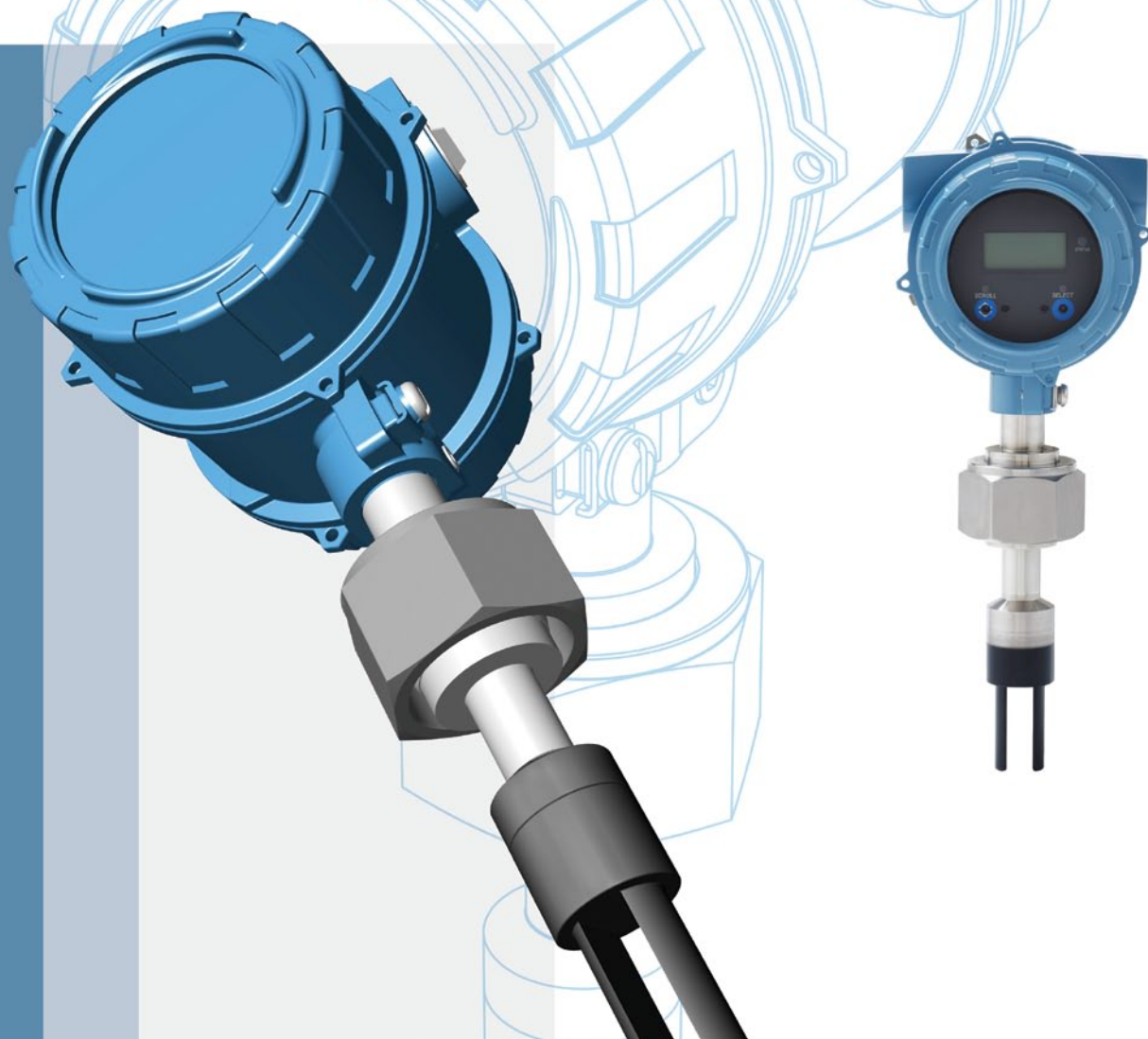


REVOLUTIONIZE YOUR ONLINE VISCOSITY MEASUREMENT TECHNOLOGY



Micro Motion Heavy Fuel Viscosity Meter
(HFVM) Viscomaster

INTRODUCING EMERSON'S MICRO MOTION® HEAVY FUEL VISCOSITY METER (HFVM) VISCOMASTER

Our Heavy Fuel Viscosity Meter (HFVM) Viscomaster delivers accurate, online viscosity and density measurement using a direct insertion tuning fork design. This rugged and reliable meter raises the standard for inline viscosity and density monitoring and enhances the product quality, blending operations, and efficient combustion of process liquids as diverse as Heavy Fuel Oil, asphalts and refined products.

Viscosity and Density Measurement with Performance and Confidence

The combination of our industry-leading technology, wide breadth of products, unparalleled application expertise and customer support allows us to deliver unbeatable performance and value, time and time again.



The Micro Motion HFVM Viscomaster Delivers:

Superior Measurement Capabilities

- A rugged, multi-variable direct insertion sensor that provides the best, real-time measurement of viscosity ($\pm 1\%$ of calibrated range max) and density ($\pm 1.0 \text{ kg/m}^3$)
- Application flexibility with pipeline, bypass (fast) loop and tank installation support

A World-Class Leading Electronics Platform

- Local display and user interface that allows for a simplified device management, minimizing maintenance requirements
- Simple integration into DCS, PLC and flow computers (Analog 4-20mA, HART, Modbus RS485)
- Revolutionary device diagnostics and verification methods

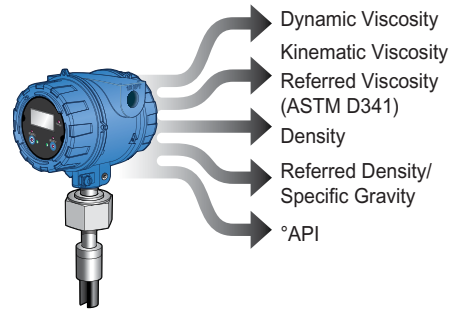
Robust and Flexible Measurement

- Application-specific measurement and output configurations to ensure simple set-up and commissioning
- Optimized design; insensitive to vibration, temperature and pressure variations

PRODUCT HIGHLIGHTS

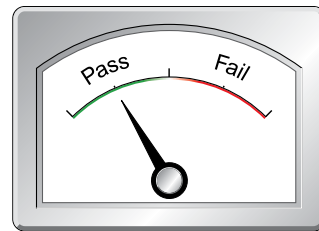
Application-Specific Configurations

Automatic, application-specific measurement and output configurations ensure simple set-up and commissioning



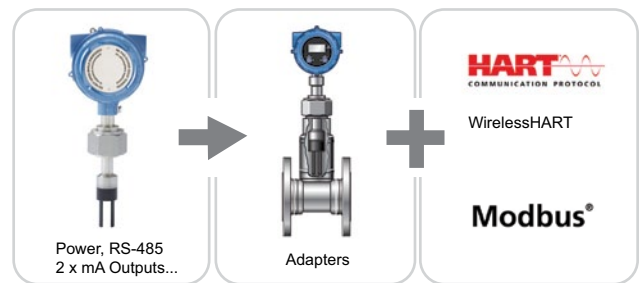
Meter Diagnostics

Built-in diagnostics for real-time monitoring and automated meter verification systems



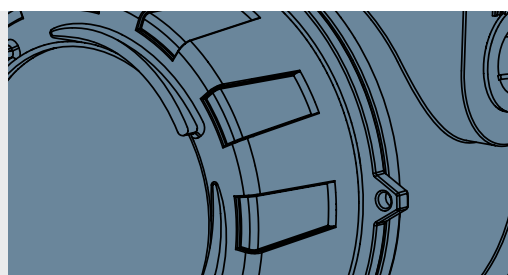
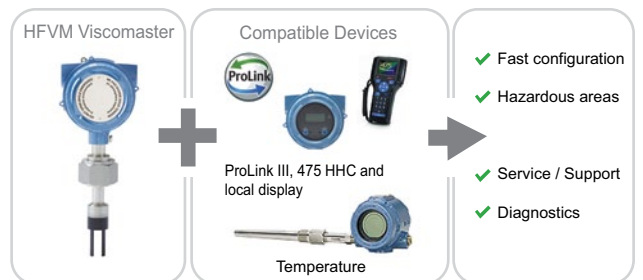
Unrivalled Viscosity and Density Performance

A choice of installation options for replacement solutions of capillary and torsional meters give you the performance you need



Intuitive configuration and usage

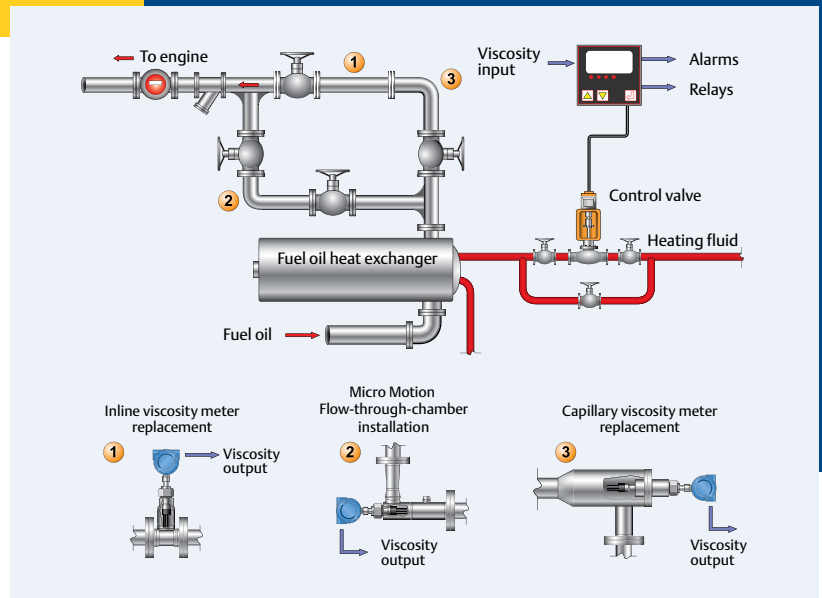
Integral HART & Modbus I/O allows direct connection via ProLink III, HART communicator or integral display



KEY APPLICATIONS

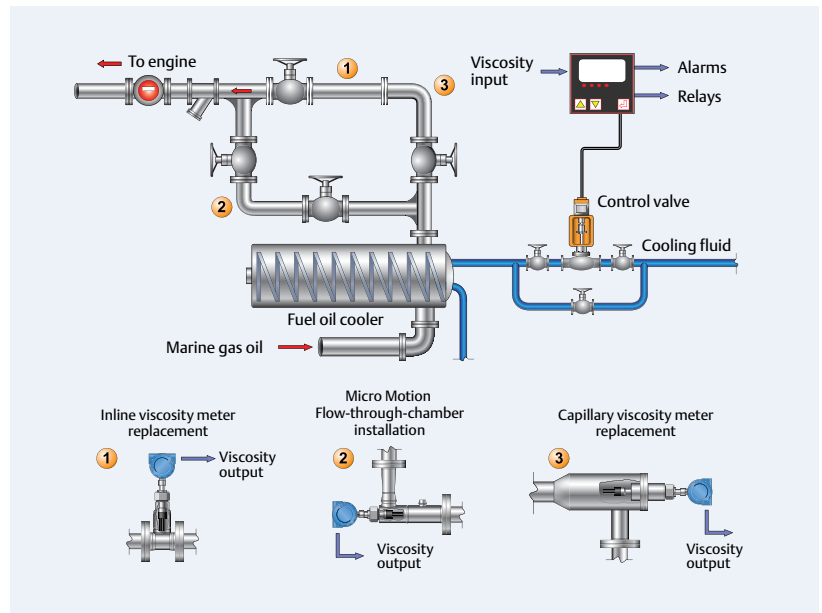
Marine HFO Viscosity Control

- **Marine HFO Combustion Control**
Maximize consistent engine power output irrespective of fuel variations
- **Measurement Reliability**
Reduced maintenance and operating costs



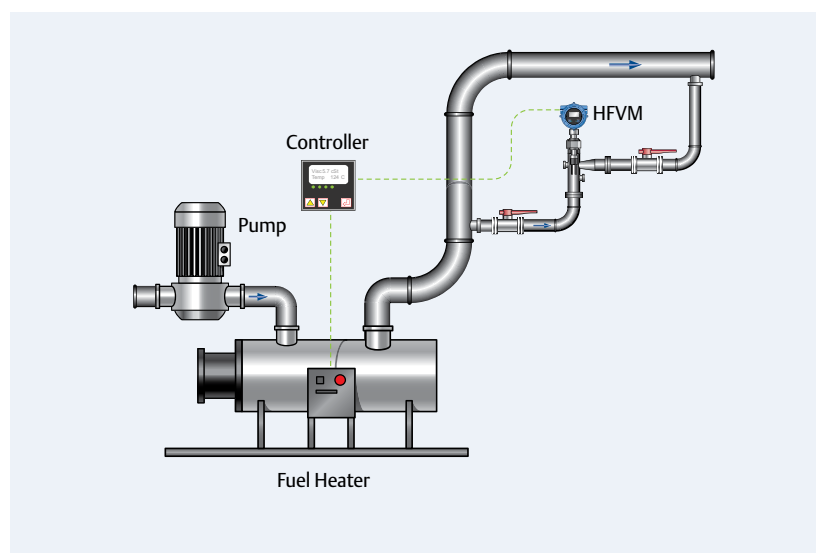
Marine Gas Oil Viscosity Control

- **Efficient MGO Viscosity Control**
Fast response kinematic viscosity optimizes HFO/MGO cut-over times
- **Robust Sensor Design**
Reduced maintenance & downtimes optimize operating costs



Land Based Combustion Control

- **Oil Fired Heater and Boiler Control**
Improved fuel atomization consistency with varying feed stock quality
- **Maintenance and Emissions**
Reduced fiscal exposure through optimized maintenance cycles and reduced NO_x/SO_x levies





YOUR SOLUTION FOR THE
MOST DEMANDING PROCESS
APPLICATIONS



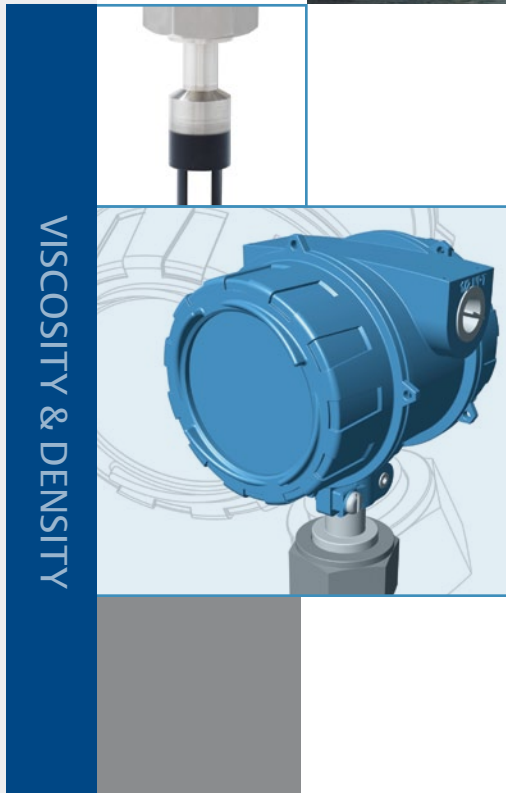
MICRO MOTION

For over 30 years, Emerson's Micro Motion has been a technology leader delivering the most precise flow, density and concentration measurement devices for fiscal applications, process control and process monitoring. Our passion for solving flow and density measurement challenges is proven through the highly accurate and unbeatable performance of our devices.



Heavy Fuel Viscosity Meter (HFVM) Viscomaster Specifications

| | |
|---------------------------|---|
| Viscosity Measuring Range | 0-100cP |
| Viscosity Accuracy | ±0.2cP (0-10cP) then ±1% Full scale of calibrated range max ±1cP (10-100cP) |
| Density Measuring Range | 0-3000 kg/m ³ (0-3 g/cc) |
| Density Accuracy | ±1.0 kg/m ³ (±0.001 g/cc) Equivalent to: ±0.5° API, ±0.1% Conc. |
| Temperature Accuracy | BS1904, DIN 43760 Class 'B' (±0.30 ±0.005 X T)°C |
| Safety Approvals | ATEX, CSA, IECEx (Explosion/Flame-Proof) – Zones 1 & 2 |
| Display | Two-line, LCD screen Optical switch configuration |
| Outputs | Standard: 4-20mA, HART, Modbus RS-485 |
| Protection Class | Ingress Protection: IP66/67, NEMA4 EMC compliant with EN61326 |
| Dimensions | 355 mm (h) x 163 mm (w) x 163 mm (d) (Typical short stem version) |
| Weight (Typical) | 6.7 kg (15 lbs) |



Compact Density Meter
Peak Performance
Precision Density Meter



Fork Density Meter
Direct Insertion
Density Meter



Gas Density Meter
Fiscal Gas
Density Meter



Specific Gravity Meter
Gas Specific Gravity
/BTU Meter



Fork Viscosity Meter
Multi-Variable
Viscosity Meter



Heavy Fuel Viscosity Meter
Multi-Variable Marine &
Power HFO Viscosity Meter

For more information, please visit: www.MicroMotion.com/density

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