

Electromagnetic Flow Meter

INDUSTRIX PRECISE SOLUTIONS PRIVATE LIMITED offers a series of digital flow meters. Design to measures the flow rate of a liquid flowing through the close pipe.

The **electromagnetic flow meter** is volumetric flow meter having no obstruction as there are no moving parts. Hence pressure drop is negligible. The performance is independent of density, viscosity, temperature, and pressure of the flowing liquid.

The magnetic flow meter is calibrate using water and can measure the flow of other conductive fluids, with no further correction. This is a special feature that other type of flow meters doesn't have. PCD is one of the leading Electromagnetic flow meter manufacturers in India.

Working Principle

Electromagnetic flow meters work on the principle of "Faraday's Law of electromagnetic induction". According to the law, "when a conductive liquid cut the magnetic field, voltage Induce". Further, that voltage signal is sensed by the electrode which is mounted on the wall of the flow tube. That induce voltage signal is process by the electronic transmitter to determine the flow. The generation of voltage is directly proportional to the velocity of the fluid.



Construction of Electromagnetic Flow Meter

Electronic Part consists of head type Flow Indicator which contains Microprocessor Controller chip mounted on the electronic circuit. It has the LCD display, Which shows the Current flow rate & Total commutative flow. Also, has a transmission feature of 4-20 mA output & RS 485 Communication with High & Low Flow Alarm. To operate it requires an external power supply of 24 VDC or 230 VAC.

The Mechanical Part consists of Flow Tube, Lining such as of PTFE Or Neoprene, Electrode, Magnetic Coil, Flange connection. Flow Tube Material is non-wetted part and should be of the nonmagnetic material such as SS 304 Or SS 316. Selection of Lining Material must be according to temperature, corrosive property & compatibility of the measured fluid. Neoprene can resist general weak acid, alkaline corrosion and can withstand temperature upto 80°C, but it has wear resistance. As PTFE (Teflon) has low wear resistance and have good compatibility to almost all strong acid, chemical, alkaline corrosion, ETP Water, Waste Slurry. And can withstand temperature up to 180°C. Selection of Electrode Material must be according to corrosiveness of measured fluid

Features

- Total / accumulated total / flow rate
- Auto empty-full pipe check
- Ultrafast response time
- 4-20mA and pulse output
- High and low alarm (2-relay output)
- Modbus (RS485)
- Can handle slurries and heavy particulates
- Good accuracy (0.5 to 1%)
- Can respond well to fast changing flows
- Insensitivity to viscosity, specific gravity, temperature and pressure (within certain limitations)
- Will work with laminar, turbulent, and transitional flows
- Virtually no pressure drop
- No moving parts
- Lining protectors available for harsh, chemically corrosive, and abrasive fluids
- Can respond well to fast changing flows

Applications

- Distribution Network
- Waste water measurement, Sluge measurement etc.
- Industrial Utility Management : Measuring water consumed by each plant. Water audit.
- Dosing of additives
- Corrosive, abrasive liquids / Slurries
- Blending, dosing, batching
- Process chemicals Measurement of acidic, alkaline chemicals, slurries with & without dissolved solids
- Mining slurries
- Paper pulp waste
- Measurement of imbibition water, raw juice etc. Measurement of Spent wash, Fermented wash molasses etc.
- Water monitoring in industrial plants
- Untreated as well as treated effluent measurement
- Boiler Feed Water Measurement.
- Monitoring and control of a variety of industrial effluents
- Food & Beverages : Special end connection like sms union, triclover clamp, fully SS body, PTFE or PFA liner available.

Process Parameters

Fluid	Liquids
Specific Gravity	Up to 2.95
Viscosity	Up to 3000 cp
Design Pressure	Up to 15 Kg/cm ²
Measuring Range	0.1 to 350M3/hr
Velocity Range	0.5m/s to 10m/s

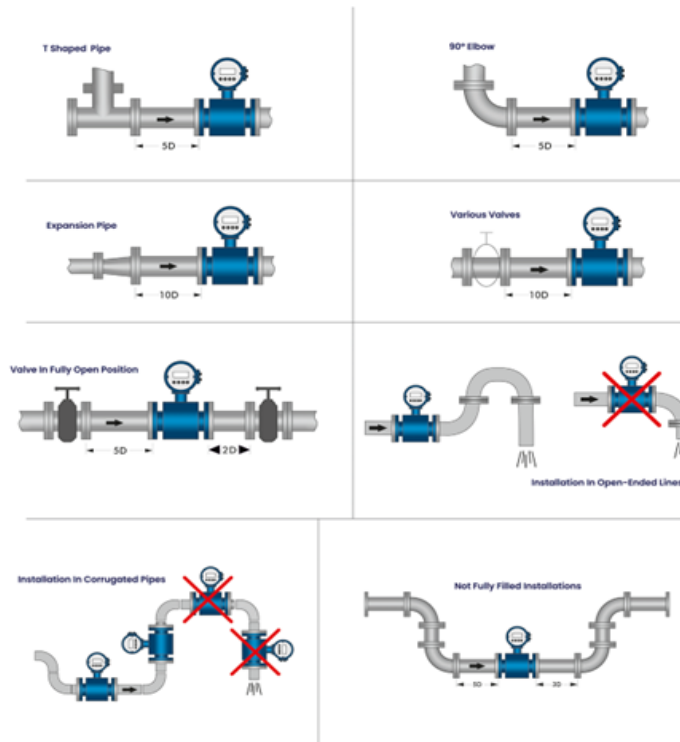
Mechanical Specifications

Line Size	15 NB to 300 NB
Lining Material	PTFE, EPDM, NEOPRENE
Electrode Material	SS316, Hastelloy C, Titanium, Monel
Design Temperature	Up to 150° C
Connection	Flanged to ASA, BS, DIN

Electronics Specifications

Programming	By Membrane Key
Power Supply	24 VDC Isolated, 230 VAC, 110VAC
Out Puts	4-20mA, 4wire, Pulse
Communication	RS 485 MODBUS
Accuracy	± 1% of FSD & ± 0.5% on request
Linearity	± 0.5 %
Repeatability	± 0.5%

Installation



Advantage of Electromagnetic Flow Meter

- Have no moving parts, results in no maintenance
- Negligible drop
- Easy to Install
- Accuracy is high
- Bidirectional flow measurement
- Performance is unaffected by Density, Viscosity, Temperature & Pressure
- Available in wide variety of sizes
- Provides a signal output of 4-20 mA current & RS 485 Communication.
- Empty pipe detection feature is available

Features of Electromagnetic Flow Meter

The [electromagnetic flowmeter](#) is a maintenance-free & cost-effective option if you are looking for a digital flow meter for measurement of Water/Waste Water, Acid and Corrosive chemicals etc.

It has an integral LCD display that displays the flow rate & total commutative flow consumption of conductive fluid passes through the flow meter.

It has numbers of more features such as 4-20 mA current output signal, which you can use to connect it to your DCS or BMS system. With the help of it, you will be able to watch the flow rate & total consumption of flow meter in your DCS or BMS system which further can be use for data logging.

It has an advance feature of RS 485 communication port. Used to watch the flow in your computer and automation systems with the help of USB interface and software. It is use in industrial applications where higher speeds and longer distances are must.

It also has an option of High & Low Flow Alarm with relay output to monitor the flow rate.

It has a Die cast aluminum weather proof enclosure and is design in such a manner that it can be mount on outdoor atmosphere.

The availability flow meter in various line size results in the satisfactory of customers need. High Accuracy, Solid Construction, negligible Pressure drop, Easy Installations, No Maintenance etc.

Due to continuous development of our products technical information's are subject to change.

Please ensure the compatibility between the measured medium and the contacting part of the product when placing an order.

IPSPL reserves the right to make any change in this datasheet without notice. The information provided is believed to be accurate and reliable as of this product sheet.
Contact factory for custom configurations not shown



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