

ELECTROMAGNETIC FLOW METER



We are leading manufacture for Electromagnetic flow meter in process control instrumentation; Maintenance free, low cost, highly stable, reliable & ideal flow meter suitable for wide ranges of pressure & temperature. The measurement being based on 'Faraday's law of electromagnetic induction' is independent of viscosity, density, pressure and temperature of the flowing media & measurement is a true volumetric. Current output of 4 – 20 mA DC is provided which is directly proportional to the instantaneous volumetric flow rate.

Advantages and Disadvantages:

Advantages of Meter:

- ▶ A magnetic flow meter provides an unobstructed flow path, with negligible pressure drop due to its pipe
- ▶ The typical accuracy for a magnetic flow meter is $\pm 0.5\%$ of full scale. This is among the best of the various pipe flow meters.
- ▶ The effect of fluid viscosity on flow through a magnetic flow meter is essentially the same as for flow through the pipe itself.
- ▶ The magnetic flow meter can be used for pipe flow measurement of either clean or dirty liquids, including wastewater, corrosive liquids, or slurries.

Disadvantages of Meter:

- ▶ The magnetic flow meter is used primarily for liquids. It doesn't work well for measurement of gas flow rate.
- ▶ In order to use a magnetic flow meter for measurement of a liquid's flow rate, that liquid must be conductive.

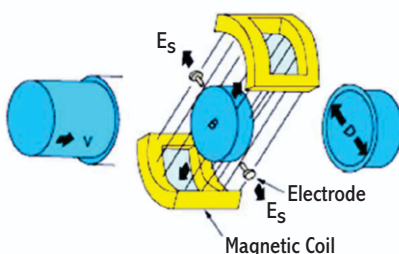
Applications:

Electromagnetic flow meter can be used for precise flow measurement of all electrically conductive liquids such as slurries, sewage, milk, water and waste water.

Electromagnetic flow meter has many applications across many industries

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| <ul style="list-style-type: none"> ▶ Chemical measurement, Water/waste water Treatment ▶ Effluent Treatment ▶ Building Automation & plant automation ▶ Pulp, paper, Food & Beverage ▶ Advanced Metering Infrastructure ▶ Meter Data Management | <ul style="list-style-type: none"> ▶ Automated meter reading ▶ Drinking water ▶ Flow measurement ▶ Public utility ▶ Utility sub meter ▶ Water conservation |
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Principle Of Operation :



- E Induced Voltage
- B Magnetic Field Strength
- D Inner Diameter of Pipe
- V Average Velocity
- C Constant
- E BDV/C

Primary Flow Tube Specifications

▶ Media Pressure	20kg/cm ²
▶ Media Temperature	0 – 120 °C
▶ Materials	Pipe – SS 304 (non magnetic & Without Painting) Electrodes-SS 316 / SS 316L / hastalloy C Inner lining -PTFE / Hard rubber Coil Housing– CS (Polyurethane Painted)

4-20 mA Transmitter Specifications

▶ Type	- Integral / Remote Mounting
▶ Enclosure	- Aluminum Die-cast - for Amplifier / Transmitter
▶ Dimensions	- Head Mount: 100 mm (L) x 160 mm (W) x 80 mm (D) - Remote Mount: 100 mm (L) x 160 mm (W) x 80 mm (D)
▶ Cable Entries	- 3 nos. for remote / integral Transmitter
▶ Cable Glands	- PG-7 [Standard]
▶ Power Supply	- 110 V / 220 V AC 50 Hz S.P.
▶ Temperature	- 0 – 50 °C (Operating Ambient)
▶ Temp. Drift	- 0.010 % / °C
▶ Humidity	- 90 % R.H. max. Non-condensing
▶ Input	- Micro-volt signal proportional to flow rate from Flow Tube
▶ Outputs	- 4 – 20 mA dc in max. 110 Ohms– Proportional (0 – 100 % flow rate)
▶ Flow Rate Unit	- m ³ /hr, LPH, LPM & LPS
▶ Totalize Unit	- Lit & m ³
▶ Min. Media	- 5 uSiemens / cm (Conductivity)
▶ Coil Excitation	- Pulsed DC
▶ Local Display	- [a] 4 digit 7 Segment LED Display (with unit indications) [b] 8 Digit 7 Segment LED Display for Totalized quantity (with unit indication)
▶ Flow Velocity	- a) 1.25m/s, b) 2.5m/s, c) 5.0m/s, d) 10.0m/s - a) V=0.3m/s, b) V=1m/s, c) V=12m/s
▶ Accuracy	- ± 1% (10 % to 90 % of calibrated range in ref. conditions)
▶ Ref. Conditions	- Power supply nominal ± 10% Temperature 27°C ± 2°C
▶ Repeatability	- ± 0.2 % of reading
▶ Ingress Protection	- IP – 65 Equivalent

Flow Rate Table

METER SIZE		FLOW RATES AT VELOCITY				
Inch	DN	FLOW RATES (IN M3 / HR) AT DIFFERENT VELOCITIES				
		1.00 m/s	1.25 m/s	2.50 m/s	5.00 m/s	10.00 m/s
0.5	15	0.636	0.795	1.59	3.18	6.36
0.75	20	1.131	1.4135	2.8275	5.655	11.31
1	25	1.767	2.20875	4.4175	8.835	17.67
1.25	32	2.895	3.61875	7.2375	14.475	28.95
1.5	40	11.95	14.9375	29.875	59.75	119.5
2	50	7.068	8.835	17.67	35.34	70.68
2.5	65	11.95	14.9375	29.875	59.75	119.5
3	80	18.907	23.63375	47.2675	94.535	189.07
4	100	28.2	35.25	70.5	141	282
5	125	44.18	55.225	110.45	220.9	441.8
6	150	63.62	79.525	159.05	318.1	636.2
8	200	113.1	141.375	282.75	565.5	1131
10	250	176.7	220.875	441.75	883.5	1767
12	300	254.5	318.125	636.25	1272.5	2545
14	350	346.4	433	866	1732	3464
.16	400	452.4	565.5	1131	2262	4524
20	500	706.9	883.625	1767.25	3534.5	7069
24	600	1018	1272.5	2545	5090	10180
28	700	1385	1731.25	3462.5	6925	13850
32	800	1810	2262.5	4525	9050	18100
36	900	2290	2862.5	5725	11450	22900