

SIM-02 Small Items Monitor



SIM-02 monitor is intended for checking and indicating contamination on small items by beta and gamma emitting radionuclides.

It can be utilized for protective helmets, different work tools, etc. It is designed primarily for use at controlled areas exits.

Purpose

SIM-02 monitor is intended for checking and indicating contamination on small items by beta and gamma emitting radionuclides. It can be used for example for protective helmets, different working tools, instruments etc.

It is designed primarily for using at nuclear power plants controlled areas exits.

Description

The control unit contains the necessary power supply sources for scintillation detectors, processes signals coming from the detectors, indicates measured values, optionally exports the data to host system, and indicates the device's status, including measurement results, both optically and acoustically. The fluorescent display and two LEDs are located in the front section.

The chamber consists of a metallic box with a measurement volume of 320 x 230 x 230 mm (12½ x 9 x 9 in). Doors form the front and rear walls of the box. The inner box sides and doors are fitted with 5 mm lead plates for shielding external background radiation (optionally up to 20 mm (¾ in) shielding). Scintillation detectors are installed in the lower and upper sections of the measuring chamber as standard.

The front and rear doors are equipped with electromagnetic locks which are controlled by a blocking system. The device prevents the opening of both doors at the same time, so as not to spread contamination outside the controlled area.

The SIM-02 can be set into one-door mode: Only the front door is utilized for insertion and removal of objects measured. The rear door stays locked.

All device parameters set-up and status monitoring can be provided remotely with RS-232 serial interface.

The power supply adaptor is in the standard delivery.

Main Advantages

- Simple installation, easy operation
- Front and rear doors: system of door blocks so as not to spread contamination
- One-door or two-doors operational modes
- Connection to the host system available for remote oversight and control

Standards and Certification

Electromagnetic Compatibility (EMC)

EN 61000-6-2, EN 61000-6-3

Description

Before an object can be properly checked, the background must be measured. The background measurement runs automatically when idle, as well as in between particular measurements. The background value must reach a defined interval.

The objects to be checked are inserted into the measuring chamber. The measuring process launches automatically with the closing of the doors.

After the checked object is inserted and the measurement completed, the measured value is compared with the pre-set alarm level. If the value measured is lower than the alarm level, the door outside the radiation controlled area will open and the object can pass through. In the case that the alarm level is exceeded, the door inside the radiation controlled area will open and the object must be returned and decontaminated.

The measurement result is indicated on the display and with a red or green light. The higher value from both detectors responses is always applied. Exceeding the alarm level is indicated by an acoustic signal.

The measurement results can be displayed as a ratio of net count to pre-set alarm level, or as a ratio of net count to background. The ratio can be displayed in percentage.



SIM-02, visible electromagnetic door lock and bottom detector grid

Specification

Detector type	2x plastic scintillation
Detector size	285 x 230 x 50 mm (11¼ x 9 x 2 in)
Measuring chamber dimensions	320 x 230 x 230 mm (12½ x 9 x 9 in)
Lead shielding	5 mm (up to 20 mm*) 0.2 in (up to ¾ in*)
Adjustable alarm level	100 Bq ~ 20 kBq, referential source ¹³⁷ Cs
Power supply	24 V, 1.5 A adaptor 230 V, 50 Hz or 110 V, 60 Hz
Power consumption	app. 24 W
Electric protection	IP 30
Dimensions (W x H x L)	384 x 511 x 471 mm (15⅞ x 20⅞ x 18½ in)
Weight	app.125 kg; up to 300 kg* (275 lb; up to 660 lb*)
Communication interface	RS-232 cannon 9 pin
Ambient temperature	+15 ~ 35 °C (59 ~ 95 °F)

* with additional shielding

Models and Accessories

Type	Description
K1112	Small Items Monitor SIM-02
Optional Accessories	
<ul style="list-style-type: none"> Software for remote display and control by host system Additional lead shielding, 20 mm (¾ in) Ethernet communication instead of RS-232 	
Related products	
K1255	MCM-300 Tools and Materials Contamination Monitor
K130X	Personnel Exit Monitor, ExitScan-2 series
K101X	Hand-Foot Contamination Monitor, HF series
K1570	FCM-11 Frisking Contamination Monitor
K1227	DCM-300D Documentation Contamination Monitor

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