

FLS F6.60

MAGMETER FLOW SENSOR



The new F6.60 and F6.63 are flow meters 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 family 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.

The insertion magmeter family 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")
- Adjustable Flow Rate Range
- Low pressure drop
- User Settable Operating Parameters
- 4-20 mA, frequency or volumetric pulse output
- Bi-directional flow measurement selectable (for F6.60)
- 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:
 - F6.60: from 0,05 to 8 m/s
 - F6.63: from 0,15 to 8 m/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: ABS
 - 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)
- Max 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):
 - Type: Open Collector NPN
 - frequency: 0 – 800 Hz

- max. Pull-up Voltage: 24 VDC
- max. Current: 50 mA, current limited
- compatible with M9.02, M9.50, M9.07, M9.08 and M9.10
- Open Collector output (Direction not available on F6.63):
 - 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

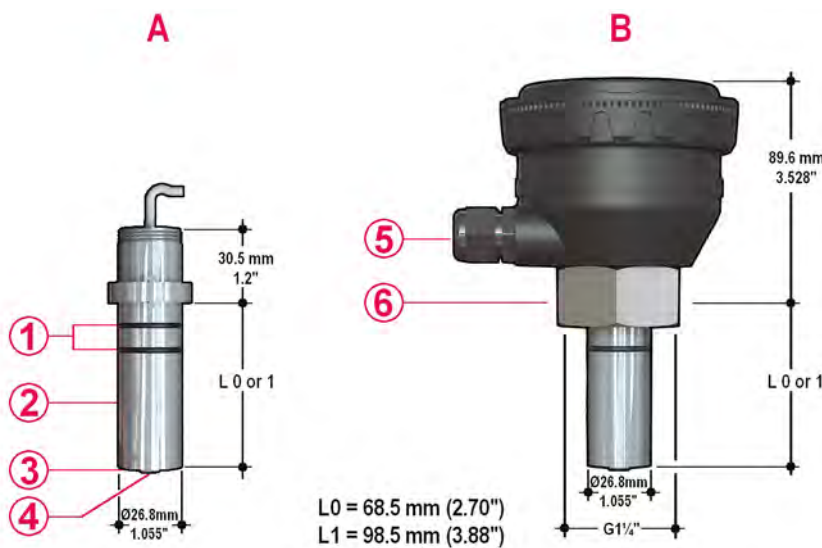
Enviromental

- Storage Temperature: -30°C to $+80^{\circ}\text{C}$ (-22°F to $+176^{\circ}\text{F}$)
- Ambient Temperature: -20°C to $+70^{\circ}\text{C}$ (-4°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: $20 \mu\text{S/cm}$
 - temperature:
 - PVDF bottom version: -10°C to $+60^{\circ}\text{C}$ (14°F to 140°F)
 - PEEK bottom version: -10°C to $+150^{\circ}\text{C}$ (14°F to 302°F)
- Max. operating pressure:
 - 16 bar @ 25°C (232 psi @ 77°F)
 - 8.6 bar @ 60°C (124 psi @ 140°F)

Standards & Approvals

- Manufactured under ISO 9001
- Manufactured under ISO 14001
- CE
- RoHS Compliant
- EAC

DIMENSIONS



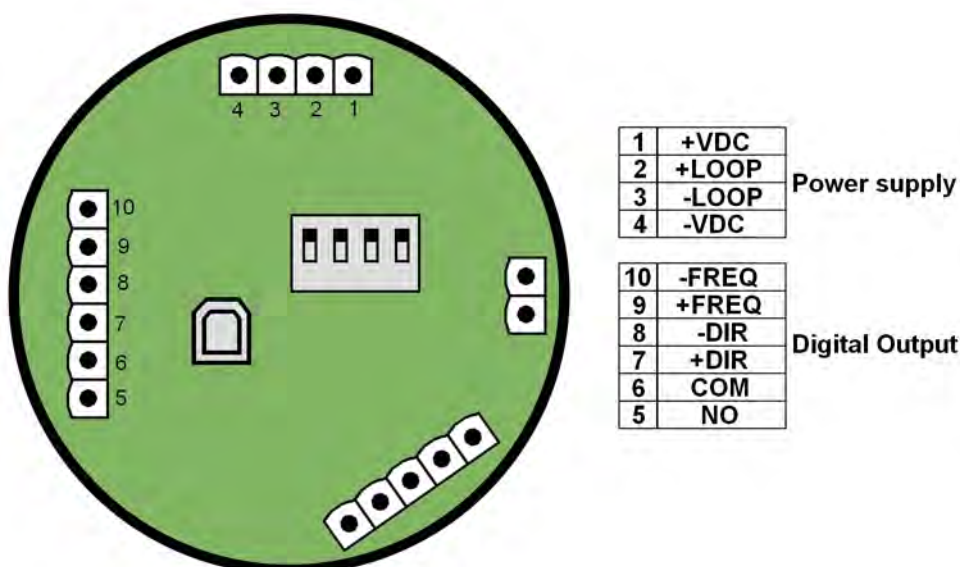
A Sensor body
B F6.60 Magmeter

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 316L SS cap for installation into fittings
7 Electronic box

WIRING CONNECTIONS

Rear Terminal View



ORDERING DATA

F6.60.XX Magmeter Flow Sensor							
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

F6.63.XX Magmeter Flow Sensor							
Part No.	Version	Power supply	Length	Main wetted materials	Enclosure	Flow Rate Range	Weight (gr.)
F6.63.09	Blind	12 - 24 VDC	L0	316L SS/ PVDF/ EPDM	IP65	0,15 - 8 m/s mono-directional	950
F6.63.10	Blind	12 - 24 VDC	L0	316L SS/ PVDF/ FPM	IP65	0,15 - 8 m/s mono-directional	950
F6.63.11	Blind	12 - 24 VDC	L1	316L SS/ PVDF/ EPDM	IP65	0,15 - 8 m/s mono-directional	1000
F6.63.12	Blind	12 - 24 VDC	L1	316L SS/PVDF/FPM	IP65	0,15 - 8 m/s mono-directional	1000
F6.63.33	Blind	12 - 24 VDC	L0	CuNi/ PVDF/ EPDM	IP65	0,15 - 8 m/s mono-directional	950
F6.63.34	Blind	12 - 24 VDC	L0	CuNi/ PVDF/ FPM	IP65	0,15 - 8 m/s mono-directional	950
F6.63.35	Blind	12 - 24 VDC	L1	CuNi/PVDF/EPDM	IP65	0,15 - 8 m/s mono-directional	1000
F6.63.36	Blind	12 - 24 VDC	L1	CuNi/ PVDF/ FPM	IP65	0,15 - 8 m/s mono-directional	1000
F6.63.38	Blind	12 - 24 VDC	L0	316L SS/ PEEK/ FPM	IP65	0,15 - 8 m/s mono-directional	950
F6.63.40	Blind	12 - 24 VDC	L1	316L SS/ PEEK/ FPM	IP65	0,15 - 8 m/s mono-directional	1000