

# dew.IQ

## Moisture Analyzer



### Features

- Rack, bench, panel, and wall mount configurations
- NEMA 4 weatherproof membrane front display/keypad
- M Series or IQ.probe moisture probe compatible
- Displays moisture content in dew/frost point and ppmv
- Built-in isolated current or voltage analog output
- Fail-safe fault alarm relay
- Two measurement alarm relays

### Applications

This Panametrics single-channel analyzer measures moisture in process gases. Designed for installation in industrial settings, it is used in conjunction with IQ.probe and M Series moisture probes for industries including:

- Industrial gas
- Furnace gas/heat treating
- Power generation
- Air dryer
- Pharmaceutical
- Aerospace



## Low Cost, Real-Time Moisture Measurement

The dew.IQ is an economical, single channel, aluminum oxide hygrometer in the IQ Series line of analyzers. It is intended for industrial applications requiring accurate, real-time moisture measurement.

## Intelligence Simplified with IQ.probe and M Series Probes

Installing the dew.IQ is highly intuitive. As a field upgrade for its predecessors, the Panametrics MMS35, System 580, Model 600 and 700 or even earlier models, the M Series probe and cable mate to the dew.IQ in minutes, minimizing installation costs. For new installations, the IQ.probe stores its calibration digitally, eliminating the need for shielded cable.

Both the IQ.probe and the M Series moisture probes are rugged and accurate true absolute humidity sensors with calibration traceable to national standards. Exceptional dynamic range, speed of response and calibration stability have made the aluminum oxide sensor the standard for performance and value in industrial moisture measurement for more than 40 years.



## Microprocessor-Based Electronics

The microprocessor-based dew.IQ accurately tracks fast-changing process conditions, and displays the moisture content as dew/frost point temperature in °F or °C or as ppmv with a constant pressure input on an LCD. The measurement is also available as an analog output. The dew.IQ features built-in isolation to ensure the integrity of signals to remote devices. The meter also features two Form C alarm relays for high and low moisture limits. The large display and six-button keypad combine to make selection of analog output zero and span, alarm set-points fast and easy, and entry of calibration data simple.

# dew.IQ Specifications

## Electronics

### Intrinsic Safety

External safety barrier for moisture input (optional on M Series Probe)

### European Compliance

Complies with EMC Directive 2004/108/EC and 2006/95/EC Low Voltage Directive (Installation Category II, Pollution Degree II)

### Input

Moisture signal from an M Series probe or IQ.probe

### Analog Output

Single internal isolated recorder output, internally optically isolated, 10-bit (0.1%) resolution

### Switch-Selectable Outputs

0 to 2 V, 10k  $\Omega$  minimum load resistance  
0 to 20 mA, 400  $\Omega$  maximum series resistance  
4 to 20 mA, 400  $\Omega$  maximum series resistance  
User-programmable within the range of the instrument and the corresponding sensor or transmitter

### Alarm Relays

One fail-safe fault relay  
Two standard Form C relays SPDT, rated for 3 A at 250 VAC/30 VDC  
Set to any level within the range of the instrument; programmable from the front panel

### Alarm Set Point Repeatability

$\pm 0.2^\circ\text{F}$  ( $\pm 0.1^\circ\text{C}$ ) dew point

### Datalogger

32 GB capacity with MicroSD card, 4 GB card included

### Display

128 x 64 matrix LCD

### Display Functions

Dew point temperature in  $^\circ\text{F}$  or  $^\circ\text{C}$ , ppmv with a constant pressure input, or sensor signals for diagnostics

### Power Requirements

Universal power 100-240 VAC @ 50-60 Hz, or 24 VDC nominal

### Temperature

Operating:  $-20^\circ$  to  $60^\circ\text{C}$  ( $-4^\circ$  to  $140^\circ\text{F}$ )  
Storage:  $-40^\circ$  to  $70^\circ\text{C}$  ( $-40^\circ$  to  $158^\circ\text{F}$ )

### Warm-Up Time

Meets specified accuracy within three minutes

### Configurations

Panel (front panel meets Type 4 and IP66)  
9.5 inch half-rack  
Bench top  
Type 4 and IP66 Wall mount



# Moisture Measurement

## Sensor Type

Thin-film aluminum oxide

## Moisture Probe Compatibility

Compatible with all Panametrics M Series aluminum oxide moisture probes and IQ.probe

## Dew/Frost Point Temperature

Overall range capability:  $-110^{\circ}$  to  $60^{\circ}\text{C}$  ( $-166^{\circ}$  to  $140^{\circ}\text{F}$ )

Standard:  $-80^{\circ}$  to  $20^{\circ}\text{C}$  ( $-112^{\circ}$  to  $68^{\circ}\text{F}$ ) with data to  $-110^{\circ}\text{C}$  ( $-166^{\circ}\text{F}$ )

Ultra-Low:  $-110^{\circ}$  to  $-50^{\circ}\text{C}$  ( $-166^{\circ}$  to  $-58^{\circ}\text{F}$ )

High Range Data:  $-80^{\circ}$  to  $60^{\circ}\text{C}$  ( $-112^{\circ}$  to  $140^{\circ}\text{F}$ )

## Calibrated Accuracy at 77°F (25°C)

$\pm 2^{\circ}\text{C}$  ( $3.6^{\circ}\text{F}$ ) from  $-65^{\circ}$  to  $10^{\circ}\text{C}$  ( $-85^{\circ}$  to  $50^{\circ}\text{F}$ )

$\pm 3^{\circ}\text{C}$  ( $5.4^{\circ}\text{F}$ ) from  $-80^{\circ}$  to  $-66^{\circ}\text{C}$  ( $-112^{\circ}$  to  $-87^{\circ}\text{F}$ ).

## Repeatability

$\pm 0.5^{\circ}\text{C}$  ( $0.9^{\circ}\text{F}$ ) from  $-65^{\circ}$  to  $10^{\circ}\text{C}$  ( $-85^{\circ}$  to  $50^{\circ}\text{F}$ )

$\pm 1.0^{\circ}\text{C}$  ( $1.8^{\circ}\text{F}$ ) from  $-80^{\circ}$  to  $-66^{\circ}\text{C}$  ( $-112^{\circ}$  to  $-87^{\circ}\text{F}$ ).



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