

PRODUCT DATA SHEET

WDG-VRM Oxygen Analyzer

Rack-mounted stand-alone or CEMS oxygen measurement with sample flow verification

As a rack-mounted oxygen (O₂) analyzer, the WDG-VRM can be used alone or as an integrated part of a continuous emission monitoring (CEM) system. Designed for optimized combustion control, it also provides extra safety protection, measuring excess O₂ to ensure safe, efficient operation of the burner management system. Low O₂ setpoints can be precisely controlled with confidence through proven zirconium oxide sensor technology.

Reliability

The WDG-VRM is designed with measurement redundancy and continual diagnostic functions that validate both the health of the analyzer and the proper O₂ measurements.

Safety

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.

Maintenance

Ethernet connection allows remote performance monitoring for maintenance LANs or asset management systems (AMS).



KEY BENEFITS

- Precise control of low O₂ setpoints with confidence
- Ultra-accurate measurement of O₂ with industry-proven zirconium oxide sensor
- Integral flow sensor to verify sample system integrity
- Rack-mounted design for stand-alone or CEMS-integrated operation
- Predictive diagnostics & proactive alarms
- Digital communications with TCP/IP Ethernet Interface

APPLICATIONS

- Process heaters
- Steam boilers
- Thermal oxidizers

KEY MARKETS

- Refining and petrochemical
- Power and steam generation
- Industrial processes

PERFORMANCE SPECIFICATIONS

Principle of operation	Zirconium oxide for net oxygen measurement
Output range	Oxygen: from 0-1% to 0-100%
Accuracy	Oxygen: $\pm 0.75\%$ of measured value or $\pm 0.05\%$, whichever is greater
Drift	$< 0.1\%$ of cell output per month ($< 0.005\%$ O ₂ per month with 2% O ₂ applied)
Response	Less than 5 seconds @ 2 scfh from 2% O ₂ to 20% O ₂
Analog output	3 isolated linear current outputs for O ₂ . 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	5 independent, NO alarms. Set relays to energize or de-energize on alarm
Contact rating	0.5A, 30V, 10VA max. non-inductive load, AC or DC
Display	4.2" color 1/4W VGA with graphical user interface. Password-protected
Digital outputs	2 or 4-wire Modbus RTU, TCP/IP Ethernet with embedded web server (RJ45 connection), USB port for data collection or software update
Keypad	18-key, membrane
Diagnostics	Low sample flow, cell and detector age tracking, cell resistance, calibration required, analog current verification
Calibration	Calibrate or verify calibration. Stored calibration and verification data. Selectable calibration gas run time and process recovery time Timed automatic calibration with optional remote calibration unit
Environment	Ambient temperature: -25 to 50°C Relative humidity: 10 to 90%, non-condensing
Enclosure	19" rack mount, 4U
Power requirements	115 VAC, $\pm 10\%$, 47 to 63 Hz, 740 VA max.; 230 VAC, $\pm 10\%$, 47 to 63 Hz, 740 VA max.
Calibration gas requirements	Use calibration gases @ 10 psig O ₂ span gas: air or from 1.0 to 100% O ₂ , balance N ₂ O ₂ zero gases: From 0.1 to 10% O ₂ , balance N ₂
Sample gas requirements	Flow rate: 2-20 scfh Gas must be non-corrosive, non-condensing, free from oil, and less than 3 micron particulates

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