DATA SHEET

GasTrack

Gas Analyser Probe (GAP)

OXYGEN ANALYSER

A compact zirconium-oxide analyser to measure percentage level (0-25%) oxygen in combustion processes. The probe is manufactured from 316 stainless steel and can handle sample temperatures up to 700°C with an insertion length of 435mm. The sample is extracted to the sensor chamber and returned to the flue via the Pitot effect, so there is no need for instrument air. The analyser operates without the need for an air reference.

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Performance</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement technology</td>
<td>Zirconium Oxide (ZrO₂)</td>
</tr>
<tr>
<td>Gas</td>
<td>Oxygen</td>
</tr>
<tr>
<td>Measurement range</td>
<td>0.1—25%</td>
</tr>
<tr>
<td>Output resolution</td>
<td>0.01 mA or 0.01% O₂</td>
</tr>
<tr>
<td>Accuracy (0.1-25%)</td>
<td>&lt; 0.25% O₂</td>
</tr>
<tr>
<td>Response time (T90)</td>
<td>&lt; 15 seconds</td>
</tr>
<tr>
<td>Repeatability</td>
<td>&lt; 0.25%</td>
</tr>
<tr>
<td>Sample Flow Effect</td>
<td>±0.5% of full scale</td>
</tr>
<tr>
<td>Sample cell temperature</td>
<td>+700°C (1292°F)</td>
</tr>
<tr>
<td>Temperature measurement</td>
<td>Pt100</td>
</tr>
</tbody>
</table>

Operating Conditions

- Ambient temperature: -20 to +55°C (-4 to +131°F)
- Ambient relative humidity: 0-95% RH
- Background gas: Combustion gas from natural gas, biogas or oil
- Sample gas temperature: +700°C (1292°F)
- Sample pressure: 260—1260mbar Absolute

FEATURES

- The GAP provides customers with a single gas flue or ventilation monitoring system
- Barometric pressure and temperature sensors included
- RS485 MODBUS RTU as standard
- User configurable relay outputs
- Easy to swap sensor module, no special tools
- Calibrate in fresh air

APPLICATIONS

- Combustion control of boilers fuelled by natural gas, light oil, diesel, coal and biomass
- Excess air analysis
- Boiler trim control
- Incineration furnaces
- Power generation
- Combined cycle gas turbines (CCGT)
- Ceramic furnace monitoring

NOTES

a) Temporary excursions up to 750°C for 30 minutes will not damage the probe.
**Technical Specifications**

**Electrical Input / Output**

- **Power supply**: 24V DC, ±10% LPS
- **Power consumption**: 700mA maximum @ 24V DC
- **Analog outputs**: Single or Dual 4—20mA
- **Output ranges (oxygen)**: 0-25% O₂
- **Output ranges (temperature)**: -50 to +300°C (-58 to +572°F)
- **Output ranges (pressure)**: 260—1260mbar (0.017—0.086psia)
- **Relays (SPST, N/O as std.)**: 1 x system alarm (SPST) 1 x user configurable alarm
- **Digital communications**: RS485 protocol
- **Display**: 16 character, 2-line, backlit

**Mechanical Specifications**

- **Warm up time**: < 90 seconds
- **Stabilisation time**: < 5 minutes
- **Dimensions**: see Outline Dimensions
- **Weight:**
  - **Head**: 1.6kg (3.5lbs)
  - **Probe**: 3.9kg (8.6lbs)
- **Wetted materials**: Stainless steel, Macor®, PTFE, aluminium and platinum
- **Process connection**: 2” 150lbs ANSI flange
- **Ingress protection**: IP65
- **Housing material**: Painted aluminium

**Outline Dimensions**

All dimensions shown in mm. Tolerances = ±1mm.

**Flange profile to match ANSI Class 150 lb.**

- **Nominal pipe size**: 2”
- **External diameter**: 152.40 (6.000”)
- **PCD**: 120.65 (4.750”)
- **Flange thickness**: 19.05 (0.750”)
- **No. of holes**: 4
- **Bolt hole diameter**: 19.05 (0.750”)

**NOTE:** The flange is NOT pressure retaining.

**Order Information**

Contact SST Sensing Ltd for assistance; call +44 (0)1236 459 020 and ask for “Technical” or email technical@sstsensing.com

**General Note:** SST Sensing Ltd. reserves the right to make changes to product specifications without notice or liability. All information is subject to SST Sensing Ltd.’s own data and considered accurate at time of going to print.

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**CAUTION**

Do not exceed maximum ratings and ensure sensor(s) are operated in accordance with their requirements. Carefully follow all wiring instructions. Incorrect wiring can cause permanent damage to the device. Do NOT use chemical cleaning agents. Failure to comply with these instructions may result in product damage.

**INFORMATION**

All sensors are tested at ambient environmental conditions unless otherwise stated. As customer applications are outside of SST Sensing Ltd.’s control, the information provided is given without legal responsibility. Customers should test under their own conditions to ensure that the equipment is suitable for their intended application. For technical assistance or advice, please email technical@sstsensing.com