

Aurora Trace HDLAS™ Moisture Analyzer

High Definition Moisture Measurement

The Aurora Trace is the next generation of laser moisture analyzer to measure moisture content in a variety of background gases at sub part per million by volume (ppmv) levels. Based on tunable diode laser absorption spectroscopy (TDLAS), the Aurora Trace uses a patent-pending technique to overcome the difficulties of background gas interference at very low moisture levels encountered by traditional TDLAS and differential spectroscopy. GE refers to this improved technology as high-definition laser absorption spectroscopy (HDLAS)™.

Aurora Trace's HDLAS™ delivers a sharper signal and more detailed spectral specificity for higher quality measurements. There is no need for baseline measurement data, and there are no blind moments because Aurora Trace is always monitoring, with accurate process information that's available faster than any other technology. GE's Aurora Trace has the technology to measure without zero or span gases with greater precision than any traditional laser-based moisture analyzer to overcome problems with background gas variation. With the Aurora Trace you have the confidence of knowing that your product comes from a long history of measurement expertise with global service team to support it.



Specifications

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| Range | |
| Calibrated Range | 0-100 ppm _v , trending to 4000 ppm _v , Larger range available upon request. |
| Lower Detect Level | For natural gas and ethylene applications: 50 ppb _v , For H ₂ Recycle applications: 100 ppb _v , |
| Dew/Frost Point ¹ | -152.3°F to -43°F (-102.4°C to -41°C) frost point @ STP of 50°C, 2.50psia |
| Process Dew/Frost Point ¹ | Process or equivalent dew point/frost point by calculation with process pressure signal (4-20 mA) or constant |
| Accuracy | |
| Parts Per Million by Volume | For Natural Gas applications up to 10% variation in ethane content from nominal: ±150 ppb _v or 5% of reading. At nominal gas composition: ±50 ppb _v or 2% of reading. For H ₂ recycle applications with 10% H ₂ and 5% C ₂ H ₆ variation from nominal: ±100 ppb _v or 4% of reading For Ethylene applications: ±50 ppb _v or 2% of reading |
| Repeatability | ±10 ppb _v (parts per billion by volume) |
| Calibration Certification | NIST or equivalent NMI traceable certification |
| Calibration Options | Nitrogen and 3 customizable calibration curves |
| Response Time | |
| Response Time | Optical system <2 seconds <60 seconds for 90% step change once system is purged |
| 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 | 2.2-2.8 psia (17.2 KPa) ±4% |
| Maximum Pressure | 100 psia (689 KPa) |
| Maximum Back Pressure | 15 psig |
| Process Pressure | 400 psig (2.76MPa) [2500 psig (17.23MPa) with heated pressure regulator option] <i>Higher pressure available with application of additional sampling system components.</i> |

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| Flowrate | |
| Sample Cell Flowrate | 0.5-2 SCFH (1-4 LPM) |
| By-pass Fast Loop | 5 to 10X of flowrate through sample cell |
| I/O | |
| Display | Backlit LCD. 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 Vacuum Pump: 115 VAC, 60 Hz or 230 VAC, 50 Hz |
| 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 Interface | Two programmable digital communications ports RS232, RS485 with multidrop capability and assignable address, MODBUS RTU 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 | Enclosure: IP-66 Vacuum Pump: FM IP54, ATEX IP65, IECEx IP56 |
| Net Weight | 340 lb (154 kg) |
| Temperature | |
| Operating | -20 to +55°C (-4 to +131°F). |
| Storage | -20 to 70°C (-4 to 158°F) |
| Hazardous Area Certification | |
| USA/Canada | Explosion-proof for Class I, Division 1, Groups B, C, D |
| EU and Elsewhere | ATEX and IEC Ex: Ex de IIB + H2 T6 -20°C to +65°C Flameproof with increased safety compartment |



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