

Artikelnummer 0786 en 0787 DFM 165-350

Nominal size DN 10-65

Nominal size 3/8"-2 1/2"

Nominal pressure PN 10 bar



Features

- Measuring range 3 to 50,000 l/h
- suitable for a wide range of applications for gaseous medium types, water, lyes, acids
- direct visualisation of the measured values
- accuracy class 4
- integrated mounting rail for flow data sensors

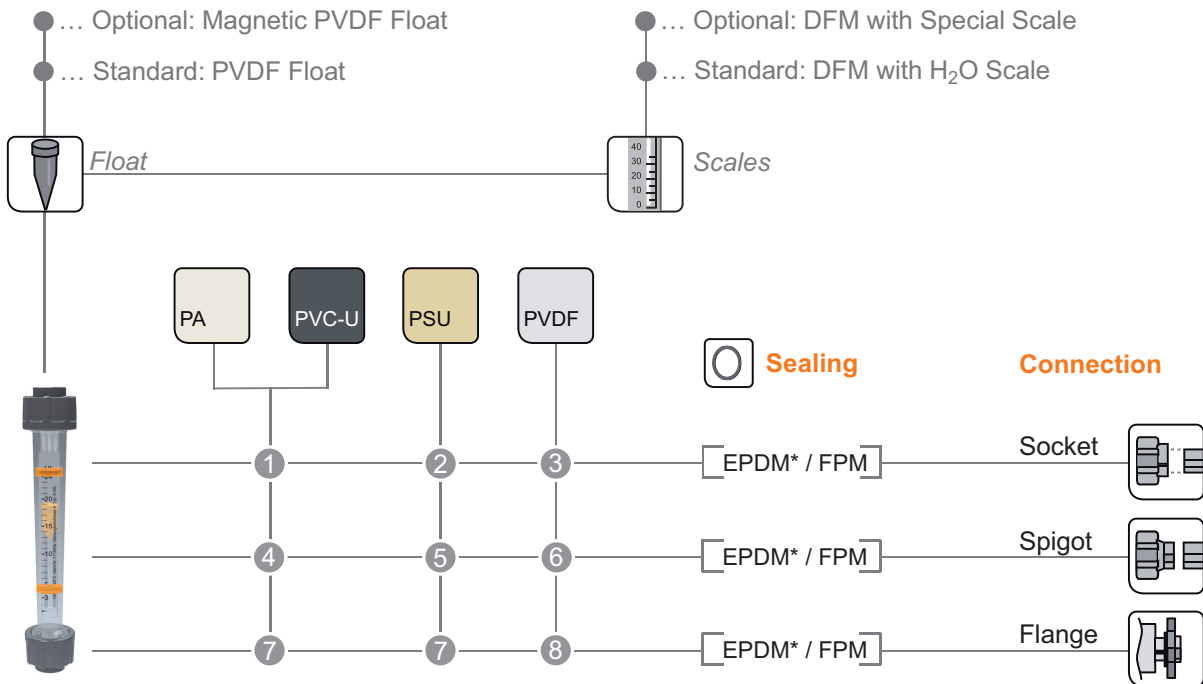
Additional options on request

- Free of paint wetting impairment substances
- Flow data sensor
- special scales

Note

Flow data sensor only in combination with magnetic float

Doorstroommeter



* PVDF-Flowmeter only available with FPM Seal

● available
 ○ not available

Basic Nominal Sizes:

DN 8	DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350	DN 400
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Connection Material (process connection)

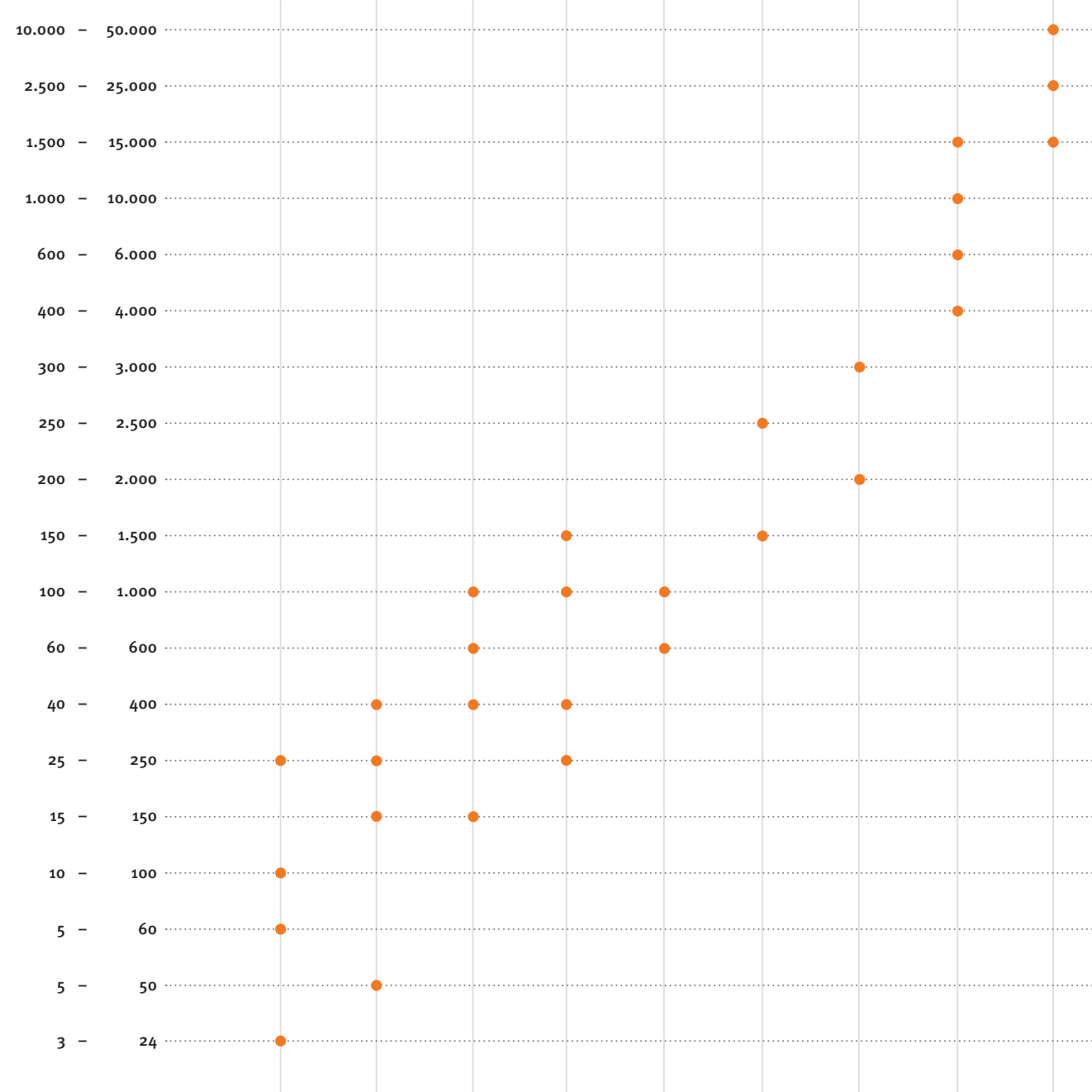
- 1 PVC-U socket **DIN, ANSI, BS, JIS***
 female thread Rp.
 1.4571 male thread R.*
 female thread Rp.
 MS female thread Rp.
 PP socket **DIN**
- 2 PVC-U socket **DIN, ANSI, BS, JIS***
 female thread Rp.
 1.4571 male thread R.*
 female thread Rp.
 MS female thread Rp.
 PP socket **DIN**.
 female thread Rp.*
- 3 PVDF socket **DIN**

- 4 PE spigot **DIN** (95mm).**
 PP spigot IR
 - 5 PP spigot IR.**
 PE spigot **DIN** (95mm).**
 - 6 PVDF spigot IR.***
 - 7 PP-St. flange **DIN, ANSI**.**
 GFK flange **DIN**.**
 - 8 PP-St. flange **DIN, ANSI**.**
- * available up to DN 50.
 ** available from DN 15.
 *** available in DN 15-50.

Doorstroommeter



Type	DFM 165	DFM 170	DFM 185	DFM 200	DFM 350				
d (mm)	16	20	25	32	32	40	50	63	75
DN (mm)	10	15	20	25	25	32	40	50	65
DN (inch)	3/8	1/2	3/4	1	1	1 1/4	1 1/2	2	2 1/2
Measuring range (l/h)									



Doorstroommeter

Application

- Measurement of the flow in pipe systems with visual display of the measured values

Use

- Chemical plant manufacture
- Water treatment

Function

- The medium – water, air, fluid or gaseous chemicals – flows vertically through the flowmeter from the bottom to the top.

The float is lifted with no friction by the flow forces and directly indicates the flow volume specified on the measuring tube scale with its top read-off edge (maximum diameter). The measuring tube contains the float, made of PVDF as a standard, as well as the float trap.

Version

- Equipped with measuring range scale l/h for water 20°C as a standard.
- two displaceable set-point value indicators
- floats made of PVDF, optionally with magnet
- optionally flow data sensors ZE 3000/3075 for process automation for continuous measuring
- optionally limit reed switches ZE 950/ZE 951 for electric signalling of min./max values

Measuring range

- see measuring range overview

Measuring accuracy

- Class 4 according to VDI/VDE 3513, page 2
VDI = Verein Deutscher Ingenieure (Association of German Engineers)
VDE = Verband Deutscher Elektrotechniker (Association for Electrical, Electronic & Information Technologies)

Flow medium

- Technically pure, neutral or aggressive fluid or gaseous medium types, provided that the valve components coming into contact with the medium are resistant at the operating temperature according to the ASV resistance guide.

Operating note

A PVC-U measuring tube cannot be used for gaseous medium types.

Flow direction

- from bottom to top

ASV resistance guide

www.asv-stuebbe.de/pdf_resistance/300051.pdf

Viscosity

- for medium types differing from H₂O
- DN 10–40: maximum 200–350 mPa
- DN 50–65: maximum 500 mPa

Process temperature

- see pressure/temperature diagram

Process pressure

- see pressure/temperature diagram

Nominal pressure (H₂O, 20 °C)

- PN 10 bar

Size

- DN 10-65

Device connection

- measuring tube made of PVC-U, PA, PSU:
DIN 8063 union with union socket ends for solvent welding DIN ISO (PVC-U)
- measuring tube made of PVDF:
union (special thread) with union socket end for fusion welding DIN ISO (PVDF)

On request:

- union end with female thread (GTW/VA)
- union socket end for fusion welding DIN ISO (PP/PE) on request

Doorstroommeter

Material with medium contact

Measuring tube:

- PA
- PVC-U
- PSU
- PVDF

Float:

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

Insert/stop:

- PVDF

Sealing:

- FPM
- EPDM

Union nut/union ends:

- PVC
- PP
- PVDF

Material, no medium contact

Set-point indicator:

- PE

Mounting position

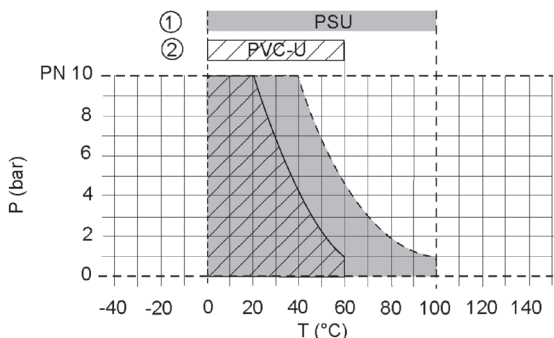
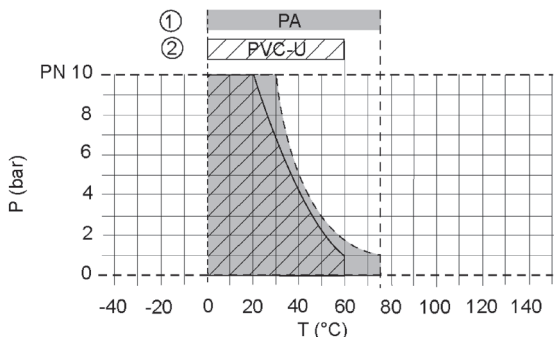
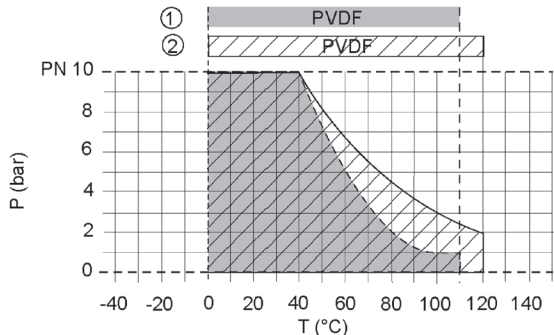
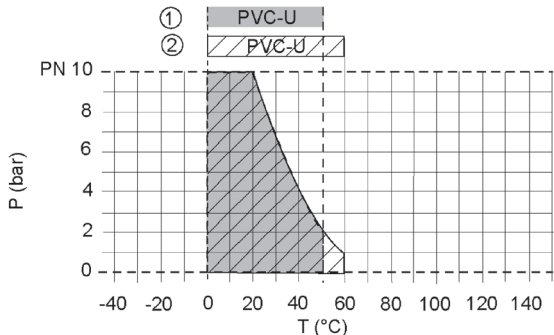
- vertical

Accessories

- Special scales for:
 - Medium air (Nm³/h) at 20 °C and 0-3 bar
 - Medium NaOH (l/h) at 30 °C
 - Medium HCl (l/h) at 30/50 °C
 - Medium FeCl₃ (l/h) at 40-41 °C
 - Medium US GPMfurther special scales on request
- Flow data sensors ZE 3000/ZE 3075 for process automation
- optionally limit reed switches ZE 950/ZE 951 for electric signalling of min./max values

Doorstroommeter

Pressure/temperature diagram



Description	
P	Operating pressure
T	Temperature
1	Measuring tube
2	Connection

The pressure/temperature limits of the materials are applicable for the stated nominal pressures and a computed operating life factor of 25 years. The values are a guide for flow medium types (DIN 2403) to which the valve material is resistant. For other flow medium types please refer to the ASV resistance guide; reduction ratios may have to be taken into account. The operating life of the wear parts depends on the conditions of use. The rated pressure (PN) depends on the size and material of the measuring tube/connection.

Doorstroommeter

Conversion of flow rate units

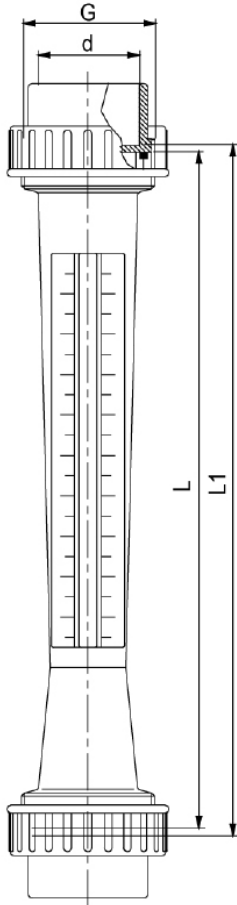
	m ³ /s	m ³ /h	l/min	GPM (GB)	GPM (US)	ft ³ /s
1 m ³ /s	1	3600	60 000	13 198	15 850	36.3
1 m ³ /h	2.788 · 10 ⁻⁴	1	16.667	3.663	4.405	9.803 · 10 ⁻³
1 l/min	1.667 · 10 ⁻⁵	6 102	1	0.219	0.264	0.163
1 GPM (GB)	7.577 · 10 ⁻⁵	0.273	4.55	1	0.833	2.676 · 10 ⁻³
1 GPM (US)	6.309 · 10 ⁻⁵	0.227	3.783	1.203	1	2.225 · 10 ⁻³
1 ft ³ /s	2.833 · 10 ⁻²	102	1700	373.69	444.44	1

Pressure loss values DFM 165–350

	d (mm)	DN (mm)	DN (inch)	Δp water 20 °C (mbar)	Δp air 20 °C (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
	40	32	1 1/4	12.3	15.9
	50	40	1 1/2	12.3	15.9
	63	50	2	22.2	27.1
	75	65	2 1/2	33.7	40.0

Doorstroommeter

Connection socket

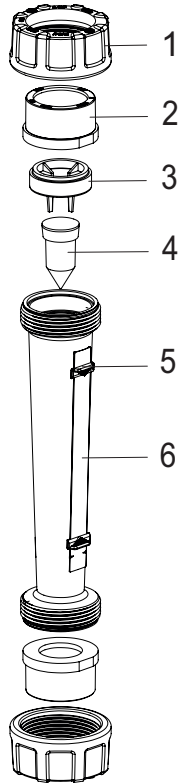


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DN (mm)	10	15	20	25	25	32	40	50	65
DN (inch)	3/8	1/2	3/4	1	1	1 1/4	1 1/2	2	2 1/2
G*	3/4	1	1 1/4	1 1/2	1 1/2	2	2 1/4	2 3/4	3 1/2
L	165	170	185	200	350	350	350	350	350
L1	171	176	191	206	356	356	356	356	356

all dimensions in mm / * dimensions in inch

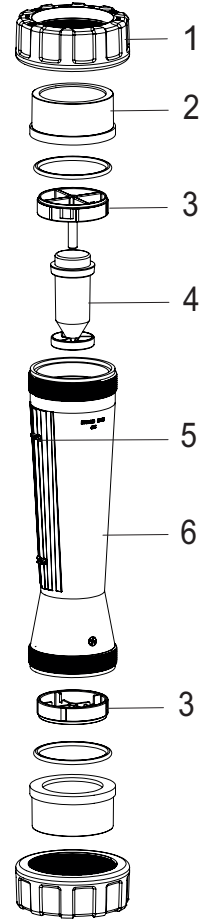
Doorstroommeter

Components DFM 165-200



Position	Designation
1	Union nut
2	Union end
3	Insert/stop
4	Float
5	Set-point indicator
6	Measuring tube

Components DFM 350



Position	Designation
1	Union nut
2	Union end
3	Insert/stop
4	Float
5	Set-point indicator
6	Measuring tube

Doorstroommeter

Installation and connection

Check operating conditions

WARNING

Splintering measuring tube!

- ▶ Do not use measuring tube made of PVC for gaseous media.

1. Ensure the required operating conditions are met:
 - Resistance of body and seal material to the medium (→ resistance lists).
 - Media temperature (→ Data sheet).
 - Operating pressure (→ Data sheet).
2. Consult with the manufacturer regarding any other use of the device.

Planning pipelines

Specify pipes and fittings

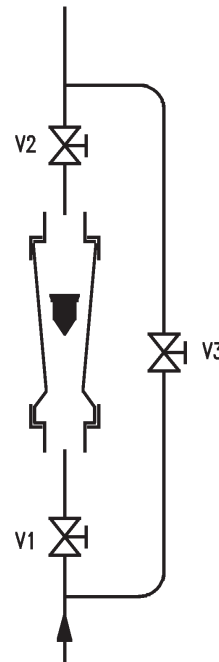
1. Ensure installation position:
 - vertical
 - Direction of flow from bottom to top
 - Device is freely accessible from all sides
2. Ensure pipe connection without tension.
 - If necessary, equip with expansion shanks or pipe compensators
3. Straight pipe lengths before and after device (recommended to avoid vibration of the float)
 - DN = DN device
 - Length > 5–7 x DN device
 - Length > 10 x DN device for large differences between nominal diameters between pipe and device
4. If necessary:
 - For gaseous media, equip with vent valve at highest point of inlet and outlet pipe
 - For condensing gaseous, equip with vent valve at lowest point of inlet and outlet pipe
5. Allocate control valves after device.
6. Allocate throttle valves before or after the device.
 - For gasses, only after the device (to prevent vibrations of the float)


Providing safety and control devices (recommended)

Avoid contamination

1. Install filter into supply line.
2. Install a differential pressure gauge to monitor contamination.

Make provisions for isolating and shutting off the pipes



 For maintenance and repair work.

1. Provide shut-off devices (V1, V2) in the inlet and outlet line.
2. If removal of the device during operation is necessary: Install bypass line (V3).