

## PRODUCT DATA SHEET

# WDG-Insitu Flue Gas Oxygen Analyzer

## Field-serviceable direct-sensing insitu probe

The WDG-Insitu flue gas oxygen (O<sub>2</sub>) probe differs from all other O<sub>2</sub> insitu probes. The unique inner/outer probe design facilitates removal of cell, heater and thermocouple assembly through the probe head.

A combination of component access and reduced utility requirements provides a cost-effective, reduced-maintenance solution for today and tomorrow's gas, oil and coal-fired boiler operations.

### Completely field-serviceable

Once the inner probe assembly is removed, the outer probe support pipe allows straight run access to the insitu filter for cleaning with compressed air.

### Reduced utility requirements

The inner probe assembly also exposes the reference side of the zirconium cell to ambient air, eliminating the need for instrument air utilities at the probe mounting location.

### Series 2000 Control Unit

Maximize integration with your existing plant or process control system with the Series 2000 Control Unit:

- Four-line local display
- Analog outputs
- Alarms
- Expanded system diagnostics
- Autocalibration option



## KEY BENEFITS

- Hot/wet O<sub>2</sub> analysis
- Different probes length
- Easy to maintain
- Detachable probe
- Completely field serviceable

## APPLICATIONS

- Combustion control
- Suitable for applications where the flue gas temperature does not exceed 800°C (1472°F)

## KEY MARKETS

- Power generation
- Thermo-electric plants
- Pre-heaters

**PERFORMANCE SPECIFICATIONS**

**Sensor Specifications**

<b>Principle of operation</b>	Zirconium oxide (ZrO <sub>2</sub> ) for net O <sub>2</sub> measurement
<b>Output range</b>	O <sub>2</sub> : From 0-1% to 0-100%
<b>Accuracy</b>	±1% of measured value or ±0.05% O <sub>2</sub> , whichever is greater
<b>Response</b>	63% of a step change < 20 seconds.
<b>Drift</b>	< 0.1% of cell output per month (< 0.005% O <sub>2</sub> per month with 2% O <sub>2</sub> applied)
<b>Linearity</b>	±1% of output span
<b>Repeatability</b>	±1% of output span
<b>Max. flue gas temperature</b>	800°C (1472°F). Probe material highly corrosion-resistant
<b>Sample pressure</b>	±10 in. water gauge
<b>Environment</b>	Ambient temperature: -20 to 71°C (-5 to 160°F) Relative humidity: 10 to 90%, noncondensing
<b>Enclosure</b>	UL type (NEMA 4X) standard. Optional explosion-proof and purged versions available. (Purged version for sub atmospheric process pressure only)
<b>Power requirements</b>	115 VAC, ±10%, 47-63 Hz; 230 VAC, ±10%, 47- 63 Hz; 150 VA max.

**Series 2000 Control Unit Specifications**

<b>Display</b>	Four-line x 20-character vacuum fluorescent. Displays combinations of O <sub>2</sub> , time and date, cell temperature, user-programmable text, thermocouple mV or cell mV. Password protection, programmable pressure compensation and context sensitive help are also provided
<b>Analog output</b>	Two isolated linear current outputs. Select O <sub>2</sub> , cell temperature, thermocouple mV or cell mV. Each output can be 4-20 mA, 0-20 mA, 20-4 mA or 20-0 mA and is fully scalable. Hold or track during calibration and select degree of damping. Maximum load 1200 ohms
<b>Alarms</b>	Two independent O <sub>2</sub> alarms, each high- or low-selectable. One alarm can be assigned as O <sub>2</sub> , calibrate or verify Set relays to energize or de-energize on alarm
<b>Contact rating</b>	0.5A, 30V, 10VA max. non-inductive load, AC or DC
<b>Diagnostics</b>	Watchdog timer and service alarms. System test for A/D, RAM, EEPROM and keypad. Display line four reserved for full-text error and diagnostic messages. 20-entry event log
<b>Communications</b>	RS-485 two-way addressable
<b>Environment</b>	Ambient temperature: -10 to 50°C (14 to 122°F) Relative humidity: 10 to 80%, non-condensing
<b>Enclosure</b>	Standard weatherproof NEMA 4 (IP 56) wall/panel mount. Optional GP (general purpose) wall mount, GP 19" rack mount, GP panel mount, or stainless steel weatherproof NEMA 4X (IP 56) wall/panel mount. All are UL listed for NEC Class I, Division 2 areas. Purged and explosion-proof versions also available
<b>Power requirements</b>	Nominal 115-230 VAC ±10%, 47-63 Hz; 75 VA max
<b>System compliance</b>	EMC Directive 2004/108/EC Low Voltage Directive 73/23/EEC

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