

## AREA MONITORS

### GRAETZ WS05C-1/WS05C-2/WS05C-3

#### Product features

The area monitors WS05C-1, WS05C-2 and WS05C-3 are stationary room monitoring systems for the dose rate measurement of  $\gamma$ -radiation and X-rays, preferably used for the permanent monitoring of isotope laboratories, radiotherapy rooms, storage rooms for radioactive materials, etc.

#### The WS05C is available in the following versions:

- ☸ **WS05C-1:** Area monitor (1 measuring channel) with RS-232 interface for the operation with any probe of the GRAETZ programme.
- ☸ **WS05C-2:** Area monitor (2 measuring channels) with RS-232 interface for one measuring channel, for the simultaneous operation of max. two different or similar probes – any of the GRAETZ programme.
- ☸ **WS05C-3:** Area monitor (3 measuring channels) with RS-232 interface for one measuring channel, for the simultaneous operation of max. three different or similar probes – any of the GRAETZ programme.

Each measuring channel indicates the measured values on a digital, illuminated LC display (60 x 30 mm). For each measuring channel four individual dose rate alarm thresholds are free programmable over the whole measuring range of the connected probes.

When using  $\gamma$ -probes, the dose rate shown on the LC display is Sv/h. When an end-window probe for  $\alpha/\beta$ -measurements or a NaI-scintillation probe for  $\beta/\gamma$ -measurements is connected, the measured value is displayed in cps. Additionally to the digital display, the dose rate is also indicated in analogue form by a logarithmic bar graph.

The instrument is autoranging. When a measuring channel triggers a dose rate alarm, the integrated alarm light of the WS05C gives an optical and acoustical alarm.

#### In the standard version:

- Green → "Ready for operation"
- Orange → "Alarm threshold exceeded"
- Red → "Error" (e.g. defective probe)

The red LED situated above the display indicates by which measuring channel the alarm has been triggered.

An RS-232 interface for one measuring channel is available for connecting the WS05C with a computer

#### Options

- ☸ **Relay output** for an additional external alarm lamp for each measuring channel or a **potential free relay output** for each measuring channel instead of the relay output for the external alarm lamps (max. switching voltage/current: 24 V, 20 mA)
- ☸ **Acoustic alarm disconnectible:** only triggered when an alarm threshold is exceeded and the monitored room's door is open
- ☸ **Emergency power supply** (300 W) for the uninterruptible operation of the WS05C in case of mains failure
- ☸ **External alarm lamps** (optical/acoustical)
- ☸ **Probe cable** (standard length: 1.25 m), extension up to 100 m
- ☸ **Time counter**, configurable as:
  - Operating time counter: Adds the time during which the wall station/the channel is switched on.
  - Alarm time counter: Adds the time in which the wall station/the channel triggered an alarm.
  - Error time counter: Adds the time in which the wall station/the channel displayed an error.

Adds the time in which a dose rate warning threshold was triggered

#### ☸ **Special versions upon request**



WS05C-3



## Technical Data WS05C

<b>Types:</b>	<b>WS05C-1</b> for the connection of one probe (1 channel) <b>WS05C-2</b> for the simultaneous connection of max. 2 probes (2 channels) <b>WS05C-3</b> for the simultaneous connection of max. 3 probes (3 channels)
<b>Probes:</b>	The probes are preferably connected by means of a probe cable (up to 100 m) or directly to the sockets of the WS05C.
<b>Measurand:</b>	Ambient equivalent dose rate $\dot{H}^*(10)$ for CE probes.
<b>Measuring accuracy:</b>	$\leq \pm 10\%$
<b>Display:</b>	Each measuring channel is equipped with an illuminated LC display
<b>Indication:</b>	<ul style="list-style-type: none"> <li>Digital indication in Sv/h or cps, depending on the connected probe</li> <li>Analogue indication by a logarithmic bar graph</li> </ul>
<b>Alarm:</b>	<ul style="list-style-type: none"> <li>Probe failure alarm</li> <li>Dose rate alarm thresholds 1 – 4</li> <li>Dose alarm thresholds 1 – 4</li> </ul>
<b>Alarm signals:</b>	<ul style="list-style-type: none"> <li>Integrated optical/acoustical signal, triggered when a connected probe signals a dose rate alarm (orange) and/or an error (red)</li> <li>Red LED for alarm indication when an alarm threshold is triggered (at each measuring channel)</li> </ul>
<b>Interface:</b>	RS-232 for one measuring channel (WS05C-2/WS05C-3 → first measuring channel)
<b>Dose rate alarm thresholds:</b>	4 dose rate alarm thresholds for each measuring channel, programmable within the measuring range of $0.5 \mu\text{Sv} \leq \dot{H}^*(10) \leq 10 \text{ Sv}$
<b>Dose alarm thresholds:</b>	4 dose alarm thresholds free for each measuring channel, programmable over the whole measuring range of the connected probe(s)
<b>Temperature range:</b>	0°C up to +40°C for the area monitor -30°C up to +60°C for the probes
<b>Humidity:</b>	Max. 90% relative humidity
<b>Power supply:</b>	90 – 260 V AC 200 mA max. 50/60 Hz
<b>Housing:</b>	Plastic, high-impact
<b>Dimensions:</b>	Approx. 260 mm x 230 (455) mm x 150 mm
<b>Weight:</b>	Approx. 2.8 kg

## Available probes:

Probe type	Measuring range Type of radiation	Energy range
<b>18545 CE</b>	$150 \text{ nSv/h} \leq \dot{H}^*(10) \leq 200 \mu\text{Sv/h}$ γ and X-rays	40 keV – 1.3 MeV
<b>18550 CE</b>	$10 \mu\text{Sv/h} \leq \dot{H}^*(10) \leq 20 \text{ mSv/h}$ γ and X-rays	40 keV – 1.3 MeV
<b>18529 CE</b>	$0.5 \text{ mSv/h} \leq \dot{H}^*(10) \leq 10 \text{ Sv/h}$ γ and X-rays	70 keV – 3 MeV
<b>18509 CE</b>	$50 \mu\text{Sv/h} \leq \dot{H}^*(10) \leq 1 \text{ Sv/h}$ γ and X-rays	55 keV – 1.3 MeV
<b>18526 D</b>	Background approx. 25 cpm Approx. 4 cps at $1 \mu\text{Sv/h } ^{137}\text{Cs}$ α, β, γ radiation	
<b>Nal-Scintillation probe 2002</b>	Background approx. 135 cps Approx. 1,500 cps at $1 \mu\text{Sv/h } ^{137}\text{Cs}$ β / γ radiation	γ radiation > 25 keV β radiation > 100 keV



For detailed information please see separate data sheet „GRAETZ probes“.

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