

MM500 Moisture Analysers



The absolute measurement for moisture in
Process Gas Analysis



Applications

Industrial Specialty Gases
Plastics Manufacturing
Compressed Air

Heat Treating Furnaces
Chemical Manufacturing
Inert Atmosphere Blanketing

Air Dryers
Metallurgy
Corrosive Gases*

Features & Benefits

- Autoranging from 0.01 to 1000ppm
- RS232/485 outputs
- ppmv, Dewpoint °C and °F units
- No calibration required
- Remote sensors available
- Fault alarm

Utilising the fundamental laws of physics

The MM500 Moisture Analysers represent the latest advance in moisture analysis – designed to be customised to your application giving precise measurements while providing a simple, yet affordable analyser.



MM510



MM520



MM530

All instruments in the range incorporate microprocessor control, with our high quality electrolytic moisture sensor, to bring flexibility to your process environment. These analysers provide an absolute measurement, with accurate dependable results over a wide range from 0.01ppm to 1000ppm. Unit of measurement can be selected from ppmv or dew point (°C or °F).

The sample systems for all MM500 instruments are manufactured using stainless steel throughout.

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

Cabinetry & Mounting

The MM500 can be configured in 3 different cabinets.

The sensor can be remote mounted from any of these configurations:

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

Options

- Scaleable Analogue outputs
- High / Low Alarms
- Programmed Calibration Check
- Thermal Mass Flow Control (not available for MMXX3, model for corrosive gases)
- Remote Mounted Sensors
- Fault Alarm

Versatile Configurations

Combine the MM530 with any of our oxygen or carbon dioxide analysers to create a dual gas analyser. Both units fit into a 19" rack mountable cabinet.

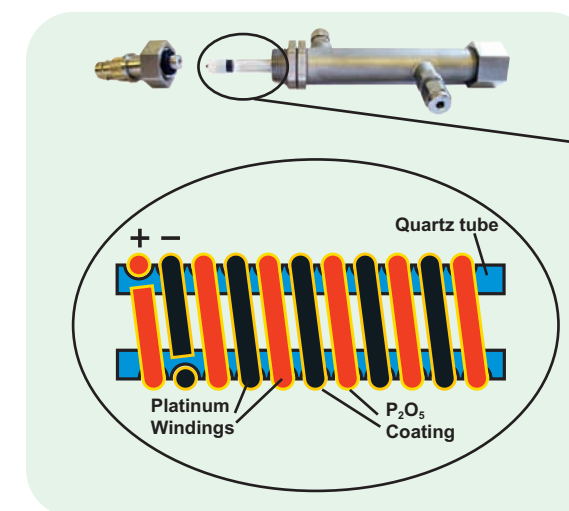
Custom Configuration

The Thermal Mass Flow Controller option for the internal sensor model automatically maintains the correct flow for maximum accuracy. An added benefit with this option is flow alarms to ensure the instrument and sample system are always in the correct configuration.

A remote sensor is available in a wall mounted cabinet. The IP66/NEMA 4X cabinet includes the P₂O₅ sensor along with flow meter and control valve. Wall mounted brackets are provided for easy installation.

For increased peace of mind, an autocalibrate check option is available. The instrument can be connected to certified gas and programmed to perform a calibration check at regular intervals. The instrument displays a warning and fault alarm if the error exceeds preset limits.

Model	MMXX0	MMXX1	MMXX2	MMXX3*
Sensor Configuration	Integral	Remote	Integral	Remote
Flow Controller	Differential Pressure	Differential Pressure	Mass Flow control	Pressure Regulator
Materials of Construction	s/steel / platinum / ptf	s/steel / platinum / ptf	s/steel / platinum / ptf	glass / platinum / ptf
Application	General purpose	General purpose	General purpose	Corrosive gases



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.

Principle of Operation

To achieve an absolute measure, the technology draws upon a fundamental principle of physics.

The phosphorus pentoxide (P₂O₅) moisture sensor consists of a dual platinum winding formed around a quartz tube about 8 cm long. The extremities of the windings are sealed by a resin coating, and the bare platinum electrodes coated with a thin film of P₂O₅. PTFE guides are provided at each end of the sensor through which the electrical connections to the windings protrude. A constant voltage is applied across the windings and the resultant current is monitored. As a flow of gas is passed over the sensor, the moisture in the gas stream is attracted to the P₂O₅ coating, and the resistance of the platinum coil changes due to the electrolysis of the moisture into hydrogen and oxygen gases. This change in resistance creates a change in the measured current, that according to Faraday's Law is directly proportional to the amount of moisture in the gas stream. Therefore, a knowledge of the gas flow rate through the sensor and the current in the cell gives an absolute measure of the moisture contained in the sample gas.

Remote sensor assembly (IP66/NEMA 4X)



MM500 Moisture Analysers



MM510

Bench/Panel Mount
190H x 237W x 410D (mm)
7.9kg



MM520

IP66/NEMA 4X
Wall Mount/Weatherproof
404H x 328W x 180D (mm)
13.1kg



MM530

Rack Mount 4U - 19 inch
Houses 1 or 2 analysers
178H x 484W x 410D (mm)
9.7kg (single unit)

Technical Specifications

Measurement Ranges	Autoranging from 0.01ppm to 1000ppm and equivalent in Dew Point
Accuracy	±5% of reading or 0.4 ppm(v)
Response Time	90% within 60 seconds
Selectable Units	ppm(v) / Dew Point °C / Dew Point °F
Display Type	5 digit high visibility LED
Operating Conditions	Sample and ambient temperature: 0–40°C (32–104°F)
Sample Connections	1/8 in. Swagelok® type, stainless steel
Maximum Sample Pressure	0.25 – 7.0 Barg
Sample Flow	100 cc/min -controlled
Power Requirements	115/230 VAC, 50/60 Hz, selectable. 12 VA
Acceptable Gases	All inert gases, N ₂ , H ₂ , O ₂ , CO ₂

Options

Analogue Outputs	Scaleable 0 - 10V, 0 - 100mV and 4 - 20mA or 0 - 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 100m away
Flow Control	Thermal mass flow control (not available on MMXX3 model for corrosive gases), pressure regulators, bypass flow system

***Note:** For corrosive gases please see our brochure, MM500 Moisture Analysers for corrosive gases.

Systech Illinois have 30 years experience of providing gas analysis solutions for a wide range of industries. From our manufacturing plants in the UK and U.S. we produce gas analysers for industrial process industries, headspace analysers for monitoring gas flushing of food products, and our range of permeation analysers.

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