

EMS-10 Continuous Emissions Monitoring System

The fully automated Thermo Scientific™ EMS-10™ Continuous Emissions Monitoring System (CEMS), based on Fourier transform infrared (FTIR) spectroscopy, offers a modular design along with flexible Thermo Scientific™ MAX-Analytical™ STANDARD Software Suite. It can be customized to meet your specific application needs while complying with United States Environmental Protection Agency (EPA) CEMS standards. The EMS-10 incorporates the Thermo Scientific™ MAX-iR™ FTIR Gas Analyzer, which can accurately analyze a wide range of gaseous compounds, from percent (%) to parts-per-billion (ppb) concentrations, without the need for liquid nitrogen cooling of the detector.

The integrated design of the EMS-10 multiplexer controls the flow and switching of all gas streams. The system can handle hot, wet, non-condensing emissions samples up to 150°C, making it ideal for a wide variety of stationary-source monitoring applications. The EMS-10 CEMS has two multiplexer options: a single-channel and a four-channel multiplexer. The four-channel configuration enables the EMS-10 to monitor up to four sources, which is ideal for time-sharing CEMS or inlet/outlet monitoring for process optimization.

The entire system is controlled by the MAX-Analytical STANDARD Software Suite. The MAX-INT Factory Interface Module provides digital and analog I/O connections from the EMS-10 to a facility's distributed control system (DCS) for remote data access, control, and reporting.

Additional sensors such as flow monitors, analog output analyzers, and facility alarms can also be integrated with the MAX-INT Factory Interface Module.

Concentration data and alarms can be exported to a DCS using Modbus TCP, ensuring seamless integration with existing systems. Overall, the Thermo Scientific EMS-10 offers a reliable and efficient solution for monitoring emissions and meeting regulatory requirements.

Key features

- Fully automated gas emission measurement system
- Compliant with US EPA standards
- 1- or 4-channel multiplexer with 10 L/min heated sample pump and bypass pump
- Standard or advanced enclosure
- Gas dilution capabilities
- Touch screen controls that work with MAX-Analytical STANDARD Software Suite
- Industrial PC runs entire system
- Other automation interfaces available



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EMS-10 CEMS specifications
Multiplexer

Number of sample channels	1 or 4
Sample pump flow	4–10 L/min
Bypass pump flow	1–2 L/min on each channel (<i>four channel only</i>)
System response time	≤15 s at 10 L/min

Gas requirements

Purge gas	Nitrogen, N3.0 or better, 30 psig
Valve actuation gas	Clean dry air (CDA) or nitrogen, 80 psig

Facilities requirements

	Indoor enclosure	Outdoor enclosure
Environmental temperature range	20 to 30 °C	-20 to 50 °C
Environmental relative humidity (RH)	10–90% RH, non-condensing	No restriction
Power*	208–240 VAC, 60 Hz, 9.5 A max	208–240 VAC, 60 Hz, 21 A max
Dimensions (W x H x D)	651 x 1948 x 915 mm	1178 x 1912 x 985 mm
Estimated weight	230 kg	320 kg

Factory integration

Data outputs	<ul style="list-style-type: none"> • Modbus TCP • Relay outputs (Form C) • Analog outputs (4–20 mA) • Digital outputs (24 V sourcing)
Data inputs	<ul style="list-style-type: none"> • Modbus TCP/IP remote control • Analog inputs (4–20 mA) • Digital inputs (24 V) for remote start and stop • Thermocouple inputs (Type K)

*Does not include heated sampling trains

 Learn more at thermofisher.com/ems-10

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