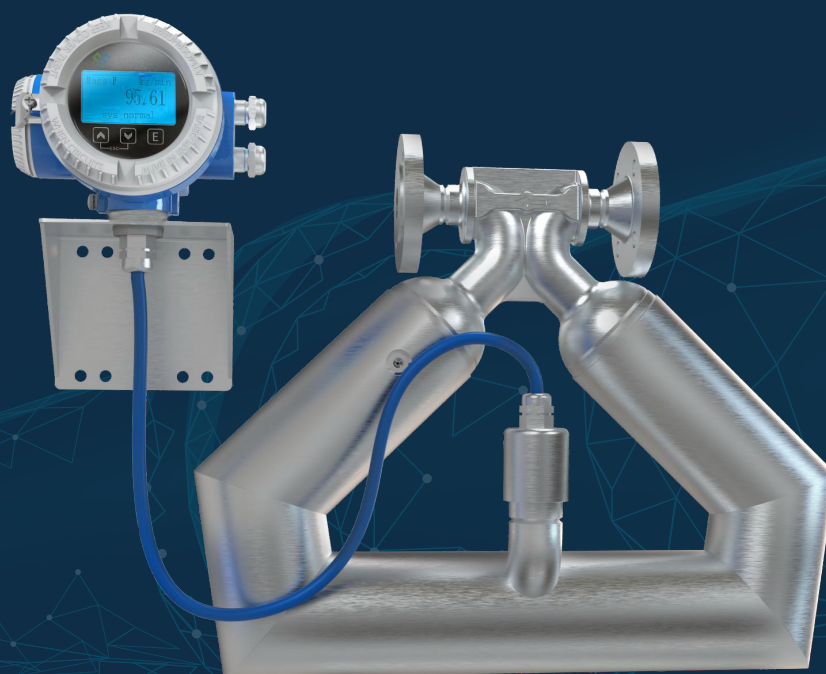


L-Cryogenic Series CORIOLIS MASS FLOWMETER

ETRANS – CMASS025LD LNG Datasheet



Precise Measurement,
Ultimate Control

Coriolis mass flowmeter

MODEL CMASS025LD LNG



Application Areas

Oil & Gas
Energy
Marine & Shipping
Petrochemical
Chemical
Industrial Gas

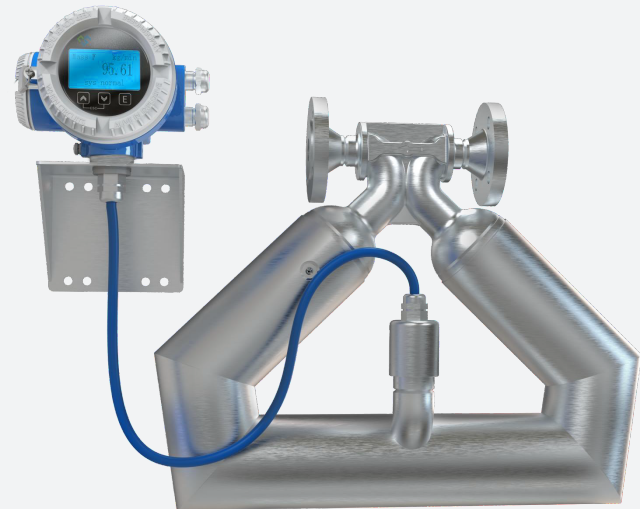
Features

- Ultra-High Accuracy ($\pm 0.1\%$)
- Direct Mass Flow Measurement
- Wide Temperature Range (-200°C to $+150^{\circ}\text{C}$)
- Robust Cryogenic Design
- Integrated Insulation Jackets
- Simultaneous Multi-Parameter Monitoring (Flow, Density, Temp)
- Versatile Output Signals (HART, Modbus RTU, 4-20mA)
- Explosion-Proof and SIL Certified

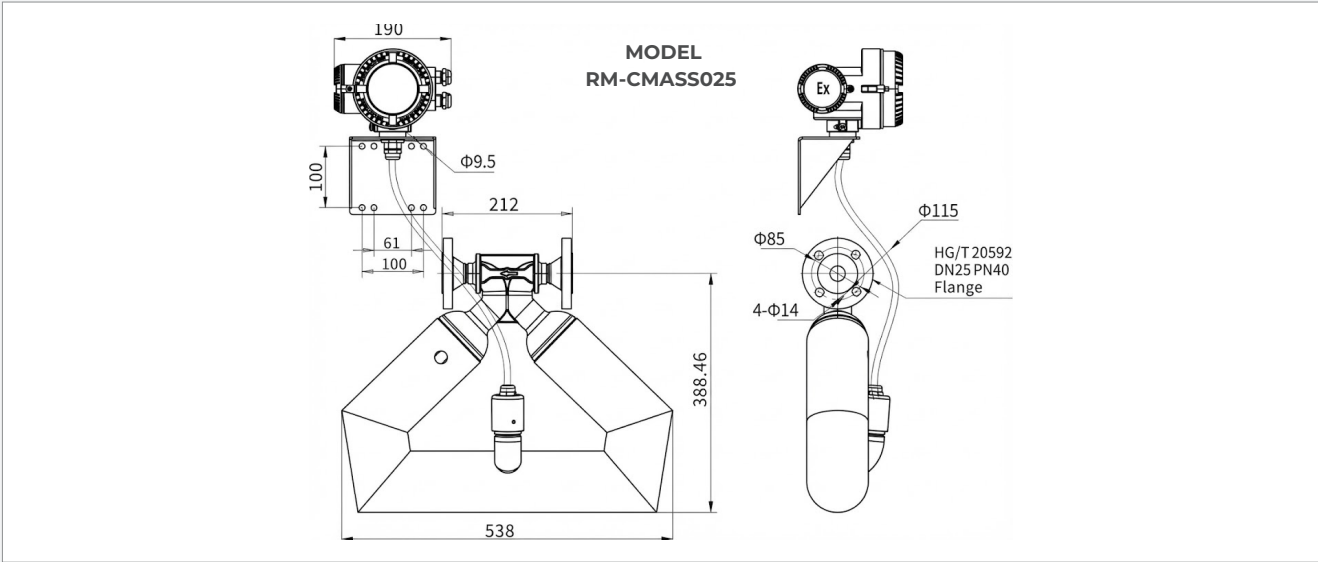
Description

- Precision in Cryogenic Custody Transfer
Accurate measurement of Liquefied Natural Gas (LNG) is critical due to significant volume fluctuations caused by temperature and pressure changes in cryogenic environments. The RM-CMASS025LD Coriolis Mass Flowmeter addresses this challenge by providing direct, dynamic mass flow measurement without the need for complex conversion calculations. Delivering unparalleled precision typically up to $\pm 0.1\%$, it serves as the ultimate standard for custody transfer and trade settlement. This high level of accuracy effectively eliminates financial risks and disputes between buyers and sellers, ensuring transparent and reliable transactions in the high-value energy sector.

- Engineered for Extreme Environments
Designed specifically for demanding cryogenic service, the RM-CMASS025LD operates reliably at temperatures as low as -200°C . Its robust stainless steel construction and specialized low-temperature sealing ensure long-term structural integrity and prevent cold embrittlement in harsh applications such as LNG terminals, peak-shaving plants, and marine bunkering. Beyond mass flow, the device simultaneously monitors medium density and temperature, offering comprehensive process insights. With essential certifications like SIL and explosion-proof ratings, it ensures operational safety and compliance in hazardous industrial locations.



Structure



Model and diameter

MODEL	CMASS025
Nominal diameter	inch 1"
	mm DN25
Medium temp.	-200°C~+150°C
Max.W.P	≤4MPa
Max. flow-rate	kg/min 200
	Lb/min 440

Typical Application Scenarios

- Unloading measurement and tank turnover at LNG receiving terminals
- Large-scale vehicle or ship bunkering at LNG refueling stations
- Custody transfer and trade measurement at liquefaction plants
- Leak detection and inventory management in cryogenic storage tanks
- Flow control of cryogenic media (e.g., liquid nitrogen, liquid oxygen) in chemical processes

Coriolis mass flowmeter
MODEL CMASS025LD LNG



Transmitter Specifications

Certification: Transmitter & Sensor Assembly	CCS Certification, CPA, Explosion proof certificate(ex)
Power Supply	220VAC/24VDC Self-adaption
Output signal	Hart,4 to 20mA current loop active, Modbus RTU/RS-485, Pulse active
Display;Operate	3-line backlight; Touch key control
Protection grade	IP66,IP67
Housing material	304 stainless steel, ZL401 (Transmitter)
Electrical connection	1/2 NPT,M20*1.5
Measuring Tube Material; Wetted Parts Surface Finish	316L (default), titanium/Ha C alloy/ tantalum (optional); polishable.
Process connection	Thread,Flange,Sanitary high-speed interface
Accuracy	±0.1%,±0.15%, ±0.2%, ±0.5 %, ±1.0%
Transmitter software	CLS100 (default), optional CLS200, CLS300
>>Other certifications	Explosion proof certificate, SIL, CCS, 3-A, EAC

1. Enables Accurate Trade Settlement and Prevents Financial Loss

This flow meter delivers unparalleled accuracy (typically up to ±0.1%) and directly measures mass flow (kg/h), the internationally recognized standard for LNG trade settlement. It provides the sole, trustworthy measurement basis for both buyers and sellers,彻底 eliminating financial risks and disputes caused by inaccurate metering.

2. Enhances Process Control and Ensures Production Safety

Real-time, accurate flow data serves as the foundation for DCS/SIS systems to execute equipment interlocking, load adjustment, and tank farm management. Precise control prevents safety hazards such as equipment overload or tank overfilling, ensuring stable and safe operation of the entire facility.

3. Enables Precise Energy Management and Cost Reduction

Provides precise cumulative mass data (in tons or kilograms), enabling enterprises to implement detailed energy management, accurately calculate costs and revenues, and optimize operational strategies.

4. Ensures Compliance with Regulations and Standards, Safeguarding Project Legitimacy

Cryogenic Coriolis flow meters are often the preferred solution to meet these stringent regulatory and certification requirements (such as ATEX explosion-proof and SIL safety ratings), ensuring full compliance and legal integrity for projects.



Key advantages of applying it to liquefied natural gas operating conditions

1. Direct Mass Flow Measurement Without Conversion

This is the core strength of the Coriolis principle. LNG is a cryogenic liquid whose volume fluctuates significantly with minor changes in temperature and pressure. Traditional volumetric flow meters (e.g., turbine, vortex) require complex temperature and pressure compensation systems, and any errors in compensation models are amplified.

2. Structure and Materials Designed for Cryogenic Service

Uses stainless steel or alloy steel with exceptional low-temperature toughness to prevent cold embrittlement.

Employs specialized low-temperature sealing materials (e.g., PTFE, metal bellows seals) to ensure leak-proof reliability.

Typically features insulation jacket ports for external insulation, preventing "cold loss" and ice formation that could compromise electronic components.

4. Multi-Parameter Measurement Capability

Advantage: While measuring mass flow, it simultaneously monitors the density and temperature of LNG.

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