

TransPort Aurora

Reliable, Portable Moisture Measurement

BHGE's Aurora series of moisture analyzers uses tunable diode laser absorption spectroscopy (TDLAS) to rapidly and accurately measure moisture in a variety of background gases. The Aurora TransPort, the latest addition to the series, is a battery operated, moveable analyzer that can be taken into the field to directly measure moisture content of natural gas and other process gases. The unit is assembled into a rugged and transportable case with a telescoping handle and wheels.

BHGE's patented temperature and pressure compensated TDLAS provides repeatable, accurate and drift-free moisture measurement with fast response.

The TransPort is ideal for spot checking the performance of natural gas processing and drying systems, gas storage facilities, compression stations, refinery processes, heat treating furnaces, instrument air and more. It is ideally suited for field verification of permanently installed moisture analyzers and transmitters.

The unit is equipped with a rechargeable battery that provides 8 to 10 hours of operation as well as integrated sample conditioning components. An easy-to-use display/keypad enables direct display of moisture, temperature and pressure. The unit also provides both analog (4-20 mA) and digital interfaces (RS232/485 and Ethernet) for data recording.

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Specifications

Range	
Range	0 to 5000 ppm _v For CO ₂ applications: 0 to 1000 ppm _v
Lower Detection Level	2 ppm _v For CO ₂ applications: 20 ppm _v (-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 ³)
Accuracy	
Parts Per Million by Volume	±1% of reading or ±2 ppm _v , whichever is greater; for >1000 ppm _v ±5% of reading For CO ₂ applications: ±3% of reading or ±5 ppm _v For H ₂ recycle applications: ±1% of reading or ±2 ppm _v (for up to ±5% H ₂ and ±1% C ₂ H ₆ variation from nominal calibration composition) (Individual instrument calibrated accuracy conditions provided in Certificate of Conformance. Accuracy of other parameters derived from ppm _v)
Repeatability	±0.2 ppm _v or ±0.1%, whichever is greater For CO ₂ applications: ±1.0 ppm _v 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	30 psi (206.8 kPa)
Flow Rate	
Sample Cell Flow Rate	0.1 to 1.0 SLPM (0.2 to 2.1 SCFH) 0.5 SLPM (1.1 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	Standard rechargeable lithium-ion battery pack (14.4/6600 mAh); Universal 120 W AC adapter with 24 VDC output
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.
Digital Interfaces	<i>Two programmable digital communications ports:</i> RS232, RS485 with multidrop capability and assignable address, MODBUS RTU protocol. <i>One Ethernet port:</i> Modbus TCP/IP protocol
User Interface	Programmable keypad with status/fault indicator LEDs and magnetically actuated reed switches
Laser	Class 1 product. Conforms to IEC 60825-1. Edition 2.0 Safety of Laser Products
Enclosure	
Net Weight	48.5 lbs. (22 kg)
Dimensions (H x L x W)	24.6 in X 19.7 in X 11.7 in (624.84 mm X 500.38 mm X 297.18 mm)
Temperature	
Operating	-20 to 50° C (-4 to 149° F) with battery discharging; 0° C to 45° C (32° C to 113° F) with battery charging
Storage	-20 to 50° C (-4 to 149° F)
Hazardous Area Certification	
USA/Canada	General Purpose
EU and Elsewhere	General Purpose