

PRODUCT DATA SHEET

WDG-VC Combustion Flue Gas Analyzer

Safe operation of the burner management system

The WDG-VC provides an additional layer of safety when measuring excess oxygen (O₂) and combustibles (CO+H₂) in the burner management system. It has a close-coupled extractive design that allows for fast response in a wide range of flue gas applications up to 1648°C (3000°F).

Reliability

The WDG-VC is designed with measurement redundancy and continual diagnostics functions that assess the health of the analyzer and validate the proper combustion measurements.

Safety

The WDG-VC is SIL 2 compliant for excess O₂ and combustibles (with the RTD catalytic detector), and it is capable for use in SIS combustion safety systems. Onboard diagnostics provide low probability of undetected analyzer faults. Communication through Modbus RTU or Fast Ethernet allows remote communication for diagnostics, calibration, verification, and error notification for the safety system.

Maintenance

This completely field-serviceable analyzer also has an Ethernet connection that allows remote performance monitoring for maintenance LANs or Asset Management Systems (AMS).



KEY BENEFITS

- SIL-2 capable for SIS implementation with predictive diagnostics and proactive alarms
- Industry-proven zirconium oxide sensor and accurate combustibles monitoring
- Integral flow sensor to verify sample system integrity
- Versatile flange mounting options
- Digital communications via Modbus and Ethernet TCP/IP
- Completely field-serviceable

APPLICATIONS

- Process heaters
- Steam boilers
- Thermal oxidizers

KEY MARKETS

- Refining and petrochemical
- Power and steam generation
- Furnace and boilers

PERFORMANCE SPECIFICATIONS

Principle of operation	Zirconium oxide for excess oxygen (O ₂) measurement and catalytic detectors for combustibles
Output range	Oxygen: From 0-1% to 0-100% Combustibles: 0-500 ppm to 0-10,000 ppm; 0-2000 ppm (standard)
Accuracy	Oxygen: ±0.75% of measured value or ±0.05%, whichever is greater Combustibles: ±2% of full-scale output range or ± 40 ppm, whichever is greater
Response	Oxygen: 90% of a step change <11 seconds with flame arrestors Combustibles: 90% of a step change <25 seconds with flame arrestors
Aspirator air requirements	3 SCFH typical at 3 to 6 psig, instrument air or nitrogen (N ₂)
Analog output	Three isolated linear current outputs for oxygen and combustibles. Each output can be 4-20 mA, 0-20 mA, 20-4 mA or 20-0 mA and is fully scalable. NAMUR configurable. Hold or track during calibration. Max. load 1200 Ω
Alarms	Five independent NO alarms Set relays to energize or de-energize on alarm
Contact rating	0.5A, 30V max. non-inductive load, AC or DC, 10W max.
Digital communication	2 wire MODBUS RTU, 57.6 Kbaud
Configuration	MODBUS RTU, AMETEK configuration software, or AMEvision HMI
Diagnostics	Low sample flow, cell and detector age tracking, cell resistance, calibration required, analog current verification
Sample pressure	±10 in. water gauge
Max. sample dewpoint	200°C (392°F)
Max. flue gas temperature/ probe type/lengths	704°C (1300°F)/316 SS/910 to 2740 mm (36 to 108 in.) 1024°C (1875°F)/310 SS/910 to 2740 mm (36 to 108 in.) 1648°C (3000°F)/Hexoloy®/600 to 1820 mm (24 to 72 in.)
Environment	Ambient temperature: -25 to 65°C (-13 to 149°F); -20 to 60°C (-4 to 140°F) for hazardous areas Relative humidity: 5 to 95%, non-condensing
Enclosure	Hinged IP65 (NEMA 4X), weather-resistant, stainless steel. Purged, remote mount, and floor mount versions available. UL Class I, Div 2, Gp B, C, D or ATEX II 3 G Ex d pz IIB+H2 T3 Gc and II 3 G Ex pz IIC T3 Gc and IECEx Ex pz IIB+H2 T3 GC and Ex pz IIC T3 Gc, versions available with purge
Power requirements	115 VAC, ±10%, 47-63 Hz, 740 VA max. 230 VAC, ±10%, 47-63 Hz, 740 VA max.

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