XGA301

Industrial Gas Analyzer

The XGA301 Industrial Gas Analyzer from Michell Instruments provides a convenient platform to measure oxygen, dew point and other gases such as CO_2, CO and CH_4. The analyzer can be supplied in one of two bench-mounted chassis and with up to three sensors fitted.

Highlights

- Sensor choices from zirconia, galvanic electrochemical, infrared and ceramic impedance technologies
- Variable speed pump (optional)
- Zirconia sensor cleaning facility which can be operated at any time during use
- Intuitive HMI with back-lit display
- Two fully-programmable alarms
- 2 x voltage outputs and 2 x 4–20 mA outputs
- Digital RS232 output
- Software package includes live graphing and Excel™ compatible data-logging
- Password protection

Applications

- Convection reflow oven control
- Laboratory scale experiments
- Combustion process in lean-burn applications — e.g. engine performance testing
- Industrial processes — e.g. wave soldering and vacuum welding
- Nitrogen generation
- Glove boxes
- Food production (nitrogen blanketed)

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Standard features include two fully-programmable alarm circuits (voltage-free contacts), programmable analog outputs, RS232 communications and complete Windows-based data-logging software.

The industrial zirconia oxygen sensor provides fast and accurate oxygen analysis over the range of 1 ppm to 30%* O_2 and delivers stable and repeatable readings, with a typical response time of less than 5 seconds for a 90% response to a step change in gas compositions. The zirconia sensor is heated, and temperature-controlled to enable oxygen ions to conduct. An internal pressure sensor compensates for small changes in the gas pressure to maintain accurate and stable readings. An optional, variable speed-pump draws a gas sample at a flow rate set by the user between 0 to 1.2 Nl/min.

The Easidew sensor is available for dew points down to –100°Cdp in combination with another sensor within the XGA301A2's chassis.

Technical Specifications

Performance

Sensor Type: Zirconia Sensor

Measurement range	1 ppm to 30%*
***Not suitable for enriched oxygen**	
Calibration (user)	Requires 2 or 3 user-selectable gases
Accuracy	±1% of reading or 0.5 ppm, whichever is greater
Response time	Approx. 5 seconds for a 90% step change (gas flow rate of 1 Nl/min^{-1})
Stability	±2% of reading per month
Life expectancy	Greater than 17,500 hours

Sensor Type: Ceramic Impedance**

Measurement range	–100 to +20°Cdp
Calibration (factory)	Traceable 7-point calibration certificate
Accuracy	±2°Cdp
Output	Dew-point or ppmv moisture content
****XGA301A2 only** **Please see Easidew Transmitter datasheet for more information**	

Additional measurements available soon: trace O_2, CO_2, CH_4

Dimensional drawings will be available in next edition of datasheet

The XGA301A3 has only 2 off mA outputs that are freely assignable to any of the sensors fitted. If all three sensors require logging at the same time, this can be achieved via the RS232

Analyzer

Operating temperature	+5 to +35°C
Warm-up time	3 to 4 minutes @ +20°C
Maximum inlet temperature	+50°C
Sample flow rate	0 to 1.2 Nl/min, user-selectable with pump
Maximum inlet pressure	1 barg
Display	
XGA301A1/A2:	16 x 2 character (9mm) back-lit LCD,
XGA301A3:	20 x 4 character (9mm) back-lit LCD
Power supply	90–260 V AC, 50/60 Hz
Outputs	2 x 4–20 mA, 2x alarm relays RS232 2 x 0–10 V (XGA301A1 only) 2 x 0–5 V (XGA301A2/A3 only)
Sample connections	
Standard:	4mm ID / 6mm OD nipple — gas fittings on front panel
Optional:	Rectus™ or Swagelok® 6mm fittings, rear panel fittings for XGA301A1 only
Dimensions	
XGA301A1:	250mm x 263mm x 150mm
XGA301A2/A3:	350mm x 263mm x 150mm
Weight	
XGA301A1:	3.5kg
XGA301A2/A3:	4 to 5.5kg

XGA301A1 single sensor unit

(Gas ports on rear panel)

XGA301A2 dual sensor unit

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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
Issue no: XGA301_97489_UK_Datasheet_0415