

GE's 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 measurement. 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.

## SPECIFICATIONS

Range

### Range

0 to 5000 ppmv

For CO2 applications: 0 to 1000 ppmv

### Lower Detection Level

2 ppmv

For CO2 applications: 20 ppmv (-55.3°C)

### Dew/Frost Point

-97.1° to 27.3°F (-71.7° 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 constant user-definable process pressure

(4-20 mA) or constant

### Absolute Humidity

0.095 to 237 lbs/MMSCF (1.52 to 3,803 mg/m<sup>3</sup>)

Accuracy

### Parts Per Million by Volume

±1% of reading or ±2 ppmv, whichever is greater; for



>1000 ppmv ±5% of reading

For CO2 applications:

±3% of reading or ±5 ppmv

For H2 recycle applications: ±1% of reading or ±2 ppmv (for up to ±5% H2 and ±1% C2H6 variation from nominal calibration composition)

(Individual instrument calibrated accuracy conditions provided in Certificate of Conformance. Accuracy of other parameters derived from ppmv.)

### Repeatability

±0.2 ppmv or ±0.1%, whichever is greater

For CO2 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, flow 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

### Bypass Fast Loop

5 to 10X of flow rate through sample cell

## I/O

### Display

Backlit transfective display. Three programmable 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