Atmospheric Corrosivity Monitor (ACM)
When the minutest layer of corrosion build up on the circuit surfaces of electronic systems at Data Centres, Server Rooms, Control Rooms, it aggravates electrical resistance and decrements equipment performance. Thus, installation of corrosion monitoring device is recommended to ensure early detection of corrosion potential, which can improve electrical systems performance.

**Atmospheric Corrosivity Monitor (ACM)**

ACM determines the overall reactivity level of gaseous airborne contaminants in indoor air, as well the room temperature, relative humidity and optionally differential pressure. The information can be stored in its internal memory/SD card or fed into another system. The results are evaluated basis a standard defined by ISA Standard 71.04-2013.

### Atmospheric Corrosivity Levels of Environment as per ISA 71.04-2013 Standards

<table>
<thead>
<tr>
<th>Class Copper</th>
<th>Class Silver</th>
<th>Severity Level</th>
<th>Cu/Ag Reactivity Rate/Month</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>S1</td>
<td>Mild</td>
<td>&lt;300A° = Cu, &lt;200A° = Ag</td>
<td>An environment sufficiently well-controlled such that corrosion is not a factor in determining equipment reliability</td>
</tr>
<tr>
<td>G2</td>
<td>S2</td>
<td>Moderate</td>
<td>&lt;1000A°</td>
<td>An environment in which the effects of corrosion are measurable and corrosion may be a factor in determining equipment reliability</td>
</tr>
<tr>
<td>G3</td>
<td>S3</td>
<td>Harsh</td>
<td>&lt;2000A°</td>
<td>An environment in which only specially designed and packaged equipment would be expected to survive. Specifications for equipment in this class are a matter of negotiation between user and supplier.</td>
</tr>
<tr>
<td>GX</td>
<td>SX</td>
<td>Severe</td>
<td>&gt;2000A°</td>
<td>An environment in which there is a high probability that corrosive attack will occur. These harsh levels should prompt further evaluation resulting in environmental controls or specially designed and packaged equipment.</td>
</tr>
</tbody>
</table>

It helps to access corrosion severity level through LCD display which is logged to internal computer storage and SD card. It also transfers data to Building Management System through Digital RS485 MODBUS port or analog 4-20 mA output.
Functions

ACM helps in monitoring the following:

- Copper corrosion Level
- Silver corrosion Level
- Temperature
- Relative Humidity
- Differential Pressure (Optional)

Features

- Remote monitoring and controlling
- RoHS compliant
- Calibration available
- Battery operated
- Internal data storage
- Alphanumeric message/alarm flash
- No external software required to operate and download data
- Easy to install and operate

Communication capabilities

- 4-20 mA Connection - Process Control System
- Local PC through LAN (wi-fi or ethernet)
- Remote PC through Internet Router (wi-fi or ethernet)
- Easy Access to data and graphs
- Building Management System connectivity through RS485
- DCS connectivity
- Enable email alerts for alarm threshold
- USB port for easy connection to any PC or laptop

Benefits

- Understanding corrosion pattern
- Measuring corrosion rate
- Verifying effectiveness of corrosion control methods

How does it work?

ACM is Based on QCM (Quartz Crystal Microbalance) technology. It measures the weight gain as a consequence of corrosion built up on the copper and silver plated sensors surfaces. The weight gain is translated to film thickness and the corresponding corrosivity classification level.

Technical Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>BCM 232</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Aluminium with powder coated</td>
</tr>
<tr>
<td>Accuracy</td>
<td>Within +/- 0.5-1% of full span</td>
</tr>
<tr>
<td>Power Output - signal Analog</td>
<td>4-20 mA</td>
</tr>
<tr>
<td>Power input - Operation Voltage</td>
<td>18-36V DC</td>
</tr>
<tr>
<td>Sensor life</td>
<td>4000 Angstrom each</td>
</tr>
<tr>
<td>Dimension (LxWxH) in cm</td>
<td>26 x 12 x 9 cm³</td>
</tr>
<tr>
<td>Weight</td>
<td>&lt; 1000 gm</td>
</tr>
<tr>
<td>Logger time, Interval of Sampling</td>
<td>Starts from 2 min to 120 min</td>
</tr>
</tbody>
</table>

Installation Environment

- Dry and controlled environment
- Free from excess vibrations
- Can be wall mounted
Gas Phase Filtration

Key Application Areas

- Petroleum & Refineries
- Fertilizer & Chemical Plant
- Pulp & Paper
- Data Centers & Server Rooms
- Telecom Towers

- Museums & Libraries
- Sewage Treatment Plant
- Diagnostic Labs
- Animal Research Labs
- Mortuary Rooms