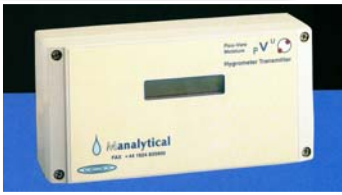
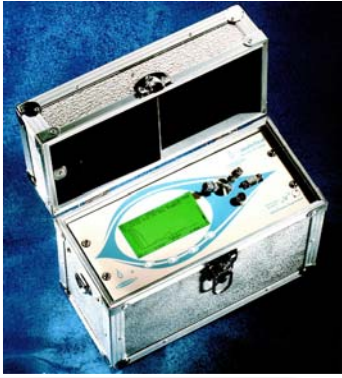




ALL MCM ANALYSERS INCORPORATE THE PATENTED TEMPERATURE CONTROLLED SILICON SENSOR AND PUSH PURGE® FEATURES THAT ARE UNIQUE TO OUR INSTRUMENTATION.



PORTABLE ANALYSERS

- Temperature Controlled Sensor provides fast response and accuracy – ideal for use with inert, non-reactive, expensive or toxic gases.
- Full scale 'wet' to 'dry' in < 1 minute using Push Purge® Sensor drying feature.
- Graphical display allows operator to quickly identify when an equilibrium condition has been achieved, thus maximising efficient use of time.
- Internal datalogging facility stores readings in the instrument memory for appraisal at a later time. The portable analyser stores the last 10 measurements.
- "Transfer Standard" analysers provide laboratory performance in the field.

ON-LINE ANALYSERS & TRANSMITTERS

- Free-standing and rack-mounted instruments for continuous moisture measurement.
- Low resolution alphanumeric and graphical displays.
- Real-time speed of response to immediately identify an upset in process conditions.
- Push Purge® Sensor heating feature gives on-line verification of results, without interrupting equilibrium of the sample gas.
- On-line analysers store the last 7 days of data in the internal memory for review at a later time.

PORTABLE ATEX ANALYSERS

- Ideal for use with explosive gases or for spot-checking in hazardous areas.
- ATEX rating – Ex II 1G EEx ia IIC T4 T_a = -20°C to +60°C.
- Exceptional speed of response minimises operator exposure to hazardous operating conditions.
- Graphical display allows the operator to quickly identify equilibrium condition.
- Internal datalogging facility stores 100 measurements in instrument memory.
- Suitable for use with inert and hazardous gases including Natural Gas, methane, LNG / LPG, H₂, and volatile hydrocarbons (up to C5).

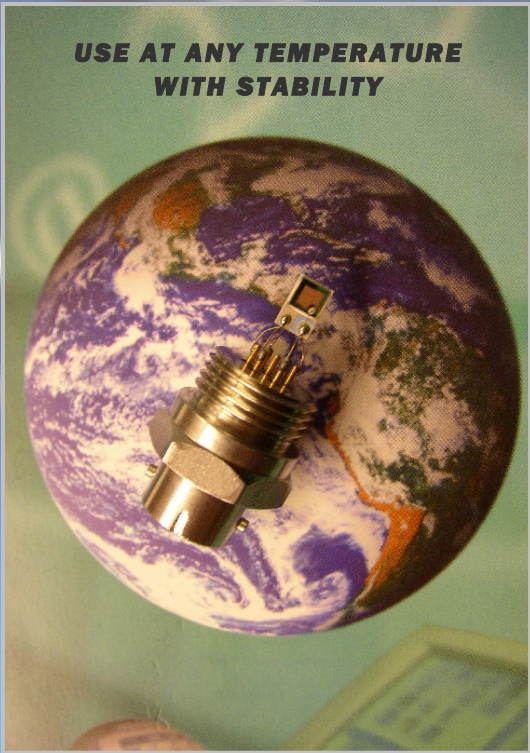
ON-LINE ATEX ANALYSERS

- MCM's ATEX on-line hygrometer redefines hazardous area applications.
- ATEX rating – Ex II 1G EEx ia IIC T4 T_a = -20°C to +60°C.
- Suitable for use with inert and hazardous gases including Natural Gas, methane, LNG / LPG, H₂, and volatile hydrocarbons (up to C5).
- Used as the base component for Self-Validating and Self-Calibrating Systems – ideal for demanding gas applications.

SELF-VALIDATING & SELF-CALIBRATING SYSTEMS

- Constant on-line moisture analysis for demanding gas applications.
- Self-Validating (Auto-Zero) System provides a cost-effective methodology to help mitigate the effects of contamination, reduce maintenance costs and extend the mean service interval. Ideally suited to applications where contamination is greater than normal and routine servicing is undesirable or impractical.
- Self-Calibrating System features a patented, state-of-the-art humidity verification centre, intended for exacting applications requiring very high precision data. The integrated Prime Humidity Generator (adopted as the National Standard for Canada) provides traceable calibrations to revalidate the 'Zero', 'Span' and 'Scale Shape' data for your system, providing unrivalled levels of traceability on collected data.
- Ideal for Natural Gas and Petrochemical operations such as Offshore Platforms, Post-Glycol 'Contactor' Monitoring, Pipeline Drying, Natural Gas Storage & Distribution, Receiving Terminals (Custody Transfer), Refineries (Catalyst Protection), LPG Container Transfer.

MCM HAVE SPENT OVER 35 YEARS DEVELOPING TECHNOLOGY AND METHODOLOGIES IN THE FIELD OF MOISTURE STANDARDISATION AND MEASUREMENT. A CONSEQUENCE OF THESE ACTIVITIES HAS BEEN THE INTRODUCTION OF TEMPERATURE CONTROL AND A PATENTED SENSOR DRYING FEATURE CALLED PUSH PURGE®, BOTH OF WHICH FEATURE ON EVERY MCM ANALYSER.



THE TEMPERATURE CONTROLLED SILICON SENSOR

Temperature Control – a Prerequisite of Good Hygrometry

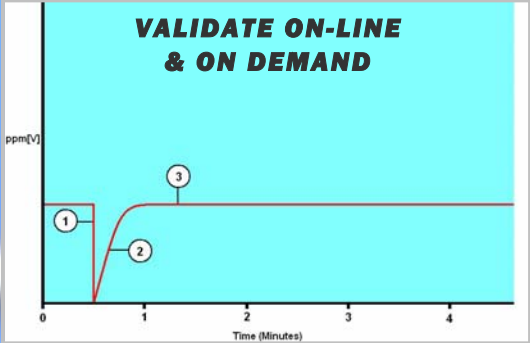
The necessity for Temperature Control in hygrometry is determined by the Laws of Physics, which dictate that all hygroscopic materials will lose or gain moisture in relation to their temperature. This is clearly observed, for example, when condensation collects on a cold surface, and is then subsequently removed when the temperature of the same surface is raised above the temperature at which the dew forms.

Stable Operating Temperature = Stable Readings

This principle applies to any moisture Sensor. Changes in temperature will give rise to a variation in the amount of water the Sensor can hold in a state of equilibrium. This will, in turn, give rise to larger uncertainties associated with any measurement if Temperature Control is not applied. Therefore, if a Sensor is to give a reproducible response to a fixed water concentration, it must operate at a constant temperature. Accordingly, all MCM analysers feature Temperature Control.

Laboratory Performance & Traceability – In the Field

By applying Temperature Control to a thermally stable Silicon Sensor MCM offers a unique advantage over its competitors who do not use Temperature Control, namely stability and traceability of data. This is particularly relevant when operating at temperatures significantly different from the temperature at the point of calibration.



THE PUSH PURGE® FEATURE

An Effective Means Of Verification

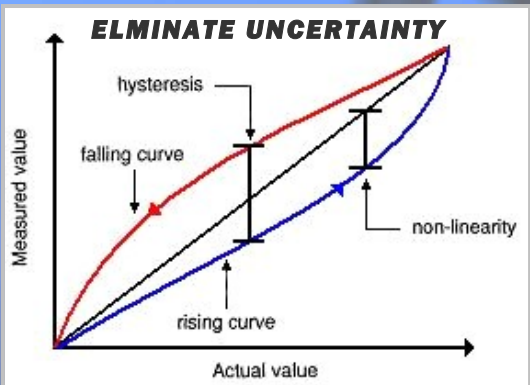
When sampling a gas for the first time, or if anomalies occur that cause concern, the ability to verify results is invaluable. MCM makes this possible with the Push Purge® feature. When activated the surface of the Sensor is heated rapidly, burning off superficial moisture any hydrocarbon contamination that may be present. As the temperature of the Sensor increases moisture is displaced and the displayed reading drops accordingly ①. As the Sensor cools, and equilibrium is re-established ②, the moisture reading will return to its previous value if surface contamination is negligible, confirming the value of the water vapour present in the sample gas ③. In addition, Push Purge® provides valuable information on the risk of contamination of the Sensor, the gas condition and the electronic functionality of the analyser.

Rapid, Repeatable Measurements by Eliminating Hysteresis

The effects of hysteresis are minimised when using Push Purge® because each measurement is started with the Sensor in a repeatable, dry condition. Equally, the time required for each measurement to stabilise can be vastly reduced by using the Push Purge® Sensor drying function to speed up the equilibrium process. The time it takes for the water vapour equilibrium to be re-established from this dry state will confirm the analyser's sensitivity to moisture and establish its response time under field conditions.

Invaluable Diagnostics

Any analyser that has the ability to confirm its sensitivity or speed of response to changes in moisture levels, without disturbing the sample condition itself, is a valuable tool for any operator in terms of the confidence it provides in the data that is collected. Push Purge® is, therefore, an invaluable diagnostic tool which aids productivity and Quality Control.



MOISTURE CONTROL & MEASUREMENT LTD

THORP ARCH TRADING ESTATE, WETHERBY, WEST YORKSHIRE, LS23 7BJ, UNITED KINGDOM

tel: +44 (0)1937 844000

fax: +44 (0)1937 849424

email: sales@mcm-moisture.com

web: www.mcm-moisture.com