

Process Gas Monitoring / Liquid Monitoring Systems

Examples of process monitoring applications are:

- O₂ monitoring on different levels and in different media

Some typical:

- ✓ Trace level O₂ in N₂, CO₂ and other gases
 - ✓ Oxygen purity monitoring
 - ✓ O₂ in flue gas
 - ✓ O₂ in glass furnaces, chemical processes
 - ✓ O₂ in petrochemical applications
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- CO, CH₄, CO₂ monitoring in biogas
 - He, H₂, N₂, Ar purity
 - Medical gas purity
 - Water and chlorine in EDC
 - Oil / gas industry applications
 - Caloric value and Wobbe index
 - Claus process tail gas monitoring
 - H₂S monitoring in different media
 - Sulphure in fuel monitoring
 - Process chromatography
 - Water in solvents
 - Moisture monitoring in different media
 - Semiconductor industry gas / liquid monitoring
 - PVC plant gas / liquid monitoring

Process Gas Monitoring

ECM is providing analytic solutions for on-line monitoring of process gases for different applications:

Combustion process control

Fast response O₂ and CO monitoring systems



Industrial analysers for chemical and petrochemical applications

NDIR analysers for SO₂, H₂S, CO, CO₂, NH₃, HCl, CH₄ and many other gases



H₂S and Sulphure analysers for gases and gasoline



Paramagnetic oxygen analysers for different media



Industrial analysers for pharmaceutical industry semiconductor industry and clean gas manufacturers

O₂, SO₂, NO, CO, CO₂, CH₄ multicomponent analysers



Multicomponent FTIR analysers for broad range of pollutants



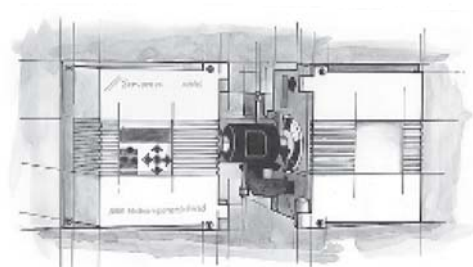
Accurate oxygen analysers



ECM ECO Monitoring Environmental & Process Monitoring instrumentation & systems

Biogas monitoring

CO, CH₄, CO₂, H₂S analytic systems



Analysers for cement kiln control

CO, CO₂, O₂, NO monitoring for high temperature and dusty atmosphere



Claus process tail gas monitoring

H₂S/SO₂ monitoring in the high sulphur content Claus process tail gas atmosphere

Analysers for food industry:

O₂, CO₂ analysers for package gases



CO₂ purity analysers for beverage manufacturers



Process gas chromatographs

The instruments are to monitor different gaseous compounds, which can be not measured by sampler methods

Analysers for clear gas manufacturers



Analysers for 100% and trace level monitoring of O₂, N₂ and others



Analysers for generator cooling systems

CO₂ and H₂ monitoring instruments to control cooling gases

Typical applications are:

- Heating value of different gas mixture
- Context of different sulphur compounds
- Gas odourisation monitoring
- Composition of different hydrocarbons

Tunable laser diode based instruments

These instruments are operating in IR wavelength band. Unlike classical NDIR and GFC analysers, where overlapping of absorption curves is disabling monitoring of compounds which are not clearly separated, these instruments are free of interferences.

This is achieved by monochromatic wavelength of lasers with wavelength positioned exactly into one of characteristic absorption curves of the measured gas.

Typical applications are monitoring of HF, HCl, NH₃, O₂ and other gases even in extremely corrosive, but and dusty environment.



Special category of monitoring instrumentation are heating value analysers.

ECM is offering 3 different types of instruments:

- Chromatographs to monitor gas composition and heating value
- Special sensor based instruments for heating value
- Classical calorimetric instruments for difficult applications (like gas mixtures with widely changing gas compositions)



ECM ECO Monitoring

Environmental & Process Monitoring instrumentation & systems

Analyzer to monitor water concentration and dew point in natural gas, process gases, environment, flue gas and all other applications where water content is an issue.

Concentration is ranging from trace levels to percent concentrations.

Sensor technology is application depending - most important methods are NDIR, optical detection of condensing on chilled surfaces, aluminium oxides, capacitive, conductive, semiconductor...

