



CEMS II e Sampling Unit

The Gasmet CEMS II e sampling unit is designed for continuous emission monitoring in fixed installations, e.g. as an integral part of the Gasmet continuous emissions monitoring system (CEMS). It performs on-line measurements of trace pollutants in wet, corrosive gas streams, with heated components up to 180 °C, allowing for undiluted gas sampling without drying. The sampling unit is built in a 19" rack, and it includes valves, flow meters, a pump, and filters, along with sample flow and air pressure alarms. It connects via a bus for digital and optional analog signals. 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.

Fully automated by Calcmet software, the unit displays alarms via LED lights for System alarm, Service request, Maintenance on progress (can be set also manually), and Result valid. Digital inputs for cabinet cooler, cabinet temperature, probe temperature, zero gas pressure, and oxygen analyzer 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.

System specifications

General parameters	There is no need to dry or dilute the sample gas before Gasmet 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 Gasmet CEMS II e sampling unit includes adjustable flow meters for unheated gases. 4 l/min: Safety air Zero gas Span gas

Temperature controllers

0.5 l/min: Interferometer purge
O₂ analyzer reference air

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 analyzer 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

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