



Heated multi-gas infra-red GFC analyzer

MIR 9000H



Turnkey system "on frame" including
MIR 9000H



Optional: WEX® advanced CEMS data
management and supervision software

Compliance with LCPD and WID applications

TÜV certified to EN15267-3

QAL1 as defined by EN14181

QAL3 compliance to EN14181

U.S. EPA 40 CFR 60 and 75 Compliant



QAL 1
EN 14181

QAL 3
EN 14181



The MIR 9000H is a multi-gas infrared analyzer using the Gas Filters Correlation technology (GFC). With its hot measurement principle (180°C on a hot and humid sample), the MIR 9000H is the perfect tool for the analysis of the main gas parameters in many applications, including DeNOx (SCR / SNCR) and the optimization of flue gas treatment processes.

SPECIFIC FEATURES:

- Available in 2 versions for the simultaneous and continuous measurement of:
 - NH₃ and H₂O (NH₃ Version)
 - CO, CO₂, NO, NO₂, SO₂, HCl, HF, N₂O and O₂ in addition to NH₃ and H₂O (Multi gas Version / 8 parameters max)
- Certified analyzer for the guarantee of accurate measurements
- Designed for the measurement of wet and corrosive samples
- Perfectly suitable for the ammonia slip detection
- 180°C heated measurement cell
- Automatic spectral interference correction
- Robust design with a stainless steel tight box enclosure to withstand the harshest industrial environment
- Acquisition / management of peripherals measurements (particulates, temperature, flow...)
- Embedded HMI with Graphic LCD display and interactive menu driven firmware, no computer required
- Remote access for all analyzer functions (visualization/ maintenance / configuration / backup.....)
- Optimized operation cost (low maintenance and low consumables requirement)
- Full compatibility with our DAHS

A full range of equipment is available to make the analyzer MIR 9000H an automated measurement system (probes & sampling box / sample line / module for automatic calibration / air treatment module / terminal module for I / O signals.....)

MAIN APPLICATIONS:

Energy From Waste incineration (EFW) : Municipal, Hazardous, Industrial, Special, Hospital • Power & Combustion • Ammonia slip detection • Biomass • Cement Kilns • Pulp and Paper • Industrial Boilers and Furnaces in Chemical & Petrochemical Plants • Process Control as DeNOx (SNCR,



Heated Multi-gas Analyzer **MIR 9000H**

SPECIFICATIONS:

Parameters	Certified ranges (except *)
NH ₃	0-15 / 100 mg/m ³
H ₂ O	0-30 / 40%
CO	0-75 / 1,000 mg/m ³
CO ₂	0-30 / 25%
NO	0-200 / 2,000 mg/m ³
NO ₂	0-200 / 2,000 mg/m ³
SO ₂	0-500 / 2,000 mg/m ³
HCl*	0-100 / 1,000 mg/m ³
HF*	0-40 / 200 mg/m ³
N ₂ O*	0-20 / 100 mg/m ³
O ₂	0-25%

Other available ranges on request, mainly for process applications

- Repeatability: < 2% of the Full Scale (F.S.)
- Zero/Span drift: <2% of the F.S. / 30 days
- Linearity: < ± 2% of the F.S.
- Cross sensitivity: < 3-4% of the F.S.
- Chamber temperature: 180 °C
- Power supply: 115 or 230V ± 15%, 50/60 Hz
- Nominal power consumption (analyzer only): 150 VA (max 450 VA)
- Serial link: RS232 / RS422
- Ethernet link: RJ45 port
- USB port and function: firmware update and upgrade, configuration, backup of data, flash memory
- 4 analog inputs (0-2.5V)
- 8 analog outputs (4-20 mA)
- 4 logical outputs (relay)
- 8 logical inputs (remote control)
- Dimensions: 710x560x300 mm (HxWxD)
- Weight: 40 kg

MAIN OPTIONS:

- Sampling system (probes + sampling boxes HOFI or LCPD)
- Heated line (for standard applications maximum length = 60m)
- Pressure, temperature and velocity measurements of the sampled gas (Embedded DTP option)
- Manual or automatic calibration module (TIG option)
- Integration options (Shelter, cabinet or frame, including project management)
- Data Acquisition and Handling System (DAHS) with WEX software

OPERATING PRINCIPLE:

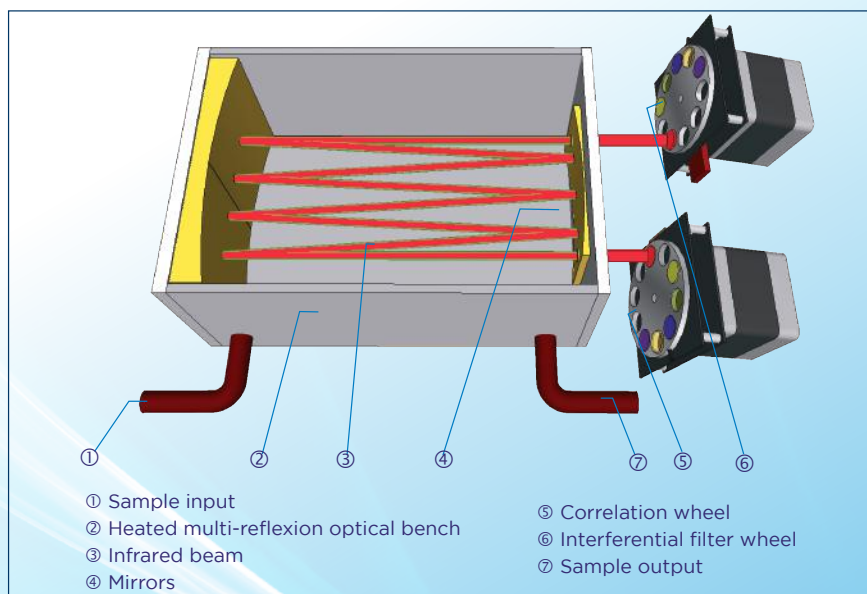
The MIR 9000H analyzer measures from 1 to 8 gas parameters, using combination of infrared spectroscopy with gas filter correlation technologies. This technology, based on a physical principle, allows a specific measurement of each gas parameter in ppm (conversion in mg / m³ configurable) or %.

The sample, hot and humid and therefore not denatured, flows through the heated measuring chamber at a rate of about 1.5 l / min (adjustable). This flow is controlled by Venturi effect, which ensure the stability of sample flow and pressure, avoiding the use of a heated pump and thereby reducing the maintenance operations and the maintenance costs. The light emitted by the infrared source (infrared beam), is passing through a series of interference filters and gas filters (gas cell) mounted on correlations wheels and modulated by chopper, before crossing the measuring chamber. The infrared beam is thus reflected by the use of mirror sets (multi-reflection) with as a result an optical path of several meters achieved in a measuring chamber of only few centimeters. The optical path length have been optimized to ensure an excellent "limit of detection / signal noise" ratio. The resulting infrared beam is measured by a pyroelectric detector. The signal from the detector is electronically amplified and processed for displaying the concentration of various parameters in the desired unit (ppm or %).

The ZERO / CALIBRATION / BLOWBACK functions are controlled by the analyzer by using solenoid valves, and can be set in manual / automatic or remote control mode.

This method of analysis makes possible the measurement of gas parameters as well as the correction of the potential interference between those gas parameters. The concentration of oxygen is measured by a zirconia oxygen probe embedded in the analyzer.

The measures are displayed in real time on the analyzers' screen and are also available on the analyzer' communication outputs (8 analogue outputs, serial port and Ethernet port).



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MIR 9000H - EN_PSO - 11/16