

Model 3050-RM Rack Mount Process Moisture Analyzer

Fast, Reliable PPMV Moisture Measurement

Measurement

AMETEK's Model 3050-RM Moisture Analyzer combines quartz-crystal accuracy with on-line verification in a cost-competitive 19" rack package. This highly sensitive moisture analyzer is designed for applications that require continuous and reliable measurement of ppmv moisture in gases and vapors.

An internal moisture generator allows Model 3050-RM users to quickly confirm analyzer performance on schedule or on demand by comparing sensor and system operation to conditioned sample gas that contains a known amount of moisture. This ability to self-verify inspires operator confidence in the moisture analyzer. No other moisture analyzer offers this on-line measurement verification.

The 3050-RM is ideally suited to monitor atmospheric and hydrocarbon gases as well as various inert industrial chemical gases. The sensor's performance is unaffected by the process gas's temperature,

and ambient temperature changes within the analyzer's operational limits.

Fast response to both increasing and decreasing changes in moisture concentration enables the 3050-RM to catch a process variation as it happens. The accuracy and speed with which changes are measured often enable users to diagnose the cause of a process change. The analyzer's accuracy, on-line verification capability, and repeatability stimulate user confidence in the readings.

The Model 3050-RM's quartz-crystal moisture detection technology has been

proven to deliver consistent, reliable and accurate information in hundreds of long-term applications. The analyzer's wide range of operation — the unit is factory calibrated over a range of 0.1 to 2500 parts-per-million by volume (ppmv) — allows users to monitor moisture levels from start-up through normal process operation.

The Model 3050-RM is provided as a 19" rack-mountable enclosure. It is suitable for indoor installation in either General Purpose or NEC/CEC Class I, Division 2, Groups A, B, C, D locations.



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Performance Specifications

Technology: Quartz-crystal microbalance

Range: Calibrated from 0.1 to 2500 parts-per-million by volume (ppmv). Readout capability in ppmw, lb/mmscf, mg/Nm³, and dew point in °C or °F (requires process pressure as an input)

Reference Gas: Continuously produced using actual sample gas

On-Line Verification: Internal moisture source with NIST traceable calibration enables on-demand verification of analyzer accuracy and responsiveness without uninstalling the analyzer

Accuracy: ±0.1 ppmv or 10% of reading from 1 to 2500 ppmv with standard calibration; special calibration ranges not required

Reproducibility: ±5.0% of reading from 1 to 2500 ppmv

Limits of Detection: 0.1 ppmv

A/D Resolution: 16 bit (0.0015%)

QCM Response Time: Near real time. Computer-enhanced response, which may lead to errors, is not required to obtain quick wet-up or dry-down response

Sensitivity: 0.1 ppmv or 1% of reading, whichever is greater

Sample Inlet Pressure

Requirement: 138 to 345 kPa (20 to 50 psig); analyzer performance is independent of process pressure

Exhaust Pressure: 0-103 KPa (0 – 15 psig)

Sample Gas Temperature: 0 to 100°C (32° to 212°F); Analyzer performance is immune to changes in sample gas temperature

Sample Flow Requirement:

Approximately 150 sccm.
Approximately 1.0 slpm bypass flow for increased speed of response

Ambient Temperature Limits: 5° to 50°C (41° to 122°F)

Outputs: 4-Line x 20 character LCD display; Isolated 4-to-20 mA analog signal, 12 bit (0.025%) resolution, RS232 and RS485 serial communication ports

Alarms: Three contact closures; system, data valid, and concentration alarms

Utility Requirements: 85 to 265 volts, 47 to 63 Hz, 185 W

Mounting Configuration: 19-inch rack/bench-top installation

Dimensions: (W x H x D): 48.3 x 13.3 x 41.9 cm (19 x 5.25 x 16.5 in.)

Net Weight: 11.4 kg (25 lbs.)

Approvals and Certifications:

CE

MET Certified to:

UL/CSA General Safety Requirements

NEC/CEC Class I, Division 2, Groups A, B, C, D T4

Additional Sample System Components

In order to derive the full advantages of the Model 3050-RM, a well-designed sample system is necessary. AMETEK can supply a complete sampling system to include:

- ▶ **Filters:** In-line or bypass filters to remove particulate from gas or liquid sample streams and small amounts of oil or other condensables from gas streams.
- ▶ **Pressure Reducer:** Required if sample sources are at pressures higher than 3.3 Bar (50 psi). Maximum input pressure is 200 Bar (3000 psi).
- ▶ **Heated Pressure Reducer:** Designed to prevent condensation of gases upon pressure reduction or to vaporize liquefied gas streams with boiling points not exceeding 40°C (104°F). Maximum input pressure is 200 Bar (3000 psi).



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One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
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MOISTURE