

05-443 and 05-444 PRIMALERT® Digital Area Monitors

Technical Data



The PRIMALERT Digital Area Monitors are designed for a wide range of gamma radiation area monitoring applications. Two self-contained configurations are available, each with an internal energy compensated GM detector (detection range in parentheses): 05-443 (0.1 mR/h to 1 R/h) and 05-444 (1 mR/h to 4 R/h). Both models are ac powered with an internal battery backup, have user-settable low and high alarms, and are available with an optional remote alarm for added security.

The versatile PRIMALERT Digital Area Monitors can be used in industrial applications, medical settings, or wherever there is a need to warn personnel of increasing radiation levels and/or to limit the accumulated exposure of personnel to gamma radiation.

Key features

- Simple installation and setup (calibration controls easily accessed through front panel)
- Anti-jam circuitry prevents erroneous readings at tube saturation
- LED digital display with Detector Fail indicator
- Programmable low and high alarm indicators, with an optional remote alarm available
- Data output/RS-232

Specifications

Indicated use	Radiation area monitoring
Internal GM detector range	05-443: 0.1 mR/hr to 1 R/hr; 05-444: 1 mR/hr to 4 R/hr
Display	4 digit LED display with 2 cm (0.8 in) character height; display range: 000.0 to 9999
Display units	Can be made to display in μ R/hr, mR/hr, R/h, μ Sv/h, mSv/h, Sv/h, cpm, cps and others
Linearity	Reading within $\pm 10\%$ of true value with detector connected
Response	Typically 3 seconds from 10 % to 90 % of final reading
Status (green light)	Indicates the instrument is functioning properly
Low alarm	Indicated by a yellow light and slow beep (1 per sec) audible tone (can be set at any point from 0.0 to 9999)
High alarm	Indicated by a red light and fast beep (4 per sec) audible tone (can be set at any point from 0.0 to 9999)
Detector fail	Red light and audible tone; > 68 dB at 2 ft indicates detector overload, no count from detector, or instrument failure
Low battery (yellow)	Indicates < 2 hours of battery power remaining
Calibration controls	Accessible from front of instrument (protective cover provided)
High voltage	Adjustable from 200 V to 2500 V
Threshold	Adjustable from 2 mV to 100 mV
Dead time	Adjustable to compensate for dead time of the detector and electronics (can be read on the display)
Overload	Senses detector saturation (indicated by display reading “-OL”)
Overrange	Indicates the radiation field being measured has exceeded the counting range of the instrument (indicated by display reading “----”)
Data output	9 pin connector providing 5 decade log output, RS-232 output, signal ground connection, FAIL and Alarm signals (current sink), and direct connection to battery and ground
Power requirements	95 V ac to 135 V ac (178 V ac to 240 V ac available), 50 Hz to 60 Hz single phase (< 100 mA), 6 V sealed lead acid rechargeable battery (built-in)
Battery life	Typically 48 hours in non-alarm condition, 12 hours in alarm condition
Battery charger	Battery is continuously trickle charged when instrument is connected to line power and turned on
Housing material	Aluminum housing with white polyurethane enamel paint
Temperature range	-20 °C to 50 °C (-4 °F to 122 °F). May be certified for operation from -40 °C to 65 °C (-40 °F to 150 °F)
Dimensions (WxDxH)	24.6 cm x 6.4 cm x 18.7 cm (9.7 in x 2.5 in x 7.4 in)
Weight	2.3 kg (6.5 lb)

Note: audible indicators can be configured as a single beep if desired.

Ordering information

Model numbers/descriptions

05-443 PRIMALERT Digital Area Monitor with internal energy compensated 0.1 mR/hr to 1 R/hr GM detector

05-443-2200 PRIMALERT Digital Area Monitor with internal energy compensated 1 μ Sv to 10 mSv/hr GM detector, 220 V ac operation

05-444 PRIMALERT Digital Area Monitor with internal energy

05-446 Remote Display

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- CE Certified, where required
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- UL, CSA, ETL Certified, where required
- NRC Compliant, where required