Panametrics
a Baker Hughes business

# Moisture Analyzers Family
## Product Guide

Precision moisture control with advanced measurement technology to safeguard quality and improve process performance across industries.

# Industry applications

**Panametrics' process measurement solutions cover a wide range of industries and applications.**

| | Power Plant | Refinery / Petrochemical Plant | Natural Gas | Steel Plant | Industrial Gases | Pharmaceutical | Food and Beverages | Quality, Test and Calibration | Hydrogen |
|---|---|---|---|---|---|---|---|---|---|
| moisture.IQ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ |
| dew.IQ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| PM880 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| HygroPro II | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ |
| HygroPro XP | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ |
| MMY30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| MMY31 | | | | | | ✓ | | | |
| Aurora | | ✓ | ✓ | ✓ | ✓ | | | | |
| Optica | | | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| OptiSonde | | | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| MMR30 | ✓ | | | | | ✓ | ✓ | ✓ | |
| MMR31 | | | | | | ✓ | ✓ | ✓ | |
| MMR101 | | | | ✓ | | ✓ | ✓ | ✓ | |

# moisture.IQ

## Multi-channel moisture analyzer for measurement in gases and liquids

The flagship analyzer of the IQ series is designed for installation in a control room or field setting, providing complete functionality where single or multiple measurements are required, for both moisture and oxygen analysis.

## APPLICATIONS

**Power Plant**

$H_2$ (cooling generator)
Instrument Air lines
$SF_6$ gas
Transformer oil

**Refinery / Petrochemical Plant**

Hydrocarbon Liquids
Hydrogen recycle gas
Utility gas/Instrument air
Ethylene
Polyethylene plant feeds

**Natural Gas**

Natural gas pipelines
LNG, LPGs, NGLs
Biogas upgrading

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Industrial Gases**

Air Separation Units
Cylinder filling

**Food & beverages**

$CO_2$ gas

**Hydrogen**

Steam Methane Reformers
Electrolyzers
Pipeline & Storage

## FEATURES

- 1 to 6 channels of moisture and oxygen measurement
- Touch screen display
- Analog and digital outputs
- Compatible with MISP2 and M series aluminum oxide moisture probes
- 19" rack, panel, weatherproof wall-mount and explosionproof versions available

# dew.IQ

## Single-channel moisture analyzer for measurement in gases

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.

## APPLICATIONS

**Power Plant**

$H_2$ (cooling generator)
Instrument Air lines
$SF_6$ gas

**Refinery / Petrochemical Plant**

Utility gas / Instrument air

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Industrial Gases**

Air Separation Units
Cylinder filling

**Pharmaceutical**

Utility air
Instrument calibration

**Food & beverages**

$CO_2$ gas

**Hydrogen**

Steam Methane Reformers
Electrolyzers
Pipeline & Storage

## FEATURES

- Rack, bench, panel and wallmount versions available
- Displays moisture content in dew / frost point and ppmv
- M Series or IQ.probe moisture probe compatible
- Intrinsic safe operation of M Series probe with external zener barrier

# PM880

## Rugged intrinsically safe portable moisture meter for gases and liquids

The PM880 is the number one hazardous area rated portable moisture meter on the market. It is designed to measure moisture in gases and hydrocarbon liquids across a broad spectrum of applications and industry segments. The compact and rugged design makes it suitable for use in the toughest of environments.

## APPLICATIONS

**Power Plant**

$H_2$ (cooling generator)
Instrument Air lines
$SF_6$ gas
Transformer oil

**Refinery / Petrochemical Plant**

Hydrocarbon Liquids
Hydrogen recycle gas
Utility gas/Instrument air
Ethylene
Polyethylene plant feeds

**Natural Gas**

Natural gas pipelines
LNG, LPGs, NGLs
Biogas upgrading

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Pharmaceutical**

Utility air

**Industrial Gases**

Air Separation Units
Cylinder filling

**Food & beverages**

$CO_2$ gas

**Hydrogen**

Steam Methane Reformers
Electrolyzers
Pipeline & Storage

## FEATURES

- Intrinsically safe in a rugged compact package
- Measures moisture in gases and hydrocarbon liquids
- Internal data logger
- Lightweight handheld sample system
- Large graphic display
- Compatible with MISP2 and M series aluminum oxide moisture probes

# HygroPro$^{II}$

## Intrinsically safe moisture transmitter for use in gas and liquid applications

The intrinsically-safe **HygroPro$^{II}$** moisture transmitter measures the moisture content of gases and non-aqueous liquids in pipelines, natural gas, petrochemical, power generation, pharmaceutical, process and industrial applications.

### APPLICATIONS

**Power Plant**

$H_2$ (cooling generator)
Instrument Air lines
$SF_6$ gas
Transformer oil

**Refinery / Petrochemical Plant**

Hydrocarbon Liquids
Hydrogen recycle gas
Utility gas/Instrument air
Ethylene
Polyethylene plant feeds

**Natural Gas**

Natural gas pipelines
LNG, LPGs, NGLs
Biogas upgrading

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Industrial Gases**

Air Separation Units
Cylinder filling

**Food & beverages**

$CO_2$ gas

**Hydrogen**

Steam Methane Reformers
Electrolyzers
Pipeline & Storage

### FEATURES

- Intrinsically safe
- Ambient to ppb moisture levels using aluminum oxide moisture sensor
- Built-in temperature and pressure sensors
- Gas and liquid applications
- HART communication

# HygroPro XP

## Explosionproof aluminum oxide moisture transmitter for gas and liquid applications

**HygroPro XP** measures moisture concentration in gases and non-aqueous liquids in natural gas, petrochemical, refinery, hydrogen, industrial gas, and power generation applications.

## APPLICATIONS

**Power Plant**

$H_2$ (cooling generator)
Instrument Air lines
SF6 gas
Transformer oil

**Refinery / Petrochemical Plant**

Hydrocarbon Liquids
Hydrogen recycle gas
Utility gas/Instrument air
Ethylene
Polyethylene plant feeds

**Natural Gas**

Natural gas pipelines
LNG, LPGs, NGLs
Biogas upgrading

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Industrial Gases**

Air Separation Units
Cylinder filling

**Food & beverages**

$CO_2$ gas

**Hydrogen**

Steam Methane Reformers
Electrolyzers
Pipeline & Storage

## FEATURES

- Explosionproof
- Ambient to ppb moisture levels using aluminum oxide moisture sensor
- Built-in temperature and pressure sensors
- Gas and liquid applications
- HART communication

# DewPro MMY30

## Loop powered moisture transmitter for measurement in gases

The MMY30 is designed to measure dew point or ppm in gases at line or atmospheric pressure. An integral flow cell with filtration and flow regulation allows for easy implementation.

### APPLICATIONS

**Power Plant**

$H_2$ (cooling generator)
Instrument Air lines
$SF_6$ gas

**Refinery / Petrochemical Plant**

Utility gas / Instrument air

**Natural Gas**

Natural gas pipelines
LNG, LPGs, NGLs
Biogas upgrading

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Industrial Gases**

Air Separation Units
Cylinder filling

**Pharmaceutical**

Utility air
Instrument calibration

**Food & beverages**

$CO_2$ gas

**Hydrogen**

Steam Methane Reformers
Electrolyzers
Pipeline & Storage

### FEATURES

- Loop powered, 4-20mA transmitter
- Integral filtering and flow regulation
- Hazardous area configurations available

# DewPro MMY31

## Loop powered moisture transmitter for measurement in gases

The MMY31 is designed for inline installation in clean applications where trace moisture measurement is required and a bypass or extractive installation is not appropriate.

### APPLICATIONS

**Pharmaceutical**

Utility air
Instrument calibration
Environmental chambers
Glove boxes

### FEATURES

- Loop powered, 4-20mA transmitter
- Hazardous area configurations available

# Aurora

## Laser based moisture analyzer for gases

The Aurora uses tunable diode laser absorption spectroscopy (TDLAS) to quickly and accurately measure moisture in gases, with speed of light response and minimum maintenance requirements.

### APPLICATIONS

**Refinery / Petrochemical Plant**

Hydrogen recycle gas
Utility gas/Instrument air

**Natural Gas**

Natural gas dehydration
Natural gas pipelines and storage
LPGs, NGLs
Biogas upgrading

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Industrial Gases**

Air Separation Units
Cylinder filling
$CO_2$

### FEATURES

- Rated for installation directly in a hazardous area
- Optical response <2 seconds
- Integrated sample system for measurement integrity
- Patented temperature and pressure compensation
- Optional safe area 19" rack mount and portable configurations available

# Optica

## Chilled mirror based hygrometer for high accuracy moisture measurements in gases

The Optica is a primary standard measurement device designed for industrial and laboratory applications requiring high precision without long term drift. It may be used with a number of chilled mirror sensors providing a wide measurement range.

### APPLICATIONS

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Industrial Gases**

Air Separation Units
Cylinder filling

**Pharmaceutical**

Utility air
Instrument calibration
Clean Room

**Food & beverages**

Utility air
Instrument calibration
Clean Room

**Quality, Test & Calibration**

Environmental test chambers
Engine test cells
Air conditioning and heat exchange coil testing
Metrology labs

### FEATURES

- Measurements traceable to national standards
- 1/4 color VGA display
- Built-in data logger
- Multiple measurement units can be displayed and transmitted
- Patented PACER® cycle automatically cleans mirror to ensure measurement integrity

# OptiSonde

## Economical chilled mirror based hygrometer for high accuracy moisture measurements in gases

The OptiSonde is a primary standard device designed for process and laboratory measurements requiring high precision without long term drift. It may be used with a number of chilled mirror sensors providing a wide measurement range.

### APPLICATIONS

**Steel Plant**

Annealing Lines
Galvanisation Lines
Utilities

**Industrial Gases**

Air Separation Units
Cylinder filling

**Pharmaceutical**

Utility air
Instrument calibration
Clean Room

**Food & beverages**

Utility air
Instrument calibration
Clean Room

**Quality, Test & Calibration**

Environmental test chambers
Engine test cells
Air conditioning and heat exchange coil testing
Metrology labs

### FEATURES

- Measurements traceable to national standards
- Built-in data logger
- Multiple measurement units can be displayed and transmitted
- Patented PACER® cycle automatically cleans mirror to ensure measurement integrity

# MMR30

## Loop powered mid-range moisture transmitter

The MMR30 is designed for mid-range (5°F to 185°F/-15°C to 85°C) moisture applications such as refrigerated compressed air dryers. It is compact and can be easily installed in indoor or outdoor environments.

### APPLICATIONS

**Power Plant**

Gas Turbline inlet air

**Pharmaceutical**

Drying applications
Product Validation
Tablet coating
ETO Sterilisation

**Food & beverages**

Dehydration applications
Fruit Ripening
Coating

**Quality, Test & Calibration**

Weather Stations

### FEATURES

- Loop powered 4-20mA transmitter
- Proven Polymer Capacitive sensor
- Integral filtering and flow regulation
- Optional integral display with user interface

# MMR31

## Loop powered mid-range moisture transmitter

The MMR31 is designed for relative humidity measurement (0-100%) applications. It is compact and can be easily installed in indoor or outdoor environments.

### APPLICATIONS

**Pharmaceutical**

Drying applications
Product Validation
Tablet coating
ETO Sterilisation

**Food & beverages**

Dehydration applications
Fruit Ripening
Coating

**Quality, Test & Calibration**

Humidity control
sterilization chambers

### FEATURES

- Loop powered 4-20mA transmitter
- Proven Polymer Capacitive sensor
- Simple field recalibration with salt bottles
- Optional integral display with user interface
- Hazardous area options available

# MMR101

## Loop powered high temperature relative humidity transmitter

The MMR101 is designed for high temperature relative humidity (0-100%) applications. It's rugged design is suitable for the harshest installations.

### APPLICATIONS

**Steel Plant**

Blast gas humidification

**Pharmaceutical**

High temperature drying applications

**Food & beverages**

High temperature drying applications

**Quality, Test & Calibration**

High temperature drying applications

### FEATURES

- Loop powered 4-20mA transmitter
- Proven Polymer Capacitive sensor
- Optional integral display with user interface
- Hazardous area options available
- Operating temperature up to 300°F (150°C)

Panametrics, a Baker Hughes business, provides solutions in the toughest applications and environments for moisture, oxygen, liquid and gas flow measurement.

Experts in flare management, Panametrics technology also reduces flare emissions and optimizes performance.

With a reach that extends across the globe, Panametrics' critical measurement solutions and flare emissions management are enabling customers to drive efficiency and achieve carbon reduction targets across critical industries including: Oil & Gas; Energy; Healthcare; Water and Wastewater; Chemical Processing; Food & Beverage and many others.

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