

Gasmet™ CEMS II e Sampling Unit



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The Gasmet CEMS II e sampling unit is especially designed for continuous emission monitoring (CEM) in fixed installations, e.g. as an integral part of the Gasmet continuous emissions monitoring system (CEMS).

The Gasmet CEMS II e sampling unit is used for on-line measurements. It is an ideal tool to use for measuring trace concentrations of pollutants in wet, corrosive gas streams. The sample pump, filter and sample lines can be heated up to 180 °C. It can be used for undiluted gases and the sample gases do not need drying beforehand.

The Gasmet CEMS II e sampling unit is built in 19" rack and includes all valves, flow meters, pump and filters that are needed for measuring and maintenance. Sample flow and instrument air pressure alarms are provided. It also has bus connector for digital and analog (optional) signal terminals, eliminating need for PCI slots in computer.

The Gasmet CEMS II e sampling unit includes temperature controllers for heated sample lines and heated module. The function of the sampling unit is fully automatic and controlled by the Calcmet software. It is connected to Gasmet computer via Ethernet cable.

Alarm outputs are displayed on LED lights and unit has corresponding digital outputs. Alarm outputs are: *System alarm*, *Service request*, *Maintenance on progress* (can be set also manually) and *Result valid*. Combination for each alarm can be set on Calcmet. Unit has digital output command for oxygen analyser to start calibrating.

Digital inputs for cabinet cooler, cabinet temperature, probe temperature, zero gas pressure, and oxygen analyser alarms are included as a standard. It is also possible to activate span gas test via probe or *System standby* by digital input.

As an option, the Gasmet CEMS II e sampling unit can be equipped with analog input and output signals. Optional digital I/O signals are also available.

General parameters

There is no need to dry or dilute the sample gas before Gasmeter sampling unit. All parts before the sampling unit must be heated up to 180 °C to avoid condensation

Operating temperature: 20 ± 20 °C, non-condensing
Power supply: Separate models for 100-115 VAC and 230 VAC / 50 - 60 Hz

Heated sample pump

Material: 316 SS
Diaphragms: Teflon
Maximum flow: ~4.0 l/min
Pressure: 1.5 bars max.
Temperature: 180 °C

Heated filter

Material: Bonded microfiber (sintered steel 0.1 as an option)
Gas filtration: Filtration of particulates 2 µm
Temperature: 180 °C

Electrical connectors

Power connection: CEE22
 Double fused 6.3 AT
Control: RJ45

Gas connections

All gas connections are pearl connectors for 4/6 mm (ID/OD) tube.

Gas inputs: Sample gas (heated)
 Span gas
 Zero gas
 Instrument air
Gas outputs: Sample out 1 (heated)
 Sample out 2 (heated)
 Span gas to probe
 Interferometer purge air
 O₂ reference air

Valves

Sampling unit includes automatic solenoid valves for gas inlets and check valves to avoid sample gas flow to unheated side.

Solenoid valves: Sample gas / backflush
 Span gas via sample out
 Span gas via probe
 Zero gas
 Safety air
Pressure: 0 - 10 bar (max.)
Check valves: Sample gas / backflush
 Maintenance gases
Cracking pressure: 0.3 bars

Flow meters

The Gasmeter CEMS II e sampling unit includes adjustable flow meters for unheated gases.

4 l/min: Safety air
 Zero gas
 Span gas
0.5 l/min: Interferometer purge
 O₂ analyser reference air

Temperature controllers

The control module includes temperature controllers for heated module and for three sample lines. Sample line 1 connector has 24 VDC control for external solid state relay.

Temperature range: 0 – 180 °C
Sensor type: TcK
Display: Calcmeter

Digital I/O

Relay outputs are potential free contacts. Digital inputs are controlled by relay contacts.

Digital outputs: System alarm
 Service request
 Maintenance
 Result valid
Digital inputs: Probe temperature alarm
 Cabinet temperature alarm
 Cabinet cooler alarm
 Zero gas pressure alarm
 O₂ analyser alarm
 Activate span gas test via probe
 Activate system standby

Sampling unit signals to Calcmeter

Sensors: Sample out 1 flow low
 Sample out 2 flow low
 Instrument air pressure low
 Maintenance switch
Temperatures: Sample Line 1 temp & alarm
 Sample Line 2 temp & alarm
 Sample Line 3 temp & alarm
 Heated module temp & alarm
Counters: Pump membrane age in hours
 All valve ages in times
Digital inputs: All listed in *Digital I/O* section above

Optional analog I/O

Analog outputs: 4 - 20 mA, active
Analog inputs: 4 - 20 mA, passive
Digital outputs: 24 VDC, active
Digital inputs: 24 VDC, active