

MULTICOMPOUND GAS ANALYZER

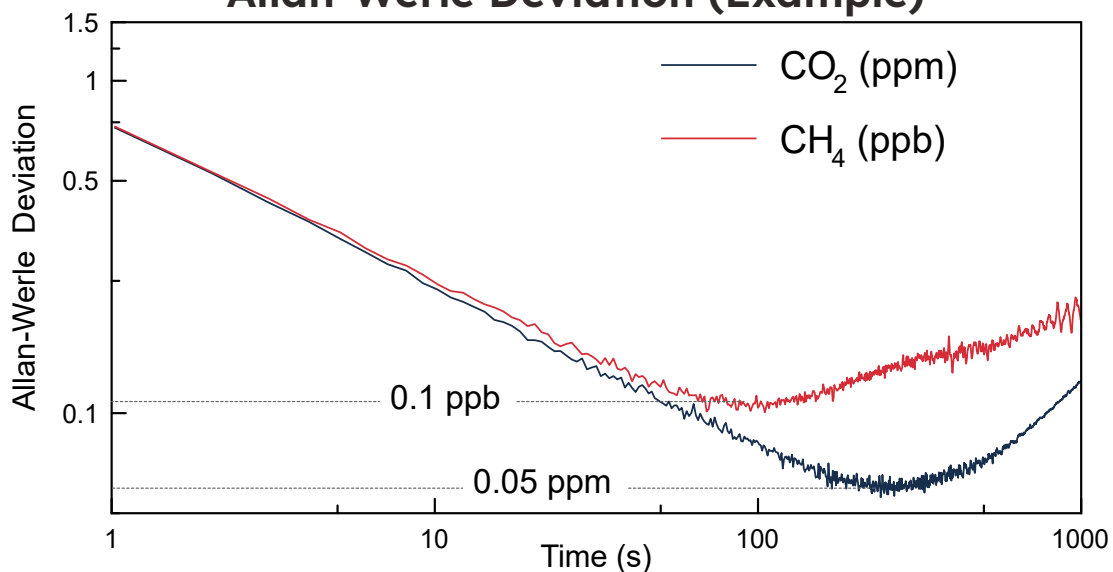
MGA⁵ - GHG

Highlights

- Measures 5 gases simultaneously:
CH₄, CO, CO₂, N₂O, H₂O
- Automated water vapor correction
- High precision for ambient air and greenhouse gas monitoring at low concentrations
- High time resolution (1 Hz or 10 Hz)
- Suitable for mobile measurements (vehicle, aircraft, marine, ground-based stations) and **eddy covariance flux monitoring**



Allan-Werle Deviation (Example)



The MIRO MGA⁵-GHG has revolutionized and simplified the monitoring of greenhouse gases by enabling simultaneous online measurements of 5 key gases **CH₄, CO, CO₂, N₂O, H₂O** at high measurement rates, while offering excellent stability and precision.

MIRO's MGA⁵-GHG analyzers directly measure concentrations of all compounds using mid-infrared laser absorption spectroscopy with **Quantum Cascade Lasers** as light sources. This allows for highly specific and accurate gas detection along with maximum measurement sensitivity. Our analyzers are typically free of measurement interferences from other gas species. The intuitive touch display enables fast and easy control. The analyzer is suitable for various applications from **air monitoring** to **eddy covariance flux** measurements.

MIRO's products are made in **Switzerland** and undergo strict quality control before shipping.

Specifications

Species (unit)	Precision @ 1s	Precision @ 200s	Max. Drift*	Specification range	Measurement Range (ppm)
CH ₄ (ppb)	1	0.2	5	1'000-3'000	0-200
CO (ppb)	0.4	0.1	1	0-1'000	0-20
CO ₂ (ppm)	0.7	0.07	1	300-500	0-8'000
N ₂ O (ppb)	0.2	0.03	2	300-400	0-20
H ₂ O (ppm)	30	5	120	0-30'000	0-100'000

* maximum pk-to-pk difference of 1-hour averaged data over 24 hours.

System parameters

System Operation Parameters	Technical Specifications	
	1 Hz	10 Hz
Ambient Temperature	15–30 °C	
Ambient Humidity	< 90% RH, non-condensing	
Sample Pressure	700–1050 mbar	
Sample Flow Rate	0.5 to 1.5 slpm	15 slpm
Sample Inlet Fittings	6 mm-Swagelok	12 mm-Swagelok
Dimensions	48 w x 18 h x 70 d (cm)	
Accessories required	Chiller unit, Vacuum pump	
Weight	20 kg (Analyzer), 11 kg (Chiller unit), 9 kg (Vacuum pump)	20 kg (Analyzer), 11 kg (Chiller unit), 32 kg (Vacuum pump)
Power	100–230 VAC / 50–60 Hz; <100 W Analyzer, <230 W (Pump + Chiller)	100–230 VAC / 50–60 Hz; <100 W Analyzer, <530 W (Pump + Chiller)
Installation	19" Rack mountable or benchtop	
Digital ports	RS232 (for data output), USB, Ethernet	
Connectivity	The instrument provides remote access and control of its main functionalities. It contains a PC which is running the instrument software. If a network access is provide the instrument's full functionality can be accessed via a remote control software.	
Electrical and Laser Safety	CE-Mark (IEC 61010-1: 2010, IEC 61326-1: 2012, IEC 60825: 2019)	
Service Interval	The instrument is suitable for operation without on-site interventions for a period of at least three weeks.	

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