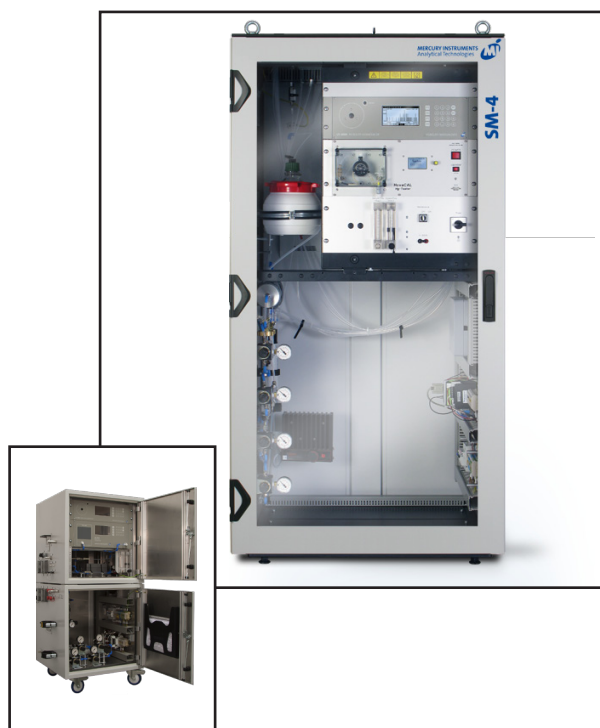




## SM-4

### Mercury Stack Gas Analyser



In order to measure very low levels of mercury in flue gases as well as complex matrices (SO<sub>2</sub>, NO<sub>x</sub>, HCl, etc.) with high accuracy and reliability, the **SM-4** analyser has been specifically developed for total mercury emission monitoring applications.

#### Continuous monitoring of total mercury emissions (CEM) in stack gas

The SM-4 utilises a dry thermocatalytic method which means there's no need for reagents, water refills or solid reagent cartridge replacements.

#### Prevention of Interferences

SM-4 uses both sample dilution and gold trap amalgamation to completely eliminate interference from matrix gases such as SO<sub>2</sub>, NO<sub>x</sub>, and HCl, etc so the system is able to measure with virtually any sample matrix.

#### Automatic Calibration

The SM-4 is equipped with an automatic calibrator (IAS HovaCAL for ionic HG or Mercury Instruments MC-3000 for Hg<sup>0</sup>). It can perform an automatic baseline check as well as automatic calibration at predefined time intervals.

To meet the latest demands for quality assurance QAL3 (European Regulation EN 14181) can be performed automatically by using the integrated HovaCAL calibrator.

“ The SM-4 Stack Gas Monitor for precise and reliable measurement of very low Mercury concentrations in stack gases ”

## APPLICATIONS

- Coal fired power plants (before & after mercury absorbers)
- Cement kilns
- Sulphuric acid producing foundries
- Incineration plants for industrial waste, sewage sludge...
- Thermal treatment of contaminated soils, hazardous waste, etc.
- Metallurgical facilities with potential Hg emissions

## Technical Specification

### GENERAL

- Continuous measurement of elementary, ionic & organic mercury
- Measured component: total mercury (oxidised and elemental speciation as option)
- Measurement principle: Dilution probe with thermo-catalytic converter at stack, Amalgamation (MI GoldTrap), Cold Vapor Atom Absorption Spectrometry (CVAAS), Wavelength = 253,7 nm
- Sample line length: up to 30 m (100 feet); up to 100 m option

### PHYSICAL

- Dimensions:  
Analyser cabinet: 161 x 80 x 60 cm H x W x D  
Probe: 36 x 36 x 66 cm H x W x D  
Probe controller: 48 x 44 x 27 cm H x W x D
- Weight:  
Analyser (including automatic calibrator): 130 kg  
Probe controller: 14 kg  
Converter unit: 28 kg

### PERFORMANCE

- Measuring range: 0,05 µg/m<sup>3</sup> - 500 µg/m<sup>3</sup> Hg (up to 1000 µg/m<sup>3</sup> as an option)
- Detection limit: 0,0001 µg/m<sup>3</sup> (Detector); < 0,01 µg/m<sup>3</sup> (System)
- Electrical power consumption: Analyzer cabinet: 450 VA; Probe-Converter: 1000 VA; heated sample line: 30 VA / meter
- Power supply: 230 V / 50 Hz; (110 V / 60 Hz option)
- Max. Sample gas temperature: 250°C
- Ambient temperature range allowed: -5 to 40°C
- Response time: 180 – 360 sec t<sub>90</sub>
- Converter: Low temperature type (200 °C); directly at stack
- Remote access: Modem and SM-4 communication software (option)
- Air consumption: 6 bar (85 PSI); 16 l/min approx.

### SIGNAL OUTPUTS

- Analogue: 4-20 mA (500 Ω max.)
- Serial: RS 232
- Modbus RTU/RS485 (option)
- Ethernet (option)

### STATUS OUTPUT

- 3 x pairs of relay contacts (dry contacts)

### COMPLIANCE

- Automatic, with built in calibration gas generator for elementary Hg (option)
- Automatic, with built in calibration gas generator for ionic Hg (option)
- Manual, with built in heated fitting for feed of externally provided calibration gas (e.g. HOVACAL®)

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Rev 1.0 Oct 18

