

MRU –
over 30 years of
innovative gas
analysis

OMS 420-Ex

O₂ & CO_e in-situ monitoring system for use in hazardous area zone 2

The OMS 420-Ex - probe is used for continuous measurement of oxygen and combustible gas concentrations in flue gases up to 1.000°C of various industrial furnaces/ovens/boilers, with hazard of explosive atmosphere at petroleum refinery, petrochemical plant and natural gas plants.




Until now, in-situ measurements, used to tune boilers, were limited to O₂ only. The introduction of combustibles CO_e measurements however, to be used simultaneously with O₂-measurements, provides engineers an improved tool to lower excess air to previously unachieved levels. Lowering excess air means lowering fuel consumption, greater cost savings and reduced NO_x emissions.

Main features:

- hazardous area designation of use: **Zone 2 or Class 1, Div 2, Gr A/B/C/D**
- special IP65 pressurized cabinet and z-purge controller, complying to **II 3G Ex pz II T3 Gc**
- unique hot solid electrolyte sensor for combustible CO_e-measurement without need for sample dilution with air as required for catalytic bead sensors (Pellistors)
- easy and fast, on site replaceable detector head with sensors (O₂&CO_e)
- unique blow-back system for dusty flue gases
- integrated auto-calibration for accurate measurements
- integrated control unit with backlit display, operating key pad, dual galvanic isolated 4...20mA output and digital output RS485 (Modbus RTU)
- stainless steel SS316Ti flange 4" ANSI-150lbs with flow guidance probe tubes, from 250mm up to 2m length
- low energy consumption, no poisoning effects on sensors, stable in hot, wet and water saturated flue gases, dust tight and water proof enclosure, with optional ATEX heater for very low ambient air temperatures or ATEX Vortec cooler for high ambient temperatures

Technical specifications

	Gas	Range	Accuracy	Method
Measured components	O ₂	0 ... 25%	0,2% abs.	zirconium dioxide
	CO _e	0 ... 1.000ppm	± 5% FS	hot solid electrolyte
Zero drift Span drift Linearity	< 0,2% of range per month, negligible with auto-zero < 0,2% of range per month, negligible with auto-cal < 1% FS			
Warm up time	Minimum 30 minutes			
Response time	< 10 seconds			
Process conditions Temperature Pressure Flow velocity Probe connection Probe tube length	up to 1.000° C 900 to 1.100 mbar min. 1m/sec to max. 30m/sec flange 4" ANSI-150lbs, stainless steel 1.316Ti 250 mm to 2.000 mm, Inconel steel			
Calibration	Manual or automatic (user free settable) 1 point (offset) or 2 points (offset and span)			
HMI Human Machine Interface	Graphical, backlit display Keyboard and password protected operation Dual, analog output 4...20mA, isolated, max. load 500R RS 485 digital interface (Modbus RTU) DIN-rail RS 485/Profibus converter			
Ex classification	 II 3G Ex pz II T3 Gc			
Cabinet Dimensions Weight/ Protection Ambient temperature	Glasfiber reinforced PE with grey, conductive painting 650x500x350mm (HxWxD) 25 kg / IP 65 +5°C ... +45° C (+65°C with ATEX Vortec cooler) -45°C ... +45°C with cabinet heater			
Operating requirements Electric power supply Compressed air	100...240Vac / 47...63Hz / 100W, 300W with cabinet heater 6...8bar, free of dust, oil and water free (DP -20°C or less)			

OMS 420-RT model with:

- remote transmitter
- 100...240V power supply
- detector head with ZrO₂ sensor
- flange with flow guidance tube
- back purge (blow back) included
- optional CO_e - sensor

MODELS for safe area



- optional pneumatic unit PU 420



OMS 420 model with:

- compact transmitter & ZrO₂-sensor
- 24Vdc power supply
- optional CO_e - sensor

