MEF-8200

Marmonix Flange Electromagnetic Flow Meter

Overview:

Electromagnetic flow meter is one of the most popular flow meters. Flange type electromagnetic flow meter has been used for more than 50 years worldwide. It is widely used for all conductive liquids in every industry, such as water, acid, alkali, milk, slurry etc. Since founded in 2005, Marmonix has sold more than 600 thousand electromagnetic flow meters to provide the solutions for clients in different work conditions.

Advantages:

The main advantages of using electromagnetic flow meter is that it is with no moving parts, no pressure loss and require very less maintenance.

Flange type magnetic flow meter can be made large size range from DN3-DN3000mm and with bi-directional flow measurement. Marmonix mag flow meters are with built-in self-diagnosis function and support data record / bluetooth function and various kinds of output signals.

Compared with other liquid type flow meter, the limitations of magnetic flow meter is that it can only be used for conductive liquid.Regarding non or low conductive liquid such as petroleum products, organic solvents can not be used. Electromagnetic flow meter will be affected if there's strong magnetic filed in the sur-rounding environment.

SPECIFICATION

Size	DN3-DN3000mm
Nominal Pressure	0.6-1.6Mpa(2.5Mpa/4.0Mpa/6.4Mpa...Max 42Mpa)
Accuracy	+/-0.5%(Standard) +/-0.3% or +/-0.2%(Optional)
Liner	PTFE, Neoprene, Hard Rubber, EPDM, 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~+60 degC(Integral type)
	Remote type (Neoprene,Hard Rubber,Polyurethane,EPDM) -10~+80degC Remote type (PTFE/PFA/FEP) -10~+160degC
Ambient Temperature	-20~+60deg C
Ambient Humidity	5-100%RH(relative humidity)
Measuring Range	Max 15m/s
Conductivity	>5us/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	RS485(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 3.6V (optional)
Power Consumption	<20W
Alarm	Upper Limit Alarm / Lower Limit Alarm
Self-diagnosis	Empty Pipe Alarm, Exciting Alarm
Explosion Proof	ATEX

Electrode Material Selection

Electrode Material	Applications & Properties
SUS316L	Applicable to industrial/municipal water, wastewater and low corrosive mediums. Widely used in petroleum, chemical industries.
Hastelloy B	Strong resistance to hydrochloric acids below the boiling point. Resist against oxidable acids, alkali and non-oxidable salts. For instance, vitriol, phosphate, hydrofluoric acids, and organic acids.
Hastelloy C	Exceptional resistance to strong solutions of oxidizing salts and acids. For example, Fe+++, Cu++, Nitric acids, mixed acids
Titanium	Titanium can withstand corrosive mediums such as seawater, chloride salt solutions, hypochlorite salts, oxidable acids(including fuming nitric acids), organic acids, and alkali. Not resistant to high purity reducing acids such as sulphuric acids, hydrochloric acids.
Tantalum	Highly resistant to corrosive mediums. Applicable to all chemical mediums except Hydrofluoric Acids, Oleum and Alkali.
Platinum-iridium	Applicable to all chemical mediums except for Ammonium salts and Fortis

Application

Electromagnetic flow meter is widely used in water treatment, food industry, pharmaceutical, petrochemical, paper mill, chemical monitoring etc.

In the metallurgical industry, it is often used to control the flow of cooling water for continuous steel casting, continuous steel rolling, and steel-making electric furnaces;

In the field of water supply and drainage in public utilities, electromagnetic flow meters are often used for the transfer measurement of finished product water and raw water in water plants;

In the pulp process of the paper industry, electromagnetic flow meters are involved in the measurement of the flow of grinding pulp, water, acid, and alkali;

In the coal industry, measuring coal washing and pipeline hydraulic conveying coal slurry.

For food and beverage industries, it is used for beer and beverage filling measurement.

For chemical and petrochemical industries, it is used to measure corrosive liquids, such as acids and alkalis etc.

Flow Range

Size	Flow Range & Velocity Table							
(mm)	0.1m/s	0.2m/s	0.5m/s	1m/s	4m/s	10m/s	12m/s	15m/s
3	0.003	0.005	0.013	0.025	0.102	0.254	0.305	0.382
6	0.01	0.02	0.051	0.102	0.407	1.017	1.221	1.526
10	0.028	0.057	0.141	0.283	1.13	2.826	3.391	4.239
15	0.064	0.127	0.318	0.636	2.543	6.359	7.63	9.538
20	0.113	0.226	0.565	1.13	4.522	11.304	13.56	16.956
25	0.177	0.353	0.883	1.766	7.065	17.663	21.2	26.494
32	0.289	0.579	1.447	2.894	11.575	28.938	34.73	43.407
40	0.452	0.904	2.261	4.522	18.086	45.216	54.26	67.824
50	0.707	1.413	3.533	7.065	28.26	70.65	84.78	105.98
65	1.19	2.39	5.97	11.94	47.76	119.4	143.3	179.1
80	1.81	3.62	9.04	18.09	72.35	180.86	217	271.3
100	2.83	5.65	14.13	28.26	113.04	282.6	339.1	423.9
125	4.42	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	953.78
200	11.3	22.61	56.52	113.04	452.16	1130.4	1356	1696
250	17.66	35.33	88.31	176.53	706.5	1766.25	2120	2649
300	25.43	50.87	127.2	254.34	1017	2543.4	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	286.1	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	692.4	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
Remark:Suggest flow velocity range 0.5m/s - 15m/s								

Selection Guide

QTLD		xxx	x	x	x	x	x	x	x	x
Caliber	DN3mm-DN3000mm									
Nominal Pressure	0.6Mpa		1							
	1.0Mpa		2							
	1.6Mpa		3							
	4.0Mpa		4							
	Other		5							
Connection Mode	Flange connection			1						
	Clamp connection			2						
	Sanitary connection			3						
Liner Material	PTFE				1					
	PFA				2					
	Neoprenen				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			
	Remote type						2			
	Remote type immerse						3			
	Integral type Ex-proof						4			
	Remote type Ex-proof						5			
Power	220VAC 50Hz							E		
	24VDC							G		
Output communication	Flow volume 4-20mADC/pulse								A	
	Flow volume 4-20mADC/RS232C communication								B	
	Flow volume 4-20mADC/RS485 communication								C	
	Flow volume HART output/with communication								D	
Converter Figure	Square									A
	Circular									B

Installation

In order to obtain a stable and accurate flow measurement, it is very important that the flow meter is installed correctly in the pipe system.

Do not install the meter near equipment that produces electrical interference such as electric motors, transformers, variable frequency, power cables etc.

Avoid locations with pipe vibrations for example pumps.

Do not install the meter close to pipeline valves, fittings or impediments which can cause flow disturbances.

Place the meter where there is enough access for installation and maintenance tasks.

- Install at the lowest point and vertical upward direction Don't install at the highest point or vertical downward
- 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 10D of upstream and 5D of downstream.
- Don't install it at the entrance of pump, install it at the exit of pump.
- Install at the rising direction.