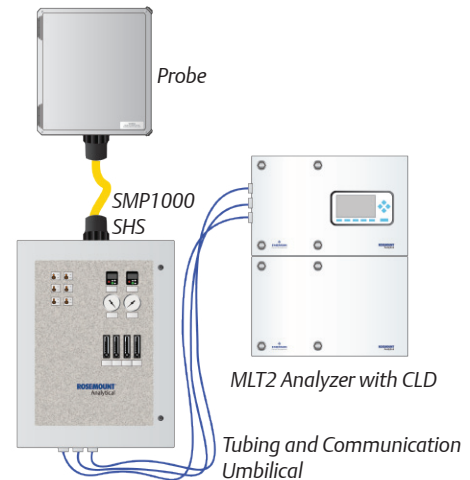


# SCP100

## Continuous Emissions Monitoring System (CEMS)

The SCP100 modular CEMS is a pre-engineered packaged system developed by Rosemount Analytical to provide accurate measurement analysis of your gas emissions. Designed in a compact, field mounted enclosure, the SCP100 provides greater installation flexibility, is easier to operate and maintain, and is more affordable than traditional CEMS.

Incorporating the various components of a standard CEMS package, the SCP100 includes sample transportation, moisture removal, pressure control, flow control, temperature control and calibration gas control to monitor gases that are reportable to environmental regulation agencies.



SCP100 CEMS Hardware

## Features

- Fully pre-engineered modular design
- Compact enclosure allows for greater flexibility and ease of installation and serviceability
- Complete field mounted sample conditioning system
- Ideal for CEMS and Process applications with entrained moisture
- Measures up to five gases (CO, CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, O<sub>2</sub>)
- NEMA 12/4/4X options
- Meets US EPA 40 CFR Part 60 requirements
- ISO 9001 – Certified Quality Standards
- System and Analyzer self diagnostics
- Sample pump located between two active cooling stages
- Fast loop bypass prior to final cooling stage
- Final cooling stage is pressurized for maximum moisture removal efficiency
- Comprehensive support services offer by Emerson

## Typical Applications

Whether you are expanding an existing plant and are limited by space, installing a new facility, or simply looking for a cost efficient solution to monitor gas emissions, the SCP100 is ideal for CEMS applications in various industries, including:

- Gas Turbines
- Cogeneration Facilities
- Refining
- Utilities and Maintenance
- Industrial Boilers
- Commercial and Institutional
- Pulp and Paper
- Selective Catalytic Reduction (SCR) Systems

## SCP100 CEMS Components

The SCP100 system includes the following components:

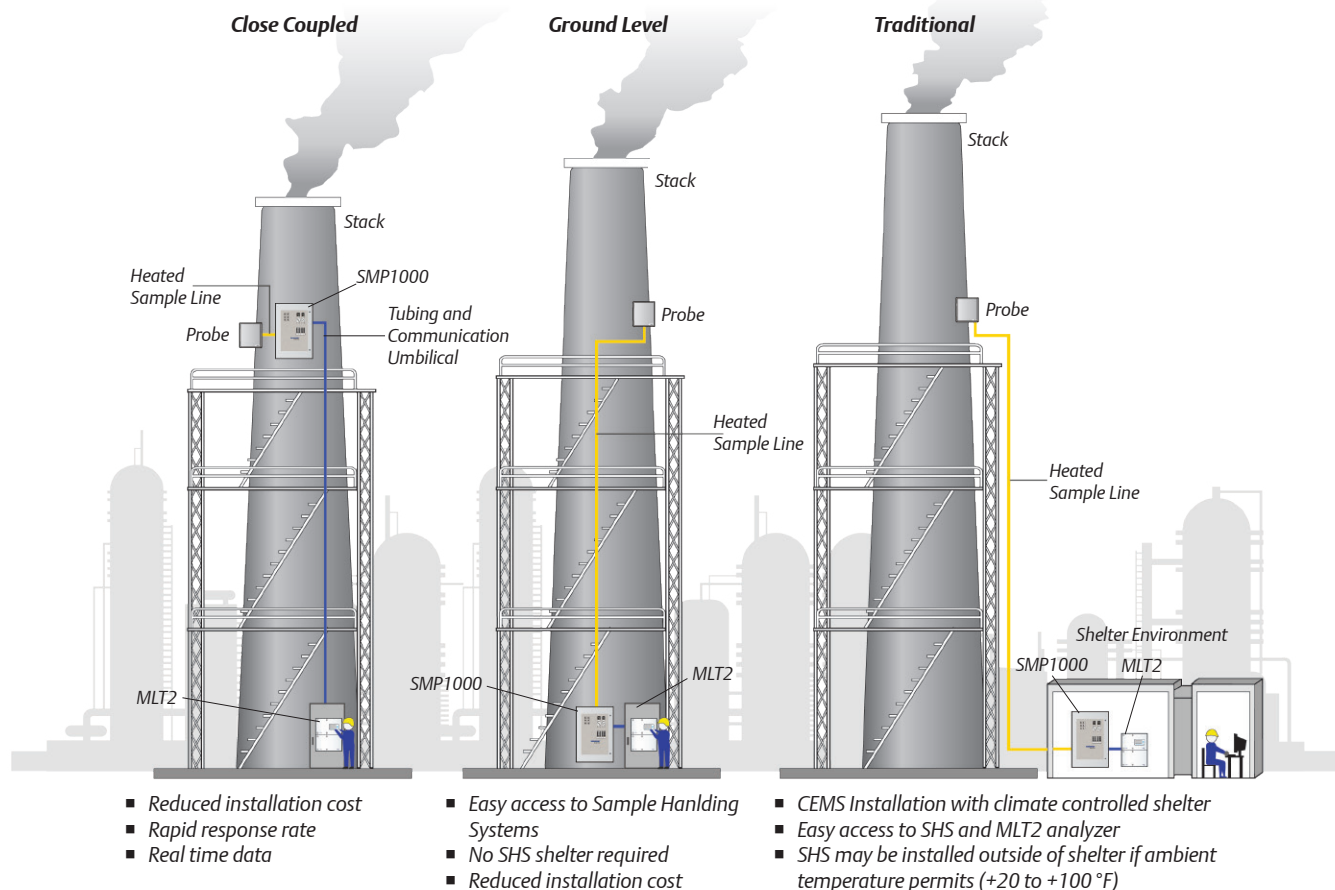
- Heated Gas Sample Probe
- Heated Sample Line Umbilical from the probe to the SCP Sample Conditioning package
- SCP Sample Conditioning package housed in wall mount enclosure
  - Thermoelectric sample conditioner with integral pre-cooler, sample pump, condensate removal system and water intrusion monitor
  - "Fast Loop"/Systems Bypass
  - Temperature controllers for both the sample probe and heated sample line umbilical
  - Auto-calibration valve assembly with local/remote capability
  - Pressure and flow control to the MLT2 gas analyzer
- Tubing and Communication umbilical between the SCP Sample Conditioning package and the Gas Analyzer
- MLT2 Field Mount Process Gas Analyzer with integral CLD Analyzer Module for NO<sub>x</sub> (where applicable)

## Optional Installations

SCP sample conditioning package enclosure may include any of the following options based on the application:

- NEMA (12\4\4X)
- HVAC and Vortex cooling options for SCP sample conditioning package enclosure
- Hazardous area options for the sample probe, heated sample line umbilical, sample handling system enclosure, and gas analyzer
- Blowback capability for the sample probe
- Additional filtration
- Pressurization Units can be added to SCP100 and process gas analyzers to be used in electrical hazardous areas

Figure 1 - Typical Field Installation Options for CEMS



## Specifications

Please consult Rosemount Analytical if your requirements are outside the specifications listed below. Improved performance, other products and material offerings may be available depending on the application.

### MLT2 Process Gas Analyzer with CLD Analyzer Module for NO<sub>x</sub>

**Up to five measurement components**

**Sample Flow Rate:** 1.0 l/min (eletr. = 2 s)

**Ambient Temperature Range:** +41 to 107 °F (+5 to 40 °C)

**Rated Voltage:** 120/230V AC, 50/60 Hz with internal switch

**Input Voltage:** 93–132V AC and 196–264V AC, 47–63 Hz

**Input Power:** 700V AC maximum, depending on configuration

**Response Time:**

- < 1 second for 90 % of full scale for ranges of 0 to 25 ppm and greater
- < 3 seconds for 90 % of full scale for ranges less than 0 to 25 ppm

**Hazardous Area Classification:** General purpose or Division 2 hazardous areas with a CSA-C/US-approved Z purge pressurization system

**Communication Options:**

**2–8 analog signal outputs**

(SIO, optically isolated, sub-modular structure):

- 0–10 V and 0–20 mA ( $R_b \leq 500 \Omega$ )
- 2–10 V and 4–20 mA ( $R_b \leq 500 \Omega$ )

**3 relay contacts (SIO, NAMUR):**

- Contact rating: 1 A, 30 V

**Serial Interfaces (SIO, option):**

- RS 232 C or RS 485

**Digital I/Os (DIO, optically isolated, freely programmable from a list of commands)**

- 8 digital inputs, 0–30V DC/2.2 mA (for remote functions)
- 24 digital outputs, 5–30V DC/500 mA

See **MLT 2 Field Housing Process Gas Analyzer Product Data Sheet** PGA\_PDS\_MLT2 for more information

See **CLD NO<sub>x</sub> Analyzer Module Product Data Sheet** PDS 103-640.A01 for more information



MLT2 Multi-Component Gas Analyzer

### SMP1000 Sample Conditioning Package (SHS Enclosure)

**Dimensions of SHS Enclosure:** 36" H x 24" W x 13.06" D

**Base Enclosure Rating:** NEMA 12 (Options for NEMA 4\NEMA 4X SS)

**Ambient Temperature Range:**

- +45 to +85 °F (with Vent Fan - std.) shielded from direct sun light
- +20 to +100 °F (with Vortex Cooler and Heater – opt.) shielded from direct sun light
- 20 to +120 °F (with HVAC – opt.) shielded from direct sun light

**Ambient Humidity:** 0 to 95 %, non-condensing

**Sample Moisture Content:** Up to 30 % moisture

**Sample Pressure:** -5 to 15 inches H<sub>2</sub>O

**Sample Flow Rate:** 5 Liters/Min. from sample probe to sample cooler  
Sample splits for bypass – providing field selectable flow rate to analyzer from 0.5 to 2.5 Liters/Min.

**System Response Time:** Variable. Time lag for sample transport from probe to analyzer is dependent upon total distance. For estimating purposes, 0.5 sec/ft

**Power Requirement:**

- 120V AC +/- 10 %, 60 Hz +/- 1.5 Hz, single phase
- 120/240V AC +/- 10 %, 60 Hz +/- 1.5 Hz, single phase (option)

**Power Consumption:**

- Approximately 5 KVA with 100 feet of heated sample line. Heated sample line at 20 watts per foot.

### Sample Probe

**Sample Flow Rate:** 0 to 20 LPM

**Calibration Gas Requirement:** Sample Flow Rates Plus 10 %

**Ambient Temperature Range:** -20 to +120 °F

**Operating Pressure Drop at 10 LPM:** 12" Water Column

**Maximum Gas Temperature at Inlet:** 700 °F (371 °C)

**Oven Temperature:** 340 °F

**Dimensions:**

W/BB: 16" x 14" x 8"

W/HBB: 18" x 16" x 10"

**Weight (Varies with Options):** 20 to 35 LBS. (Minus Probe)

**Input Power Requirement:** 150 to 400 Watts

**Input Voltage Requirement:** 115 V or 230V AC @ 50/60 HZ

**Enclosure:** NEMA 4x, Fiberglass

**Sample Line Connection:** 3 Inch Heat Shrink Boot  
(Unless Otherwise Specified)

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