

HUBA

Flow Sensor for Liquid Media Type 240**DESCRIPTION**

The flow sensor Type 240 is based on the VORTEX principle and provides reliable measurement results of liquids with different specific viscosities – from cryogenic protection agents to drinking water. It operates without moving parts, which ensures a long service life and high accuracy.

It is ideal for precise and stable flow measurements even under difficult conditions. Thanks to its robust construction, it is insensitive to contamination and can also be used at high pressures or temperatures. At the same time, it has very good accuracy.

Starting from small diameters for precise measurements in DN 6 pipelines and extending to larger diameters in industrial processes, it covers a wide spectrum.

The compact design allows mounting directly on the manifold, which guarantees optimal use of space.

**SPECIFICATIONS**

Product features	
Sensor type	Flow sensor, optionally with temperature measurement
Measuring principle flow rate	Vortex
Measuring principle temperature	Resistance (Pt1000)
Measuring range flow rate	0.5 ... 150 l/min
Measuring range temperature	-40 ... +125 °C
Nominal widths	DN 6 / 8 / 10 / 15 / 20 / 25
Accuracy <50 % full scale (water)	±1 % Measuring range full scale
Accuracy >50 % full scale (water)	±2 % Measuring value
Repeatability	±0.5 %

Range of application	
Applications	Industrial applications, heating circuits, ...
Media	Drinking water, heating water
	Water-glycol mixtures
	Other media on request
Media temperature (non-freezing / non-boiling)	-15 ... +125 °C
Recommended minimum system pressure	1 bar
Maximum test pressure at 90 °C (Media temperature)	16 bar
Maximum pressure impact strength at 90 °C ¹⁾ (Media temperature)	100 bar

Electrical data	
Electrical connection	4-pole round plug M12x1 with A-coding
Supply voltage	8 ... 33 VDC
Output signal flow rate	4 ... 20 mA
Measuring principle temperature	Resistance (Pt1000)
Signal limitation	20.5 mA
Load / burden against GND or IN	$< (U_{IN} - 8 \text{ V}) / 20 \text{ mA}$
Electrical protection	Reverse polarity protection: all against all Short-circuit protection: OUT against GND
Protection class	III
Power consumption	< 21 mA

FEATURES

- Wear-free and long-term stable sensor design
- Robust design for system pressure up to 16 bar
- Up to 100 bar (high pressure shock wave)
- Media temperature measurement (optional)
- Media resistant sensor design
- Drinking water approvals UBA, WRAS, & ACS
- UL 61010-1

APPLICATIONS

- Smart Water Supply Systems
- Industrial Water Treatment Plants
- HVAC Systems in Smart Buildings
- Hydraulic Systems in Automation
- Sustainable Irrigation Systems

SPECIFICATIONS continued...

Environmental conditions	
Ambient temperature	-15 ... +85 °C
Storage temperature	-40 ... +85 °C
Protection class	IP65

Temperature measurement	
Measuring principle temperature	Resistance (Pt1000)
Measuring range temperature	-40 ... +125 °C
Accuracy Pt1000 (ΔT referred to 0 °C)	$\pm 0.3K \pm 0.005 \cdot \Delta T$ (class B DIN EN 60751)

¹⁾ Test conditions: Test medium water, 20 high pressure shock waves at 100 bar, media temp. 90 °C, rising flank $t_{10,90} = 1$ ms, falling flank $t_{10,90} = 1$ ms

Materials in contact with media	
Sensor paddle	PPSU
Housing	PPS (40 % glass fibre)
Sealing material	EPDM (perox.)
	FKM

Admissions	
Electromagnetic compatibility	CE-conform according to EN 61326-2-3
	UKCA
Drinking water	WRAS ²⁾
	ACS ²⁾
	UBA ²⁾
UL	UL 61010-1 ²⁾

²⁾ Expected authorisation Q4/2024

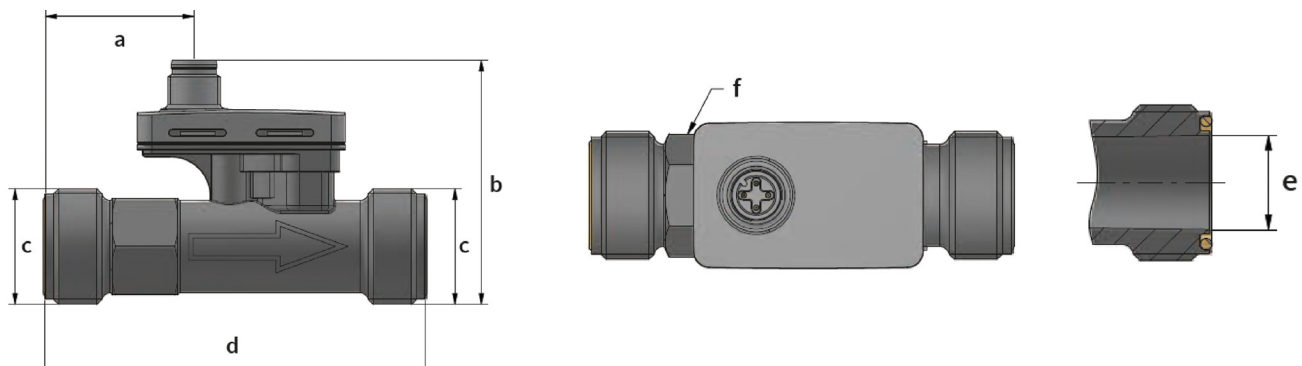
Nominal diameter dependent on variant			
DN	Measuring range [l/min]	Flow velocity [m/s]	Pressure losses [Pa]
6	0.5 ... 10	0.2 ... 6.9	$230 \cdot Q^2$
8	0.9 ... 15	0.3 ... 6.9	$80 \cdot Q^2$
10	1.8 ... 32	0.4 ... 7.3	$11.3 \cdot Q^2$
15	3.5 ... 50	0.3 ... 7.0	$7.9 \cdot Q^2$
20	5.0 ... 85	0.3 ... 7.2	$2.9 \cdot Q^2$
25	9.0 ... 150	0.3 ... 8.1	$0.95 \cdot Q^2$

Legend

Q Volume flow [l/min]

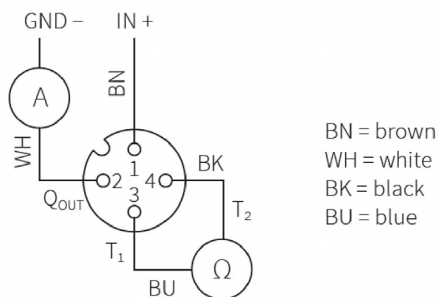
DIMENSIONS

Dimensions								
DN	Thread size	a [mm]	b [mm]	c	d [mm]	e [mm]	f [SW]	Weight [g]
6	K	27.4	52.7	G 1/2	77	11.5	12	48
8	K	27.4	52.6	G 1/2	77	11.5	12	47
10	G	34.2	53.7	G 3/4	90	16	15	60
15	K	34.1	55.7	G 3/4	87	16	22	59
20	K	52.1	61.1	G 1	105	20	27	80
25	K	53.7	68	G 1 1/4	120	26	34	113

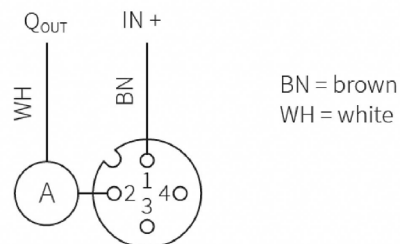


ELECTRICAL CONNECTIONS

Connector M12x1 with temperature measurement Pt1000



Connector M12x1



ORDERING INFORMATION

Article number 240.			X	X	X	X	X	X	X
Versions	Flow and temperature	Pt1000 according to DIN EN 60751. class B	8						
	Flow rate		9						
Nominal diameter and flow range	DN 6	0.5 ... 10 l/min		0	6				K
	DN 8	0.9 ... 15 l/min		0	8				K
	DN 10	1.8 ... 32 l/min		1	0				G
	DN 15	3.5 ... 50 l/min		1	5				K
	DN 20	5.0 ... 85 l/min		2	0				K
	DN 25	9.0 ... 150 l/min		2	5				K
Power supply / output	8 ... 33 VDC	Analogue output 4 ... 20 mA				4			
Electrical connection	4-pole round plug	M12x1 (protection class IP 65) with condensation protection (temperature)				6			
Sealing material	EPDM	O-rings mounted						1	
	FKM	O-rings mounted						2	
	EPDM	O-rings enclosed separately (only with multipack)						3	
	FKM	O-rings enclosed separately (only with multipack)						4	
	EPDM	no O-rings supplied						5	
	FKM	no O-rings supplied						6	
Tube connection housing	PPS-GF40	External thread small (DN 6 / 8 → G 1/2, DN 15 → G 3/4, DN 20 → G 1, DN 25 → G 1 1/4)							K
		External thread large (DN 10 → G 3/4)							G

ACCESSORIES

				Order no.
Straight-wire box for connector M12x1 with cable	5-pole	200 cm	(Temperature)	114564
Corner-wire box for connector M12x1 with cable	5-pole	200 cm	(Temperature)	114563
Straight-wire box for connector M12x1 screwing terminal				115024