

Electromagnetic Flow Meter



SEGO



Electromagnetic Flow Meter



Description

SEGO magnetic flow meter, also known as electromagnetic flow meter or mag meter, is widely used because less obstruction, cost-effective and accurate measurement. Electromagnetic flow meter don't have any moving parts to wear down, reducing the need for maintenance or replacement. We offer flowmeters with a range of liners, electrodes, and sizes, which can meet various conductive liquids.

Industries

- Effluent Treatment Plant
- Sewage Treatment Plant Water Supply Scheme
- Steel & Aluminum Industries
- Chemical & Fertilizer Industries
- Dairy Industries
- Sugar Industries
- Textile Processing Industries



Electromagnetic Flow Meter

Applications



Features

- No moving parts, no pressure loss.
- Self-diagnosis, empty pipe alarm, exciting alarm, high and low flow alarm.
- Infrared telecontrol keyboard.
- Recording time when power off, record power broken time automatically.
- Dual frequency excitation and stable zero point.
- Precision coil winding technology, makes magnetic field more uniform.
- Built-in reference electrodes, no need to connect ground ring.
- Measure forward and reverse direction flows.
- High accuracy: $\pm 0.5\%$ of reading, $\pm 0.2\%$ optional, velocity >0.5 m/s.



Electromagnetic Flow Meter

Technical Data

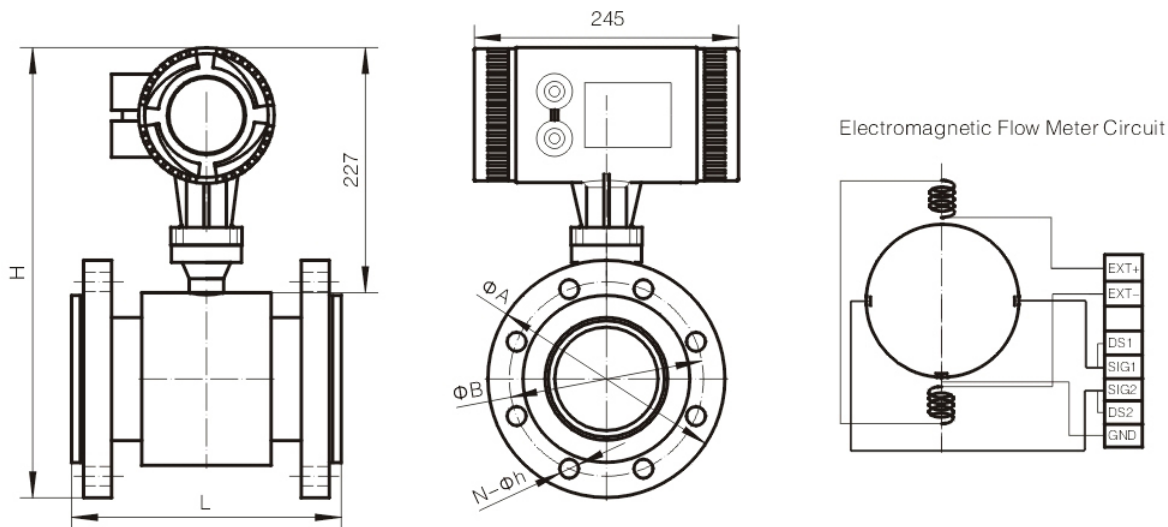
Size	DN3–DN3000mm (1/8"– 120")	
Accuracy	$\pm 0.5\%$ of reading at flow velocity $\geq 0.5\text{m/s}$ $\pm 0.2\%$ optional at flow velocity $\geq 0.5\text{m/s}$	
Velocity	0. 1~15 m/s	
Repeatability	$\leq 0.17\%$	
Structure	Compact / remote, cable length 10m standard, 100m max	
Conductivity	$> 5\mu\text{S/cm}$, demineralized water $> 20\mu\text{S/cm}$	
Protection Grade	Transmitter: IP65 standard, IP67 optional Sensor: IP65 standard, IP68 (submersible, only available for remote type)	
Electrode	SS316L, Hastelloy C, Hastelloy B, Titanium, Tantalum, Platinum–iridium	
Power Supply	85~250 VAC (50/60 Hz), 20~36 VDC	
Power Consumption	$< 20\text{W}$	4~20mA (load resistor 0~750 Ω)
	Analog	Forward & reverse flow output with a frequency range of 1~5000Hz
	Frequency	Two isolated open collector transistor (OCT) outputs for alarm signals
Protocol	Alarm	
Display	RS485 MODBUS RTU standard, HART, GPRS, PROFIBUS optional	
Ambient Temperature	LCD Display, 128X128mm, three lines, 4 buttons	
Fluid Temperature	$-20^{\circ}\text{C}\sim 60^{\circ}\text{C}$	
Liner Material	Compact: $-20^{\circ}\text{C}\sim 80^{\circ}\text{C}$, Remote: $-20^{\circ}\text{C}\sim 120^{\circ}\text{C}$	
	PTFE ($-20^{\circ}\text{C}\sim 150^{\circ}\text{C}$, DN15–DN1600)	
	FEP ($-20^{\circ}\text{C}\sim 120^{\circ}\text{C}$, DN3–DN1800)	
	PFA ($-20^{\circ}\text{C}\sim 160^{\circ}\text{C}$, DN3–DN800)	
	Polyurethane ($-10^{\circ}\text{C}\sim 60^{\circ}\text{C}$, DN40–DN1600)	
	Neoprene ($-10^{\circ}\text{C}\sim 80^{\circ}\text{C}$, DN40–DN3000)	
	Hard Rubber ($-10^{\circ}\text{C}\sim 80^{\circ}\text{C}$, DN 40–DN3000)	
	Ceramic ($-20^{\circ}\text{C}\sim 180^{\circ}\text{C}$, DN15–DN200)	
Flange Standard	DIN, ANSI, JIS	
Sensor Material	Measuring tube: SS304	
	Flange & housing: carbon steel (standard), SS304 / SS316 optional	
Transmitter Material	Aluminium alloy with epoxy painting	
Nominal Pressure	PN10 / PN16 / PN25 / PN40	
	10K / 20K / 30K	
	150# / 300# / 600#	
	High pressure 42 MPa / ANSI 2500# can be customized	
Display	Instantaneous flow, total flow, velocity	
Function	High and low alarm, empty pipe alarm, empty pipe alarm, self–diagnosis	
Totalizer	Three built–in totalizers: forward flow, reverse flow and net flow	
Display Unit	L/s, L/m, L/h, m^3/s , m^3/m , m^3/h , UKG, USG	
Language	English, Chinese, Italian, Portuguese, French, Spanish, Korean	



Electromagnetic Flow Meter

Dimension

Size is from 1/2"-24", other sizes can be provided upon request.



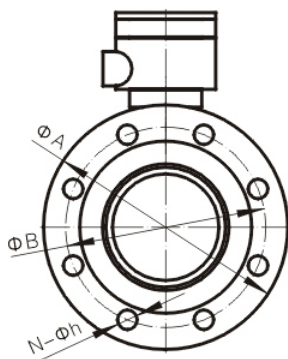
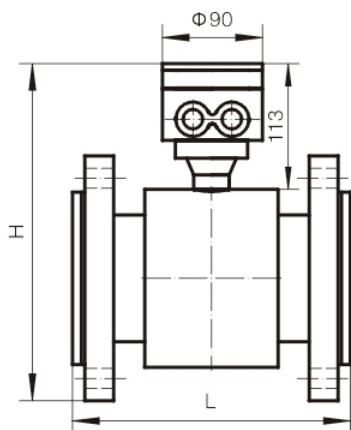
1/2"-24" Compact Electromagnetic Flow Meter with ANSI 150# Drawing

Size	Flange Standard	Pressure Rate	H (mm)	L (mm)	ΦA (mm)	ΦB (mm)	N (mm)	Φh (mm)
1/2"	ANSI	150#	318	200	88.9	60.45	4	15.7
3/4"	ANSI	150#	323	200	98.6	69.85	4	15.7
1"	ANSI	150#	328	200	108	79.25	4	15.7
1 1/4"	ANSI	150#	333	200	117.3	88.9	4	15.7
1 1/2"	ANSI	150#	343	200	127	98.6	4	15.7
2"	ANSI	150#	363	200	152.4	120.7	4	19.1
2 1/2"	ANSI	150#	383	200	177.8	139.7	4	19.1
3"	ANSI	150#	398	200	190.5	152.4	4	19.1
4"	ANSI	150#	426	250	228.6	190.5	8	19.1
5"	ANSI	150#	449	250	254	215.9	8	22.4
6"	ANSI	150#	477	300	279.4	241.3	8	22.4
8"	ANSI	150#	538	350	342.9	298.5	8	22.4
10"	ANSI	150#	613	450	406.4	362	12	25.4
12"	ANSI	150#	678	500	482.6	431.8	12	25.4
14"	ANSI	150#	728	550	533.4	476.3	12	28.4
16"	ANSI	150#	784	600	596.9	539.8	16	28.4
18"	ANSI	150#	830	600	635	577.9	16	31.75
20"	ANSI	150#	887	600	698.5	635	20	31.75
24"	ANSI	150#	999	600	812.8	749.3	20	35.1

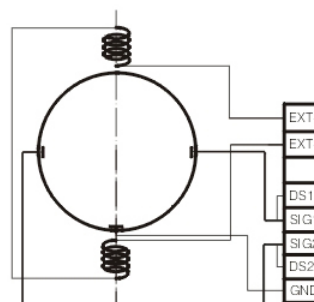


Electromagnetic Flow Meter

Dimension



Electromagnetic Flowmeter Circuit



1/2"–24" Remote Electromagnetic Flow Meter with ANSI 150# Drawing

Size	Flange Standard	Pressure Rate	H (mm)	L (mm)	ΦA (mm)	ΦB (mm)	N (mm)	Φh (mm)
1/2"	ANSI	150#	204	200	88.9	60.45	4	15.7
3/4"	ANSI	150#	209	200	98.6	69.85	4	15.7
1"	ANSI	150#	214	200	108	79.25	4	15.7
1 1/4"	ANSI	150#	219	200	117.3	88.9	4	15.7
1 1/2"	ANSI	150#	229	200	127	98.6	4	15.7
2"	ANSI	150#	249	200	152.4	120.7	4	19.1
2 1/2"	ANSI	150#	269	200	177.8	139.7	4	19.1
3"	ANSI	150#	284	200	190.5	152.4	4	19.1
4"	ANSI	150#	312	250	228.6	190.5	8	19.1
5"	ANSI	150#	335	250	254	215.9	8	22.4
6"	ANSI	150#	363	300	279.4	241.3	8	22.4
8"	ANSI	150#	424	350	342.9	298.5	8	22.4
10"	ANSI	150#	499	450	406.4	362	12	25.4
12"	ANSI	150#	562	500	482.6	431.8	12	25.4
14"	ANSI	150#	614	550	533.4	476.3	12	28.4
16"	ANSI	150#	670	600	596.9	539.8	16	28.4
18"	ANSI	150#	716	600	635	577.9	16	31.75
20"	ANSI	150#	773	600	698.5	635	20	31.75
24"	ANSI	150#	885	600	812.8	749.3	20	35.1



Electromagnetic Flow Meter

Main Performance of Electrode Material

Electrode Material	Application
SS316L	Applicable to industrial and 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, like vitriol, phosphate, hydrofluoric acids and organic acids.
Hastelloy C	Exceptional resistance to strong solutions of oxidizing salts and acids, like 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.

Main Performance of Liner Material

Electrode Material	Application
PTFE	Best chemical resistance, withstand boiling hydrochloric acid, sulfuric acid, nitric acid, alkali and a variety of organic solvents. Poor wear resistance and poor adhesion.
PFA	Highly resistant to chemicals. Performance well under vacuum pressure condition.
Neoprene	Excellent elasticity, good abrasion resistance. Withstand the corrosion of low-concentration acid, alkali, salt and other media. Not resistant to corrosion by oxidizing medium.
Polyurethane	Strong abrasion resistant, applicable for slurries and muds. Poor corrosion resistance, can't be used for corrosive medium.
Hard Rubber	Withstand the corrosion of hydrochloric acid, acetic acid, oxalic acid, ammonia water, phosphoric acid and 50% sulfuric acid, sodium hydroxide, potassium hydroxide. Use for general acid, alkali, and salt solutions, not resistant to the corrosion of strong oxidants.
Ceramic	Withstands high temperature, corrosion and wear smooth inner totally vacuum resistant.



Electromagnetic Flow Meter

Selection Table SEGO

SEGO		X	X	X	X	X	X	X	X	X	X	X
Caliber size	DN3–DN3000 (1/8"–120")											
Structure	Compact		1									
	Remote		2									
	Compact with explosion proof		3									
	Remote with explosion proof		4									
Accuracy	± 0.5%			1								
	± 0.2%			2								
	Others			3								
Lining Material	PTFE				1							
	FEP				2							
	PFA				3							
	Neoprene				4							
	Polyurethane				5							
	Hard Rubber				6							
	Ceramic				7							
	Others				8							
Electrode Material	SS316L					1						
	Hastelloy B					2						
	Hastelloy C					3						
	Titanium					4						
	Tantalum					5						
	Platinum–iridium					6						
	Stainless steel covered with tungsten carbide					7						
	Others					8						
Sensor Material	Carbon steel						1					
	SS304						2					
	SS316						3					
Power Supply	20~36 VDC							G				
	85~265 VAC							E				
	9~36 VDC solar power							SD				
	Others							X				
Signal Output / Communication	4~20 mA + Pulse + RS485 MODBUS								A			
	4~20 mA + HART								B			
	4~20 mA + Profibus PA/DP								C			
	GPRS								D			
Flange Process Connection	DIN D10: DIN PN10, D16: DIN PN16, D25: DIN PN25, D40: DIN PN40									D**		
	ANSI A15: ANSI 150#, A30: ANSI 300#, A60: ANSI 600#									A**		
	JIS J10: JIS 10K, J20: JIS 20K, J30: JIS 30K									J**		
	Others									O		
Protection Grade	IP65 Transmitter + IP65 sensor										1	
	IP65 Transmitter + IP68 sensor (remote)										2	
Transmitter	Square											A
	Round											B



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Flow Range Table

Size		Flow Range & Velocity Table							
mm	Inch	0.1m/s	0.2m/s	0.5m/s	1m/s	4m/s	10m/s	12m/s	15m/s
DN3	1/8"	0.003	0.005	0.013	0.025	0.102	0.254	0.305	0.382
DN6	1/4"	0.01	0.02	0.051	0.102	0.407	1.017	1.221	1.526
DN10	3/8"	0.028	0.057	0.141	0.283	1.13	2.826	3.391	4.239
DN15	1/2"	0.064	0.127	0.318	0.636	2.543	6.359	7.63	9.538
DN20	3/4"	0.113	0.226	0.565	1.13	4.522	11.304	13.56	16.956
DN25	1"	0.177	0.353	0.883	1.766	7.065	17.663	21.2	26.494
DN32	1 1/4"	0.289	0.579	1.447	2.894	11.575	28.938	34.73	43.407
DN40	1 1/2"	0.452	0.904	2.261	4.522	18.086	45.216	54.26	67.824
DN50	2"	0.707	1.413	3.533	7.065	28.26	70.65	84.78	105.9
DN65	2 1/2"	1.19	2.39	5.97	11.94	47.76	119.4	143.3	179.1
DN80	3"	1.81	3.62	9.04	18.09	72.35	180.86	217	271.3
DN100	4"	2.83	5.65	14.13	28.26	113.04	282.6	339.1	423.9
DN125	5"	4.42	8.83	22.08	44.16	176.63	441.56	529.9	662.34
DN150	6"	6.36	12.72	31.79	63.59	254.34	635.85	763	953.78
DN200	8"	11.3	22.61	56.52	113.04	452.16	1130.4	1356	1696
DN250	10"	17.66	35.33	88.31	176.53	706.5	1766.25	2120	2649
DN300	12"	25.43	50.87	127.2	254.34	1017	2543.4	3052	3815
DN350	14"	34.62	69.24	173.1	346.19	1385	3461.85	4154	5193
DN400	16"	45	90	226.1	452	1809	4522	5426	6782
DN450	18"	57	114	286.1	572	2289	5723	6867	8584
DN500	20"	71	141	353.3	707	2826	7065	8478	10598
DN600	24"	102	203	508.7	1017	4069	10174	12208	15260
DN700	28"	138	277	692.4	1385	5539	13847	16617	20771
DN800	32"	181	362	904.3	1809	7235	18086	21704	27130
DN900	36"	229	458	1145	2289	9156	22891	27469	34336
DN1000	40"	283	565	1413	2826	11304	28260	33912	42390
DN1200	48"	407	814	2035	4069	16278	40694	48833	61042
DN1400	56"	554	1108	2769	5539	22156	55390	66468	83084
DN1600	64"	723	1447	3617	7235	28938	72346	86815	108518
DN1800	72"	916	1831	4578	9156	36625	91562	109875	137344
DN2000	80"	1130	2261	5652	11304	45216	113040	135648	169560
DN2200	88"	1368	2736	6839	13678	54711	136778	164134	205168
DN2400	96"	1628	3256	8139	16278	65111	162778	195333	244166
DN2600	104"	1910	3821	9552	19104	76415	191038	229245	286556
DN2800	112"	2216	4431	11078	22156	88623	221558	265870	332338
DN3000	120"	2543	5087	12717	25434	101736	254340	305208	381510

Remark: Recommend flow velocity range 0.5 ~ 15 m/s



Electromagnetic Flow Meter



Description

SEGO battery-powered electromagnetic flow meter is an ideal flow measurement device for water and wastewater systems located at remote sites. Various signal and communication are available, like 4–20mA, pulse, RS485 etc. all real-time flow data can be monitored on computer or mobile phone by GPRS. Beside flow, it also can measure temperature or pressure. With 5 pcs of 3.6V lithium battery, lifespan is up to 8 years, and battery can be changed when it's used up. The transmitter body is SS304 and the protection grade is IP68, which is available to be buried or submerged in the water.

Industries

- Effluent Treatment Plant
- Sewage Treatment Plant Water Supply Scheme
- Steel & Aluminum Industries
- Food & Drug Industries
- Chemical & Fertilizer Industries
- Dairy Industries
- Sugar Industries
- Textile Processing Industries



Electromagnetic Flow Meter

Applications



Features

- It has a long life span, standard battery can work for 3–8 years, determined by the excitation current.
- Dual power supply: it's equipped with external power supply interface, which can be powered by external 12– 24VDC power supply, enabling users to have a variety of power options.
- Multiple work mode: SEGO has "Flow Only" mode, "Flow + Pressure" mode, "Flow +Temperature" mode for users.
- Multiple network interfaces: SEGO has GPRS, RS485, HART and other network communication for users.
- 3.6V lithium battery can be changed if it's used up.
- Infrared remote control display and operation.

Technical Data

Size	DN10–DN2000 (3/8"~80")
Accuracy	$\pm 0.5\%$ of reading at flow velocity $\geq 0.5\text{m/s}$, $\pm 0.2\%$ optional at flow velocity $\geq 0.5\text{m/s}$
Velocity	0.1~15 m/s
Repeatability	$\leq 0.17\%$
Structure	Compact / remote, cable length 10m standard, 100m max



Electromagnetic Flow Meter

Technical Data

Conductivity	> 5 μ S/cm, demineralized water > 20 μ S/cm	
Protection Grade	Transmitter: IP65 standard, IP68 optional	
	Sensor: IP65 standard, IP68 (submersible, only available for remote type)	
Electrode	SS316L, Hastelloy C, Hastelloy B, Titanium, Tantalum, Platinum-iridium	
Power Supply	3.6V lithium Battery	
Power Consumption	<20W	
Signal Output	4 ~ 20 mA, Pulse	
Protocol	RS485 MODBUS standard, HART, GPRS, PROFIBUS optional	
Display	LCD Display, 128X128mm, three lines, 4 buttons	
Ambient Temperature	-20°C~60°C	
Fluid Temperature	Compact: -20°C~80°C, Remote: -20°C~120°C	
Liner Material	PTFE (-20°C~150°C, DN15-DN1600)	
	FEP (-20°C~120°C, DN3-DN1800)	
	PFA (-20°C~160°C, DN3-DN800)	
	Polyurethane (-10°C~60°C, DN15-DN1600)	
	Neoprene (-10°C~80°C, DN40-DN3000)	
	Hard Rubber (-10°C~80°C, DN40-DN3000)	
Process connection	Ceramic (-20°C~180°C, DN15-DN200)	
	Flange, tri-clamp, wafer, thread, insertion	
Sensor Material	Measuring tube: SS304	
	Flange & housing: carbon steel (standard), SS304/SS316 optional	
Transmitter Material	SS304	
Nominal Pressure	Flange	PN10 / PN16 / PN25 / PN40 DIN 10K / 20K / 30 K JIS 150# / 300# / 600# ANSI
	Insertion, tri-clamp, wafer, thread	PN16
Display	Instantaneous flow, total flow, velocity	
Function	High and low alarm, empty pipe alarm, self-diagnosis	
Totalizer	Three built-in totalizers: forward flow, reverse flow and net flow	
Display Unit	L/s, L/m, L/h, m ³ /s, m ³ /m, m ³ /h, UKG, USG	