BHOOMI®

Agasthya 2013 Series
Oxygen Purity Transmitter
Model BI 440

Features:

- Long life Zirconia O_2 sensor
- 24VDC power supply
- Measurement range: 0.1-99.9% vol
- Combined Sensor & Electronics allows for ease of integration
- Light weight & robust

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Specification

Method of Detection	: Zirconia sensor for O_2
Range Available	: 0.1-99.9% scalable
Resolution	: 0.01%
Accuracy	: ± 2% of reading
Repeatability	: ± 1%
Response Time (T-90)	: ≤10 seconds
Pressure range	: 900 to 1100 mBar $_{abs}$
Power	: 24 VDC
Analog Output	: 4-20 mA
Digital Output (optional)	: RS485 with MODBUS Protocol
Humidity	: 0-95% RH
Ambient Temperature	: 0 to 60ºC
Wetted materials	: SS 304, PTFE, Viton
Ingress protection	: IP66
Enclosure material	: SS 304
Process connection	: Flow through (¼" or ⅛" connector), other connections on request
Cable length	: 5 Meter
Dimensions	: 50 mm Diameter x 125 mm

Operating Principle:

Zirconia is a type of ceramic that conducts electricity at high temperature through the movement of charged Oxygen ions and this ability is used to measure Oxygen in a gas mixture. At temperatures above 700°C, the openings in the lattice permit the passage of O_2 ions. The principle equation on which Zirconia Analyzers function is called the Nernst Equation,

$$E = \left(\frac{RT}{4F}\right) \ln\left(\frac{P_{O_{2(ref)}}}{P_{O_{2(test)}}}\right)$$

E = Millivolt signal R = Gas constant T = Absolute temperature

F = Faradays constant $Po_{2(ref)}$ = Partial pressure of the oxygen in reference gas

$Po_{2(test)}$ = Partial pressure of the oxygen in process gas

BHOOMI® Process Management Pvt. Ltd.
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