

PROXMAG 80S C/R

The **Electromagnetic Flowmeter** mainly measure the flow of various conductive liquid or solid-liquid two-phase fluid, such as water, sewage, mud, paper pulp, beverage, chemical, viscous liquid and suspension. It consists of converter and sensor . The converter and the sensor can be directly assembled into an integrated electromagnetic flow meter, or be connected by external signal cable to form a separate electromagnetic flow meter.



**Compact
Electromagnetic Flowmeter**

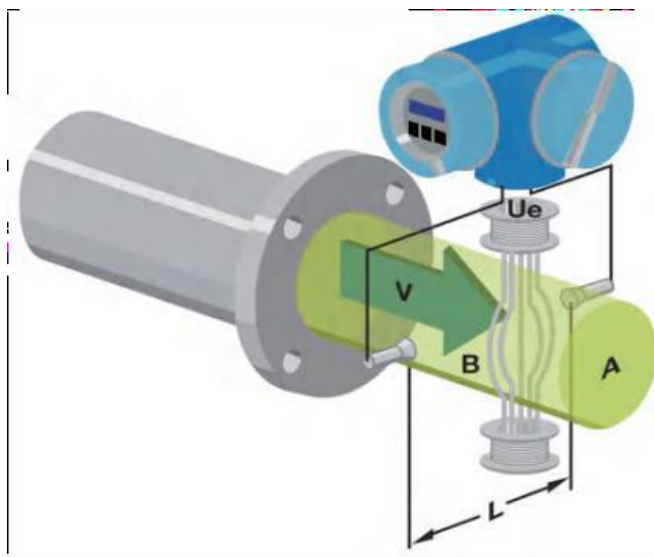


**Remote
Electromagnetic Flowmeter**

When the conductive liquid is cutting the magnetic lines in the magnetic field, the ends of conductor will induce electromotive force (E), which is vertical to direction of movement and magnetic field. The electromotive force and the velocity of conductive liquid(V)are in a direct ratio, that is $E=BLV$ (B: magnetic induction strength of the magnetic field; L: conductor length; V: velocity of cutting the magnetic lines).

After the converter has the power, the excitation current drive coils form the magnetic field in the measuring tube, and when the media flows along the measuring tube and cutting the magnetic lines, the induced electromotive force transmitted to the converter through the two electrodes on the pipe wall, signal processing and computing by the converter, and then convert the measured flow value.

The display shows the measured flow data, and output the data by the way of 4-20mA, pulse or RS485.



Flange Connection Electromagnetic Flow (Heat) Meter PROXMAG 80S Series

The **PROXMAG 80S Flanged Electromagnetic Flow Meter** mainly measure the flow of various conductive liquid or solid-liquid two-phase fluid, such as water, sewage, mud, paper pulp, beverage, chemical, viscous liquid and suspension. The electromagnetic flow meter consists of converter and sensor. The converter and the sensor can be directly assembled into an integrated electromagnetic flow meter, or be connected by external signal cable to form a separate electromagnetic flow meter. Additionally, the meter offers optional PT1000 temperature sensors, enabling accurate heating and cooling energy measurement in heat exchange loops.



Compact type



Remote type

Features:

- High accuracy as +/- 0.5% of reading, 0.3% and 0.2% for optional.
- No moving parts, no pressure loss.
- Suitable for conductive liquids ($\geq 5\mu\text{S/cm}$).
- DN10-DN2000 pipes are available.
- Bi-directional flow measurement.
- Standard outputs: 4-20mA, RS485 Modbus, Pulse, Hart, Bluetooth, etc.
- Lower installation requirements: upstream 5D and downstream 2D straight pipe section.
- Maintenance-free: no moving parts.
- PT1000 sensors are optional for thermal energy measurement.

Specification:

Display	4-line English LCD display, display the data of forward and reverse flow, percentage of flow and flow velocity, heat(cold), the temperature of inlet and outlet water.
Parameter Setting	Setting the parameters with the button, Ultrared remote control and Bluetooth (smart phone)
Language	Chinese, English. Can customize traditional Chinese, Spanish, Korean
Current Output	4-20mA, load Resistance $\geq 500\Omega$ (include cable resistance)
PIO	Can choose passive pulse output, active pulse output, state output/alarm output and contact signal input Passive pulse output 30VDC (Off), 200mA(On); 0.0001 -5000Hz; Pulse width:50% duty cycle of the fixed value (≤ 100 ms) Active pulse output: 0.0001 -2000Hz, ≤ 150 mA, 15 VDC $\pm 20\%$; Pulse width: ≤ 100 ms (The default value: 20ms) State/Alarm output: contact capacity: 30VDC (Off), 200mA(On) Contact input: passive contact, load resistance: closed $\leq 200\Omega$, disconnected $\geq 100k\Omega$
Communication	RS 485(MODBUS-RTU), BACNET, HART
Power Supply	220VAC 50Hz/60Hz, 24VDC, (100 -240) VAC
Alarm	Empty pipe alarm, reverse alarm, upper limit and lower limit alarm
Protection Level	IP65, IP67
Accuracy	0.5% (Standard); 0.3%, 0.2% (Optional)
Explosion-proof	Exia/dbeb II CT3 ~ T6 Ga/Gb ExtbIIICT200°CDb
Structure	Compact or remote
Thermal energy	PT1000 temperature sensor (Optional)

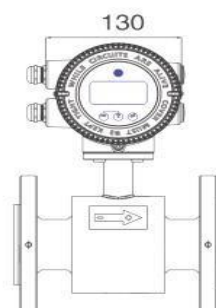
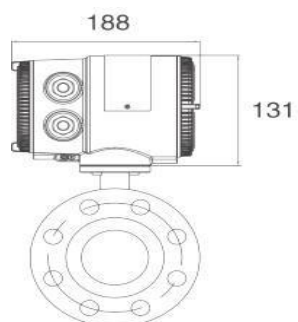
Converter:

Sensor:

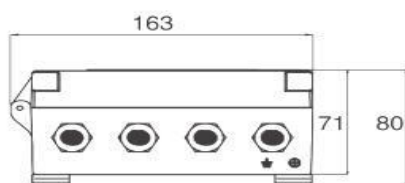
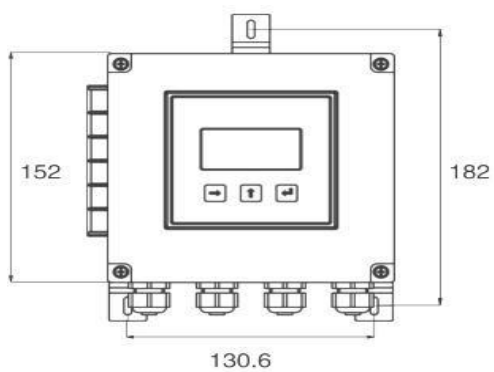
Pipe Size	DN10 ~ DN2000
Nominal Pressure	0.6 ~ 4.0 MPa
Electrode Material	Stainless Steel (316L), Hastelloy C (Hc), Hastelloy B (Hb), Titanium (Ti), Tantalum (Ta), Tungsten carbide (W), Platinum-Iridium (Pt)
Lining Material	Ne, FEP, PTFE, PU, PFA
Medium Temperature	-40 ~ +180°C
Shell Material	Carbon steel
Protection Class	IP65, IP67, IP68
Process Connection	Flange Standards:DIN, ANSI, JIS

Dimension:

Converter Dimension (unit : mm):

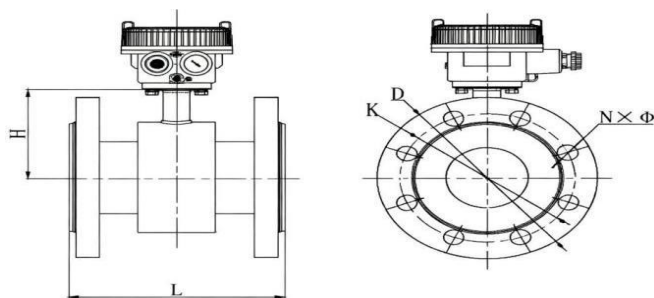


Round Converter Dimension



Square Converter Dimension

Sensor Dimension:



Pipe size (mm)	Nominal Pressure (MPa)	Lining Material					Body Size: mm			Connection Size: mm			Weight (kg)	
		NE	FEP	PTFE	PU	PFA	L	D	H	K	Hole No (N)	Φ Size		
10	4	×	O	×	×	O	150	90	84	60	4	14		
15		×	O	×	×	O		95	84	65				
20		×	O	O	×	O		105	84	75				
25		×	O	O	O	O		115	90	85				
32		×	O	O	O	O		140	93	100	4	18	6.5	
40		×	O	O	O	O		150	93	110			7	
50		1.6	O	O	O	O	O	200	165	100	125	8	18	9.5
65			O	O	O	O	O		185	113	145			12
80	O		O	O	O	O	200		113	160	15			
100	O		O	O	O	O	250	220	126	180	17			
125	O		O	O	O	O		250	138	210	21			
150	O		O	O	O	O	300	285	151	240	8	22	28	
200	O		O	O	O	O	350	340	190	295			36	
250	1		O	O	O	O	O	400	395	222	350			49
300		O	O	O	O	O	450	445	248	400	12	22	61	
350		O	O	O	O	O		505	264	460	16	22	79	
400		O	O	O	O	O	500	565	299	515	16	26	99	
450		O	O	O	O	O	600	615	325	565		26	121	
500		O	×	O	O	×		670	360	620	20		143	
600		O	×	O	×	×		780	412	725	20	30	187	
700		0.6	O	×	O	×	×	700	895	445	840	24	30	260
800	O		×	O	×	×	800	1015	492	950	24	33	342	
900	O		×	O	×	×	900	1115	555	1050	28	33	420	
1000	O		×	O	×	×	1000	1230	605	1160	28	36	503	
1200	O		×	×	×	×	1200	1405	705	1340	32	33	666	
1400	O		×	×	×	×	1400	1630	805	1560	36	36	1036	
1600	O		×	×	×	×	1600	1830	905	1760	40	36	1333	
1800	O		×	×	×	×	1800	2045	1005	1970	44	39	1720	
2000	O	×	×	×	×	2000	2265	1105	2180	48	42	2190		

Note: "O" means optional, "×" means not optional

Configuration Code:

PROXMAG 80S Series Flange Connection Electromagnetic Flow (Heat) Meter

Accuracy

1 $\pm 0.5\%$

2 Others (0.3% and 0.2% can be optional)

Structure

C Compact

R Remote

Pipe Size

DN10-DN2000

Lining Material

U PU (Standard)

P PTFE

F FEP

Electrode Material

1 SS316L (Standard)

2 Others (Hc, Hb, Ta, Ti and Pt can be optional)

Sensor Material

S Carbon steel (Standard)

H Stainless steel 304

O Others

Power Supply

A 85-265VAC (Standard)

D 24VDC

Output Selection

S 4-20mA & RS485 Modbus & Pulse (Standard)

O Others

Process Connection

1 Flange DIN (Standard)

2 Others (Flange ANSI/JIS)

Grounding Electrode

N None

W With grounding rings (SS316L/Hb/Hc/Ta/Ti/Pt)

Protection Class

65 IP65 (Standard)

67 IP67

68 IP68 (Only for remote type)

Nominal Pressure

1 4.0MPa

2 2.5MPa

3 1.6MPa

4 1.0MPa

Heat Function

N None

Y With PT1000 Sensors

Lining Material Selection:

Material	Scope of Application	Working Temp.
Ne	Water, sewage, low concentration non-oxidizing acid, alkali, salt.	-30~70°C
FEP	The wear resistance is much better than PTFE, the adhesion resistance is good, and the corrosion resistance is comparable to PTFE.	-40~140°C
PTFE	Suitable for the vast majority of strong acid, alkali and other chemical fluids and high temperature fluids, food and beverage.	-40~110°C
PU	Excellent wear resistance, suitable for water, cement slurry, pulp, etc.	-40~80°C
PFA	The corrosion resistance is the same as PTFE; Anti-adhesion and the rest of the application range is the same as FEP.	-40~180°C

- For media that are prone to scaling, such as pulp, FEP or PFA lining that is not easy to adhere to and easy to remove scaling is preferred.
- For media with hygienic requirements, FEP or PTFE lining should be selected. In the case of negative pressure, FEP is recommended.
- For abrasive media such as pulp and mud, PU lining or FEP lining should be selected.

Electrode Material Selection:

The electrode material should be selected according to the corrosiveness of the measured, please refer to the corrosion manual. Corrosion tests should be carried out on special fluids.

Material	Code	Performance of Corrosion Resistance
316L	316L	Available: water, sewage, neutral and alkaline solutions, carbonic acid, acetic acid and other weak acids. Unavailable: electroplating wastewater, strong acid, chloride ion solution.
Hastelloy Alloy C	Hc	Available: phosphoric acid, nitric acid, seawater, caustic soda and various common chemical media. Unavailable: electroplating wastewater, hydrochloric acid, hydrofluoric acid, aqua regia and sulfuric acid containing oxidizing impurities.
Hastelloy Alloy B	Hb	Available: hydrofluoric acid, organic acid, sulfuric acid, phosphoric acid and other non-oxidizing acid, alkaline, salt. Unavailable: electroplating wastewater, nitric acid and aqua regia.
Ti	Ti	Available: seawater, various chlorides, alkalis, etc. Unavailable: electroplating wastewater, hydrochloric acid, sulfuric acid, phosphoric acid, hydrofluoric acid and aqua regia.
Ta	Ta	Available: hydrochloric acid, aqua regia, sulfuric acid. Unavailable: hydrofluoric acid, fluorinated salt, alkali solution, fluorinated solution.
Tungsten Carbide	W	Available: mud, pulp and other abrasive medium. Unavailable: electroplating wastewater, strong acid, chloride ion solution.
Platinum-iridium Alloy	Pt	Available: electroplating wastewater, hydrochloric acid, sulfuric acid. Unavailable: aqua regia, halogen.

Note: Most media are not single-component solutions, which contain small amounts of impurities that can be fatal to some electrode materials. For example, tantalum has good corrosion resistance in pure phosphoric acid solution, but when phosphoric acid contains more than 4PPM of fluorine, it will be rapidly corroded, so unless you have experience, it is best to consult the company when selecting electrode materials.

Measuring Range:

The flow corresponding to the maximum output signal. That is, the flow corresponding to the current output of 20mA or the frequency output upper limit (frequency upper limit is 5KHz), and the pulse equivalent can be set independently in the intelligent converter. The electromagnetic flowmeters produced by our company have been strictly calibrated before leaving the factory. Therefore, when selecting the range, it is not contrary to the premise that the range must be greater than the maximum flow rate, and generally the common flow rate is between 50% and 80% of the range.

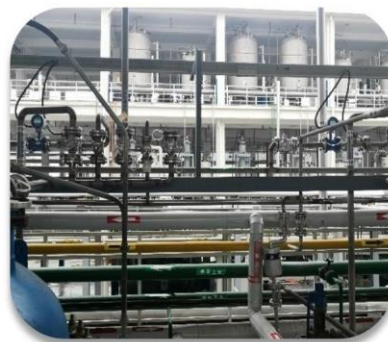
Note 1: The gray area is the flow we recommended. Note 2: The formula for the flow and velocity:

$$V = \frac{354 \times F}{D^2}$$

V — Velocity, m/s
F — Flow, m³/h
D — Diameter, mm

Caliber (mm)	Scale Flow(m ³ /h)														
10c	0.01	0.016	0.02	0.025	0.03	0.04	0.05	0.06	0.08	0.1	0.12	0.16	0.18	0.2	0.25
10b	0.03	0.04	0.05	0.06	0.07	0.08	0.1	0.12	0.16	0.2	0.3	0.4	0.5	0.6	0.7
10a	0.03	0.05	0.06	0.08	0.1	0.12	0.16	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1
10	0.1	0.16	0.2	0.25	0.3	0.4	0.5	0.6	0.8	1	1.2	1.6	2	2.5	2.8
15	0.2	0.4	0.5	0.6	0.8	1	1.2	1.6	2	2.5	3	4	5	6	6.3
20	0.4	0.6	0.8	1	1.2	1.6	2	2.5	3	4	5	6	8	10	11.3
25	0.6	1	1.2	1.6	2	2.5	3	4	5	6	8	10	12	16	17.7
32	0.9	1.6	2	2.5	3	4	5	6	8	10	12	16	20	25	28
40	1.4	2.5	3	4	5	6	8	10	12	16	20	25	30	40	45
50	2.1	4	5	6	8	10	12	16	20	25	30	40	50	60	70
65	4	6	8	10	12	16	20	25	30	40	50	60	80	100	120
80	6	10	12	16	20	25	30	40	50	60	80	100	120	160	180
100	8	16	20	25	30	40	50	60	80	100	120	160	200	250	280
125	13	25	30	40	50	60	80	100	120	160	200	250	300	400	440
150	19	40	50	60	80	100	120	160	200	250	300	400	500	600	630
200	34	60	80	100	120	160	200	250	300	400	500	600	800	1000	1100
250	53	100	120	160	200	250	300	400	500	600	800	1000	1200	1400	1600
300	76	160	200	250	300	400	500	600	800	1000	1200	1600	1800	2000	2500
350	100	200	250	300	400	500	600	800	1000	1200	1600	2000	2200	2500	3000
400	140	250	300	400	500	600	800	1000	1200	1600	2000	2500	2600	3000	4000
450	170	300	400	500	600	800	1000	1200	1600	2000	2500	3000	3600	4000	5000
500	210	400	500	600	800	1000	1200	1600	2000	2500	3000	3600	4000	5000	7000
600	310	500	600	800	1000	1200	1600	2000	2500	3000	3600	4000	5000	6000	10000
700	420	700	800	1000	1200	1600	2000	2500	3000	3600	4000	5000	6000	8000	13000
800	540	800	1000	1200	1600	2000	2500	3000	4000	5000	6000	7000	8000	10000	18000
900	690	1000	1200	1600	2000	2500	3000	4000	5000	6000	7000	8000	10000	12000	20000
1000	850	1200	1600	2000	2500	3000	4000	5000	6000	7000	8000	10000	12000	18000	26000
1200	1220	2000	2500	3000	4000	5000	6000	8000	9000	10000	12000	16000	20000	26000	40000
1400	1660	2500	3000	4000	5000	6000	8000	10000	12000	16000	20000	25000	26000	30000	54000
1600	2160	3000	4000	5000	6000	8000	10000	12000	16000	20000	25000	30000	36000	40000	71000
1800	2740	5000	6000	7000	8000	10000	12000	16000	20000	25000	30000	36000	40000	45000	90000
2000	3380	6000	7000	8000	10000	12000	16000	20000	25000	30000	36000	40000	45000	50000	110000

Application Pictures:



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