

# FLS F6.60

## FLOW MAGMETER



The new FLS F6.60 is a flow meter without moving mechanical parts which can be applied for the measurement of dirty liquids so long as they are conductive and homogeneous. The F6.60 can provide three different options: frequency output to be connected to FLS flow monitors, 4-20 mA output for long distance transmission and PLC connection and the new volume pulse output freely settable.

F6.60 Insertion Magmeter is provided with an USB interface and a dedicated software (freely downloadable from FLS web site) which allows to easily set by a PC all parameters according to specific installation requirements (as full scale and cut off).

The specific design allows an accurate flow measurement over a wide dynamic range in pipe sizes from DN15 (0.5") to DN600 (24").

### 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

### MAIN FEATURES

- No moving parts, no wear, maintenance free
- High mechanical resistance
- Accurate measurement of dirty liquids
- Pipe size range: from DN15 (0,5") to DN600 (24")
- Flow Rate Range adjustable from 0.05 to 8 m/s (0.15 to 25 ft/s)
- Low pressure drop
- User Settable Operating Parameters
- 4-20 mA, frequency or volumetric pulse output
- Bi-directional flow measurement selectable
- Special versions for salt-water applications (high concentrations of chlorides like sea water) and for high temperature conditions



# TECHNICAL DATA

## General

- Pipe Size Range: DN15 to DN600 (0.5" to 24")  
Please refer to Installation Fitting section for more details
- Max Flow Rate Range:  
from 0.05 to 8 m/s (0.15 to 26.24 ft/s)
- Full Scale: 8 m/s (26.24 ft/s)
- Linearity:  $\pm 1\%$  of reading + 1,0 cm/s
- Repeatability:  $\pm 0.5\%$  of reading
- Enclosure: IP65
- Materials:
- case: PC/ABS
- gasket: EPDM
- Wetted Materials:
- sensor body: 316L SS/PVDF; 316L SS/ PEEK; CuNi alloy/PVDF
- o-rings: EPDM or FPM
- electrodes: 316L SS or CuNi alloy

## Electrical

- Power Supply:
- 12 to 24 VDC  $\pm 10\%$  regulated (reverse polarity and short circuit protected)
- maximum current: consumption: 250 mA
- protective earth:  $< 10 \Omega$
- Current output:
- 4-20 mA, isolated
- max. loop impedance:  $800 \Omega @ 24 \text{ VDC} - 250 \Omega @ 12 \text{ VDC}$
- positive or negative flow indication
- Solid State Relay output:
- user selectable as MIN alarm, MAX alarm, Volumetric, Pulse Out, Window alarm, Off
- optically isolated, 50 mA MAX sink, 24 VDC MAX pull-up voltage
- max pulse/min: 300
- hysteresis: User selectable
- Open Collector output (Frequency):
- Ttype: Open Collector NPN

- frequency: 0 – 800 Hz
- max. Pull-up Voltage: 24 VDC
- max. Current: 50 mA, current limited
- compatible with FLOWX3 M9.02, 9.03, M9.50
- Open Collector output (Direction):
- 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

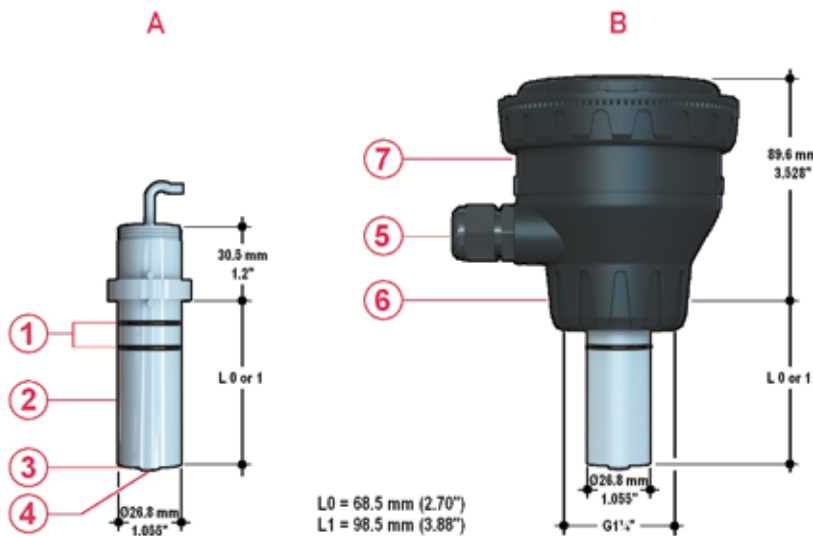
## Environmental

- Storage Temperature:  $-30^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $176^{\circ}\text{F}$ )
- Ambient Temperature:  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $158^{\circ}\text{F}$ )
- Relative Humidity: 0 to 95% (non-condensing)
- Fluid conditions:
- homogeneous liquids, pastes or slurries, also with solid content
- min electrical conductivity:  $20 \mu\text{S}$
- temperature:
- PVDF bottom version:  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ( $14^{\circ}\text{F}$  to  $140^{\circ}\text{F}$ )
- PEEK bottom version:  $-10^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$  ( $14^{\circ}\text{F}$  to  $302^{\circ}\text{F}$ )
- Max. operating pressure:
- 16 bar @  $25^{\circ}\text{C}$  (232 psi @  $77^{\circ}\text{F}$ )
- 8.6 bar @  $60^{\circ}\text{C}$  (124 psi @  $140^{\circ}\text{F}$ )

## Standards & Approvals

- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- RoHS Compliant
- GOST R

# DIMENSIONS



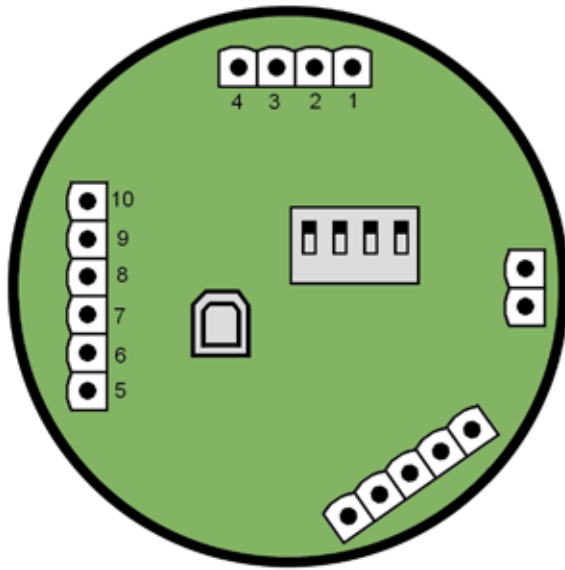
A Sensor body  
B F6.60 Magmeter

- 1 O-Ring (EPDM or FPM)
- 2 Sensor body (316L SS or CuNi)
- 3 Isolation Plate (PVDF or PEEK)
- 4 Electrodes (316L SS or CuNi)

- 5 Cable Gland
- 6 ABS cap for installation into fittings
- 7 Electronic box

# WIRING CONNECTIONS

Rear Terminal View



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

Power supply

10	-FREQ
9	+FREQ
8	-DIR
7	+DIR
6	COM
5	NO

Digital Output

INSERTION FLOW SENSORS

## ORDERING DATA

F6.60.XX Flow Magmeters							
Part No.	Version	Power supply	Length	Main wetted materials	Enclosure	Flow Rate Range	Weight (gr.)
F6.60.09	Blind	12 - 24 VDC	L0	316L SS/ PVDF/ EPDM	IP65	0,05 – 8 m/s bi-directional	950
F6.60.10	Blind	12 - 24 VDC	L0	316L SS/ PVDF/ FPM	IP65	0,05 – 8 m/s bi-directional	950
F6.60.11	Blind	12 - 24 VDC	L1	316L SS/ PVDF/ EPDM	IP65	0,05 – 8 m/s bi-directional	1000
F6.60.12	Blind	12 - 24 VDC	L1	316L SS/PVDF/FPM	IP65	0,05 – 8 m/s bi-directional	1000
F6.60.33	Blind	12 - 24 VDC	L0	CuNi/ PVDF/ EPDM	IP65	0,05 – 8 m/s bi-directional	950
F6.60.34	Blind	12 - 24 VDC	L0	CuNi/ PVDF/ FPM	IP65	0,05 – 8 m/s bi-directional	950
F6.60.35	Blind	12 - 24 VDC	L1	CuNi/PVDF/EPDM	IP65	0,05 – 8 m/s bi-directional	1000
F6.60.36	Blind	12 - 24 VDC	L1	CuNi/ PVDF/ FPM	IP65	0,05 – 8 m/s bi-directional	1000
F6.60.38	Blind	12 - 24 VDC	L0	316L SS/ PEEK/ FPM	IP65	0,05 – 8 m/s bi-directional	950
F6.60.40	Blind	12 - 24 VDC	L1	316L SS/ PEEK/ FPM	IP65	0,05 – 8 m/s bi-directional	1000