ALMO

Alarm Monitor - stationary dose rate monitoring system with external detectors

The ALMO alarm monitors are designed to measure dose rate levels in rooms.

The systems consist of a head unit with LC display and electronics, combined with one or more probes and external alarm units.

The ALMO can be connected to a PC-system for central monitoring and data recording.

Benefits

- Microcontroller-based measurement electronics
- Dose rate measurements displayed in n/μ/mSv/h with autoranging function
- User configurable alarm thresholds per probe
- Easy-to-operate measurement system
- Ergonomic housing, for desktop or wall mounting
- Various visual/acoustic alarm units can be connected
- Software for continuous dose rate measurement, including data storage
- Also available with integrated battery backup

Afterloading

The ALMO-1 is used by different manufacturers of afterloading systems for brachytherapy. In this case, the main task of the alarm monitor is to indicate if the therapy source is open or closed. For that purpose the ALMO-1 is usually combined with GM-probe type 18550. Generally the version with integrated battery backup is used in order to keep the system running in case of a power failure.

An external alarm with 3 lights (red/yellow/green) and an acoustic alarm show the operational status of the system, both visually and acoustically: green = closed source, yellow = error, red = open source, red + acoustic alarm = open source and open door. In addition to the visual alarm, some manufacturers use a second warning light or a matrix sign with

alarm signal for the area outside the therapy room (e.g. corridor or control room). These units are controlled in a similar way via ALMO. An electronic interlock - if present - can also be operated via ALMO. This function is often used as safety feature, particularly in hot cells.

Options and accessories

External alarm units

Visual and acoustic alarm units are available for connection to all ALMO systems. Available with 1, 2 or 3 lights and with or without buzzer and flashing light. They can be ordered for wall mounting as well as for desktop installation.

ALMO 1

Alarm monitor - single-channel, stationary dose rate measuring system with external detector

Technical specifications

ALMO1

Type:	Alarm Monitor ALMO 1
Electronics:	Microcontroller-based measurement electronics, one-channel system (1 detector connectable)
Display.:	LCD with LED illumination during continuous operation
Keyboard:	foil keyboard
Housing:	200 x 150 x 75 mm (L x B x H) applicable as wall housing or desktop housing
Weight:	Approx. 700 g
Power supply:	100-240 V ~, 47-63 Hz
Consumption:	15 W
Alarm:	Optical and acoustic, optionally external alarm unit, quit function
Temperature:	0° C up to +50° C, 0 - 95% relative humidity (no condensation)
Interfaces:	2 relay outputs (24 V, 500 mA or potential-free, max. 24 V, 1 A) e.g. for LED-lamp with 3 levels, siren, interlock, RS 232 / 422 / 485 or USB-interface (selectable via menu)

Fields of application

- workplace and room monitoring, e.g. on hot cells
- system monitoring, e.g. in isotope production
- ward and/or patient monitoring in nuclear medicine/radiation therapy
- monitoring and selection in sorting boxes for radioactive waste
- monitoring of test facilities in nondestructive material testing

Performance feautures

- μ-controller-based measurement electronics
- digital measurement value information on large-area, illuminated LCD display
- externally connectable detector (GM-counter tube, NaI-detector..) with integrated
- high voltage generation and electronics
- automatic detector identification, calibration data are read out by the measurement electronics,
- allowing simple replacement of the detector

ALMO 1

Alarm monitor - single-channel, stationary dose rate measuring system with external detector

- detector can be set up in a distance of 100 m from measurement electronics via cable
- 2 freely definable alarm thresholds
- easy-to-operate measurement system with user guidance
- ergonomically shaped housing, desktop or wall version
- various optical/acoustic alarm units connectable
- serial data interface for measurement data transmission and storage on external PC system
- software for continuous dose rate measurement, incl. data storage

Detectors

The following detectors can be used as standard:

Geiger-Müller counter tubes

Type 18 550 DE/CE*, measurement range approx. 1 µSv/h - 20 mSv/h
Type 18 509 DE/CE*, measurement range approx. 50 µSv/h - 1 Sv/h
Type 18 529 DE/CE*, measurement range approx. 200 µSv/h - 10 Sv/h
* ambient dose equivalent H*(10)

NaI-scintillation detector*

NaI 1 x 1.5", measurement range 40 nSv/h - 200 µSv/h
* max. cable length 20 m

ALMO 1 with GM-probe and 3-level LED-lamp