



Electromagnetic Flow Meter

Electromagnetic Flow meter

Measuring Principle

The Measurement of flow rate of the electromagnetic flow meter is based on Faraday's law of electromagnetic induction

When the conductive liquid moves within the magnetic field, voltage is induced in it, whose magnitude is proportional to the velocity of the conductor

The equation is as below:

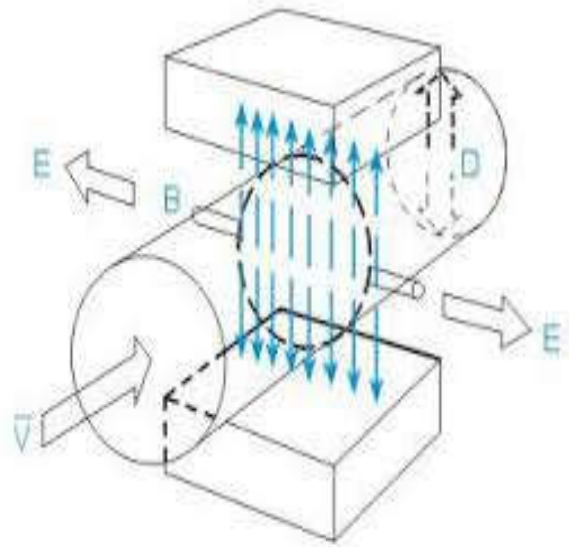
$$E = KBVD$$

K: coefficient of the flow meter

B: Pulsed magnetic flux density

V: Average velocity of the media

D: Inner diameter of the measuring pipe



Features:

- Meter size DN3-DN3000 (3/25-120")
- Liners, PFA, PTFE F46, Polyurethane, Hard or Soft Rubber, Ceramic Caribe
- Measurement is independent of fluid density, viscosity, humidity, temperature, pressure
- Sensor with advanced processing technology
- Converter with alarm output function
- High performance, high reliability

Benefits

- 18months warranty
- 99.99% pure copper coil
- Stability signal
- Integrated cast without welding joint
- Low maintenance, Reliable meter

Application

- Water purification and desalination
- Drinking Water distribution networks
- Revenue metering or billing
- Leakage detection
- Irrigation
- Industry water
- Cooling water
- Wastewater
- Sewage and sludge
- Sea water

Specification

Diameter	DN10~DN3000/mm (3/8"~120")		
Accuracy	± 0.5% of reading , ±0.3% ± 0.2% optional ,velocity > 0.3m/s		
Conductivity	Normal liquid >5μS/cm, DI water >20 μS/cm		
Protection Grade	IP65 Compact ; IP68 Separated		
Electrode	SS316L (Standard) ;Hastelloy C; Hastelloy B ; Titanium Tantalum; Platino iridium ; Stainless Steel Covered Tungsten Carbide		
Power Supply	AC85 ~ 250V ; DC20V ~ 36V		
Power Consumption	<20W		
Signal Output	4-20mA ;Pulse		
Communication	Rs485 Modbus RTU , Hart over 4-20mA ,Hart , Profibus		
Language	English ; Other language are available		
Ambient Temperature	-25 ~ 60°C Sensor -10 ~ 60°C Convertor		
Liquid Temperature	Integrated: 70°C max Separated: 200°C max		
Relative Humidity	5% ~ 90%		
Exciting Current	125mA,187mA,250mA,500mA		
Exciting Frequency	3.12Hz ,4.16Hz ,6.25Hz ,12.5 Hz ,25Hz ,30Hz		
Flange	Standard : Carbon Steel Optional : Stainless Steel SS304 ; Stainless Steel SS316		
Straight Pipe	Inlet Path≥ 10D,Outlet Path ≥ 5D		
Frequency Output	1~5000Hz		
Liner Material	PTFE	DN15~DN1600	-20 °C~120°C
	PFA	DN3 ~DN800	-20 °C~120°C
	F46	DN25~DN1800	-20 °C~120°C
	Neoprene	DN40~DN3000	-10 °C~80°C
	Polyurethane	DN40~DN1600	-10 °C~60°C
	FLS	DN40~DN1800	-10 °C~200°C
Velocity	0.1~15 m/s		
Process Pressure	4.0 MPa (DN3-DN150) 1.6 MPa (DN200-DN600) 1.0 MPa (DN700-DN1000) 0.6 MPa (DN1200-DN3000)		
Flange Standard	ANSI B16.5 150# ,300# ,600# EN1092-1 PN10,PN16 ,PN25 ,PN40 JIS2220-10k ,20k ,40k AS2129-Table D, Table E AS4087 -PN16 ,PN21 ,PN35 BS4504 -PN2.5 ;PN6 ;PN10 ;PN16 ;PN25 ;PN40		

Converter Drawing & Features

Measured Value	Instant Flow Rate Forward & reverse integrated volume Ratio of Emptiness Deference of forward and reverse Alarm Percent of flow rate
Output Signals	Current output • 4-20mA Pulse/Frequency Output • Pulse output : Range 0 ÷100 impulse • Frequency output : 1 ÷ 5000 Hz Frequency and pulse output can't be use together Alarms can be set as minimum or maximum flow rate or as system alarm
Alarms	Alarms can be set as minimum or maximum flow rate or as system alarm
Protocols	MODBUS interface : format of RTU Hart interface: designed by standard of HART, if you choose our hand held unit ,you can display the measure value on line ,and setting the parameter
Cut- Off	Free Setting



Flange Dimension

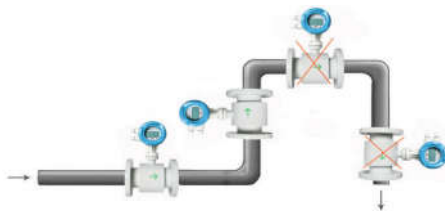
Connecting flange and installing dimension see Picture executive standard of connection flange:
1.6MPa (DN3 ~ DN250)
1.0MPa (DN300 ~ DN1000)
0.6MPa (DN1100 ~ DN3000)

Diameter	DN 3 ~ 3000 (mm)
Nominal Pressure	PN6 ,PN10 ,PN16 ,PN25 ,PN40 (special version upon request)
Accuracy	± 0.5%
Liner Material	PTFE ,PFA ,Neoprene ,Poly other on request
Electrodes	SS1.4435 On request Hastelloy C, Titanium, Tantalum ,Platino iridium
Ambient Temperature	-25°C ~+60 °C
Fluid Temperature	• Neoprene : -20 ~+90 °C • PTFE: -20 ~ 130°C
Ambient Humidity	5 ÷ 100% HR
Measuring Range	1500: 1; Velocity < 15m/s
Conductivity	Minimum conductivity : • ≥20μS/cm for Demi water Note: Separate version, the conductivity minimum requested depends of the length of cable.
Version available	Compact version , wall mounting version
Protection	IP65 , IP68 on request

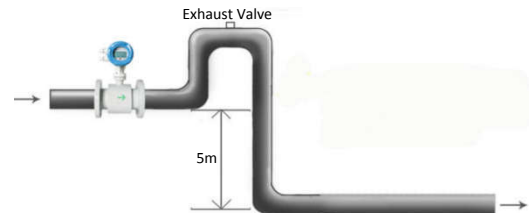
Electrode Property

SS316 L	Applicable in water , sewage and corrosive mediums . Widely used in industries of petrol ,chemistry ,carbamide, etc
Stainless Steel Covered with tungsten carbide	Applicable in mediums of no corrosive and low abrasion
Hastelloy B	Having strong resistance to hydrochloric acid of any consistence which is below Boiling point. Also resistible against vitriol, phosphate, hydrofluoric acid, organic acid etc, which are oxidable acid, alkali and non-oxidable salt.
Hastelloy C	Be resistant to oxidable acid such as nitric acid, mixed acid as well as oxidable salt such as Fe^{+++} , Cu^{++} and sea water
Titanium	Applicable in seawater, and kinds of chloride, hypochlorite salt, oxidable acid (including fuming nitric acid), organic acid , alkali etc. Not resistant to a pure reducing acid (such as sulphuric acid, hydrochloric acid) corrosion .Acid contains antioxidant (such as Fe^{+++} , Cu^{++}) will greatly reduce corrosion.
Tantalum	Having strong resistance to corrosive mediums that is similar with glass .Almost applicable in all chemical mediums. Except for hydrofluoric acid ,oleum and alkali .
Platinum-iridium	Almost be applicable in all chemical mediums except for aqua fortis, ammonium salt .

Installation Notice



Installed at the lowest point and vertical upward direction
Don't install at the highest point and vertical downward direction



Installed exhaust valve at the downstream of flow meter
When drop is more than 5m



Installed at the lowest when used in open drain pipe



Need 10D of upstream and 5D of downstream



Don't install it at the entrance of pump, install it at the exit pump



Installed at the rising direction

Flow Rate Table

Flow rate (m/s)	0.5	1	4	10	12	15
Calibre(mm)	(m3/h)	(m3/h)	(m3/h)	(m3/h)	(m3/h)	(m3/h)
3	0.013	0.025	0.102	0.254	0.305	0.382
6	0.051	0.102	0.407	1.017	1.221	1.526
10	0.141	0.283	1.13	2.826	3.391	4.239
15	0.318	0.636	2.543	6.359	7.63	9.538
20	0.565	1.13	4.522	11.304	13.56	16.956
25	0.883	1.766	7.065	17.663	21.2	26.494
32	1.447	2.894	11.575	28.938	34.73	43.407
40	2.261	4.522	18.086	45.216	54.26	67.824
50	3.533	7.065	28.26	70.65	84.78	105.98
65	5.95	11.94	47.76	119.4	143.3	179.1
80	9.04	18.09	72.35	180.86	217	271.3
100	14.13	28.26	113.04	282.6	339.1	423.9
125	22.08	44.16	176.63	441.56	529.9	662.3
150	31.79	63.59	254.34	635.85	763	953.78
200	56.52	113.04	452.16	1130.4	1356	1696
250	88.31	176.53	706.5	1766.25	2120	2649
300	127.2	254.34	1017	2543.4	3052	3815
350	173.1	346.19	1385	3461.85	4154	5193
400	226.1	452	1809	4522	5426	6782
450	286.1	572	2289	5723	6867	8584
500	353.3	707	2826	7065	8478	10598
600	508.7	1017	4069	10174	12208	15260
700	692.4	1385	5539	13847	16617	20771
800	904.3	1809	7235	18086	21704	27130
900	1145	2289	9156	22891	27469	34336
1000	1413	2826	11304	28260	33912	42390
1200	2035	4069	16278	40694	48833	61042
1400	2769	5539	22156	55390	66468	83084
1600	3617	7235	28938	72346	86815	108518
1800	4578	9156	36625	91562	109875	137344
2000	5652	11304	45216	113040	135648	169560
2200	6839	13678	54711	136778	164134	205168
2400	8139	16278	65111	162778	195333	244166
2600	9552	19104	76415	191038	229245	286556
2800	11078	22156	88623	221558	265870	332338
3000	12717	25434	101736	254340	305208	381510

