

BATTERY OPERATED ELECTROMAGNETIC FLOW METER
Features

- Battery / Solar Powered
- Suitable for conductive liquids
- Full bore type
- Empty pipe indication
- Data Logging facility
- Local Indication through LCD
- Communication port (Optional)
- Simple & Cost Effective Construction
- Maintenance Free


Description

Electronet series ELMAG®-600 battery-powered Electromagnetic flow meter. It is ideal when power supply on field is not present, the battery powered ELMAG®-600 gives the flexibility to install a reliable flow meter, virtually anywhere, without distorting accuracy & performance. ELMAG®-600 is provided with 2 to 10 years of continuous battery operation based on sampling time & communication interval. The flow meter is extremely easy to use, simple to install & requires no regular maintenance. The product is engineered for various industrial as well as domestic applications such as Municipal and Industrial Water applications, Cooling tower, Water treatment, etc. The LCD display provides indication for flow rate & totalized flow with key selection. The display automatically turns OFF after 10 minutes, which can be again turned ON by pressing the 'enter' key.

Technical Specifications

Media	Liquid (Conductive)
Line Size	15 NB to 600 NB
Power Supply	Battery / Solar Powered
Electronics	Integral / Remote
Conductivity	> 5 μ S/cm
Viscosity	200 cp max
Excitation	Pulsed DC
Display	LCD Display – 5 digit for Flow Rate & 9 digit for Totalizer Flow
Calibration Range	Wet Calibrated on IEC/ISO/EN17025 Accredited Calibration Laboratory.
Accuracy	< \pm 1% of M.V. (\pm 5mm /sec) for Velocity Range 0.3 m/s to 6 or 12 m/s
Linearity	+/- 0.5% of M.V.
Repeatability	+/- 0.2% of M.V.
Temperature Coefficient	+/- 0.05% per $^{\circ}$ C
Process Temperature	-20 to 85 $^{\circ}$ C max for Rubber Lining & -20 to 220 $^{\circ}$ C for PTFE Lining
Process Pressure	16 kg/cm ² max (Higher on request)
Material of construction	1) Lining – Neoprene / Ebonite Rubber, PFA, PTFE, PU, CERAMIC
	2) Flange – MS, CS, SS316, SS304 & PVC
	3) Electrode – SS316L, Hastelloy C, Platinum, Tantalum, Titanium
	4) Coil Housing – MS, SS304, SS316 & PVC
MOC Electronics Enclosure	1) Aluminium Die Cast 2) SS 316 3) ABS Plastic

Low Bat indication	Provided	
Battery Life	2 to 10 Years depending on sampling time.	
	For RS485 Communication output battery life - 1 Year	
Response Time	10 Sec.	
Electronic Protection Class	Field Mount Weather Proof IP-67	
	Flameproof (CMRI IIA IIB Certified)	
Sensor / Flow Tube Protection class	Weather Proof IP-67, IP-68	
Process Connections	ANSI150 flanged, as per table B 16.5 (Other On Requirement)	
Mounting	In-Line Horizontal / Vertical	
Ambient Conditions	Temperature -20 to 75°C / Humidity 5 to 95% non condensing	
Communication Output	Output : 1 (Any one)	RS485 supporting MODBUS RTU Protocol
	Output : 2 (Any one)	1) GSM 2) GPRS
Certification	CE	

Assembly Overview

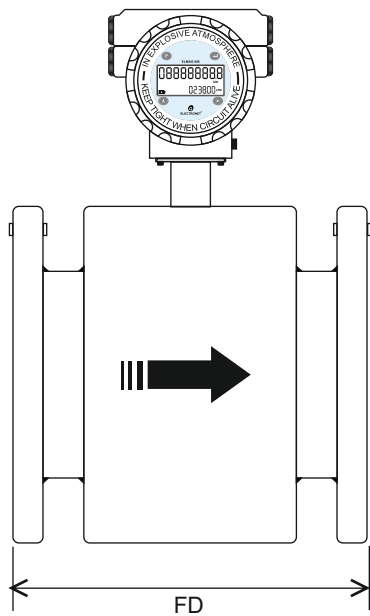


Fig. 1 Front View

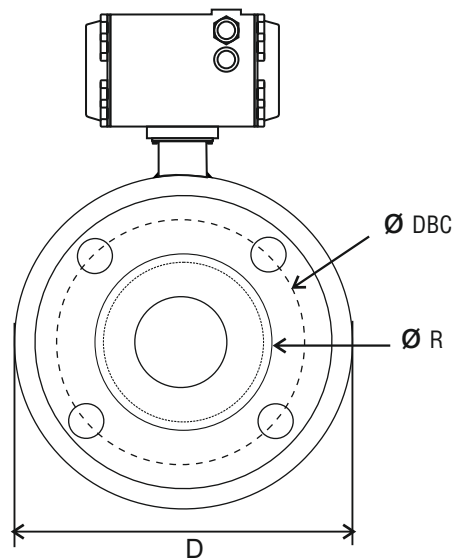


Fig. 2 Side View

TABLE : Dimensional Details (Flow Meter with ANSI 150 Flange)

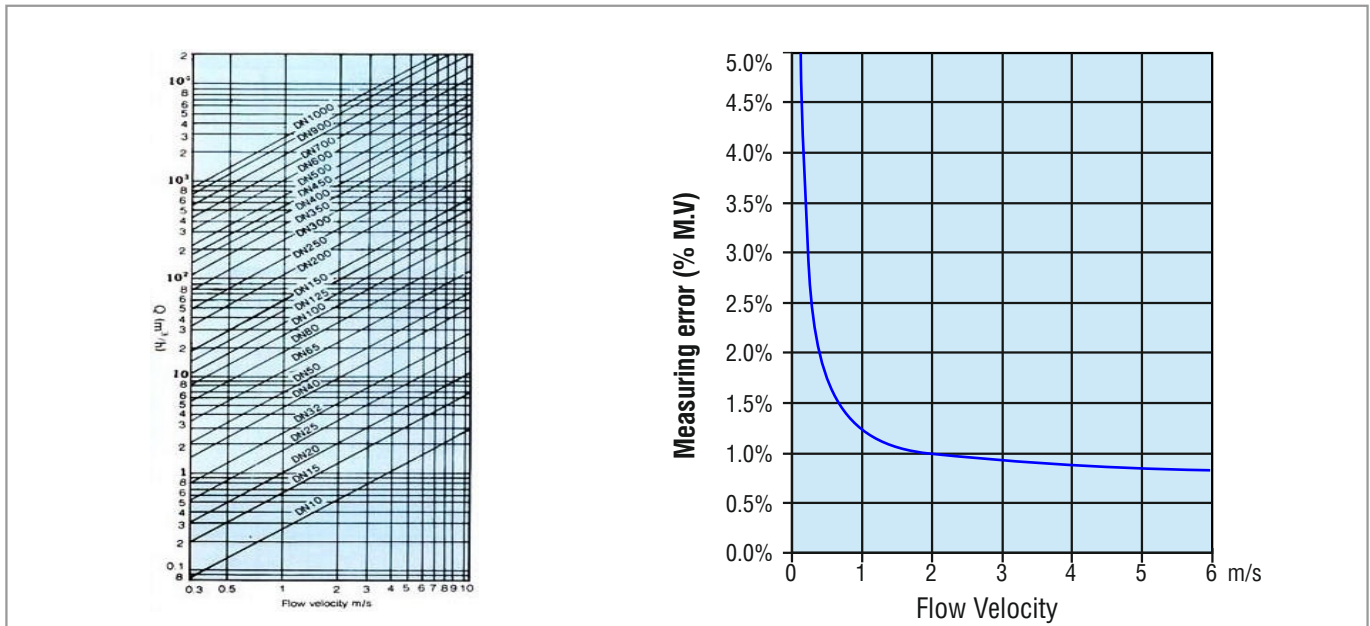
Refer Drg. Fig.1 & 2

Line Size Inch	NB	Flange Diameter D (mm)	Diameter of Raised Face R (mm)	Diameter of Bolt Hole Circle DBC (mm)	Diameter of Bolt Hole (mm)	No. of Holes	Thickness of Flange	Housing OD (mm)	Flange to Flange Distance (FD) (mm)	Flow Range (m ³ /hr) for Velocity 0.3m/s to 6m/s	
										Min.	Max.
1/2"	15	88.9	34.9	60.3	15.9	4	11.1	125	200	0.19	3.817
3/4"	20	98.4	42.9	69.8	15.9	4	12.7	125	200	0.33	6.785
1"	25	107.9	50.8	79.4	15.9	4	14.3	145	200	0.53	10.602
1 1/4"	32	117.5	63.5	88.9	15.9	4	15.9	155	200	0.86	17.371
1 1/2"	40	127.0	73.0	98.4	15.9	4	17.5	155	200	1.35	27.143
2"	50	152.4	92.1	120.6	19.0	4	19.0	165	200	2.12	42.4115
2 1/2"	65	177.8	104.8	139.7	19.0	4	22.2	185	200	3.58	71.675
3"	80	190.5	127.0	152.4	19.0	4	23.8	205	200	5.42	108.573
4"	100	228.5	157.2	190.5	19.0	8	23.8	245	260	8.48	169.646
5"	125	254.0	185.7	215.9	22.2	8	23.8	265	260	13.25	265.071
6"	150	279.4	215.9	241.3	22.2	8	25.4	285	310	19.085	381.703
8"	200	342.9	269.9	298.4	22.2	8	28.6	355	360	33.929	678.584
10"	250	406.4	323.8	361.9	25.4	12	30.2	405	460	53.014	1060.28
12"	300	482.6	381.0	431.8	25.4	12	31.8	485	510	76.340	1526.81
14"	350	533.4	412.7	476.7	28.6	12	34.9	555	562	103.908	2078.16
16"	400	596.9	469.9	539.7	28.6	16	36.5	605	612	135.716	2714.33
18"	450	635.0	533.4	577.8	31.7	16	39.7	605	612	171.766	3435.33
20"	500	698.5	584.2	635.0	31.7	20	42.9	630	612	212.057	4241.15
24"	600	812.8	692.1	749.3	34.9	20	47.6	755	612	305.362	6107.25

Note : Flange to flange distance (FD) Tolerance : 1) 1/2"(15NB) to 6"(150NB) : +/-3mm 2) 8"(200NB) to 24"(600NB) : +/-5mm

- All dimensions are in 'mm'
- For dimensions of line size above 600NB, please consult factory.
- Typical mounting dimensions are for reference only.
- Wet Calibrated at IEC/ISO/EN17025 Accredited Calibration Laboratory.
- Flow meter should be selected with the help of Nomograph (recommended full scale velocity).
- Flow indication of 6 digit max. up to 999999.

Flow Nomograph



Applications

Food Industry	Chemical Industry	Atomic Energy	Manufacturing Industry
Automation Industry	Thermal Power Energy	Process Industry	Water Treatment Industry

Product Ordering Information :

Order Code for Flow Transmitter				
Sample Order Code : TX 1 A3 B2 C1 E1 G1 H2				
Parameter	Code	Description		
TX	Electronics Transmitter	TX 1	Field Mount Weather Proof IP67	
		TX 4	Flameproof (CMRI IIA IIB Certified)	
A	Power Supply	A3	Battery Operated	
		A5	Solar Powered 3.6V DC	
B	MOC Electronics Enclosure	B1	Aluminium Die Cast	
		B2	SS316	
		B3	ABS Plastic	
C	Electrical Connection	C1	M20 *1.5 F	
		C2	1/2 Inch NPT F	
		C3	M12 Connector	
		CY	Other	
Parameter	Code	Description		
E	Output 2 (Any One)	E1	Pulse (Open Collector Type)	
		EX	NA	
G	Communication Output 1 (Any One)	G1	RS485 (MODBUS RTU)	
		GX	NA	
H	Communication Output 2 (Any One)	H1	GSM	
		H2	GPRS	
		HX	NA	
Note : ▪ In case of flameproof version only electronics enclosure is flameproof certified. ▪ Accuracy defined at Lab Conditions.				

Order Code for Flow Tube

Sample Order Code : FT 15 J2 K1 L1 M2 N2 O3 P1 Q2 R2 S2

Parameter	Code	Description	Code	Description	Parameter	Code	Description			
FT	Flow Tube	FT 15	15 NB	FT 150	150 NB	P	Flow Tube Lining Material	P1	Neoprene Rubber (Above 40 NB)	
		FT 20	20 NB	FT 200	200 NB			P2	Ebonite Rubber (Above 40 NB)	
		FT 25	25 NB	FT 250	250 NB			P3	PFA (15 to 300 NB)	
		FT 32	32 NB	FT 300	300 NB			P4	PTFE (15 to 600 NB)	
		FT 40	40 NB	FT 350	350 NB			P5	PU (15to 400 NB)	
		FT 50	50 NB	FT 400	400 NB			P6	Ceramic (15 to 600 NB)	
		FT 65	65 NB	FT 450	450 NB			P7	PVC	
		FT 80	80 NB	FT 500	500 NB			PY	Other	
		FT 100	100 NB	FT 600	600 NB			PX	NA	
		FT 125	125 NB							
		J	Electronics Location	J1	Integral (Local)			Q	Flange Standard and Rating	Q1
J2	Remote			Q2	ANSI 300 B16.5					
K	Remote Cable Length	K1	5 Meter		Q3	ANSI 600 B 16.5				
		KX	NA		Q4	DIN PN 10 EN 1092-1				
L	Flow Tube Protection Class	L1	IP-67		Q5	DIN PN 16 EN 1092-1				
		L2	IP-68		Q6	DIN PN 25 EN 1092-1				
M	Process Connection	M1	Threaded (15 to 50 NB)		Q8	IS 1538				
		M2	Flanged (15 To 600 NB)		QY	Other				
		M3	Triclover (15 to 100 NB)		QX	NA				
		M4	SMS Union (25 to 100 NB)		R	Material of construction - Flow Tube	R1			SS304
		M5	Compact (Wafer) - 15 to 200 NB Maximum				R2			SS316
N	Material of construction - Flange	N1	MS				R3	PVC		
		N2	CS				RY	Other		
		N3	SS304		S	Material of construction - Electrode	S1	SS316L		
		N4	SS316				S2	Hastelloy C		
		N5	PVC				S3	Platinum Coated		
		NX	NA				S4	Tantalum		
O	Material of construction - Coil Housing	O1	MS				S5	Titanium		
		O2	SS304		Note : ▪ Due to our continuous product revisions, design specification and model numbers are subject to change without notice. ▪ To be used for industrial applications. ▪ Accuracy defined at Lab Conditions. ▪ For other requirement please consult factory.					
		O3	SS316							
		O4	PVC							

ELECTRONET EQUIPMENTS PVT. LTD.

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