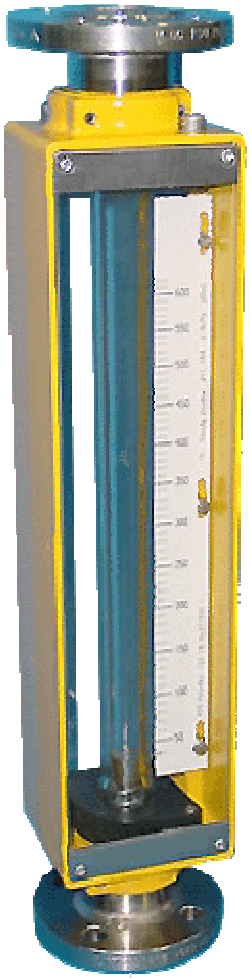
TYPE 123

Flanged variable area, glass tube flowmeter



FEATURES

- Accuracy
- Good tube protection
- Interchangeability of scale
- Large range of materials for the connections

USE

- The 123 flowmeter type is suitable for flow measuring of transparent media (liquid or gas).
- The flow indication is serigraphied on a removable strip which allows easy changing of scales.
- Metallic parts are polyurethane paint coated, which gives excellent protection against corrosion.
- Protection glasses are made of tempered glass for optimum safety.

DESCRIPTION

- A plumb bob type float is pushed upward by the fluid into a tapering borosilicate glass tube (the larger diameter of this tube being at the top). The tube section varies, and increases linearly from bottom to top of the tube.

For a given flow, the float stabilises itself in the tube at a height where the float weigth balances the fluid thrust. The actual corresponding flow may be read on the scale, level with the upper side of the float.

Flow measurement

Technical data sheet
50466-601
July 2017

TECHNICAL FEATURES

Flow range :

Frame	ND	Tube Type	Liquids S.G. = 1, tcPo: Max pressure bar G.	Liquids: Flow range	Liquids: Pressure drop at max. flow mbar	Air 20°C atmospheric pressure: Max pressure bar G.	Air: Flow range	Air: Pressure drop at max. flow mbar
A1	15	5.1	16	1 - 10 l/h	4	8	12 - 120 l/h	0.5
		5.2	16	1.7 - 17 l/h	4	8	20 - 200 l/h	0.5
		5.3	16	3 - 30 l/h	6	8	35 - 350 l/h	0.7
		7 X	16	5 - 50 l/h	7	8	50 - 500 l/h	0.9
		7	16	6 - 60 l/h	8	8	60 - 600 l/h	1
		10 X	16	10 - 100 l/h	9	8	0.1 - 1 m³/h	1.2
		10	16	15 - 150 l/h	11	8	0.15 - 1.5 m³/h	1.4
		14 X	16	20 - 200 l/h	11	8	0.2 - 2 m³/h	1.5
		14	16	30 - 300 l/h	13	8	0.3 - 3 m³/h	1.6
A2	25	18 X	14	50 - 500 l/h	16	7	0.5 - 5 m³/h	3.5
		18	14	70 - 700 l/h	18	7	0.8 - 8 m³/h	3.5
		24 X	10	0.1 - 1 m³/h	20	5	1 - 10 m³/h	3
		24	10	0.15 - 1.5m³/h	24	5	1.5 - 15 m³/h	6
A3	40	35 X	8	0.2 - 2 m³/h	30	4	3 - 30 m³/h	6
		35	8	0.3 - 3.3m³/h	45	4	5 - 50 m³/h	11
		47 X	7	0.6 - 6 m³/h	50	3.5	6 - 60 m³/h	8
		47	7	0.8 - 8 m³/h	50	3.5	8 - 80 m³/h	8
		47 A	7	1 - 10 m³/h	50	3.5	10 - 100 m³/h	8
A4	50	65 X	6	1.5 - 15 m³/h	60	3	15 - 150 m³/h	9
		65	6	4 - 20m³/h	75	3	20 - 200m³/h	11

N.B. Central guide for metallic floats from the 35 X size tube.

Accuracy : +/-2% of the maximum flow.

Operating temperature :
- standard construction : -30 to +90°C (storage : -40 to +90°C)
- on request : up to 200°C.

CONSTRUCTION

- Frame : polyurethane coated aluminium
- Safety glasses : tempered glass
- Measuring tube : borosilicate glass (pyrex)
- Scale : aluminium, white paint, black markings
- Floats : ST.ST., dural, PTFE
- Gaskets : Nitrile, Viton
- Flanges : mechanical welded carbon steel, mechanical welded stainless steel, halard coated carbon steel.

OPTIONS

Additional scale

S.P.D.T. switches (only for liquid from 10 - 100 L/hr).
- Reed type
- Max : 1A
  500 V.D.C.
  380 V.A.C.
  50 VA

Photo electric switch alarms (for low liquid flows and all gas flows).
Warning : fluids must be clean and transparent.

a) photo electric detection :
- power supply 12 - 24 V.D.C.
- logical output 80mA maxi
  or
- logical output (U=RI with I 1.5 to 3mA)

b) photo electric detection with relay amplifiers :
- power supply 110/220 V - 50/60 Hz
- 1 SPDT output 250 V - 3 A

Classification Table According PED 2014/68/UE on under pressure equipments

Tube N°	Connection size	Diameter taken into consideration = Maximum internal diameter expressed in mm	Operating pressure (PS) > 0,5 bar G: Max operating pressure (in bar) for liquids	max PS x DN	PS<10 ; DN < 200 PS x DN <5000 (Liq. Gr2)	DN < 25 PS x DN <1000 (Liq. Gr1)	Max operating pressure (in bar) for gas	max PS x DN	DN < 32 PS x DN <1000 (Gas Gr2)	DN < 25 PS x DN <1000 (Gas Gr1)	Max operating pressure (in bar) for gas with protection shield	PS x DN max	DN < 32 PS x DN <1000 (Gas Gr2)	DN < 25 PS x DN <1000 (Gas Gr1)
5,1 5,1 5,1	1/2" (DN15)	7,4	16	118,4	DN < 200 : PSx DN <5000 : SEP	DN < 25 : SEP	4		DN < 32 : SEP	DN < 25 : SEP	8		DN < 32 : SEP	DN < 25 : SEP
7X 7		9,5	16	152			4				8			
10X 10		12,45	16	199,2			4				8			
14X 14		17,5	16	280			4				8			
18X 18	3/4" (DN20) 1" (DN25)	23,2	14	324,8			3				7			
24X 24		30,6	10	306		SEP	3	91,8		Not compatible	5	153		Not compatible
35X 35	1"1/2 (DN40)	44,1	8	352,8			2	88,2	SEP		4	176,4	SEP	
47X 47 47A	2" (DN50)	58,3	7	408,1			2	116,6			3,5	204,05		
65X 65		78,45	6	470,7			1,5	117,675			3	235,35		

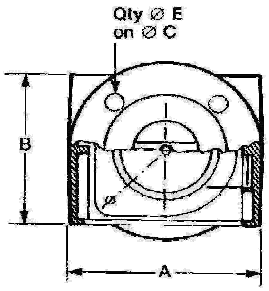
DN (Nominal Diameter) expressed in mm / PN (Nominal pressure) expressed in bar / PS = operating pressure

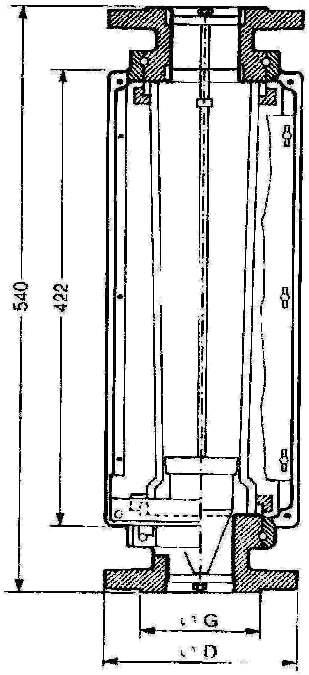
According PED 2014/68/UE on under pressure equipments, glass tube flowmeters are furnished only in 4.3. Art.

CONNECTION AND OUTLINE DIMENSIONS

Model	ND	A	B	Ø D	Ø G	Ø C	Qty	Ø E	Weigth kg
A1	15	96	75	95	47	65	4	14	6
A2	25	106	90	115	68	85	4	14	8
A3	40	140	110	150	88	110	4	18	12
A4	50	165	140	165	102	125	4	18	13
A4	80*	165	140	200	133	160	8	18	23

*on request

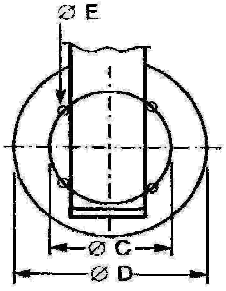


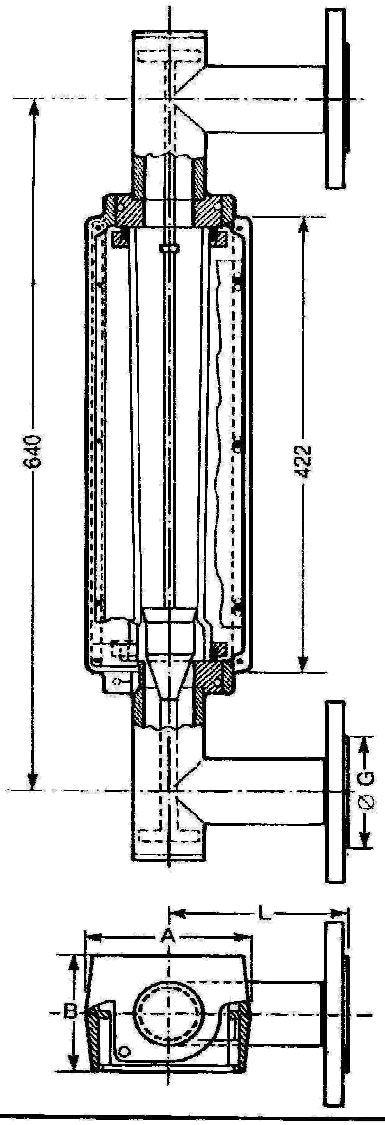


ALTERNATE CONNECTION AND OUTLINE DIMENSIONS

The 123 type flowmeter may be manufactured on request with lateral connections

ND	A	B	L	Ø D	Ø G	Ø C	Qty of holes	Ø E
15	96	75	100	95	47	65	4	14
25	106	90	100	115	68	85	4	14
40	140	110	125	150	88	110	4	18
50	165	140	150	165	102	125	4	18
80	165	140	150	200	133	160	8	18





Flow measurement

TYPE 123 - Ordering information

CONNECTION CODE	ISO PN 16 DN / ANSI B 16.5	15 ½"	25 1"	40 1"½	50 2"	65 2"½	80 3"
Code	**CONSTRUCTION**						
	ISO PN16 Flanges — Float — Seals						
C1	See C4 — Dural / St Steel — Nitrile						
C2	See C5 — Dural / St Steel — Nitrile						
C3	Cast Iron lined Halar® * — PTFE ** — Viton®						
C4	Mech. welded steel — Dural / St Steel — Nitrile						
C5	Mech. welded St. St. — Dural / St Steel — Nitrile						
	ANSI 150# Flanges — Float — Seals						
C6	Mech. welded steel — Dural / S Steel — Nitrile	860	916	1 107	1 721	1 935	1 971
C7	Mech. welded St. Steel — Dural / S Steel — Nitrile	946	1 090	1 351	2 038	2 355	2 497
CX	Special construction	On Request					

DN	Code	Tube	FLOW: Liquid: Lig SG=1.1cPo	Gas: Air 20°C Atm.	ADD
15 ou ½"	M1	5,1	1-10 l/h	12-120 l/h	
		5,2	1,7-17 l/h	20-200 l/h	
		5,3	3-30 l/h	30-300 l/h	
		2X	5-50 l/h	50-500 l/h	
		7	6-60 l/h	60-600 l/h	
		10X	10-100 l/h	0,1-1 m³/h	
		10	15-150 l/h	0,15-1,5 m³/h	
		14X	20-200 l/h	0,2-2 m³/h	
		14	30-300 l/h	0,3-3 m³/h	
25 ou 1"	M2	18X	50-500 l/h	0,5-5 m³/h	
		18	70-700 l/h	0,8-8 m³/h	
		24X	0,1-1 m³/h	1-10 m³/h	
		24	0,15-1,5 m³/h	1,5-15 m³/h	
40 ou 1"½	M3	35X	0,2-2 m³/h	3-30 m³/h	
		35	0,3-3,3 m³/h	5-50 m³/h	
	M4	47X	0,6-6 m³/h	6-60 m³/h	
		47	0,8-8 m³/h	8-80 m³/h	
		47A	1-10 m³/h	10-100 m³/h	
50 2"	M5	65X	1,6-15 m³/h	15-150 m³/h	
		65	4-20 m³/h	20-200 m³/h	
	MX	Special flow rate			

Code	ALARM:	ADD
S1	1 Reed contact ***	
S2	2 Reed contacts ***	
S3	1 Photocell contact	
S4	1 Photocell + ampli relay	

Code	OPTIONS	ADD
Z1	Fluorocarbone Seals	
Z2	PTFE Seals	
Z3	Extra scale on guide	
Z5	Shielding	
Z9	Epoxy paint	
Z10	Degreasing	

123 - 15 - C3 - M1 — 10 - 185 l/h, Soda SG=1,34, 12cPo, 20°C, 3 bar

The flow characteristics in plain language must always include the following particulars:
- **Flow scale, nature of fluid, specific gravity in the operating conditions**
- **working temperature and pressure**
- **and viscosity in the operating conditions**

* HALAR® : Equivalent to the PTFE ** PTFE Float : flows are reduced to 20% max
*** Reed contact : Only useable for liquids with 10 tubes or greater.
- In cases of special construction, the complete definition of the equipment agreed with Technical Department, will be entered in plain language after coding

INSTALLATION, MAINTENANCE

You need only ensure that :
- Installation is as near as possible to truly vertical
- The meter is kept clean
- Shock pressures are avoided

SPARE PARTS

- Measuring tube
- Float
- Gaskets
- Protection glasses
- Scale

For spare parts orders you must give the serial number of the flowmeter to be repaired.

Houdec Innovation S.A.S.
Z.A. de la Tour– ABREST– France
Tel: +33 (0)4.70.59.81.81.
Fax: +33 (0)4.70.59.96.37.
Email : contact@houdec.com
www.houdec.com