

AMP-300 Area Monitoring Probe Very High Range Waterproof Gamma Detector

Introduction

The AMP-300, or Area Monitor Probe, is a dose rate meter. It has been designed specifically to be used in very high dose rate fields.

The AMP-300's detector features linear response from 1 mSv/h to 300 Sv/h (0.1 R/h to 30,000 R/h).

More importantly, since the probe's sensitive electronics are located far from the high field (25 to 350 feet away), they are not subject to destructive gamma exposure. Thus the probe head may be located near a filter cube, rad waste stream, resin tank, or even inside the fuel pool (to take advantage of waterproof characteristics) having a longer life expectancy.

The AMP -300 may be used in one of 2 ways: By locally reading the smoothed digital display via the hand-held meter or by connecting the meter to a Remote Monitoring System (e.g. wired DDC 16 or wireless WRMPlus) and TeleMap.



Applications

Real-time monitor applications. For example, the probe head may be placed directly into a filter cube or against a resin tank for the purpose of providing survey Results.

Replacement of traditionally "difficult to calibrate" underwater instruments.

Local readout of hand-held meter allows for use as a portable survey instrument.

Provides real-time, remote monitoring in geometries developed for extendible "pole" rate meters (TelePole, Teletector, etc.).

Features

Wide range response from 1 mSv/h to 300 Sv/h (0.1 R/h to 30,000 R/h) Ruggedized construction, waterproof detector housing and cable.

Quick-connect connectors allow customization of cable length and facilitate easy de-contamination.

Built-in communication connection for use with Area Monitor or WRM transmitter "Smoothed" digital display offers accurate, stable readings.

User-selectable internal alarm threshold.

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Technical Data

Description

The Area Monitor Probe (AMP-300) is a high-range silicon diode based detector designed to be continuously used in areas where very high exposure levels exist.

The detector consists of three parts: the Meter box, which includes the detector's electronics, display and pushbuttons; The Probe head, which contains the energy compensated silicon diode detector; and the connecting cable, which is fitted with quick-connect-type connector at one end. The AMP-300's connections and probe head feature watertight sealing to allow for use in underwater applications up to at least 20 meters deep.

Radiological characteristics

Expected detector lifetime: 5,000 Sv.

Detector: energy compensated Silicon Diode

Detection range: 1 mSv/h to 300 Sv/h (0.1 R/h to 30,000 R/h)

- * Accuracy: $\pm 10\%$
- * Energy range: 60 KeV to 2 MeV.
- * Related to ¹³⁷Cs

Electrical Characteristics

Power supply - 9 Volts, supplied by a 9 Volt alkaline battery

Optional 9 Volt AC adapter available

Battery life - approximately 50 hours of continuous use

Environmental conditions - temperature: 15 °F to 120°F (-10 °C to 50°C) Relative humidity (meter): 10 to 95% RH (non-condensing)

Mechanical characteristics

Meter dimensions: 2.7" (6.9cm) wide, 4.7"(11.9cm) high, 1.25" (3.2cm) deep

Detector dimensions: 5.7" (14.5 cm) Long, Diameter: 1" (2.5 cm)

Standard cable length: 82 feet (25 m)

Maximum cable length: 350 feet (107m)