

## FME800 Series Electromagnetic Flowmeter

### OVERVIEW

FME800 series intelligent electromagnetic flowmeter is a new generation of fully intelligent flowmeter developed by our company based on Faraday electromagnetic induction principle. The electromagnetic flowmeter can not only measure the volume flow of conductive liquid, but also measure the volume flow of corrosive liquid such as strong acid and alkali, and even liquid-solid two-phase suspension liquid such as mud, pulp and pulp. It is widely used in the fields of petroleum, chemical industry, metallurgy, textile, pharmacy, food and beverage, paper making, electric power, urban water supply and drainage and environmental protection.

### MAIN FEATURES

- Adopt high reliable EMI switching power supply, adapt to wide range of power supply voltage changes
- It adopts SMD high-precision components, SMT mounting technology and three-layer insulation protection to improve the reliability of the circuit
- There are no movable parts, mainstream parts, long service life and pressure loss in the sensor
- The flow signal has a linear relationship with the average flow rate and is not affected by the change of fluid density, viscosity, temperature, pressure and conductivity
- High definition backlit LCD display, which can simultaneously display instantaneous flow, cumulative flow, flow percentage, flow rate, etc
- The flowmeter is a two-way measurement system, which can automatically identify the positive flow and the directional flow, and make cumulative records
- There are three Totalizers in the instrument, which can record the total amount of forward, reverse and difference respectively
- With a variety of current signal, pulse signal and frequency signal output
- It has the function of automatic diagnosis and alarm of instrument fault
- With RS485, RS232, Hart, MODBUS and other digital communication signal output (optional)
- Power down time recording function, automatic recording of interruption time of instrument system power supply, supplementary calculation of missing meter flow (optional)
- Hourly total volume recording function, recording flow weight in hours, applicable to time sharing measurement system (optional)
- Infrared hand-held operator, all functions of remote non-contact operation converter (optional)

### SPECIFICATION

Nominal diameter	DN2-DN2200mm
Nominal pressure	DN2-DN150 ≤1.6MPa DN200-DN1000 ≤1.6MPa DN1100-DN2200 ≤0.6MPa 10-42MPa(special customized)
Accuracy	±0.5%, ±1.0%
Repeatability	0.10%
Dielectric conductivity	Conductive medium (conductivity ≥ 5μS / cm)
Maximum medium temperature	FEP or F46 < 160 ° C Neoprene (CR) < 60 ° C PTFE lining (PTFE or F4) < 180 ° C Polyurethane rubber (PU) < 40 ° C
Power supply	Single phase AC 85-250V (45-63Hz) or DC 20-36VDC
Output signal	4-20mA / 0-10mA current output, pulse / frequency output, switch signal output (optional);
Communication mode	RS485, RS232, MODBUS protocol, HART Protocol (optional)
Protection level	IP65, IP68
Ambient temperature	-30°C~ 60°C
Ambient humidity	5% ~ 95%
Power dissipation	Less than 20W

## MODEL TYPES

Model FME801

Standard Type



- *Design for most application, flange connection type, high performance*
- Diameter: DN10-DN2200mm
- Lining: FEP (DN10-DN500), Chloroprene Rubber, PU (DN10-DN500)
- Accuracy: 0.5% of Reading
- Flow sensor housing material: Cast aluminum (DN10-DN100); Carbon steel (DN125-DN2200)
- Temperature class: 80 ° C; 120 ° C; 180 ° C
- Protection class: IP65 (standard); IP68 (optional); IP67 (optional)
- Power supply: 85-240VAC; 20-36VDC; Lithium battery

Model FME802

Wafer Type



- *Wafer connection type, suitable for different flange dimension*
- Diameter: DN25-DN200mm
- Lining: FEP
- Accuracy: 0.5% of Reading
- Flow sensor housing material: Carbon steel
- Temperature class: 80 ° C
- Protection class: IP65
- Power supply: 85-240VAC; 20-36VDC

Model FME803

Sanitary Type



- *Design for food and beverage industry, made by stainless steel*
- Diameter: DN3-DN150mm
- Lining: FEP
- Connection: Tri-clamp, Thread (DIN11851), Customized
- Flow sensor housing material: SS304 (standard); SS316 (optional.)
- Temperature class: 80 ° C; 120 ° C; 180 ° C
- Power supply: 85-240VAC; 20-36VDC

Model FME804

Stainless Steel Type



- *High performance, polished stainless steel, full welding*
- Flow transmitter: MT200 (standard); MT200HD (optional)
- Diameter: DN10-DN200mm.
- Lining: FEP
- Flow sensor housing material: SS304 (standard.); SS316 (optional)
- Temperature class: 80 ° C; 120 ° C; 180 ° C
- Protection class: IP65 (standard.); IP68 (optional); IP67 (optional)
- Power supply: 85-240VAC; 20-36VDC; Lithium battery

Model FME805

High Pressure Type



- *Design for high pressure application, such as oil field water injection, offshore platform.*
- Diameter: DN10-DN200mm
- Working pressure: PN6 4MPa, PN10MPa, PN20MPa, PN32MPa, PN42MPa
- Lining: FEP, PU
- Temperature class: 80 ° C; 120 ° C; 180 ° C
- Protection class: IP65 (standard); IP68 (optional); IP67 (optional)
- Power supply: 85-240VAC; 20-36VDC; Lithium battery

Model FME806

Insertion Type



- **Design for large pipeline flow detection, not need to be cut off pipe**
- Diameter: DN80~DN500, DN600~DN1000, DN1200~DN1400
- Working pressure:1.6Mpa
- Measuring range: 0 ~0.5 ~10 m/s
- Temperature class: 80 ° C, 120 ° C; 180 ° C
- Protection class: IP65 (standard); IP68 (optional); IP67 (optional)
- Power supply: 85-240VAC; 20- 36VDC

Model FME807

Water Meter Type



- **Design for portable water industry**
- Diameter: DN25-DN1200mm
- Lining: FEP (DN25-DN500), Chloroprene Rubber (DN65-DN1200)
- Battery life time: up to 5 years
- Accuracy: 0.5% of Reading
- Protection class: IP65 (std.); IP68 (opt.).
- Power supply: Lithium battery
- Signal output: calibration pulse output (std.); RS485 (opt.), GSM/GPRS/CDMA (opt.)

Model FME808

Split Type



- **Design for distance operation, away from harsh environment**
- Diameter: DN10-DN2000(mm)
- Working pressure:DN6-DN50,PN<4.0MPA; DN65-DN150,PN<1.6MPA;DN200-DN600,PN<1.0MPA; DN700- DN2000,PN<0.6MPA
- Measuring range: 1.0-10000(m3/h)
- Temperature class: 80 ° C (converter ), 120 ° C; 180 ° C
- Protection class: IP65 (standard); IP68 (optional); IP67 (optional)
- Power supply: 85-240VAC; 20- 36VDC

**FLOW RANGE**

DN(mm)	10	15	20	25	32	40	50	65
Lower Limit flow rate(m3/h)	0.14	0.3	0.5	0.8	1.4	2	3	5
Upper Limit flow rate(m3/h)	2.8	6	10	16	28	40	60	100
DN(mm)	80	100	125	150	200	250	300	350
Lower Limit flow rate(m3/h)	7	10	15	25	45	70	100	120
Upper Limit flow rate(m3/h)	140	200	300	500	900	1400	2000	2400
DN(mm)	400	450	500	550	600	700	800	900
Lower Limit flow rate(m3/h)	160	200	250	300	350	500	600	800
Upper Limit flow rate(m3/h)	3200	4000	5000	6000	7000	10000	12000	16000
DN(mm)	1000	1100	1200	1400	1600	1800	2000	2200
Lower Limit flow rate(m3/h)	1000	1200	1400	2000	2500	3200	4000	4800
Upper Limit flow rate(m3/h)	19600	24000	28000	40000	50000	64000	80000	96000

### ELECTRODE MATERIAL

Material	Corrosion Resistance
316L	Application: 1. Domestic water, industrial water, raw water, well water, urban sewage 2. Weak corrosive acid, alkali and salt solution
Hastelloy B	Application: 1. Non oxidizing acids such as hydrochloric acid (concentration less than 10%) 2. Sodium hydroxide (concentration less than 50%), ammonium hydroxide alkali solution of all concentrations 3. Phosphoric acid, organic acid Not applicable; nitric acid
Hastelloy C	Application: 1. A mixture of acids, such as chromic acid and sulfuric acid 2. Oxidizing salts such as Fe + + +, Cu + +, seawater Not applicable: hydrochloric acid
Titanium	Application: 1. Salt, such as: (1) chloride (chloride / magnesium aluminum / calcium / ammonium / iron, etc.) (2) Sodium salt, potassium salt, hypochlorite, sea water 2. Concentration less than 50% potassium hydroxide, amine hydroxide, barium hydroxide alkali solution Not applicable: hydrochloric acid, sulfuric acid, phosphoric acid, hydrofluoric acid and other reducing acids
Tantalum	Application: 1. Hydrochloric acid (concentration less than 40%), dilute sulfuric acid and concentrated sulfuric acid (excluding fuming sulfuric acid) 2. Chlorine dioxide, ferric chloride, hypochlorite, sodium cyanide, lead acetate, etc 3. Oxidizing acids such as nitric acid (including fuming nitric acid), aqua regia with temperature lower than 80 ° C Not applicable: alkali, hydrofluoric acid
Platinum	Application: almost all acid, alkali and salt solutions (including fuming sulfuric acid and fuming nitric acid) Not applicable: aqua regia, ammonium salt
Tungsten carbide	Application: pulp, sewage, anti-interference of solid particles Not applicable: inorganic acid, organic acid, chloride

### LINING MATERIAL

Lining Material	Main Performance	Application
Poly (perfluoroethylene propylene) FEP or F46	The material has the corrosion resistance of polytetrafluoroethylene, the strong adhesion to metal and excellent negative pressure resistance	1.< 160°C 2. Strong corrosive media such as acid, alkali and salt 3. Sanitary media 4. Diameter range: DN10-500
CR or neoprene	1. Excellent elasticity, high tensile strength and good wear resistance 2. It is resistant to the general low concentration of acid, alkali and salt, and not resistant to the corrosion of oxidizing medium	1. < 60 °C 2. Tap water, industrial water, sea water, sewage, mud and slurry 3. Caliber range: DN50-2200
PTFE or F4	1.It is very stable in chemical properties and can withstand boiling hydrochloric acid, sulfuric acid, nitric acid and aqua regia, as well as concentrated alkali and various organic solvents 2. Poor wear resistance and adhesion	1.< 160 °C 2. Strong corrosive media such as acid, alkali and salt 3. Sanitary media 4. Caliber range: DN50-500
Polyurethane rubber PU	1. Excellent corrosion resistance (equivalent to ten times of natural rubber) 2. Poor acid and alkaline resistance	1. < 40 °C 2. Neutral and strong wear mineral slurry, coal slurry and slurry 3. Caliber range: DN25-1200

**ORDER GUIDE**

FME Series	Parameter	Explanation	Order Code
A	Types	801: Standard Type 802: Wafer Type 803: Sanitary Type 804: Stainless Steel Type 805: High Pressure Type 806: Insertion Type 807: Water Meter Type 808: Split Type	801
B	Caliber	DN2-2200mm	Please choose specific diameter needed
C	Electrode material	L: 316L      V: Titanium      T: Tantalum H: Hastelloy alloy      M: Monel P: Platinum iridium alloy      O: Other customized	T
D	Lining material	C: Neoprene (DN50-2200) F: FEP (DN10-500) T: PTF1 (DN50-500) P: Polyurethane (DN25-1200) O: Other customized	C
E	Connection mode	F: Carbon steel flange connection S: 304 stainless steel flange connection T: Threaded connection (DN10-50) W: Clamping type (DN10-dn200) C: Clamp type (DN10-150) O: Other customized	F
F	Working pressure	U: GB PN. 0.6, 1.0, 1.6, 2.0, 2.5, 4.0, 16, 25, 35, 42MPa A: American Standard CL150, CL300, CL600, CL900, CL1500, CL2500 J: Japanese standard 10K, 20K, 30K	U
G	Sensor housing material	C: Carbon steel shell A: Aluminum die casting shell S: 304 stainless steel painting shell P: 304 stainless steel polished shell	C
H	Working temperature	L: <60°C S: < 120°C (split type) H: < 160°C (split type)	S
I	Protection level	A: IP65 B: IP68 (split type)	A
J	Power Supply	A: 220VAC B: 24VDC C: Battery powered (no output signal)	B
K	Display	W: Field display N: No field display	W
L	Output signal	C: 4-20mA      D: 0-10mA      P: Pulse output F: Frequency output      S: RS485 R: RS232M      M: MODBUS      H: Hart	C
M	Grounding ring	W: With earthing ring N: Without earthing ring	N
N	Mating flange	N: No companion flange fastener F: Fastener with companion flange	N