

ELECTROMAGNETIC FLOW METER

NMF SERIES



Liquid, Sludge



■ OVERVIEW

Product description:

The electromagnetic flowmeter is a kind of measuring instrument based on Faraday law of electromagnetic induction, which can measure the volume flow of electrically conductive liquid, seriflux and so on. It is widely used in industrial sectors such as chemical industry, environmental protection, metallurgy, pharmaceutical, paper making, water supply and removal etc. such as clear water, sewage, acid, alkali, slurry, beer, milk, food grade liquid, salt solution, liquid.

Features:

- Highly intelligentized
- Multi-electrode structure
- High accuracy
- No moving parts
- Wide operating range
- AC:85V~265V, DC:18V38V
- No obstruction to the flow
- Variety of flange types available
- Different excitation frequencies to choose
- Able to detect two-way
- Capacitive empty and full pipe measurement technique
- Lighting protection and anti-jamming circuit design
- Have EPROM

Applications

- Water / waste water
- Chemical industry
- Food industry
- Power engineering
- Agriculture
- Effluent Industry

■ TECHNICAL SPECIFICATIONS:

Converter Type:	Compact (CM)	Remote (RM)
Picture:		
Size:	DN10...DN2800	
Medium:	Conductive liquid, slurry	
Medium Temperature:	0 ... 60°C ($\leq 120^{\circ}\text{C}$; $\leq 150^{\circ}\text{C}$; $\leq 180^{\circ}\text{C}$ as optional)	
Ambient Temperature:	-30...+60°C, Humidity: <90%	
Conductivity:	$\geq 5 \mu\text{S/cm}$	
Accuracy:	$\pm 0.25\%$, $\pm 0.5\%$	
Repeatability:	$\pm 0.1\%$, $\pm 0.17\%$	
Rated Pressure:	0.6, 1.0, 1.6, 2.5, 4.0, 6.4 MPa (or specified by customer)	
Display:	Flow rate, Totalizer, Velocity, Flow rate ratio	
Signal Output:	4-20mA current output, pulse output, RS-485, Hart	
Power Supply:	AC: 85V...265V, DC: 18V...38V	
Protection Grade:	IP67 / IP68	
Explosion Proof:	Ex deibmb IIC T3~6	
Velocity:	0.0512m/s (0.115m/s as required)	
Liner:	CR / F4 (PTFE) / F46 (FEP) / PFA	
Flowing Direction:	Forward, Reverse	
Electrode Material:	316L, Pt, Ta, Ti, HB, HC, WC	
Electrode Number:	3~6 pcs	
Flange Material:	SS / CS	
Alarm (normal open):	Empty, excitation, upper/lower limit	
Communication:	RS-485 / Hart	



Threaded



Flange



Sms Union

■ HOW TO SELECT THE ELECTRODE MATERIAL

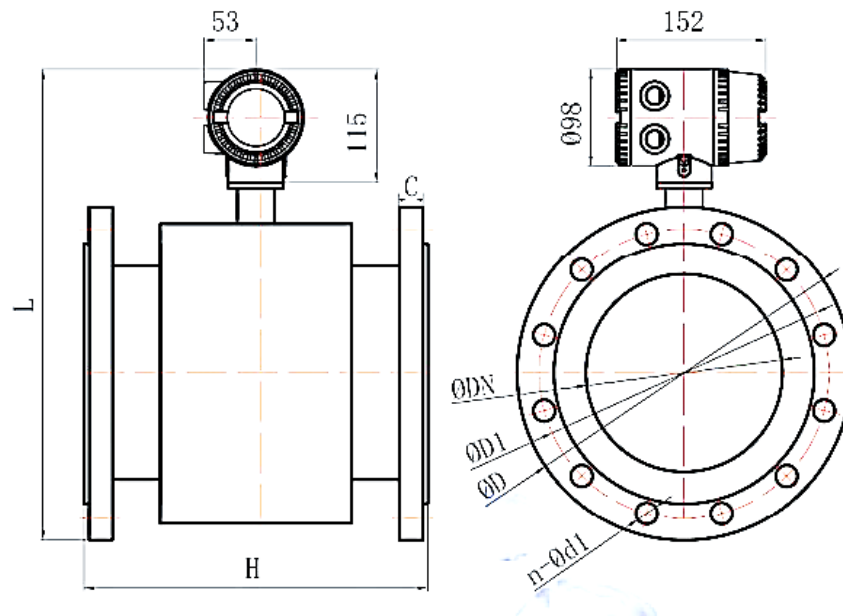
Electrode	Suitable	Not suitable for
316L	Domestic water, industrial water, raw water, city sewage, weak corrosion of acid, alkali, salt solution	Strong acid, alkali etc
Hastelloy alloy B	Concentration is less than 10% of non oxidizing acid, concentration of less than 50% sodium hydroxide, and concentrations of ammonium hydroxide alkaline solution; phosphoric acid and organic acid	Nitric acid
Hastelloy C	Mixed acid (such as chromic acid and sulfuric acid solution); oxidizing salts (such as seawater, including Cu ⁺⁺⁺ , Fe ⁺⁺⁺)	Hydrochloric acid
Titanium	Salts (such as sodium, potassium, chloride, ammonium salts, sodium bicarbonate, slit water), concentration of less than 50% potassium hydroxide, ammonium hydroxide, barium hydroxide alkaline solution	Hydrochloric acid, sulfuric acid, phosphoric acid, hydrofluoric acid and other reductive acid
Tantalum	Hydrochloric acid (concentrations of less than 40%), dilute sulfuric acid and concentrated sulfuric acid (not including oleum); chlorine dioxide, ferric chloride, hypochlorous acid, sodium chloride, lead acetate; nitric acid (including fuming nitric acid, an oxidizing acid)	Alkali, hydrofluoric acid
Platinum gold	Almost all of the sour alkali salt solution (including fuming sulfuric acid and fuming nitric acid)	Aqua regia, ammonium salt

■ HOW TO CHOOSE THE LINING MATERIAL

According to the measured medium corrosion, wear and temperature, select lining material, as shown in the following table:

Lining	Symbol	Performance	Temperature	Usage occasions
Rubber	CR	Wear resistance of medium, high average concentrations of acid-base salt solution	≤70°C	Tap water, industrial water, sea water
PTFE	PTFE	The chemical properties of stability, high boiling hydrochloric acid, sulfuric acid, aqua regia, concentrated alkali corrosion	≤150°C	Corrosive acid, salt, solution
Fluorinated ethylene propylene	F46 or FEP	Chemical properties equivalent to F4, tensile strength is higher than that of F4	≤180°C	Corrosive acid salt solution, negative pressure
Polyurethane	PU	Excellent wear resistance. Not suitable for resistance to acid	≤70°C	Slurry, pulp and other abrasive

■ DIMENSIONS



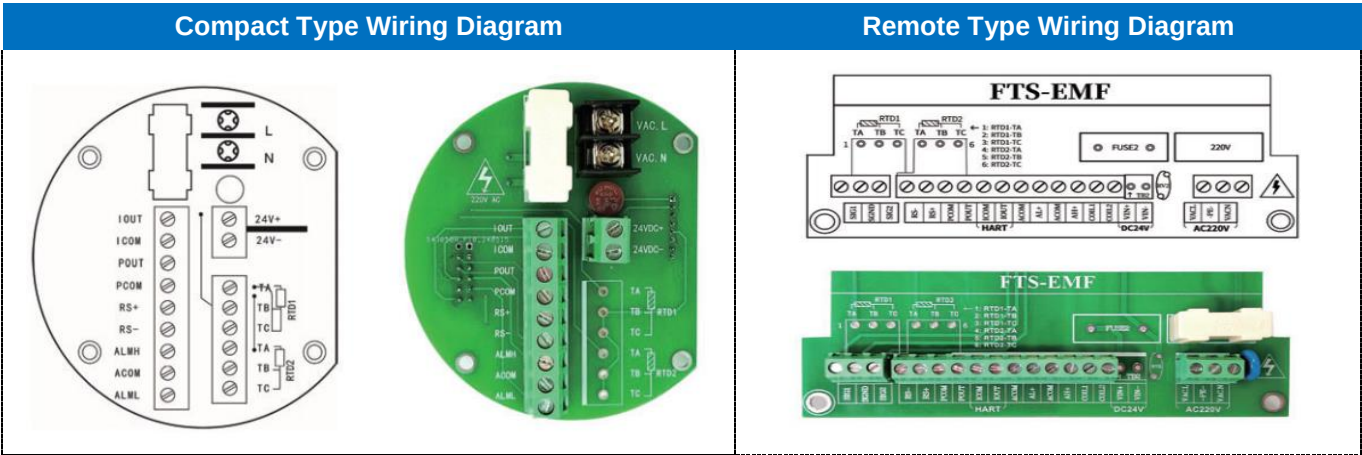
DN	H	L	D1	D	n-Ød1	C	Pressure
10	160	260	60	90	4-Ø14	14	PN4.0
15		265	65	95	4-Ø14	14	
20		272	75	105	4-Ø14	16	
25		280	85	115	4-Ø14	18	
32		290	100	140	4-Ø18	18	
40	200	305	110	150	4-Ø18	18	PN1.6
50		320	125	165	4-Ø18	20	
65		335	145	185	4-Ø18	20	
80	250	350	160	200	8-Ø18	22	
100		370	180	220	8-Ø18	22	
125		435	210	250	8-Ø18	22	
150	300	495	240	285	8-Ø22	24	
200	350	535	295	340	12-Ø22	24	
250	400	545	350	395	12-Ø22	26	
300	500	595	400	445	12-Ø22	26	PN1.0
350		605	460	505	16-Ø22	26	
400	600	685	515	565	16-Ø26	26	
450		735	565	615	20-Ø26	28	
500		790	620	670	20-Ø26	28	
600		900	725	780	20-Ø30	30	
700	700	1000	835	895	24-Ø30	30	
800	800	1140	950	1015	24-Ø33	32	
900	900	1245	1050	1115	28-Ø33	32	

1000	1000	1350	1160	1230	28-ø36	34	PN0.4
25	160	280	85	115	4-ø18	18	
32		290	100	140	4-ø22	26	
40	200	305	125	170	4-ø22	26	
50		320	150	180	4-ø22	26	
65		340	160	185	8-ø22	28	
80		350	185	200	8-ø22	28	
100	250	375	210	235	8-ø26	30	
125		410	245	270	8-ø30	32	
150	300	465	280	300	8-ø33	36	
200	350	520	345	375	12-ø36	42	
250	400	590	400	450	12-ø36	46	
300	500	650	470	515	16-ø36	52	
350		680	525	580	16-ø36	58	

■ FLOW RATE (M³/H):

DN (mm)	Flow range (m³/h)	Accuracy range (m³/h)	DN (mm)	Flow range (m³/h)	Accuracy range (m³/h)
DN 10	0.014~3.39	0.08~2.82	DN 300	12.7~3052	76~2543
DN 15	0.03~7.63	0.19~6.35	DN 350	17.3~4154	104~3454
DN 20	0.06~13.6	0.33~11.34	DN 400	22.6~5425	1355~4521
DN 25	0.09~21.19	0.52~17.56	DN 450	28.6~6877	171~5722
DN 32	0.14~34.66	0.86~28.93	DN 500	35.3~8478	211~7065
DN 40	0.23~54.2	1.36~45.21	DN 600	50.9~12208	305~10173
DN 50	0.35~84.18	2.1~70.15	DN 700	69~16516	415~13786
DN 65	0.58~138.4	3.58~119.8	DN 800	88~21752	542~18096
DN 80	0.9~217	5.43~187.8	DN 900	114~27468	686~22809
DN 100	1.41~339.8	8.48~282	DN 1000	141~33912	847~28260
DN 125	2.21~529	13.25~441	DN 1200	203~48833	1221~40694
DN 150	3.18~763	19.08~635	DN 1400	277~68467	1662~55386
DN 200	5.65~1355	33.91~1130	DN 1600	361~86814	2171~72345
DN 250	8.83~2119	52.99~1766	DN 1800	457~109874	2747~91562

■ WIRING



L / N: AC power input (typically 220V AC)

- **L:** Live wire
- **N:** Neutral wire

24V+ / 24V-: DC 24V power input (if the device supports DC power instead of AC)

Terminal	Function	Description
IOUT	Current Output	4–20 mA analog current output (typically used to transmit measured values to PLC or SCADA).
ICOM	Current COM	Common (ground) for current output.
POUT	Pulse Output	Pulse signal output (used for flow counting).
PCOM	Pulse COM	Common for pulse output.
RS+	RS485 D+	Positive terminal of RS485 communication (Modbus RTU).
RS-	RS485 D-	Negative terminal of RS485 communication.
ALMH	Alarm High Output	High-level alarm output (activated when the measured value exceeds the set high limit).
ALML	Alarm Low Output	Low-level alarm output (activated when the value drops below the low limit).
ACOM	Alarm COM	Common terminal for alarm outputs.
TA, TB, TC	RTD Input	3-wire RTD input — TA (wire 1), TB (wire 2), TC (wire 3). RTD1 and RTD2 are separate input channels.

■ ORDER TABLE

Name	Specification code	Explanation
Model	NMF	Electromagnetic flowmeter
Converter Type	CM	Compact
	RM	Remote
Diameter code	10-1800	For example: 100 represents DN100
Rated pressure (bar)	16	DN15 to 150
	10	DN200~600
	6	DN800~1000
	2.5	DN1200~2000
Signal Output:	S1	4-20mA,Pulse, RS485
	S2	4-20mA,Pulse, Hart
Power Supply	P1	90~245VAC, 50Hz (220VAC)
	P2	20~36V DC (24VDC)
	P3	Battery
Electrode material	E1	Stainless steel (316L)
	E2	Platinum Pt
	E3	Hastelloy B (HB)
	E4	Hastelloy C (HC)
	E5	Tantalum Ta
	E6	Titanium Ti
Lining material	L1	PTFE
	L2	FEP
	L3	PFA
	L4	Chloroprene rubber
Operating temperature	T1	≤60°C
	T2	≤120°C
	T3	≤150°C
	T4	<180°C
Connection Type	D	DIN Flange
	A	ANSI Flange
	J	JIS Flange

For example: NMF.CM.0100.16.A.E1.L1.D

Explaining: NMF series, CM Converter Type, 16 bar, Signal Output 4-20mA,Pulse, RS485, Power Supply 220VAC, Electrode Stainless steel (316L) material , Lining PTFE material, Operating temperature ≤60°C, DIN Flange Connection Type.

