

New
GENERATION
★★★★★

Continuous Mercury Analyzer SM-5

PROCESS & EMISSIONS MONITORING SYSTEMS

The SM-5 mercury analyzer is designed to provide accurate and reliable continuous measurements of very low mercury concentrations in stack flue gases (CEMS) as well as in process gases, dealing with complex matrices such as high levels of SO₂, NOx, HCl, dust, etc.

Very low certification range, which meets national and international regulatory requirements.



SPECIFIC FEATURES:

- Continuous measurement of total mercury (elemental and ionic)
- QAL1 certification range **0-5 µg/m³**
- Additional ranges: 0-30; 0-45; 0-100; 0-1000 µg/m³
- Short response time to detect stealthy Hg peaks
- Eliminating interferences
- Speciation available as an option
- High-temperature reactor allowing for very low concentrations measurements
- Photometric measurement independent of the high-temperature converter
- Does not require a calibrator (injection system for QAL3 calibration available as an option)
- Automatic backflush function
- Very low air instrument consumption
- Low maintenance and optimized operating costs

MAIN APPLICATIONS:

- > Regulatory control of mercury emissions: Waste-to-energy plants (WtE), cement plants, metallurgical industry, power plants (before and after mercury absorbers)
- > Process control: at boiler outlet or electrofilter outlet
- > Process optimization and reagent injection control

REGULATORY COMPLIANCE
EN 14181 - QAL1, QAL2, QAL3
2001/80/CE, 2000/76/CE, EN 15267-3



TÜV Rheinland®

QAL1 CERTIFICATION (ONGOING)
EN 15267

Online mercury monitoring SM-5

MEASURING PRINCIPLE:

The SM-5 uses the principle of high temperature thermal conversion in combination with Cold Vapor Atomic Absorption Spectrometry (CVAAS). The extractive sampling is performed without dilution using a heated probe coated with a specific surface treatment and equipped with a ceramic filter. A heated line transfers the sample to the analysis cabinet, where a high-temperature quartz furnace (950°C) thermally converts all forms of oxidized or particulate mercury into elemental mercury Hg⁰.

TECHNICAL SPECIFICATIONS

| | |
|----------------------------|---|
| Certified measuring ranges | 0-5 µg/m ³ Hg Additional ranges : 0-30; 0-45; 0-100; 0-1000 µg/m ³ |
| Detection limit | < 0.05 µg/m ³ (system) |
| Response time | < 180 sec t[90] |
| Operating temperature | +5°C to +40°C (without A/C) |
| Sample max temperature . | 200°C as standard (others as option) |
| Display | Touchscreen |
| Heated sampling line | custom-made: 2 to 60 m |
| Communication | 4-20 mA, RS232, Modbus RTU/RS485, Modbus TCP/IP, USB |
| Power supply | 230 V / 50 Hz or 110 V / 60Hz |
| Power consumption | Analyzer cabinet: 1850W (total) Sampling box: 800W Probe: 600W (0,6m), 800W (1m) or 1200W (1,5m) Heated line: 120W/m |
| Air instrument consumption | 5-10 bar, max. 16 L/min (for backflush) |
| Mounting flange | DN65 / PN6, other on request |
| Dimensions (H x L x P) cm | Analyzer cabinet: 190.5x80x65 Sampling box: 26x34x34.5 Probe controller: 25x35x15 (27x38x18 incl. fixations) |
| Weight | Analyzer cabinet: 224 kg Sampling box: 15,4 kg Stinger: 9 to 12 kg, depending on length Probe controller: 10 kg |
| Protection Rating | Analyzer cabinet IP55, Sampling IP54, Probe controller IP66 |



MAIN OPTIONS :

- Other measuring ranges than specified
- Remote access for telemaintenance
- Injection system for QAL3 calibration (integrated in the analyzer cabinet)
- Onboard or external HovaCal calibration system
- Reversible air conditioning (A/C) for analyzer cabinet (energy consumption 650W, weight 41 kg)

| FEATURES | BENEFITS |
|---|--|
| Very low certification range | High measurement accuracy |
| Instrument certified to operate without calibration | Reliability & reduced operating costs |
| Simple and robust design | Easy servicing with low maintenance costs |
| Converter oven without catalyst | Requires no consumables, minimized operating costs |
| Very low instrument air consumption | Lower operating costs |
| Speciation as an option (elemental and ionic mercury) | Better knowledge of the process |
| Injection system for QAL3 calibration | Compliance with quality assurance standards |
| Measurement of mercury in raw gases | Anticipates mercury peaks, optimizes the quantity of reagents injected and reduces costs |
| Over 20 years of expertise in mercury analysis | Guarantee of a high quality and high performance product |



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