Area Monitors
GRAETZ WS05C-1 / C-2 / C-3

The area monitors WS05C-1 / WS05C-2 and WS05C-3 are stationary room monitoring systems for the dose rate measurement of γ-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 RS232-interface for the operation with any probe of the GRAETZ-programme.
- **WS05C-2:** Area monitor (2 measuring channels) with RS232-interface for one measuring channel, for the simultaneous operation of max. 2 different or similar probes – any of the GRAETZ-programme.
- **WS05C-3:** Area monitor (3 measuring channels) with RS232-interface for one measuring channel, for the simultaneous operation of max. 3 different or similar probes – any of the GRAETZ-programme.

Each measuring channel indicates the measured values on a digital, illuminated LC-display (60x30 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 γ-probes, the dose rate shown on the LC-Display is Sv/h. When an end-window probe for α-/β-measurements or a NaI-scintillation probe for β-/γ-measurements is connected, the measured value is displayed in cps. Additionally to the digital display, the dose rate is also indicated in analog form by a logarithmic bargraph.

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.

For connecting the WS05C with a computer, an RS232-interface for one measuring channel is available.

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: 24V, 20 mA).
- **Acoustic alarm disconnectible:** only triggered when an alarm threshold is exceeded and when the door of the monitored room is open.
- **Emergency power supply** (300W) 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.
- **Special versions upon request.**

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Subject to technical change

Technical Data WS05C

Types: **WS05C-1** for the connection of one probe (1 channel)
WS05C-2 for the simultaneous connection of max. 2 probes (2 channels)
WS05C-3 for the simultaneous connection of max. 3 probes (3 channels)

Probes: The probes are preferably connected by means of a probe cable (up to 100 m) or directly to the sockets of the WS05C.

Measurand: ambient dose rate equivalent rate $\dot{H}^*(10)$ for CE-probes

Available probes

(The PTB-approval of the probes is only valid when used together with the dose rate meter X5C *plus*.)

Probe type	Indication range	PTB-approved measuring range [1)]
18545 CE	60 nSv/h – 200 µSv/h	150 nSv/h – 200 µSv/h (γ-radiation and X-rays)
18550 CE	100 nSv/h – 20 mSv/h	10 µSv/h – 20 mSv/h (γ-radiation and X-rays)
18529 CE	10 µSv/h – 10 Sv/h	0.5 mSv/h – 10 Sv/h (γ-radiation and X-rays)
18509 CE	10 µSv/h – 1 Sv/h	50 µSv/h – 1 Sv/h (γ-radiation and X-rays)
18526 D	cps, α-, β-, γ-radiation	
NaI-Scintillation probe 2002	cps, β-/ γ-radiation	

[1)] PTB-approved measuring range for measurements specifically demanded by German authorities

Measuring accuracy: ≤ ± 10%

Display: each measuring channel is equipped with an illuminated LC-display

Indication:
- digital indication in Sv/h or cps, depending on the connected probe
- analog indication by a logarithmic bargraph

Alarm:
- probe failure alarm
- dose rate alarm thresholds 1 - 4
- dose alarm thresholds 1 - 4

Alarm signals:
- integrated optical/acoustical signal, triggered when a connected probe signalises a dose rate alarm (orange) and/or an error (red)
- red LED for alarm indication when an alarm thresholds is triggered (at each measuring channel)

Interface: RS232 for one measuring channel
(WS05C-2 / WS05C-3 → first measuring channel)

Dose rate alarm thresholds: for each measuring channel 4 dose rate alarm thresholds free programmable over the whole measuring range of the connected probe(s)

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Temperature range: 0°C up to +40°C for the area monitor
-30°C up to +60°C for the probes

Humidity: max. 90% relative humidity

Power supply: 90-260V AC 200 mA max. 50/60 Hz

Housing: plastic, high-impact

Dimensions: 260 mm x 230 (455) mm x 150 mm

Weight: approx. 2,8 kg

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