WDG-Insitu Flue Gas Oxygen Analyzer

Field-serviceable direct-sensing insitu probe

The WDG-Insitu flue gas oxygen (O$_2$) probe differs from all other O$_2$ 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$_2$ 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

To find out more or request a quote visit our website ametekpi.com
## Performance Specifications

### Sensor Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Principle of operation</strong></td>
<td>Zirconium oxide (ZrO₂) for net O₂ measurement</td>
</tr>
<tr>
<td><strong>Output range</strong></td>
<td>O₂: From 0-1% to 0-100%</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>±1% of measured value or ±0.05% O₂, whichever is greater</td>
</tr>
<tr>
<td><strong>Response</strong></td>
<td>63% of a step change &lt; 20 seconds.</td>
</tr>
<tr>
<td><strong>Drift</strong></td>
<td>&lt; 0.1% of cell output per month (&lt; 0.005% O₂ per month with 2% O₂ applied)</td>
</tr>
<tr>
<td><strong>Linearity</strong></td>
<td>±1% of output span</td>
</tr>
<tr>
<td><strong>Repeatability</strong></td>
<td>±1% of output span</td>
</tr>
<tr>
<td><strong>Max. flue gas temperature</strong></td>
<td>800°C (1472°F). Probe material highly corrosion-resistant</td>
</tr>
<tr>
<td><strong>Sample pressure</strong></td>
<td>±10 in. water gauge</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>Ambient temperature: -20 to 71°C (-5 to 160°F)</td>
</tr>
<tr>
<td></td>
<td>Relative humidity: 10 to 90%, noncondensing</td>
</tr>
<tr>
<td><strong>Enclosure</strong></td>
<td>UL type (NEMA 4X) standard. Optional explosion-proof and purged versions available.</td>
</tr>
<tr>
<td></td>
<td>(Purged version for sub atmospheric process pressure only)</td>
</tr>
<tr>
<td><strong>Power requirements</strong></td>
<td>115 VAC, ±10%, 47-63 Hz; 230 VAC, ±10%, 47-63 Hz; 150 VA max.</td>
</tr>
</tbody>
</table>

### Series 2000 Control Unit Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display</strong></td>
<td>Four-line x 20-character vacuum fluorescent. Displays combinations of O₂, 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</td>
</tr>
<tr>
<td><strong>Analog output</strong></td>
<td>Two isolated linear current outputs. Select O₂, 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.</td>
</tr>
<tr>
<td><strong>Alarms</strong></td>
<td>Two independent O₂ alarms, each high- or low-selectable. One alarm can be assigned as O₂, calibrate or verify. Set relays to energize or de-energize on alarm</td>
</tr>
<tr>
<td><strong>Contact rating</strong></td>
<td>0.5A, 30V, 10VA max. non-inductive load, AC or DC</td>
</tr>
<tr>
<td><strong>Diagnostics</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
<td>RS-485 two-way addressable</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>Ambient temperature: -10 to 50°C (14 to 122°F)</td>
</tr>
<tr>
<td></td>
<td>Relative humidity: 10 to 80%, non-condensing</td>
</tr>
<tr>
<td><strong>Enclosure</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>Power requirements</strong></td>
<td>Nominal 115-230 VAC ±10%, 47-63 Hz; 75 VA max</td>
</tr>
</tbody>
</table>

## Sales, Service & Manufacturing

**USA - Pennsylvania**
- 150 Freeport Road
- Pittsburgh PA 15238
- Tel: +1 412 828 9040
- Fax: +1 412 826 0399

**USA - Delaware**
- 455 Corporate Blvd.
- Newark DE 19702
- Tel: +1 302 456 4400
- Fax: +1 302 456 4444

**Canada - Alberta**
- 2876 Sunridge Way NE
- Calgary AB T1Y 7H9
- Tel: +1 403 235 8400
- Fax: +1 403 248 3550

## Worldwide Sales and Service Locations

**USA**
- Tel: +1 713 466 4900
- Fax: +1 713 849 1924

**Brazil**
- Tel: +55 19 2107 4100

**France**
- Tel: +33 1 30 68 89 20
- Fax: +33 1 30 68 89 99

**Germany**
- Tel: +49 2159 9136 0
- Fax: +49 2159 9136 39

**Indonesia**
- Tel: +62 81 400 89 89 20
- Fax: +62 81 400 89 99

**China**
- Beijing
  - Tel: +86 10 8526 2111
  - Fax: +86 10 8526 2141
- Shanghai
  - Tel: +86 21 5868 1111
  - Fax: +86 21 5866 0969
- Chengdu
  - Tel: +86 28 8675 8111
  - Fax: +86 28-8675 8141
- Singapore
  - Tel: +65 6484 2388
  - Fax: +65 6481 6588

© 2018, by AMETEK, Inc. All rights reserved. Printed in the U.S.A. F-0162 Rev 7 (0818) One of a family of innovative process analyzer solutions from AMETEK Process Instruments. Specifications subject to change without notice.