## SHD-SE14 Insertion Electromagnetic Flow Meter

### **Overview**

The SHD-SE14 series insertion inductive electromagnetic flowmeter is a new type of flow meter developed on the basis of the in-line type electromagnetic flowmeter. When install the in-line type electromagnetic flowmeter into large pipelines, the installation cost is large and the mounting procedures is complicated, so we develop the new version electromagnetic flowmeter with insertion probe, it is based on Faraday's Law and used to measure conductive fluids volumetric flow in large pipeline applications. It can be used to measure raw water, water extracted from wells, irrigation water, waste water, portable water, drinking water, effluent water, tap water., etc. It has digital display to show liquid instant flow and total flow, with 4-20mA and pulse output, also available with Hart Protocol, RS485, and Profibus-DP.



### Features

- Easy installation and can install the magnetic flow meter without shut down the lines
- Hot-tapping is possible
- Insertion mag meter with ball valve to allow installation/extraction while the pipeline is pressurized or liquid running
- Low price cost for large pipelines fluids flow measurement
- No moving parts and works reliably and durable
- Insertion probe can be used for several sizes pipelines.
- Forward and reverse flow measurement
- Upper and lower limit alarm
- Empty pipe alarm
- Different protection level, IP65 or IP68
- Insertion magnetic flow meter for DN100~700 pipelines
- Digital display to show instant flow and total flow
- Integral or remote display
- Volume flow measurement not affected by fluids pressure, temperature, density or viscosity

### **Technical Specifications**

Size	DN100~700
Flow Velocity	0.5 m/s~10 m/s
Accuracy	$\pm$ 1.5%FS; $\pm$ 2.5% FS; $\pm$ 5.0% FS
Conductivity	≥ 20us/cm
Straight pipelines	Upstream 10D,Downsteam4D
Fluids temperature	-20~90 °C
Environment Temperature	-20~60 °C

Pressure Rating	1.6Mpa
Protection level	IP65,IP68
Electrodes Material	Stainless steel 316L
Output	4~20mA,RS485,HART,MODBUS
Sensor Material	Stainless steel 304
Power supply	220V AC or 24V DC
Power	6.5 W
Pressure Rating	≤1.6Mpa

# **Flow meter Range**

Flow unit: m3/h

Velocity	0.5	1	2	3	4	5	6	7	8	9	10
Size	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s	m/s
100mm	14	28	57	85	110	140	170	190	220	250	280
125mm	28	44	80	130	170	220	260	300	350	390	440
150mm	32	64	120	190	250	310	380	440	500	570	630
200mm	57	110	220	340	450	560	670	790	900	1000	1100
250mm	88	180	350	530	700	880	1000	1200	1400	1500	1700
300mm	130	250	500	760	1000	1200	1500	1700	2000	2200	2500
350mm	180	350	690	1000	1300	1700	2000	2400	2700	3100	3400
400mm	230	450	900	1300	1800	2200	2700	3100	3600	4000	4500
450mm	290	570	1100	1700	2300	2800	3400	4000	4500	5100	5700
500mm	360	710	1400	2100	2800	3500	4200	4900	5600	6300	7000
600mm	510	1000	2000	3000	4000	5100	6100	7100	8100	9100	10000
700mm	700	1400	2700	4100	5500	7000	8300	9600	11000	12000	13000

# Flow meter Accuracy Curve



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# **Model Selection**

Item	Code	Description							
Factory Mark	SHD	Silver Automation Instruments							
Туре	SE14	Insertion type Electromagnetic flow meter							
Size	-xxx	mm							
Electrodes Material	EO	316L SS							
Liner	L1	Teflon/PTFE							
	1G	GB 1.6Mpa	1D	DIN PIN16	1A	ANSI 150LB			
Pated Prossure	2G	GB 2.5 Mpa 2D DIN PIN25		2A	ANSI 300LB				
Rateu Pressure	3G	GB 4.0 Mpa 3D DIN PN40			3A	ANSI 600LB			
	S	Special							
Working Tomp	Е	<60 °C							
working lemp	Н	60 °C~160 °C							
Protection Crade	PO	lp65							
Protection Grade	P2	Ip68(only for remote version, sensor IP68,converter IP65)							
Convertor	0	Compact							
Converter	1	Remote (standard cable 10m)							
	SO	4~20mA							
Quitaut 8	S1	RS-485							
Communication	S2	HART							
Communication	S3	Profibus-DP							
	S4	Pulse output							
Concer Material	H1	304 SS							
Sensor Material	H2	Special							
Flance Material	F1	304							
Flange Material	F2	Special							
	G0	220V AC (85~256V,45~63Hz)							
Power Supply	G1	24V DC(18~36V)							
	G2	Battery supply (no output)							
Evaluation Droof	0	Non							
	Ex	Exd eia IIC T3~T6							

### **Flow meter Size**



### **Insertion Magnetic Flow meter Installation**

- 1) Flow meter pipeline should be filled with water
- 2) Reserve 10D in the upstream of the flow meter and 5D in the downstream of the flow meter
- 3) Fluids direction should be in the same direction of the arrow on the flow meter
- 4) No strong magnetic and radio frequency interference around the flow meter
- 5) Flow meter cannot be installed in the suction side of the pump to avoid Vacuum and negative pressure
- 6) Flow meter should be fixed if there is vibration around the flow meter

#### Installation Position Requirement

- 1. The fluids should be full of pipeline
- Line between the electrodes should be perpendicular to the direction of liquid flow
- When install the flow meter in the horizontal pipeline, the flow meter should be installed Vertical upward or vertical less 45° install



#### Installation when there is valve nearby

- 1. If the valve is near the flow meter, better to install the valve after the flow meter
- 2. If the valve before the flow meter, keep 20D distance



#### Straight Pipeline Requirement



### Wrong Installation

- 1. Try to avoid gas into the flow meter
- 2. Not install the flow meter at the highest point
- 3. Not to install the flow meter where flow direction is from up to bottom at gravity flow.

