

PRODUCT DATA SHEET

5000 Moisture Analyzer

Fast, reliable ppmv moisture measurement

The versatile 5000 is a highly sensitive moisture analyzer for process applications where the continuous, reliable measurement of moisture in vapors and gases is required.

The analyzer measures moisture on-line by monitoring the vibrational frequency change of a hygroscopically sensitized quartz-crystal that is exposed alternately to wet sample and dry reference gas for 30 second periods. The reference gas is sample gas passed through a molecular sieve dryer to remove virtually all its moisture content.

Many moisture analyzers are susceptible to attack by the process stream. Unsaturated hydrocarbons, compressor oils, oxygen, carbon dioxide, and others can permanently damage or destroy trace moisture sensors. Even worse, a fouled sensor can become completely unresponsive to moisture, yet continue to give an output, which could leave your process unmonitored.

The 5000's unique differential measurement principle, combined with continuous diagnostics, ensures reliable performance in critical moisture applications.

Field unit

The field unit is explosion-proof and is certified to comply with numerous international standards. It contains a sample cell, switching valves and associated electronic circuits mounted internally and a flowmeter, flow control valves and back pressure regulator mounted externally.

Controller

Designed for use in industrial areas, the controller is available with several standard and optional certifications. It provides all control and data processing, as well as a keypad and display interface. Outputs include RS-485 bidirectional serial data, two fully configurable 4-20 mA analog signals, and three configurable alarms. It can be separated from the field unit by up to 600 m (2000 ft).

External dryer

The external dryer supplies the analyzer with reference gas, by using a molecular sieve to dry the actual process gas.



KEY BENEFITS

- Reliable performance
- Internal verification on process gas
- Fast response
- Few interferences
- No process temperature or pressure compensation required
- Wide-range moisture



APPLICATIONS

- Catalytic reforming
- Moisture in olefins
- Moisture in natural gas



KEY MARKETS

- Natural gas
- Petrochemical
- Refinery
- Chemical

PERFORMANCE SPECIFICATIONS

Ranges	Calibrated 0 to 1000 parts per million by volume (ppmv). Display continues to provide trend information above 1000 ppmv. Output capability in lb./mmscf and dewpoint temperature (requires sample line pressure as analog input; single-point systems only)
Outputs	80-character vacuum fluorescent display. Two 4-20 mA analog signals with completely user-settable span; One analog output is auto-ranging RS485 bidirectional serial port
Alarms	System alarm, concentration alert, range or calibration alert
Sensitivity	0.1 ppmv or 0.5% of reading, whichever is greater
Accuracy	±1 ppmv or 5% of reading, whichever is greater
Reproducibility	0.2 ppmv or 1% of reading, whichever is greater
Operating pressure	103 kPa (15 psi) gauge Allowable inlet pressure: 207 to 690 kPa (30 to 100 psi) gauge
Sample gas temperature	0 to 100°C (32 to 212°F)
Gas flow requirements	1500 mL/min @103 kPa (15 psig)
Utility requirements	All systems are available with choice of nominal AC voltages: 100 ±10%, 50/60 Hz 115 ±10%, 50/60 Hz 230 ±10%, 50/60 Hz Field unit: 175 W Controller: 95-230 V ±10%, 47-63 Hz, 75 W
Maximum separation	600 m (2000 ft.) between field unit and controller
Ambient temperature limits	Field unit: -20 to 50°C (-4 to 122°F) without heat; -40 to 50°C (-40 to 122°F) with optional electric heat Controller: -10 to 50°C (14 to 122°F)
Moisture generator value	Exact values stated with analyzer Nominal: 20 ppmv Low option: 3 ppmv
Approvals and certifications	UL/CSA General Safety Requirements Field Unit: NEC/CEC Class 1, Division 1, Groups B, C, D; ATEX II 2 G EEx d IIC T6 (optional: CSA special acceptance)

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