ELECTROMAGNETIC FLOW METER

Model No.
CS-MAG-110

HSN CODE: 90261010

ELECTROMAGNETIC FLOW METER CS-MAG-110

Electromagnetic flow meters are mainly used in various industries, ETP, STP, WTP Plants, Borewell, Chemical Petrochemicals, Fertilizer Beverage, Process Industries and for conductive liquids for measuring the flow rate & totalizer.

Working Principle :

Electromagnetic Flow meters are based on Faraday's Law of Electromagnetic Induction. In an Electromagnetic Flow meter, the magnetic field is generated by a set of coils. As the conductive liquid passes through the magnetic field, an electric voltage is induced in the liquid which is directly proportional to its velocity. This induced voltage is perpendicular to both, the liquid flow direction and the electromagnetic field direction. the voltage sensed by the electrodes is further processed by the transmitter to give standardized output signal or displayed in appropriate engineering unit.

Technical Specifications

Sr.no.	Parameters	
1	Media	: Liquids (Conductive)
2	Nominal dia (mm)	: 15 to 3000
3	Working pressure	: 10, 16, 25, 40 (Kg/cm²)
4	Working Temperature	: 150°C for PTFE Lining & 85°C for Rubber Lining
5	Electrode material	: SS 316L Std.* | HASTALLOY C | PLATINUM | TITANIUM | TENTALUM
6	Sensor Lining	: Std. Rubber*/PTFE
7	Display Version	: Integral/Remote
8	Measuring Tube material	: SS 304 Std.*
9	Sensor housing material	: Std. CS* | Ss304 | Ss316 optional
10	End connection	: Flange/Wafer/Tri-clamp/SMS
11	Flange standard	: ASA 150# | ANSI 150 | PN10 | PN16
12	Measuring range	: 0.2 to 12m/sec. Bidirectional
13	Accuracy % of measured value	: ±0.5% (±0.2% consult Factory)
14	Conductivity	: Liquids (Conductive)
15	Repeatability	: >5 µs/cm
16	Display	: ±0.2% of Span
17	Display units	: GRAPHIC DISPLAY/16X2 LINE DISPLAY
18	Output	: 4-20 mA & RS485
19	Power Supply Options	: 1. 85-260 V AC : 2. 24V DC : 3. Battery Operated
20	Protection Class for Sensor	: Std. IP 65 | IP67 | IP68 optional
21	Protection Class for Transmitter	: Std. IP67*
22	Cable length for Remote	: Std. 3m*
23	Installation	: Inline Flanged Type

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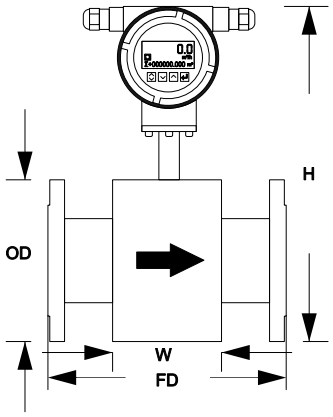
The Flux Density of the electromagnetic field in a given Flowmeter and the distance between the electrodes are constant. Therefore, the induced voltage is only a function of liquid velocity.

$$E = KxBx\overline{V}xD$$

where E : Induced voltage
K : Flow tube contant
B : Magnetic field strength
$\overline{V}$: Mean flow velocity
D : Electrode spacin



Volume flow is calculated by the equation

$$Q=\overline{v}xD^2x\pi/4$$

Therefore,

$$Q=\frac{ExDx\pi}{KxBx4}$$

The induced voltage is not affected by the physical properties of liquids like temperature, viscosity, pressure, density and conductivity as long as the conductivity of the measured liquid is above the minimum threshold level. For reliable measurement, the pipe must be completely full of the liquid. The electromagnetic field coil assembly is excited by pulsed DC technique which eliminates the interfering noise and provides automatic zero correction.

FLOW RANGE

SIZE (MM)	OD (MM)	W (MM)	H (MM)	FD (MM)	m^3/hr		LPM		USGPM	
					Min	Max	Min	Max	Min	Max
15 NB	88.9	66	90	200	0.03	6.4	0.5	106.66	0.132	28.178
20 NB	98.4	66	98	200	0.11	11	1.83	183.33	0.484	48.431
25 NB	107.9	66	108	200	0.18	18	3	300	0.792	79.251
32 NB	117.5	69	118	200	0.29	29	4.83	483.33	1.276	127.683
40 NB	127	79	127	200	0.45	45	7.5	750	1.981	198.129
50 NB	152.4	79	152	200	0.71	71	11.83	1183.33	3.126	312.603
65 NB	177.8	79	178	200	1.19	119	19.83	1983.33	5.239	523.941
80 NB	190.5	79	191	200	1.81	181	30.16	3016.66	7.969	796.919
100 NB	228.6	108	229	250	2.83	283	47.16	4716.66	12.460	1246.011
125 NB	254	106	254	250	4.42	442	73.66	7366.66	19.460	1946.067
150 NB	279.4	155	280	300	6.36	636	106	10600	28.002	2800.223
200 NB	342.9	171	343	350	11.3	1130	188.33	18833.33	49.752	4975.240
250 NB	406.4	203	407	450	17.66	1766	294.33	29433.33	77.754	7775.464
300 NB	450	240	483	500	25.43	2543	423.83	42383.33	111.964	11196.492
350 NB	510	298	533	550	34.62	3462	577	57700	152.427	15242.727
400 NB	570	336	597	600	45.22	4522	753.66	75366.66	199.097	19909.767
450 NB	620	398	635	698	57.23	5723	953.83	95383.33	251.976	25197.610
500 NB	675	450	700	768	70.65	7065	1177.5	117750	311.062	31106.259
600 NB	785	550	813	918	101.74	10174	1695.66	169566.66	447.947	44794.774

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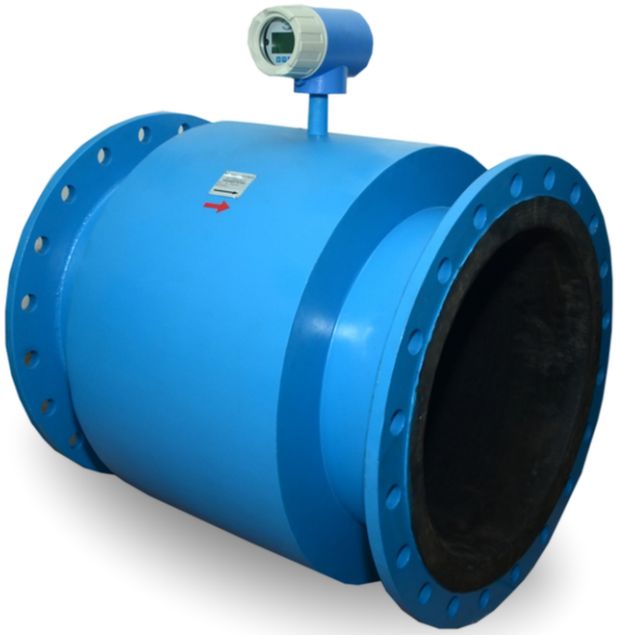
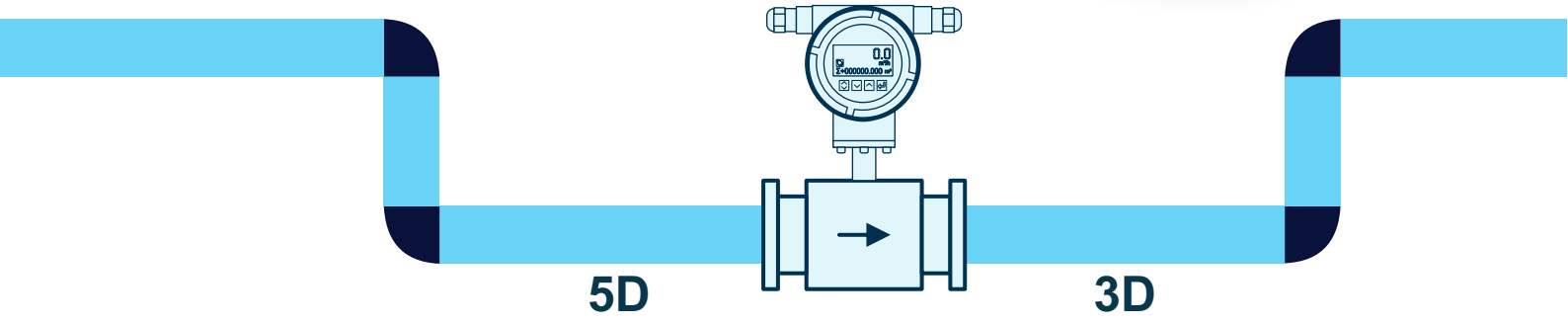


Installation Drawing



Installation Precaution

Installation location should be such that the Flowmeter will always remain full of liquid.
Minimum 5D inlet & 3D outlet straight lengths should be maintained at installation locations where ‘D’ is the pipe diameter.
The Flowmeter installation location should be free of bends, slbows, tees, valves, etc.

WARRANTY

All meter are warranted against any manufacturing defect for a period of 12 months from date of supply, provided the meter has not been misused, damaged, installed for services it is not recomended or the seal has been tempered with. The company shall be liable to furnish part/ parts thereof or full water meter as the company may deem fit.