CONTINUOUS EMISSIONS MONITORING SYSTEMS

The Avensys team offers durable CEMS solutions with maximum availability.

Avensys CEMS are designed to meet your compliance needs with ease of maintenance in mind. Reliable components and measurement are key elements to ensure successful regulatory compliance monitoring. Our analytical and particulate solutions, with flexible interface options, are integrated, commissioned and maintained by our technical team.

WELL RECOGNIZED EXPERTISE

Both our sales and technical teams are focused on delivering customer-driven solutions. Working closely with our customers, our team prides itself on listening, understanding and providing sound advice in order to optimize the performance of your CEMS. Our qualified Service team can maintain any CEMS whether we built it or not.

HIGH QUALITY PRODUCTS

Avensys Solutions and our strong network of well-established and reputable suppliers, have been providing high quality, reliable products to the Canadian Market for over 60 years. Along with our expertise and customer-driven solutions, our CEMS solutions provide reassurance that your emissions monitoring is reliable & compliant.

SOLUTIONS FOR:

- Compliance Monitoring
- Cold dry extractive systems
- Close couple systems
- In-Situ systems
- Hot wet systems
- Dilution systems
- Vast selection of gases

SERVICE CAPABILITIES:

- Design & planning
- Data acquisition & reporting
- Development & construction
- Cylinder Gas Audit (CGA)
- Service contracts
- Installation & start-up services
- Electrical & classification approval
- Calibration & commissioning

Premium Quality Products | Application Assistance | In-house & On-site Service | Training & Field Support

BASIC CEM SYSTEM

Avensys has designed various configuration of CEM Systems. Our basic CEMS configuration normally includes continuous measurement of Carbon Monoxide (CO) and Oxygen (O_2). A third component such as Nitric Oxide (NOx) or Total Hydrocarbon (THC) can also be added to the system.

The system includes a rugged sampling and conditioning system design for minimum maintenance and long-term reliability. A self standing cabinet houses all the components and can be temperature controlled. The system communicates with the plant SCADA and provides various outputs for all the measurements and system state.

EXTENDED CEM SYSTEM

Our Extended CEM System, offers additional measurements and functionalities. It is fully integrated with a data acquisition and handling system or DAHS that provides advanced connectivity, control and reporting. The extended CEM System can include the following:

- Analyzer Cabinet
- Heated Sample line and probe
- DAHS and Reporting
- QA/QC Manual
- Stack Flowmeter
- Opacity or Particulate Analyzer
- Pressure, Temperature Transmitters

STACK FLOW

Measuring stack flow rate is a crucial part of quantifying emissions. Avensys offers various technologies to achieve the best possible measurement based on the location. Avensys can provide ultrasonic, thermal mass or conventional pitot based flow measurement depending on the application, requirements and budget.

OPACITY AND PARTICULATES

Canadian regulations often call for Opacity to be measured on a continuous basis. Alternatively, particulate concentration, mg/m3 is also an interesting measurement that can help optimize the process and reduce particulate emissions. Avensys offers a wide variety of instruments based on optical technologies that can be used in compliance and process control systems.

AVAILABLE MEASUREMENT AND RANGES

STANDARD	
Carbon Monoxide - CO	0-75/3 000/12 500 mg/m^3
Oxygen - O_2	0-25%
Nitric Oxide - NO_x	0-100/1 500/5 000 mg/m^3
Sulfur Dioxide - SO_2	0-75/1 500/7 500 mg/m^3
Carbon Dioxide - CO_2	0-20/30%
Nitrous Oxide - N_2O	0-50/200/1 000 mg/m^3
Methane - CH_4	0-50/200/1 000 mg/m^3
EXTENDED	
Total Hydrocarbons - THC	0-10/10 000 ppm
Opacity	0-100%
Particulates	0-15 mg/m^3 to 0-1 000 mg/m^3
Other Gases Available	HCl, HF, TOC

DATA ACQUISITION & HANDLING SYSTEM

Data Acquisition Software (DAS) is a critical part of a CEMS and must be given serious consideration since data integrity and accuracy is important to avoid any potential fines and penalties.

The Data Acquisition & Handling System (DAHS) used by Avensys meets the handling and reporting requirements of the Canadian Regulations. The system is based on a distributed architecture and can be customized to any applications according to the Environmental Compliance Approval (ECA).

The Protocols and performance specifications for continuous monitoring of gaseous emissions from thermal power generation (EPS 1/PG/7) is a federal standard for the design, installation, certification and operation of automated continuous emission monitoring (CEM) systems that is recognized Canada-wide.

QUALITY ASSURANCE AND CONTROL

The QA policies (high level) and QC procedures (standard operating procedures, working level) are outlined in the QA/QC manual. The procedures are defined to ensure and document the quality of the environmental data being collected and reported.

The QA/QC manual describes a complete program of activities to be implemented to ensure that the data generated by the CEM system will be complete, accurate, and precise.

Avensys Solutions

is an industry leader providing instrumentation and integrated solutions for the monitoring of industrial processes, waste water treatment and environmental surveillance applications in the Canadian market place.

Biogas | Water & Wastewater | Industrial Gas | Industrial Processes | Oil & Gas | Nuclear industry | Environment

ANALYZERS - GAS
- NDIR, IR, UV, FID, FFA, FTA, LFL, BTU, Photometric, FTIR, Paramagnetic, Thermal Conductivity, Laser Diode
- O2 – ppb, ppm, %
- Combustion, THC & VOC
- Mass Spectrometer & GC
- Combustibles & Toxic Gas Detectors
- Opacity/Dust Monitors
- Flammability
- Acid Dewpoint

ANALYZERS - LIQUID
- Ammonia, Nitrate, Hydrocarbon, Organic Loading
- Dissolved Oxygen, Hydrazine, Silicate
- PH, ORP, Conductivity & Turbidity
- Water Samplers
- COD, Water Testing Kits

TEMPERATURE
- Non-contact Infrared
- Thermal Imaging
- Thermal Line Scanners
- Blackbody Calibration Standards

PRESSURE
- Differential, Gauge & Absolute Transmitters
- Transducers
- Wireless

LEVEL
- Level/Liquid Interface Thermal Switches
- Pump/Level Controllers
- Submersible Pressure Transmitters
- Ultrasonic Detectors

FLOW
- Thermal and Mass Flow Meters
- Primary Air / Gas Flow Elements
- Switches & Transmitters
- Open Channel Flow Meters
- Parshall, Palmer-Bowlus, Trapezoidal & H Flumes
- Transit Time Clamp-on Flow Meters

RECORDERS/ANNUNCIATORS
- Video, Graphic, Strip & Circular Chart
- Annunciators
- Event Management Systems
- Sequence of Events
- Fault & Power Quality

SAFETY/GAS DETECTION
- VOC Detectors (PID, FID & GC)
- Dust & Particulate Monitoring
- Purging & Pressurization Systems for Hazardous Locations
- LFL Monitors & Detectors
- Fire & Flame Detection
- Toxic & Combustible Gas Detection

SIGNAL CONDITIONING
- Industrial Wireless Signal Monitoring & Control
- Isolators & Alarm Relays
- Power Quality Monitors
- Conditioners/Transmitters
- Current, Voltage & Watt/VAR Transducers

ATMOSPHERIC EMISSIONS
- Compliance Opacity Monitors
- Stack Flow Monitors
- CEM Systems

SYSTEMS INTEGRATION
- Design & Fabrication of Customized Systems
- Syngas, Landfill, CEMS, Process & Area Monitoring
- Sample Conditioning Systems

ENGINEERING SERVICES
- Repair and Calibration
- Start-up Assistance and Training
- Equipment Subscription Programs
- Maintenance Contract

www.avensys.com
info@avensys.com
Montréal

Oakville
Sarnia
Calgary

Vancouver
Edmonton
Halifax