



VF NUCLEAR



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PRŮMYSL

CIM-305

CONTINUOUS IODINE MONITOR



MAIN ADVANTAGES

- Continuous measurement under normal, accident and post-accident operational conditions
- Automatic exchange of the iodine cartridge after reaching the preset pressure drop
- Various communications interfaces
- Compliant with IEC 60761, IEC 61171
- Easy maintenance

PURPOSE

The CIM-305 Continuous Iodine Monitor is designed for continuous monitoring of iodine activity in air (in both organic and inorganic forms). The air can be sampled directly from working environments, ventilation systems or the environment.

The main components of the monitor are as follows:

- Container with unused iodine cartridges
- CID-05 Continuous Iodine Detector,
- Box for used iodine cartridges
- RPU-12 Radiation Processing Unit
- Vacuum Pump
- GFM-10 Gas Flow Meter

The air is sampled through an iodine cartridge filled with impregnated activated carbon as standard. During sampling, the iodine contained in the air is collected in the cartridge. The CID-05 Continuous Iodine Detector measures iodine activity in the cartridge using a NaI(Tl) scintillation detector. The detection unit also includes a container with unused iodine cartridges and a mechanism for their automatic exchange after reaching the maximum pressure drop on the cartridge.

The CID-05 measuring chamber is heated to the set temperature and can be equipped with shielding of various thicknesses. A remotely controlled radionuclide source Cs-137 is used for temperature and time stabilization of the detector.

The RPU-12 Radiation Processing Unit provides power for the system, displays the results of activity measurements, archives measured values and displays the status and other measured parameters of the monitor. It also visually and audibly indicates when the pre-set alarm levels have been exceeded.

A vacuum pump ensures the required air flow.

Optionally, a version without the integrated pump can be supplied. In this case, a remote pump is required to ensure sample flow through the monitor.

The CIM-305 monitor can be connected to the host system via the Ethernet and/or RS-485 interfaces.

Using the display and keyboard, you can check the values and statuses of the monitor and, after authorization of the operator, you can enter basic control commands.

VF-Setup service software is used to set all parameters and perform full diagnostics. The service laptop is connected via the service connector.



Detail of the detector and the container with unused iodine cartridges

SPECIFICATION

Detector type	scintillation NaI(Tl)
Filter media	iodine cartridge TC-45
Measuring range (¹³¹ I)	1 to 1E6 Bq/m ³
Standard shielding (Pb)	3 cm
Nominal flow	55 l/min
Settable flow range	25-100 l/min
Communication interface	Ethernet, RS-485, relay outputs
Service interface	UART
Power supply	230 VAC
Approximate weight	400 kg
Dimensions (W × H × D)	(600 × 1785 × 870) mm
Operational temperatures	from 0° to 50 °C

OPTIONAL ACCESORIES

1-7004-00003	TC-45 Iodine cartridge with activated carbon impregnated with 5% TEDA
	Iodine cartridge with silver zeolite
	Calibration jigs (Ba-133 source with a holder in the form of iodine cartridge)

OPTIONAL FEATURES

Dust filter upstream of the iodine cartridge
Alternative shielding of the CID-05
Configuration for iodine cartridges with silver zeolite
Intake and exhaust connections freely from the place / hose attached with a clip / pipe with a nut M30×1.5
Ports for air grab sampling
Wireless communication with the host system
Displaying of the total activity on the filter
Displaying of the total activity discharged from the ventilation stack
Gamma detector for the measurement of the area gamma dose rate
115 VAC power supply
UPS for backup monitor power supply (without the pump)
Galvanically isolated analog inputs and outputs 0/4-20 mA, digital inputs and outputs, RS-232
Qualification according to IEC 61226 or IEC/IEEE 60780-323, seismically resistant skid according to IEC/IEEE 60980-344