LM 206

On-line liquid monitor

• continuous monitoring and display of liquid volume activity • visual, audible and electrical signal alarms when threshold levels are exceeded

- **energy spectrum and temperature changes compensation**
- **1024 channels spectrum analysis**
- **available with or without display and local signalling**
- **no sampling system needed**
- **measurement range on request**

The LM 206 from the **RAMSYS** product line has been developed for liquid effluent or process monitoring such as primary system spectrometry in nuclear power plant. A NaI scintillation detector inside a lead shielding faces the process (usually a pipe) containing liquid.
The size of the NaI scintillation detector, the shape and the thickness of the lead shielding is defined by Monte-Carlo analysis on the basis of the required measurement for the application, the volume characteristics, the background and source term for the liquid.

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Version available	Display and local signalling	Associated detector	Associated processing
LM 206-1		1 in 1/4 x 1 in	LPU/SAS
LM 206-2		3 in x 2 in	LPU/SAS
LM 206-3	X	1 in 1/4 x 1 in	LPDU/SAS
LM 206-4	X	3 in x 2 in	LPDU/SAS

Information: in this datasheet are provided as examples for specific arrangements, temperature ranges, energy ranges, measurement ranges, please consult us.

Physical characteristics

- radiation detected: gamma
- detector: NaI scintillation detector
- lead shielding: 2π or 4π/5 cm (4π/2 in)
- measurement range:
  - 6 decades on the following range : 3.7 10^3 Bq/m^3 - 3.7 10^{15} Bq/m^3
- energy range: adjustable in the range 60 keV to 7 MeV
- temperature range: +0°C to +55°C (32°F to 131°F)

Electrical characteristics

- power supply: 120 V/60 Hz - 230 V/50 Hz
- interfaces
  - RS232 serial link for parameter configuration of the monitor through a computer and MASS application software
  - two 0/4 - 20mA analog outputs, one 0/4 - 20mA analog input, three programmable relays, two RS485 isolated serial links

Mechanical characteristics

- protection level: IP65 and IK07
- aluminium case: RAL 7030 grey colour decontaminable paint
- dimensions:

	Detection sub assemblies	LPU/SAS	LPDU/SAS
height	359 mm (14.1 in)	326 mm (12.83 in)	370 mm (14.56 in)
width	394 mm (15.4 in)	196 mm (7.7 in)	196 mm (7.71 in)
depth	496 mm (19.5 in)	106 mm (4.17 in)	187 mm (7.36 in)
weight	290 kg (638 lb)	4.5 kg (9.92 lb)	8 kg (17.6 lb)

Qualification

- EMI/RFI: EN 55022, IEC 61000-6-2, IEC 61000-6-4

Alarm signaling (applicable to LPDU only)

- audio indicators: buzzer sound alert rated at 90dBa at one meter
- visual indicators: programmable operation lights such as red for high alarm, yellow for alert alarm, green for normal operation

Accessories

RAMSYS: Radiation Monitoring System

- RAMSYS softwares
- junction box to get all signals on a terminal block
- set of calibration (^{137}Cs and ^{60}Co source and its fixture)

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