

Flowmeter with float



Advantage

- measuring ranges graduated in line with practical requirements according to DIN
- face-to-face dimension = type designation 165 mm
- face-to-face dimension = type designation 170 mm
- face-to-face dimension = type designation 185 mm
- face-to-face dimension = type designation 200 mm
- face-to-face dimension = type designation 335 mm
- face-to-face dimension = type designation 350 mm
- measuring accuracy according to VDI/VDE 3513
- materials with reduced moisture absorption increase the measured value stability
- process automation using optional components such as flow data sensor ZE 3000 or limit reed switches ZE 950/ZE 951
- special scales according to the medium property

Application

- chemical plants
- water treatment

Measuring Principle

- The medium – water, air, fluid or gaseous chemicals – flows vertically through the flowmeter from the bottom to the top. The float is lifted frictionless by the flow forces and directly indicates the flow volume specified on the measuring tube scale with its top read-off edge (maximum diameter).

Version

- The conical measuring tube is equipped as standard with a measuring scale in l/h for water at 20°C. It is fitted with external dovetail strips with two moveable setpoint indicators for visual marking of the minimum and maximum flow volume or for accommodating flow data sensor ZE 3000 or limit reed switches ZE 950/ZE 951.
- The measuring tube contains the float, made of PVDF as standard, as well as the float trap.

Measuring Range

- see table measuring range

Flow Media

- Technically pure, neutral or aggressive fluid or gaseous media, provided that the valve components coming into contact with the media are resistant at the operating temperature according to the ASV-resistance guide!
- Attention: A PVC measuring tube cannot be used for gaseous media.

Nominal Pressure (H₂O, 20°C)

- PN 10

Fluid Temperature

- see pressure-/temperature diagram

Operating Pressure

- see pressure-/temperature diagram

Size

- DN 10 - DN 65

Viscosity

- for media differing from H₂O
- DN 10 - DN 40: max. 200 - 350 mPas
- DN 50 - DN 65: max. 500 mPas

Measuring Accuracy

- Class 4 according to VDI/VDE 3513, page 2
- VDI = Association of German Engineers
- VDE = Association for Electrical, Electronic & Information Technologies

Float

- PVDF without magnet
- PVDF with liquid-tight sealed magnet for electronic measurement

Sealing

- FPM
- EPDM

Connection

- Measuring tube: PVC-U, PA, PSU DIN 8063 union with union socket end for solvent welding DIN ISO (PVC-U)
- Measuring tube: PVDF union (special thread) with union socket end for fusion welding DIN ISO (PVDF)
- union end with female thread (GTW/VA) on request
- union socket end for fusion welding DIN ISO (PP/PE) on request

Mounting Position

- vertical

Flow Direction

- from bottom to top

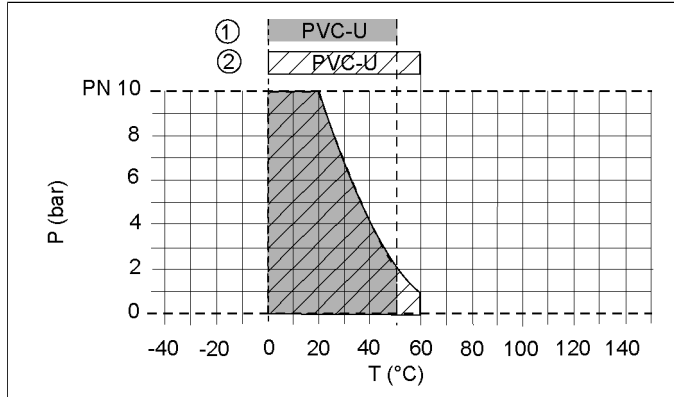
Accessories

- Special scales
- Flow data sensor ZE 3000 for process automation
- Limit read switch ZE 950, ZE 951 for minimum or maximum flow measurement for process automation

Flowmeter with float

Pressure/temperature diagram

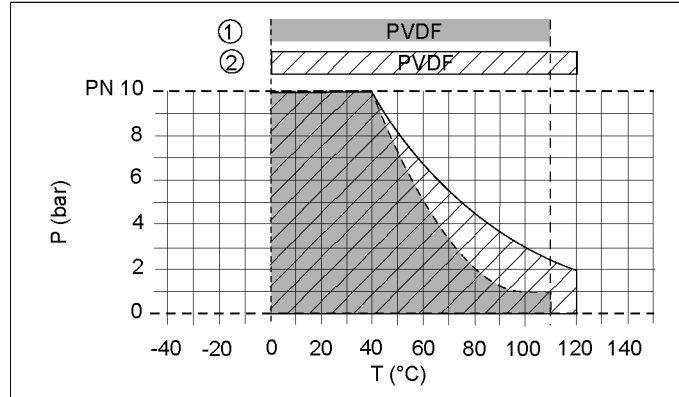
Measuring tube: PVC



P = operating pressure
T = operating temperature
1 = diagram PVC - measuring tube
2 = diagram PVC-U - connection

Pressure/temperature diagram

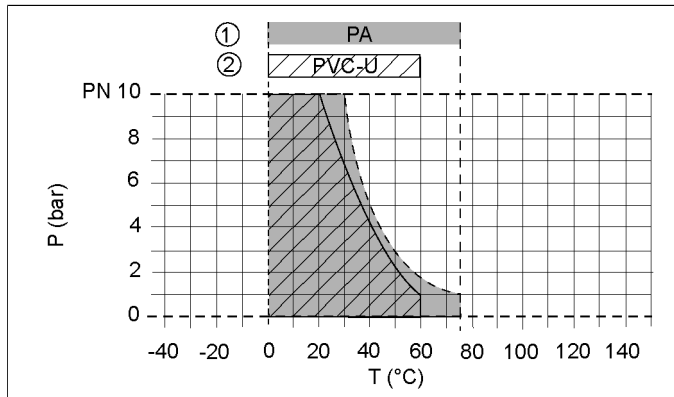
Measuring tube: PVDF



P = operating pressure
T = operating temperature
1 = diagram PVDF - measuring tube
2 = diagram PVDF - connection

Pressure/temperature diagram

Measuring tube: PA



P = operating pressure
T = operating temperature
1 = diagram PA - measuring tube
2 = diagram PVC-U - connection

Measuring range DFM 165 - DFM 350

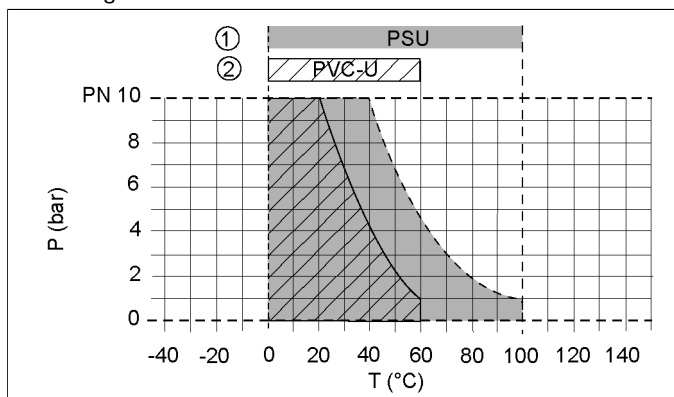
Q (l/h) H ₂ O	DFM 165	DFM 170	DFM 185	DFM 200	DFM 335	DFM 350
3 - 24	d 16					
5 - 50		d 20				
5 - 60	d 16					
10 - 100	d 16					
15 - 150		d 20	d 25			
25 - 250	d 16	d 20		d 32		
30 - 300						
40 - 400		d 20	d 25	d 32		
60 - 600			d 25		d 32	d 32
100 - 1.000			d 25	d 32	d 32	d 32
150 - 1.500				d 32		d 40
200 - 2.000					d 50	d 50
250 - 2.500						d 40
300 - 3.000					d 50	d 50
400 - 4.000						d 63
600 - 6.000					d 63	d 63
1.000 - 10.000					d 63	d 63
1.500 - 15.000						d 75
2.500 - 25.000					d 75	d 75
10.000 - 50.000					d 75	d 75

Conversion of flow rate units

	m ³ /s	m ³ /h	l/min	GPM(GB)	GPM(US)	ft ³ /s
1 m ³ /s	1	3600	60000	13198	15850	35,3
1 m ³ /h	2,788·10 ⁻⁴	1	16,667	3,663	4,405	9,803·10 ⁻³
1 l/min	1,667·10 ⁻⁵	6·10 ⁻²	1	0,219	0,264	0,163
1 GPM (GB)	7,577·10 ⁻⁵	0,273	4,55	1	0,833	2,676·10 ⁻³
1 GPM (US)	6,309·10 ⁻⁵	0,227	3,783	1,203	1	2,225·10 ⁻³
1 ft ³ /s	2,833·10 ⁻²	102	1700	373,69	444,44	1

Pressure/temperature diagram

Measuring tube: PSU



P = operating pressure
T = operating temperature
1 = diagram PSU - measuring tube
2 = diagram PVC-U - connection

Flowmeter with float

Pressure loss values DFM 165 - DFM 350

Typ	d	DN	DN	$\Delta p^{1)}$	$\Delta p^{2)}$
	mm	mm	Zoll	mbar	mbar
DFM 165	16	10	3/8	3,3	4,8
DFM 170	20	15	1/2	2,5	4,3
DFM 185	25	20	3/4	6,1	8,3
DFM 200	32	25	1	6,1	8,3
DFM 350	32	25	1	12,3	15,9
DFM 350	40	32	1 1/4	12,3	15,9
DFM 350	50	40	1 1/2	12,3	15,9
DFM 350	63	50	2	22,2	27,1
DFM 350	75	65	2 1/2	33,7	40,0

Operating note

Safe operation of the valve can only be ensured if it is properly installed, operated, serviced or repaired by qualified personnel according to its intended use while observing the accident prevention regulations, safety regulations, relevant standards, directives/technical regulations or codes of practice such as e.g. DIN, DIN EN, DIN ISO and DVS*. *DVS = German Welding Society
The intended use includes adhering to specified limit values for pressure and temperature, as well as checking the resistance. This requires all components coming into contact with the medium to be "resistant" in accordance with the ASV resistance guide.

Attention:

A PVC measuring tube cannot be used for gaseous media.