



Embeddable ESD Monitoring

NOVX MINIPULSE ESD EVENT MONITOR

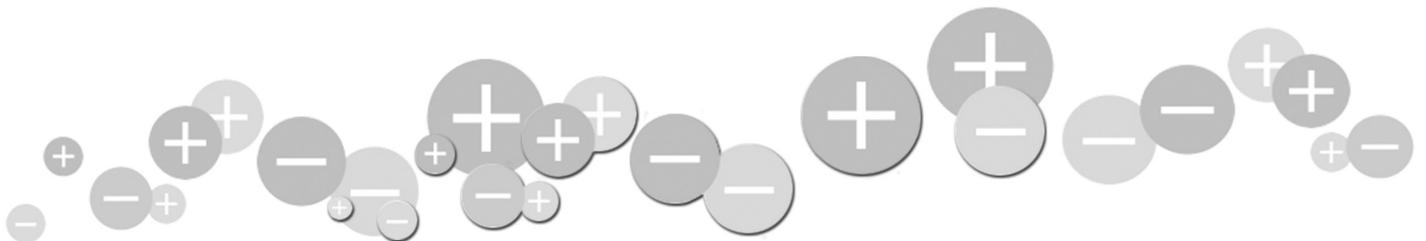
The Novx MiniPulse ESD Event Detector is designed for tool and process monitoring. This affordable, small footprint embeddable monitor has been developed to warn of product damage risks at the point of electrostatic discharge. The MiniPulse uses time domain and threshold discrimination to detect pulsed electromagnetic energy. Through the use of specific antenna configurations and placement, the MiniPulse can provide ESD event detection for well-defined small areas.

Features

- Small Footprint
- Red/green LED alarm; audible alarm
- Open Collector Output on Alarm
- 9-24 VDC power input, including 9V battery operation
- Variable antenna orientations and adjustable threshold settings

Benefits

- Can easily fit inside a tool or in a manufacturing line
- Visual and audible alarms of ESD events
- Can integrate into a Factory Monitoring System
- Multiple power options provide flexibility in use
- Can tune the unit to specific applications while eliminating false alarms



Novx MiniPulse	
Power	9-24 VDC, 30 mA (9V alkaline battery option can be used to provide up to 20 hours of operation, no ground required)
Range	1-1000 V/m radiated ESD event
Accuracy	±20 V/m radiated amplitude
Response	50 ms (reset time)
Indicator	Green NORMAL OPERATION and red ESD EVENT LEDs
Audible Alarm	Piezo buzzer sounds momentarily on ESD event
Alarm Output	Open collector pulls to GND on alarm +24 VDC max; 0.2A load max
Connector	Input & Alarm: Header receptacle 2-pin, female socket (mating connector is a Molex 22-01-3027, TE Connectivity 3-640440-2, or other equivalent connector) Antenna: SMA
User Adjustment	Detection level adjustment via "Level" trimpot; pulse detection length
Cleaning	The exterior of the MiniPulse stainless steel chassis may be cleaned with a dry cleanroom cloth or a cleanroom cloth dampened with distilled or deionized water
Operating Env	+40° F to +120° F (5-49° C); 10-60% RH, non-condensing
Dimension	2.15"W x 2.08"L x 0.750"H (5.46 x 5.28 x 1.91 cm) not including mounting flanges
Weight	0.25 lb (0.11 kg)
Certification	 
CDMES System	
Power	Variable benchtop DC power 2 kV supply
Range	25-2000 VDC (using 14-1245 power supply)
Accuracy	±10 V/m radiated amplitude
Response	50 ms
Connector	Input & Alarm: Header receptacle 2-pin, female socket (mating connector is a Molex 22-01-3027, TE Connectivity 3-640440-2, or other equivalent connector) Oscilloscope: SMA-male (RG-316 cable)
User Adjustment	Voltage input level controlled through DC power supply level
Operating Env	+40° F to +120° F (5-49° C); 10-60% RH, non-condensing
Cleaning	Periodic point replacement only
Dimension	7.67"L x 1.65"W (19.5 x 4.19 cm)
Weight	0.23 lb (0.104 kg)
Certification	 

Ordering Information

9904-0002-0000	MiniPulse ESD Event Monitor
14-1245	Universal Power Supply, 12VDC @ 1.25A (optional)
33-3050	Power Cable with 9V Battery (optional)
33-0527-xx	Monopole Micro ESD Antenna with cable (xx = cable length available in 6 ft or 12 ft)
33-0530-8	MPA-02 Micro Directional ESD Antenna with 8 ft Remove Coax Cable
33-4400-5	LCD Event Counter Module with 5 ft cable
92-0003-01	Charge Device Model Event Simulator (includes cable, 2 attenuators)
92-0003-02	Charge Device Model Event Simulator (includes power supply, cables, 2 attenuators)

Main Features

Controlling ESD Detection by Pulse Length: The MiniPulse can discriminate between different pulse event types. This allows it to determine valid ESD-type events from other pulse packet signals (cell phone, WiFi, etc.).

Threshold Control: Due to electromagnetic field attenuation over distance, many wider-area ESD events can be filtered out by adjusting the threshold to match local event amplitudes. The MiniPulse threshold control sensitivity allows fine-tuning down to very small acquisition areas. This is an important aspect of limiting detected ESD events to only those of critical importance.

Antenna Configuration: Another key factor in limiting ESD event detection to a specific process point is the form and placement of the antenna. The physical gain characteristics of the antenna play a part in controlling signal acquisition.

Noise Insensitivity: Differing antenna lengths and types can be calibrated to reject unwanted signal noise based upon antenna surface (the amount of antenna presented to the incident field), orientation and frequency wavelength. One of the major challenges to embedded ESD detectors is accommodating robotic noise signatures and other tool/environmental noise without triggering false ESD alarms. The MiniPulse has been specifically designed for this type of application.

Special Features

The MiniPulse can be used with a 9V battery attachment for portability. This useful feature lends itself to ESD investigations in enclosed tools where power cable routing is problematic.

The available Monopole Micro ESD antenna is designed for close proximity ESD event detection. This antenna is rated for use in high-temperature environment locations up to 390°F (200°C). The MPA-02 Micro Directional ESD Antenna is for use in electrically noisy environments, to reduce false-positive signals.

Calibration

The MiniPulse is shipped preset for maximum sensitivity. The end user will need to perform a basic calibration procedure to adjust the Alarm sensitivity to a level that is appropriate for their environment. Calibration should be validated annually to meet ISO certification compliance requirements.

Related Products

The optional Charge Device Model Event Simulator (CDMES) was designed to allow ESD detectors to be calibrated inside the tools and processes where CDM events occur. This simulation tool allows calibrated CDM events of different magnitudes to be produced at the location where production devices are most vulnerable and where ESD monitoring sensors are located. Other options:



Micro ESD Antenna



Micro Directional ESD Antenna



LCD Event Counter

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DS-0002_V8- 1/24
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