

ECLIPSE EMAG 3000

Electromagnetic Flow Meter

EOLIPSE



Overview

The ECLIPSE EMAG 3000 Electromagnetic flow meter consists of sensors and converters in two parts. The product is based on Faraday's law of electromagnetic induction, used to measure the conductance greater than $5 \mu\text{S} / \text{cm}$ volume of conductive liquid flow.

The measuring pipe is in a magnetic field. If an electrically conductive medium with a certain flow passes through the pipe, it passes at a right-angle to the magnetic field, creating a voltage which is proportional to the average flow velocity and picked up by two electrodes.

In addition to measuring the general volume of conductive liquid flow, but also can be used to measure strong acid,

alkali and other strong corrosive liquids and mud, pulp, pulp and other liquid-solid two-phase suspension of uniform volume flow.

Typical Applications

- ⌋ Water/wastewater industry(except distilled)
- ⌋ High Viscous Fluids in Food & Beverage industry
- ⌋ Pulp and Paper Industry
- ⌋ Pharmaceutical Manufacturing
- ⌋ Metal & Mining Industry
- ⌋ Irrigation applications

Features and Benefits

- ⌋ High accuracy of $\pm 0.5\%$ of reading($\pm 0.3\% \pm 0.2\%$ optional).
- ⌋ Conductivity normal liquid $> 20 \mu\text{S}/\text{cm}$, Slurry liquid $> 5 \mu\text{S}/\text{cm}$.
- ⌋ Measure forward and reverse direction flows.
- ⌋ Built-in reference electrodes, no need to connect ground ring.
- ⌋ Available in DN 3 to DN3000 line sizes
- ⌋ Integrated diagnostic function and empty pipe detection.
- ⌋ Process temperature up to 160°C (Remote type).
- ⌋ Available in flange, clamp and sanitary connections.
- ⌋ High protection grade, IP65, IP68
- ⌋ Dual frequency excitation and stable zero point.
- ⌋ No moving parts, no pressure loss.
- ⌋ Optional Modbus RS485 communication

Major Technical Performance

- Size : DN3-DN3000mm (1/8"~120")
- Accuracy : $\pm 0.5\%$ of reading, $\pm 0.3\%$ and $\pm 0.2\%$ optional, velocity > 0.3 m/s
- Conductivity : Normal liquid > 20 $\mu\text{S/cm}$,
Slurry liquid > 5 $\mu\text{S/cm}$
- Protection Grade : IP65, IP68
- Electrode : SS316L, Hastelloy C, Hastelloy B,
Titanium, Tantalum, Platinoidium
- Power Supply : AC85~250V, DC20V~36V
- Power Consumption : $< 20\text{W}$
- Communication : RS485/Modbus, Hart, Profitbus
- Display : LC Display, 128X128mm
Three lines
4 internal push buttons
- Ambient Temperature: $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$
- Relative Humidity : 5%~95%
- Liner Material : Neoprene(Rubber)
PTFE
PFA
F46
Polyurethane)
- Velocity : 0.1 m/s ~ 15 m/s
- Explosion-proof : Exd IIB T6 Gb
- Nominal Pressure : 4.0 MPa (DN3-DN150)
1.6 MPa (DN200-DN600)
1.0 MPa (DN700-DN1000)
0.6 MPa (DN1200-DN3000)
- Frequency Output : 1~5000 Hz
- Language : English, Chinese
Other languages are available
- Flange Standard : EN1092-1
PN10, PN16, PN25, PN40
ANSI BS16.5 Class 150, 300, 600
JIS2220 10K, 20K, 40
AS2129 Table D, Table E
AS4087 PN16, PN21, PN35
- Exciting Current : 125mA, 187mA, 250mA
- Exciting Frequency : 3.12Hz, 4.16Hz, 6.25Hz
12.5Hz, 25Hz, 30Hz
- Material
Measuring Tube : Stainless Steel 304
Flange : Carbon Steel (standard)
: Stainless Steel 304 (optional)
: Stainless Steel 316 (optional)
- Straight Pipe : Inlet Path $\geq 10D$
Outlet Path $\geq 5D$
- Signal Output : 4~20 mA, pulse

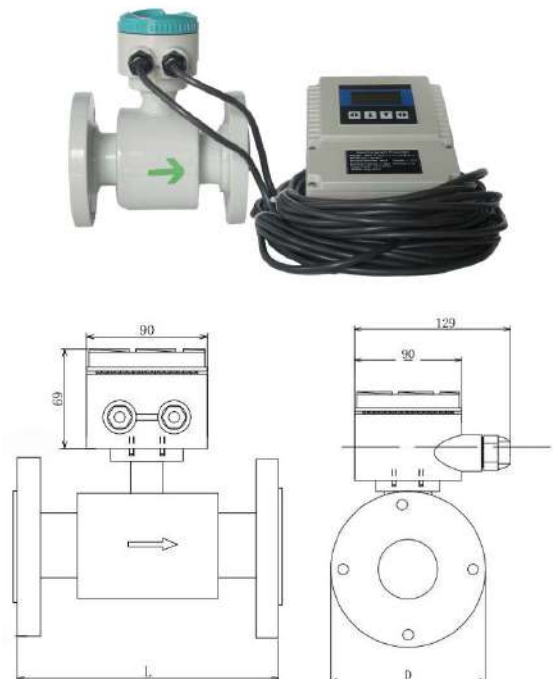
Dimensions of Sensor and Converter

Table 1: Dimensions of Sensor and Converter			
DN	External Dimension(mm)		Weight
	L	D	
3	200	90	4
6	200	90	5
10	200	90	6
15	200	95	8
20	200	105	10
25	200	115	12
32	200	140	13
40	200	150	14
50	200	165	15
65	200	185	18
80	200	200	20
100	250	235	25
125	250	270	28
150	300	300	30
200	350	340	50
250	450	405	70
300	500	460	95
350	550	520	120
400	600	580	140
450	600	640	160
500	600	715	200
600	600	840	280
700	700	895	350
800	800	1015	400
900	900	1115	480
1000	1000	1230	550
1200	1200	1405	660
1400	1400	1630	750
1600	1600	1830	850
1800	1800	2045	980
2000	2000	2265	1200
2200	2200	2475	1600
2400	2400	2685	2000
2600	2600	2905	2400
2800	2800	2905	2700
3000	3000	3315	2900

Integral Type



Remote Type



EMAG 3000 Electromagnetic Flow Meter Selection Matrix

	EM	XXXX	XX	XX	X	X	X	X	XX	XX	
Series	EM										Pressure Rating
EMAG 3000											P1 0.6 MPa
Line Size DN											P2 1.0 MPa
DN 6		0006									P3 1.6 MPa
DN 10		0010									P3 4.0 MPa
DN 15		0015									
DN 20		0020									Process Connection
DN 25		0025									S1 Sanitary Type (Tri Clamp)
DN 32		0032									J1 JIS 10k Flange
DN 40		0040									J2 JIS 20k Flange
DN 50		0050									J3 JIS 40k Flange
DN 65		0065									A1 ANSI 150# Flange
DN 80		0080									A3 ANSI 300# Flange
DN 100		0100									A6 ANSI 600# Flange
DN 125		0125									D06 EN 1092-1 DIN PN10 Flange EN
DN 150		0150									D10 1092-1 DIN PN16 Flange EN
DN 200		0200									D16 1092-1 DIN PN25 Flange EN
DN 250		0250									D25 1092-1 DIN PN40 Flange
DN 350		0350									
DN 400		0400									
DN 500		0500									
DN 600		0600									
Other sizes up to DN3000- contact sales		xxxx									
Converter											Liner Material
Integral Type			IT								A PTFE
Remote Type			RT								B PFA
Remote Type Immersion			RI								C Neoprene
Integral Type Ex-Proof			IE								D Polyurethane
Remote Type Ex-Proof			RE								
Accuracy											Electrode Material
0.5 % of Rate				05							K 316L
0.3 % of Rate				03							L Hastelloy B
0.2 % of Rate				02							M Hastelloy C
Power											N Titanium
220VAC 50Hz					A						O Platinum- Iridium
24VDC					D						P Tantalum
											Output /Communication
										A	Flow Volume 4-20mA/ Pulse
										B	Flow Volume 4-20mA/ RS232C
										C	Flow Volume 4-20mA/ RS485
										D	Flow Volume 4-20mA/ HART

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