

## Model 3050-OLV Process Moisture Analyzer

### FAST, RELIABLE PPMV MOISTURE MEASUREMENT

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

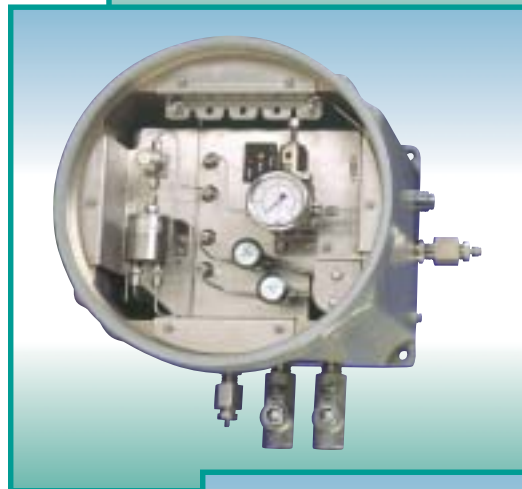
An internal moisture generator allows Model 3050-OLV users to quickly confirm analyzer performance on schedule or on demand by comparing sensor and system operation to conditioned sample gas that contains a known amount of moisture. This ability to self-verify inspires operator confidence in the moisture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

The 3050-OLV is ideally suited to monitor natural gas as well as various other industrial gases. The sensor is not unfavorably affected by the presence of methanol, process gas temperature, and ambient temperatures within its operational limits. It can be used in sour gas containing up to 30% hydrogen sulfide or 100% carbon dioxide. The mercury levels typically present in natural gas do not adversely affect sensor performance.

Fast response to changes in moisture levels enables the 3050-OLV to catch a moisture problem as it happens. Its accuracy, on-line verification capability, and repeatability guarantee that industrial gas specifications are met.

The Model 3050-OLV'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-OLV is available in four possible configurations: black box, NEMA 1 enclosure, NEMA 4X enclosure, and Div 1/Zone 1 enclosure. The black box and NEMA 1 versions must be installed in weather-protected locations. These can either be general purpose or NEC Class I, Div 2 depending upon configuration. The NEMA 4X systems are suitable for NEC Class I, Div 2 hazardous indoor or outdoor areas. The explosion-proof Div 1/Zone 1 versions are also suitable for indoor or outdoor installation.



Model 3050-OLV in a black box configuration, top  
NEC Class I, Division 1/CENELEC Zone 1 explosion-proof enclosure, center  
NEMA 4X weather-proof enclosure, bottom

## 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/Nm<sup>3</sup>, 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:** ±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

**Allowable Inlet Pressure:** 1.3 to 3.3 Bar (20 to 50 psi) gauge; up to 200 Bar (3000 psi) with optional pressure reducer; analyzer performance is independent of process pressure

**Exhaust Pressure:** 0 to 1 Bar (0 to 15 psi) gauge

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

**Gas Flow Requirements:** Approximately 150 sccm. Approximately 1.0 slpm bypass flow for increased speed of response

**Outputs:** 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

**Ambient Temperature Limits:**

Analyzer: 5° to 50°C (41° to 122°F)

Enclosed analyzer with sample system: -20° to 45°C (-4° to 113°F)

**Voltage/Power Requirements:**

Analyzer: 24 VDC, 50 watts

Analyzer with sample system:

120 ±10% VAC, 50/60 Hz, 150 W maximum

230 ±10% VAC, 50/60 Hz, 150 W maximum

**Approvals and Certifications:**

UL/CSA General Safety Requirements (general purpose)

UL/CSA Class I, Division 2, Groups A, B, C, D, T4

UL/CSA Class I, Division 1, Groups B, C, D, T6

ATEX II 2 G EEx d IIC T6

Complies with all relevant European directives

Russian GOST 1ExdIICT6X

Russian GOST Pattern Approval

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## ADDITIONAL SAMPLE SYSTEM COMPONENTS

In order to derive the full advantages of the Model 3050-OLV, 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.
- **Contaminant Trap:** Activated charcoal trap protects the reference gas dryer by removing contaminants from the reference stream.
- **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).

*One of a family of innovative process analyzer solutions from AMETEK Process Instruments. Specifications subject to change without notice.*

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**MANUFACTURING  
LOCATIONS**  


  
**PROCESS INSTRUMENTS**  
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3050-OLV (02/23/04)



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