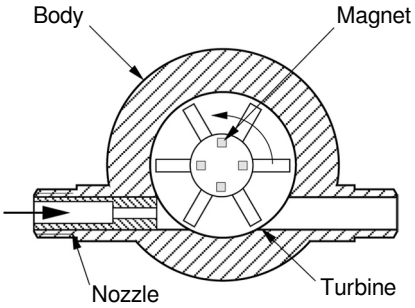
Turbine flow sensor
FFG

- **Applications: Totalization; Low flow-rates**
- **Versions: Or in Arnite, or in PVDF**
- **Ranges: From 2 up to 940 l/h**
- **High resolution frequency output**
- **Fitting: BSP ¼"**

APPLICATIONS

- With neutral or aggressive liquids
- Clear liquids free of particles, non-crystallizing.

The flow must be homogeneous and piping always full of liquid.
(FFG turbine type is not suitable for measuring gas flow)



Option: BAMOWIZ monitor

DESCRIPTION

The FFG flow sensor allows measurements of low flow-rates for remote reading or totalization with appropriate monitors (See Codes and References on next page)

The dynamic pressure of the liquids makes rotate the turbine. The liquid passes through a calibrated nozzle, which increases its speed and that of the turbine. Magnets are integrated to the turbine and activate an Hall effect sensor inside the top cover. The electronic generates a pulsating signal, proportional to the speed of rotation of the turbine and therefore to the flow-rate.

Recommendations for assembly:
The FFG works in any position, but it is recommended to mount it on a horizontal axis, with its upper body in a horizontal plane, to obtain reliable and precise measurements.
Respect the straight pipe section of 150 mm upstream and 50 mm downstream in order to obtain a uniform flow.
Installing an upstream filter prevents suspended particles from blocking the turbine (during commissioning, and, normal operation).

Associated electronics:
- BAMOWIZ : Flow rate indicator and flow totalizer, digital and graphical display, relays and analogue outputs (Data-sheet 217-01)
- BIF 6040: Flow indicator and totalizer with options for thresholds and analogue output (Data-sheet 282-01)
- BCP 48: Counter and downcounter for dosage with 2 set points (Data-sheet 289-03)
- BAMOTOP 281: Frequency converter for analogue output 0/4-20 mA or 0/5-10 V (Data-sheet 281-01)

All these electronic monitors include supply to the sensor FFG and can be set up before shipment according your specifications.

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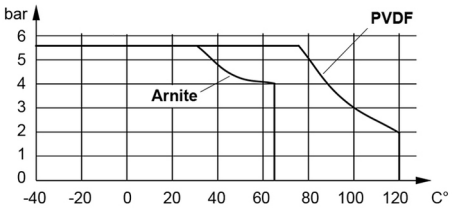
TECHNICAL FEATURES

Measuring ranges	According the nozzle size: 2 to 35 l/h - up to 10 to 550 l/h of water PVDF model, without nozzle: 150 to 940 l/h
Accuracy	± 1 % F.S. with scale factor 1:10 ± 2 % F.S. with scale factor 1:25
Repeatability	> 0.25 %
Temperature	Ambient: 0 ... + 40 °C Limits: See the diagram Pressure vs. Temperature
Viscosity	0.2 ... 20 cSt



Pressure vs. temperature diagram

Materials:

Body / Sealing	PVDF / FPM Arnite / Silicone
Turbine	PVDF
Nozzle	PTFE
Turbine axes	PCTFE

Power supply	4.5 ... 24 V DC
Consumption	Max. 20 mA
Output signal	Open collector - NPN - Max. load 20 mA
Connections	Plug DIN 43650, IP65
Accepted cable	3 x 0.75 mm2, shielded; Max. 100 meters 3 x 0.75 mm2, without shield; Max. 30 meters
Fittings	BSP ¼"
Mass	185 g

EC Conformity: The instrument meets the legal requirements of the current European Directives.

CODE NUMBERS AND REFERENCES

Below, values should be considered as approximated values.

Code	Reference	Description	Code	Description	Flow range*	*Pulses* **
784 606	FFG 6/PVDF	Flow sensor PVDF / FPM seal; Max. 950 l/h	784 001	Nozzle, Ø 1 mm, PTFE	1.2 ... 35 l/h	3413 pulse/l
			784 002	Nozzle, Ø 2 mm, PTFE	3...140 l/h	*1687 /l*
			784 003	Nozzle, Ø 3 mm, PTFE	7...340 l/h	*1045 /l*
			784 004	Nozzle, Ø 4 mm, PTFE	10...550 l/h	*721 /l*
784 406	FFG 6/A	Flow sensor Arnite / Silicone seal; Max. 465 l/h			14 ... 465 l/h	343 pulse/l
784 101	R1/4-FFG/PVC	U-PVC coupling BSP-F 1/4" diam. 16 mm (solvent welding to piping)				

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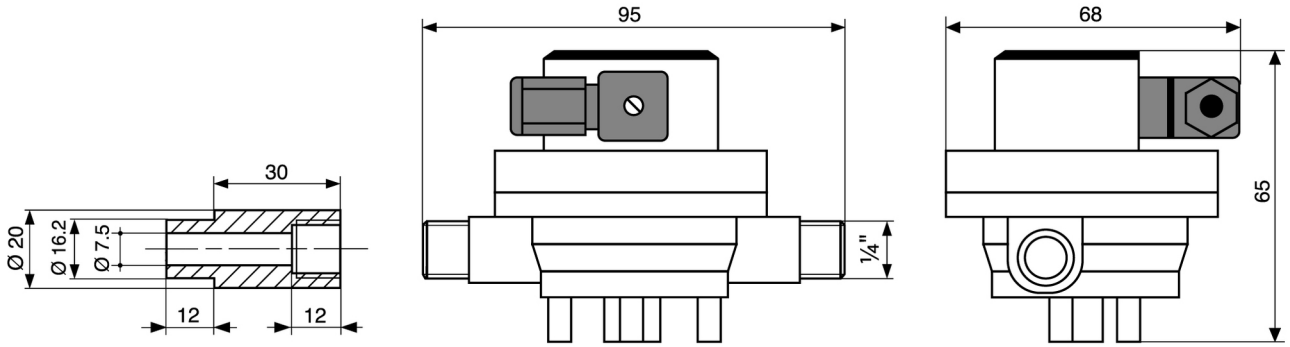
* Maximum flow rates are for a pressure drop of 1 bar, Pmax. 3.3 bar Higher flow rates may be possible, but, the pressure drop would increase by the square of flow rate.
***: The number of pulses per litre may differ depending on the installation. We recommend to calibrate the device on site (pulses per litre) according to the installation.*

DIMENSIONS



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