

# Certified Marine Bunker Measurement Solution

Traceable, transparent, mass-based measurement



# Best-in-Class Measurement for the Marine Industry only from Micro Motion®

Emerson delivers the only traceable, transparent, mass-based measurement solution with OIML/MID approval.

Custody transfer measurement of heavy fuel oil (HFO) can save hundreds of thousands in operating expense and ensure accurate billing. Emerson's Certified Marine Bunker Measurement Solution delivers the world's best measurement for supreme accuracy, reliability and consistency both on land and sea.



## Increase Profitability

- Highest accuracy, traceable and transparent mass-based measurement ensures billing for actual mass of HFO delivered/received, eliminating traditional bunker inferential measurements and calculations
- Meet market requirements and eliminate operating losses that may occur from using traditional, inferential, measurement methods

## Improve Operations

- Eliminate billing discrepancies with custody transfer-approved HFO delivery ticket indicating the exact amount of HFO delivered
- Direct mass measurement saves significant time during bunker delivery and improves overall operational efficiencies by eliminating the need to perform cumbersome volume-to-mass data conversions

## Reduce Cost

- Handle difficult entrained gas and two-phase flow conditions with a single device, saving you maintenance time and money
- No internal moving parts and robust meter measurement performance eliminate the need for on-the-ship repair or maintenance
- Multivariable measurement (mass, density, temperature, volume) from a single device minimizes required instrumentation cost and maintenance, and maximizes profitability

## Inherent Advantages of Micro Motion Coriolis

- Direct mass flow measurement of all fluids, slurries and gases with one instrument
- No moving parts result in no maintenance or repair
- Install anywhere with no flow conditioning or straight pipe run required
- Simple and fast installation and commissioning at start-up
- Smart Meter Verification eliminates the need for periodic and disruptive calibration checks

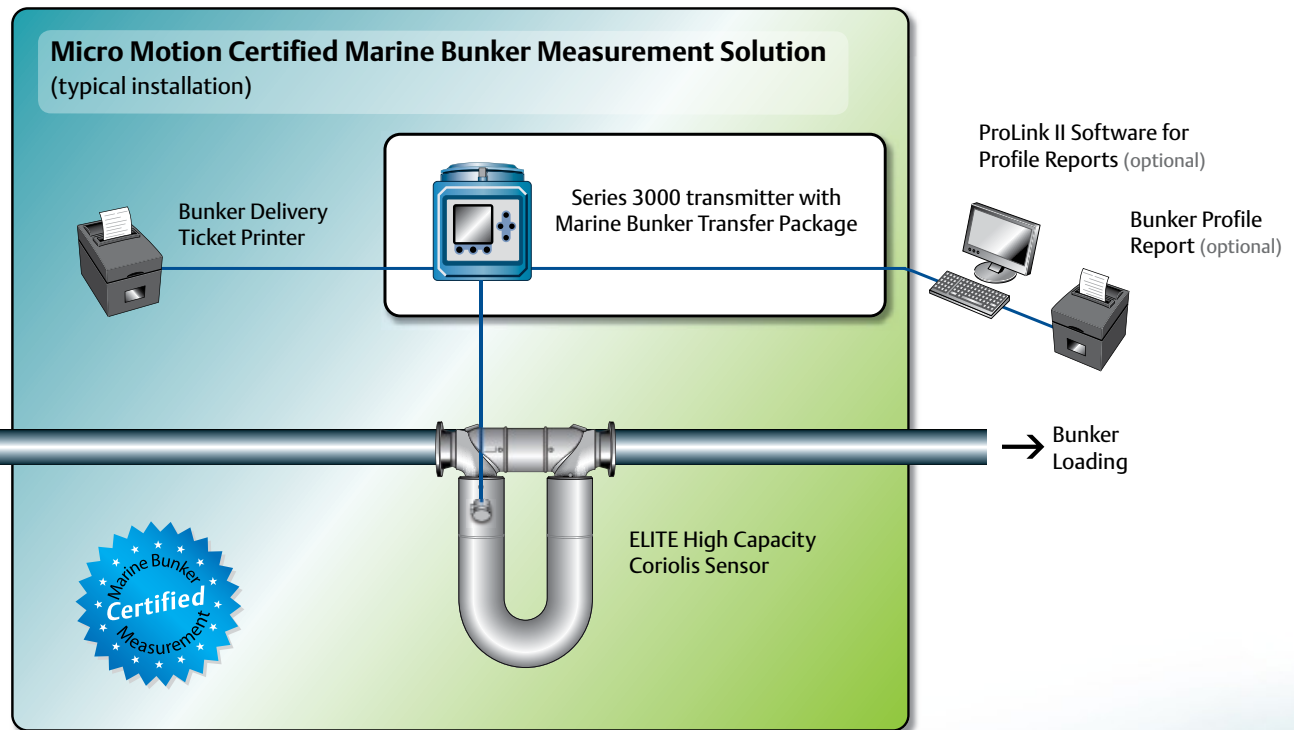


### Certified Marine Bunker Measurement Solution

Traditional bunkering measurement practices can contribute to potential error, including level measurement, table accuracy, tank straps, and volume-to-mass data conversions.

A proven, robust measurement solution for bunkering, Micro Motion Coriolis is unique in being able to tolerate portions of air in liquid and still deliver certified measurement performance. Air within the liquid occurs in tank stripping, for example, where air can be entrained during bunker delivery. With built-in aeration limits, the Micro Motion Series 3000 Transmitter with Marine Bunker Transfer Package (part of the Certified Marine Bunker Measurement Solution) also shows when excess air is too high to produce accurate results.

Micro Motion meters also feature Smart Meter Verification that measures the actual, mechanical characteristics to track meter performance – in line and without removing the meter for inspection. This technology can reduce the need to remove the meter for calibration.



### Marine Services & Support for Bunkering Applications

*Emerson offers a complete solution to ensure the success of your fuel measurement requirements in the Marine industry. Emerson-trained and certified technicians provide technical assistance, vessel surveys, commissioning, custody transfer P&ID review, and complete final installation review for startup of the Certified Marine Bunker Measurement Solution.*

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 600,000 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

- Superior, out-of-the-box density accuracy
- Simple installation and reduced cost
- No straight-run piping or special supports required
- Multivariable outputs (mass flow, volumetric flow, density/concentration, temperature)
- Direct PLC interface with digital protocols (DeviceNet, Profibus, Modbus, HART)
- In-line meter verification of electronics and sensor – without the need for tools or down-time
- Exceptional measurement and operating performance in entrained gas conditions
- Solutions for high and extreme temperature applications
- Best-in-class compact and drainable Coriolis
- Exida Safety-certified Coriolis for SIL-2 and SIL-3 applications



[www.micromotion.com](http://www.micromotion.com)

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### Emerson Process Management Americas

7070 Winchester Circle  
Boulder, Colorado USA 80301

[www.MicroMotion.com](http://www.MicroMotion.com)

T: +1 800 522 6277

T: +1 (303) 527 5200

F: +1 (303) 530 8459

Mexico T: 52 55 5809 5300

Argentina T: 54 11 4837 7000

Brazil T: 55 15 3413 8000

Venezuela T: 58 26 1300 8100



### Emerson Process Management Europe/Middle East

Central & Eastern Europe T: +41 41 7686 111

Dubai T: +971 4 811 8100

Abu Dhabi T: +971 2 697 2000

France T: 0800 917 901

Germany T: 0800 182 5347

Italy T: 8008 77334

The Netherlands T: +31 318 495 555

Belgium T: +32 2 716 77 11

Spain T: +34 913 586 000

U.K. T: 0870 240 1978

Russia/CIS T: +7 495 981 9811



### Emerson Process Management Asia Pacific

Australia T: (61) 3 9721 0200

China T: (86) 21 2892 9000

India T: (91) 22 6662 0566

Japan T: (81) 3 5769 6803

South Korea T: (82) 2 3438 4600

Singapore T: (65) 6 777 8211

For a complete list of contact information and websites, please visit: [www.emersonprocess.com/home/contacts/global](http://www.emersonprocess.com/home/contacts/global)

