

## PRODUCT DATA SHEET

# 3050 Series Moisture Analyzers

Accurate, reliable moisture analysis for ppmv or sub-ppmv in industrial applications

The AMETEK 3050 Series utilizes quartz crystal microbalance (QCM) technology, coupled with online verification, in a robust industrial package. These highly sensitive moisture analyzers offer rapid, accurate, and reliable measurements in low-moisture applications. They are designed to minimize operational costs, enhance process efficiency, and ensure maximum plant productivity.

### Online Verification Ability

The 3050 Series inspires operator confidence with its unique ability to self-verify. Its dual-concentration moisture generator is a NIST-traceable internal permeation device engineered to perform reliably and maintenance-free. It enables scheduled or on-demand, rapid verification of measurement performance by comparing sensor data with known moisture levels at two distinct concentrations.

### Accurate and Responsive

The 3050 Series' proven QCM technology delivers consistent, reliable, and accurate real-time moisture detection. Its wide measurement range provides moisture analysis over the entire process cycle, ensuring the process meets required specifications.

### Rugged Design

The 3050 Series is engineered for harsh industrial environments, making it ideal for monitoring natural gas, hydrocarbon process gases, and other industrial gases while maintaining serviceability. It is capable of operating in environments with up to 30% hydrogen sulfide or 100% carbon dioxide and ambient temperatures up to 50°C. Its integrated display permits access to measurement data, alarms, and configuration settings without the need for a hot-work permit.



### KEY BENEFITS

- Consumable service life exceeding 3 years minimizing operational expenses
- Built-in traceable verification system with multiple setpoints
- Fast response to changes in moisture concentration
- Integrated user interface eliminating requirement for hot-work permit
- High accuracy across measurement range
- Certified for IECEx/ATEX Zone 1

### APPLICATIONS

- Natural gas quality in pipelines and custody transfer stations
- Natural gas processing and dehydration
- Feedstock gas quality
- Molecular sieve dryer efficiency
- Cryo-recovery turbo expander inlet and outlet
- Hydrogen recycle gas in continuous catalytic reactor

### KEY MARKETS

- Petrochemical
- Natural Gas
- Refinery
- Chemical
- Industrial Gas

## PERFORMANCE SPECIFICATIONS

3050 ANALYZER	OLV
Calibrated Range	0.1 to 2500 ppmv
Accuracy	0.1 to 2500 ppmv ±0.1 ppmv or ±10% of reading, whichever is greater
Sensitivity	0.1 ppmv or 1% of reading, whichever is greater
Limits of Detection	0.1 ppmv
Dual Moisture Generator	25 ppmv and 75 ppmv

Technology	Quartz Crystal Microbalance (QCM)
Reference Gas	Continuously produced using sample gas and reference dryer with +5,000,000 ppm hour capacity
Online Verification	Internal moisture source with NIST traceable calibration enables on-demand verification of analyzer accuracy without uninstalling the analyzer
Reliability	No routine factory calibration required due to highly stable and reliable nature of QCM sensor
QCM response time	Near real-time. 63% to a step change in < 5 minutes.
User Interface	Integrated display with optical keypad
Communications	RS485 2-wire Modbus RTU, ethernet (10/100MBS, web interface, and Modbus TCP), ethernet (1GBS, web interface, and Modbus TCP), USB
Inputs	Two remote isolated digital (triggered by contact closure) One isolated analog (selectable 1-5V or 4-20mA for process pressure)
Outputs	Two isolated analog 16-bit, 4-20mA
Alarms	Four contact closures: service, data valid, concentration, and user configurable
Allowable Inlet Pressure	1.3 to 3.3 Bar (20 to 50 psi) gauge; up to 200 Bar (3000 psi) with optional pressure reducer
Exhaust Pressure	0 to 1 Bar (0 to 15 psi) gauge
Sample gas Temperature	0 to 100°C (32° to 212°F)
Gas Flow Requirements	Approximately 200 sccm. Approximately 1.0 slpm bypass flow for increased speed of response
Readout Capability	ppmv, ppmw, lb/mmascf, mg/Nm3, and dew point temperature in C or F
Ambient Temperature	-20 to +50°C (-4 to 122°F)
Power Requirements	120 ±10% VAC, 50/60 Hz, 100W maximum; 230 ±10% VAC, 50/60 Hz, 100W maximum
Enclosures	IP65
Certifications	ATEX/IECEx Zone 1

## SALES, SERVICE &amp; MANUFACTURING

## USA - Pennsylvania

150 Freeport Road  
Pittsburgh PA 15238  
Tel: +1 412 828 9040  
Fax: +1 412 826 0399

## USA - Delaware

455 Corporate Blvd.  
Newark DE 19702  
Tel: +1 302 456 4400  
Fax: +1 302 456 4444

## Canada - Alberta

2876 Sunridge Way NE  
Calgary AB T1Y 7H9  
Tel: +1 403 235 8400  
Fax: +1 403 248 3550

## WORLDWIDE SALES AND SERVICE LOCATIONS

## USA

Tel: +1 713 466 4900  
Fax: +1 713 849 1924

## Brazil

Tel: +55 19 2107 4100

## Germany

Tel: +49 2159 9136 0  
Fax: +49 2159 9136 39

## India

Tel: +91 80 6782 3200  
Fax: +91 80 6780 3232

## Singapore

Tel: +65 6484 2388  
Fax: +65 6481 6588

## China

Beijing  
Tel: +86 10 8526 2111  
Fax: +86 10 8526 2141  
Chengdu  
Tel: +86 28 8675 8111  
Fax: +86 28-8675 8141  
Shanghai  
Tel: +86 21 5868 5111  
Fax: +86 21 5866 0969



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