HISPACONTROL S.L.
Pº Delicias 65 Bis
28045 Madrid
Tel. 915 308 552
hc@hispacontrol.com
www.hispacontrol.com

# Sistema de análisis de gases extractivo y control de emisiones

# CEMS
# Continuous Emission Monitoring Systems

## FGMS for CO, NOx, SO2, H2S, O2 measurement pressurized for zone 2

**MEASURED GASES**
CO - Carbon monoxide - Infrared Analyzer Mod. Enox II
NOx - Nitrogen oxides - Infrared Analyzer Mod. Enox II and NO2/NO molybdenum-based converter
SO2 - Sulphur dioxide - Infrared Analyzer Mod. Enox II
H2S - Hydrogen sulfide - Electrochemical cell analyzer Mod. Methox
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705

**SAMPLING AND TREATMENT SYSTEM**
System with fast loop and double tapping pump for response time minimization
n. 1 probe with heated filter suitable for zone 1, n. 1 Heated line with AISI 904L inner tube and heater suitable for zone 1, Heated (180 °C) box with redundant dual-stage filtering and solenoid valves suitable for high temperature for zero calibration control, Corrosion resistant cooler with double glass heat exchanger, n. 2 Sampling pumps, Condense monitor, Flow-meters, AISI 904L wiring for the part in contact with the sample

**MONITORED PLANT**
On-shore refinery chimney

**CABINET**
**Protection for area with danger of explosion with Eex method-p (y)**
Stainless steel 30/10 with conditioner (EEx-d protection for temperatures up to 55 °C)
Degree of protection IP65

**DATA PROCESSING**
Modbus and hardwired output
The entire periphery for connection to PLC of all hardwired signals provided

# FGMS for CO, NOx, O2 x2 measurement

**MEASURED GASES (redundant analyzers)**
CO - Carbon monoxide - Infrared Analyzer Mod. Enox II
NOx - Nitrogen oxides - Infrared Analyzer Mod. Enox II and NO2/NO molybdenum-based converter
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705

**SAMPLING AND TREATMENT SYSTEM**
n. 1 Probe with heated filter, n. 1 Heated line with double inner tube for sample and dynamic calibration, Heated (180 °C) box with solenoid valves suitable for high temperature for zero calibration control, Cooler with AISI316 heat exchanger, n. 1 Sampling pump, Condense monitor, Flow-meters, Pneumatic wiring completely Viton ® for the part in contact with the sample

**MONITORED PLANT**
Industrial boiler fueled with natural gas

**CABINET**
Painted sheet metal with conditioner for temperatures up to 45 °C
Degree of protection IP54

**DATA PROCESSING**
Modbus and hardwired output

# FGMS for CO, NOx (with NH3), O2, T multiplexing on 3 points measurement

**MEASURED GASES**
CO - Carbon monoxide - Infrared Analyzer Mod. ENOX II
NOx - Nitrogen oxides - Infrared Analyzer Mod. ENOX II, NO2/NO molybdenum-based converter, NH3/NO converter
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705
T - Flue gas temperature - K-type thermocouple and converter

**SAMPLING AND TREATMENT SYSTEM**
System with fast loop for response time minimization
n. 3 Probes with heated filter, n. 3 Heated lines, Heated (180 °C) solenoid valves for scanning and fast loop control, Cooler with double heat exchanger, n. 2 Sampling pumps, Condense monitor, Flow-meters
Additional stream for CO measurement to prevent leakage on the NH3/NO converter

**MONITORED PLANT**
3 Internal combustion engines fueled with natural gas

**CABINET**
Painted sheet metal with double redundant conditioner for temperatures up to 45 °C
Degree of protection IP54

**DATA PROCESSING**
Modbus output and DAS-DAC data acquisition: remote control for service and technical support

# FGMS for CO, NOx, NH3 (hot), O2 measurement

**MEASURED GASES**
CO - Carbon monoxide - Infrared Analyzer Mod. Enox II
NOx - Nitrogen oxides - Infrared Analyzer Mod. Enox II and NO2/NO molybdenum-based converter
NH3 - Ammonia - Infrared (HOT / WET) analyzer with measurement performed directly on hot fumes
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705

**SAMPLING AND TREATMENT SYSTEM**
System with fast loop for response time minimization
n. 1 Probe with heated filter, n. 1 Heated line, Heated (180 °C) solenoid valves, Cooler with continuously operating peristaltic pump, n. 1 Sampling pump with fast-loop tapping, Condense monitor, Flow-meters

**MONITORED PLANT**
1 Internal combustion engine fueled with natural gas installed in hazardous area

**CABINET**
Double width painted plate with dual redundant conditioner for temperatures up to 45 °C
Degree of protection IP54

**DATA PROCESSING**
Modbus output and DAS-DAC data acquisition: remote control for service and technical support

# FGMS for CO, NOx, O2, Dust measurement

**MEASURED GASES**
CO - Carbon monoxide - Infrared Analyzer Mod. Enox II
NOx - Nitrogen oxides - Infrared Analyzer Mod. Enox II and NO2/NO molybdenum-based converter
Dust - With electro-dynamic indicator
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705

**SAMPLING AND TREATMENT SYSTEM**

n. 1 Probe with heated filter, n. 1 Heated line, Heated (180 °C) solenoid valves and fine filtering system, Cooler with peristaltic pump continuously operating, n. 1 Sampling pump with fast-loop tapping, Condense monitor, Flow-meters

**MONITORED PLANT**
1 Internal combustion engine fueled with vegetable oil

**CABINET**
Painted plate with dual conditioner for temperatures up to 45 °C
Degree of protection IP54

## DATA PROCESSING
Modbus output and DAS-DAC data acquisition: remote control for service and technical support

# FGMS for CO, NOx, SO2, CO2, O2 measurement

**MEASURED GASES**
CO - Carbon monoxide - Infrared Analyzer Mod. Enox II
NOx - Nitrogen oxides - Infrared Analyzer Mod. Enox II and NO2/NO molybdenum-based converter
SO2 - Sulfur dioxide - Infrared Analyzer Mod. Enox II
CO2 - Carbon dioxide - Infrared Analyzer Mod. Methox
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705

**SAMPLING AND TREATMENT SYSTEM**
n. 1 Probe with heated filter, n. 1 Heated line, Compressor-based cooler, n. 1 Sampling pump, Condense monitor, Flow-meters

**MONITORED PLANT**
Emissions from heating plant in Egypt

**CABINET**
Painted plate with conditioner for temperatures up to 55 °C
Degree of protection IP54

## DATA PROCESSING
5 x 4-20 mA analog outputs
10 x Relay outputs for alarm and service signals

# FGMS for CO, NOx, O2, TOC, Dust measurement

**MEASURED GASES**
CO - Carbon monoxide - Infrared Analyzer Mod. Enox II
NOx - Nitrogen oxides - Infrared Analyzer Mod. Enox II and NO2/NO molybdenum-based converter
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705
TOC - Total Organic Carbons - Flame ionization analyzer - FID
Dust - With electro-dynamic indicator

**SAMPLING AND TREATMENT SYSTEM**
n. 1 Probe with heated filter, n. 1 Heated line, Compressor-based cooler, n. 1 Sampling pump, Condense monitor, Flow-meters

**MONITORED PLANT**
Emissions from aluminum recovery oven

**CABINET**
Painted plate with conditioner for temperatures up to 55 °C
Degree of protection IP54

**DATA PROCESSING**
Modbus output and DAS-DAC data acquisition: remote control for service and technical support

# FGMS for CO, NOx, O2 measurement

**MEASURED GASES**
CO - Carbon monoxide - Infrared Analyzer Mod. Enox II
NOx - Nitrogen oxides - Infrared Analyzer Mod. Enox II and NO2/NO molybdenum-based converter
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705

**SAMPLING AND TREATMENT SYSTEM**
n. 1 Probe with heated filter, n. 1 Heated line, Heated (180 °C) solenoid valves for zero calibration control, Cooler with AISI315 heat exchanger and pump continuously operating, n. 1 Sampling pump, Condense monitor, Flow-meters

**MONITORED PLANT**
Gas turbine

**CABINET**
Painted plate with double redundant conditioner for temperatures up to 45 °C
Degree of protection IP54

**DATA PROCESSING**
Modbus output and DAS-DAC data acquisition: remote control for service and technical support

# FGMS for SO2 measurement

**MEASURED GASES**
SO2 - Sulfur dioxide - Infrared Analyzer Mod. Enox II

**SAMPLING AND TREATMENT SYSTEM**
n. 1 Probe with heated filter, n. 1 Heated line, Heated (180 °C) solenoid valves for zero calibration control, Cooler with glass heat exchanger and pump continuously operating, n. 1 Sampling pump, Condense monitor, Flow-meters

**MONITORED PLANT**
Refinery smokestack

**CABINET**
AISI316 with “Rittal” finishing
Degree of protection IP54

## DATA PROCESSING
Modbus and hardwired output

# FGMS for CO, O2 measurement

**MEASURED GASES**
CO - Carbon monoxide - Infrared Analyzer Mod. Enox II
O2 - Oxygen - Extractive zirconium oxide cell Analyzer Mod. E705

**SAMPLING AND TREATMENT SYSTEM**
n. 1 Probe with filter, Peltier-based cooler and pump continuously operating, n. 1 Sampling pump, Condense monitor, Flow-meters

**MONITORED PLANT**
Hospital boilers

**CABINET**
Wall rack with intermediate opening for easy access to devices

**DATA PROCESSING**
Modbus output and DAS-DAC data acquisition: remote control for service and technical support

# O2 control system for explosion control scanning on 6 +5 points with redundant analyzers

**MEASURED GASES**
O2 - Oxygen – 2+2 Redundant extractive zirconium oxide cell Analyzers Mod. E705

**SAMPLING AND TREATMENT SYSTEM**
The system consists of two sections of analyzes in a cyclic scan on respectively 6 and 5 points
n. 6+5 Probes with heated filter, n. 2 Peltier-based cooler and pump continuously operating, n. 2 Sampling pumps, Condense monitor, Flow-meters with low flow rate alarm

**MONITORED PLANT**
Dried resins transport

**CABINET**
Painted plate with double redundant conditioner for temperatures up to 45 °C
Degree of protection IP54

**DATA PROCESSING**
Hardwired analog and digital output