

MLT 1 - Ultra Low Multi-Channel Analyzer Applications for 0-5 ppm CO₂ / 0-10 ppm CO

FEATURES

- Automotive (ICEE) and flue gas (CEMS) up to 4 measuring channels
- CO ultra low (0 – 10 ... 2,500 ppm), CO₂ and H₂O channels
- CO high as option
- AK protocol for automotive
- Gas purity: up to 2 channels
- CO ultra low (0 – 10 ... 100 ppm) and CO₂, ultra low (0 – 5 ... 100 ppm)
- NDIR with microflow sensor or solid-state detector
- Dynamic autoranging ratio: 1 : 15 for CO₂, 1 : 20 for CO high and up to 1 : 250 for CO ultra low
- Autocalibration via digital I/O, serial interface, network, time-programmed via man-machine interface
- Zero and span stability by means of autozero and automatic gain control
- Barometric pressure compensation
- Sample flow rate measurement
- Analog, digital and serial I/O (SIO/DIO)

APPLICATIONS

- Internal combustion engine emissions
- Engine and exhaust gas catalyst development
- Continuous emissions monitoring systems (CEMS)
- Control of stack gas cleaning systems, e.g. carbon bed scrubber
- Trace monitoring in gas purity and air separation measurement



Rosemount Analytical's NGA 2000 MLT 1 ULCO Gas Analyzer is specially designed to measure ultra low carbon monoxide (ULCO) levels.

The analyzer is equipped with a second optical bench including a multi detector assembly for cross interference rejection in automotive and flue gas applications. Water vapor and carbon dioxide measurement is used for internal cross interference compensation, providing an ultra low CO and a CO₂ channel as standard. An additional CO high channel is optionally available for automotive applications.

For gas purity measurements, new quality standards require ultra low CO measurement but lower dynamic ranging and cross compensation. Therefore the 2nd bench can include another channel, e.g. ultra low carbon dioxide (ULCO₂).

For a complete overview of the NGA 2000 MLT Gas Analyzer series, please refer to PDS 103-MLT1 and PDS 103-MLT34.

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GENERAL SPECIFICATIONS

	CO ultra low 0 – 10 ...100 ppm CO ₂ , ultra low 0 – 5 ...100 ppm	CO _{low} 0 – 50...2,500 ppm CO _{high} 0 – 0.5 ...10% CO 0 – 1...15%
Detection limit Linearity Zero-point drift Span (sensitivity) drift Repeatability Noise Response time (t₉₀) Gas flow range Influence of gas flow Max. pressure Pressure influence (at constant temperature) (with optional pressure compensation) Ambient temperature range Temperature influence (at constant pressure) - on zero point - on span (sensitivity) Warm-up time	< 0.2 ppm ⁴ < ± 1% of 10% of lowest range < ± 0.2 ppm in 24 hr. ⁴ < ± 0.2 ppm in 24 hr. ⁴ < ± 0.2 ppm ⁴ < ± 0.1 ppm ⁴ < 4 s ³ 0.2 - 1.5 l/min < ± 2% ^{1 4} < 1,500 hPa abs. < 0.1% per hPa ² < 0.01% per hPa ² + 5°C to + 40°C ⁶ < ± 0.2 ppm per 10 K ⁷ < ± 0.2 ppm per 10 K ⁷ Approx. 15 to 50 minutes ⁵	< 1 % ^{1 4} < ± 1 % of 10% of lowest range < 2% per week ^{1 4} < 0.5% per week ¹ < 1% ^{1 4} < 1% ^{1 4} < 4 s (3) 0.2 - 1.5 l/min range < ± 1% ^{1 4} < 1,500 hPa abs. < 0.1% per hPa ² < 0.01% per hPa ² + 5 °C to + 40 °C ⁶ < ± 1% per 10 K ¹ < ± 5% at 5 to 40°C ¹ Approx. 15 to 50 minutes ⁵

¹ Related to full scale

² Related to measuring value

³ From gas analyzer inlet at 1.0 l/min. gas flow (electr. = 2s)

⁴ Constant pressure and temperature

⁶ Higher ambient temperatures (45°C) on request

⁵ Dependent on integrated photometer bench

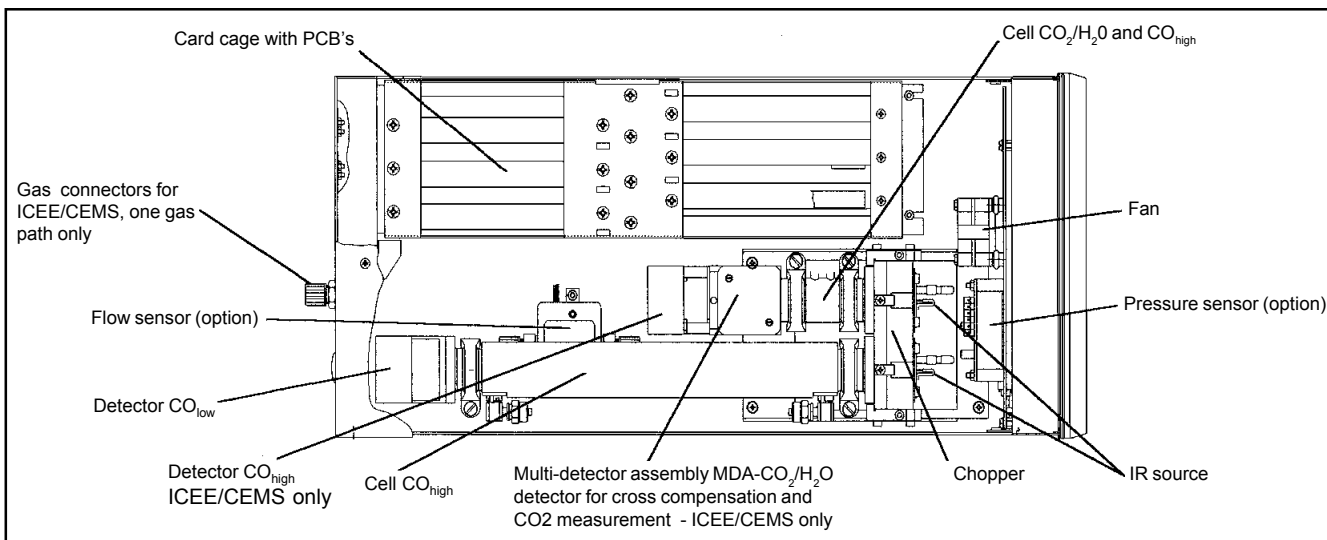
⁷ Temperature must not change > 10 K within 1 hour

SPECIFIC DATA, ICEE / CEMS

Gas connections for sample gas	2 fittings 6/4 mm PVDF (option: 6/4 mm ss, 1/4" ss)
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SPECIFIC DATA, GAS PURITY

Gas connections for sample or purge gas	max. 8 fittings 6/4 mm PVDF (option: 6/4 mm ss, 1/4" ss)
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