Ultra-Fast Hygrometer Redefines Hazardous Area Analysis

The MicroView ATEX Hygrometer combines state-of-the-art Sensor and processing power with the the most stringent ATEX certification. From now on your work need never be restricted by instrumentation – quite simply, if you can get to the hazardous area so can the MicroView ATEX Hygrometer!

- Temperature Controlled Silicon Sensor transfers laboratory accuracy in to the field with unrivalled speed of response
- Push Purge® Sensor dry-down for rapid response and elimination of hysteresis
- Graphical display for detailed sample information and audit
- Automated features and management key simplify operation and prevent unauthorised use in hazardous areas

### Specification

<table>
<thead>
<tr>
<th><strong>Sensor Type</strong></th>
<th>Silicon Sensor, Temperature Controlled to 46°C</th>
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</thead>
<tbody>
<tr>
<td><strong>Operating Range</strong></td>
<td>1 to 1000 ppm[V]. Other ranges available upon request</td>
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<tr>
<td><strong>Resolution</strong></td>
<td>1 ppm[V]</td>
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<tr>
<td><strong>Stability</strong></td>
<td>±1% of the operating range</td>
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<tr>
<td><strong>Speed of Response</strong></td>
<td>Full scale ‘wet’ to ‘dry’ in &lt;1 minute using Push Purge®</td>
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<tr>
<td><strong>Sample Flow Rate</strong></td>
<td>Flow independent. Recommended 0.05 to 1 litre / min</td>
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<tr>
<td><strong>Sample Gas Pressure</strong></td>
<td>Atmospheric vent</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>Backlit LCD presenting graphical data, digital value and audit information. The display shows the last 15 minutes of the current measurement, and stores 100 measurements in the memory</td>
</tr>
<tr>
<td><strong>ATEX Rating</strong></td>
<td>Ex II 1G EEx ia IIC T4 Tₘ = -20°C to +50°C</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Rechargeable internal lead / acid battery</td>
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<tr>
<td><strong>Diagnostics</strong></td>
<td>Push Purge® feature aids Sensor dry down, confirms that the Sensor and electronics are operational and highlights the presence of contamination. Push Purge® confirms if the speed of response of the analyser is maintained and validates readings on-line by removing hysteresis before each measurement</td>
</tr>
<tr>
<td><strong>Standard Calibration</strong></td>
<td>In ppm [V], traceable to National Standards</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>-20 to +40°C.</td>
</tr>
<tr>
<td><strong>Mounting</strong></td>
<td>Free-standing (portable) or rack-mount (on-line)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>7kg (portable) / 3kg (on-line)</td>
</tr>
</tbody>
</table>

**MicroView ATEX Portable Dimensions**
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 Manalytical analysers feature Temperature Control.

Laboratory Performance & Traceability – In the Field

By applying Temperature Control to a thermally stable Silicon Sensor Manalytical 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. Manalytical 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. As the Sensor cools, and equilibrium is re-established, 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. 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.