ELECTROMAGNETIC FLOWMETER

"KABIR" make versatile Electromagnetic flow meter is ideal for conductive liquids such as Raw Water, Chilled water, effluents, Potable water etc. Using time proven electromagnetic flow metering principle, the meter achieves a flow meter for pipes from 15mm to 600mm. Since there are no moving parts, the flow meter gives years of maintenance free service.

"KABIR" flow-head can be supplied in Teflon lining or Hard Rubber lining is available with all the features required in a field mounted water metering equipments. These include - weather proof enclosure, communication options, RTC with data logging with printer option and 4 to 20 mA isolated Flow signal transmission option for flow pattern recording. The converter is available as field mounted-IP65 protection category. GSM modem interface can also be supplied as an optional add-on feature.

PRINCIPAL OF OPERATION :-

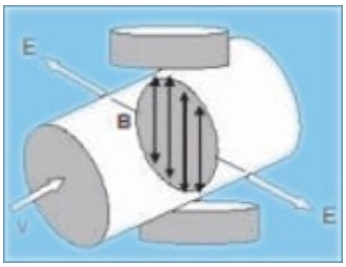


Figure 1

The operating principle of Magnetic flow meters is based upon Faraday's Law of electromagnetic induction, "It state that a voltage will be induced in a conductor moving through a magnetic field".

E = kBDV
Where E = Induced Voltage, B = Strength of the magnetic field, D = Conductor Width, V = Velocity of the conductor

The magnitude of the induced voltage E is directly proportional to the velocity of the conductor width D, and the strength of the magnetic field B. Liquid acts as a conductor as it flows through pipes. This Flowmeters find varied applications where the flowing medium is difficult to handle.

Major advantage of these flowmeters are : Zero pressure drop, No moving part and highest accuracy level at most affordable cost.

Some of the major application can be described below :

Effluent Treatment plant, Sewage Treatment plant, Water supply Schemes, Pulp and Papers, Sugar industries and Distilleries, Steel and Aluminium, Chemical / Pharmaceuticals, Food and Drugs etc.

Tolerates High percentage of suspended solids Sludge, slurries, minerals, paper, sewage – flows with high level of solids which can not be measured other type of meters. Obstruction less measurements Nothing projects into the flow stream, no head loss, no parts to maintain.
Suitable for corrosive liquid Acids, caustic and corrosive additives are isolated from the meter pipe by inert linings and compatible electrodes. Suitable for all types of electrically conductive liquids. Liquid where conductivity is of sufficient level to induce measurable

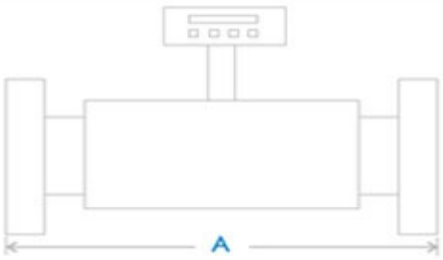
SPECIFICATIONS :-

Full-Bore EMFM from	**:** ½" to 24" sizes
Medium Conductivity	: >5 uS/cm
Flow Tube Part	: SS 316 / SS 304 (Non Magnetic)
Meter Sizes	: 1/2"'to 24" Pipe sizes. For Higher size consult Factory.
Electrodes	: SS 316L or optionally Hastalloy 'C'
Process Connection	: S series: SS 304 M.S. #150 Flange • E series: Epoxy painted M.S. #150 Flange
Lining	: S series Lining: PTFE • E series: Hard Rubber / EPDM / Neoprine
Sensor Housing	: Epoxy painted M.S OR SS 304 optional.
Flow Velocity	: 0.1 to 10 m/s in two ranges
Pressure Rating	: Standard Flanges - ASA150 options on request 15 bar Standard, higher on request
Operating Temperature Medium	: S series: 0 to 150 Deg.C for PTFE lining • E Series: 0 to 70 DegC for Hard Rubber lining
Operating Temperature Ambient	: 0 to 55 Deg. C
Power Supply	: 24Vdc or 230Vac or Battery Operated
Power Consumption	: 12VA max
Key Board	: 6 Key Membrane Key Board
Electrodes	: SS 316L or optionally Hastalloy 'C'
Programmable parameters	: Volume Units : ltrs, M3, ML, CF. BG; Time Units: sec, min, hrs- 4 to 20 mA range, % Low flow cut of, Pipe Dia, Discharge range, Comm. Parameters Calibration Constant, Filter Constant
Data Logger (Optional)	: RTC with 24 column Printer, Battery Charger +SMF Batteries and
Data Transmission (Optional)	: RS 485 MODBUS RTU or ASCII Protocol or RS232C, HART, with 4 to 20 mA option as add-on module –available
Data Communication (Optional)	**:** An SMS based or GPRS based communication module with software is available as optional at extra price. The Modem connects through the RS232C port .The flow meter can be equipped with GSM Modem.
Thus following configuration can be given:	Respond with data to a message (SMS) from any user. (Query response mode) Periodic GPRS based Data transmission to a fixed IP address / user's website. Respond by an SMS to Cell number stored, in case of alarm condition.
Flow parameter	: Programmable - Volume Units : ltrs, M3, ML, CF, BG - Time Units : sec, min, hrs
Configurable Parameters	: F.S. for 4 to 20 mA range, %Low flow cut off, Communication Parameters Calibration Constant Damping (Filter)
Calibration	: Factory Calibrated on certified flow rig
Ingress protection	: IP 65 / IP 67
Electronics Enclosure	: Powder coated Die cast Aluminum
Flame proof Version	: Please contact factory

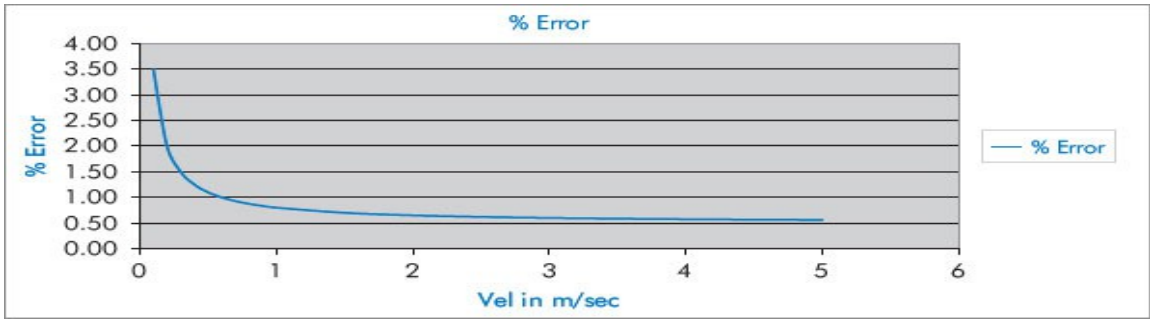
DIMENSIONAL DETAILS :-

Distance between Two Flanges

Line Size	A	Line Size	A
15 mm (1/2")	142 mm	100 mm (4")	242 mm
25 mm (1")	142 mm	150 mm (6")	350 mm
40 mm (1½")	142 mm	200 mm (8")	360 mm
50 mm (2")	194 mm	300 mm (12")	590 mm
80 mm (3")	242 mm		



ACCURACY CURVE :-



CAPACITY TABLE :-

Pipe Size (NB)	Max. Flow in LPM at Velocity 0.5 M/Sec	Max. Flow in LPM at Velocity 5 M/Sec
15 (1/2”)	5	50
20 (3/4”)	10	100
25 (1”)	15	150
40 (1 ½ “)	37	370
50 (2”)	60	600
65 (21/2”)	100	1000
80 (3”)	150	1500
100(4”)	235	2350
150 (6”)	530	5300
	Max. Flow in M^3/Hr at Velocity 0.5 M/Sec	**Max. Flow in M^3/Hr at Velocity 5 M/Sec**
200 (8”)	50	500
250 (10”)	90	900
300 (12”)	125	1250
350 (14”)	180	1800
400 (16”)	225	2250
500 (20”)	300	3000
600 (24”)	4250	4250