

## PRODUCT DATA SHEET

# WDG-VCM Combustion Flue Gas Analyzer

## Safe operation of the burner management system

The WDG-VCM provides an additional layer of safety when measuring excess oxygen (O<sub>2</sub>), combustibles (CO+H<sub>2</sub>), and methane (CH<sub>4</sub>) in the burner management system. It has a close-coupled extractive design for fast response in a wide range of flue gas applications up to 1648°C (3000°F).

### Reliability

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

### Safety

The WDG-VCM is SIL 2 compliant for excess O<sub>2</sub> 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

Completely field serviceable. Ethernet connection 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 zirconia sensor and accurate combustibles and methane 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

<b>Principle of operation</b>	Zirconium oxide for excess O <sub>2</sub> measurement and catalytic detectors for both combustibles and CH <sub>4</sub>
<b>Output range</b>	Oxygen: From 0-1 to 0-100% Combustibles: 0-500 ppm to 0-10,000 ppm, 0-2000 (standard) Methane: 0-5%
<b>Accuracy</b>	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 Methane: ±5% of full scale output range or ± 2500 ppm, whichever is greater
<b>Response</b>	Oxygen: 90% of a step change <11 seconds with flame arrestors Combustibles: 90% of a step change <25 seconds with flame arrestors Methane: 90% of a step change <25 seconds with flame arrestors
<b>Aspirator air requirements</b>	3 SCFH typical at 3 to 6 psig, instrument air or nitrogen
<b>Analog output</b>	Three isolated linear current outputs for oxygen, combustibles, and methane. 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
<b>Alarms</b>	Five independent NO alarms. Set relays to energize or de-energize on alarm
<b>Contact rating</b>	0.5A, 30V max. non-inductive load, AC or DC, 10W max.
<b>Digital communication</b>	Two-wire Modbus RTU, 57.6 Kbaud
<b>Configuration</b>	Modbus RTU, AMETEK configuration software, HART, or AMEvision HMI
<b>Diagnostics</b>	Low sample flow, cell & detector age tracking, cell resistance, calibration required Analog current verification
<b>Sample pressure</b>	±10 in. water gauge
<b>Max. sample dewpoint</b>	200°C (392°F)
<b>Max. flue gas temperature/ probe type/lengths</b>	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.)
<b>Environment</b>	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
<b>Power requirements</b>	115 VAC, ±10%, 47-63 Hz, 740 VA max. 230 VAC, ±10%, 47-63 Hz, 740 VA max.
<b>Enclosure</b>	Hinged IP65 (NEMA 4X), weather-resistant, stainless steel. Purged, remote mount, and floor mount versions available UL Class I, Div II, 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

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