

## Insertion Electromagnetic Flow Meter



### Description

VMF-C 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.



### Industries

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

### Applications



### 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.



## Technical Data

Size	DN100-DN3000 (4"-120" )	
Accuracy	$\pm 1.5\%$ of reading at flow velocity $\geq 0.5\text{m/s}$	
Velocity	0.1~15 m/s	
Repeatability	$\leq 0.17\%$	
Structure	Compact / remote, cable length 10m standard, 100m max	
Conductivity	$> 5 \mu\text{S/cm}$ , demineralized water $> 20 \mu\text{S/cm}$	
Protection Grade	Transmitter: IP65 standard, IP67 optional	
	Sensor: IP65 standard, IP68 (submersible, only available for remote type)	
Electrode	SS316L, Hastelloy C, Hastelloy B, Titanium, Tantalum, Platinoidium	
Power Supply	85~250 VAC (50/60 Hz), 8~36 VDC	
Power Consumption	$< 20\text{W}$	
Signal Output	Analog	4~20mA ( load resistor 0~750 $\Omega$ )
	Frequency	Forward & reverse flow output with a frequency range of 1~5000Hz
	Alarm	Two isolated open collector transistor (OCT) outputs for alarm signals
Communication	RS485 MODBUS standard, HART, GPRS, PROFIBUS optional	
Display	LCD Display, 128X128mm, three lines, 4 buttons	
Ambient Temperature	$-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$	
Fluid Temperature	$-20^{\circ}\text{C} \sim 80^{\circ}\text{C}$	
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, 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, m <sup>3</sup> /s, m <sup>3</sup> /m, m <sup>3</sup> /h, UKG, USG, gal/s, gal/m, gal/h, kg/s, kg/m, kg/h, t/s, t/m, t/h	
Language	English, Chinese, Italian, Portuguese, French, Spanish, Korean	

## Insertion Electromagnetic Flow Meter



### 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

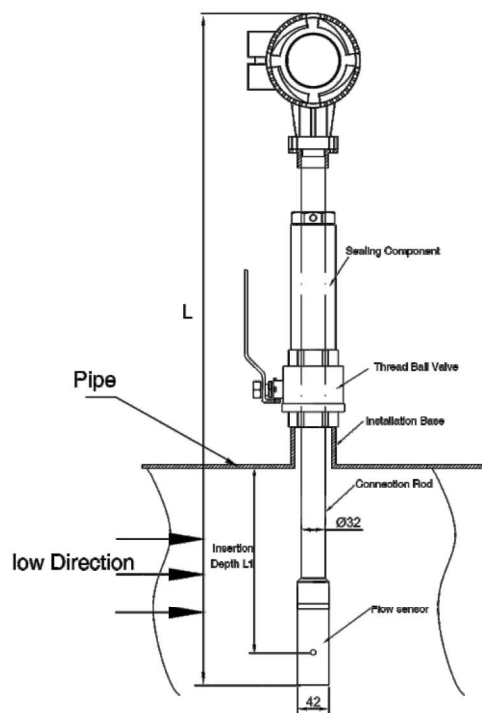


Remote Insertion Magnetic Flow Meter with Flange Ball Valve

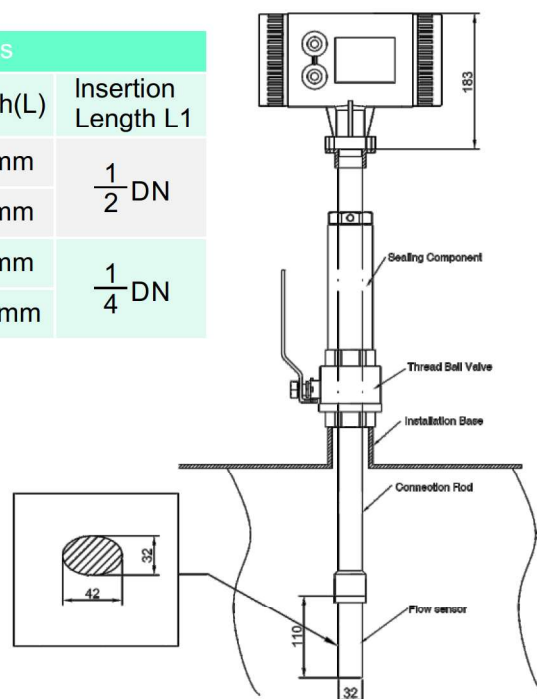
# Insertion Electromagnetic Flow Meter



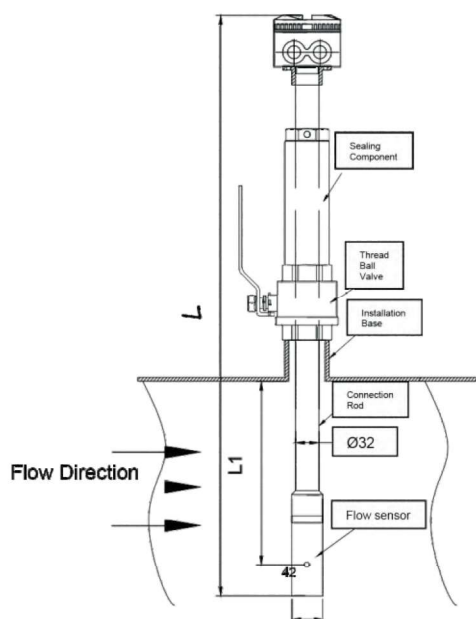
## Dimension



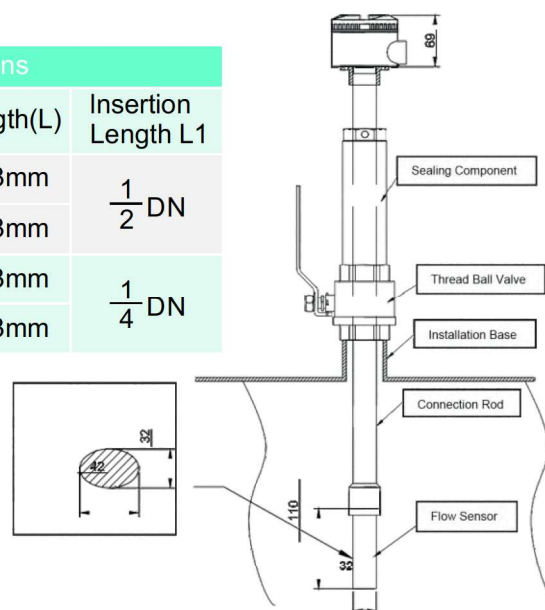
Specifications		
Pipe Size	Length(L)	Insertion Length L1
DN≤200	693mm	$\frac{1}{2}$ DN
400≥DN≥250	793mm	
1200≥DN>400	893mm	$\frac{1}{4}$ DN
2000≥DN>1400	1093mm	



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



Specifications		
Pipe Size	Length(L)	Insertion Length L1
DN≤200	583mm	$\frac{1}{2}$ DN
400≥DN≥250	683mm	
1200≥DN>400	783mm	$\frac{1}{4}$ DN
2000≥DN>1400	983mm	



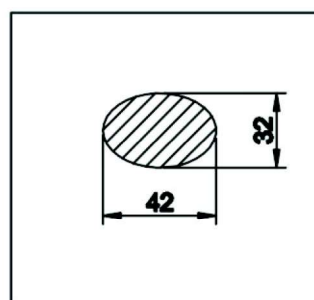
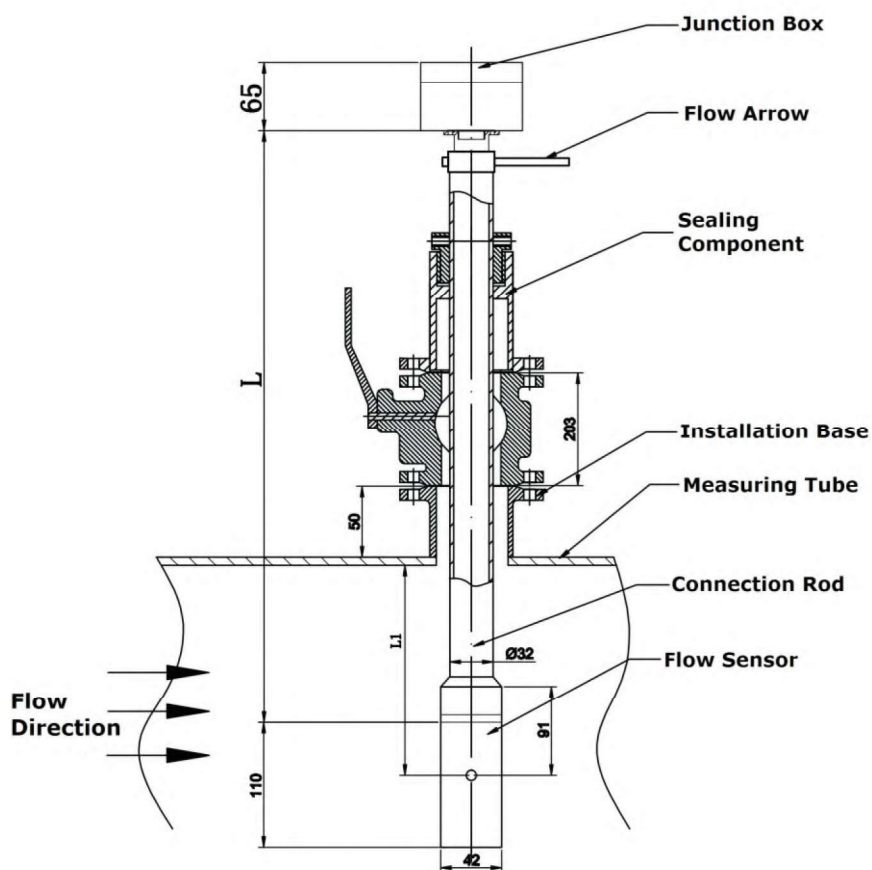
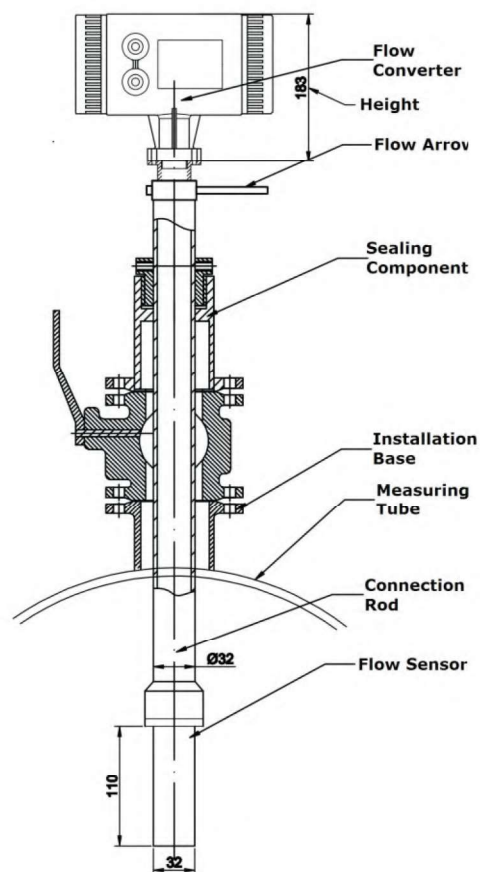
4"-80" Thread Ball Valve Insertion Electromagnetic Flow Meter Drawing (Remote)



## Dimension

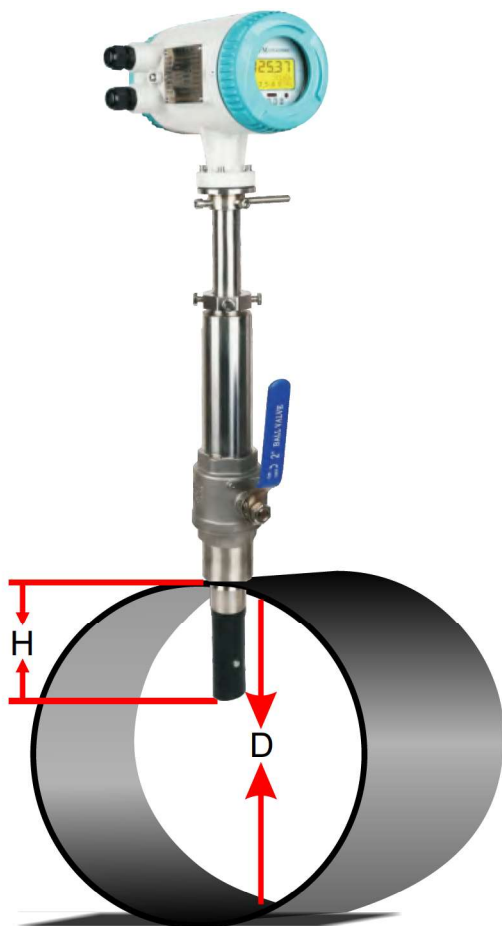
Specifications		
Pipe Size	Length(L)	Insertion Length L1
DN≤200	480mm	$\frac{1}{2}$ DN
400≥DN≥250	580mm	
1200≥DN>400	680mm	$\frac{1}{4}$ DN
2000≥DN>1400	880mm	

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





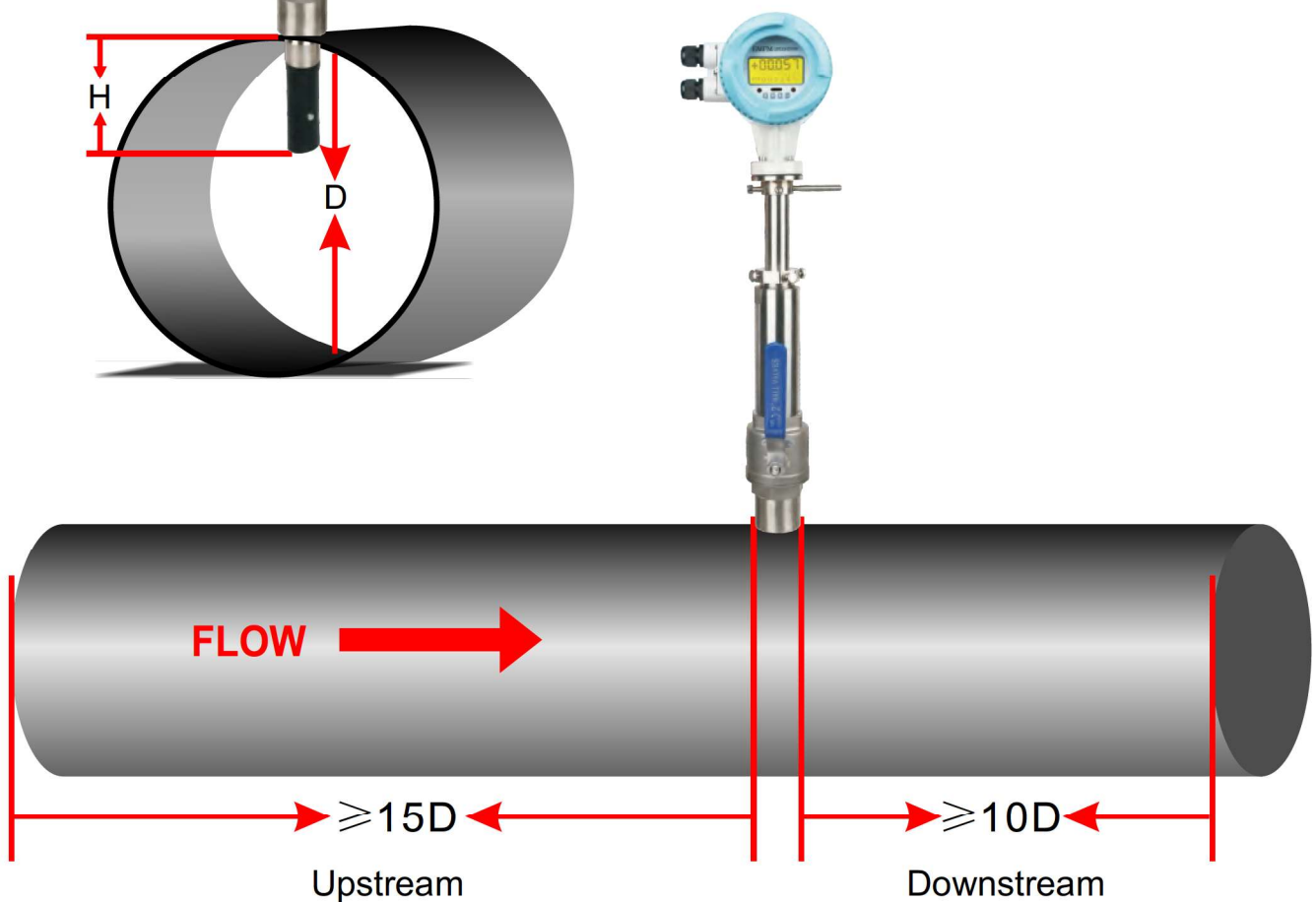
### Insertion Electromagnetic Flow Meter



$D \leq 400\text{mm}, H = 1/2 D$   
 $D > 400\text{mm}, H = 1/4 D$

**Remarks:**

Insertion depth has no relationship with pipe thickness. For example, DN400 pipe thickness is 5mm, insertion depth should be  $1/2$  of 400mm, the L1 should be 200 mm.





## Selection Table

VMF-C		X	X	X	X	X	X	X	X	X
Caliber size	DN100-DN3000/4"-120"									
Structure	Compact		1							
	Remote		2							
	Compact with explosion proof		3							
	Remote with explosion proof		4							
Probe	ABS			1						
	Polyurethane			2						
Electrode Material	SS316L				1					
	Hastelloy B				2					
	Hastelloy C				3					
	Others				4					
Power Supply	20~36 VDC					G				
	85~265 VAC					E				
	9~36 VDC solar power					SD				
	Others					X				
Signal Output /Communication	4~20 mA + Pulse + RS485 MODBUS						A			
	4~20 mA + HART						B			
	4~20 mA + Profibus						C			
	GPRS						D			
Protection Grade	IP65 Transmitter + IP65 sensor							1		
	IP65 Transmitter + IP68 sensor (remote)							2		
Transmitter	Square								A	
	Round								B	
Insertion	G2" thread ball valve									1
	DN50 flange ball valve									2