AEM SYSTEMS

SERIES 100

CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)

- Complete stand-alone system for stack emission monitoring
- Meets regulatory compliance monitoring requirements, such as Certification and RATA as specified by US EPA 40CFR60, 40CFR63EEE, 40CFR75
- Designed for reliability and low maintenance
- Capable of Self-Diagnostics
- User-Friendly Operation. Front Panel Controls and Displays

APPLICATIONS

The monitoring system is for stack gas emissions monitoring for Power Generation, Incinerators, Boilers & Furnaces, Gas Turbines, Petrochemical Plants, Cement Kilns, Steel Mills, Pulp & Paper, Gas Industries, Fertilizer Plants, Wood Products, Vehicle / Diesel Engine Emissions and others.

MONITORING PARAMETERS

The monitoring system is capable of monitoring any of these parameters: SO_2, NO/NO_X, O_2, CO, CO_2, Hydrocarbons, HCl, TRS, H_2S, NH_3, Hg, H_2O, Opacity, Stack Gas Flow, Temperature & Pressure, etc.. Other parameters available, consult factory.

REGULATORY COMPLIANCE

Monitoring system performance and reliability is guaranteed to meet, or exceed, relevant codes and regulatory requirements, such as US EPA 40CFR60, 40CFR75, 40CFR63EEE, etc.. For other requirements, consult factory for special applications.

MONITORING SYSTEM DESIGN

Special attention is given to reliability, measurement accuracy, ease of operation and maintenance, gas composition, local operating conditions, etc.. The system is designed for low maintenance and extended un-attended field operation. It is economic to run.

TYPICAL SYSTEM CONFIGURATION

The CEMS employs extractive technology. Gas sample is extracted from the stack. The sampling probe removes the particulate and evaporates any liquid droplets present. The heated sampling line transports the filtered gas sample to the equipment cabinet. The sample is kept at a high temperature with no cold spot to prevent any condensate build up. The sample gas moisture is removed by a ThermoElectric condenser. The conditioned gas sample is then fed to the gas analyzer via a pressure and flow control panel. Other system design available to meet particular requirements. Consult factory.

SAMPLE CONDITIONING

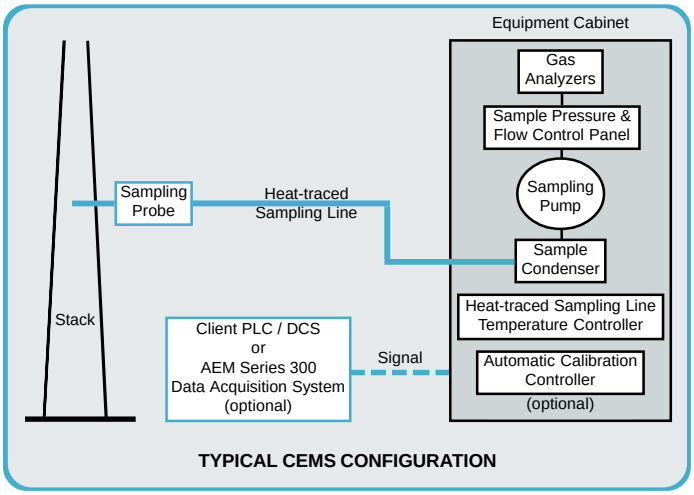
Proper sample conditioning is critical in ensuring reliable operation and equipment protection. The sampling handling equipment provides comprehensive sample filtration and gas conditioning prior to analysis. The sampling and conditioning technology used guarantees sample integrity and representativeness. The sampling equipment also serves to protect the gas analyser against particulate contamination and damage by condensate. **For individual equipment specifications, see separate brochure.**

1. MODEL 110 SAMPLING PROBE - The stack sampling probe extracts gas samples from the stack. Leak-proof oversized reusable ceramic filter are used to remove particulate at the point of sampling. Any liquid droplets are evaporated. This ensures no pluggage of the sampling circuit and damage to the monitoring equipment. Automatic air blow-back is used to clean the insertion probe, which allows for extended unattended operation between maintenance.

2. HEAT-TRACED SAMPLING LINE - The line is used to transport sample gas from the sampling probe to the monitoring system and to deliver calibration gas standards to the sampling probe. A replaceable liner is provided for easy maintenance. The sampling line is equipped with extra insulation and industrial grade protective jacket. Such design minimizes power consumption and ensures proper sample temperature even for outdoor applications during winter periods.

3. MODEL 100 SAMPLE CONDENSER - The conditioner is used to remove moisture from the sample. Using a proprietary aerodynamic design, condensate is extracted without interfering with the monitoring parameters. The sample condenser has very high chilling power and the wetted part is Teflon coated. This is essential for sample integrity and equipment protection.

4. SAMPLING PUMP - The Stainless steel leak-free sampling pump is used to draw and distributing gas samples to the analyzers.



TYPICAL CEMS CONFIGURATION

5. MODEL 130 SAMPLE PRESSURE & FLOW CONTROL PANEL - The panel distributes sample and calibration gases and controls its flow rate through the system. The sampling pressure is actively controlled. Since all gas analyzers are pressure sensitive, this design ensures the analyzer is calibrated and operating at a constant pressure.

6. MODEL 120 AUTOMATIC CALIBRATION CONTROLLER (OPTIONAL) - Used to control gas analyzers calibration and communication with external control system.

7. EQUIPMENT CABINET - Free-standing equipment cabinet is used to house the gas analyzers and supporting equipment. Equipment shelter is available if required.

8. SIGNAL INPUTS & OUTPUTS - The CEMS output can be interfaced easily with external data acquisition and control systems. Typically, the monitoring system has the following signal inputs & outputs.
   a. Analyzer analog outputs
   b. Equipment status outputs, digital (contact closures) for alarms and operation mode
   c. External control inputs, digital (contact closures), for system operation control
   d. Serial input & output
   e. Other inputs & outputs available upon request.

OPTIONS & AUXILIARY EQUIPMENT

Various system configurations, options and supporting equipment are available to meet particular requirements. Consult factory for special applications.

For equipment described in this brochure and the following related equipment, see separate brochures for detail specifications.

1. Series 300 Data Acquisition & Reporting System, report format meets regulatory requirements, such as US EPA 40CFR60, 40CFR75, 40CFR63EEE, etc. Other report formats available upon request.
2. Equipment Shelter for outdoor operation
3. Series 400 Calibration Equipment and Sources
4. Monitoring System (CEMS) for Hazardous Locations
5. On-Line Gas Monitoring for Process Operation Control

TECHNICAL SUPPORT & WARRANTY

AEM provides active technical support and warranty services for the complete monitoring system and its components. We maintain a full inventory of parts and materials for timely warranty and operation support.

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