

# FMS Release counter system



The FMS release counter systems are used to measure, control and manage temporarily stored radioactive waste with a relatively short half-life. Such waste is generated, for example, in the field of nuclear medicine and research and can be disposed of as conventional waste after a certain storage period. Country-specific and European radiation protection directives define limit values for specific activity as a release criterion.

## Benefits

- Measuring chambers in different sizes
- Systems with 4, 6, 8 or 10 NaI detectors for gamma radiation measurement
- Operation via integrated industrial PC
- Easy to use software with data management system
- 2 doors for easy loading
- Mobile
- Integrated floor scale

## Key figures

4 different types

➔ FR 4, FR 6, FR 8, FR 10

Up to 30000 counts

➔ Measuring range

2 measuring methods

➔ For quality assurance

## Product description

The FMS release counter system consists of a measuring chamber in a stainless steel housing. The detectors are located on the side surfaces and, depending on the type, also in the floor and ceiling areas. Plastic containers or Halipacs are used to collect and store waste. The waste container can be easily and safely inserted into the measuring chamber via two doors. The measuring chamber is surrounded on all sides by a 5 mm lead shielding.

The measuring system is operated using an industrial PC integrated into the housing.

A floor scale takes into account the weight of the measured object, so the measured values can also be output in Bq/g.

FMS release measuring systems are available in different types, which can be adapted to different requirements.

## Functionalities

- Integrated floor scales with serial data interface and automatic acquisition of measured values.
- Printout of labels and protocols possible.
- Statistical functionalities:
- Presentation of activities currently in storage
- Annual overview of stored and outsourced activities
- Detector exchange easily possible.

## Quality assurance

- Two different measuring methods available for regular checks of the probe function.
- Software supports nuclide- and object-related calibrations.

## Extensions and options

- External monitor
- Various label and protocol printers can be connected
- Barcode reader connectable
- Storage location management and booking specs functions can be integrated
- Determination of the characteristic limits according to DIN ISO 11929

## Technical data detector

<b>Type</b>	NaI(Tl) probe with magnetically shielded photomultiplier
<b>Size</b>	Crystal: 70 mm x 70 mm x 13 mm Total: 250 mm x 80 mm x 35 mm
<b>Weight</b>	0.6 kg
<b>Voltage</b>	Approx. 1100 V
<b>Background (with 5 mm lead shielding)</b>	Background count rate at 50 nSv/h: 6 detectors: approx. 120 cps 10 detectors: approx. 200 cps
<b>Radionuclide efficiency</b>	Cs-137: 6 detectors: approx. 1.05 % 10 detectors: approx. 1.15 %
<b>Measuring channels</b>	FR 4      4 scintillation detectors: one on each side FR 6      4 scintillation detectors: one on each side, plus one floor detector and one ceiling detector FR 8      8 scintillation detectors: two on each side FR 10     8 scintillation detectors: two on each side, plus one floor detector and one ceiling detector  Detector area: each approx. 50 cm <sup>2</sup> (70 mm x 70 mm)
<b>Background subtraction</b>	With adjustable BG measuring time
<b>Measurement electronics</b>	Integrated industrial computer (PC 104 basis)
<b>Keyboard</b>	PC keyboard via USB with integrated touchpad
<b>Measurement value display</b>	Nuclide-related in Bq/g or Bq
<b>Measuring time</b>	Adjustable in s (individually, depending on the container; depends on the detection limit)
<b>Display</b>	Large-area, graphic colour LC display 12.1"
<b>Measuring range</b>	Up to 30,000 counts/s
<b>Power supply</b>	100 V~ - 240 V~, 50 Hz - 60 Hz, 120 VA
<b>Nominal operating range</b>	Temperature: Operation: 10 °C - 40 °C (non-condensing) Storage: 0 °C - 50 °C $\Delta t < 10$ °C/h
<b>Dimensions</b>	Total: FR 4/6      approx. 800 mm x 620 mm x 620 mm (H x W x D) FR 8/10     approx. 1100 mm x 620 mm x 620 mm (H x W x D)  Measurement chamber: FR 4/6      approx. 570 mm x 500 mm x 500 mm (H x W x D) FR 8/10     approx. 870 mm x 500 mm x 500 mm (H x W x D)
<b>Weight</b>	FR 4/6      approx. 235 kg FR 8/10     approx. 290 kg
<b>Scale</b>	Maximum load 50 kg
<b>Housing</b>	Stainless steel housing
<b>Interfaces</b>	4 USB interfaces VGA external External network connection RJ45