

GCS GIGAS CEM System



GIGAS FT-IR is the first and unique gas analyser designed and **Made in Italy**, developed to guarantee high quality, accuracy, reliability and strength.

The System

GCS incorporates reliable and precise FT-IR Spectrometer, heated optical cell with variable path length, automatic signal processing with build-in industrial PC and touch screen.

Data transmission follows modern Ethernet connection, otherwise can be implemented analog 4-20 mA transmission.

For typical applications GCS includes FID and Oxygen analyser and is designed to integrate other signals like that from dust, gas temperature or flow sensors.

Cabinet has IP54 protection level and air fan exchanger for working in protected areas.

GCS is the ideal solution for **industrial emission** and **process monitoring**. It is a rugged and modular system, easily integrable in any supervisor level of industrial plant.

One reliable analyser for most gaseous emissions, make of GIGAS FT-IR a cost effective solution in full compliance of actual regulatory.

All the analyser performances are **TÜV Rheinland** tested and **approved** in compliance with European directives EN 14181 and EN 14956.

Applications

- Waste handling
 - . Waste incineration
 - . Multifuel furnaces
- Energy Industry
 - . Power station with fuel combustion
- Chemical Industry
 - . Plants with chemical combustion
 - . Solvent recovering
 - . Process Control
- Production Plants
 - . Steel and iron
 - . Aluminum
 - . Glass and ceramic
 - . Smelting plants

Components	Measuring Range	
	Minimum	Maximum
H ₂ O	0 - 30 Vol%	0 - 30 Vol%
CO ₂	0 - 20 Vol%	0 - 20 Vol%
CO	0 - 75 mg/m ³	0 - 300 mg/m ³
NO	0 - 200 mg/m ³	0 - 400 mg/m ³
NO ₂	0 - 100 mg/m ³	0 - 100 mg/m ³
SO ₂	0 - 75 mg/m ³	0 - 300 mg/m ³
HCl	0 - 15 mg/m ³	0 - 90 mg/m ³
HF	0 - 10 mg/m ³	0 - 15 mg/m ³
NH ₃	0 - 15 mg/m ³	0 - 15 mg/m ³
N ₂ O	0 - 50 mg/m ³	0 - 50 mg/m ³
CH ₄	0 - 50 mg/m ³	0 - 50 mg/m ³
O ₂	0 - 5 Vol%	0 - 25 Vol%
TOC	0 - 1 mg org.C/m ³	0 - 500.000 mg org.C/m ³

Performances

Linearity	<2% of the smallest measuring range <1% for O ₂
Accuracy	<2% of the smallest measuring range
Repeatability	<1% of the smallest measuring range
Response time	T ₉₀ <150 s
Zero drift	Automatically corrected
Span drift	<4% in 6 months <0,5% in month for O ₂
Temperature drift	<1% of the smallest measuring range per 10K change
Cross sensitivity	<4% of the smallest measuring range
Availability	>98%

Interface and Signals

Interface	Ethernet communication with Modbus standard protocol
Output signals	Analog: 4-20 mA per measured component Digital: as specified
Input signals	Analog and Digital signals possible as specified
Colour Display	All measured data and system status are displayed on 17" LCD Touch screen

Sample Gas Conditions

Gas Temperature	180 °C (Non condensing) GCS provides for sampling system (sampling probe & heated line) temperature regulation
Gas filtration	Filtration of particulates 2µ required (by sampling probe)
Flow rate	Max 600 l/h (10 l/min), by internal pump
Pressure	900-1100 mbar

Gas Utilities

Instrument air	Pressure 6-8 bar; Flow rate 120 l/min (whose 40 l/min for optional TOC analyser)
Calibration Gas	Pressure 0-3 bar; Flow rate 5 l/min
Hydrogen* (for optional TOC Analyser)	Pressure 1 bar; Flow rate 40 ml/min

* Optionally Hydrogen generator available

Cabinet Design

Dimension	120x80x190 cm (WxDxH)
Environmental Condition	+5 to +25 °C with air fan (in conditioned room) +5 to +40 °C with optional air conditioner unit* 80% relative moisture, not condensing *Cooling capacity 1500 W
Weight	Approx. 300 Kg
Protection class	IP54
Colour	Light Grey (RAL 7032), other on request
Power Supply	230 VAC 48-62 Hz, or 400 VAC (3p, 1n, 1g) 48-62 Hz on request
Power consumption	Approx. 2400 VA for analysis system Approx. 110 VA/m for heated line Approx. 600 VA for heated probe
Gas connection	Gas inlet: Special cable gland for enter line Screw fitting for 4/6 mm tube Gas & condensate outlet: Screw fitting for 4/6 mm tube Test gases: Screw fitting for 4/6 mm tube Instrument air: Screw fitting for 10/12 mm tube