

FLS F6.60

FLOW MAGMETER



SAFETY INSTRUCTIONS

General Statements

- Do not install and service the product without following the Instruction Manual.
- This item is designed to be connected to other instruments which can be hazardous if used improperly. Read and follow all associated instrument manuals before using with it.
- Product installation and wiring connections should only be performed by qualified staff.
- Do not modify product construction.

Installation and Commissioning Statements

- Remove power to the instrument before wiring input and output connections.
- Do not exceed maximum specifications using the instrument.
- To clean the unit, use only chemical compatible products.

PACKING LIST

Please verify that the product is complete and without any damage. The following items must be included:

- F6.60 Flow Magmeter
- Instruction Manual for F6.60 Flow Magmeter
- USB pen drive with interface software
- USB cable for instrument/PC interface

DESCRIPTION

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").

TECHNICAL DATA

General

- Pipe Size Range: DN15 to DN600 (0.5" to 24")
- 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: 800Ω @ 24 VDC - 250Ω @ 12 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 FLOWX3 M9.02, M9.03, 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

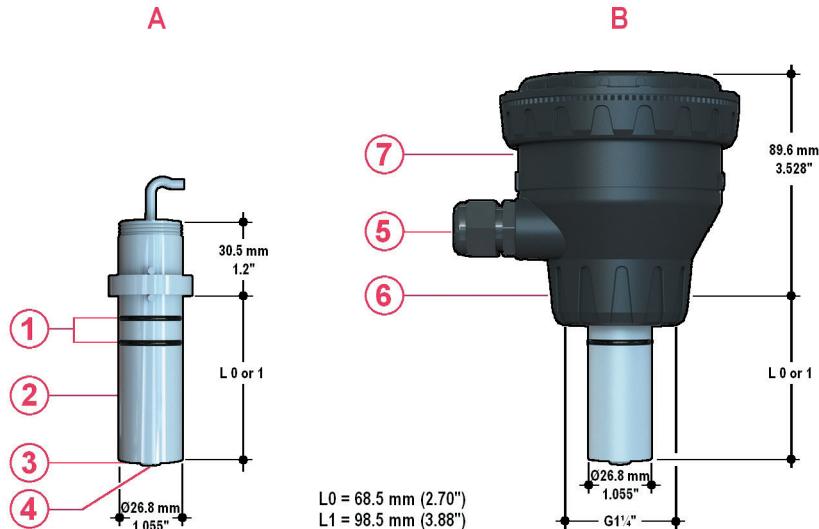
Environmental

- Storage Temperature: -30°C to +80°C (-22°F to 176°F)
- Ambient Temperature: -20°C to +70°C (-4°F to 158°F)
- Relative Humidity: 0 to 95% (non-condensing)
- Fluid conditions:
 - homogeneous liquids, pastes or slurries, also with solid content
 - min electrical conductivity: 20 µS
- temperature:
 - PVDF bottom version: -10 °C to +60 °C (14 °F to 140 °F)
 - PEEK bottom version: -10 °C +150 °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
- 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

INSTALLATION

Pipe Location

- The six most common installation configurations shown in fig. 1 help in selecting the best location in the pipeline for paddlewheel flow sensor as well for magmeter flow sensor.
- The three configurations in fig. 2 ensure that the pipe is always full: for a correct measurement the sensor can NOT be exposed to air bubbles at any time.
- The three installations in Fig. 3 should be avoided unless you are absolutely sure the sensor is not exposed to air bubbles.
- In gravity-flow systems the connection to the tank must be designed so the level does not drop below the outlet: this to avoid pipe to draw air in from the tank causing a inaccurate measurement of sensor (see Fig. 4).
- For more information, please refer to EN ISO 5167-1.
- Always maximize distance between flow sensors and pumps.

Fig.1

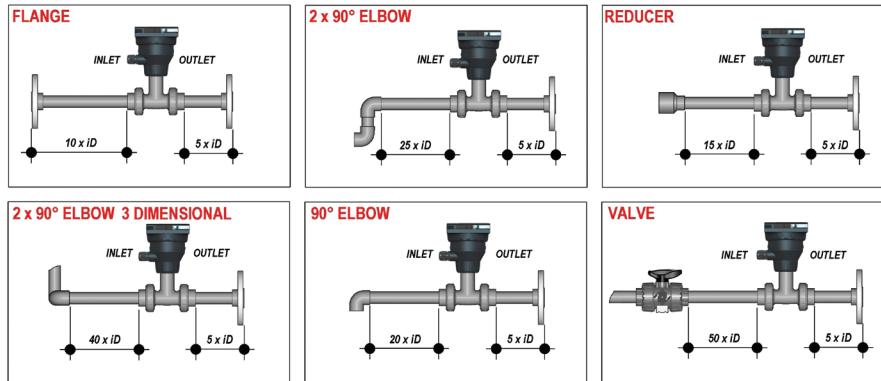


Fig.2



Fig.3

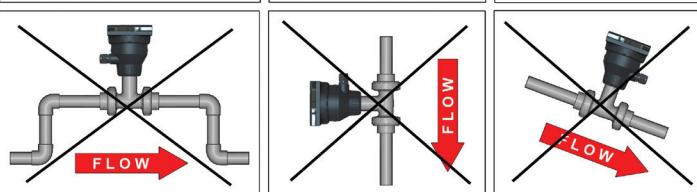
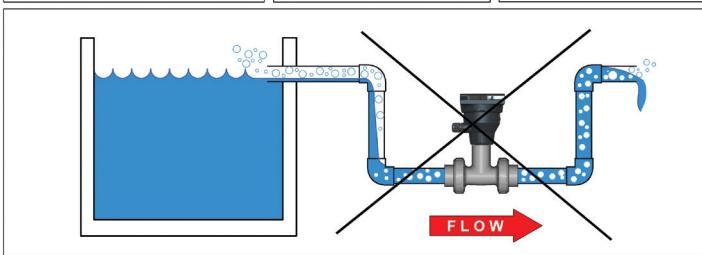


Fig.4



Mounting position

Measuring part of sensor (rotor for paddlewheel and pins for magmeter) should be positioned at 12% of ID where, basing on insertion theory, average velocity can be measured.

The reading accuracy of insertion flow sensors can be affected by:

- air bubbles;
- sediments;
- friction between shaft and bearings (only for paddlewheel).

In a horizontal pipe runs, the mounting position to get the best performances is at a 45° angle (Fig. 3) to avoid air bubbles as well sediments. Vertical position (Fig. 2) can be chosen in case air bubbles are not present. Do not mount the sensor on the bottom of the pipe (Fig. 1) if sediments are likely. Do not mount paddlewheel at 90° otherwise friction can affect measurement.

Installation in a vertical pipe runs can be done fixing any orientation.
Upward flow is preferred to ensure full pipe.

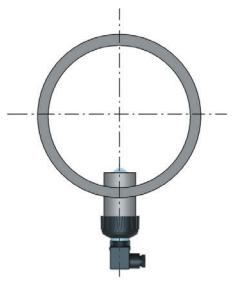


Fig. 1

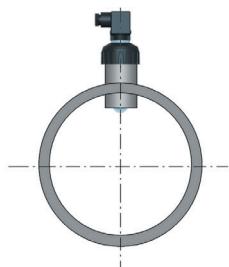


Fig. 2

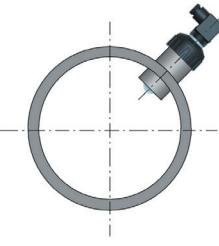
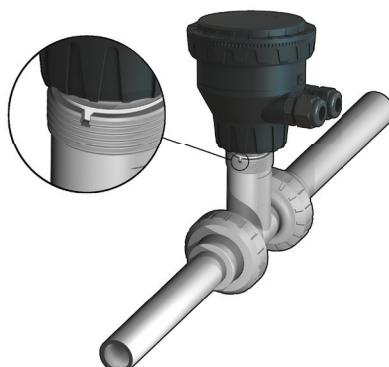


Fig. 3

Process connection

1. Lubricate the sensor O-rings with a silicone lubricant. Do not use any petroleum based lubricant that may damage the O-rings.
2. Lower the sensor into the fitting making sure the alignment tab is seated in the fitting notch.
3. Hand tighten the sensor cap. Do not use any tool otherwise cap and/or fitting threads may be damaged.





WIRING

General recommendation

Always ensure the power supply is switched off before working on the device.
Make wiring connections according to wiring diagrams.

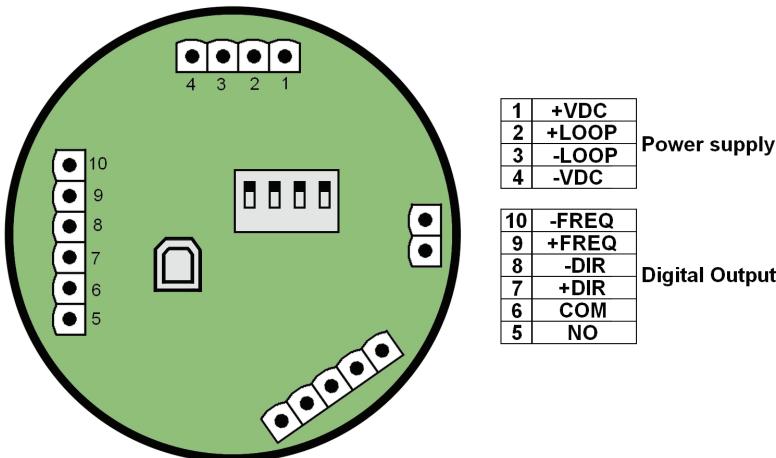
- Terminals accept 26 to 12 AWG (0.08 to 2.5 mm²)
- Strip around 10 mm (0.4") of insulation from the wire tips and tin bare ends to avoid fraying.
- Ferrules are suggested when connecting more than one wire to a single terminal.
- Remove the upper part of the terminals for an easy cabling.
- Insert wire tip or ferrule completely into the terminal and fix with the screw until finger tight.
- Do not route the sensor, DC power, or 4-20mA cables in conduit containing AC power wiring. Electrical noise may interfere with sensor signal.
- Routing the sensor cable in grounded metal conduit can help prevent electrical noise and mechanical damage.

Specific info

Pull the electrical cables through liquid tight connectors.
Use electrical cables with the proper external diameter for the liquid tight connector.

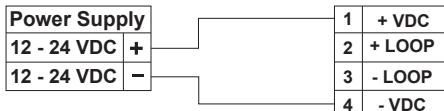
PG11/PG9: external diameter between 2-7 mm (0.079-0.276")

REAR TERMINAL VIEW

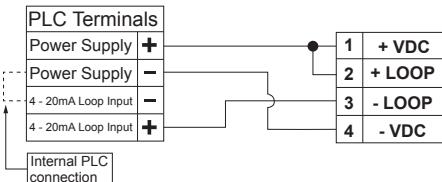


POWER/LOOP WIRING DIAGRAM

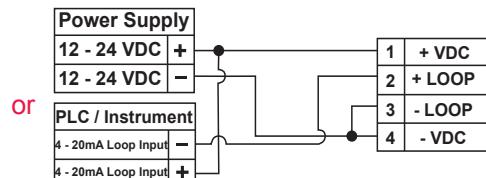
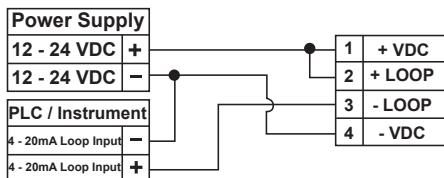
Stand-alone application,
no current loop used



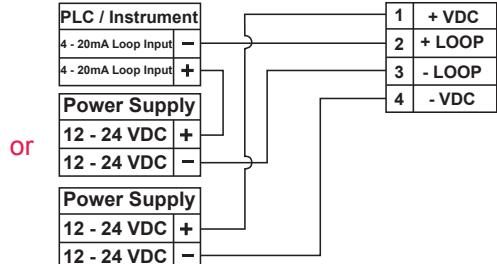
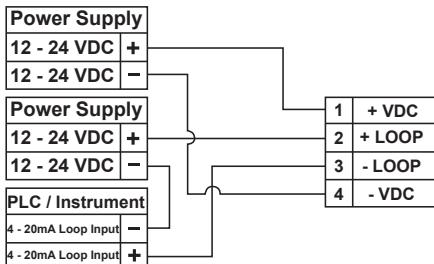
Connection to a PLC with built-in power supply (3 wire connection)



Connection to a PLC/Instrument with ONE separate power supply

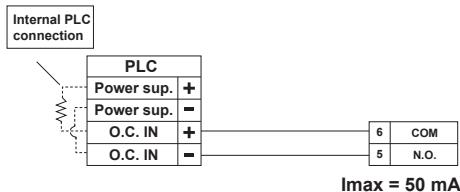


Connection to a PLC / Instrument with TWO separate power supplies

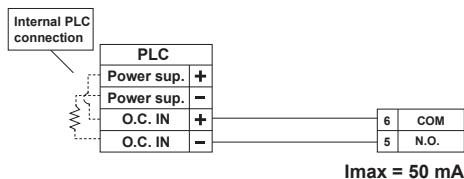


SOLID-STATE RELAY WIRING DIAGRAM

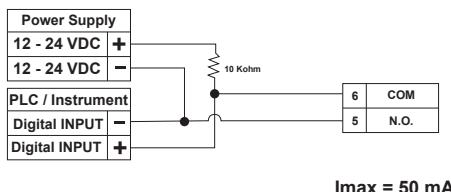
Connection to a PLC with NPN input



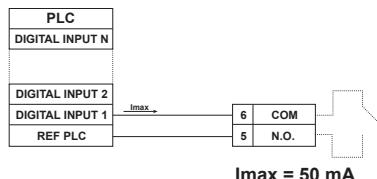
Connection to a PLC with PNP input



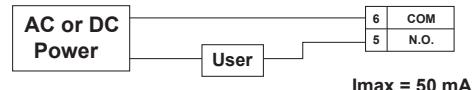
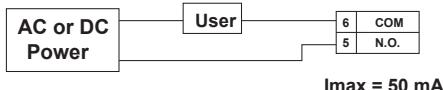
Connection to a PLC / Instrument digital input with separate Power Supply



Connection to a PLC / Instrument digital input for Voltage Free Contacts (REED)

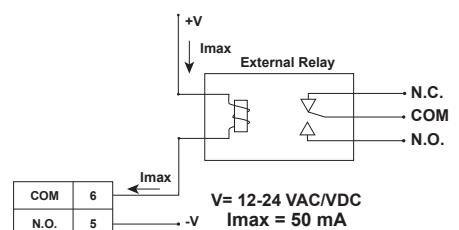


Connection to an User



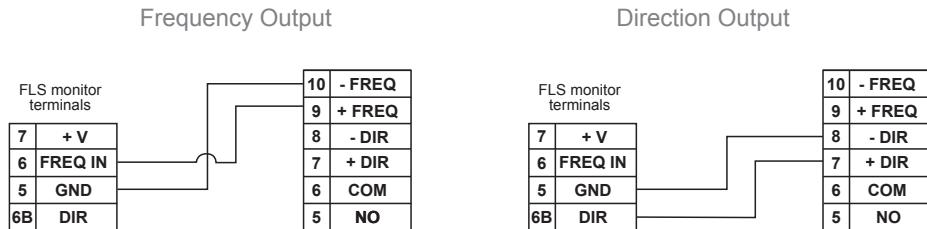
Connection to an User

The alarm is off during normal operation and goes ON according to Relay setting.
If Imax > 50 mA use external Relay.

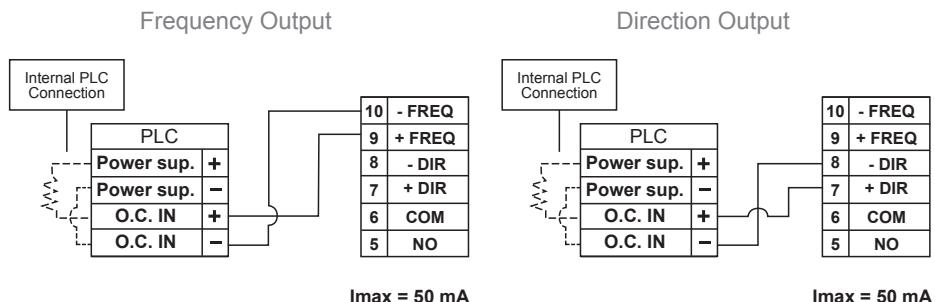


OPEN COLLECTOR WIRING DIAGRAM

Connection to FLS Instruments

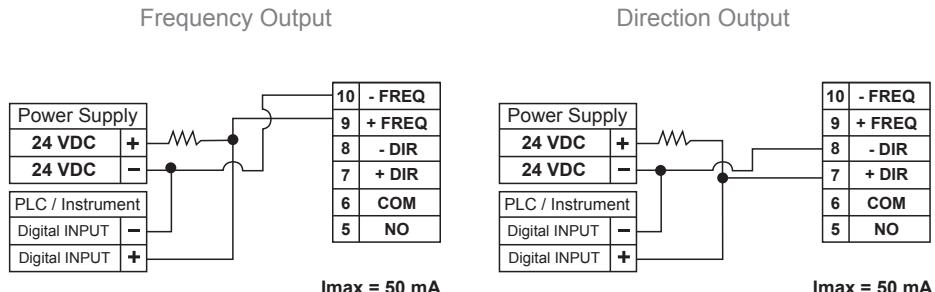


Connection to a PLC NPN Open Collector input



Please refer to K-Factor tables
for PLC setting (p.16)

Connection to a PLC/Instrument digital input with separate Power Supply



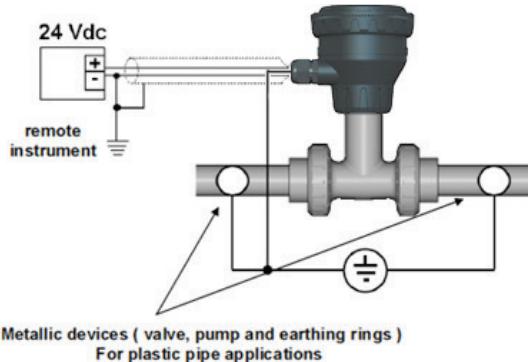
Please refer to K-Factor tables
for PLC setting (p.16)

EARTHING

The magmeter normally is uninfluenced by low levels of electrical noise. In some applications it is necessary to connect the sensor to earth to eliminate electrical noise.

The earthing can be done as following described:

- connecting the Ground Wire (black wire from the sensor body) to an External Earthing passing through a cable gland.
- in case of plastic pipes, connecting the Ground Wire (black wire from the sensor body) to metallic inserts (such as flanged earthing rings) into the plastic pipe before and after the magmeter and then connecting them together to an External Earthing. Fluid earths must be in direct contact with the fluid near to the magmeter.



Note: If present, the shield from the output cable must be terminated only at the remote instrument. Do not connect this shield at both ends.

CALIBRATION

Manual Calibration

Manual calibration can be done setting the micro switches on PCB in the proper combination in according with the pipe size (from d20-DN15 up to d>200-DN>180) where sensor will be installed. Positions are reported in the following table.

Lock position is a No Functioning Combination while the USB combination is for accessing to the USB connection.

The setting has to be done before powering up the instrument.

F6.60 provides a frequency output (0Hz@0m/s - 800Hz@8m/s) by a Open Collector (connectors 9-10) and an analog output (4mA@0m/s – 20mA@8m/s).

Both outputs are proportional to the flow velocity and so to the flow rate. Moreover a Open Collector (connectors 7-8) is dedicated to specify the flow direction.

In manual calibration the S.S.R. cannot be set and consequently used.

Switch 1	Switch 2	Switch 3	Switch 4	Diameter
Off	Off	Off	Off	Lock
Off	Off	Off	On	D20
Off	Off	On	Off	D25
Off	Off	On	On	D32
Off	On	Off	Off	D40
Off	On	Off	On	D50
Off	On	On	Off	D63
Off	On	On	On	D75
On	Off	Off	Off	D90
On	Off	Off	On	D110
On	Off	On	Off	D125
On	On	On	On	D140
On	On	Off	Off	160
On	On	Off	On	D200
On	On	On	Off	> D200
On	On	On	On	USB

CALIBRATION BY USB

The F6.60 flow magmeter can be connected to a PC and the operator can be connected to a PC and the operator can calibrate the instrument and set all parameters using dedicated software on USB pen drive (software can be dowloaded freely from FLS website)

Procedure for setting

- plug FLS Pen Drive into a USB port of PC
- open FLS Pen Drive folder
- install Java software: a internet connection is required. Installer software is able to search for updated Java version automatically. In case of troubles, please contact Technical Assistance at info@flsnet.it
- install FLS Calibration software
- launch FLS Calibration software
- set all MicroSwitches in ON position
- power the F6.60
- plug USB on the F6.60 PCB
- plug USB into a USB port of PC
- FLS Calibration software recognizes the F6.60 PCB

Software structure

The FLS Calibration software features following sub-views:

- Settings
- Calibration
- Output mA
- Digital Output
- Simulation
- View Data
- Download Data

Excluding View Data Section and Download Data Section, in each previous sub-view you can set different parameters and the following actions are allowed:

- Update: for data updating
- Reset: for going back to default data
- Help: for functions explanation and for undertaking the Remote Assistance procedure (internet connection is required)

View Data sub-view summarizes status of measurement, analog output, digital output including Volume Totalizer .

Download Data sub-view summarizes instrument parameters and following actions are allowed:

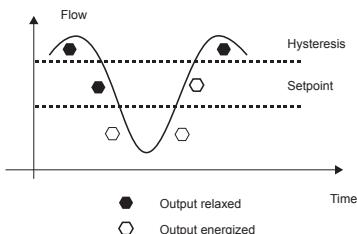
- Download Data: to update instrument with new settings
- Download Default: to reload Default settings
- Save: to generate a file containing all set parameters
- Load: to load directly a file containing a instrument configuration

OUTPUT MODE

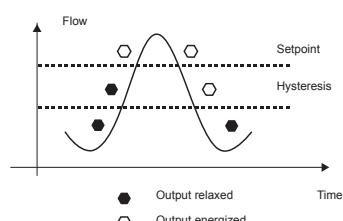
The F6.60 flow magmeter features 1 solid state relays and 1 analog output 4-20mA in addition to a Open Collector for frequency remoting (mainly for the interfacing of F6.60 with a FLS monitor) and a Open Collector for the flow direction remoting.

SSR output (connectors 5-6) can be set in the following way:

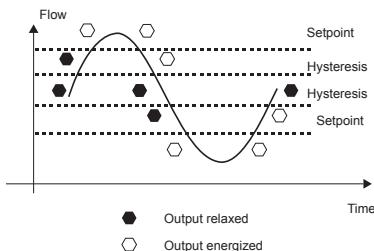
MIN MODE



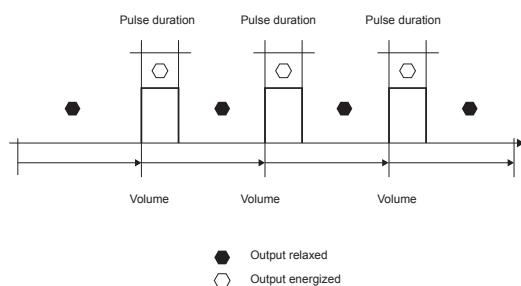
MAX MODE



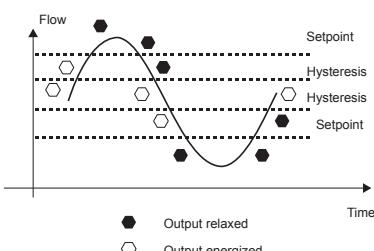
WINDOW OUT MODE



PULSE MODE



WINDOW IN MODE



F6.60 K-FACTOR TABLE (ONLY FOR FREQUENCY OUTPUT)

K-Factor is the number of pulses which a sensor produces for one liter of measured fluid. Here below all K-Factors for water at room temperature are listed.

K-Factor values can depend on the installation conditions. K-Factor has to divide the frequency generated by F6.60 in order to achieve the flow rate (l/s).

Please contact your dealer for K-Factor values not included in the table.

Installation on PVC pipes

ISO Metric PVC Tee Fittings for ISO SDR 21 pipes (female ends for solvent welding)			
Part No.	DN	d	K-Factor
TFIV20B	15	20	462,04
TFIV25B	20	25	272,89
TFIV32B	25	32	157,86
TFIV40B	32	40	101,60
TFIV50B	40	50	63,72
TFIV20D	15	20	462,04
TFIV25D	20	25	272,89
TFIV32D	25	32	157,86
TFIV40D	32	40	101,60
TFIV50D	40	50	63,72

ISO Metric Clamp Saddles for ISO SDR 21 pipes (PN10 up to d 90mm, PN12,5 from d 110mm)

Part No.	DN	d	K-Factor
SCIC063BVC	50	63	39,88
SCIC075BVC	65	75	28,19
SCIC090BVC	80	90	19,55
SCIC110BVC	100	110	13,10
SCIC125BVC	110	125	10,11
SCIC140BVC	125	140	5,24
SCIC160BVC	150	160	4,01
SCIC200BVC	180	200	2,57
SCIC225BVC	200	225	2,03
SCIC063DVC	50	63	39,88
SCIC075DVC	65	75	28,19
SCIC090DVC	80	90	19,55
SCIC110DVC	100	110	13,10
SCIC125DVC	110	125	10,11
SCIC140DVC	125	140	5,24
SCIC160DVC	150	160	4,01
SCIC200DVC	180	200	2,57
SCIC225DVC	200	225	2,03
SMIC250IVC	225	250	1,64
SMIC280IVC	250	280	1,31
SMIC315IVC	280	315	1,03

PVC Glue-on Fittings			
Part No.	DN	d	K-Factor
WAIW063	50	63	on request
WAIW075	65	75	on request
WAIW090	80	90	on request
WAIW110	100	110	on request
WAIW125	110	125	on request
WAIW140	125	140	on request
WAIW160	150	160	on request
WAIW200	180	200	on request
WAIW225	200	225	on request
WAIW250	225	250	on request
WAIW280	250	280	on request
WAIW315	280	315	on request

BSP Female Threaded PVC Tee Fittings for for BS PN12 pipes (parallel threaded female ends)			
Part No.	DN	d	K-Factor
TFVF20B	15	1/2"	462,04
TFVF25B	20	3/4"	272,89
TFVF32B	25	1"	157,86
TFVF40B	32	1 1/4"	101,60
TFVF50B	40	1 1/2"	63,72
TFVF20D	15	1/2"	462,04
TFVF25D	20	3/4"	272,89
TFVF32D	25	1"	157,86
TFVF40D	32	1 1/4"	101,60
TFVF50D	40	1 1/2"	63,72

BS Solvent Welding PVC Tee Fittings for BS PN12 pipes (female ends for solvent welding)			
Part No.	DN	d	K-Factor
TFLV20B	15	1/2"	462,04
TFLV25B	20	3/4"	272,89
TFLV32B	25	1"	157,86
TFLV40B	32	1 1/4"	101,60
TFLV50B	40	1 1/2"	63,72
TFLV20D	15	1/2"	462,04
TFLV25D	20	3/4"	272,89
TFLV32D	25	1"	157,86
TFLV40D	32	1 1/4"	101,60
TFLV50D	40	1 1/2"	63,72

NPT Female Threaded PVC Tee Fittings for ASTM SCH. 80 pipes (NPT threaded female ends)			
Part No.	DN	d	K-Factor
TFNV20B	0.50"	1/2"	462,04
TFNV25B	0.75"	3/4"	272,89
TFNV32B	1.00"	1"	157,86
TFNV40B	1.25"	1 1/4"	101,60
TFNV50B	1.50"	1 1/2"	63,72
TFNV20D	0.50"	1/2"	462,04
TFNV25D	0.75"	3/4"	272,89
TFNV32D	1.00"	1"	157,86
TFNV40D	1.25"	1 1/4"	101,60
TFNV50D	1.50"	1 1/2"	63,72

ASTM SCH. 80 PVC Tee Fittings for ASTM SCH. 80 pipes (female ends for solvent welding)			
Part No.	DN	d	K-Factor
TFAV20B	0.50"	0.85"	462,04
TFAV25B	0.75"	1.06"	272,89
TFAV32B	1.00"	1.33"	157,86
TFAV40B	1.25"	1.67"	101,60
TFAV50B	1.50"	1.91"	63,72
TFAV20D	0.50"	0.85"	462,04
TFAV25D	0.75"	1.06"	272,89
TFAV32D	1.00"	1.33"	157,86
TFAV40D	1.25"	1.67"	101,60
TFAV50D	1.50"	1.91"	63,72

BS Clamp Saddles for BS PN12 pipes			
Part No.	DN	d	K-Factor
SCLC2.0BVM	50	2"	43,50
SCLC3.0BVM	80	3"	20,04
SCLC4.0BVM	100	4"	12,17
SCLC6.0BVM	150	6"	3,64
SCLC8.0BVM	200	8"	2,10
SCLC2.0DVM	50	2"	43,50
SCLC3.0DVM	80	3"	20,04
SCLC4.0DVM	100	4"	12,17
SCLC6.0DVM	150	6"	3,64
SCLC8.0DVM	200	8"	2,10

ASTM SCH. 80 Clamp Saddles for ASTM SCH. 80 pipes			
Part No.	DN	d	K-Factor
SCAC2.0BVM	2.00"	2,375"	53,93
SCAC2.5BVM	2.50"	2,875"	37,67
SCAC3.0BVM	3.00"	3,500"	24,06
SCAC4.0BVM	4.00"	4,500"	17,84
SCAC5.0BVM	5.00"	5,520"	13,77
SCAC6.0BVM	6.00"	6,625"	3,93
SCAC8.0BVM	8.00"	8,625"	2,24
SCAC2.0DVM	2.00"	2,375"	53,93
SCAC2.5DVM	2.50"	2,875"	37,67
SCAC3.0DVM	3.00"	3,500"	24,06
SCAC4.0DVM	4.00"	4,500"	17,84
SCAC5.0DVM	5.00"	5,520"	13,77
SCAC6.0DVM	6.00"	6,625"	3,93
SCAC8.0DVM	8.00"	8,625"	2,24

Installation on C-PVC pipes

ISO Metric CPVC Tee Fittings for ISO SDR 21 pipes (female ends for solvent welding)			
Part No.	DN	d	K-Factor
TFIC20B	15	20	462,04
TFIC25B	20	25	272,89
TFIC32B	25	32	157,86
TFIC40B	32	40	101,60
TFIC50B	40	50	63,72
TFIC20D	15	20	462,04
TFIC25D	20	25	272,89
TFIC32D	25	32	157,86
TFIC40D	32	40	101,60
TFIC50D	40	50	63,72

ISO Clamp Saddles for ISO SDR 21 pipes			
Part No.	DN	d	K-Factor
SCIC063BVC	50	63	39,88
SCIC075BVC	65	75	28,19
SCIC090BVC	80	90	19,55
SCIC110BVC	100	110	13,10
SCIC125BVC	110	125	10,11
SCIC140BVC	125	140	5,24
SCIC160BVC	150	160	4,01
SCIC200BVC	180	200	2,57
SCIC225BVC	200	225	2,03
SCIC063DVC	50	63	39,88
SCIC075DVC	65	75	28,19
SCIC090DVC	80	90	19,55
SCIC110DVC	100	110	13,10
SCIC125DVC	110	125	10,11
SCIC140DVC	125	140	5,24
SCIC160DVC	150	160	4,01
SCIC200DVC	180	200	2,57
SCIC225DVC	200	225	2,03
SMIC250IVC	225	250	1,64
SMIC280IVC	250	280	1,30
SMIC315IVC	280	315	1,03

CPVC Glue-on Fittings

Part No.	DN	d	K-Factor
WAIC063	50	63	on request
WAIC075	65	75	on request
WAIC090	80	90	on request
WAIC110	100	110	on request
WAIC125	110	125	on request
WAIC140	125	140	on request
WAIC160	150	160	on request
WAIC200	180	200	on request
WAIC225	200	225	on request
WAIC250	225	250	on request
WAIC280	250	280	on request
WAIC315	280	315	on request

Installation on PP pipes

ISO Metric PP Tee Fittings for ISO SDR 11 pipes (female ends for socket welding)			
Part No.	DN	d	K-Factor
TFIM20B	15	20	510,01
TFIM25B	20	25	321,51
TFIM32B	25	32	192,77
TFIM40B	32	40	124,34
TFIM50B	40	50	79,18
TFIM20D	15	20	510,01
TFIM25D	20	25	321,51
TFIM32D	25	32	192,77
TFIM40D	32	40	124,34
TFIM50D	40	50	79,18

BSP Female Threaded PP Tee Fittings for BS pipes (parallel threaded female ends)			
Part No.	DN	d	K-Factor
TFFM20B	15	1/2"	510,01
TFFM25B	20	3/4"	321,51
TFFM32B	25	1"	192,77
TFFM40B	32	1 1/4"	124,34
TFFM50B	40	1 1/2"	79,18
TFFM20D	15	1/2"	510,01
TFFM25D	20	3/4"	321,51
TFFM32D	25	1"	192,77
TFFM40D	32	1 1/4"	124,34
TFFM50D	40	1 1/2"	79,18

ISO Clamp Saddles for ISO SDR 21 pipes				NPT Female Threaded PP Tee Fittings for ASTM SCH.80 pipes (NPT threaded female ends)			
Part No.	DN	d	K-Factor	Part No.	DN	d	K-Factor
SCIC063BME	50	63	42,40	TFNM20B	0.50"	1/2"	510,01
SCIC075BME	65	75	29,86	TFNM25B	0.75"	3/4"	321,51
SCIC090BME	80	90	20,71	TFNM32B	1.00"	1"	192,77
SCIC110BME	100	110	13,84	TFNM40B	1.25"	1 1/4"	124,34
SCIC125BME	110	125	10,68	TFNM50B	1.50"	1 1/2"	79,18
SCIC140BME	125	140	5,50	TFNM20D	0.50"	1/2"	510,01
SCIC160BME	150	160	4,23	TFNM25D	0.75"	3/4"	321,51
SCIC200BME	180	200	2,71	TFNM32D	1.00"	1"	192,77
SCIC225BME	200	225	2,14	TFNM40D	1.25"	1 1/4"	124,34
SCIC063DME	50	63	42,40	TFNM50D	1.50"	1 1/2"	79,18
SCIC075DME	65	75	29,86				
SCIC090DME	80	90	20,71				
SCIC110DME	100	110	13,84				
SCIC125DME	110	125	10,68				
SCIC140DME	125	140	5,50				
SCIC160DME	150	160	4,23				
SCIC200DME	180	200	2,71				
SCIC225DME	200	225	2,14				
SMIC250IME	225	250	1,73				
SMIC280IME	250	280	1,38				
SMIC315IME	280	315	1,09				
PP Glue-on Fittings				ASTM SCH. 80 Clamp Saddles for ASTM SCH. 80 pipes			
Part No.	DN	d	K-Factor	Part No.	DN	d	K-Factor
WAIM063	50	63	on request	SCAC2.0BME	2.00"	2,375"	53,93
WAIM075	65	75	on request	SCAC2.5BME	2.50"	2,875"	37,67
WAIM090	80	90	on request	SCAC3.0BME	3.00"	3,500"	24,06
WAIM110	100	110	on request	SCAC4.0BME	4.00"	4,500"	13,77
WAIM125	110	125	on request	SCAC5.0BME	5.00"	5,520"	8,68
WAIM140	125	140	on request	SCAC6.0BME	6.00"	6,625"	6,06
WAIM160	150	160	on request	SCAC8.0BME	8.00"	8,625"	3,45
WAIM200	180	200	on request	SCAC2.0DME	2.00"	2,375"	53,93
WAIM225	200	225	on request	SCAC2.5DME	2.50"	2,875"	37,67
WAIM250	225	250	on request	SCAC3.0DME	3.00"	3,500"	24,06
WAIM280	250	280	on request	SCAC4.0DME	4.00"	4,500"	13,77
WAIM315	280	315	on request	SCAC5.0DME	5.00"	5,520"	5,64

Installation on PVDF pipes

ISO Metric PVDF Tee Fittings for ISO SDR 33 pipes (female ends for socket welding)			
Part No.	DN	d	K-Factor
TFIF20B	15	20	510,01
TFIF25B	20	25	294,29
TFIF32B	25	32	178,60
TFIF40B	32	40	105,74
TFIF50B	40	50	67,60
TFIF20D	15	20	510,01
TFIF25D	20	25	294,29
TFIF32D	25	32	178,60
TFIF40D	32	40	105,74
TFIF50D	40	50	67,60

ISO Clamp Saddles for ISO SDR 33 pipes

Part No.	DN	d	K-Factor
SCIC063BF	50	63	37,20
SCIC075BF	65	75	26,06
SCIC090BF	80	90	18,09
SCIC110BF	100	110	12,09
SCIC125BF	110	125	9,38
SCIC140BF	125	140	4,84
SCIC160BF	150	160	3,70
SCIC200BF	180	200	2,37
SCIC225BF	200	225	1,87
SCIC063DF	50	63	37,20
SCIC075DF	65	75	26,06
SCIC090DF	80	90	18,09
SCIC110DF	100	110	12,09
SCIC125DF	110	125	9,38
SCIC140DF	125	140	4,84
SCIC160DF	150	160	3,70
SCIC200DF	180	200	2,37
SCIC225DF	200	225	1,87
SMIC250IVC	225	250	1,64

Installation on PE pipes

ISO Metric PVC Tee Fittings for PE SDR 11 pipes (PE end connectors for electrofusion or butt welding)			
Part No.	DN	d	K-Factor
TFIV20BE	15	20	510,01
TFIV25BE	20	25	318,30
TFIV32BE	25	32	194,27
TFIV40BE	32	40	122,80
TFIV50BE	40	50	78,79
TFIV20DE	15	20	510,01
TFIV25DE	20	25	318,30
TFIV32DE	25	32	194,27
TFIV40DE	32	40	122,80
TFIV50DE	40	50	78,79

ISO Clamp Saddles for PE SDR 11 pipes

Part No.	DN	d	K-Factor
SCIC063BME	50	63	49,53
SCIC075BME	65	75	34,67
SCIC090BME	80	90	23,50
SCIC110BME	100	110	16,07
SCIC125BME	110	125	12,48
SCIC140BME	125	140	6,41
SCIC160BME	150	160	4,95
SCIC200BME	180	200	3,17
SCIC225BME	200	225	2,50
SCIC063DME	50	63	49,53
SCIC075DME	65	75	34,67
SCIC090DME	80	90	23,50
SCIC110DME	100	110	16,07
SCIC125DME	110	125	12,48
SCIC140DME	125	140	6,41
SCIC160DME	150	160	4,95
SCIC200DME	180	200	3,17
SCIC225DME	200	225	2,50
SMIC250IVC	225	250	2,01
SMIC280IVC	250	280	1,61
SMIC315IVC	280	315	1,27

PE Glue-on Fittings

Part No.	DN	d	K-Factor
WAIIE063	50	63	on request
WAIIE075	65	75	on request
WAIIE090	80	90	on request
WAIIE110	100	110	on request
WAIIE125	110	125	on request
WAIIE140	125	140	on request
WAIIE160	150	160	on request
WAIIE200	180	200	on request
WAIIE225	200	225	on request
WAIIE250	225	250	on request
WAIIE280	250	280	on request

Special Installation on DN 250 and DN 300 pipes

PVC Wafer Fittings			
Part No.	DN	d	K-Factor
WVIC280B	250	280	on request
WVIC315B	300	315	on request
WVIC280D	250	280	on request
WVIC315D	300	315	on request

PP Wafer Fittings			
Part No.	DN	d	K-Factor
WFIC280B	250	280	on request
WFIC315B	300	315	on request
WFIC280D	250	280	on request
WFIC315D	300	315	on request

Metal Fittings

316L SS Threaded Tees (BSP Female Threads)			
Part No.	DN	d	K-Factor
TFFX25	20	3/4"	308,21
TFFX32	25	1"	177,84

ORDERING DATA

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

SPARE PARTS

Part No.	Name	Description	Weight (gr.)
F6.KC1	Compact mounting kit	Plastic adapter with compact cap and locking nut	137
M9.SP4.1	PG 11	PG 11 complete cable gland (2 o-rings and cap)	12
F3.SP3.1	O-Rings	EPDM Sensor body O-Rings	4
F3.SP3.2	O-Rings	FPM Sensor body O-Rings	4
F6.60. SP1.S	Electronic device	Magmeter electronic device with 4-20 mA output and freq./volumetric pulse output for bi-directional sensor	180
F3.60M. SP09	Magmeter bi-directional flow sensor	316L SS/PVDF body - EDPM O-Rings - L0 length	330
F3.60M. SP10	Magmeter bi-directional flow sensor	316L SS/PVDF body - FPM O-Rings - L0 length	330
F3.60M. SP11	Magmeter bi-directional flow sensor	316L SS/PVDF body - EDPM O-Rings - L1 length	400
F3.60M. SP12	Magmeter bi-directional flow sensor	316L SS/PVDF body - FPM O-Rings - L1 length	400
F3.60M. SP13	Magmeter bi-directional flow sensor	CuNi/PVDF body - EPDM O-Ring - L0 lenght	330
F3.60M. SP14	Magmeter bi-directional flow sensor	CuNi/PVDF body - FPM O-Ring - L0 lenght	330
F3.60M. SP15	Magmeter bi-directional flow sensor	CuNi/PVDF body - EPDM O-Ring - L1 lenght	400
F3.60M. SP16	Magmeter bi-directional flow sensor	CuNi/PVDF body - FPM O-Ring - L1 lenght	400
F3.60M. SP17	Magmeter bi-directional flow sensor	316L SS/PEEK body - FPM O-Ring - L0 lenght	330
F3.60M. SP18	Magmeter bi-directional flow sensor	316L SS/PEEK body - FPM O-Ring - L1 lenght	400



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