

ELMAG 600

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	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)

Technical Specifications

Velocity	0.3 m/s - 2.5m/s upto Max. 10m/s	
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.	
Response Time	< 10 Sec.	
Electronic Protection Class	Field Mount Weather Proof IP-67, Field Mount Weather Proof IP-68	
	DIN Standard (IP54), 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 70°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 3) Dual SIM GPRS
		4) Ethernet MODBUS TCP
Certification	CE	

Assembly Overview

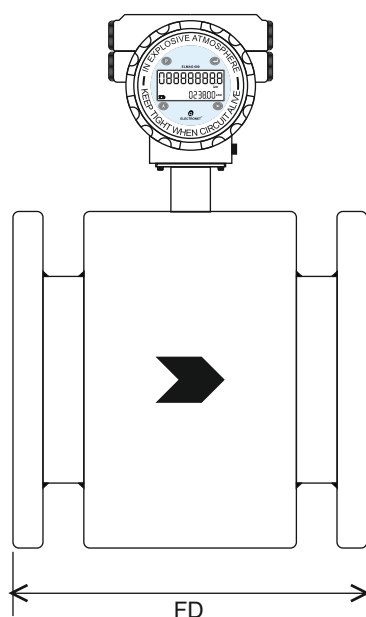


Fig. 1 Front View

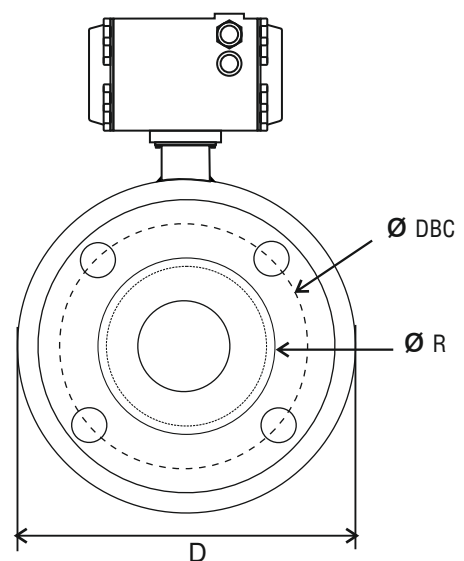


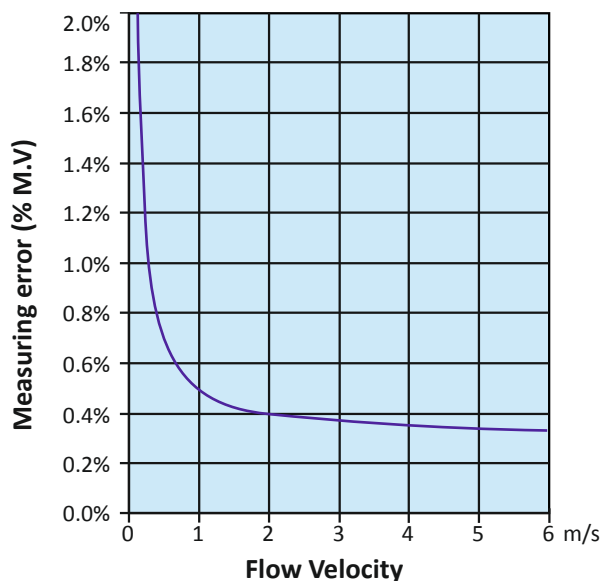
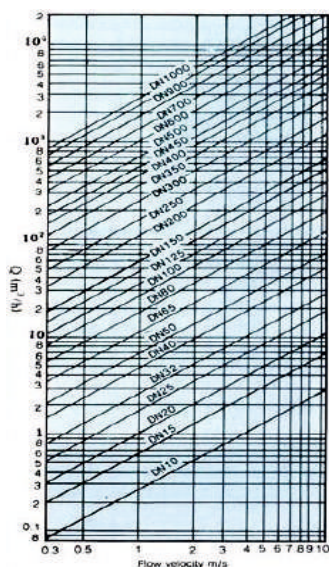
Fig. 2 Side View

Line Size		Flange To Flange Distance	Flow Range (m ³ /Hr)			
Inch	NB		Velocity 0.3m/s	Velocity 2.5m/s	Velocity 6m/s	Velocity 10m/s
½"	15	200	0.19	1.59	3.81	6.36
¾"	20	200	0.34	2.83	6.785	11.31
1"	25	200	0.53	4.42	10.602	17.67
1¼"	32	200	0.87	7.24	17.371	28.95
1½"	40	200	1.36	11.31	27.143	45.24
2"	50	200	2.12	17.67	42.411	70.69
2½"	65	200	3.58	29.86	71.675	119.46
3"	80	200	5.43	45.24	108.573	180.96
4"	100	250	8.48	70.69	169.646	282.74
5"	125	250	13.25	110.45	265.071	441.79
6"	150	300	19.09	159.04	381.703	636.17
8"	200	350	33.93	282.74	678.584	1130.97
10"	250	450	53.01	441.79	1060.28	1767.15
12"	300	500	76.34	636.17	1526.81	2544.69
14"	350	550	103.91	865.9	2078.16	3463.61
16"	400	600	135.72	1130.97	2714.33	4523.89
18"	450	600	171.77	1431.39	3435.33	5725.55
20"	500	600	212.06	1767.15	4241.15	7068.58
24"	600	600	305.36	2544.69	6107.25	10178.76

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 Rig.
- Flow meter should be selected with the help of Nomograph (recommended full scale velocity).

Flow Nomograph



ELMAG 600

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Ordering Information of Transmitter

Sample Order Code: ELMAG 600-TX-A1-B1-C1-D1-E1-F1-G1-H1-I1-J1

Parameter	Code	Value	Parameter	Code	Value
TX Transmitter Electronics	TX	ELMAG 600	F Hazardous Certification	F1	ATEX
A Transmitter Mounting	A1	Integral (Local)		F2	FF(CMRI 2A, 2B)
	A2	Remote (Max 5 mtr.)		FX	NA
B Power Supply	B1	Battery Operated	G Electrical Connection	G1	M20
	B2	3.6V Solar operated		G2	1/2 NPT
C Battery back up Time	C1	2 Years (Two times communication Per Day)		GY	Other
	C2	5 Years (Two times communication Per Day)	H Electrical Output 2 (pulse)	H1	Pulse (OC)
	C3	3.6V Solar operated 1month		HX	NA
D Enclosure MOC	D1	Aluminium die Cast	I Communication Output 1	I1	RS485
	D2	SS316		IX	NA
	DY	Other	J Communication Output 2	J1	GPRS
E Enclosure IP Rating	E1	IP54		J2	GSM
	E2	IP67		J3	Dual SIM GPRS
	E3	IP68		J4	MBUS
				JX	NA

Note : ▪ In case of flameproof version only electronics enclosure is flameproof certified.
▪ Accuracy defined at Lab Conditions.

Ordering Information of Flow Tube

Sample Order Code: ELMAG 600-FT15-N1-O1-P1-Q1-R1-S1-T1

Parameter		Code	Value	Code	Value	Parameter	Code	Value	
FT	Flow Tube	FT 15	15NB	FT 150	150NB	R	Flange Standard	R1	ASA150 B 16.5
		FT 20	20NB	FT 200	200NB			R2	ASA 300 B 16.5
		FT 25	25NB	FT 250	250NB			R3	ASA 600 B 16.5
		FT 32	32NB	FT 300	300NB			R4	DIN PN 10 EN 1092-1
		FT 40	40NB	FT 350	350NB			R5	DIN PN 16 EN 1092-1
		FT 50	50NB	FT 400	400NB			R6	DIN PN 25 EN 1092-1
		FT 65	65NB	FT 450	450NB			R7	DIN PN 40EN 1092-1
		FT 80	80NB	FT 500	500NB			R8	IS1538
		FT 100	100NB	FT 600	600NB			RY	Other
		FT 125	125NB					RX	NA
N	Electronics Location	N1	Integral (Local)		S	Lining Material	S1	Hard /Ebonite Rubber	
O	Remote Signal Cable Length	N2	Remote (Max 5 mtr.)				S2	Neoprene Rubber	
		O1	5 mtr.				S3	PFA	
P	Process Connection	OX	NA				S4	PTFE	
		P1	Threaded (15 to 50 NB)				S5	Ceramic	
		P2	Flanged (15 To 600 NB)				S6	PEEK	
		P3	Triclover (15 to 100 NB)			T	Electrode Material	T1	SS316L
		P4	SMS Union (25 to 100 NB)					T2	Hastelloy C
P5	Compact Wafer (50 to 100 NB)		T3	Platinum					
Q	Flange MOC	Q1	MS					T4	Tentalum
		Q2	CS		Note: ■ Due to our continuous product revisions, design specification and model numbers are subject to change without notice. ■ Accuracy defined at Lab Conditions. ■ For other requirement please consult factory. ■ This product is meant for laboratory/Process application only & not for custody transfer application.				
		Q3	SS304						
		Q4	SS316						
		QX	NA						



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