

BATTERY OPERATED ELECTROMAGNETIC FLOW METER WITH GROOVED COUPLING



Description

Manas has introduced a new type of Battery Operated Electromagnetic Flow meter series. This sensor works on Faraday's law of electromagnetic induction. The new type of flow transmitter is SS1021. It is available with an integral or remote version of the transmitter. Battery Operated Electromagnetic Flow meter is specifically designed where an Electric supply is unavailable and accurate flow measurement is essential.

Features

- Battery Operated (Battery Life 5 Years)
- Sizes Available from 1/2 " to 18"
- Highly Accurate and extremely Linear
- Microvolt signal Proportional flow rate from primary flow sensor
- Various types of Liner and Earth electrodes, both options are available
- Empty tube detection is also provided

Technical Specifications

Meter Size	: 2" – 12" [SROAT 1000P(Flange) /SROAT1000V(Victaulic coupling)]
Operating Ambient Temperature	: 0 – 125 °F
Material of Construction (along with options)	
Pipe	: SS304 / SS316 (non magnetic)
Electrodes	: SS 316 L / Hastalloy C or Others (as per compatibility with liquid)
Liner	: PU / Hard Rubber / PFA
Coil Housing	:MS/CS Polyurethane Painted / SS 304 With or Without Paint
Media Conductivity	: $\sigma \geq 5 \mu\text{S/cm}$
Local Display	: 16 characters x 2 lines LCD Display without backlight For Instantaneous Flow rate, Total Flow, Engg. units, Fault messages like Empty Pipe, etc.

- Output : a) Pulsed DC output supply to excite the field coils in Flow sensor
 b) 4 - 20mA dc, in max. 600 Ω load, Isolated, proportional to flow rate. Externally powered (2 wire system). Additionally, One DO for flow direction status(forward/reverse) is provided.
 c) PC Communication using RS485 Modbus RTU protocol OR PC Communication using RS232 Modbus RTU protocol
 Note : PC Communication O/P C should be enabled using a DI

Accuracy under Reference condition : Better than $\pm 1\% \pm 2\text{mm/s}$ of Actual Flow rate between 100% to 10% of calibrated range

Repeatability : $\pm 0.2\%$ of reading

End Connection :Groove compatible with Victaulic coupling of same line size OR Flange ANSI-150 (MS/SS)

Power Supply to Field Coils : Pulsed DC

Ingress Protection : IP67 (integral transmitter)

Service Condition

Service Liquid : Compatible with Liner and Electrode & pipe Material, $\sigma \geq 5 \mu\text{S/cm}$

Media Pressure : Upto 8" :230 PSI (16 bar)
 Above 8" :145 PSI (10 bar)

Media Temperature : For PU : 0 to 195 °F
 For Different Liners For Hard Rubber : 0 to 175 °F
 For PFA :0 to 390 °F

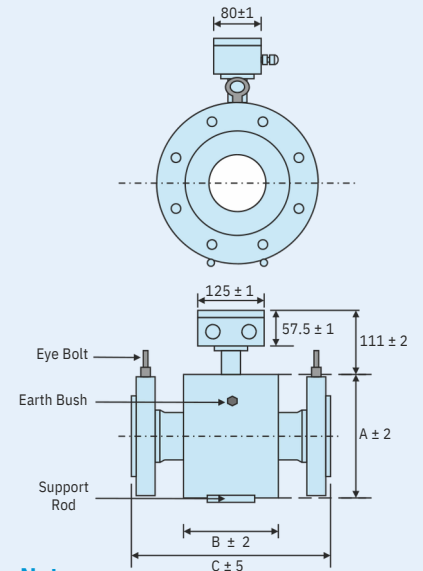
Flow Rate Table

Flow Rate at V = 1 m/s

DN (in inch)	Max.flow (in USGPM)	Min.flow (in USGPM)	Cutoff flow
3/8"	12.45	1.245	0.124
1/2"	28.01	2.801	0.28
3/4"	49.8	4.98	0.498
1"	77.71	7.781	0.778
1 1/4"	127.5	12.75	1.275
1 1/2"	199.2	19.92	1.992
2"	311.2	31.12	3.112
2 1/2"	526	52.6	5.26
3"	796.7	79.67	7.967
4"	1245	124.5	12.45
5"	1945	194.5	19.45
6"	2801	280.1	28.01
8"	4980	498	49.8
10"	7781	778.1	77.81
12"	1120x10	1120	112
14"	1525x10	1525	152.5

Table for Meter Dimensions (mm)

DN (inch)	A	B	C
3/8", 1/2", 3/4"	5.27	2.99	7.87
1"	4.41	3.94	7.87
1 1/4"	4.76	3.94	7.87
1 1/2"	5.16	4.13	7.87
2"	6.14	3.89	7.87
2 1/2"	7.12	3.62	7.87
3"	7.64	3.5	7.87
4"	9.13	5.31	9.84
5"	10.16	5.31	9.84
6"	11.14	6.69	11.81
8"	13.66	8.07	13.77
10"	16.14	9.45	15.75
12"	19.21	11.42	19.68
14"	21.22	11.42	21.65
16"	23.62	12.79	23.62
18"	25	16.34	25.59



Note

- All dimensions are in mm
- Dimensions are with ANSI B 16.5, class 150 flanges with terminal box
- Production Standard Flanges : ANSI B 16.5, class 150 up to 14" : IS1538 for Above 16"

ORDERING INFORMATION

Sample code explained: 1 1/2" - PFA - SS316 - ANSI150 - MS/CS - SS304 - SS1021 - RS4 - INT - 3.6 V

1 1/2"	Flow Meter Size	ANSI150	Flange / End Connection Standards	SS1021	Transmitter Type
	DN 15 : 1/2" DN 125 : 5"		ANSI 150 : ANSI150		SS1021 : SS1021
	DN 20 : 3/4" DN 150 : 6"		IS1538 : IS1538		
	DN 25 : 1" DN 200 : 8"		Any Other : ZZ		
	DN 32 : 1 1/4" DN 250 : 10"			RS4	Communication Facility
	DN 40 : 1 1/2" DN 300 : 12"				No Communication : NA
	DN 50 : 2" DN 350 : 14"	MS/CS	Flange / End Connection Material		RS 485 : RS4
	DN 65 : 2 1/2" DN 400 : 16"		Mild/Carbon Steel : MS/CS		
	DN 80 : 3" DN 450 : 18"		Stainless Steel 304 : SS304	INT	Transmitter Mounting
	DN 100 : 4"		Stainless Steel 316 : SS316		Integral : INT
			Any Other : ZZ		Remote : RMT
PFA	Liner Material	SS304	Body Material	3.6 V	Power Supply
	Hard Rubber : HR		Mild / Carbon Steel : MS/CS		Battery Operated : 3.6 V
	PU : PU		Stainless Steel 304 : SS304		
	PTFE : PTFE		Stainless Steel 316 : SS316		
	PFA : PFA		Any Other : ZZ		
	Any Other : ZZ				
SS316L	Electrode Material				
	SS316L : SS316L				
	Hastelloy : HAST C				
	Any Other : ZZ				

Due to continuous development specifications are subject to change without prior notice.

