SYSTECH Illinois

Moisture / Dew Point Hygrometers

MM400

Advanced technologies in process gas measurement for maintenance free analysis. Utilising a state of the art ceramic sensor the MM400 offers excellent long-term reliable and stable moisture analysis from trace levels to ambient air conditions.

INDUSTRIAL PHYSICS

Protecting Product Integrity

The Systech Illinois 400 Moisture/Dew Point Hygrometers represent the latest advance in moisture analysis. Designed to be customized to your application giving precise measurements while providing a simple, yet affordable analyzer.

All instruments in the series incorporate our high quality aluminium oxide moisture sensor, providing accurate, dependable results over a wide range from –148°F to +68°F dew point. The aluminium oxide sensor is maintenance-free and is the popular choice for the most demanding applications.

Simply select the instrument configuration and sensor location and let the analyzer do the rest.

Cabinetry & Mounting

The MM400 can be configured in 3 different cabinets. The sensor can be remote mounted from any of these configurations.

Both general purpose and intrinsically safe remote sensors are available:

Three different configurations to match your needs:

- Panel or bench mount
- NEMA 4X / IP66 waterproof and weatherproof
- 19" rack mount

Options

- Analog Outputs
- Alarms
- Remote Sensors

Versatile Configurations

Combine the MM430 with any of our oxygen or carbon dioxide analyzers to create a dual gas analyzer. Both units fit into a 19" rack mountable cabinet.

MM410

MM420

MM430

All Systech Illinois sensors are made to laboratory standards of precision and industrial standards of durability.

Stainless steel housings, lab grade components and controlled environment manufacturing ensure the finest, most consistently precise sensors in the industry.

Contact Details

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Custom Configuration

This series is designed with the user in mind. These units are completely configurable including the ability to remote mount sensors and offering user-selectable units of Dew Point (°C or °F) or ppmv.

Two versions of the remote sensor are available to meet your needs. The general purpose sensor includes flow valves and can be mounted up to 3280.8ft from the analyzer. A simple coaxial cable connects the sensor to the instrument.

The intrinsically safe remote sensor allows for installations into hazardous areas. This sensor is approved by BASEEFA and CENELEC to ATEX II 1G/EEx ia IIC T4 standards.

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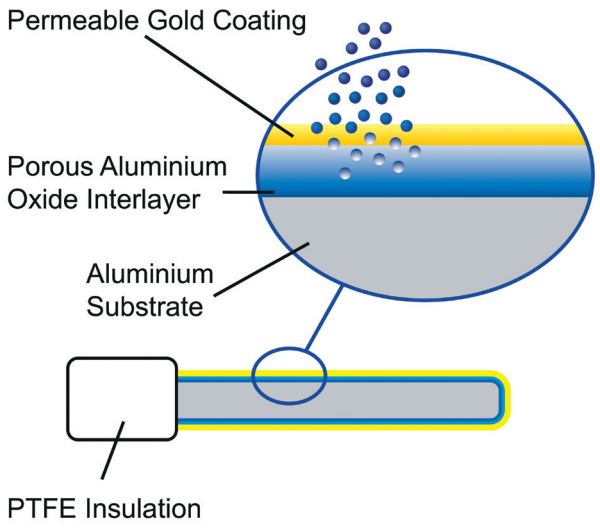
Principle of Operation

A small, anodized aluminium strip is coated with a very thin layer of gold.

The aluminium and gold layers form the two electrodes of an aluminium oxide capacitor.

The water vapor penetrates through the gold layer and adheres to the pores of the oxide layer. The number of molecules absorbed on the oxide layer determines the conductivity of the oxide. The value of pore wall resistance provides a value of impedance which is directly related to the water vapour pressure.

Water vapour molecules permeate gold emulsion to change the sensor's capacitance in relation to the dew point of the sample gas stream.



Intrinsically safe sensor

General purpose sensor

Features & Benefits

- Autoranging from –148°F to +68°F
- RS232/485 outputs
- °F, °C, and ppmv units
- Calibration traceable to NIST
- Remote sensors available
- Fast response and recovery from saturation
- Fault alarm
- Intrinsically Safe Option

Applications

- Industrial specialty Gases
- Heat Treating Furnaces
- Air Dryers
- Chemical Manufacturing
- Compressed Air
- Natural Gas
- Plastics Manufacturing
- Inert Atmosphere Blanketing
- Metallurgy

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Technical Specification

Measurement Ranges	Autoranging from -148°F to +68°F and equivalent in ppm(v) moisture
Accuracy	±1°F from -76°F to +68°F (±1°C from -60°C to +20°C) ±2°F from -148°F to -76°F (±2°C from -100°C to -60°C
Response Time	Wet gas to dry gas: -4°F to -76°F (-20°C to -60°C), less than 60 seconds Dry gas to wet gas: -148°F to -4°F (-100°C to -20°C), less than 60 seconds
Selectable Units	Dew Point °C / Dew Point °F / ppm(v)
Display Type	5 digit high visibility LED
Operating Conditions	Sample and ambient temperature: 32–104°F (0–40°C)
Sample Connections	1/8in. Swagelock® type, brass
Sample Pressure	0.25 – 28.0 Barg
Sample Flow	Independent: ideally 0.5 l/min
Power Requirements	115/230VAC, 50/60Hz, selectable. 10VA
Unacceptable Gases	Corrosive gases, Mercury, Ammonia, Chlorine, HCl, Ozone

Options

Analog Outputs	Scaleable 0 - 10V, 0 - 100mV and 4 - 20mA all isolated
High / low alarms	2 Voltage free with changeover contacts rated 240V 3A
19" Rack Mount	Can be combined with many of our other products in a 19" rack mount configuration
Remote Mounted Sensors	General Purpose Sensors can be remote mounted up to 3280.8 ft away. Intrinsically Safe Sensors can be mounted up to 656 ft away.

Weights & Dimensions

	Weight (lb)	Width (in)	Depth (in)	Height (in)
MM410 Bench/Panel Mount	17.41	9.33	16.14	7.48
MM420 IP66/NEMA 4X	28.8	12.91	7.08	15.9
MM430 Rack Mount 4U Houses 1 or 2 analyzers	21.38	19.05	16.14	7

CE Approved by BASEEFA and CENELEC to ATEX Ex II 1G EEX ia IIC T4 standards

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