Panametrics

Datasheet

Aurora

Reliable moisture measurement

Panametrics Aurora analyzer uses tunable diode laser absorption spectroscopy (TDLAS) to rapidly and accurately measure moisture in a variety of background gases. The analyzer is suitable for installation in hazardous areas and operates over a wide range of environmental conditions. Aurora's fast response immediately alerts when moisture concentrations are out of compliance or natural gas dehydration process is upset; once corrected, gas can be quickly cleared for re-entry to pipeline or process.

The Aurora analyzers have an intuitive interface that makes them easy to learn, configure and operate. With a local service team to support them, you have the confidence of knowing that Aurora analyzers are always ready for immediate moisture measurements. With power and gas lines easily connected, the Aurora moisture analyzer provides a wide range of reliable measurement with accuracy and fast response you need for immediate alerts to process upsets or out-of-compliance moisture concentrations.

PANA003DS Rev. 4

Technical **Specifications**

Range

Range	0 to 5000 ppm For CO_2 applications: 0 to 1000 ppm
Dew/Frost Point	-97° to 27.3°F (-71° to -2.6°C) frost point @ STP of 25°C, 14.696 psia
Process Dew/ Frost Point	Process or equivalent dew point/frost point by calculation with process pressure signal (4-20 mA) or constant
Absolute Humidity	0.095 to 237 lbs/MMSFC (1.52 to 3,803 mg/m^3)

Accuracy

Moisture reading (parts per million by volume)	±1% of reading or ±2 ppm, whichever is greater; for > 1000 ppm, ±5% of reading For CO_2 applications: ±3% of reading or ±5 ppmv Note: Lower detection limit 20 ppm For H_2 recycle applications: ±1% of reading or ±2 ppmv (for up to ±5% H_2 and ±1% C_2H_6 variation from nominal calibration composition) (Background conditions for individual instrument calibrated accuracy provided in Certificate of Conformance. Accuracy of other parameters derived from ppmv.)
Repeatability	±0.2 ppmv or ±0.1%, whichever is greater For CO_2 applications: ±1.0 ppmv or ±0.5%, whichever is greater
Calibration Certification	NIST or equivalent NMI traceable certification
Calibration Options	Nitrogen, standard natural gas and 3 customizable calibration curves

Response Time

Response Time	Optical system <2 seconds
System Response	The system response is dependent on the length of sample tubing, sample system components, fl ow rate and pressure, as well as the change in moisture concentration.

Pressure

Operating Sample Cell Pressure	10 to 25 psia (69 to 172 kPa)
Maximum Pressure	200 psi (1380 kPa)
Process Pressure	400 psig (2.76 MPa) [2500 psig (17.23 MPa) with heated pressure regulator option] Higher pressure available with application of additional sampling system components.

Flow Rate

Sample Cell Flow Rate	10 to 60 SLH (0.4 to 2 SCFH); 30 SLH (1 SCFH) nominal
By-pass Fast Loop	5 to 10X of flow rate through sample cell

I/O

Display	Backlit LCD. Three programable simultaneous parameters. Alphanumeric status and diagnostic display. LEDs for power, laser temperature stability, keypad lockout
Power	Analyzer: 100-240 VAC, 50-60 Hz, 24VDC
Analog Outputs	Three 0/4-20 mA DC (source) with 500 ohm load. User programmable for any parameter and scalable. Complies with NAMUR protocol for analog signals.
Analog Input	Loop powered 4-20 mA input for remote pressure transmitter. Aurora supplies 24 VDC.
Digital Interfaces	Two programmable digital communications ports: RS232, RS485 with multidrop capability and assignable address, MODBUS RTU protocol. One Ethernet port: Modbus TCP/IP protocol
User Interface	Programmable "through-the-glass" via magnetic stylus
Laser	Class 1 product. Conforms to IEC 60825-1. Edition 2.0 Safety of Laser Products

Enclosure

Ingress Protection	IP-66
Net Weight	45 kg (100 lb)
Dimensions (H x L x W)	841.2 mm x 461 mm x 332.3 mm (33.12 in. x 18.31 in. x 13.08 in.)

Temperature

Operating	-20 to 65°C (-4 to 149°F)
Storage	-20 to 70°C (-4 to 158°F)
Optional Heater/ Thermostat Set Point	20°C/68°F ±5°C/9°F for US/Canada, 10°C/50°F ±5°C/9°F EU and elsewhere

Hazardous Area Certification

USA/Canada	Explosion-proof for Class I, Division 1, Groups B, C, D
EU and Elsewhere	ATEX and IECEx: Ex de IIB+H2 T6 -20°C to +65°C Flameproof with increased safety compartment

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