High-Precision Corrosion-Resistant Gear Flow Meter

ESPL Series

Product Description

Designed for precise flow measurement, the volumetric flow meter is suitable for continuous or intermittent monitoring of liquid flow or instantaneous flow in pipelines. It performs reliably in high-viscosity, high-pressure environments such as heavy oil, polyvinyl alcohol, resin, and similar conditions. Capable of accurately measuring even small flow rates, it meets the high-precision monitoring needs of a wide range of industries.

Applicable Liquids Include Water, oil products, food-grade lubricants, chemical agents, cosmetics, fertilizers, ink, pharmaceutical ingredients, coatings, petroleum products, automotive fluids, adhesives, polyurethane, electrolytes, and various additives.

Principle of Operation & Structure

The volumetric flow meter contains a pair of precision-meshed gears that serve as rotors. These gears, together with the chamber, form a fixed unit of volume known as the standard volume. As liquid flows through the meter, it drives the gears to rotate. By counting the number of standard volumes passing through over time, the flow rate can be measured accurately.

Features

- **Ideal for High-Viscosity and Highly Corrosive Media:** The higher the viscosity, the less leakage occurs through the gear and chamber gaps, resulting in reduced measurement error and improved accuracy. Under normal temperature conditions, media with a pH range of 2 to 12 can be used reliably, demonstrating excellent chemical compatibility and corrosion resistance.
- **Compact & Lightweight:** Quiet and low-vibration operation. Suitable for measuring high-viscosity fluids. Offers high accuracy up to ±0.3%(F.S) and a wide turndown ratio of up to 100:1.
- **Standard Model:** Designed for precise measurement of small flow rates of clean liquids.
- **No Straight Pipe Required:** Flexible installation in limited spaces.
- **Suitable for Pulsating Flow:** Handles unsteady or intermittent fluid flows effectively.
- **Supports Micro-Dosing:** Ideal for short-duration, small-quantity dosing or filling.

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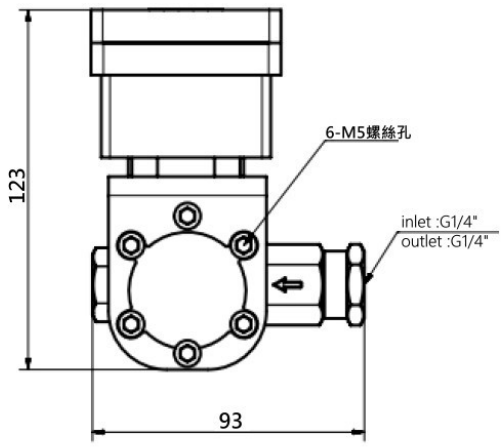
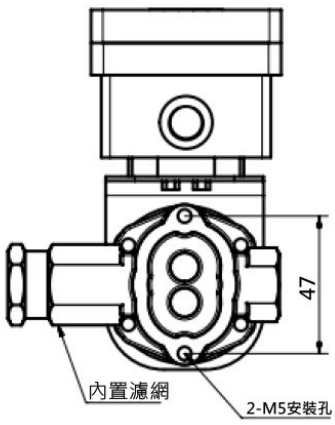
Specifications

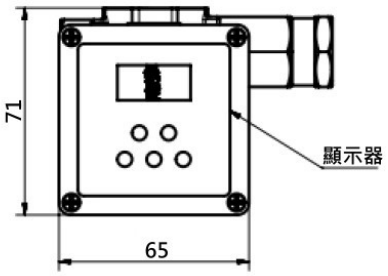
Type	ESPL50	ESPL500	ESPL1700	ESPL4600
Flow Range	15-900 mL/min	150-9000 mL/min	500-30000 mL/min	1300-83000 mL/min
Pulse Frequency	0.25 mL/p	2.5 mL/p	8.5 mL/p	23 mL/p
Port Size	G1/4”	G1/4”	G1/2”	G1”
Work Pressure(bar)	200	200	50	50
Accuracy(F.S)	*0.5%			
Temp.	-40~80℃(available on request from -40°C up to 120°C)			
Medium	Water, oil products, food-grade lubricants, chemical agents, cosmetics, fertilizers, ink, pharmaceutical ingredients, coatings, petroleum products, automotive fluids, adhesives, polyurethane, electrolytes, and various additives and other types of high-viscosity(800,000 cP) media.			
Output Signal	4-20mA			
Supply	5-24VDC			
Body Material	Stainless Steel			
Gear Material	PPS			
For ESPL1700: Water fluid Accuracy: 1% of reading within turndown ratio of 1: 10 (3000-30000) 0.5% F.S outside turndown ratio (500-3000).				

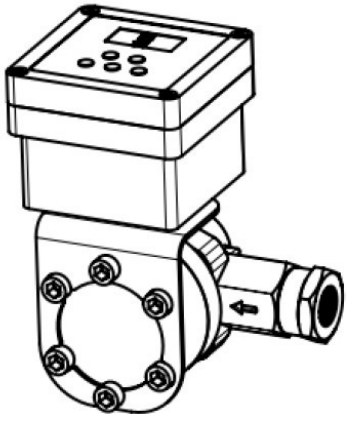
Dimensions

ESPL50









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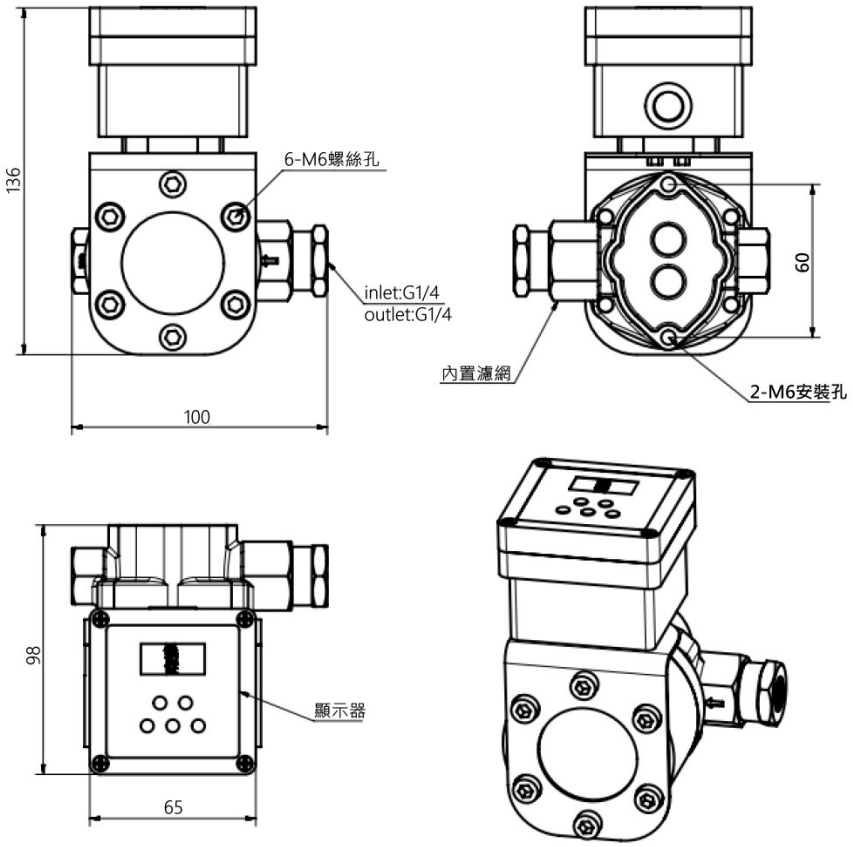
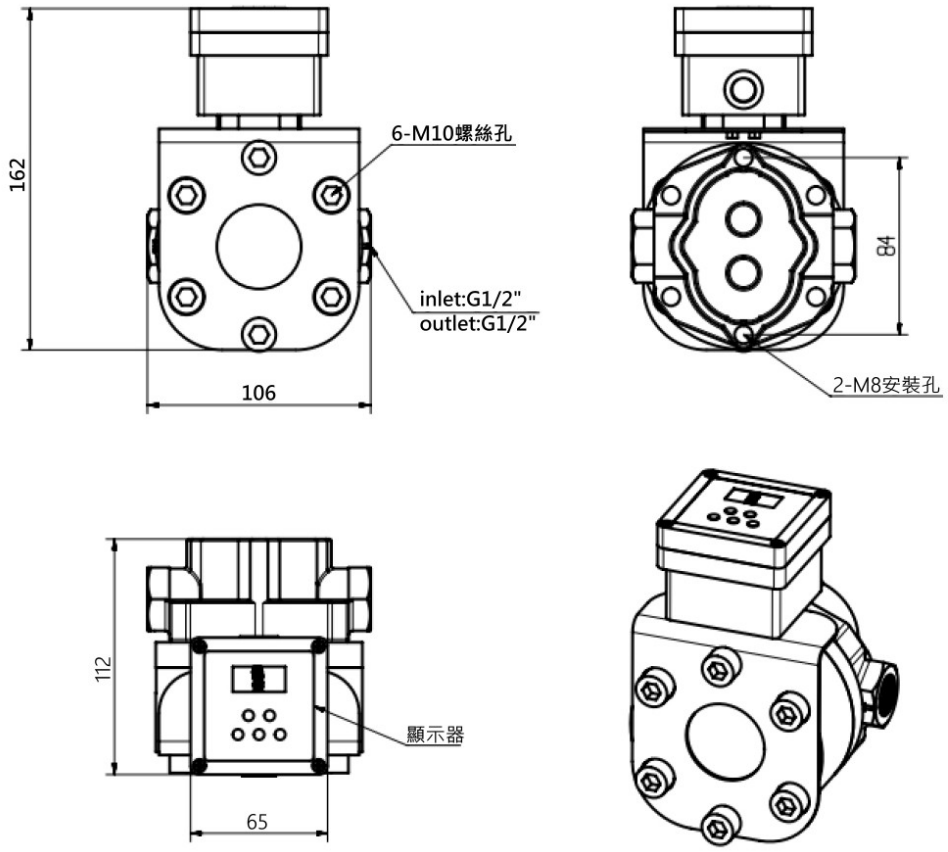
Dimensions

ESPL500



ESPL1700



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Dimensions

ESPL4600