



VF NUCLEAR



NUCLEAR
POWER PLANTS



WASTE
MANAGEMENT



RESEARCH
CENTRES



INDUSTRY
& MANUFACTURING

CPD-16

CONTINUOUS PARTICULATE DETECTOR



MAIN ADVANTAGES

- Very low detection limits
- Moving filter tape
- Operation from 3 months up to several years without filter replacement (depending on the operation mode)
- Continuous or periodic filter movement
- Real time and delayed measurement
- Background compensation in real time
- Radon/Thoron compensation
- Easy maintenance
- Meets the requirements of IEC 60761, IEC 61172, and IEC 61578 standards.

PURPOSE

CPD-16 continuously measures the volumetric activity of alpha and beta active aerosols in the air. The detector is used to protect personnel in monitored areas against internal contamination by radioactive particles.

The air sample enters the detector module, which is mounted within a hermetically sealed box, through an inlet fitting. The air flow then passes through the filter tape, and exits by the outlet fitting.

Aerosol particles are trapped on the filter tape. Two silicon detectors are positioned close to the filter tape to ensure measurement of captured aerosol activity with maximum efficiency.

The main detector measures the actual response to the aerosols trapped on the filter at the place of sampling. The second detector performs delayed measurement on the filter when the short-lived natural radionuclides have decayed and is used to compensate for radon daughter products.

Both detectors are also equipped with a background detector used for dynamic background compensation.

A LED check source is used to check the detectors' correct functioning.

The device is equipped with a pressure sensor that checks the clogging or tearing of the tape by monitoring the pressure loss across the tape.

The CPD-14 detector can also be supplied with an integrated RDU-02 display unit. This version does not require connection to an external display unit and can be directly connected to the host system.

SPECIFICATION

Detectors	2x \times Si - PIN
Real time measurement	
alpha (^{241}Am , T=10 min)	5E2 to 1E6 Bq/m ³
alpha (^{241}Am , T=12 hr)	3E-2 to 1,3E4 Bq/m ³
beta (^{36}Cl , T=10 min)	5E2 to 1E6 Bq/m ³
beta (^{36}Cl , T=12 hr)	1,3E-1 to 1,4E4 Bq/m ³
Delayed measurement	
alpha (^{241}Am , T=10 min)	5E2 to 1E6 Bq/m ³
alpha (^{241}Am , T=12 hr)	8E-3 to 1,2E4 Bq/m ³
beta (^{36}Cl , T=10 min)	5E2 to 1E6 Bq/m ³
beta (^{36}Cl , T=12 hr)	3E-2 to 1,2E4 Bq/m ³
Filter tape	70 mm x 25 mm
Aerosol trapping efficiency	min 90 %
Nominal air flow (adjustable)	10-20 m ³ /h
Dimensions (W \times H \times D)	(550 \times 262 \times 360) mm
Weight	approx.. 45 kg
Interface	RS-485, UART, relay outputs for status signaling
Power supply	24 V DC, max. 15 W
Temperature range	from +5 to +40°C

CPD-16

CONTINUOUS AEROSOL DETECTOR

OPTIONAL FEATURES¹

Flow rate meter

Intake and exhaust connections freely from the place / hose attached with a clip / pipe with a nut M30×1.5

Qualification according to IEC 61226

¹ Optional features must be specified before ordering

OPTIONAL ACCESORIES

50-A-0017274 Coil with an aerosol filter tape LFS-2-70, (70 mm, 70 g/m²), 25 m long

Calibration jigs (solid state source with a holder)

RELATED PRODUCTS

CPD-14 Continuous Particulate Detector

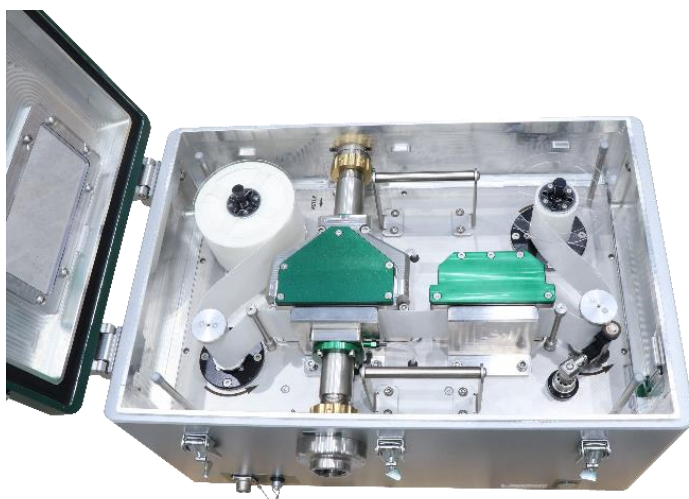
CPM-316 Continuous Particulate Monitor

PIM-320 Particulate and Iodine Monitor

RPU-12 Radiation Processing Unit



Continuous Particulate Monitor CPM-316, with CPD-16 detector



Opened case of the CPD-16 detector, with a filter tape, main and delayed detector



Particulates and Iodine Monitor CPM-316, with CPD-16 detector