Electromagnetic Flowmeter

Electromagnetic flow meter is hallmarked by its high performance and reliability based on successful, field-proven technology. It is being widely used in industries such as petroleum, chemical engineering, iron and steel, food, electricpower, paper making, water treatment, petrochemical, medicine etc.

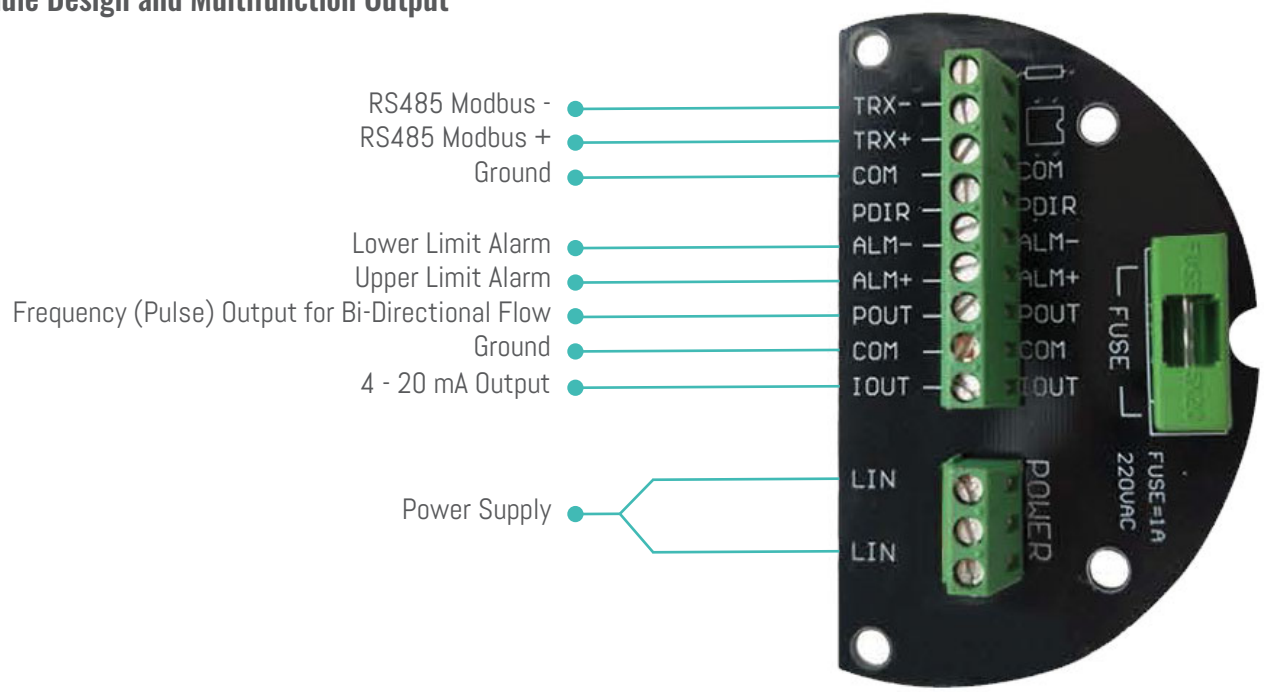
Feature

- Medium temperature can be -20 °C ~200 °C
- Integrated vertification,diagnostic function and empty pipe detection.
- Measure forward and reverse direction flows.
- Built-in reference electrodes,no need to connect ground ring.
- Dual frequency excitation and stable zero point.
- Precision coil winding technology,makes magnetic field more uniform.
- High protection grade,IP65.
- No moving parts,no pressure loss.
- High accuracy: ±0.5% of reading,±0.3% and ±0.2% optional,velocity >0.3 m/s.

Multiple Flow Unit Selectable

- Instantaneous Flow
- Flow Unit
- Flow Velocity (FLS)
- Flow Percentage (FQP)
- Ratio of Emptiness (MTP)
- Forward and Reverse Integrated Volumes
- Difference of Forward and Reverse
- Alarm

Module Design and Multifunction Output



Bi Directional Measurement
Easy to Install

Automatic Alarm Functions for Self-Diagnosis

Optional Functions

- Infrared Touch Screen
- 32 SD Card
- Bluetooth
- Can Display Temperature Pressure

Product Group

Wafer Type

Union Type

Flange Type

Remote Type

Tri-Clamp Type

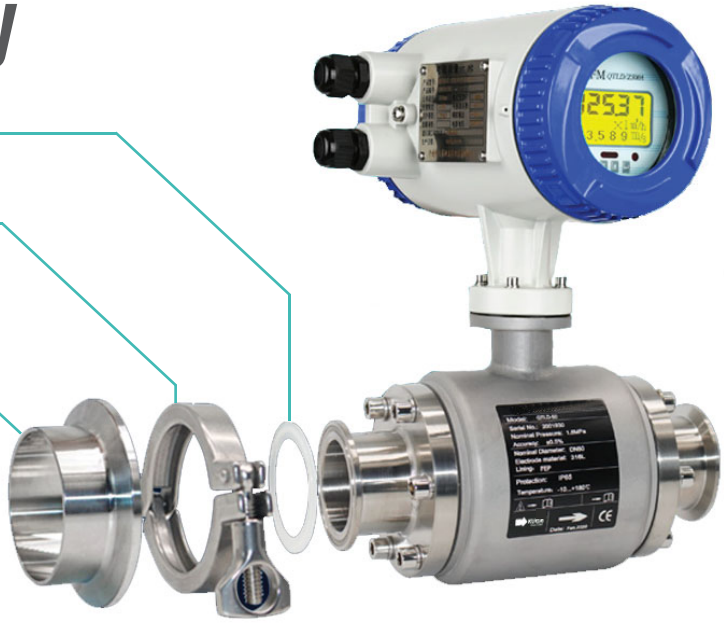
Insert Type

Clamped and Sanitary

PFA Gasket

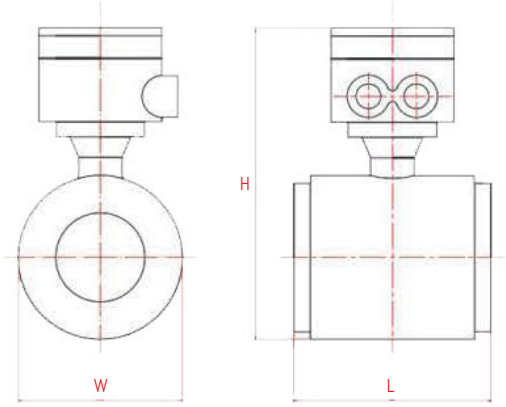
Clamp

Connector



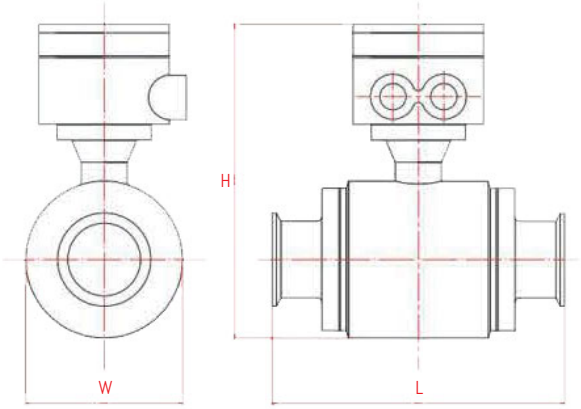
Widely used in mineral water, soy sauce, beer, fruit juice, wine, milk, etc.

- Structure type : Integral type, remote type
- Caliber : DN25-DN200mm
- Body material : CS,304,316L
- Accuracy : 0.5% of the value displayed
- Application : General type, Ex- proof type
- Liner material : PTFE,PFA
- Electrode material : SUS316L,HC,HB
- Ground ring : SUS316L,HC,HB,Ti
- Pipe connection : flange,clamp and tri-clamp
- Min electrical conductivity : 5 μ s/cm
- Medium temperature : -20°C- +150°C
- Power supply : AC 100-240V, DC12-36V
- Output signal : 4- 20mA,HART, MOD BUS ,RS485,PROFIBUS



Figuration of clamped type
Electromagnetic flow sensor

Diameter	H (mm)	L (mm)	W (mm)
DN25	177	98	69
DN32	186	98	78
DN40	197	98	89
DN50	210	98	102
DN65	228	146	120
DN80	240	146	132
DN100	265	146	157
DN125	291	196	183
DN150	327	196	219
DN200	369	220	261



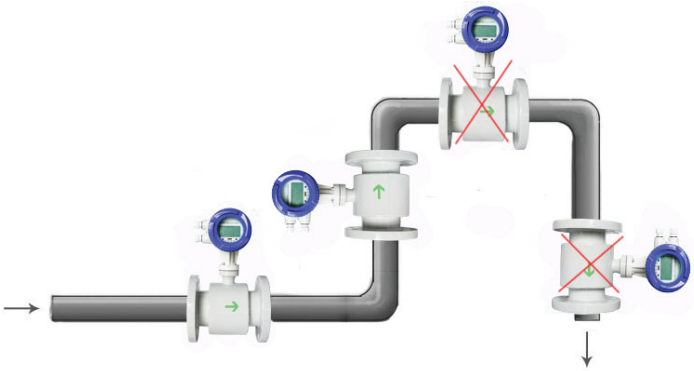
Figuration of sanitary type
Electromagnetic flow sensor

Diameter	H (mm)	L (mm)	W (mm)
DN25	191	200	83
DN32	202	200	94
DN40	202	200	94
DN50	216	200	108
DN65	223	250	115
DN80	243	250	135
DN100	267	250	159
DN125	291	300	183
DN150	327	300	219
DN200	369	300	261

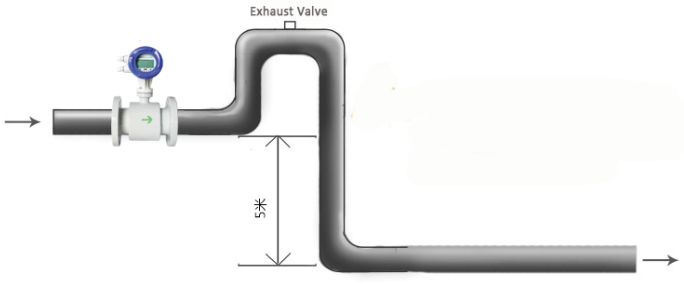
Ceramic Liner

Structure	Compact, Remote
Diameter	25-350mm
Accuracy	0.5% (Of Flow Reading)
Application	Normal, Ex-proof
Liner	Zirconium Dio xide(ZrO2)
Electrode	TiB , (Titanium diboride)
Grounding Ring	SUS316, Hastelloy C,Titanium JIS I0K, JIS 20K
Pipe Process Connection	ANSI 150, ANSI 300 DINPNI0, DIN PN16,etc.
Minimum Conductivity	5 µ s/cm
Fluid Temperature	-20°C ± 180°C
Power Voltage	AC100- 240V, DC12- 36V

Installation Method



Install at the lowest point and vertical upward direction



When drop is more than 5m, install exhaust valve at the downstream

Install at the lowest point when used in open drain pipe

Need 1 OD of upstream and 5D of downstream

Dont' install it at the entrance of pump,
install it at the exit of pump

Install at the rising direction

Main Performances Parameters	
Size	DN3 - DN3000 mm
Norminal Pressure	0.6 - 1.6 MPa(2.5MPa/4.0MPa/64MPa ... Max 42MPa)
Accuracy	+/- 0.5% (Standard) +/- 0.3% or +/- 0.2% (Optional)
Liner	PTFE, Neoprene, Hard Rubber, EDPM, FEP, Polyurethane, PFA
Electrode	SUS316L, Hastelloy B, Hastelloy C Titanium, Tantalum, Platinium-iridium
Structure Type	Integral type, remote type, submersible type, ex-proof type
Medium Temperature	-20 to + 60 deg C (Integral type) Remote type (Neoprenem Hard Rubber, Polyurethane, EPDM) -10 to 80 deg C Remote type (PTFE/PFA/FEP) -10 to 160 deg C
Ambient Temperature	-20 to 60 deg C
Ambient Humidity	5 - 100%RH(Relative humidity)
Measuring Range	Max 15 m/s
Conductivity	>5 us/cm
Protection Class	IP65(Standard), IP68(Optional for remote type)
Process Connection	Flange(Standard), Wafer, Thread, Tri-clamp etc (Optional)
Output Signal	4-20mA/Pulse
Communication	RS48/5(Standard), HART(Optional), GPRS/GSM(Optional)
Power Supply	AC220V (can be used for AC85-250V) DC24V (can be used for DC20-36V) DC12V (Optional), Battery Powered 3.6 (Optional)
Power Consumption	<20W
Alarm	Upper Limit Alarm/ Lower Limit Alarm
Self-Diagnosis	Emtry Pipe Alarm, Exciting Alarm
Explosion Proof	ATEX

Main Performances of The Electrode Materials

Electrode Material	Application
SUS316L	Applicable in water, sewage and low corrosive medium Widely used in industries of petrol, chemistry, carbamide etc.
Hastelloy B	Having strong resistance to hydrochloric acid of any consistence which is below boiling point. Resistable against vitriol, phosphate, hydrofluoricacid, 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. But if acid contains antioxidant (such as Fe+++, Cu++) is greatly reduce corrosion
Tantalum	Having strong resistance to corrosive mediums that is similar with glass. Almost applicable in all chemicals mediums except for hydrofluric acid, oleum and alkali
Platinum-iridium	Almost be applicable in all chemical mediums except fortis, ammonium salt

Velocity-Flow Range Table

Size	Flow Range & Velocity Table							
(mm)	0.1 m/s	0.2 m/s	0.5 m/s	1 m/s	4 m/s	10 m/s	12 m/s	15 m/s
3	0.003	0.005	0.013	0.025	0.102	0.254	0.305	0.382
6	0.010	0.020	0.051	0.102	0407	1.017	1.221	1.526
10	0.028	0.057	0.141	0.283	1.130	2.826	3.391	4.239
15	0.064	0.127	0.318	0.636	2.543	6.359	7.630	9.538
20	0.113	0.226	0.565	1.130	4.522	11.304	13.56	16.956
25	0.177	0.353	0.883	1.766	7.065	17.663	21.2	26494
32	0.289	0.579	1447	2.894	11.575	28.938	34.73	43407
40	0452	0.904	2.261	4.522	18.086	45.216	54.26	67.824
50	0.707	1413	3.533	7.065	28.260	70.650	84.78	105.98
65	1.19	2.39	5.97	11.94	47.76	11940	143.3	179.10
80	1.81	3.62	9.04	18.09	72.35	180.86	217.0	271.30
100	2.83	5.65	14.13	28.26	113.04	282.60	339.1	423.90
125	442	8.83	22.08	44.16	176.63	441.56	529.9	662.34
150	6.36	12.72	31.79	63.59	254.34	635.85	763.0	953.78
200	11.3	22.61	56.52	113.04	452.16	113040	1356	1696
250	17.66	35.33	88.31	176.53	706.50	1766.25	2120	2649
300	2543	50.87	127.2	254.34	1017	254340	3052	3815
350	34.62	69.24	173.1	346.19	1385	3461.85	4154	5193
400	45	90	226.1	452	1809	4522	5426	6782
450	57	114	86.1	572	2289	5723	6867	8584
500	71	141	353.3	707	2826	7065	8478	10598
600	102	203	508.7	1017	4069	10174	12208	15260
700	138	277	6924	1385	5539	13847	16617	20771
800	181	362	904.3	1809	7235	18086	21704	27130
900	229	458	1145	2289	9156	22891	27469	34336
1000	283	565	1413	2826	11304	28260	33912	42390
1200	407	814	2035	4069	16278	40694	48833	61042
1400	554	1108	2769	5539	22156	55390	66468	83084
1600	723	1447	3617	7235	28938	72346	86815	108518
1800	916	1831	4578	9156	36625	91562	109875	137344
2000	1130	2261	5652	11304	45216	113040	135648	169560
2200	1368	2736	6839	13678	54711	136778	164134	205168
2400	1628	3256	8139	16278	65111	162778	195333	244166
2600	1910	3821	9552	19104	76415	191038	229245	286556
2800	2216	4431	11078	22156	88623	221558	265870	332338
3000	2543	5087	12717	25434	101736	254340	305208	381510

Model Select

		EMF	XXX	X	X	X	X	X	X	X	X
Caliber	DN10 - DN3000 - 3-digital code seeing caliber code table K										
Nominal Pressure	0.6 MPa			1							
	1.0 MPa			2							
	1.6 MPa			3							
	4.0 MPa			4							
	Other			5							
Connection Mode	Flange Connection				1						
	Clamp Connection				2						
	Sanitary Connection				3						
Liner Material	PTFE					1					
	PFA					2					
	Neoprene					3					
	Polyurethane					4					
	Ceramic					5					
Electrode Material	316L						1				
	Hastelloy B						2				
	Hastelloy C						3				
	Titanium						4				
	Platinum - iridium						5				
	Tantalum						6				
	Stainless Steel covered with tungsten carbide						7				
Structure Type	Integral Type							1			
	RemoteType							2			
	Remote Type immerse							3			
	IntegralType Ex-proof							4			
	Remote Type Ex-proof							5			
Power	220 VAC 50Hz								E		
	24 VAC								G		
Output Communication	Flow Volume 4 - 20 mA DC/Pulse									A	
	Flow Volume 4 - 20 mA DC/RS232C Communication									B	
	Flow Volume 4 - 20 mA DC/RS485C Communication									C	
	Flow Volume HART Output/ with Communication									D	
Converter Figure	Square										A
	Circular										B

X	
1	Grounding Electrode
2	Coupled Flange
3	Entrance Protection Falnge
4	Scraper type Electrode
5	Other

Table K
Caliber Code Table

Caliber	Code
10	100
15	150
20	200
25	250
32	320
40	400
50	500
65	650
80	800
100	101
125	125
150	151
200	201
250	251
300	301
350	351
400	401
450	451
500	501
600	601
700	701
800	801
900	901
1000	102
1100	112
1200	122
1400	142
1500	152
1600	162
1800	182
2000	202
2200	222
2400	242
2600	262
2800	282
3000	302