

## FLOWX3 NEW F9.60M Insertion Magmeter with Display



The FLOWX3 NEW F9.60M & F9.63M 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 NEW F9.60M & F9.63M with built in display provide a local indication of instant flow-rate, permanent and resettable totalizer.

A complete choice of analog and digital outputs plus the bi-directional flow indication make them very complete and updated devices suitable for a wide range of applications.

### Main Features

- No moving parts, no wear, maintenance free.
- High mechanical resistance.
- For DN15 (0.5") to DN600 (24") pipes.
- Flow Rate Range:
  - F9.60M: from 0.05 to 8 m/s (0.15 to 25 ft/s)
  - F9.63M: from 0.15 to 8 m/s (0.5 to 25 ft/s).
- Accurate measurement of dirty liquids.
- Zero flow output with empty pipe.
- Bi-directional flow measurement (F9.60M only).
- Low pressure drop.

### Applications

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

### 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.

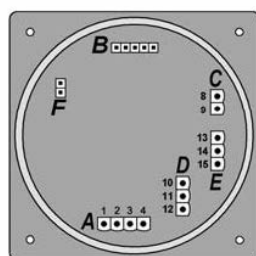
The magnetic field and the velocity induce a voltage between the electrodes. The voltage is directly proportional to the flow velocity.

### Connections to FLOWX3 Instruments

F9.60M Frequency output is compatible with the list of instruments marked into the following table.

FLOWX3 Magmeter	FLOWX3 Instruments						
	F9.00	F9.01	F9.02	F9.03	F9.20	F9.50	F9.51
<b>F9.60M</b>		■	■	■		■	■
<b>F9.63M</b>		■	■	■		■	■

## Terminal View



Power supply	A	1	+ VDC
		2	+ LOOP
		3	- LOOP
		4	- VDC
Sensor connections		B	
Open collector OUTPUT	C	8	O.C.+
		9	O.C.-
OUT 1 RELAY	D	RELAY 1	
		10	NC
		11	COM
OUT 2 RELAY	E	RELAY 2	
		13	NC
		14	COM
Sensor connections		15	NO
		F	

## 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:
  - F9.60M: from 0.05 to 8 m/s (0.15 to 25 ft/s)
  - F9.63M: from 0.15 to 8 m/s (0.5 to 25 ft/s)
- Linearity:  $\pm 1\%$  of reading + 1,0 cm/s.
- Repeatability:  $\pm 0.5\%$  of reading.
- Enclosure: IP65.
- Materials:
  - Case: PC
  - Gasket: EPDM
  - Keypad: 5 button silicone rubber.
- Display:
  - 3 line LCD: 2 x 12 alphanumeric lines and 1 icon line
  - Update rate: 1 second
  - Contrast: User adjustable with 5 levels
  - Backlight version available.
- Wetted Materials:
  - Sensor body: 316L SS/PVDF
  - O-rings: EPDM or FPM
  - Electrodes: 316L SS.

### Electrical

- Power Supply:
  - 12 to 24 VDC  $\pm 10\%$  regulated (reverse polarity and short circuit protected)
  - Maximum current consumption: 300 mA
  - Protective earth:  $< 10 \Omega$
- Current output:
  - 4 - 20 mA, isolated, fully adjustable
  - Max. loop impedance: 600  $\Omega$  @ 24 VDC
  - Positive, negative or bi-directional flow indication.
- Open Collector output (OPT):
  - Type: solid state NPN, optically isolated
  - Output modes: Off, MIN, MAX, Window, Proportional Pulse, Freq.
  - Max. Frequency: 500 Hz
  - Max. Pull-up Voltage: 24 VDC
  - Max. Current: 50 mA, current limited
  - Compatible with FLOWX3 F9.01, F9.02, F9.03, F9.50 and F9.51
  - Hysteresis: User selectable plus timer delay
  - Trigger delay: adjustable
- Relay Output (OUT1 and OUT2):
  - Type: mechanical SPDT contact
  - Output modes: Off, MIN, MAX, Window, Proportional Pulse
  - Max voltage rating: 3A @ 30VDC, 3A @ 250VAC resistive load
  - Hysteresis: User selectable plus timer delay
  - Trigger delay: adjustable
  - Expected mechanical life (min. operations):  $10^7$
  - Expected electrical life (min. operations):
    1. N.O. switching capacity 5A 250VAC:  $5 \times 10^4$
    2. N.C. switching capacity 2A 250VAC:  $2 \times 10^5$