



# ALMAG-IS

## Electromagnetic Flowmeter

### Model ALMAG Series

SMARTMEASUREMENT's ALMAG-IS is an insertion-type electromagnetic flowmeter designed to measure the fluid velocity of conductive liquids in applications where hot-tap or insertion installations are preferred. This insertion mag meter is available in four standard lengths and may be installed in any pipeline with internal diameters ranging from 2" to 120" (50~3000 mm) and in permanent locations where cost or space limitations preclude the use of conventional in-line style meters. Available connections include hot-tapped, NPT threads and ANSI or DIN flanges. The ALMAGIS is designed for use with conductive fluids including water, raw sewage and wastewater, clarified water, RAS, WAS, primary sludge and cooling tower water, as long as adequate lengths of straight pipe are available where the sensor is installed.



- Available sizes: 2"~120" (50~3000 mm)
- Operating pressure: 0.6MPa, 1.0MPa, 1.6MPa, 2.5MPa, 4.0MPa
- Velocity range of 0.5~10m/s
- Accuracy:  $\pm 1.5\%$
- Hot-tap sensor can be installed and retracted from process piping
- Conductivity of measured medium:  $\leq 20 \mu\text{s/cm}$
- Electrode materials: SS# 316L, Hastalloy, Ti, Ni, Tantalum
- Maximum distance between sensor and converter:  $\leq 50\text{m}$
- NIST traceable calibration



- |                              |   |                         |  |
|------------------------------|---|-------------------------|--|
| • Line Size:                 | 2"~120" (50~3000 mm)  | • Cable Entry:          | 2 X PG11   |
| • Measuring Range:           | 0.5~10 m/s, bi-directional  | • Ambient Temperature:  | -13 to 140 °F (-25~60 °C)  |
| • Connection:                | Weld, ball valve(threaded and flanged)                                      | • Protection:           | IP 65 - std<br>IP 68 (Submersible) - only for remote                                   |
| • Accuracy:                  | $\pm 1.5\%$ of reading, bi-directional<br>for velocities $\geq 1\text{m/s}$ | • Grounding Resistance: | Must be $\leq 10 \Omega$   |
| • Temperature:               | up to 248 °F (120 °C) max   | • Power requirements:   | 19~36 V <sub>DC</sub> , 12~15W<br>85~265 V <sub>AC</sub> , 45~63 Hz, $\leq 20\text{W}$ |
| • Pressure:                  | up to 230 psig (1.6 Mpa) max  | • Outputs:              | 4~20mA, Pulse  |
| • Materials of Construction: |   | • Communication:        | RS232/485/HART, Modbus   |
| • Transmitter housing:       | Aluminum  | • Display:              | Flow rate, flow velocity, percentage,<br>Total flow                                    |
|                              | Probe: SS #304 (std), 316L, Ti  |                         |  |
|                              | Electrode: SS# 316L, HC-22, HB3, Ti   |                         |  |
| • Media Conductivity:        | $> 20 \mu\text{s/cm}$   |                         |  |

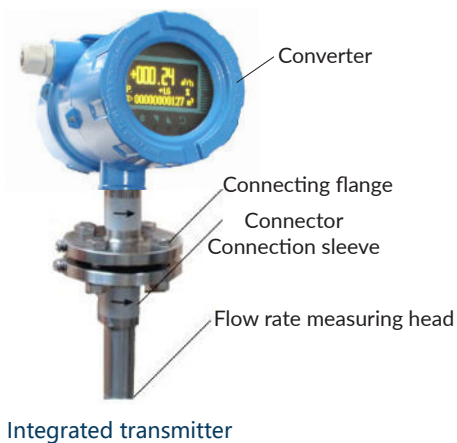
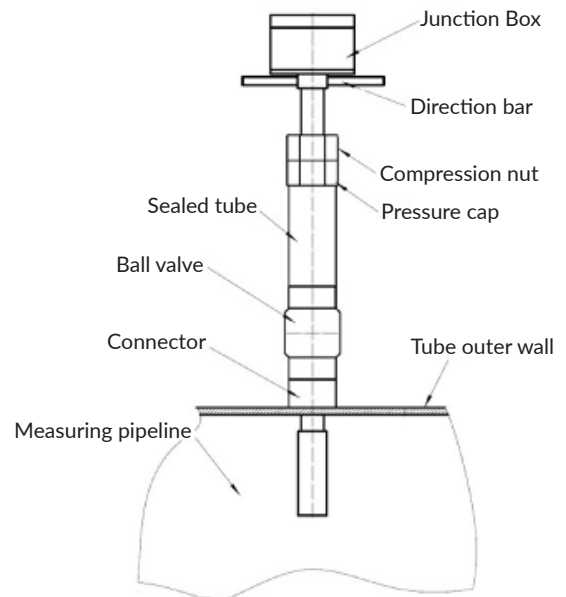
## ■ Insert rod length and measuring pipe diameter table

model	Measured pipe diameter	
	Insert into (1/2) * D	Insert into (1/8) * D
ALMAG-B-500	DN50 ~ DN400	DN50 ~ DN1600
ALMAG-B-900	DN450 ~ DN1200	DN50 ~ DN4800
ALMAG-B-1200	DN1300 ~ DN1800	DN50 ~ DN7200
ALMAG-B-1500	DN2000 ~ DN2400	DN50 ~ DN8000

## ■ Fixed length installation type



## ■ Online pluggable installation type



### ■ Calculation of Insertion Height for fixed and retractable types

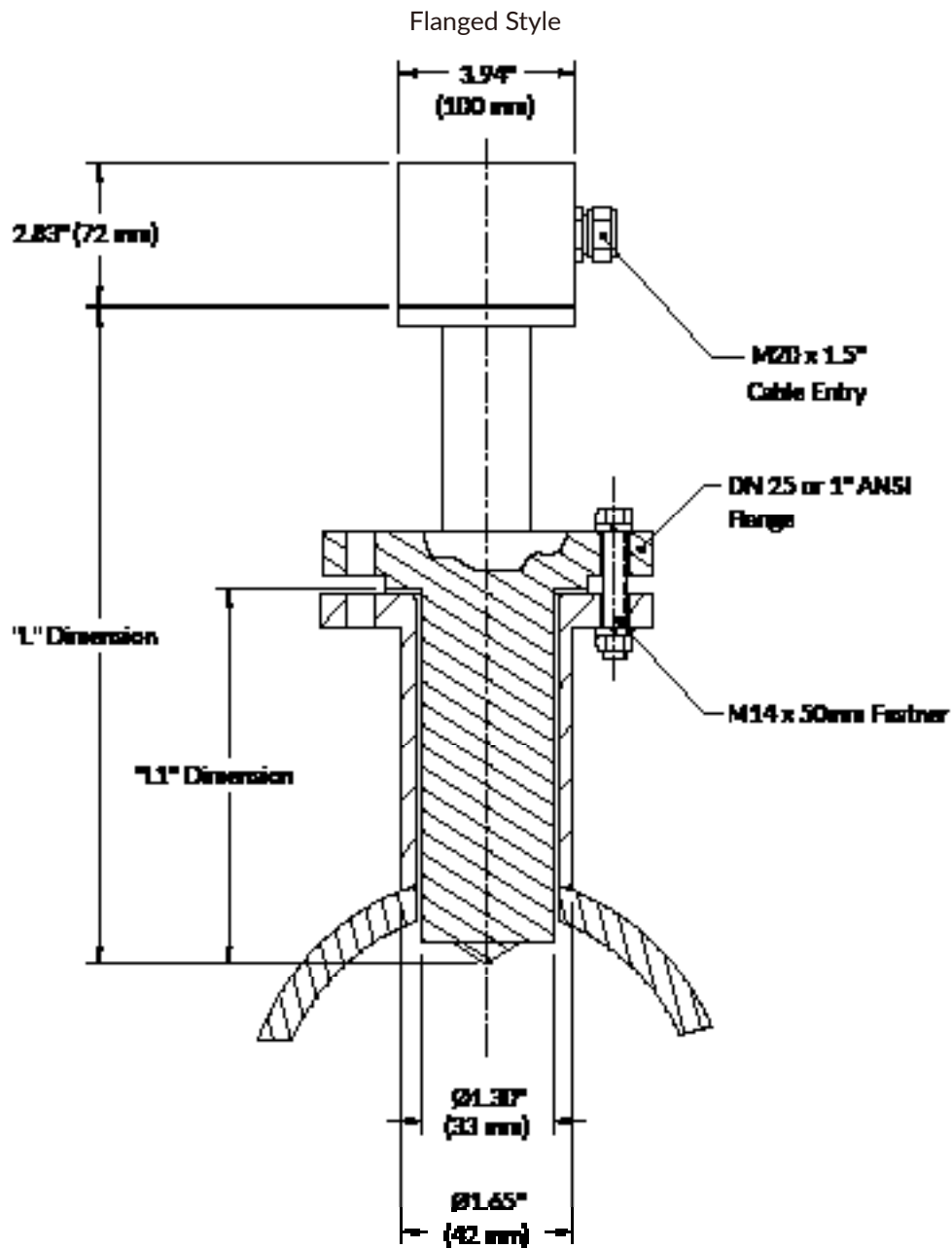
$$H = L - A - B$$

H --- insertion height, mm

L --- the nominal length of sensor, L=600mm, 900mm, 1200mm, 1500mm

A --- the insertion depth (D/8), mm

B --- the thickness of pipe wall, mm



Nominal Line Size	"L" Diminsion	"L1" Dimension
≤16" (DN 400)	18.2" (208 mm)	4.92" (125 mm)
>16" (DN 400)	9.76" (248 mm)	6.50" (165 mm)

Please contact your **SmartMeasurement** application engineer

You also need to provide the following information:

Please provide the name of your fluid media, the operating PH, and conductivity

Please provide the max and min flow rate, in units of Lb/hr, GPM or LPM

Please provide the nominal pipe size as well process connection type (flange, threaded, etc..)

We will calibrate your flow meter as close to your operating conditions as possible

### ALMAG IS SERIES

EXAMPLE: ALMAGIS-BF-50-0-3-IN-2.5-65-0-DC-0-EXI-NN-NN

ALMAG IS	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Weld	W												Connection	
Ball valve - Welded	BW													
Ball valve - Threaded	BT													
Ball valve - Flanged	BF													
DN50~DN3000	**												Line Size	
316 stainless steel	0												Electrode	
Nickel	1													
Hast C	2													
Tan	3													
Ti	4													
304 stainless steel	0												Probe material	
316 stainless steel	1													
Ti	2													
Hastalloy C	3													
Integral type	IN												Transmitter	
Remote type - with 5m cable	RE													
Max Pressure 1.6Mpa	1.6												Pressure	
Standard - IP65	65												Protection	
IP68 flowbody and IP65 transmitter, only for remote type	68													
Not Needed	0												Grounding electrode/ring	
16~30 V <sub>DC</sub>	DC												Power supply	
85~265V <sub>AC</sub> , @ 45 -63 Hz	AC													
No digital communication	0												Communication	
HART	1													
RS485 - Modbus	2													
RS485 - Profibus DP	3													
None	NX												Explosion proof	
Explosion Proof - for integral type	EXI													
Explosion Proof - for remote type	EXR													
Aluminium enclosure, PEEK liner	NN												Materials	
Energy meter with RTD (only remote)	EG												Option	
With welding installation part	WP													

