Datasheet

Insertion type electromagnetic flowmeter

LDGC-SUP

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Datasheet

Electromagnetic flow meter for flow measurement

The Insertion type electromagnetic flowmeter and the electromagnetic flow conversion display constitute the Insertion type electromagnetic flowmeter. The sensor is installed on the pipe where it needs to be detected, and the split-type conversion display is installed on the nearby wall or in the instrument box with brackets, or between the instrument and the control. The two are connected in the sensor junction box with a special cable.The split type conversion display is directly mounted on the top of the sensor. Insertion electromagnetic flowmeter is used to measure the flow and total amount of various conductive liquids in various sectors of the national economy such as industry, agriculture, water conservancy, environmental sewage monitoring, and urban water supply.

Application

- Sewage treatment
- printing and dyeing
- Chemical industry
- Environmental protection
- metallurgy
- medicine
- Paper making
- Tap water supply

Insertion type electromagnetic flow meter

Features

- Wide flow measurement range
- No additional pressure loss
- Sensor body and electrodes are available in a variety of materials.
- Unaffected by the temperature, pressure, density of the liquid.
- Adopt advanced excitation technology
- Low power consumption,
- Strong anti-interference ability and good reliability
- Two-way measurement system
- Multiple outputs: current, pulse, digital communication, HART.

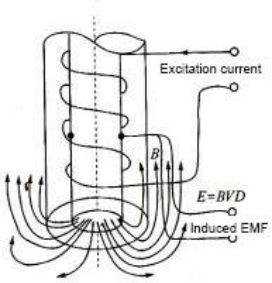
Principle

Its working principle is based on Faraday's law of electromagnetic induction just like the pipeline electromagnetic flow sensor. When the conductive liquid passes through two electrodes with a distance L at an average velocity V and perpendicular to the direction of the magnetic field line of the magnetic field strength B, a corresponding electromotive force E is generated between the electrodes. Faraday's law of electromagnetic induction is:

$$E=B\times L\times V$$

Where:

E—Induced electromotive force
K—Meter constant
B—Magnetic induction density
L—The distance between the two electrodes
V—Average flow velocity
Q_v—The volume flow of the fluid to be measured



The Meter constant is

$$K=\frac{\pi D^2}{4BL}$$

The fluid volume flow through the pipe is:

$$Q_V=\frac{\pi}{4}D^2V$$

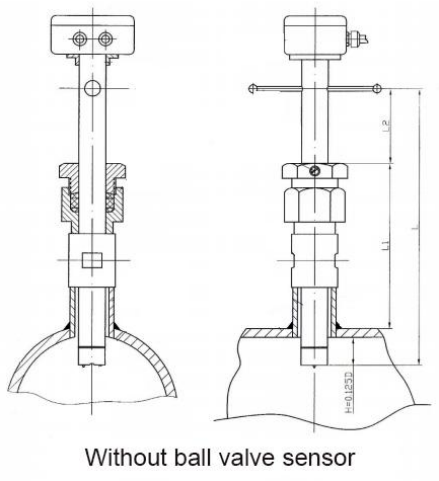
The volume flow Q of a calibrated sensor is only proportional to the electromotive force E:

$Q_V=K\times E$

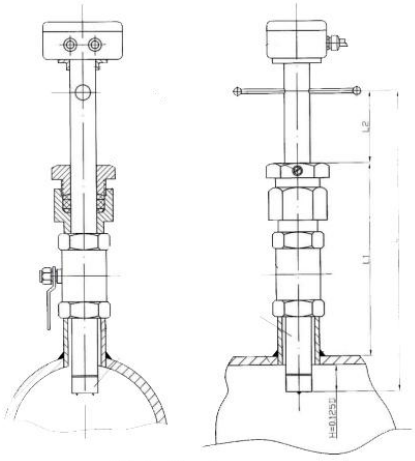
Parameter

Measurement sensor	
Nominal Diameter	DN300-DN1000
Flange	In line with GB/T9119-2000 standard carbon steel (Optional stainless steel flanges), other standard flange can be customized
Pressure	≤1.6MPa
Working temperature	≤70℃
Velocity upper limit range	continuously adjustable within 1—10m/s
Accuracy	±2.5%
Conductivity	≥50 μs/cm
Electrode material	304, 304L, 316, 316L, Hastelloy, titanium
Maximum distance	≤50m
Cable	RVVP type two-core shielded cable or STT3200 type four-core three-shielded cable

Dimensions and Pressure



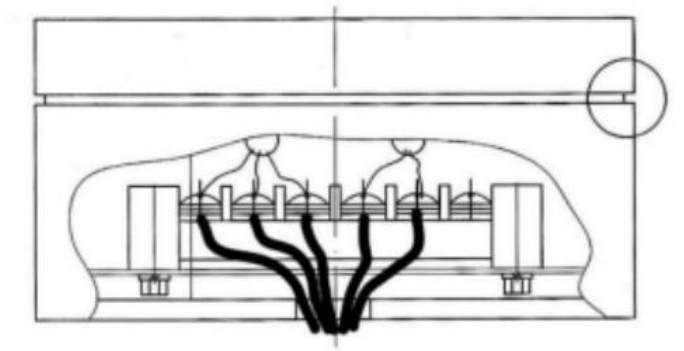
Without ball valve sensor

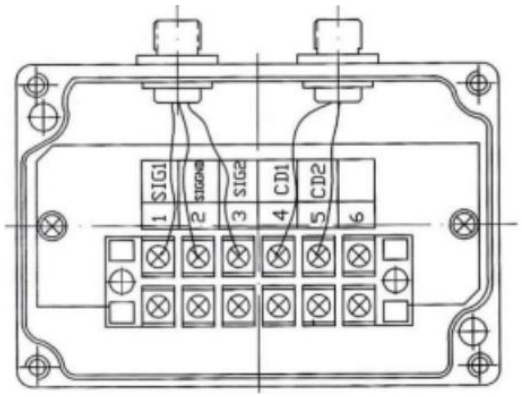


with ball valve sensor

DN（mm）	0.5（m/s）	1.0（m/s）	1.5（m/s）	2.0（m/s）	2.5（m/s）	3.0（m/s）
300	127.2	254.4	381.6	508.8	636.0	763.2
350	173.1	346.2	519.3	692.4	865.5	1038.6
400	226.1	452.2	678.3	904.4	1130.5	1356.6
450	286.2	572.3	858.3	1144.6	1430.8	2574.9
500	353.3	706.5	1059.8	1413.2	1766.5	2119.8
600	508.7	1017.0	1526.0	2034.0	2544.0	3052.0
700	682.4	1385.0	2047.0	2730.0	3412.0	4094.0
800	904.3	1808.0	2713.0	3617.0	4522.0	5126.0
900	1145.0	2290.0	3435.0	4580.0	5725.0	6870.0
1000	1413.0	2826.0	4239.0	5652.0	7065.0	8478.0
1200	2034.0	4068.0	6102.0	8136.0	10170.0	
1400	2770.0	5540.0	8310.0	11080.0	13850.0	

Wiring





SIG1 SIG2 -------Signal
CD1 CD2---------Excitation
SIG CND--------- Ground

Ordering code

LDGC-SUP -M1-DN50-J1-D2-I2-V1-P3-T1-E1-L2-G2-B1-IP1													Description
LDGC-SUP-	-	-	-	-	-	-	-	-	-	-	-	-	
Type	M1												Compact type(IP65)
	M2												Remote type(IP68)
Diameter		DNXX											DN300 - DN1000
Accuracy			J7										1.5%
Transmit output				O1									4-20mA output
Frequency output					PWM1								Pulse output
Communication						D2							RS485
Power supply							V1						24VDC
							V2						220VAC
Pressure rating								P3					1.6MPa
								PZ					Others
Electrode material									E1				316L stainless steel
									E4				Hastelloy B
									E5				Hastelloy C
Measuring tube type										SP0			304 stainless steel
										SP1			Carbon steel
Measuring tube material											B7		ABS(＜60℃)
											B8		PE
Ingress protection												IP1	IP65
												IP3	IP68