

Corrosion Inhibitor Series CORIOLIS MASS FLOWMETER

High Pressure Mass Flowmeter

ETRANS – CMASS001/CMASS002 Datasheet

Precise Measurement,
Ultimate Control

www.enelean.com



Coriolis Flow Meter

MODEL CMASS001/CMASS002



Application Areas

- Oil & Gas Upstream
- Water Treatment Facilities
- Petrochemical Processing
- Power Generation
- R&D Laboratories

Features

- Ultra-Low Flow Sensitivity: Capable of accurate measurement at micro-flow rates as low as 1 L/h.
- Direct Mass Measurement: Independent of fluid density, temperature, and pressure variations.
- Superior Accuracy: High-precision performance with repeatability for consistent chemical dosing.
- Robust Construction: Features 316L stainless steel wetted parts (Titanium/Hastelloy optional) for harsh environments.
- Maintenance-Free Design: No moving parts in the measuring tube, significantly reducing downtime and wear.
- Intelligent Connectivity: Supports Modbus RTU, HART, and 4-20mA outputs for seamless system integration.
- Explosion-Proof Certified: Designed for safe operation in hazardous industrial zones (ATEX/Ex).

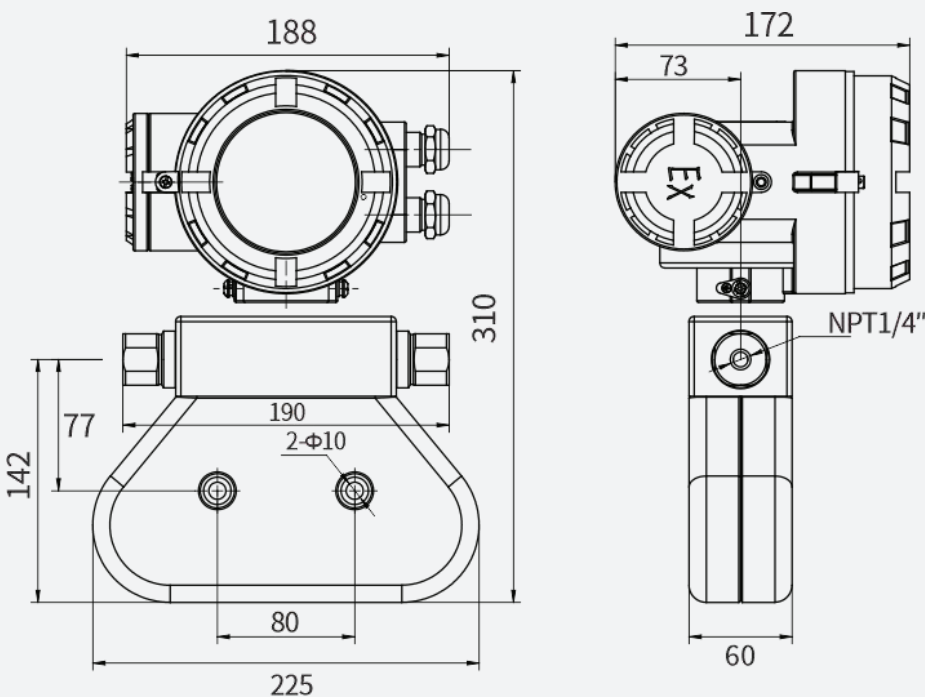
Description

Enelsan sets a new benchmark in precision fluid management with the Etrans-CMASS001 Coriolis Mass Flow Meter, specifically engineered for the most demanding chemical injection applications. By integrating advanced Coriolis sensing technology with industrial-grade durability, Reinmeer ensures that every drop of corrosion inhibitor is measured with absolute accuracy, safeguarding your critical infrastructure against internal degradation while optimizing operational costs.

At Enelsan, we understand that consistency is the backbone of industrial efficiency. The CMASS001PD is designed to eliminate the variables of temperature and density fluctuations, providing direct mass flow measurement even at ultra-low flow rates. Whether integrated into offshore platforms or complex chemical processing units, this instrument embodies Enelsan's commitment to delivering reliable, high-performance solutions for sustainable asset protection.



Diameters



Model and diameter

MODEL	CMASS001
Nominal diameter	inch 1/12"
	mm DN01
Medium temp.	-500°C~+150°C
Max.W.P	≤45MPa
Max. flow-rate	kg/min 0.2
	Lb/min 0.44

Product Core Value

- **Precise Measurement:**Solves the challenge of measuring ultra-low flows as low as 1 L/h, ensuring injection accuracy.
- **Cost Optimization:** Offers the most cost-effective choice while meeting operational requirements.
- **Stability and Reliability:** Direct mass measurement is unaffected by property changes, and the absence of moving parts eliminates maintenance needs.
- **Intelligent Management:** Supports remote data transmission, enabling automation and digitization of processes.

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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
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

The core application of this flow meter is precision chemical injection in medium to low-pressure environments.

- 1. Low-pressure oil and gas pipeline/equipment corrosion inhibitor injection.
Used in oilfield gathering pipelines, low-pressure pipelines within processing plants, storage tanks, separators, and other equipment to inject corrosion inhibitors and prevent internal corrosion.
- 2. Industrial water treatment systems.
Precisely injects corrosion inhibitors, scale inhibitors, and other chemicals into systems such as circulating cooling water and boiler feedwater to prevent scaling and corrosion in pipelines and equipment.
- 3. Chemical process additive injection.
Used for accurately adding trace liquid additives or catalysts during chemical reactions or product formulation processes.
- 4. Laboratory research and testing.
Precisely controls and measures the flow rate of trace liquids in experimental setups.



Core Product Advantages

1. Exceptional micro-flow measurement capability (core advantage)

The flow rate is extremely low, at just 24 L/d (i.e., 1 L/h). This is a critical test of a flow meter's performance. The DN01's small bore and inverted triangular measuring tube design make it the optimal choice for measuring such ultra-low flows. The inverted triangular structure generates a more significant Coriolis effect than U-shaped tubes at extremely low flow rates, offering high sensitivity and ensuring stable and accurate measurement even at 1 L/h.

2. Direct measurement of mass flow (fundamental advantage)

The density of corrosion inhibitors may vary . Coriolis flow meters directly measure mass flow rather than volumetric flow. This means that regardless of fluctuations in chemical density due to temperature changes or batch variations, the measured mass value is absolutely accurate. The weight of the "active ingredient" you inject is precise, which is crucial for ensuring corrosion protection effectiveness and cost control.

3. High accuracy and repeatability

It ensures strict control over the injection volume, preventing both over-injection (wasting expensive chemicals) and under-injection (leading to corrosion protection failure).

4. Optimized cost-effectiveness (advantage of the low-pressure design)

Due to the significantly reduced operating pressure , components such as the meter's housing and seals do not require the extreme reinforcement design of high-pressure models. This typically results in better cost control while ensuring performance and quality, saving customers procurement costs and offering a more economical and cost-effective choice.

Contact us

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