



PRODUCT CATALOG



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Flow Instrument Series

- Electromagnetic Flow Meter Series
- Electromagnetic Heat Meter
- Vortex Flow Meter Series
- Turbine Flow Meter Series
- Coriolis Mass Flowmeter



Overview

Electromagnetic flowmeters are designed exclusively for measuring the flow of conductive liquids. They are not suitable for measuring gases, oils, or other non-conductive fluids such as organic chemical liquids.

Suitable applications include:

- Industrial wastewater
- Clean water
- Industrial process water
- Slurry
- Seawater
- Acids
- Alkalis
- Salt solutions
- Hydrochloric acid
- Mud and other conductive liquids

Features

- Adopts SMD components and Surface Mount Technology (SMT) for high circuit reliability.
- No moving parts or flow obstruction inside the measuring tube, resulting in virtually no additional pressure loss.
- Measuring range can be modified online according to actual application requirements.
- High-definition backlit LCD display with a full English menu for convenient operation.
- Optional digital communication outputs including RS485, Pulse Output, and HART Protocol.
- Built-in self-test and self-diagnostic functions.
- Three internal totalizers independently display:
 - Forward total flow
 - Reverse total flow
 - Net total flow
- Optional power-off clock capable of recording up to 16 power failure events.
- Measurement is unaffected by changes in:
 - Fluid density



- o Viscosity
 - o Temperature
 - o Pressure
 - o Conductivity
- No obstruction inside the measuring tube, resulting in low pressure loss and minimal straight pipe requirements.
- Excellent performance for slurry measurement.
- Proper selection of electrode and liner materials provides excellent corrosion resistance and wear resistance.
- Fully digital signal processing with strong anti-interference capability, ensuring reliable measurement and high accuracy.
- Flow measurement range up to 10:1.
- Equipped with a 16-bit embedded microprocessor featuring high-speed processing and programmable low-frequency rectangular-wave excitation, improving measurement stability while reducing power consumption.



Integrated / Remote Type Electromagnetic Flowmeter



Technical Specifications

Item	Specification
Nominal Diameter	DN6 mm – DN3000 mm
Nominal Pressure	0.6 – 4.0 MPa (Special pressure ratings available upon request)
Accuracy	±0.5% of reading (Optional ±0.3% or ±0.2%)
Lining Materials	Neoprene Rubber, Polyurethane Rubber, Silicone Fluorine Rubber, PTFE, F46, PFA
Electrode Types	Standard, Scraper Type, Replaceable Type
Electrode Materials	SUS316, Hastelloy B, Hastelloy C, Titanium, Tantalum, Platinum-Iridium Alloy, Stainless Steel with Tungsten Carbide Coating
Medium Temperature	Integrated Type: -20°C to +70°C
	Remote Type (Neoprene / Polyurethane): -20°C to +60°C
	Remote Type (PTFE / PFA / F46 / Silicone Fluorine Rubber): -40°C to +180°C
Ambient Temperature	-25°C to +60°C
Medium Conductivity	≥20 μS/cm
Measuring Range	1500:1
Flow Velocity Setting	<15 m/s
Structure	Integrated Type, Remote Type, Submersible Type, Explosion-proof Type
Protection Rating	IP65 / IP67 / IP68 (Optional)
Explosion-proof Rating	Ex md IIC T4
Product Standard	JB/T 9248-1999 Electromagnetic Flowmeter

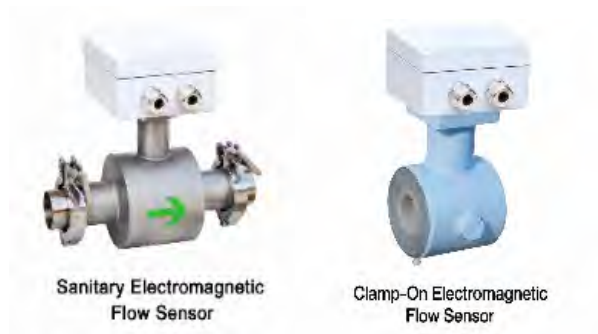
Insertion Electromagnetic Flowmeter

Technical Specifications

Item	Specification
Nominal Diameter	DN100 mm – DN3000 mm
Pressure Rating	1.6 MPa, 2.5 MPa
Measuring Tube Material	Carbon Steel, SUS304 Stainless Steel, Fiberglass Reinforced Plastic (FRP), Cement Pipe
Sensor Probe Material	ABS
Connection Type	Flanged Connection, Threaded Connection



Sanitary / Clamp Type Electromagnetic Flow Sensor



Technical Specifications

Item	Specification
Nominal Diameter	DN6 mm – DN200 mm
Nominal Pressure	0.6 – 1.6 MPa
Structure	Integrated Type, Remote Type, Submersible Type, Explosion-proof Type

High Pressure Electromagnetic Flow Sensor



Technical Specifications

Item	Specification
Nominal Diameter	DN25 mm – DN250 mm
Nominal Pressure	6.3 MPa, 10 MPa, 16 MPa, 25 MPa, 42 MPa
Connection Type	Flanged Connection, Hammer Union Connection



Battery Powered Electromagnetic Flowmeter



Technical Specifications

Item	Specification
Nominal Diameter	DN6 mm – DN600 mm
Nominal Pressure	1.0 MPa, 1.6 MPa, 2.5 MPa, 4.0 MPa
Flange Standard	GB9119 (Standard), Carbon Steel (Optional Stainless Steel)
Battery Life	More than 3 years (Two batteries, HZ response)



Electromagnetic Heat Meter

Technical Specifications

Item	Specification
Nominal Diameter	DN15 mm – DN2200 mm
Nominal Pressure	1.0 MPa, 1.6 MPa, 2.5 MPa, 4.0 MPa
Flange Standard	GB9119 (Standard), Carbon Steel (Optional Stainless Steel)

The Electromagnetic Heat Meter is developed based on the split-type electromagnetic flowmeter and is additionally equipped with a PT1000 temperature sensor to provide heat energy measurement and display functions.

Lining Material – Main Performance

Lining Material	Main Performance	Application Range
Neoprene Rubber	1. Excellent elasticity, high tensile strength, good wear resistance. 2. Resistant to general low-concentration acids, alkalis, and salt solutions; not resistant to oxidizing media.	1. Temperature resistance: 80°C, 120°C (special order) 2. Suitable for water, wastewater, low-abrasion slurry and ore pulp
Polyurethane Rubber	1. Excellent abrasion resistance (about 10 times that of natural rubber). 2. Poor resistance to acids and alkalis. 3. Not suitable for water containing organic solvents.	1. <80°C 2. Neutral, highly abrasive slurry such as mineral slurry, coal slurry, mud
Silicone Fluorine Rubber	1. Good elasticity, high tensile strength, high temperature resistance. 2. Not resistant to acids, alkalis, and salts of any concentration.	Water applications, temperature range: -20°C ~ +180°C
PTFE (Polytetrafluoroethylene)	1. Most chemically stable plastic material. Resistant to boiling hydrochloric acid, sulfuric acid, nitric acid, aqua regia, concentrated alkali, and most organic solvents. 2. Poor wear resistance.	Strong corrosive media such as strong acids and alkalis. Temperature range: -40°C ~ +170°C
FEP (F46)	1. Corrosion resistance similar to PTFE. 2. Better wear resistance. 3. Strong negative pressure resistance.	Same as PTFE, suitable for low-abrasion media. Temperature range: -40°C ~ +160°C
PFA	Excellent corrosion resistance similar to PTFE, strong negative pressure resistance.	Suitable for vacuum/negative pressure conditions. Temperature range: -40°C ~ +160°C

Electrode Material – Corrosion Resistance Table

Electrode Material	Corrosion Resistance
SUS316	Suitable for industrial water, domestic water, wastewater and weakly corrosive media. Widely used in petroleum, chemical, urea, and fiber industries.
Hastelloy B (HB)	Excellent resistance to all concentrations of hydrochloric acid below boiling point.

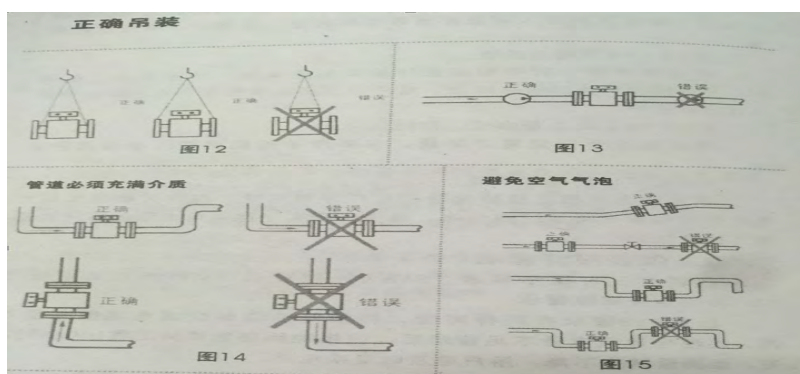


	Also resistant to sulfuric acid, phosphoric acid, hydrofluoric acid, organic acids, alkalis, and non-oxidizing salts.
Hastelloy C (HC)	Resistant to oxidizing acids such as nitric acid, mixed acids, and chromium-sulfuric acid mixtures. Also resistant to oxidizing salts such as Fe^{3+} , Cu^{2+} , seawater, and hypochlorite solutions at elevated temperatures.
Titanium (Ti)	Resistant to seawater, chlorides, hypochlorites, oxidizing acids (including fuming nitric acid), organic acids, and alkalis. Not resistant to pure reducing acids (e.g., sulfuric acid, hydrochloric acid), unless oxidizing agents are present.
Tantalum (Ta)	Extremely high corrosion resistance, similar to glass. Resistant to nearly all chemical media except hydrofluoric acid, fuming sulfuric acid, and strong alkalis.
Platinum-Iridium Alloy	Suitable for almost all chemical media except aqua regia and ammonium salts.
Stainless Steel with Tungsten Carbide Coating	Used for non-corrosive but highly abrasive media.

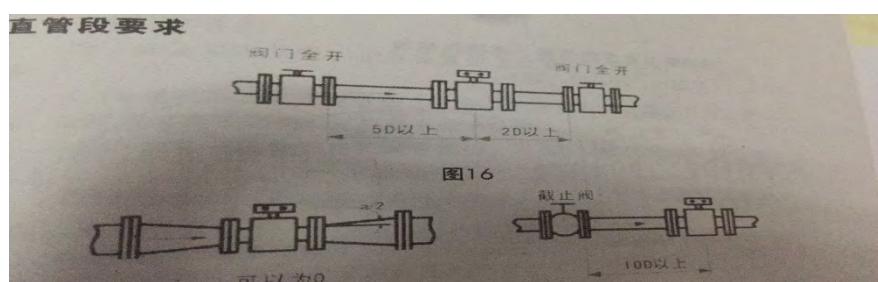
Note: Due to the wide variety of media and complex influencing factors such as temperature, concentration, and flow velocity, the above data is for reference only. Final material selection should be based on actual working conditions and corrosion testing if necessary.

Installation Guidelines for Instruments

- The flowmeter must not be installed on the suction side of a pump (to avoid vacuum conditions).



Straight Pipe Length Requirements





Installation Location Requirements

To ensure stable and reliable operation of the sensor, the following installation conditions must be observed:

1. Avoid installation near ferromagnetic materials and strong electromagnetic devices (e.g., large motors, transformers) to prevent interference with the magnetic field and signal.
2. Install in a dry, ventilated area; avoid humid or water-prone environments.
3. Piping modification: If flow velocity is insufficient, use a smaller diameter flowmeter or modify the pipeline. Straight pipe requirements must be:
 - o Upstream: ≥ 10 DN
 - o Downstream: ≥ 5 DN
(DN = pipe diameter)
4. Avoid direct sunlight, rain exposure, ambient temperature above 60°C, or relative humidity above 95%.
5. The flowmeter should be installed downstream of the pump. It must never be installed on the suction side. Valves should be installed downstream of the flowmeter.
6. Select a location that allows easy maintenance and operation.



Overview

Vortex flowmeters are capable of measuring gases, steam, compressed air, liquids (water), saturated steam, and superheated steam.

Note: The original description refers to electromagnetic flowmeter; here it is corrected in terminology contextually to vortex flowmeter application scope without changing meaning of measured media.

Field Display Flange Clamp / Flanged Vortex Flowmeter

Technical Specifications

- Pipe Diameter: DN15 – DN300
- Measured Media: Superheated steam, saturated steam, general gases, liquids
- Nominal Pressure: 1.6 MPa, 2.5 MPa, 4.0 MPa and above
- Medium Temperature: -40°C ~ 350°C
- Pressure Loss: Drag coefficient $c_d \leq 2.4$
- Output: 4–20 mA (for DCS/PLC or secondary instruments)
- Power Supply: 12V–24V or 3.6V lithium battery
- Communication: RS485 and HART, compatible with control systems or computers



Compensated Flange Clamp / Flanged Vortex Flowmeter

Technical Specifications

- Pipe Diameter: DN15 – DN300
- Temperature and pressure compensated vortex flowmeter
- Mainly used for:
 - Saturated steam mass flow measurement
 - Standard gas volume flow and mass flow measurement

Insertion Type / Simple Insertion Vortex Flowmeter (Ball Valve Type)

Technical Specifications

- Pipe Diameter: DN150 – DN2000



- Pressure Loss: Drag coefficient $c_d \leq 2.4$
- Battery powered field display
- No external power supply required

Split Type / Split Temperature & Pressure Compensated Vortex Flowmeter

Technical Specifications

- Pipe Diameter: DN15 – DN300
- Display unit and sensor are separated and connected via shielded cable
- Output pulse signal can be connected to flow totalizer

Flow Velocity – Flow Rate Reference Table

Instrument

Pipe Diameter (mm)	Liquid Flow Range (m ³ /h)	Output Frequency Range (Hz)	Gas/Steam Flow Range (m ³ /h)	Output Frequency Range (Hz)
20	1–7	37–260	6–30	226–1130
25	1.6–10	32–214	9–55	190–1178
32	2.1–15	17–150	15–130	150–1296
40	2.5–25	13–130	22–200	115–1011
50	3.5–35	9–93	36–320	96–854
65	6.5–68	8–82	50–480	61–583
80	10–100	6–65	75–628	45–402
100	15–150	5–50	130–1100	43–367
125	27–275	5–47	200–1700	33–290
150	40–350	4–33	280–2240	27–221
200	80–650	3–26	580–4200	24–167
250	120–950	3–19	970–5500	20–112
300	180–1800	2–22	1460–8000	17–95
(400)	180–3000	5.6–87	2750–27000	85–880
(500)	300–4500	5.6–88	4300–43000	85–880
(600)	450–6500	5.7–89	6100–61000	85–880
(800)	750–10000	5.7–88	11000–110000	85–880
(1000)	1200–17000	5.8–88	17000–170000	85–880



Overview

- **Liquid turbine flowmeters** are mainly used for low-viscosity and relatively non-corrosive liquids, such as:
 - o Clean water
 - o Alcohol
 - o Diesel oil
 - o Other similar liquids
- **Gas turbine flowmeters** are mainly used for gas measurement, such as:
 - o Natural gas
 - o Air
 - o Biogas
 - o Carbon dioxide (CO₂)
 - o Nitrogen (N₂)
 - o Oxygen (O₂)
 - o Compressed air and other gases



Turbine Sensor / Liquid Turbine Transmitter / Gas Turbine Transmitter

Technical Specifications

- **Pipe Diameter & Connection Type:**
 - o Threaded connection: 4, 6, 10, 15, 20, 25, 32, 40 mm
 - o Flanged connection: 15, 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200 mm
- **Accuracy:** $\pm 1\%$ R
- **Rangeability:** 1:10, 1:15, 1:20
- **Body Material:** 304 Stainless Steel
- **Medium Temperature:** -20°C ~ +80°C
- **Ambient Conditions:**
 - o Temperature: -10°C ~ +55°C
 - o Relative Humidity: 5% ~ 90%
 - o Atmospheric Pressure: 86 ~ 106 kPa



Output Signal

- Sensor output: Pulse frequency signal
 - Low level $\leq 0.8\text{ V}$
 - High level $\geq 8\text{ V}$
- Transmitter output:
 - Two-wire 4–20 mA DC current signal

Power Supply

- +12 VDC / +24 VDC (optional)
- Field display powered by built-in 3V lithium battery or external 24V DC supply

Signal Transmission

- Cable type: STVPV 3×0.3 (three-wire system)
- Two-wire system: 2×0.3
- Transmission distance: $\leq 1000\text{ m}$

Signal Interface

- Basic type: Hausmann connector or integrated 3-core cable
- Explosion-proof type: M20×1.5

Explosion Protection

- Basic type: Non-explosion-proof
- Explosion-proof type: Ex d IIB T6

Protection Rating

- IP65



Liquid Turbine Flowmeter Flow Velocity Table

DN (mm)	Flow Range (m³/h)	Accuracy Class	Pressure (MPa)
15	0.4–4	1%	16
25	1.2–12	1%	—
40	3–30	1%	—
50	5–50	1%	6.3 / 2.5
80	12–120	1%	—
100	20–200	1%	—
150	40–400	1%	—
200	80–800	1%	2.5
250	120–1200	1%	—
300	—	1%	—
400	—	1%	—
500	—	1%	—

Gas Turbine Transmitter Flow Velocity Table

DN (mm / inch)	Flow Range (m³/h)	Starting Flow (m³/h)	Working Pressure (MPa)	Installation Type
25 (1")	2–40	0.6	4.0	Flange (Thread)
40 (1.5")	3–60	0.8	4.0	Flange (Thread)
50 (2")	3–100	1	4.0	Flange
80 (3")	6–200	2.5	1.6	Flange
100 (4")	8–300	2.5	1.6	Flange
150 (6")	10–1000	4	1.6	Flange
200 (8")	18–2500	8	1.6	Flange
250 (10")	25–3000	12	1.6	Flange
300 (12")	30–4000	16	1.6	Flange



Features

- Uses frequency-domain digital signal processing technology, with no drift over time or temperature.
- Fully digital closed-loop control technology ensures excellent stability.
- Patented vibration coupling isolation technology provides strong anti-interference capability.
- Easy operation and simple maintenance, equipped with integrated transmitter.



Applications

This product is suitable for measuring almost all fluids without solid particles, widely used in:

- Petroleum industry
- Chemical industry
- Food industry
- Environmental protection industry
- Other industrial process control applications

Technical Parameters

- **Nominal Diameter (mm):** DN001 – DN150
- **Flow Range (kg/h):** 0.5 – 290000
- **Accuracy:** $\pm 0.1\%$, Repeatability: $\pm 0.05\%$
- **Density Measurement Range (g/cm³):** 0 – 3.0
- **Density Accuracy:** ± 0.005
- **Operating Temperature Range (°C):** -60°C ~ +150°C
- **Explosion Protection:** Ex d ib IIC T6 Gb
- **Power Supply:** Adaptive power supply, 22VDC – 245VAC
- **Output Interface:** 0–10 kHz, 4–20 mA, RS485, HART

Flow Range Table



Model	Flow Range (kg/h)	Error (%)	Zero Stability (kg/h)	Wetted Material
TCD001	10	$\pm 0.2 / \pm 0.5$	0.0008	316L Stainless Steel
TCD003	260	$\pm 0.15 / \pm 0.2$	0.012	316L Stainless Steel
TCD008	1800	$\pm 0.15 / \pm 0.2$	0.090	316L Stainless Steel
TCD015	3000	$\pm 0.15 / \pm 0.2$	0.150	316L Stainless Steel
TCD025	7000	$\pm 0.15 / \pm 0.2$	0.320	316L Stainless Steel
TCD050	35000	$\pm 0.15 / \pm 0.2$	1.800	316L Stainless Steel
TCD080	75000	$\pm 0.15 / \pm 0.2$	5.500	316L Stainless Steel
TCD100	295000	$\pm 0.15 / \pm 0.2$	15.000	316L Stainless Steel
TCD150	635000	$\pm 0.15 / \pm 0.2$	32.150	316L Stainless Steel

FINAL NOTE (Catalog Completion)

This concludes the Flow Instrument Product Catalog including:

- Electromagnetic Flowmeters
- Vortex Flowmeters
- Turbine Flowmeters
- Coriolis Mass Flowmeters
- Technical parameters, materials, installation and application data