

ELMAG® 200

ELECTROMAGNETIC FLOW METER

Features

- Universal Power Supply 90 to 250V AC, Optional 24V DC
- Suitable for conductive liquids
- Full bore type
- Empty pipe indication
- Material option depending upon process data
- Local Indication through LCD Display
- Inbuilt Relay Status output (High / Low / Batch)
- HART Compatible
- Maintenance Free
- Protection Class : Electronics – IP66, Flow Tube – IP68

Description

Electronet series ELMAG®-200 are micro-controller based full bore type electromagnetic flow meters specially used for various industrial applications. These flow meters accurately measure the flow rate of conductive liquids and slurries in closed pipes.

Due to its simple and rigid design, the flow meter is an obstruction less and maintenance-free instrument in place of conventional mechanical flow measuring devices. The use of 'Pulsed DC' technology offers highest ability and better measuring accuracy in the form of electrical signal 4–20 mA DC linearly proportional to volumetric flow. The instrument is based on Faraday's law of electromagnetic induction. A magnetic field is generated by the instrument in the flow tube. The fluid flowing through this magnetic field generates a voltage that is proportional to the flow velocity. Corresponding electrical output is provided with respect to measuring flow range.



Technical Specifications

Media	Liquids (Conductive)
Conductivity	> 5 µs/cm
Viscosity	200 cp max
Line Size	15 NB to 2000 NB
Excitation	Pulsed DC
Type of Output	1) 4 to 20mA DC
	2) 4 to 20mA DC (HART Compatible)
	3) 4 to 20mA DC + Pulse Output / Frequency Output
	4) 4 to 20mA DC (HART Compatible) + Pulse output / Frequency Output
Display	16 x 2 LCD – 6 Digit for Flow Rate & 8 Digit for Totalizer Flow
Engineering Unit	User Programmable (m ³ /hr by default)
Calibration Range	Wet Calibrated on IEC/ISO/EN17025 Accredited Calibration Rig.
Accuracy	+/- 0.5% of M.V. (For Flow Velocity > 0.5 m/s)
Flow Velocity Range	-6 m/s to +6 m/s
Linearity	+/- 0.5% of M.V.
Certification	CE

Repeatability	+/- 0.2% of M.V.
Temperature Coefficient	+/- 0.05% per °C
Process Temperature	-20 to 85°C max for Rubber Lining & -20 to 220°C for PTFE Lining
Process Pressure	16 kg/cm ² max (Higher on request)
Material of construction	1) Lining – Neoprene Rubber / Hard Rubber / EPDM / PFA / PTFE / CERAMIC 2) Flange – MS / CS / SS316 / SS304 3) Electrode – SS 316L/ Hastalloy C / Platinum / Tantalum 4) Coil Housing – MS / SS 304 / SS316
Power Supply	Option1 : 90 – 250 V AC, 50 Hz Option2 : 24 V DC
Power Consumption	< 10 VA
Isolation	1.4 KV between Input, Output & Power Supply
Response Time	Less than 1 Sec.
Electronics	Integral / Remote
Transmitter Enclosure	Electronics : IP66, Flow Tube : IP68
Process Connections	ANSI150 flanged, as per table B 16.5 (Other On Requirement)
Mounting	In-Line Horizontal / Vertical
Operating Conditions	Temperature -20 to 75°C / Humidity 5 to 95% non condensing
OPTIONAL :	
Communication Output	1) RS 485 supporting MODBUS RTU Protocol 2) RS 232 3) GSM Communication 4) Profibus 5) GPRS
Note :- For process conditions other than above please consult factory.	

Assembly Overview

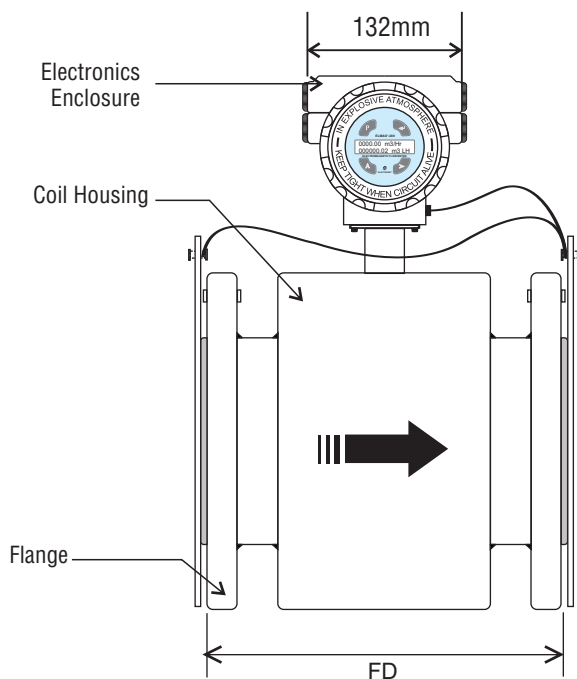


Fig. 1 Front View

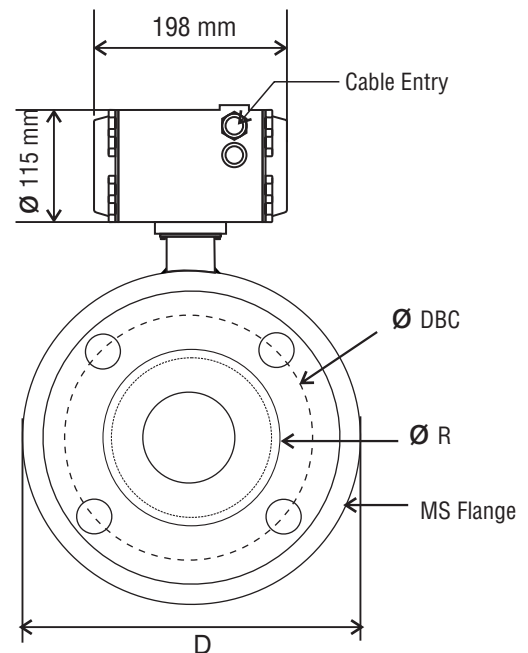


Fig. 2 Side View

TABLE : Dimensional Details Of Flange (as Per ANSI 150 # B-16.5) & Finished Product

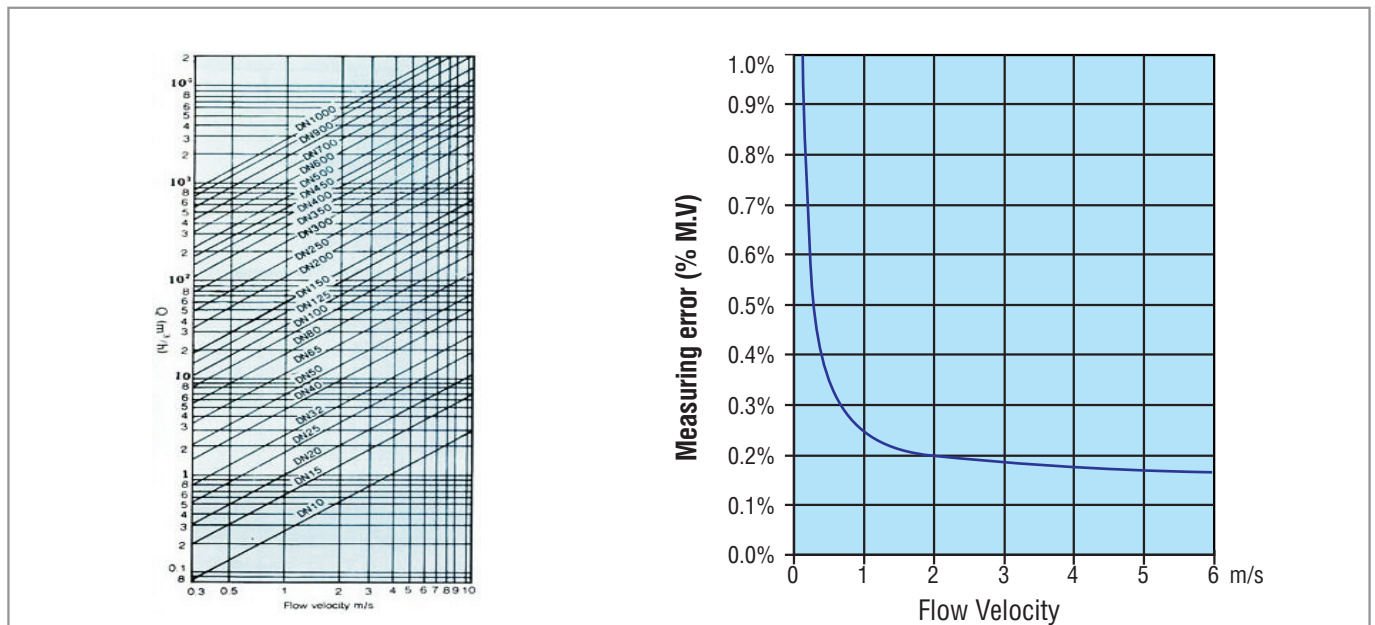
Refer Drg. Fig.1 & 2

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)	FD with Lining (mm)	FD With Grounding Ring (mm)	Flow Range (m ³ /hr) at 0.3m/s to 6m/s	
												Min.	Max.
1/2"	15	88.9	34.9	60.3	15.9	4	11.1	125	190	196	204	0.19	3.817
3/4"	20	98.4	42.9	69.8	15.9	4	12.7	125	190	196	204	0.33	6.785
1"	25	107.9	50.8	79.4	15.9	4	14.3	145	190	196	204	0.53	10.602
1 1/4"	32	117.5	63.5	88.9	15.9	4	15.9	155	190	196	204	0.86	17.371
1 1/2"	40	127.0	73	98.4	15.9	4	17.5	155	190	196	204	1.35	27.143
2"	50	152.4	92.1	120.6	19.0	4	19.0	165	190	196	204	2.12	42.4115
2 1/2"	65	177.8	104.8	139.7	19.0	4	22.2	185	190	196	204	3.58	71.675
3"	80	190.5	127.0	152.4	19.0	4	23.8	205	190	198	206	5.42	108.573
4"	100	228.5	157.2	190.5	19.0	8	23.8	245	240	248	256	8.48	169.646
5"	125	254.0	185.7	215.9	22.2	8	23.8	265	240	250	258	13.25	265.071
6"	150	279.4	215.9	241.3	22.2	8	25.4	285	290	300	308	19.085	381.703
8"	200	342.9	269.9	298.4	22.2	8	28.6	355	340	350	358	33.929	678.584
10"	250	406.4	323.8	361.9	25.4	12	30.2	405	440	452	460	53.014	1060.28
12"	300	482.6	381.0	431.8	25.4	12	31.8	485	490	502	510	76.340	1526.81
14"	350	533.4	412.7	476.2	28.6	12	34.9	555	540	552	560	103.908	2078.16
16"	400	596.9	469.9	539.7	28.6	16	36.5	605	590	602	610	135.716	2714.33
18"	450	635.0	533.4	577.8	31.7	16	39.7	605	590	602	610	171.766	3435.33
20"	500	698.5	584.2	635.0	31.7	20	42.9	630	590	600	608	212.057	4241.15
24"	600	812.8	692.1	749.3	34.9	20	47.6	755	590	600	608	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 on IEC/ISO/EN17025 Accredited Calibration Rig.
- 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

Ordering Information

Sample Order Code : 01A-07B-09B-10D-22A-23B-24B-50B-51B-52A-53F-66B-67C-68C-69F-70A-71A-72B-73A

Parameter		Code	Value	Code	Value
01	Line Size	01A	15 NB	01P	400 NB
		01B	20 NB	01Q	450 NB
		01C	25 NB	01R	500 NB
		01D	32 NB	01S	600 NB
		01E	40 NB	01T	700 NB
		01F	50 NB	01U	800 NB
		01G	65 NB	01V	900 NB
		01H	80 NB	01W	1000 NB
		01I	100 NB	01AA	1100 NB
		01J	125 NB	01AB	1200 NB
		01K	150 NB	01AC	1400 NB
		01L	200 NB	01AD	1500 NB
		01M	250 NB	01AE	1600 NB
		01N	300 NB	01AF	1800 NB
		01O	350 NB	01AG	2000 NB
		07	Area Classification	07A	Weather Proof
		07B	Flame Proof		
09	Electronics	09A	Integral		
		09B	Remote		
10	Remote Cable Length	10A	2 Meter		
		10B	5 Meter		
		10C	10 Meter		
		10D	15 Meter		
		10E	25 Meter		
		10Z	NA		
22	MOC Electronics Enclosure	22A	Die Cast Aluminium		
		22B	SS316		
		22C	ABS Plastic		
23	Cable Entry	23A	M20 X 1.5		
		23B	½” NPTF		
		23X	Other		
24	Power Supply	24A	90 – 250 VAC		
		24B	24 VDC		
50	Output 1	50A	4 to 20 mA		
		50B	4 to 20 mA with HART		
		50Y	None		
51	Output 2	51A	Pulse		
		51B	Freq (0 to 1 KHz)		
		51Y	None		
52	Alarm Status Output	52A	1 Alarm		
		52B	2 Alarm		
		52Y	None		
53	Communication Output 1	53A	RS 485		
		53B	RS 232		
		53C	GSM		

Parameter		Code	Value
53	Communication Output 1	53E	Profibus
		53F	GPRS
		53Y	None
66	Process Connection	66A	Threaded
		66B	Flanged
		66E	* Tri Clover
67	MOC Flange	67A	MS
		67B	CS
		67C	SS316
		67D	SS304
		67E	PVC
		67Z	NA
68	MOC Coil Housing	68A	MS
		68B	SS304
		68C	SS316
		68D	PVC
69	Lining Material	69A	Neoprene Rubber
		69B	Hard Rubber
		69C	Ebonite Rubber
		69D	EPDM
		69E	PFA
		69F	PTFE
		69G	PU
		69H	Ceramic
		69X	Other
70	Flange Standard	70A	ANSI
		70B	DIN
		70C	AWWA
		70X	Other
		70Z	NA
71	Flange Rating	71A	ANSI 150
		71B	ANSI 300
		71C	ANSI 600
		71D	DIN 10
		71E	DIN 16
		71F	DIN 40
		71X	Other
		71Z	NA
72	MOC Flow Tube	72B	SS304
		72C	PVC
73	MOC Electrode	73A	SS 316L
		73B	Hastelloy
		73C	Platinum
		73D	Tantalum
		73E	Titanium

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. * Process connection –Tri Clover : Upto Max. 4 inch Line Size

ELECTRONET EQUIPMENTS PVT. LTD.

Factory Address:

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