



## stationary dose rate measuring systems

### ALM01 - ALM03 - ALM06

**ALM01** Alarm -channel, stationary dose rate measuring system with external detector

#### *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
- exhaust air monitoring
- monitoring of test facilities in non-destructive material testing
- warehouse monitoring, e.g. collection sites for radioactive was

#### *Performance features*

- $\mu$ -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
- 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.



### Technical data

- Type: Alarm Monitor ALMO 1
- Electronics:  $\mu$ -controller-based measurement electronics
- 1 detector connectable
- Display: LCD display (128 x 64 pixels with LED background illumination in continuous operation mode)
- Keyboard: membrane keyboard
- Housing: 200 x 150 x 75 mm (L x W x H) available as wall or desktop housing
- Power supply: 100 - 240 V  $\sim$ , 50 - 60 Hz
- Consumption: 15 W
- Alarm: optical and acoustic, external alarm unit as an option
- Temperature range: 0° C to +40° C
- Interfaces: switch output for 3-level lamp
- 2 switch outputs, potential-free, max. 24 V, 1 A
- serial interface RS 232 or RS 422 (as an alternative)

### Detectors

The following detectors can be used as standard:

Geiger-Müller counter tubes

- Type 18 550 DE/CE\*, measurement range approx. 1  $\mu$ Sv/h - 20 mSv/h
  - Type 18 509 DE/CE\*, measurement range approx. 50  $\mu$ Sv/h - 1 Sv/h
  - Type 18 529 DE/CE\*, measurement range approx. 200  $\mu$ Sv/h - 10 Sv/h
- \* ambient dose equivalent

H

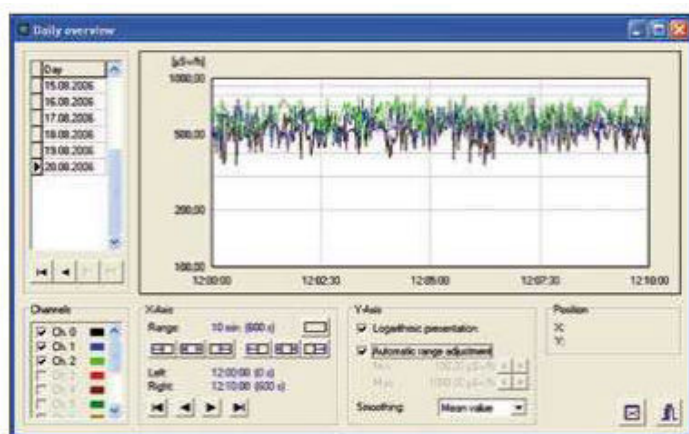
\*(10)

Nal-scintillation detector\*

Nal 1 x 1.5", measurement



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



software for dose rate measurement and data storage (option)



## ALM03 Monitor Multi-Channel, Stationary Dose Rate Monitoring System with External Detectors .

### Field 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
- Exhaust air monitoring
- Monitoring of test facilities in non-destructive material testing
- Warehouse monitoring, e.g. collection sites for radioactive waste



### Performance Features

- Microcontroller-based measurement electronics
- Digital measurement value information on large-area, illuminated LC display
- Simultaneous measurement value display of all connected probes
- Measurement value display of the dose rate in n/µ/mSv/h with auto ranging function
- Externally connectable detectors (GM counter tubes, NaI detectors) with integrated high voltage generation and electronics
- Automatic detector identification, calibration data are read out by the measurement electronics, allowing simple replacement of the detectors
- Mixed operation of different detectors possible
- Detectors can be set up in a distance of up to 100 m from the measurement electronics via cable connection
- 2 freely definable alarm thresholds per probe
- Monitoring of the service life of the counter tube (%)
- Easy-to-operate measurement system with user guidance
- Ergonomically formed housing, can be used as desktop or wall housing
- 2 insulated switch outputs per probe (one each per alarm threshold)
- Different visual/acoustic alarm signalling units can be connected
- Serial data interface for data transfer and storage on external PC system
- Software for continuous dose rate measurement, including data storage

### Technical Data:

- Type: Alarm Monitor ALMO 3
- Electronics:  $\mu$ -controller-based measurement electronics connection of max. 3 detectors
- Display: LC display 4 x 20 characters, with LED background illumination in continuous operation mode
- Keyboard: Membrane keypad
- Housing: 302 x 272 x 101 mm (W x D x H) can be used as wall or desktop housing
- Power supply: 230 V, 50 Hz
- Consumption: max. 60 W
- Alarm: visual and acoustic, external alarm unit as an option
- Temperature range: 0° C to + 50° C, 0 - 95% relative humidity
- Interfaces: 2 insulated switch outputs per detector (max. 24 V, 1 A)
  - e.g. for 3-step signal lamp, in addition 1 sum output 1 RS 232 or RS 422 interface

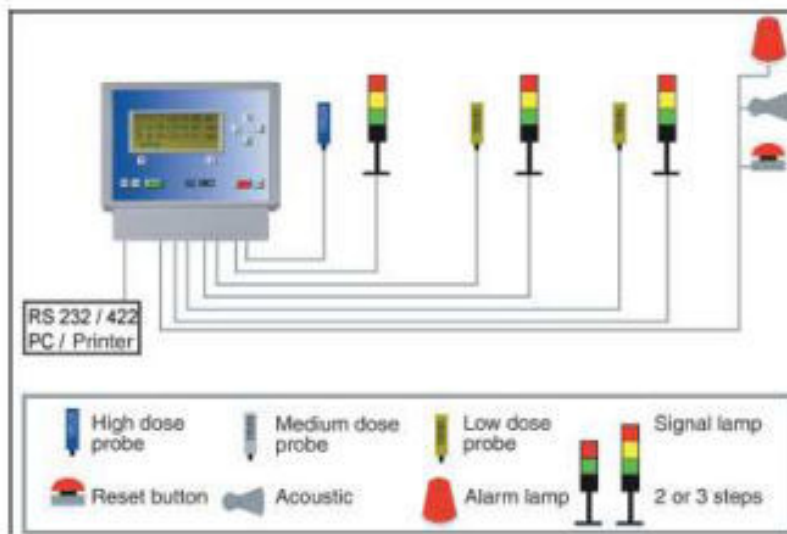
The following detectors can be used as standard:

### Geiger---Müller Counter Tubes.

- Type 18 550 DE, measurement range approx. 1  $\mu$ Sv/h - 20 mSv/h
- Type 18 509 DE, measurement range approx. 50  $\mu$ Sv/h - 1 Sv/h
- Type 18 529 DE, measurement range approx. 200  $\mu$ Sv/h - 10 Sv/h
- Type 18 526/36 as pulse probes

### Nal Scintillation Detector.

Nal 1 x 1.5", measurement range 40 nSv/h - 2 mSv/h.



Example of a dose rate monitoring system with alarm units





**MNT**  
KWINT INTERNATIONAL B.V.



MEDICAL NUCLEAR TECHNOLOGY

**ALM06** Alarm Monitor –6-channel, stationary dose rate measuring system with external detectors.



#### *Fields of application.*

- workplace and room monitoring, e.g. in 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
- exhaust air monitoring
- monitoring of test facilities in non-destructive material testing
- warehouse monitoring, e.g. collection sites for radioactive waste

#### *Performance features .*

- $\mu$ -controller-based measurement electronics
- digital measurement value information on large-area, illuminated LC display
- measurement value display of dose rate in  $n/\mu/mSv/h$  with auto ranging function
- membrane keyboard with indication of the switching status of the traffic light relays
- externally connectable detector (GM counter tube, NaI detectors) 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
- detector can be set up in a distance of 100 m from measurement electronics via cable
- 2 freely definable alarm thresholds per probe
- easy-to-operate measurement system with user guidance
- ergonomically shaped housing, desktop or wall version
- optional emergency power supply
- 8 x 2 switch outputs, 8 x potential-free and 8 x potential-free or 24 Volt supply (can be set via menu)
- various visual/acoustic alarm units can be connected
- 2 (3) interfaces:
  - Interface A: USB, RS-232, RS-422 or RS-485 can be selected via menu.
  - Interface B: RS-232, RS-422 or RS-485 can be selected via menu.
  - Ethernet (in preparation)
- software for continuous dose rate measurement, including data storage (in preparation)
- 3 languages can be set via menu: German, English, French
- data storage of the last 100 alarms

### Technical data

Type:	Alarm monitor ALMO 6
Electronics:	$\mu$ Controller-based measuring electronics 6 detectors can be connected
Display:	Graphic-LCD-screen (128 x 64 pixels) with LED illumination during continuous use
Keyboard:	Membrane keyboard
Housing:	280 x 300 x 120 mm (L x W x H) available as wall or desktop housing
Power supply:	100 - 240 V, 47 - 63 Hz
Power consumption:	max. 60 W
Alarm:	optical and acoustic, optionally external alarm units, 2 thresholds for each probe, Freely definable
Temperature range:	0° C till + 40° C
Relays:	Switching capacity: max. 24 V, 1 Ampere per channel Current for traffic light, acoustic and additional elements If not switched potential-free: 24 V, total current of all 6 channels max. 1500 mA
Interfaces:	A: switchable: USB, RS-232, RS-422 or RS-485 B: switchable: RS-232, RS-422 or RS-485

### Detectors:

The following detectors can be used as standard:

#### Geiger---Müller counter tubes.

Type 18 550 DE/CE\*, measurement range approx. 1  $\mu$ Sv/h - 20 mSv/h

Type 18 509 DE/CE\*, measurement range approx. 50  $\mu$ Sv/h - 1 Sv/h

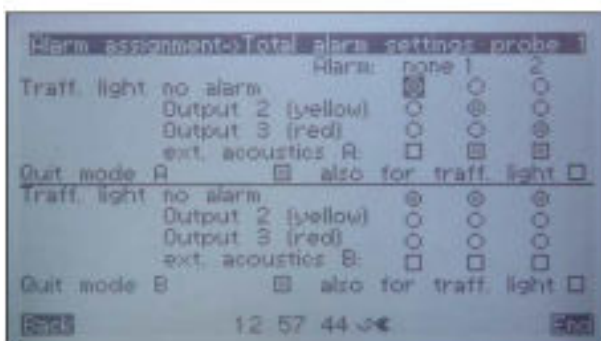
Type 18 529 DE/CE\*, measurement range approx. 200  $\mu$ Sv/h - 10 Sv/h

\* ambient dose equivalent H\*(10)

#### Nal---scintillation detector\*.

Nal 1 x 1.5", measurement range 40 nSv/h - 200  $\mu$ Sv/h

\* max. cable length 20 m



Software for dose rate measurement and data storage (option)