

## FLOWX3 F3.60M Insertion Magmeter



The FLOWX3 F3.60M & F3.63M Insertion Magmeters are suitable to measure flowrate in both metal and thermoplastic pipelines.

No moving mechanical parts and the high quality materials allow the measurement of liquids where suspended solids can be present or of abrasive liquids as long as they are conductive and homogeneous.

The sensor can be assembled into the standard FLS fitting range so it is perfectly interchangeable with the paddlewheel sensors. The new design allows an accurate flow measurement over a wide dynamic range in pipe sizes from DN15 (0.5") to DN600 (24"). The F3.60M & F3.63 offer frequency output for use with FLS flow instrumentation and 4-20 mA output for long distance transmission and PLC connection.

### Main Features

- No moving parts, no wear, maintenance free.
- High mechanical resistance.
- For DN15 (0.5") to DN600 (24") pipes.
- Flow Rate Range:
  - F3.60M: from 0.05 to 8 m/s (0.15 to 25 ft/s)
  - F3.63M: from 0.15 to 8 m/s (0.5 to 25 ft/s).
- Accurate measurement of dirty liquids.
- Blind 4-20 mA or frequency output.
- Bi-directional flow measurement (F3.60M).
- Low pressure drop.
- Special versions for salt-water applications (high concentrations of chlorides like sea water) and for high temperature conditions.

### Applications

- Water and waste water treatment.
- Raw water intake.
- Industrial water distribution.
- Textile industry.
- Pools, spas and aquariums.
- HVAC.
- Processing and manufacturing industry.
- Sea water applications.

### Operating Principle

If an electrical conductor is caused to move in a magnetic field, such movement induces a voltage in the conductor (Faraday's law). The magnetic coil in the body of the instrument generates a magnetic field perpendicular to the flow direction. The magnetic field and the velocity induce a voltage between the electrodes.

The voltage is directly proportional to the flow velocity.

The voltage is converted into a flow proportional 4-20 mA output signal or frequency output signal.

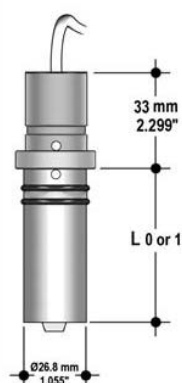
### Connections to FLOWX3 Instruments

F3.6XM Frequency output is compatible with the list of instruments marked into the following table.

FLOWX3 Magmeter	FLOWX3 Instruments					
	F9.00.L	F9.02.L	F9.03	F9.20	F9.50.L	F9.51.L
<b>F3.60M</b>		■	■		■	■
<b>F3.63M</b>		■	■		■	■

## Dimensions

### Sensor Body



### F3.60M & F3.63M Magmeter



**Sensor length:**  
 L0 = 68.5 mm (2.70")  
 L1 = 98.5 mm (3.88")

## Terminal View

### Power supply

1	+ VDC
2	+ LOOP
3	- LOOP
4	- VDC

A

### Sensor connections

B

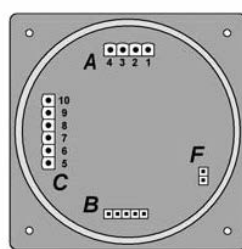
F

### Open collector OUTPUTS

5	N.C.
6	N.C.
7	N.C.
8	N.C.
9	FREQ +
10	FREQ -

C

F3.63M



### Power supply

1	+ VDC
2	+ LOOP
3	- LOOP
4	- VDC

A

### Sensor connections

B

F

### Open collector OUTPUTS

5	N.C.
6	N.C.
7	DIR +
8	DIR -
9	FREQ +
10	FREQ -

C

F3.60M

## Technical Data

### General

- Pipe Size Range: DN15 to DN600 (0.5" to 24"). Please refer to Installation Fitting section for more details.
- Flow Rate Range:
  - F3.60M: from 0.05 to 8 m/s (0.15 to 25 ft/s)
  - F3.63M: from 0.15 to 8 m/s (0.5 to 25 ft/s).
- Full Scale Range : 5 m/s (16,4 ft/s) standard (others available on request).
- Linearity:  $\pm 1\%$  of reading + 1,0 cm/s.
- Repeatability:  $\pm 0.5\%$  of reading.
- Enclosure: IP65.
- Materials:
  - Case: PC/UPVC
  - Gasket: EPDM.
- Wetted Materials:
  - Sensor body:
    - 316L SS/PVDF
    - 316L SS/PEEK
    - CuNi alloy/PVDF
  - O-rings: EPDM or FPM
  - Electrodes:
    - 316LSS
    - CuNi alloy

### Electrical

- Power Supply:
  - 12 to 24 VDC  $\pm 10\%$  regulated (reverse polarity and short circuit protected)
  - Maximum current consumption: 150 mA
  - Protective earth:  $< 10 \Omega$ .
- Current output:
  - 4 - 20 mA, isolated
  - Max. loop impedance:  $600 \Omega @ 24 \text{ VDC}$
  - Positive or negative flow indication.
- Frequency output:
  - Open Collector NPN
  - Frequency: 0 – 500 Hz
  - Max. Pull-up Voltage: 24 VDC
  - Max. Current: 50 mA, current limited
  - Compatible with FLOWX3 F9.02.L, F9.03, F9.50.L and F9.51.L.
- Digital output (F3.60M only):
  - Type: Open Collector NPN
  - Max. Pull-up Voltage: 24 VDC
  - Max. Current: 50mA, current limited
  - Flow direction:
    - 0 VDC arrow-wise
    - + VDC anti arrow-wise