

**NEW**  
GENERATION

## NDIR-GFC Multi-Gas Analyzer

PROCESS & EMISSIONS MONITORING SYSTEMS

Eco-designed, ultra-compact, smart & connected instrument, the MIR 9000e is your next tool to measure combustion exhaust gas from boiler, or gas emission from different industrial furnaces and process applications.



ENVEA Connect™  
Free Apps  
iOS / Android



**Cold Dry Extractive sampling**  
(Dry Basis Analysis)



### SPECIFIC FEATURES:

- Superior metrological performances for the simultaneous multi-gas measurement of: NO<sub>x</sub>, SO<sub>2</sub>, CO, O<sub>2</sub>, residual H<sub>2</sub>O, and optionally CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O (greenhouse gases)
- 3U rack, environmental-friendly and cost-saving analyzer, with ultra low power consumption
- Breakthrough mechanical design for weight and power saving, thermal insulation & reliability
- Insensitive to T° variations in the range +5° to +40°C (no air conditioning required)
- Compatible with any type of drying technologies (gas cooler, permeation, dilution...)
- No compressed air required (if using a gas cooler)
- Proactive, user-friendly remote communication
- Smart analyzer including AMS control functionalities: integrated sampling control, automatic zero and span gas injection, external pump control, system alarms display...
- Highly accurate, excellent stability
- Economical, easy and reduced maintenance
- Real-time graphic display (color touch screen), animated synoptic, self-diagnostic, control and maintenance data screens can be displayed while the instrument is operating
- Service assistant inside: detects early signs of trouble, allows predictive maintenance for increased productivity on site, reduced downtime, more efficiency, less training
- Includes embedded Communication Protocol for WEX® Management Software with automatic recognition and configuration

### MAIN APPLICATIONS:

- > Industrial Boilers and Furnaces
- > Power Generation & Combustion
- > Gas turbines
- > Chemical & Petrochemical Plants
- > Process gas monitoring...



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EN 15267  
QAL1 Certified  
Regular  
Surveillance  
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TÜV CERTIFIED



U.S. EPA COMPLIANCE  
40 CFR 60 & 75

# NDIR-GFC Analyzer **MIR 9000e**

Infrared analyzers allow for high sensitivity measurement of a variety of gas components, technology employed since many years by ENVEA, and continuously evolved, with its well-known MIR 9000 generation of gas analysers. The MIR 9000e is a new generation of gas monitors, which benefits from a unique eco-design expertise.

The MIR 9000e is capable of measuring up to 8 components, depending on your selection. NO<sub>x</sub>, SO<sub>2</sub>, CO, CH<sub>4</sub> and N<sub>2</sub>O are measured by the Non-Dispersive Infrared Gas Filter Correlation method (NDIR-GFC), while O<sub>2</sub> is measured by a built-in zirconia sensor (or paramagnetic cell upon request).

Eco-designed, the gas monitor utilizes the most recent optical and electronic technologies offering increased precision and robustness, while requiring only limited maintenance.

MEASURING RANGES			
NO <sub>x</sub> as NO <sub>2</sub> (after NO <sub>x</sub> converter)	0 - 100* / 1,500* / 5,000 mg/m <sup>3</sup>	CO <sub>2</sub>	0 - 20 / 0 - 30%
SO <sub>2</sub>	0 - 75* / 1,500* / 7,500 mg/m <sup>3</sup>	CH <sub>4</sub>	0 - 50* / 200* / 1,000 mg/m <sup>3</sup>
CO	0 - 75* / 3,000* / 12,500 mg/m <sup>3</sup>	N <sub>2</sub> O	0 - 50* / 200* / 1,000 mg/m <sup>3</sup>
O <sub>2</sub>	0 - 25%	*QAL 1 ranges	
Residual H <sub>2</sub> O	0 - 2%		

TECHNICAL SPECIFICATIONS	
Zero drift	< 2 % FS / 1 month
Span drift	< 2 % FS / 1 month
Linearity	< 1 % FS
Sample flow-rate	approx 25 l/h
Display	TFT LCD color screen, resolution: 800 (RGB) x 480, size: 7 inches
HMI	Touch screen & graphic display
Power supply	100-250Vac, 50/60Hz + ground
Energy consumption	Warm-up: 110 W / 160 VA; Measuring 50 W / 75VA
Working temperature	+5 °C to 40 °C
Memory storage of measurement values	Capacity: 1 year based on 1-min intervals
Alarms checks	Yes
Tests and maintenance diagnostics	Yes
Standard I/O	Modbus TCP, Modbus RTU (dongle), UDP protocol, RJ45
Optional I/O	4 to 8 analog outputs (0-1 V, 0-10 V, 0-20 mA, 4-20 mA) 6 to 12 output relays 4 to 8 logical inputs
USB port	Type A USB socket: 2.0 (3.0 compliant)
External SV control	Screw terminal connector for up to 5 SV (solenoid valves): Measurement, Zero, Span 1, Span 2, Probe / Analyzer
Dimensions (DxWxH)	19" rack, 3U; 483x330x133 mm
Weight	10.4 kg / 23 lbs
Mean Time Between Maintenance (MTBM)	3 months

## MAIN OPTIONS:

- Up to 5 SV (external)
- I/O modules (external)
- O<sub>2</sub> measurement (internal)
- NO<sub>x</sub> converter
- External sampling pump
- External filter cartridge (CO<sub>2</sub>)
- USB to RS232/RS485 converter
- Automated drift control function

### Automated drift control function

Automated quality monitoring of the on-site data thanks to zero drift control and calibration checkpoint. Certified by TÜV for QAL3 (Quality Assurance Level 3) according to EN 14181 & EN 15267-3 standards (pending official publication on QAL1.de).  
Embedded Shewhart control card for Statistical Process Control (SPC);  
Possibility to work in concentration or in %.  
Programming in hours/day/month.



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