XZR250

Oxygen Analyzer

A compact zirconium-oxide analyzer 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 analyzer uses our micro ion pump sensor (MIPS) technology and operates without the need for an air reference.

Highlights

- Measures 0 - 25% O_2 in Flue Gas
- Sample temperature up to +700°C
- Barometric pressure and temperature sensors included
- MODBUS as standard
- Single or Dual 4-20 mA outputs
- User configurable relays
- Easy to swap sensor, requiring no special tools
- Sensor exchange program

Applications

- Combustion control of boilers fueled by natural gas, light oil, diesel and biomass.

Technical Specifications

Performance

Measurement technology	Zirconium Oxide
Gas	Oxygen
Measurement range	0.1-25%
Output resolution	0.01 V, 0.01 mA or 0.01% O_2
Accuracy (0.1-25%)	< 0.25% O_2
Response time (T90)	< 15 seconds
Repeatability	< 0.25%
Sample Flow Effect	±0.5% of full scale
Sample cell temperature	+700°C (1292°F)
Temperature measurement	PT100
Display	16 Character, 2 Line, with backlight

Electrical Input/Output

Power supply	24 V DC, ±10% (limited power source)
Power consumption	700 mA maximum @ 24 V DC
Analog outputs	Single or Dual 4-20 mA (550 Ω maximum loop load resistence)
Output ranges (oxygen)*	0-25% O_2
Output ranges (temperature)*	-50 - +300°C (-58 - +572°F)
Output ranges (pressure)*	760 - 1260 mbara (10.9 to 18.1 psia)
Relays	1 x System alarm (SPST, N/O as standard) 1 x User configurable process alarm (SPST, N/O as standard)
Digital communications	RS485 protocol
Cable Gland	M12 x 1.5
Cable size	7mm to 12.5 mm outer diameter 4 to 11 cores with overall screen

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	760 - 1260 mbara Absolute

Mechanical Specifications

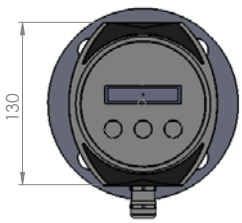
Warm Up time	< 90 seconds
Stabilization time	< 5 minutes
Dimensions	130 x 120 x 150mm (h x w x d) excluding probe
Probe dimensions	Nominally 50mm OD with 435mm insertion length
Weight: Head	1.6kg (3.5lbs)
Weight: Probe	4.8kg (Stainless steel: 435mm) (10.5lbs)
Wetted materials	Stainless steel, Macor®, aluminium, platinum & PTFE
Process connection	2" 150lbs ANSI flange
Ingress protection	IP65
Housing material	Painted aluminium

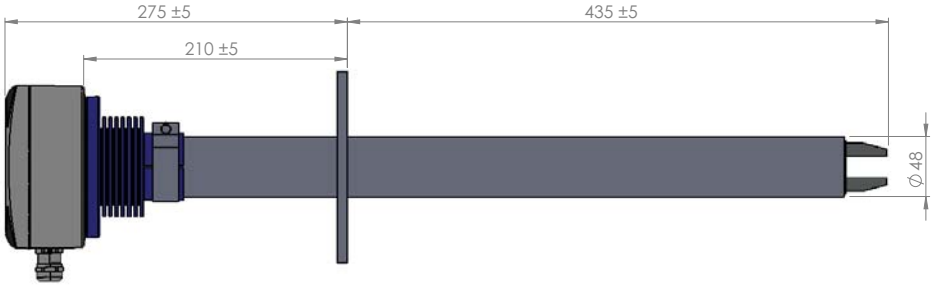
Warning: Sensor gets hot (250°C) allow to cool and do not touch without PPE!

*Measurement chamber temperature and pressure are displayed on the main screen but can also be output via the MODBUS or the second mA output can be factory configured to either of these parameters.

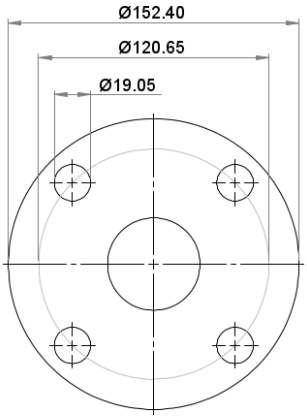
**Temporary excursions up to 750°C for 30 minutes will not damage the probe.

Dimensions





Dimensions in mm unless otherwise stated.



Flange profile to match ANSI Class 150 lb.

Nominal pipe size	2"
External diameter	6.000" (152.40)
PCD	4.750" (120.65)
Flange thickness	0.75" (19.05)
No. of holes	4
Bolt hole diameter	0.750" (19.05)

NOTE:
The flange is NOT pressure retaining.

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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
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