PRODUCT DATA SHEET

5830 Moisture Analyzer

Ideal for critical moisture measurement applications

The 5830 Moisture Analyzer is an easy-to-use process moisture analyzer that offers a truly remarkable combination of performance features: exceptional accuracy, multi-gas compatibility, fast response speed, and wide measurement range. The 5830 is ideal for critical moisture measurement applications.

Online verification system

This state-of-the-art analyzer is designed to rapidly build and maintain operator confidence in its analyses. The verification system allows the user to challenge the analyzer's sensor at will with either a zero gas or a NIST-traceable moisture concentration, to check both its baseline stability and responsiveness to real moisture. An alarm contact alerts the operator if the analyzer fails verification. The verification sequences may be started on a programmable schedule or on manual demand.

Multi-gas compatibility

The 5830 is completely compatible with virtually all non-corrosive gases, including inerts – helium (He), argon (Ar), neon (Ne), xenon (Xe) and krypton (Kr) – oxygen (O_2), hydrogen (H_2), nitrogen (N_2), air, and many specialty gases such as sulfur hexafluoride (SF_6). A single, simple menu selection is all that is needed to re-configure the 5830 for a new gas type.

Fast response speed

The 5830 responds quickly to both increases and decreases in moisture concentration because the analyzer employs a unique non-equilibrium measurement technique. This technique continuously exposes the sensor to "wet" sample gas followed by "dry" sample gas to make its analysis. With this technique, the analyzer never needs to wait for the sensor to reach equilibrium to establish its accurate measurement.

Wide measurement range

The 5830 accurately measures from parts per million by volume (ppmv) (20 parts per billion by volume (ppbv) to 100 ppmv). While the recommended usable range is between 0 and 100 ppmv, the analyzer will provide measurements up to 1000 ppmv so the user can capture the nature of a process upset.

🔑 KEY BENEFITS

- Exceptional accuracy at ±20 ppbv or ±10% of reading
- Multi-gas compatibility
- Menu-driven gas selection eliminates all manual adjustments
- On-line verification system confirms analytical performance

📉🔍 APPLICATIONS

- High purity gas production
- Semiconductor gases
- Industrial gas production
- Quality assurance

📊 KEY MARKETS

- Semiconductor manufacturing
- High-purity gas production

PERFORMANCE SPECIFICATIONS

Compatible gases	Inerts (He, Ar, Ne, Xe, Kr), O_2, H_2, N_2, air, and many specialty gases such as SF_6. Carbon dioxide (CO_2) requires a custom measurement cell. (Contact the factory to confirm compatibility with other gases)
Range	0 to 100 ppmv. Indicates trend to 1000 ppmv. Display is software-settable to show ppmv, ppbv, or dew point temperature (requires pressure input)
Reference dryer life	Over 1,000,000 ppmv-hrs nominals (e.g. dryer will last over five years with a 20 ppmv inlet moisture concentration)
Limit of detection	20 ppbv
Accuracy	±20 ppbv or ±10% of the reading, whichever is greater
Response time	63% of a step change in either direction in less than 5 minutes
Inlet pressure	138 to 345 kPa (20 to 50 psig)
Exhaust pressure	Atmospheric
Sample flow requirements	Approx. 150 sccm in sample saver mode. Approx. 1 slpm with by-pass open
Sample gas temperature	0 to 100°C (32 to 212°F)
Outputs	Four-line digital display. A fully programmable 4-20 mA analog output RS485/RS232 serial communication
Alarms	Three dry contact closures, 32 V DC maximum, 1 A non-inductive load (moisture, data valid, and system alarm). Alarm signals are available on the RS485 interface
Software features	Displays ppmv or ppbv moisture reading or dew point temperature, timer status, and instrument status
Environmental conditions	5 to 50°C (41 to 122°F), 90% relative humidity, non-condensing, non-corrosive atmosphere. Optimal performance in ppbv applications is achieved when the ambient temperature is maintained within ±2°C
Utility requirements	85 to 265 volts, 47 to 63 Hz, 185 W Instrument air: 483 to 690 kPa (70 to 100 psi)
Mounting configuration	19-inch rack/bench-top installation
Dimensions (W x H x D)	483 x 133 x 419 mm (19 x 5.25 x 16.5 in.)
Net weight	12.7 kg (28 lbs.)
Approvals and certifications	CEMET Certified to: UL/CSA General Safety Requirements. NEC/CEC Class I, Division 2, Groups A, B, C, D T4

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