AMETEK®
PROCESS INSTRUMENTS

MEASURES: **SO_2, NO, NO_2 or H_2S with mass flow**

PRODUCT DATA SHEET

909 Hot/Wet Single Gas Mass Flow CEM

Specifically configured for monitoring stack emissions on a mass rate basis

The AMETEK 909 is a single gas continuous emissions monitoring (CEM) system that measures stack effluent temperature and velocity, in addition to pollutant concentrations at stack conditions, enabling mass emission rates to be reported. With the addition of an optional zirconium oxide (ZrO_2) sensor, the 909 is also capable of monitoring oxygen (O_2).

The sample cell and all components in contact with the sample are heated above the dew points of all gases in the sample stream. This results in a more accurate calculation of gas concentrations, compared to other CEM systems that require water removal or sample dilution. No corrections for condensed and dissolved components are required. It also results in a simpler, more reliable analytical system as there is no need for sample drying. The 909 has built-in zero and span calibration and four zone temperature control (sample line, probe, sample conditioning unit, and oven).

Full function CEM

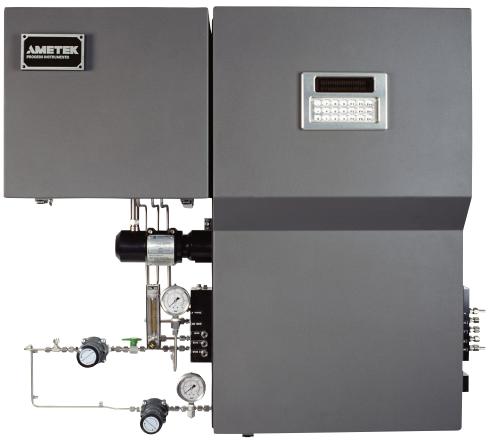
As a full function CEM, the 909 performs all necessary sample gas and calibration gas flow management, as well as probe and sample line temperature control. Simply add a sample probe and sample line to be fully operational.

Maximum reliability and durability

With a no-moving-parts design, the 909 is built for maximum reliability and durability. It is a complete system with a sample extraction and transport system designed to ensure sample integrity.

High resolution ultraviolet (UV) technology

With a dual beam, dual wavelength configuration, a resolution of better than 0.02nm is provided by high-intensity line source lamps, enabling unparalleled linearity over a wide dynamic range, and leading to very accurate measurements. The dual beam configuration, combined with the reference measurement, ensures low noise performance with minimal baseline and span drift.



KEY BENEFITS

- High reliability and reduced maintenance (no moving parts)
- Sample and mass flow measurement in one device
- Hot/Wet analysis – no water compensation or correction factors required
- Accuracy better than 2.5 parts per million (ppm) SO_2
- No water (H_2O) or carbon dioxide (CO_2) interference
- Automated zero and span gas calibration
- Incorporates flow measurements for emission rate calculations

APPLICATIONS

- Sulfur recovery incinerators
- Sulfuric acid plants

KEY MARKETS

- Gas processing sulfur recovery

PERFORMANCE SPECIFICATIONS

Methodology	Dual beam, high resolution, nondispersive UV
Measurement and scale chart	**Species measurable** / **Minimum full scale** / **Maximum full scale** SO_2 / 250 ppm / 100% NO / 300ppm / 100% NO_2 / 300ppm / 100% H_2S / 125 ppm / 100% NH_3 / 125ppm / 100% Cl_2 / 500 ppm / 100%
Optional O_2	Integral ZrO_2
Accuracy	Better than ±1% full scale of standard ranges
Repeatability	Better than ±0.5% full scale of standard ranges
Linearity	Better than ±1% of full scale
Response time	Typically less than 30s to T90 (excludes sample system)
Sample transport	Air aspiration
Typical sample flow	3 to 5 L/min (0.1 to 0.2 CFM)
Temperature control	Independent control of three zones (oven, sample line, probe)
Pressure and temperature compensation	Standard
Ambient temperature	5 to 50°C (41 to 122°F)
Instrument air	Minimum 413.6 KPa (60 psig), 120 L/min (4.24 CFM), instrument quality air
Power	120 VAC ±10%, 47 to 63 Hz or 240 VAC ±10%, 47 to 63 Hz, 600 W for analyzer only
Communications	Analog: (4) 4-20mA self powered Digital: One RS232 port for service diagnostics. One RS422 with Modbus protocol Relays: Three independent sets of SPDT relays alarm conditions
Physical dimensions (W x H x D)	1117.6 x 1553.6 x 306 mm (44 x 61.17 x 12 in.)
Weight	Estimated minimum 160 kg (350 lbs.)
Approvals and certifications	NEC/CEC Class I, Division 2, Groups C & D ATEX II 2 G Ex db eb pxb IIB T3 Gb IECEx Ex db eb pxb IIB T3 Gb GOST: ExpydIIBT3 Complies with all relevant European Directives

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