Superior Gas Flow and Density Measurement
Precise, reliable and direct measurement for gas applications
Superior Gas Flow and Density Measurement – only from Micro Motion®

World-leading Micro Motion® Coriolis gas flow measurement solutions deliver a broad range of technology offerings specifically designed for superior accuracy, better control of product quality, faster response to changing conditions, and outstanding reliability.

Micro Motion Measurement Benefits

Ideal Measurement Performance for Custody Transfer of Gases
• Exceptional measurement accuracy
• Achieves compliance with international standards requirements (AGA-11, API, OIML, NMI, PtB, ASME10790)
• With no moving parts in the measurement device, drift is eliminated to assure measurement performance both at the time of installation and over the life of the device

Embrace Simplicity by Eliminating Unnecessary Components
• Eliminate the need for straight or downstream piping and significantly reduce the space requirement to easily realize installation costs reductions of 20% or more
• No need to purchase devices to compensate for pressure or temperature
• Often eliminates the need for complex flow computers to integrate multiple devices and to perform complex algorithms required by traditional gas flow measurement solutions

Improved Confidence in Sensor Stability and Integrity
• Achieve ongoing, stable measurement reliability with devices that have no moving parts, gears or bearings to break, shift or wear over time
• Unlike traditional gas measurement technology such as turbine meters, it is not possible to “over spin” a Micro Motion device with unexpected high gas flows that could cause measurement performance drift or potential failure
• Unique ability to use in-situ calibration verification diagnostic to confirm the stability of flow calibration, without removing the meter from the line or shutting down the process flow

Inherent Advantages of Micro Motion Coriolis
• No moving parts result in no maintenance or repair
• Install anywhere with no flow conditioning or straight pipe run required
• Accuracy over a wide flow range from a single meter to optimize plant efficiency and maintain precise fiscal measurement
• Repeatable, direct mass flow measurement to eliminate problems of volume measurement
• Improved startup and turnover with simple commissioning and reduced risk

Micro Motion measurement technology is perfect for gas applications, offering the most accurate and robust, in-line gas measurement available today. Ideal applications include:
• Custody transfer of industrial gases (e.g. Oxygen, Nitrogen, Ethylene)
• Custody transfer of natural gas
• Optimum fuel gas control and reduced emissions (e.g. heaters, boilers, compressors)
• Process control of high value gases
Designed for Accuracy and Performance

Coriolis Measurement

Emerson’s Micro Motion Coriolis devices deliver an ideal solution for the mass and volume flow measurement of gas, which ensure measurements are not impacted by changing gas density, pressure or temperature.

By measuring mass directly without the need to measure gas density, Micro Motion Coriolis meters deliver real savings while easily delivering flow output in standard volume (SCFM, Nm³, etc). This highly accurate measurement solution is perfect for replacement of existing volumetric or traditional gas technologies by delivering a simple, single device for gas measurement needs.

- World-leading, field proven gas measurement solution with over 75,000 units installed world-wide
- Coriolis flow and dedicated density vibrating technology in the widest range of line sizes and pressure capabilities to serve applications requirements
- Patented, in-line meter verification available to check electronics and sensing element structural integrity – without the need for tools or down-time

Dedicated Density Measurement

For applications requiring gas density or specific gravity measurement, Emerson’s Micro Motion dedicated density meters are ideal.Insensitive to gas composition, temperature or pressure, Micro Motion dedicated density meters delivers simple, low cost options for quality control and process measurement of gas density or specific gravity.

Key Specifications Summary

See Product Data Sheets for detailed specifications at www.micromotion.com

<table>
<thead>
<tr>
<th>ELITE® Coriolis Meters</th>
<th>F-Series Coriolis Meters</th>
<th>7812 Gas Density Transducer</th>
<th>3098 Gas Specific Gravity Transducer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas flow accuracy</td>
<td>± 0.35% of flow rate</td>
<td>Liquid flow accuracy</td>
<td>± 0.50% of flow rate</td>
</tr>
<tr>
<td>Liquid flow accuracy</td>
<td>± 0.05% of flow rate</td>
<td>Liquid flow accuracy</td>
<td>± 0.15% of flow rate</td>
</tr>
<tr>
<td>Nominal line size</td>
<td>3 to 250mm</td>
<td>Nominal line size</td>
<td>6 to 100mm</td>
</tr>
<tr>
<td>Flow range</td>
<td>108 to 2,000,000 kg/h</td>
<td>Flow range</td>
<td>2,720 to 272,000 kg/h</td>
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<tr>
<td>Pressure rating*</td>
<td>103 bar (stainless steel); 170 bar (nickel alloy)</td>
<td>Pressure rating</td>
<td>100 bar (stainless steel); 148 bar (nickel alloy)</td>
</tr>
<tr>
<td>Gas density accuracy</td>
<td>± 0.1% of rate</td>
<td>Density range</td>
<td>1-400 kg/m³</td>
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<tr>
<td>Density range</td>
<td>to 250 bar</td>
<td>Pressure rating</td>
<td>to 250 bar</td>
</tr>
<tr>
<td>Gas density accuracy</td>
<td>± 0.1% of rate</td>
<td>Repeatability</td>
<td>± 0.02% of reading</td>
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<tr>
<td>Pressure rating</td>
<td>7 bar</td>
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</table>

*Specialty models with pressure ratings in the range of 300 bar to 660 bar are available. Please consult Product Data Sheet to determine availability.

Secondary containment is standard on all ELITE products and optional on F-Series. Refer to dedicated density Product Data Sheets (7812 & 3098) for signal converter requirements.

Over 75,000 Micro Motion Coriolis devices have been installed in a wide range of gas applications over the past 30 years:

- Acetylene (C₂H₂)
- Air
- Ammonia (NH₃)
- Argon (Ar)
- Carbon Dioxide (CO₂)
- Chlorine (Cl₂)
- Ethane (C₂H₆)
- Ethylene (C₂H₄)
- Freon
- Fuel gas
- Helium (He)
- Hydrogen (H₂)
- Hydrogen Chloride (HCl)
- Hydrogen Cyanide (HCN)
- Hydrogen Sulfide (H₂S)
- Methane (CH₄)
- Nitrogen (N₂) and LN₂
- Oxygen (O₂) and LO₂
- Phosgene (COCl₂)
- Propylene (C₃H₆)
- Steam
- Sulfur Dioxide (SO₂)
- Trifluoro Ethylene (TFE)
Micro Motion, a division of Emerson Process Management, is known globally in over 85 countries for its quality and reliability. As part of the Emerson PlantWeb digital plant architecture, Micro Motion enables increased plant availability, decreased costs and enhanced safety. With over 500,000 meters installed around the world, Micro Motion delivers application expertise, service and technical support not available elsewhere.

Benefit from the wide range of Micro Motion solutions available
- In-line meter verification of electronics and sensor – without the need for tools or down-time
- Exceptional measurement and operating performance on both liquids and gases
- World-leading dedicated density measurement devices
- Solutions for high and extreme temperature applications
- Best-in-class compact and drainable Coriolis
- TÜV Safety-certified Coriolis for SIL-2 and SIL-3 applications

WWW.micromotion.com

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