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RadAl™-1

Wall Mount Radiation Monitor and Alarm

http://radal.com mailto:info@radal.com

- ✓ ***Compact, rugged, economical***
- ✓ ***Easy installation, no maintenance***
- ✓ ***Self-calibration without radioactive sources***
- ✓ ***Sensitive to gamma energies as low as 25 keV***
- ✓ ***RS-232 and RS-485 communications***

Applications:

- State borders and road check points
- Airports, ports, railway and bus stations
- Public, corporate and military buildings
- Banks: safe deposit boxes and caveaux
- Post offices
- Hospitals (radiotherapy units) and universities
- Smelters and waste dumps
- Stockrooms and storage facilities
- Waste incineration and disposal plants
- Food processing plants, water supply tanks
- Weather stations
- Radiological protection in areas subject to terrorist threat

Also available in weatherproof enclosure

RadAl™-1

The RadAl™-1 wall mount radiation monitor and alarm was specifically designed to identify radioactive substances, either lost or misappropriated with criminal intent. It can thus help protect from the consequences of illegal trafficking in radioactive sources and from the radiological risk caused by the widespread presence of radioactive substances in the environment.

The instrument detects the presence of harmful radiation using one to eight large Geiger detectors: the alarm is triggered when the radiation level is statistically higher than the local background.

Each Geiger detector in the RadAl™-1 has 80 times the volume of the detectors used in typical hand-held instruments, ensuring fast response (≤ 1 sec) and high sensitivity (the alarm threshold is typically 20 nGy/h, depending on background).

Multiple outputs (LEDs, buzzer, relay, RS-232 and RS-485 communications) and power supply possibilities (230 / 115 Vac, 12 Vdc) allow easy integration in any area monitoring and security systems.

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Specifications *:

Detectors	Geiger-Müller tube(s), L = 230 mm x ¬ = 20 mm (9" x 0.8")
Sensitivity	12 cps/µGy/h/tube = 12 cps/µSv/h/tube = 120 cps/mR/h/tube
Alarm Level	Automatic, as low as 20 nGy/h = 20 nSv/h = 2 µR/h
Response Time	Automatic, from < 1 seconds to 10 minutes
Alarm Modes	Latching and non-latching, *field selectable*
Calibration	Automatic, uses ambient background
Radiation Detected	X-Ray and Gamma > 25 keV; peak sensitivity at 60 keV
Inputs	1 - Key ON/OFF 2 - Key CALIBRATE
Outputs	Status LEDs: green: ON yellow: COUNT red : ALARM
	Buzzer (can be disabled): 80 dBA @ 30 cm (70 dBA @ 1 m)
	Relay: SPDT, 10 A, 380 Vac, 2500 W, non-inductive load
Communications	RS-232-C or RS-485 1/4 load, *field selectable;* Protocol: 9600 baud, 8 bits, No parity, 1 stop bit
Power Supply	230 Vac (nominal), 50 - 60 Hz (fused 100 mA)
(field selectable)	115 Vac (nominal), 50 - 60 Hz (fused 100 mA)
	12 ± 3 Vdc
Power Consumption	1.5 W average, 3 W peak
Temperature Range	Operating: -25… 85 °C; Storage: -40… 125 °C
Humidity Range	0… 95% RH, non-condensing (-WP models: 0... 100% RH)
Housing	Black anodised aluminium (other colours on demand) (-WP: grey fiberglass reinforced polyester)
Dimensions (HWD)	110x400x60 mm = 4.35x15.75x2.37 ") (-WP models: 445x393x158 mm = 17.53x15.46x6.23 ")
Weight	1.4 Kg = 3.0 LBS (-WP: 12 Kg = 27 LBS); Shipping: 2.0 Kg = 4.2 LBS (-WP: 13 Kg = 29 LBS)
Protection	IP54 (-WP models: IP67 = NEMA 4, UP listed)
Applicable Standards	FCC Part 15 (Class B); EN 50081-1, 50082-1 (CE label)
Warranty	One year parts and labour

Options *:

Model	Number GMs	Price (EU)**	Model	Number GMs	Price (EU)**
RadAl™-1/1	1		RadAl™-1-WP/1	1	
RadAl™-1/2	2		RadAl™-1-WP/2	2	
RadAl™-1/4	4		RadAl™-1-WP/4	4	

Notes:

Options RadAl™-1-WP/X are in an IP67 (NEMA-4) waterproof, fiberglass reinforced tan polyester enclosure.

The specifications above for sensitivity are for model RadAl™-1/1. The RadAl™-1/4 model has four G-M tubes, and consequently has four times the sensitivity and - in presence of a source of equal intensity - is twice as fast as the RadAl™-1/1.

Each RadAl™-1/X is delivered with a 1.8 m (6 ft) power cord (Standard Central European plug) and two expansion screws for wall mounting. A 6 mm (1/4") drill bit and a drilling machine may be required for installation. Connections to relay and communication ports are by wire terminals accessible through passages on the bottom wall.

Computer programs can be provided to demonstrate and test communications. A detailed report: "*sensitivity tests using Am^{241} and Cs^{137} sources*" is available documenting alarm response thresholds.

A remote command box (RCB-R1), lead shield, (Shield-R1), test sources and other accessories are also available.

All models can be delivered with energy compensated detectors (flat response, ± 20%, 40 to 2000 keV) (option /C).

No toxic nor radioactive substances are used in this instrument.

* Specifications and prices are subject to variation without notice: consult your distributor for a firm quote. ** Prices do not include TVA

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