



# ALMAG

## Electromagnetic Flowmeter

### ALMAGIS Series

## GENERAL

**SMC'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 pipe connections include hot-tapped, DIN and NPT threads. 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.

## FEATURES

- Applicable sizes: 2"~120" (50~3000 mm)
- Operating pressure: ≤ 1.6MPa
- Velocity range of 0.5~10m/s
- Accuracy: ±1.5%
- Hot-tap sensor can be installed and retracted from process piping
- Conductivity of measured medium: ≤ 20 μs/cm
- Electrode materials: 316L, Hastalloy, Ti, Ni, Tantalum
- Maximum distance between sensor and converter: ≤50m
- NIST traceable calibration



## SPECIFICATIONS

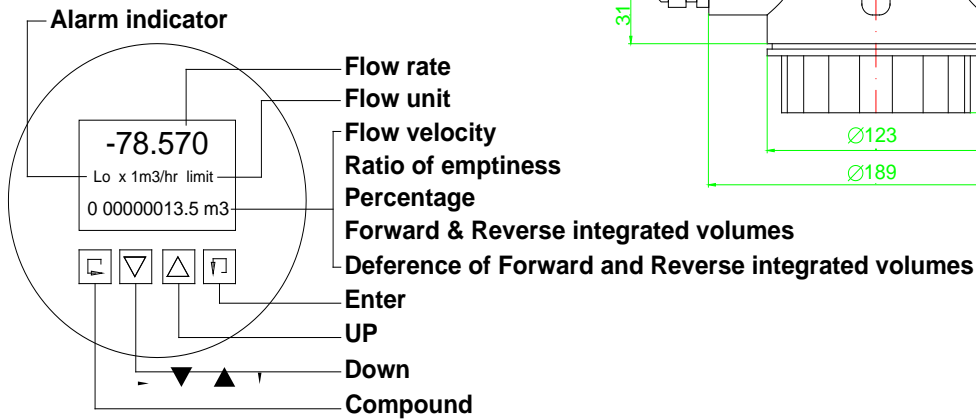
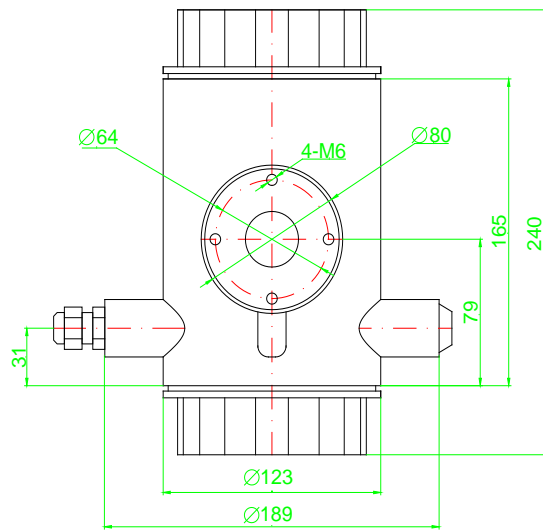
- |                             |                                         |                        |                                                                             |
|-----------------------------|-----------------------------------------|------------------------|-----------------------------------------------------------------------------|
| ● Line Size                 | : 2"~120" (50~3000 mm)                  | ● Cable Entry          | : 2 X PG11                                                                  |
| ● Measuring Range           | : 0.5 - 10 m/s -bi-direction            | ● Ambient Temperature  | : -13 to 140 °F (-25 to 60 °C)                                              |
| ● Connection                | : Weld, ball valve(threaded and flange) | ● Protection           | : IP 65 - std<br>IP 68 (Submersible) - only for remote                      |
| ● Accuracy                  | : ±1.5% of reading (velocity v≥1m/s)    | ● Grounding Resistance | : Must be ≤ 10 Ω                                                            |
| ● 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, ≤20W |
| ● 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<br>Total flow         |
| Probe                       | : SS #304 (std), 316L, Ti               |                        |                                                                             |
| Electrode                   | : 316L, HC-22, HB3, Ti                  |                        |                                                                             |
| ● Media Conductivity        | : > 20 μS/cm                            |                        |                                                                             |

**ALMAG**

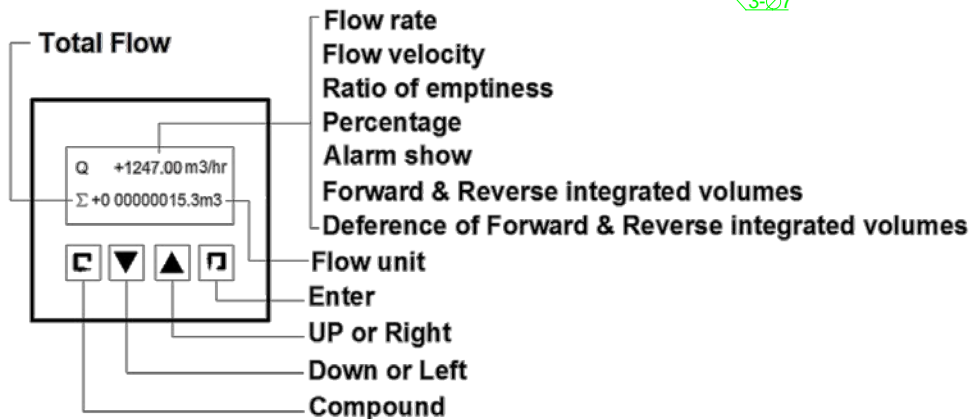
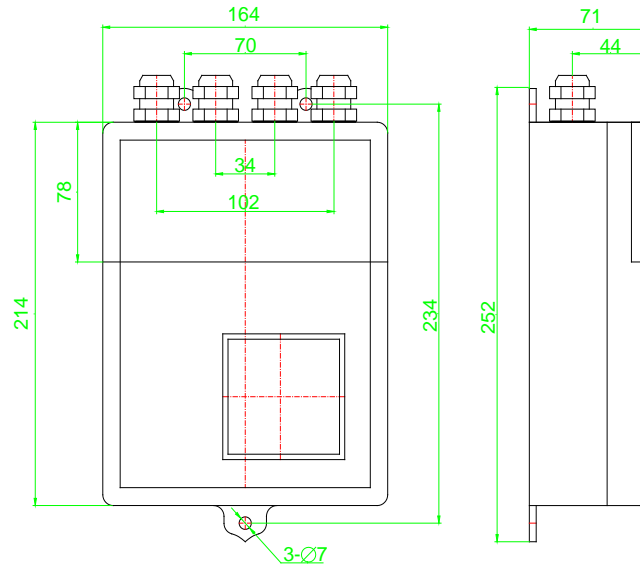
**Electromagnetic Flowmeter**

**➤ Mounting drawing**

● **Standard Integral type**



● **Standard Remote type**



➤ DIMENSIONS - Insertion

Calculation of Insertion Height for fixed and retractable types

$$H = L - A - B$$

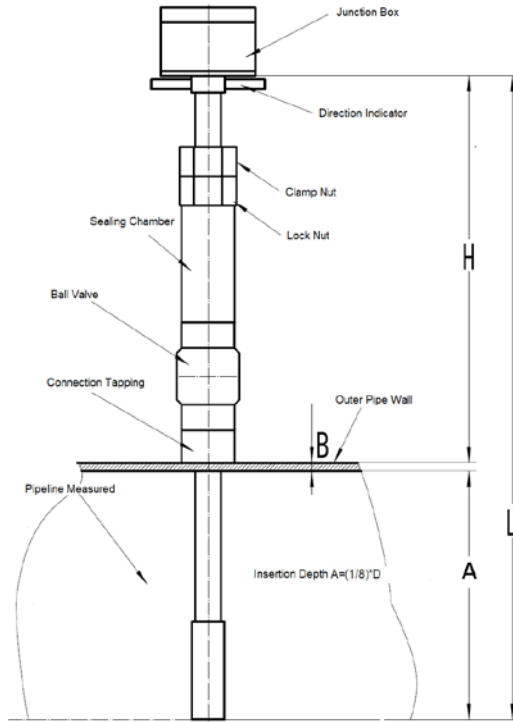
H --- insertion height, mm

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

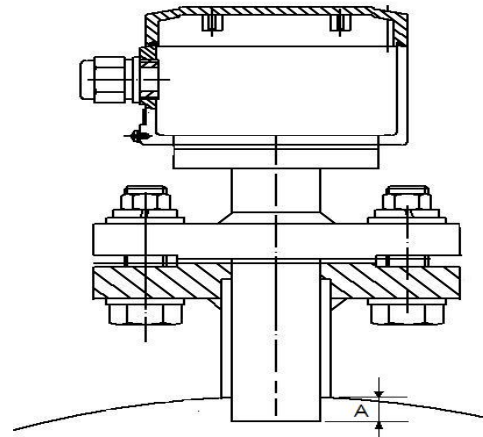
A --- insertion depth (D/8), mm

B --- thickness of the pipe wall, mm

Retractable type



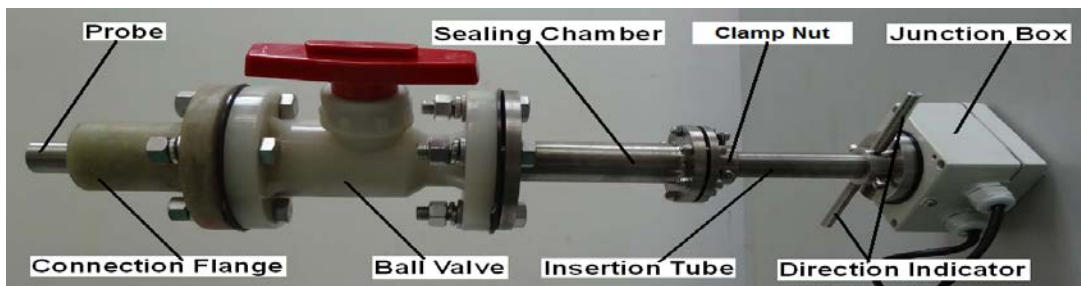
Flanged type



Insertion Depth  $A = (1/8) * D$

Pipe Size	Insertion Depth (D)= pipe inner diameter
DN50~DN150	$(\frac{1}{8}) * D$
DN200~DN600	$(\frac{1}{8}) * D$ or $(\frac{1}{2}) * D$
DN700~DN8000	$(\frac{1}{8}) * D$

Model	Probe Length (mm)	DN Size
		Insertion Depth $(\frac{1}{8}) * D$
EMF-B-600	600	DN50 ~ DN1600
EMF-B-900	900	DN450 ~ DN4800
EMF-B-1200	1200	DN1400 ~ DN7200
EMF-B-1500	1500	DN2000 ~ DN8000



**ALMAG**

**Electromagnetic Flowmeter**

**\*\* Please contact your local Smart Measurement application engineer**

**You also need to provide the following information:**

<b>Type of Fluid</b>	Please provide the name of your fluid
<b>Full Scale Flow</b>	Maximum and minimum flow rates; units must be in GPM, LPM or m <sup>3</sup> /hr, etc..
<b>Line Size</b>	Please provide pipe size as well connection type (flanged, threaded, etc..)
<b>Pressure &amp; Temperature</b>	We will calibrate your flowmeter as close to your operating conditions as possible

**➤ Model Selection Guide**

ALMAG Series														
Example: ALMAGIS-BF-50-0-3-IN-2.5-65-0-DC-0-EXI-NN-NN														
ALMAGIS-	*_	*	*_	*	*_	*	*_	*	*_	*	*_	**_	**	Description
Weld	W											Connection		
Ball valve - Welded	BW													
Ball valve - thread	BT													
Ball valve - Flanged	BF													
2"~120" (DN50~DN3000)	**											Size		
304 stainless steel	0											Probe		
316 stainless steel	1													
Ti	2													
Hastalloy C	3													
316 stainless steel	0											Electrode		
Nickel	1													
Hastalloy C	2													
Tan	3													
Ti	4													
Integral type	IN											Transmitter		
Remote type - with 5m cable	RE													
Max Pressure 1.6Mpa	1.6											Pressure		
IP65	65											Protection		
IP68 flow body and IP65 transmitter, only for remote type	68													
Not Needed	0											Grounding rings		
11-40V <sub>DC</sub>	DC											Power supply		
85~265V <sub>AC</sub> , 50/60 Hz	AC													
Non 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													
Aluminum Enclosure, SS #304 probe	NN											Materials		
None	NN											Options		
With welding installation part	WP													