

# RTM871

Two-in-one Quick Scan



---

## Body and Internal Contamination Measurements

---

- dual measurement for internal contamination including Hot Spot detection and contamination detection ( $\beta/\gamma$ )
  - fast measurement (typical 2 x 4s)
  - no gas required
  - speech processor/multi-language
  - automatic background subtraction
- 

The RTM871 has been developed especially for fast entrance checks outside the controlled area. With this measurement all persons entering the plant are reliably and efficiently detected on activity from outside. In case of contamination their entrance can be denied.



## Functional characteristics

measurement principle:

- large surface scintillation detectors for beta/gamma radiation
- two-step measurement
- differentiation between surface contamination and internal contamination
- background compensation with a unique method using two median filters

operation:

- display of amount of activity volume and position of contamination
- user guidance by speech processor up to four languages user selectable
- monitoring of the measurement position by optical sensors
- measurements in cps, cpm, Bq and Bq/cm<sup>2</sup>
- two-step measurement:
  - 1. front measurement of the body, right hand and lower arm, and right foot
  - 2. reverse side: back measurement, left hand and lower arm, and left foot

service and maintenance:

- easily replaceable detectors
- new software provides a calibration menu with a protocol (MOWIN)
- very easy adjustment of all programmable parameters
- data storage on floppy disk or data printout for analysis

## characteristics of the detectors

- detectors: plastic scintillation detector with photo multiplier tube and discriminator
  - body: 5 x RPD 11.4 / 9.1 each 1140 cm<sup>2</sup> (176 in<sup>2</sup>)
  - feet: 1 x RPD 6.5 / 5.2 650 cm<sup>2</sup> (100 in<sup>2</sup>)
  - hand, forearm: 2 x RPD 6.5 / 5.2 each 650 cm<sup>2</sup> (100 in<sup>2</sup>)
- detector efficiency: referred to a large area source 100 cm<sup>2</sup> (15.5 in<sup>2</sup>), hands and feet in contact

Nuclides	body	foot	forearms
<sup>60</sup> Co	> 10%	> 7%	> 10%
	(8)	(5)	(8)
<sup>133</sup> Ba	> 10%	> 7%	> 10%
	(10)	(7)	(10)
<sup>36</sup> Cl	> 8%	> 5%	> 8%
	(0)	(0)	(0)

- detection limit
  - 200 Bq (5.4 nCi)<sup>60</sup>Co in 2 x 4 seconds
  - (0.1 μSv/h (0.01 mrem/h) detection probability 1.65 Sigma, safety against false alarm 1.65 Sigma, source in contact)
- electronics/display
  - computer PC board pentium 200 MHz
  - ATEWIS2000 plug-in board for detector communication and binary control
  - RAM 64 MB
  - interface 4 x serial, 1 x parallel RS232
  - graphic display VGA on board
  - HDD 1.28 MB
  - FDD 3.5 in, 1.44 MB
  - full ASCII IR-keyboard plus trackball (mouse function for parameter setting)
  - monitor TFT LC display, colour
  - sound card on board 16 B
- software
  - operating system QNX
  - graphic user interface QNX photon
  - multitasking and real time
  - option: TCP/IP network for central database (IRMOS system)
- sensors
  - several opto-sensors and proximity switches

