

PADDLE WHEEL FLOW SENSOR BAMOFLU 100



USER MANUAL

BAMO INTERNATIONAL

22, Rue de la Voie des Bans · Z.I. de la gare · 95100 ARGENTEUIL

Tel +33 (0)1 30 25 83 20 Web www.bamo.eu

Fax +33 (0)1 34 10 16 05 E-mail export@bamo.fr

PADDLE WHEEL FLOW
SENSOR
BAMOFLU 100

04-12-2021

M-780.01-EN-AC

DEB

780-01 /1

1. PRECAUTIONS

- Operate the device only in accordance with the conditions described in this manual.
- Installation, commissioning and maintenance operations must only be performed by qualified personnel.
- Connect the device to a suitable supply voltage as indicated in the technical features.
- Disconnect all power sources before any installation and maintenance works.

2. APPLICATIONS

BAMOFLU is designed for neutral or slightly aggressive liquids, free from solid particles (demineralized water, pool water after filtration, etc.)

3. DESCRIPTION

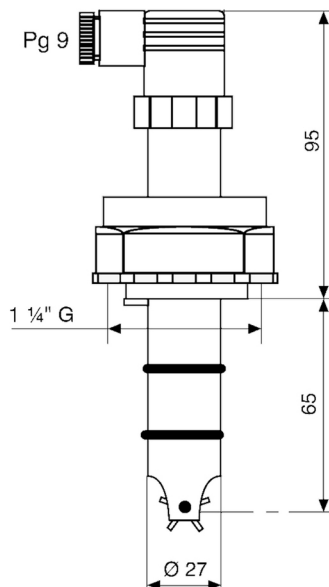
The flow of the liquid causes the rotation of a 5-blade paddle wheel with integrated magnets. Variations of magnetic field produce pulses whose frequency is directly proportional to the speed of the fluid. Our sensor delivers approximately 38 to 45 Hz per meter per second depending on the type of installation. The liquid may contain no more than 2 % of solid particles, size < 0.5 mm, non-magnetics. The viscosity may be between 0.5 and 20 cSt, beyond which an on-site calibration will be necessary.

4. TECHNICAL FEATURES

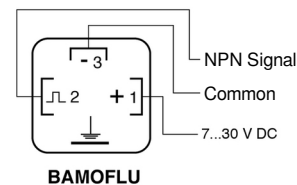
Frequency output	From 38 to 45 Hz according fitting vs. pipe ND. NPN signal: Rectangular pulses, 5 ... 24 V DC
Power supply	7 ... 30 V DC / 30 mA (stabilized) The sensor is protected against reverse polarity
Measuring range	0.8 ... 10 m/s
Accuracy	± 1 % With calibrated frequency converter
Repeatability	± 0.5 %
Linearity	± 1 %
Pressure limits	PP & PVDF versions: 10 bar at 20 °C AISI 316 L version: 25 bar (with stainless steel nut)
Temperature limits	PVC version: 40 °C; PP version: 85 °C; PVDF & AISI 316: 100 °C
Body	PP or PVDF or AISI 316 L
Paddle wheel	E-CTFE (Halar)
Rotor shaft	Ceramic (Al ₂ O ₃)
Seals	FPM (standard); EPDM on request
Connector	Plug DIN 43 650, IP 65

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

4.1 Dimensions



Electrical connections



BAMO INTERNATIONAL

22, Rue de la Voie des Bans · Z.I. de la gare · 95100 ARGENTEUIL
Tel +33 (0)1 30 25 83 20 Web www.bamo.eu
Fax +33 (0)1 34 10 16 05 E-mail export@bamo.fr

**PADDLE WHEEL FLOW
SENSOR
BAMOFLU 100**

04-12-2021

M-780.01-EN-AC

DEB

780-01 /2

5. INSTALLATION

To obtain a reliable measurement, it is necessary to respect following conditions:

- The pipe must to be always full of liquid.
- Do not alternate between liquid and gas phases.
- Flow velocity should be between 0.8 and 10 m/s

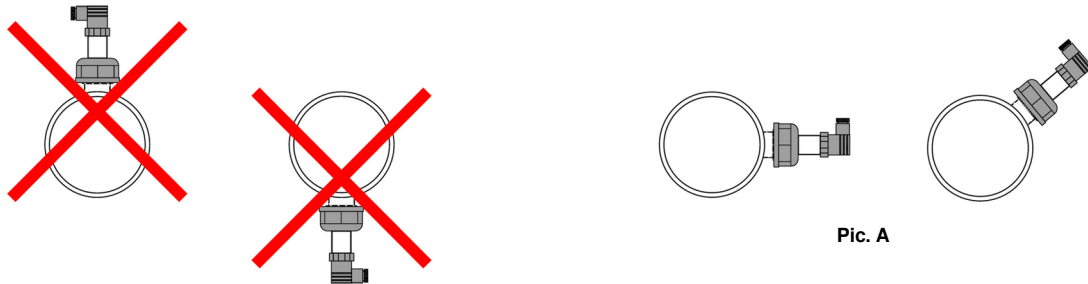
5.1 Mounting position

Respect the straight lengths upstream and downstream in order to obtain a homogeneous vein of liquid.

The sensor can be mounted in the positions as shown (Pic. A).

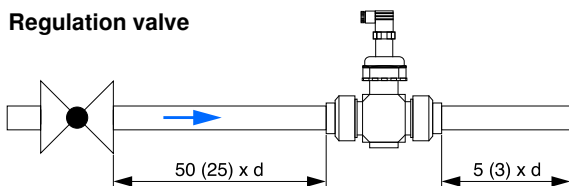
It is preferable to mount the sensor in a slightly inclined position as shown on the drawing below.

In all cases, avoid bubbles and particles.

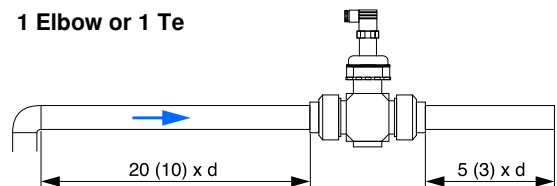


5.2 Straight lengths required

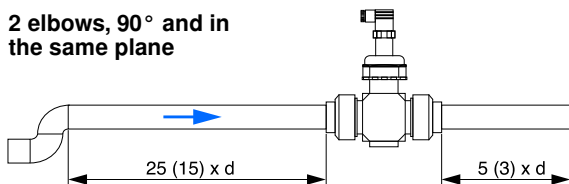
Regulation valve



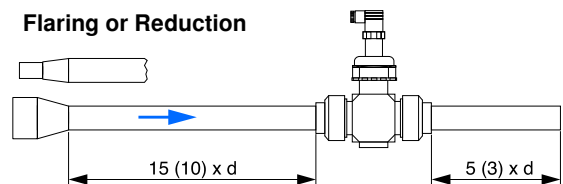
1 Elbow or 1 Te



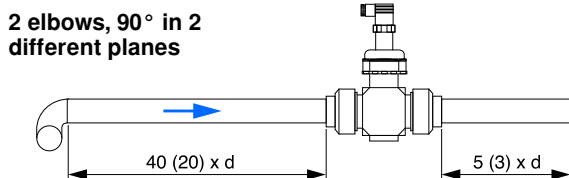
2 elbows, 90° and in the same plane



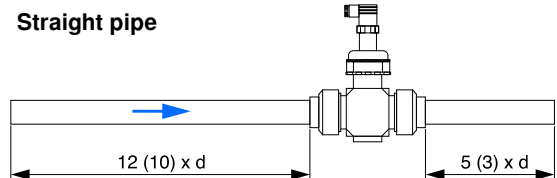
Flaring or Reduction



2 elbows, 90° in 2 different planes



Straight pipe



BAMO INTERNATIONAL

22, Rue de la Voie des Bans · Z.I. de la gare · 95100 ARGENTEUIL

Tel +33 (0)1 30 25 83 20 Web www.bamo.eu

Fax +33 (0)1 34 10 16 05 E-mail export@bamo.fr

PADDLE WHEEL FLOW
SENSOR
BAMOFLU 100

04-12-2021

M-780.01-EN-AC

DEB

780-01 /3

5.3 Te FITTINGS

Mounting tees are supplied in PVC, PP, PVDF or stainless steel 316L, for pipes DN15 to DN 40, with half-union fittings and FPM gaskets as standard (On request: to weld-on ends, or, flanges).
On request: For nominal diameters DN 15 to DN 300, we can supply flanged coupling sleeves of 250 mm long (face to face) in same material as the sensor body.

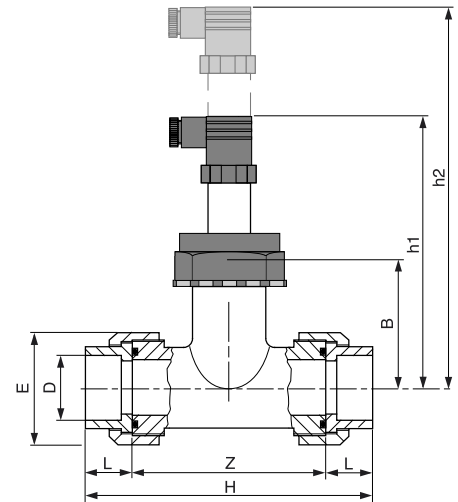
Maximum pressure: 10 bar at 20 °C

Fittings: PVC: Sockets for solvent welding; PP & PVDF: Sockets for fusion welding

Code PVC	ND	D	R	H	Z	L	B	E	h1	h2
780 205	15	20	1"	113	81	16	73	53	168	243
780 207	20	25	1 ¼"	126	88	19	80	62	170	245
780 209	25	32	1 ½"	139.5	95.5	22	81	71	173	248
780 211	32	40	2"	170	118	26	84	84	177	252
780 213	40	50	2 ¼"	199	137	31	82,5	98	181	256

Code PP	ND	D	R	H	Z	L	B	E	h1	h2
780 240	15	20	1"	111	73	14.5	73	53	168	243
780 242	20	25	1 ¼"	120.5	80	16	80	62	170	245
780 244	25	32	1 ½"	133.5	81	18	81	71	173	248
780 246	32	40	2"	163.5	84	20.5	84	84	177	252
780 248	40	50	2 ¼"	195	82.5	23.5	82.5	98	181	256

Code PVDF	ND	D	R	H	Z	L	B	E	h1	h2
780 260	15	20	1"	111	82	14.5	73	53	168	243
780 262	20	25	1 ¼"	120.5	88.5	16	80	62	170	245
780 264	25	32	1 ½"	133,5	97	18	81	71	173	248
780 266	32	40	2"	161,5	120.5	20.5	84	84	177	252
780 268	40	50	2 ¼"	193.5	146.5	23.5	82.5	98	181	256



5.4 Support collars

Collar to clamp on plastic pipeline exclusively; With NBR gasket (EPDM or FPM on request) and galvanized steel screws.
Unless otherwise specified, plastic pipes will be considered as PN 10 pipes.

The collar is supplied with a specific fitting to adapt the BAMOFLU 100 on the threaded sleeve of the collar; The assembly thus made respects the mounting position (0.12 x D).

Pipes ND 40 (Ø 50) to ND 100 (Ø 110)

Maximum pressure 10 bar at 20 °C

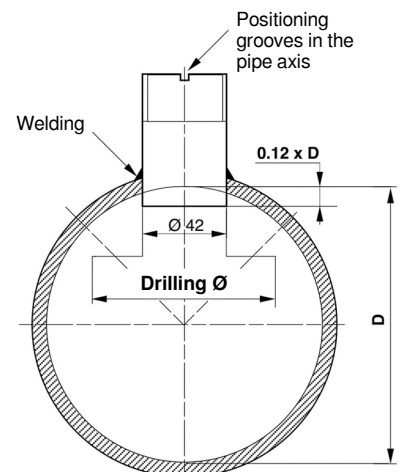
Maximum temperature 55 °C

Collar PE & PP		Collar PVC-C		ND	Ø d	R
Code	Reference	Code	Reference			
780 901	COL 50 PE	-	-	40	50	1 ½"
780 906	COL 63 PE	780 907	COL 63 PVC-C	50	63	2"
780 911	COL 75 PE	780 912	COL 75 PVC-C	65	75	2 ½"
780 916	COL 90 PE	780 917	COL 90 PVC-C	80	90	3"
780 921	COL 110 PE	780 922	COL 110 PVC-C	100	110	4"

5.5 BF 150 adaptors

To fit BAMOFLU 100 on pipes of minimum ND 50; Materials: AISI 316 L, PVC, PP or PVDF.

Code	Reference	Description
780 200	BF 150-I	Adaptor in AISI 316 L
780 201	BF 150-PVC	Adaptor in PVC
780 202	BF 150-PPH	Adaptor in PP
780 203	BF 150-PVDF	Adaptor in PVDF



BF 150 adaptor

It is mandatory to respect the insertion distance of 0.12 x D (inner diameter) in accordance with ISO 7145-1982.

BAMO INTERNATIONAL

22, Rue de la Voie des Bans · Z.I. de la gare · 95100 ARGENTEUIL

Tel +33 (0)1 30 25 83 20 Web www.bamo.eu

Fax +33 (0)1 34 10 16 05 E-mail export@bamo.fr

**PADDLE WHEEL FLOW
SENSOR
BAMOFLU 100**

04-12-2021

M-780.01-EN-AC

DEB

780-01 /4