Charged Body Detector

model 248

Features:

- **Continuous monitoring capability**
- **Wide sensitivity range**
- **Polarity-insensitive response**
- **Analog output for oscilloscope or recorder for analysis.**
- **Non-radioactive**

Description:

The Monroe Electronics Model 248 Charged Body Detector is essentially an electrometer, driven by a special multilayer tape sensor. The tape probe detects the electric field from a moving charged object or person, and can trigger any of several alarm modes if the voltage exceeds a pre-set sensitivity level, adjustable from 10V to 10kV. Patented feedback technique provides stability.

Application:

The Model 248 features built-in audible/visual alarms plus three FORM C relay outputs to operate remote alarm devices. By connecting a counter to one relay output, the user can track the number of ESD events or charged object intrusions day-by-day. This is especially useful for validating the effectiveness of static control techniques. Latch feature permits operation either as a momentary alarm for each ESD incident or for continuous alarm (until reset). An analog output suitable for oscilloscope analysis is provided.

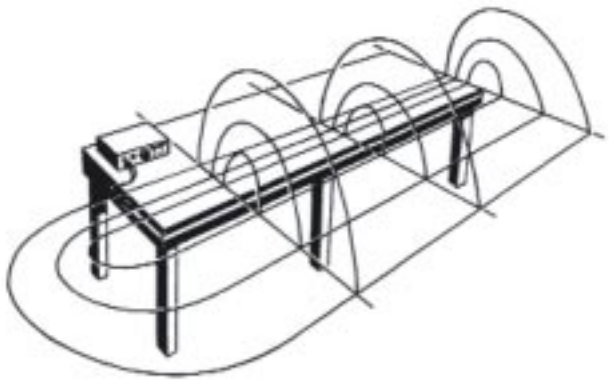
Sensor:

The Model 1021 Tape Sensor (included) contains three layers of copper foil; each insulated by Mylar® film. The top layer is the sensing electrode, the middle layers a driven shield, and the bottom layer is grounded. This configuration produces a tape whose detection sensitivity is completely independent of position along the length of the tape. Tape can be folded around corners, around doorways, or even looped. 15-foot (4.57m) tape is standard; lengths to 50 feet (15.24m) are available on special order.

Typical Installation:

The installation shown below is typical for work-bench monitoring. However, tape and cabinet can be attached at almost any convenient position providing they are out of the worker's way. (Like most fieldmeter probes, the tape alarms on touch.) Sensitivity is preset to between 10V and 10kV (on a 6" (152mm) square plate). If the dotted line closest to the table represents a 100V sensitivity line, the next dotted line would represent 200V sensitivity, and the farthest dotted line 500V. In this mode, a 6" (152mm) square plate at 500V passing through the plane of the farthest line would cause an alarm.

Since the instrument measures changes in electrostatic field, it detects not only charged personnel and objects approaching the grounded workbench, but also grounded objects approaching a charged object.



Specifications:

Sensitivity:

10V - 10kV adjustable (Dual potentiometer controls; internal broad range adjustment sets low end from 10V - 100V, high end from 1kV- 10kV. Front-panel fine range control provides 10X adjustment based on broad range control setting.)

Calibration:

Rough calibration can be obtained by moving typical charged objects near the tape electrode and adjusting sensitivity controls until desired results are obtained. More accurate calibration requires the use of a Monroe Model 249 Calibrator, a companion unit specially designed for use with the Model 248, or any high voltage supply and a conductive object the size of those to be monitored.

Outputs:

- ANALOG: 0 to ± 6.8V max, external voltage protected. 1K output impedance.
- RELAY: Three sets FORM C contacts at back-panel barrier strip. Contacts rated 3A, 30VDC or 120VAC, resistive. Alarm condition allows de-energizing of relays for fail-safe operation.

Power:

105-130VAC, 43-63Hz. 5W max. Internal ¼A fuse.

Size/Weight:

- Cabinet: 8 1/16" W x 6¼" D x 2½" H. (20.5cm x 15.9 cm x 6.3 cm)
- Overall: 7¾" D. (19.7cm) Weight 2 lb 4 oz. (1 kg)

Patents issued or applied for.

Calibration:

Monroe Electronics instruments are factory-calibrated prior to shipment. Recalibration should be performed annually, or more frequently if specified by contract or company policy. Your instrument should also be recalibrated any time it has been repaired or tampered with. We are happy to recalibrate your instrument for you at a reasonable cost, or provide information and procedures on calibration upon request.

Warranty:

Monroe Electronics, Inc., warrants that each instrument and sub-assembly manufactured by them shall be free from defects in material and workmanship for a period of one year after shipment from the factory. This warranty is applicable to the original purchaser only.

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For more than 40 years - ever since we invented the feedback--nulled electrostatic voltmeter, Monroe has been the technology and quality leader in electrostatic detection and measurement instrumentation. Today we offer the world's most complete array of fieldmeters, voltmeters, and resistivity meters. Our customers include the leading makers of photocopiers and laser printers, converters and microelectronics worldwide.

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How can we help?

Contact your Monroe Electronics representative for price and delivery information on this and other ME products, to schedule a no-obligation demonstration at your convenience. For the name of your nearest dealer, or for technical or applications assistance, contact Monroe Electronics directly at the address and numbers below.

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