V alkaline battery. Do not use any other type of battery. If you are not using your ESD Pro ESD Event Indicator CTM082 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 CTM082 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 CTM082 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 CTM082 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 CTM082 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 CTM082 can produce audible alarm when an event is deleted. In order to enable this function, move the actuator of sound slide switch to the right.

Customer and Technical Support

For customer and technical support:

within the US Contact:

3M Electronics Materials Solutions Division,
Customer Service Department 866-722-3736

For customer service and technical support outside the US contact your local authorized 3M representative – see the distributor section at www.3Mstatic.com.

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.

3M is a trademark of 3M Company.

Important Notice

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