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POWER PLANTS



WASTE
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INDUSTRY
& MANUFACTURING

PIS-300E

POST-ACCIDENT GASEOUS EFFLUENT SAMPLER



MAIN ADVANTAGES

- Fully automatic operation with redundant sampling chambers.
- Measurement of dose rate from filters and signaling of alarm levels.
- It is possible to remotely disconnect sampling lines and remove filters from a distance of 1 meter.

PURPOSE

The PIS-300E samples air during accident and post-accident conditions from the ventilation stack and evaluates the release of radioactive particulates and iodine.

Integrated detectors are used to measure dose rate from filters in shielded sampling chambers. The system can also be expanded with a high range noble gas detector.

Post-accident sampler PIS-300E consists of following main parts:

- Control PLC unit, which controls, checks, and signals system status
- Pneumatic system, which handles the air intake and distribution between two sampling chambers.
- Detectors for dose rate measurement from filters.

The PIS-300E is controlled by a local control unit, with the host system monitoring the status of the device and setting the selected parameters.

The sampler can operate in local manual mode or use full control from the host control system.

The system is in standby mode by default. It is activated from the host system according to the preset mode:

- Automatic Continuous Mode: automatically switches between the filters after exceeding the set dose rate threshold from the active filters.
- Automatic Discontinuous Mode: automatically switches between the filters after exceeding the set dose rate threshold from the active filters and pauses sampling for a set time.
- Discontinuous One-time Mode: after the required sampling time has elapsed terminates the measurement and waits for a new start.

The sampling piping of the system is equipped with controlled heating to limit sample condensation. Route connection locations and hand valves are used for manual flow control in the sampling path during maintenance, manual sampling, manual purging, testing and calibration.

Based on the signal from the dose rate detectors located in the shielded chamber, sampling can be stopped and switched to the second set of filters. The estimated dose rate at 1 metre from the filter can be displayed.

During post-accident sampling, high activities are deposited on filters. In order to minimize the risk of worker exposure when handling the filters, the filter capsules are placed in a shielded steel or lead casing.

PIS-300E

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An automatic mechanism for connecting / disconnecting sampling paths provides a quick exchange of filters in the chamber. The system is controlled by a mechanical lever located outside the chamber, which also serves to lock the door of the chamber. This mechanism greatly reduces the time needed for the exchange of filters and also the exposure of the personnel performing it.

There is also a special tool for pull out the capsule with the filters and put in the transport container. Workers will therefore keep a distance of 1 metre from the filters throughout the entire exchange process.

SPECIFICATION

Nominal sample flow	1 l/min
Sample relative humidity	95 % noncond.
Sample temperature	max. 50 °C
Sample pressure	150 kPa
Max. activity	3,17E12 Bq/m ³
Filters	
Aerosol	glass fibre
Iodine	silver zeolite
Dose rate measuring range	5E-6 to 1E1 Gy/h
Chamber shielding	Pb, 10 cm
Dimensions (W × H × D)	1900 × 1700 × 470 mm
Weight	1200 kg
Power supply	2 × 230 V, 50 Hz / 450 VA
Temperature	55 °C
Interface	RS-485

OPTIONAL ACCESSORIES

K0962-01	Shielded container for filters transportation
K0966-53	Stair-trolley for transportation of shielded container

RELATED PRODUCTS

GEMS-700	Gaseous effluent monitoring and sampling system
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Shielded sampling chamber with filters and dose rate meters



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Specification subject to change without prior written notice.

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