



VF NUCLEAR



WASTE
MANAGEMENT



RESEARCH
CENTRES



NUCLEAR
MEDICINE



MAK-201

LIQUID EFFLUENT DETECTOR

MAIN ADVANTAGES

- Spectrometric measurement of volume activity of up to four selected radionuclides
- A collimator that compensates the effect of level height and is adjustable for various activity levels
- Minimum maintenance
- Can be used as part of a system for controlled releases with retention tanks or as an autonomous monitor

PURPOSE

The MAK-201 monitor is intended for spectrometric monitoring of volume activity of liquids in retention tanks at nuclear medicine workplaces and PET centres.

The monitor consists of:

- LAD-21 detector with NaI(Tl) 1×1" scintillator
- DIM-09 BOX multichannel analyser

The scintillation detector is located in a lead collimator with a horizontal circular collimation slit with the adjustable width of 5-20 mm. The collimation angle is 20°. The design of the collimator compensates the effect of the level fluctuation in the storage tank on the measurement results and ensures optimal geometry for the detection of artificial radionuclides.

The LAD-21 detector is installed in a protective tube hung on a stainless steel wire in the retention tank. A simple mechanical fitting makes it easy to handle the detector and place it in the correct measuring position.

The signal from the LAD-21 detector is processed by the DIM-09 BOX multichannel analyser to produce energy

spectra which allow determination of the activity of up to four predefined radionuclides and their comparison with the preset release levels. The DIM-09 BOX also provides a power supply to the detector.

SPECIFICATION

Detector	NaI(Tl) 1 × 1"
Check source	¹³⁷ Cs, 1 kBq
Measuring range	10 MBq/m ³ – 20 GBq/m ³
Energy resolution (¹³⁷ Cs)	> 8 %
Number of MCA channels	1024
Communication interface	RS-485
Dimensions	95 × 297 mm
Weight	5 kg
Power supply	24 V DC, 10 W
Temperature range	from 5 to 50 °C

RELATED PRODUCTS

-	An automatic system for monitoring and control of storage tanks
ASU-50	Alarm Slave Unit

MAK-201

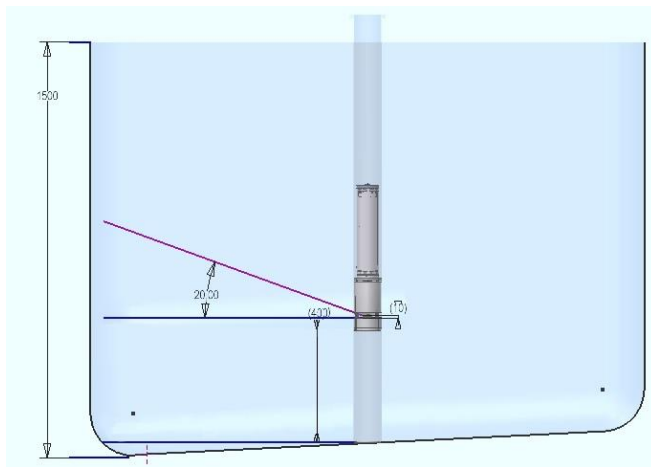
LIQUID EFFLUENT DETECTOR



LAD-21 detector



DIM-09 BOX Multichannel analyser



An example of placement of the LAD-21 detector in a retention tank



ASU-50 Alarm Slave Unit



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Specification subject to change without prior written notice.

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