

## Model 2850 Moisture Analyzer

AMETEK's Model 2850 moisture analyzer establishes a new standard in clean gas moisture analyzers: ultrafast response speed, exceptional accuracy, virtually no interferences, multigas compatibility, and on-board measurement verification. This unique combination of capabilities makes the Model 2850 the moisture analyzer of choice for monitoring process desiccant dryers, instrument air dryers, or air separators, and for industrial gas production and quality assurance.

### Features and Benefits

#### *Ultrafast response*

The Model 2850 reaches 63% of a steady state reading in less than five minutes, far faster than other moisture analyzers in the 1 to 100 ppmv range. By using unique non-equilibrium measurement techniques, the Model 2850 provides this exceptional response speed drying-down as well as wetting-up.

#### *Wide measurement range*

The Model 2850 provides  $\pm 5\%$  accuracy from 1 to 100 ppmv and indicates to 1000 ppmv. Between 100 ppbv and 1 ppmv, the measurement is exceptionally valuable as a sensitive trend indicator. Two customer-settable 4 to 20 mA analog outputs are provided which may be assigned to cover any portion of the operating range.

#### *Internal verification*

The Model 2850 employs an internal, NIST-traceable moisture generator. This generator adds a known amount of moisture to conditioned sample gas. The resulting wet gas is then directed to the analyzer's sensor to verify proper sensor and system operation. An alarm contact is provided to alert the operator if the analyzer fails the verification process. Verification may be initiated on programmable schedule or on manual demand.

#### *Few interferences*

The Model 2850 is specific to water for most applications. Hydrogen and oxygen do not interfere, nor do unsaturated hydrocarbons.

#### *True process analyzer features*

Data is provided by RS-485 digital interface and two fully

programmable 4 to 20 mA analog outputs. Multiple, fully programmable alarms and alerts allow the user to alarm on a menu of process and analyzer performance conditions. The RS-485, when used with optional AMETALK software, is particularly useful for remotely monitoring or troubleshooting an unattended Model 2850.

#### *After-sale Support*

Our AMETEK Service Assistance Program is available to all AMETEK analyzer customers. ASAP is a comprehensive package of after-sale support programs, from hands-on training, to 24 hour phone help, to warranty extension. Contact AMETEK for additional details. (ASAP programs may have limited availability in some world areas.)



*Moisture measurement made fast, accurate, and reliable*

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## Performance Specifications

**Range:** Operating range 0.1 to 1000 ppmv. Factory calibrated range 1 to 100 ppmv with trend indication above and below the calibrated range. (Display will not display values below 0.1 ppmv.) Two custom settable 4 to 20 mA outputs are available which may be assigned to cover any portion of the calibrated range, such as 1 to 100 ppmv

### Outputs:

Four line x 20 character vacuum fluorescent digital display

Two fully programmable 4 to 20 mA analog outputs, into 1200 ohm load

RS-485 bidirectional serial port

**Alarms:** Three pairs: system alarm, range alert/or calibration alert, concentration alert/or calibration alert. 32 volt, 1 amp noninductive (fail-safe by default)

**Sensitivity:** 20 ppbv or 0.5 percent of instrument range whichever is greater.

**Response Time:** 63 percent to a step change in less than 5 minutes

**Accuracy:**  $\pm 0.05$  ppmv or  $\pm 5$  percent of the reading whichever is greater

**Operating Pressure:** Atmospheric

**Inlet Pressure:** 1 to 10 bars (15 to 150 psig)

**Exhaust Pressure:** Atmospheric

**Sample Flow Requirements:** less than 600 mL/min at STP

**Electrical Classifications:** NEC Division 2; conforms to CE requirements

**Sample Gas Temperature:** 0° to 100°C (32° to 212°F)

**Ambient Operating Range:** 4° to 40°C (40° to 105°F), 90% relative humidity, non-condensing, non-corrosive atmosphere

**Software Features:** Displays ppmv moisture reading or dew point, timer status, and instrument status

**Power Requirements:** 85 to 265 volts, 47 to 63 Hz

**Mounting Options:** Available for stand-alone or 19 inch rack installation

**Dimensions:** (W x H x D): 43.2 x 13.2 x 38.1 cm  
17 x 5.2 x 15 inches)

**Rack-mount Version:** Same as above except height is 22.1 cm (8.71 inches)

## Typical Applications

### Industrial gas production and quality assurance

Compressed industrial gas suppliers need accuracy to certify compressed gas quality. They need fast dry-down response to ensure that the analyzer comes back on-line quickly after a slug of moisture, and they need complete multigas compatibility. Compare the performance of your present moisture analyzer with the Model 2850: accuracy to 50 ppbv, less than five minute dry down time in the 100 to 1 ppmv range, and compatibility with virtually all compressed gases, including CO<sub>2</sub>, hydrogen, and oxygen. Finally, there is one analyzer which meets all your analytical and operational needs.

### Cryogenic air separation

Cryogenic separation produces inherently dry gas, typically on the order of a few hundred ppbv. Suddenly increasing moisture is a widely used alarm condition because of the danger of catastrophic freeze-up and the downtime it causes. The Model 2850 answers this need perfectly, with sensitivity to 20 ppbv, fast response to increasing moisture, and reliable trend indication in the critical 100 ppbv to 1 ppmv alarm range.

### Process dryers

Many industrial applications use desiccant dryers to remove moisture from process gases. Typically, these dryers operate in parallel: when the first dryer becomes saturated, the process gas is switched to the second while the first is regenerated. Used as the dryer outlet monitor, the Model 2850 provides internal measurement verification, fast wet-up response time, fast dry-down response time, wide measurement range, and superior accuracy. Plant operators can extend the dryer regeneration cycle reducing regeneration costs using the reliable, accurate Model 2850.



455 Corporate Blvd., Newark, DE 19702  
Ph. +1-302-456-4400, Fax +1-302-456-4444  
www.ametekpi.com



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F-0121 Rev 4 (0714)

One of a family of innovative process analyzer solutions from AMETEK Process Instruments.  
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### SALES, SERVICE AND 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 N.E., Calgary AB T1Y 7H2 • Tel: +1-403-235-8400, Fax: +1-403-248-3550

### WORLDWIDE SALES AND SERVICE LOCATIONS:

**USA - Houston, Texas**  
Tel: +1-713-466-4900, Fax: +1-713-849-1924

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**CHINA**  
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Chengdu / Tel: +86 28 8675 8111, Fax: +86 28-8675 8141  
Shanghai / Tel: +86 21 6426 8111, Fax: +86 21 6426 7818

**USA - Austin, Texas**  
Tel: +1-512-252-2440, Fax: +1-515-252-2430

**FRANCE**  
Tel: +33 1 30 68 89 20, Fax: +33 1 30 68 89 99

**GERMANY**  
Tel: +49 21 59 91 36 0, Fax: +49 21 59 91 3639

**INDIA**  
Tel: +91 80 6782 3200, Fax: +91 80 6782 3232

**SINGAPORE**  
Tel: +65 6484 2388, Fax: +65 6481 6588

MOISTURE