

Model 133 Series Gamma Survey Detectors



Introduction

The Model 133 series of Geiger-Mueller (GM) gamma survey detectors can be used with any portable ratemeter, scaler instrument, or area monitor that provides the appropriate amount of voltage (see table below) with an input sensitivity of 30 ± 10 mV.

Waterproof versions of these detectors (all 133-x-1 versions) have the same characteristics as non-waterproof models, other than they are waterproof, contain an O-ring, and do not have a "C" connector on the probe end (base). A 30-meter (100 foot) cable is hard-wired into the detector. They weigh slightly more and have a slightly larger diameter than the non-waterproof versions. They are submersible up to 30 m (100 ft).

Features

- Energy Compensated GM
- Halogen Quenched
- Waterproof Versions Available
- Stainless Steel Tube
- Range of Models to Suit Needs

Specifications

INPUT SENSITIVITY: 30 mV \pm 10 mV

DEAD TIME: typically 50 microseconds

TUBE: 30 mg/cm² stainless steel (halogen quench) GM

CONNECTOR: series "C," unless a waterproof detector. Other connectors are available upon request.

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F), may be certified for operation from -40 to 65 °C (-40 to 150 °F)

SIZE (Dia x L):

-3, -4, -6, -7: 2.2 x 10.2 cm (0.88 x 4 in.)

-2, -2-1, -3-1, -4-1, -6-1, -7-1: 2.5 x 10.2 cm (1 x 4 in.)

WEIGHT: approximately 0.090 kg (0.20 lb)

WATERPROOF VERSIONS: all Model 133-x-1 versions are submersible up to 30 m (100 ft); IP68 or better

OPTIONAL PROBE CLIP: included at no additional charge when meter and detector are purchased at the same time (PN 4285-018)

Model (Part Number)	133-2 (47-1717) 133-2-1 (47-2450) [†]	133-3 (47-1314) 133-3-1 (47-4387) [†]	133-4 (47-1674) 133-4-1 (47-2451) [†]	133-6 (47-1718) 133-6-1 (47-2452) [†]	133-7 (47-1216) 133-7-1 (47-2453) [†]
Operating Voltage	550 Vdc	550 Vdc	550 Vdc	550 Vdc	460 Vdc
Sensitivity (¹³⁷ Cs Gamma)	100 cpm / μ Sv/h (1000 cpm / mR/hr)	45 cpm / μ Sv/h (450 cpm / mR/hr)	10 cpm / μ Sv/h (100 cpm / mR/hr)	1.8 cpm / μ Sv/h (18 cpm / mR/hr)	0.42 cpm / μ Sv/h (4.2 cpm / mR/hr)
Linear Range without DTC*	1 μ Sv/h to 2 mSv/h (0.1 to 200 mR/hr)	1 μ Sv/h to 10 mSv/h (0.1 mR/hr to 1 R/hr)	10 μ Sv/h to 20 mSv/h (1 mR/hr to 2 R/hr)	40 μ Sv/h to 60 mSv/h (4 mR/hr to 6 R/hr)	250 μ Sv/h to 300 mSv/h (25 mR/hr to 30 R/hr)
Linear Range with DTC*	1 μ Sv/h to 10 mSv/h (0.1 mR/hr to 1 R/hr)	1 μ Sv/h to 50 mSv/h (0.1 mR/hr to 5 R/hr)	10 μ Sv/h to 100 mSv/h (1 mR/hr to 10 R/hr)	40 μ Sv/h to 400 mSv/h (4 mR/hr to 40 R/hr)	250 μ Sv/h to 1 Sv/h (25 mR/hr to 100 R/hr)
Linear Range with SCC**	1 μ Sv/h to 50 mSv/h (0.1 mR/hr to 5 R/hr)	1 μ Sv/h to 250 mSv/h (0.1 mR/hr to 25 R/hr)	10 μ Sv/h to 500 mSv/h (1 mR/hr to 50 R/hr)	40 μ Sv/h to 10 Sv/h (4 mR/hr to 1000 R/hr)	250 μ Sv/h to 10 Sv/h (25 mR/hr to 1000 R/hr)
Energy Response (60 keV to 3 MeV)	within 25%	within 25%	within 25%	within 25%	within 25%
Background (10 μ R/hr field)	12 cpm	6 cpm	1 cpm	1 cpm or less	1 cpm

*DTC: Dead Time Correction, available on some instruments

**SCC: Series Correction Constant, available on some instruments

†: Waterproof