

Insertion Electromagnetic Flow Meter

RF3301-I



Accuracy $\pm 0.2\%$, $\pm 0.5\%$



Power Consumption $< 20W$



Line Size DN100-DN3000



IP68 Sensor

**Product
Datasheet**

ROCKSENSOR AT A GLANCE (ABOUT US)

Rocksensor is one of the global leaders specializing in process Instrumentation, Research and Development and Designing of Industrial Automation Equipment. We provide highly precise pressure sensors and transmitters, flow metres, level transmitters & temperature transmitters with a prime focus to help our clients efficiently, safely and economically run complex industrial processes.

Rocksensor headquartered in Germany (originated in Switzerland), has its footprint in various geographical regions such as the US, Russia, South Korea, Italy, Germany, Singapore, Malaysia, China, Taiwan, Australia, UAE, Brazil, and India. Our clients come from some of the major industries such as Oil and Gas, Petrochemicals, Pharmaceuticals, FMCG, Automobiles, Water, Cement, Metal & Mining and mainly from the Power Industry like Nuclear, Thermal, Hydro and Solar.

Rocksensor deals in a wide range of highly accurate industrial automation instruments ensuring that even the complex industrial processes happen efficiently.

To fulfill the needs of our clients we make sure that our instruments work in even the harsh environmental conditions offering accurate recordings and communication.

We, at Rocksensor, believe in creating bonds that last a lifetime and create a success story for each and every client. Rocksensor aims to achieve a perfect fit in global market landscape and establish our footprints across the globe.



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1. Description

RF3301-I Insertion electromagnetic flow meter is used to measure the flow of conductive liquids. It is available for use in pipes ranging in size from DN100 to DN3000. It can configure thread or flange ball valve to be hot-tapped, which allows sensor to be installed and retracted from process piping without shutting down the process. It's an economic alternative when installed in large pipeline no matter in cost and delivery compared with full bore magnetic flow meter.



2. Industries

- Dairy Industries
- Sugar Industries
- Food & Drug Industries
- Effluent Treatment Plant
- Chemical & Fertilizer Industries
- Steel & Aluminum Industries
- Textile Processing Industries
- Sewage Treatment Plant Water Supply Scheme

3. Applications

- Raw Water
- Potable Water
- Sea Water
- Waste Water
- Heat Exchanger Industrial
- Pulp & Beverages Acidic & Alkaline Solution
- Cooling Water
- Brine Solutions

4. Features

- No moving parts, no pressure loss and require very less maintenance.
- More economical option for large pipelines flow measurement.
- It can achieve hot-tapping online installation.
- Simple structure, light weight and easy to transport.
- Bi-directional flow measurement.
- Automatic self-diagnosis.
- Protection Class: IP68 (sensor submersible) available.

5. Technical data

Parameters	Details	
Size	DN100-DN3000 (4"-120")	
Accuracy	±1.5% of reading at flow velocity ≥ 0.5m/s	
Velocity	0.1~15 m/s	
Repeatability	≤0.17%	
Structure	Compact / remote, cable length 10m standard, 100m max	
Conductivity	Media conductitivity > 20 μS/cm	
Electrode	SS316L, Hastelloy C, Hastelloy B, Titanium,Tantalum, Platinum-iridium	
Power Supply	85~250 VAC (50/60 Hz), 8~36 VDC	
Protection Grade	Transmitter: IP65 standard	
	Sensor: IP65 standard, IP68 (submersible, only available for remote type)	
Power Consumption	<20W, after connecting sensor	
Communication	RS485 MODBUS standard, HART, GPRS	
Display	LCD Display,128X128mm, three lines, 4 buttons	
Signal Output	Analog	4~20mA (load resistor 0~750Ω)
	Frequency	Forward & reverse flow output with a frequency range of 1~5000Hz
	Alarm	Two isolated open collector transistor (OCT) outputs for alarm signals
Ambient Temperature	-20℃~60℃	
Fluid Temperature	-20℃~80℃	
Process Connection	G2" thread ball valve	
	DN50 flange ball valve	
Sensor Material	Probe material: ABS standard, Polypropylene optional	
	Valve: SS316	
	Pole: SS304	
Transmitter Material	Aluminium alloy with epoxy painting	
Nominal Pressure	1.6 Mpa	
Display	Instantaneous flow, total flow, velocity	
Function	High and low alarm, empty pipe alarm, exciting alarm, self-diagnosis	
Totalizer	Three built-in totalizers: forward flow, reverse flow and net flow	
Display Unit	L/s, L/m, L/h, m3/s, m3/m, m3/h, UKG, USG, gal/s, gal/m, gal/h, kg/s, kg/m, kg/h,t/s, t/m, t/h	
Language	English	

6. Type



Compact Insertion Magnetic Flow Meter
with Thread Ball Valve



Remote Insertion Magnetic Flow Meter
with Thread Ball Valve

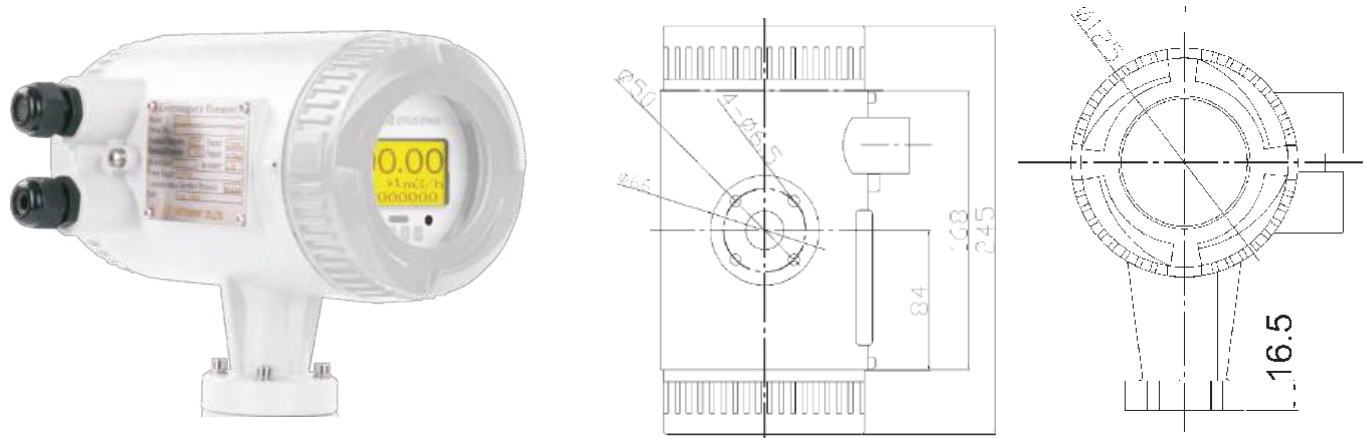


Compact Insertion Magnetic Flow Meter
with Flange Ball Valve

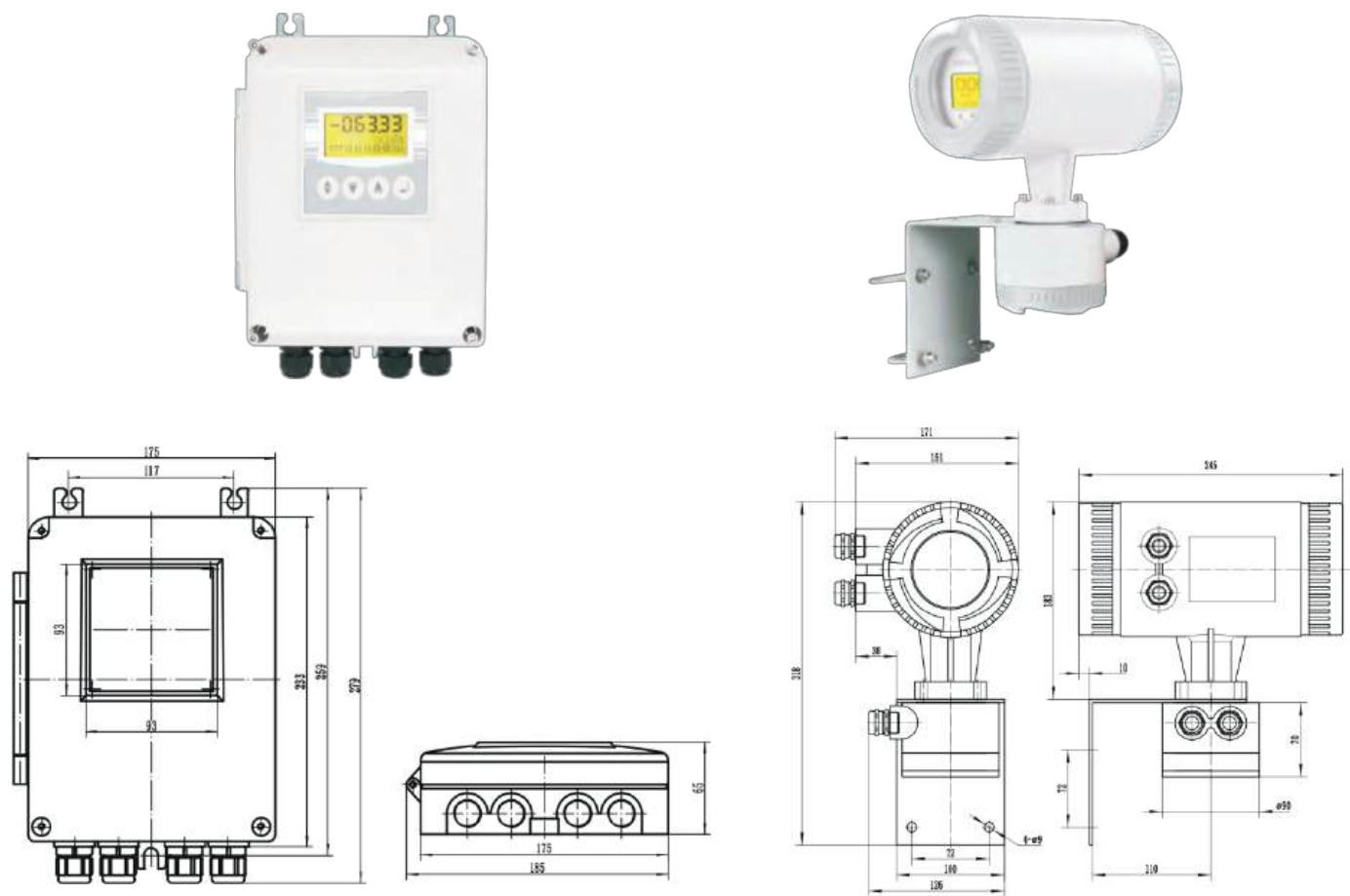


Remote Insertion Magnetic Flow Meter
with Flange Ball Valve

7. Transmitter Drawing

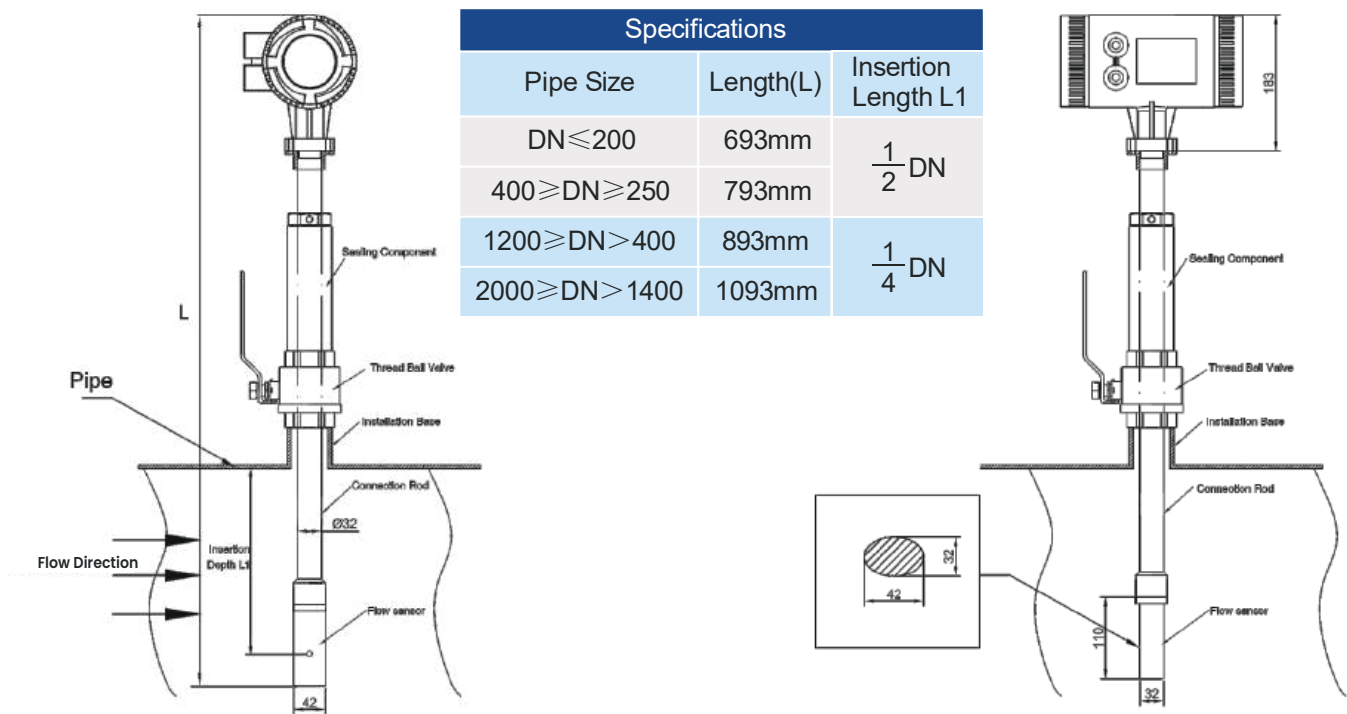


Compact Transmitter

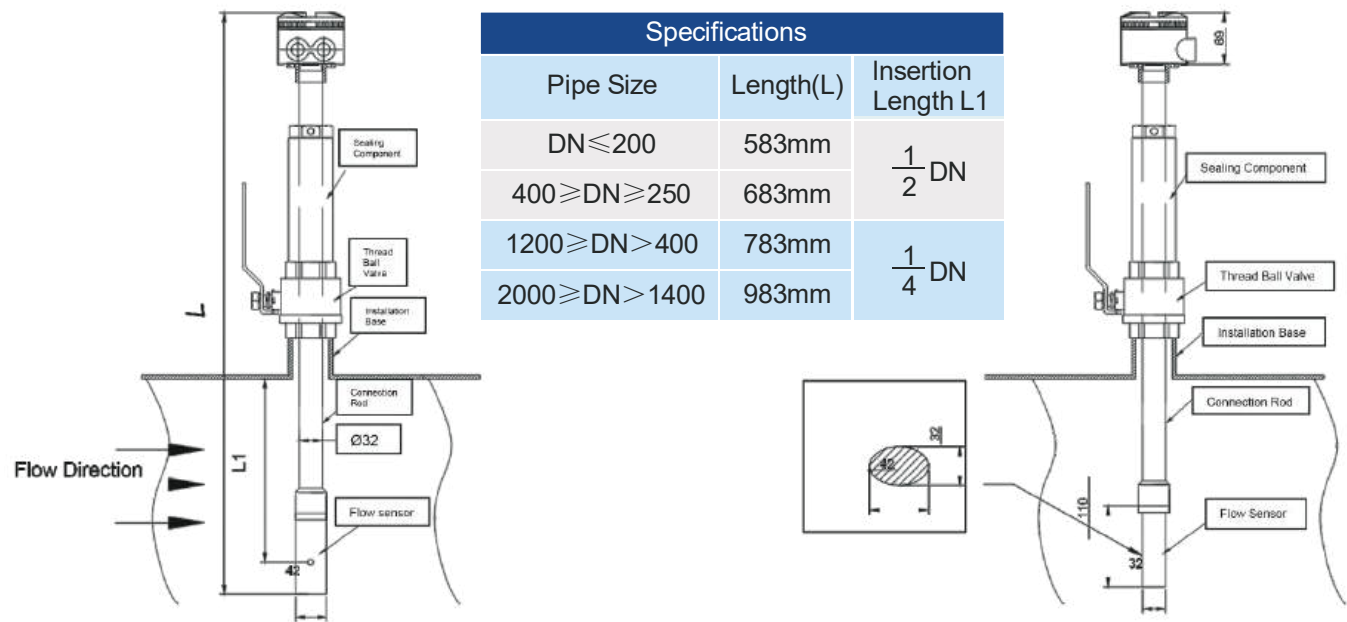


Remote Transmitter

8. Dimensions



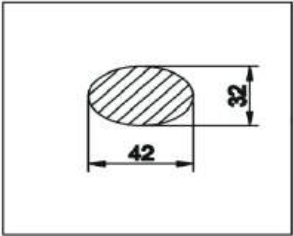
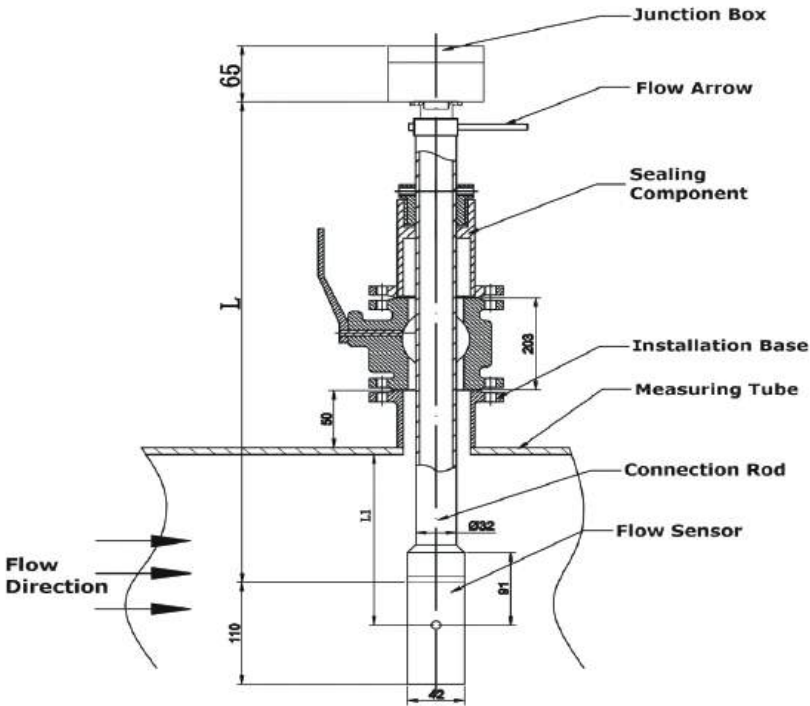
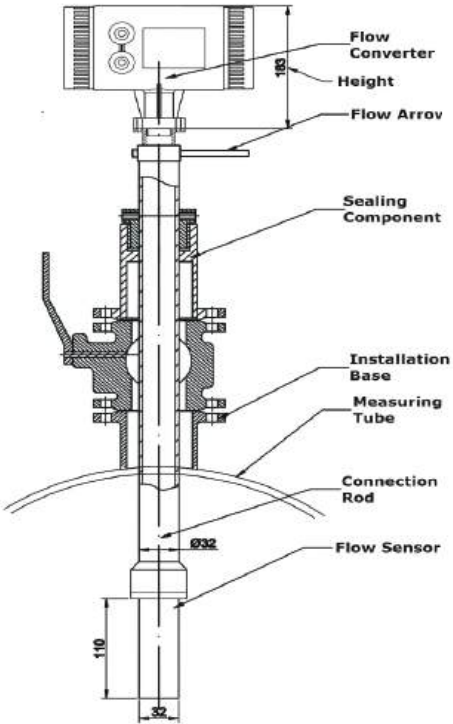
4"-80" Thread Ball Valve Insertion Electromagnetic Flow Meter Drawing (Compact)



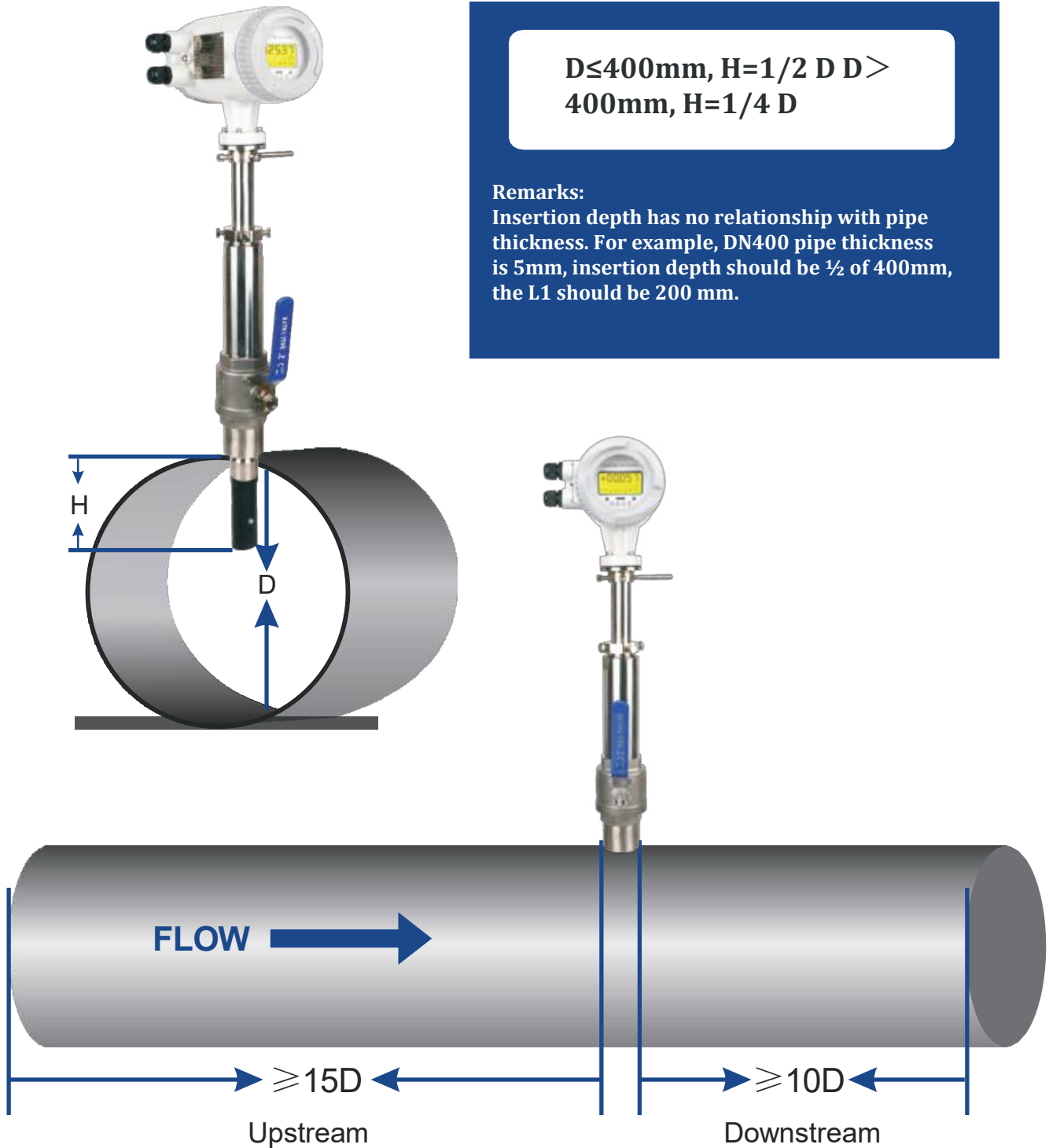
4"-80" Thread Ball Valve Insertion Electromagnetic Flow Meter Drawing (Remote)

Specifications		
Pipe Size	Length(L)	Insertion Length L1
DN≤200	480mm	$\frac{1}{2}$ DN
400≥DN≥250	580mm	
1200≥DN>400	680mm	$\frac{1}{4}$ DN
2000≥DN>1400	880mm	

4"-80" Flange Ball Valve Insertion Electromagnetic Flow Meter Drawing (Compact)



9. Insertion Electromagnetic Flow Meter



10. Model Selection Table

RF3301-I		Insertion Electromagnetic Flowmeter									
Code		1	2	3	4	5	6	7	8	9	10
Line size											
DN100-DN3000/4"-120"											
Structure											
Compact	1										
Remote	2										
Probe											
ABS	1										
Polypropylene	2										
Electrode Material											
SS316L	1										
Hastelloy B	2										
Hastelloy C	3										
Others	8										
Power Supply											
20~36 VDC	G										
85~265 VAC	E										
9~36 VDC solar power	SD										
Others	X										
Explosion Proof option											
N	None										
D	Explosion Proof										
Insertion											
1	G2" thread ball valve										
2	DN50 flange ball valve										
Transmitter											
A	Square										
B	Round										
Protection Grade											
1	IP65 Transmitter + IP65 sensor										
2	IP65 Transmitter + IP68 sensor (remote)										
Signal Output /Communication											
A	4~20 mA + Pulse + RS485 MODBUS										
B	4~20 mA + HART										
D	GPRS										

Example: RF3301-I- 20112GA1B2N

RF3301-I - Insertion Electromagnetic Flowmeter

20 - Line Size : DN100-DN3000/4"-120"

1 - Structure : Compact

1 - Probe : Compact

2 - Electrode Material : Hastelloy B

G - Power Supply : 20 ~ 36VDC

A - Signal Output/ Communication : 4~20 mA + Pulse + RS485 MODBUS

1 - Protection Grade: IP65 Transmitter + IP65 sensor

B - Transmitter : Round

2 - Insertion: DN50 flange ball valve

N - Explosion Proof option: None

*For any customisation, contact our sales team

11. Insertion Electromagnetic Flow Meter

Size		Flow Range & Velocity Table							
mm	Inch	0.1 m/s	0.2 m/s	0.5 m/s	1 m/s	4 m/s	10 m/s	12 m/s	15 m/s
DN3	1/8"	0.003	0.005	0.013	0.025	0.102	0.254	0.305	0.382
DN6	1/4"	0.01	0.02	0.051	0.102	0.407	1.017	1.221	1.526
DN10	3/8"	0.028	0.057	0.141	0.283	1.13	2.826	3.391	4.239
DN15	1/2"	0.064	0.127	0.318	0.636	2.543	6.359	7.63	9.538
DN20	3/4"	0.113	0.226	0.565	1.13	4.522	11.304	13.56	16.956
DN25	1"	0.177	0.353	0.883	1.766	7.065	17.663	21.2	26.494
DN32	1¼"	0.289	0.579	1.447	2.894	11.575	28.938	34.73	43.407
DN40	1½"	0.452	0.904	2.261	4.522	18.086	45.216	54.26	67.824
DN50	2"	0.707	1.413	3.533	7.065	28.26	70.65	84.78	10.598
DN65	2½"	1.19	2.39	5.97	11.94	47.76	119.4	143.3	179.1
DN80	3"	1.81	3.62	9.04	18.09	72.35	180.86	217	271.3
DN100	4"	2.83	5.65	14.13	28.26	113.04	282.6	339.1	423.9
DN125	5"	4.42	8.83	22.08	44.16	176.63	441.56	529.9	662.34
DN150	6"	6.36	12.72	31.79	63.59	254.34	635.85	763	953.78
DN200	8"	11.3	22.61	56.52	113.04	452.16	1130.4	1356	1696
DN250	10"	17.66	35.33	88.31	176.53	706.5	1766.25	2120	2649
DN300	12"	25.43	50.87	127.2	254.34	1017	2543.4	3052	3815
DN350	14"	34.62	69.24	1731	3461.9	1385	3461.85	4154	5193
DN400	16"	45	90	2261	452	1809	4522	5426	6782
DN450	18"	57	114	2861	572	2289	5723	6867	8584
DN500	20"	71	141	3533	707	2826	7065	8478	10598
DN600	24"	102	203	5087	1017	4069	10174	12208	15260
DN700	28"	138	277	6924	1385	5539	13847	16617	20771
DN800	32"	181	362	9043	1809	7235	18086	21704	27130
DN900	36"	229	458	1145	2289	9156	22891	27469	34336
DN1000	40"	283	565	1413	2826	11304	28260	33912	42390
DN1200	48"	407	814	2035	4069	16278	40694	48833	61042
DN1400	56"	554	1108	2769	5539	22156	55390	66468	83084
DN1600	64"	723	1447	3617	7235	28938	72346	86815	108518
DN1800	72"	916	1831	4578	9156	36625	91562	109875	137344
DN2000	80"	1130	2261	5652	11304	45216	113040	135648	169560
DN2200	88"	1368	2736	6839	13678	54711	136778	164134	205168
DN2400	96"	1628	3256	8139	16278	65111	162778	195333	244166
DN2600	104"	1910	3821	9552	19104	76415	191038	229245	286556
DN2800	112"	2216	4431	11078	22156	88623	221558	265870	332338
DN3000	120"	2543	5087	12717	25434	101736	254340	305208	381510
Remark: Recommend flow velocity range 0.5~15 m/s									

Field Instrumentation Range



Pressure Measurement

- Smart Differential Pressure Transmitter
- Smart Gauge Pressure Transmitter
- Smart Absolute Pressure Transmitter
- Miniature Pressure Transducer without display
- Sanitary Gauge/ Absolute Pressure Transmitter

- Submersible Pressure Transmitter
- Remote Seal Differential P.T. with capillary
- Remote Seal Differential P.T. Direct Mount
- Remote Seal Gauge/Absolute P.T. with capillary
- Remote Seal Gauge/Absolute P.T. Direct Mount



Flow Measurement

- Coriolis Mass Flowmeter
- Thermal Gas Mass Flowmeter
- Positive Displacement Flowmeter
- Electromagnetic Flowmeter
- Vortex Flowmeter

- Turbine Flowmeter
- Variable Area Flowmeter
- Clamp On Ultrasonic Flowmeter
- Inline Ultrasonic Flowmeter
- Portable Ultrasonic Flowmeter



Level Measurement

- RADAR Level Transmitter Horn Antenna
- Compact RADAR Level Transmitter
- RADAR Level Transmitter Sanitary
- RADAR Level Transmitter
- Guided Wave RADAR Level Transmitter
- Guided Wave RADAR Level Transmitter
- RADAR Level Transmitter Lens Antenna

- RADAR Level Transmitter Rod Antenna
- Ultrasonic Level Transmitter
- Microwave Barrier Level Switch
- Admittance Level Switch Series
- Vibrating Rod Level Switch Series
- Tuning Fork Level Switch Series



Temperature Measurement

- Head Mount Temperature Transmitter
- Temperature Transmitter for Sanitary Applications

- DIN Rail Temperature Transmitter
- Field Mount Temperature Transmitter

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