DATA SHEET

Type 5550

Pressure-relief valve with media separation

- Media-separated
- Return of overpressure to the system rather than to the environment
- Compact design with flange
- Adjustable operating point
- Suitable for numerous applications

Product variants described in the data sheet may differ from the product presentation and description.

Type description

Type 5550 is a media-separated pressure-relief valve suitable for various tasks, including overpressure control or back pressure damping, for use in laboratory and medical applications. The set-point value can be adjusted for when a high level of flexibility is required. These types of application often require the use of aggressive or sensitive media. Among other things, the Type 5550 valve is offered in a wide range of different materials which means it can be optimally adapted to the application in question. One major advantage of the valve is that overpressure is returned to the system rather than being released into the environment. Type 5550 is easy to integrate, as the flange interface allows for compact installation in plant or in a distribution system.

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Visit product website

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1. General technical data

Product properties	
Dimensions	Further information can be found in chapter "5. Dimensions" on page 6.
Material	
Seal	EPDM, FFKM (FKM on request)
Housing	PPS, PEEK
Performance data	
Possible opening pressure (adjustable)	0.2...3 bar (pressure can be preset at the factory in 50 mbar increments)
Adjustment tolerance	> 1...3 bar ± 7 % adjustment tolerance at + 20 °C > 0.5...1 bar ± 10 % adjustment tolerance at + 20 °C 0.2...0.5 bar ± 20 % adjustment tolerance at + 20 °C
Temperature tolerance	Further information can be found in "6.3. Qualitative temperature influence of the opening point as a function of the medium at 1 bar" on page 10.
Opening pressure	Max. 5 bar
Response times during pressure peaks	The response time depends largely on the respective operating conditions, such as the medium used, the temperature and other influencing factors. The vibration behaviour is strongly dependent on the overall design of the system and must therefore be considered and evaluated individually. Further information can be found in chapter "6.1. Response times during pressure peaks" on page 8.
Nominal diameter	DN 4
Flow rate	K_V value: 0.25 m^3/h Q_{Nn} value [1.)]: 300 l/min
Medium data	
Operating medium	Resistant against neutral and aggressive gases and liquids. Further information can be found in chapter "4.1. Bürkert resistApp" on page 4.
Medium temperature	EPDM: - 10...+ 70 °C FFKM: + 15...+ 50 °C FKM (on request): 0...+ 70 °C
Product connections and communication	
Port connection	Flange
Approvals and conformities	
Foods and beverages/Hygiene	FDA (only on request and with seal material EPDM) Further information can be found in chapter "2.2. Foods and beverages/Hygiene" on page 4.
Environment and installation	
Installation position	Any
Ambient temperature	EPDM: - 10...+ 70 °C FFKM: + 15...+ 50 °C FKM (on request): 0...+ 70 °C

1.) Volume flow under standard conditions, measured at: inlet pressure (p_1): 6 bar(g), outlet pressure (p_2): 5 bar (resp. 1 bar pressure loss), temperature: + 20 °C, pressure: 1013.25 mbar abs

2. Approvals and conformities

2.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available verions can be supplied with the below mentioned approvals or conformities.

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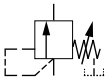
2.2. Foods and beverages/Hygiene

Conformity	Description
FDA	**FDA – Code of Federal Regulations (valid for the variable code PL03)** All wetted materials are compliant with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA) according to the manufacturer's declaration.
USP	**United States Pharmacopeial Convention (USP) (valid for variable code PL04)** All wetted materials are biocompatible according to the manufacturer's declaration.
	EG-Verordnung 1935/2004 des Europäischen Parlaments und des Rates (gültig für den variablen Code PL01) Alle medienberührten Werkstoffe sind konform zur EG-Verordnung 1935/2004/EC gemäß Herstellererklärung.

3. Circuit functions

Symbol	Description
	2-way pressure relief valve Direct-acting Opening pressure is adjustable via spring

4. Materials

4.1. Bürkert resistApp

Bürkert resistApp – Chemical Resistance Chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

Start Chemical Resistance Check

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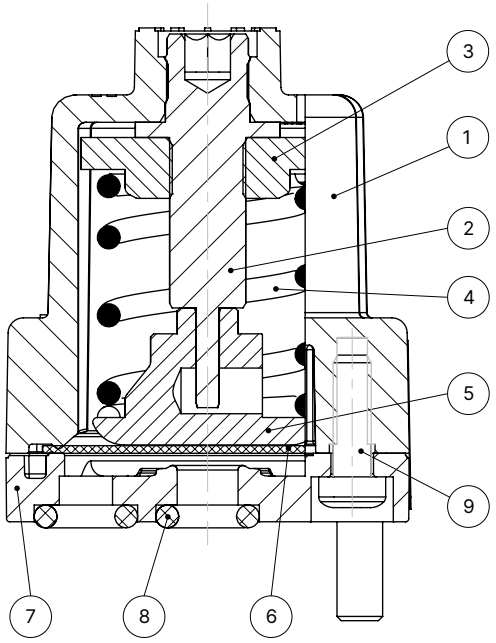
4.2. Material specifications



No.	Element	Material
1	Cover	PBT
2	Spindle	Stainless steel
3	Guide plate for spring	Stainless steel
4	Spring	Stainless steel
5	Support plate for spring	PTFE
6	Diaphragm	EPDM, FFKM (FKM on request)
7	Valve body	PPS or PEEK
8	Seal	EPDM, FFKM (FKM on request)
9	EJOT DELTA-PT screw	Steel

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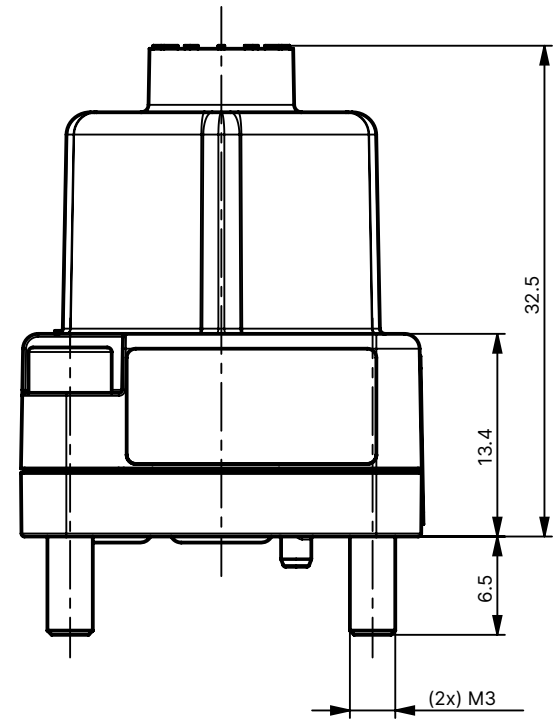
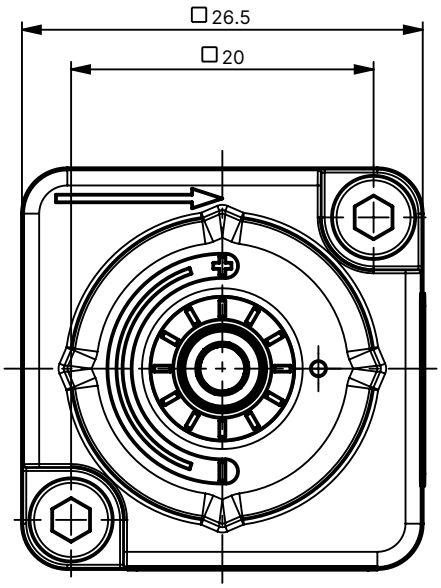
5. Dimensions

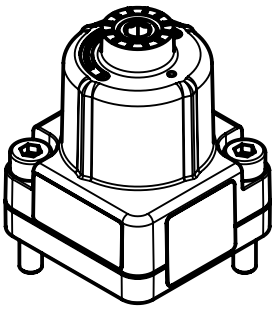
5.1. Flange variant

Note:
Dimensions in mm





(1 : 1)



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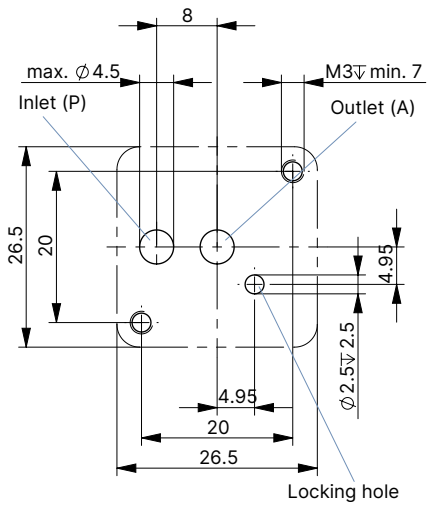
5.2. Flange contour

Note:
Dimensions in mm



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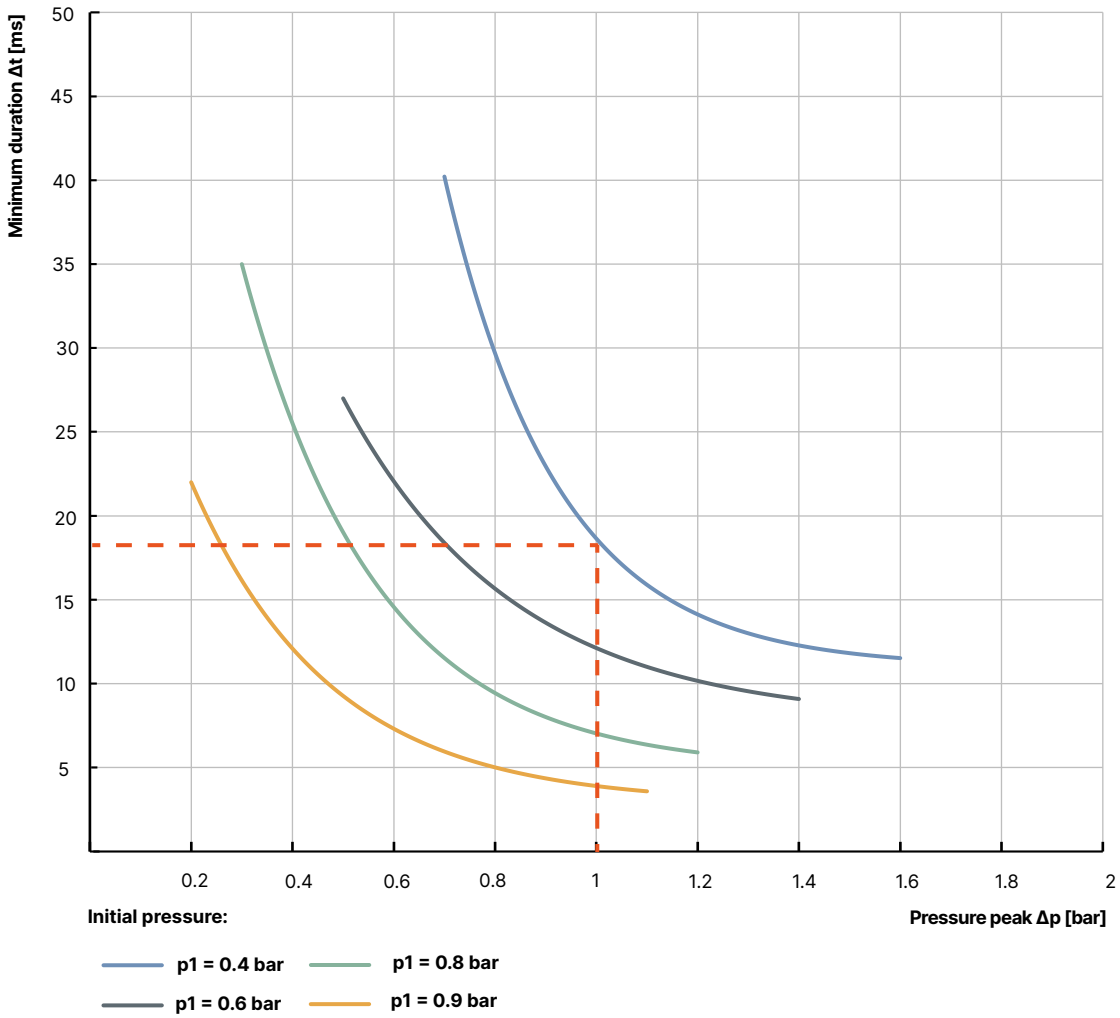
6. Performance specifications

6.1. Response times during pressure peaks

Note:
The diagram shows the typical response time for valve with set opening pressure of 1 bar at 20 °C. The response time varies under different environmental conditions.

The diagram describes the minimum duration of a short-term pressure peak required for the pressure relief valve to open. The x-axis shows the pressure peak $\Delta p = p_2 - p_1$, while the y-axis shows the required minimum duration Δp. Each curve applies to a starting pressure p_1 before the pressure peak.



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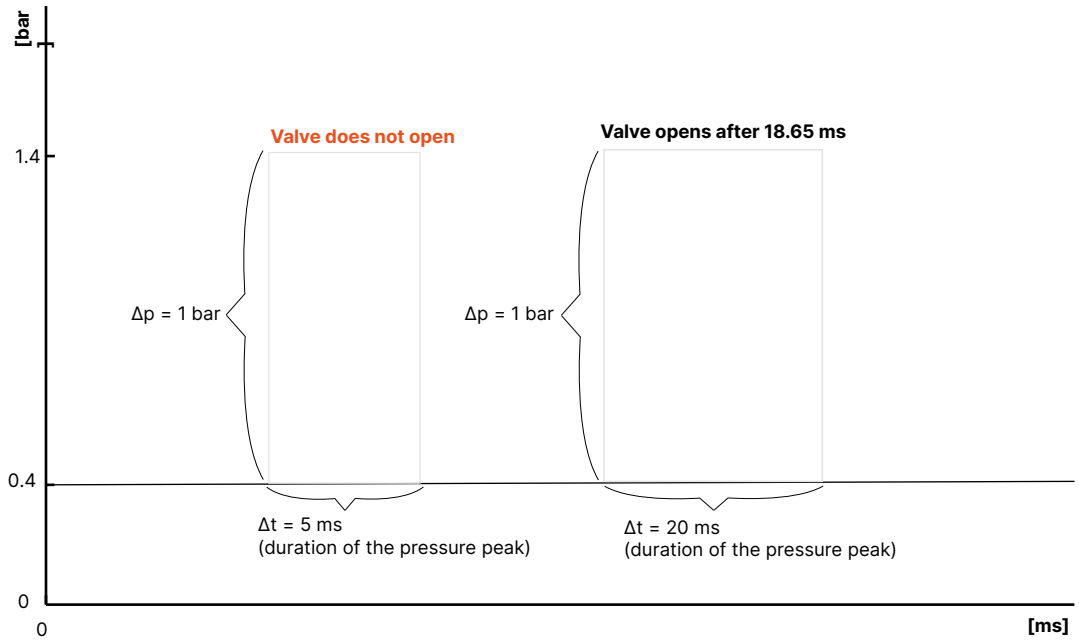
Example:
At p_1 = 0.4 bar and a pressure peak of Δp= 1.0 bar, the result is p_2 = 1.4 bar. The characteristic curve for p_1 = 0.4 bar indicates a minimum duration of Δp= 18.65 ms. This means that a pressure peak of up to 1.4 bar lasting less than 18.65 milliseconds will not result in safe opening. If the situation persists for a longer period of time, an opening is to be expected.



6.2. Flow characteristic

Nominal diameter	Port connection	Q_{Nn} value	K_V value
4	Flange	300 l/min	0.25 m^3/h

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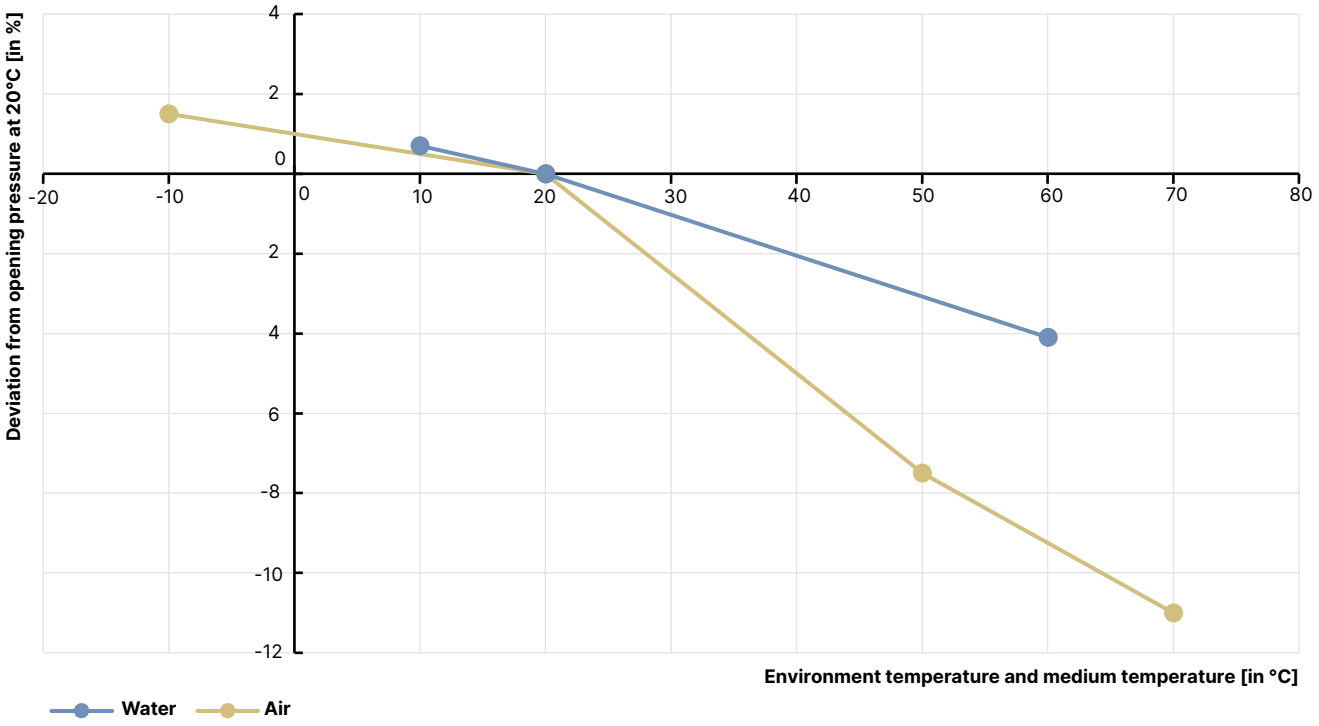
6.3. Qualitative temperature influence of the opening point as a function of the medium at 1 bar

Note:
Measurements under Bürkert test conditions. Other conditions may result in different values.

Temperature-dependent opening behaviour for EPDM



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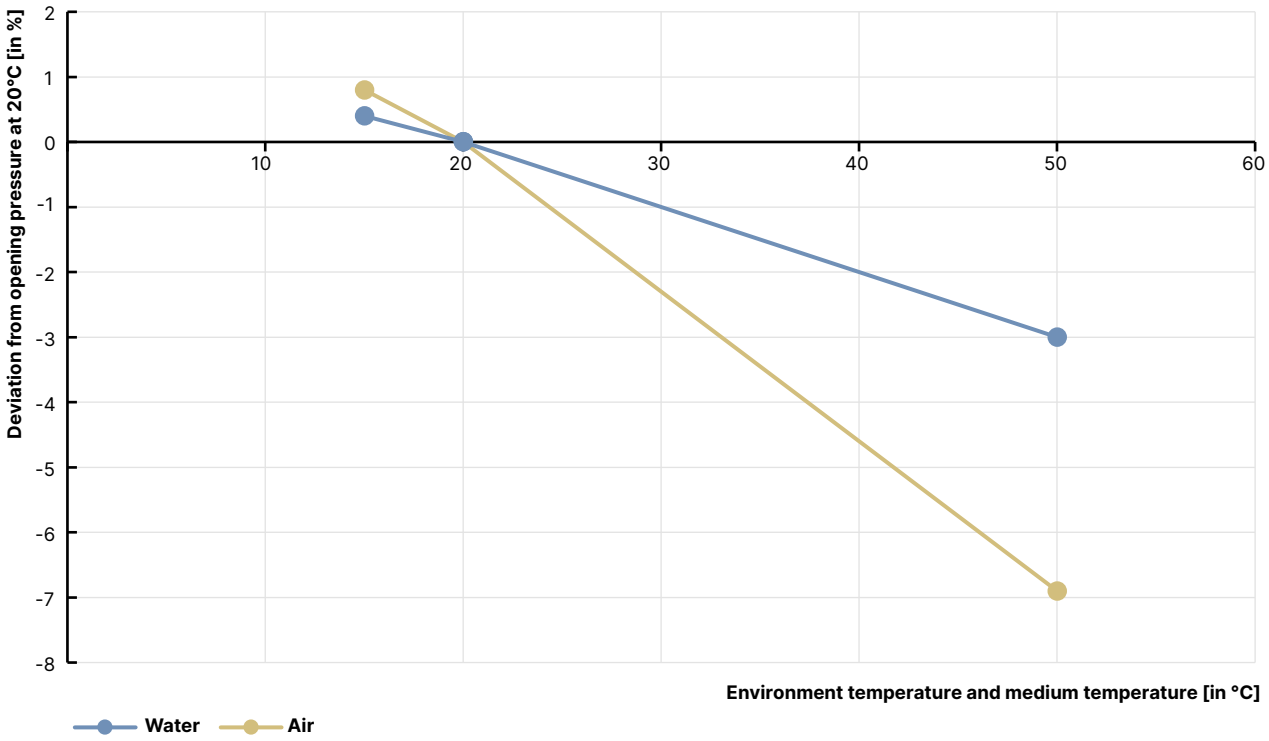
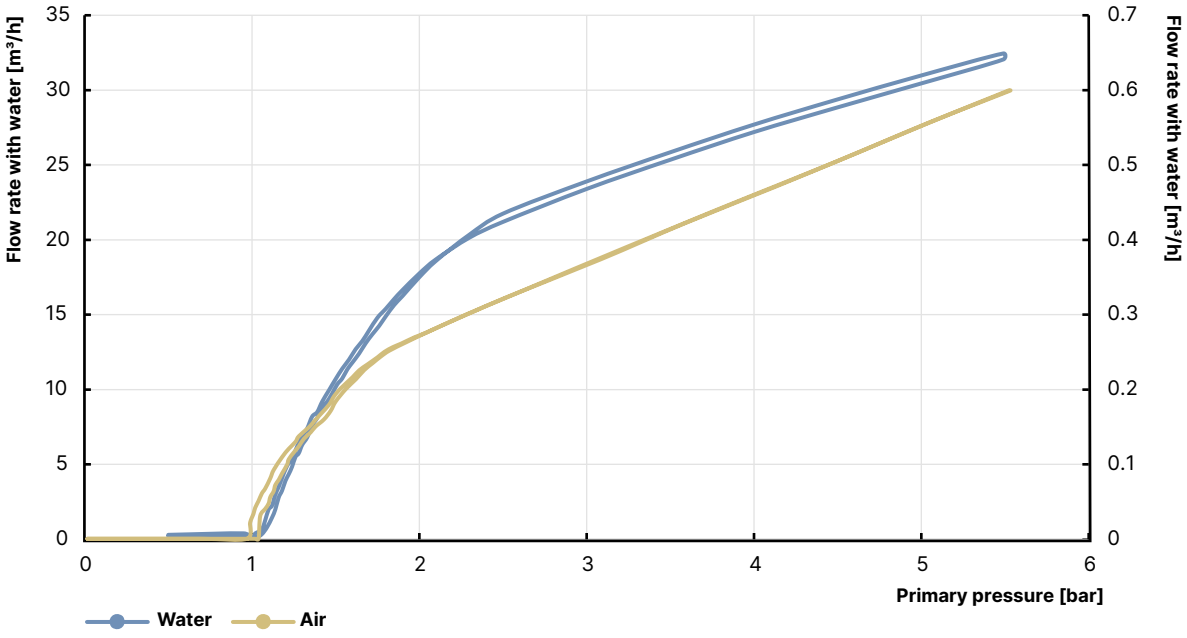
Temperature-dependent behaviour for FFKM



6.4. Opening curves

Qualitative opening and closing curve as a function of the medium at + 20 °C and 1 bar opening pressure



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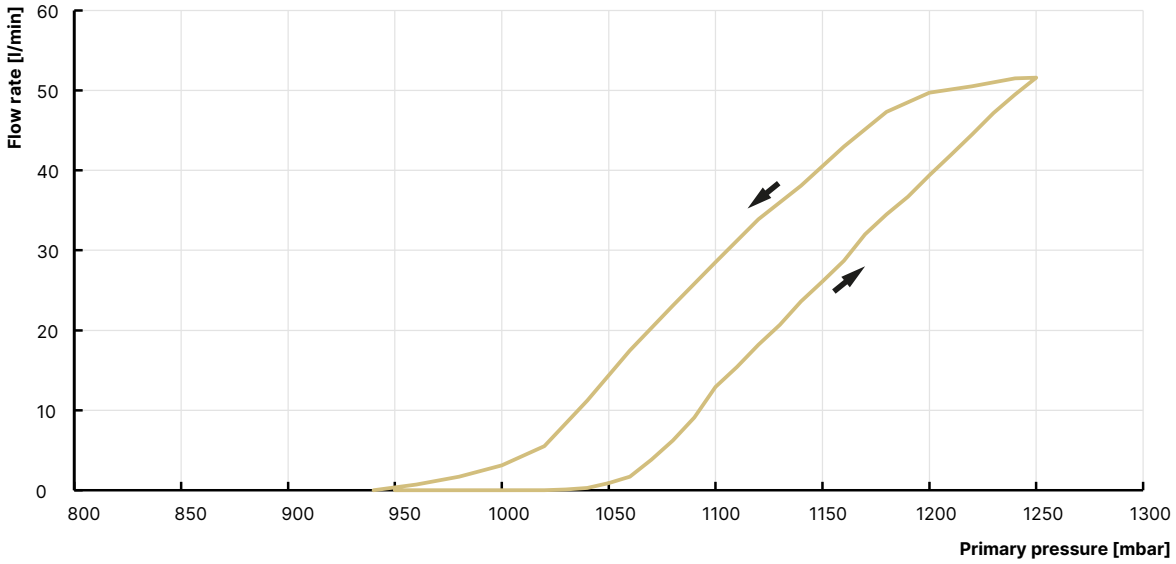
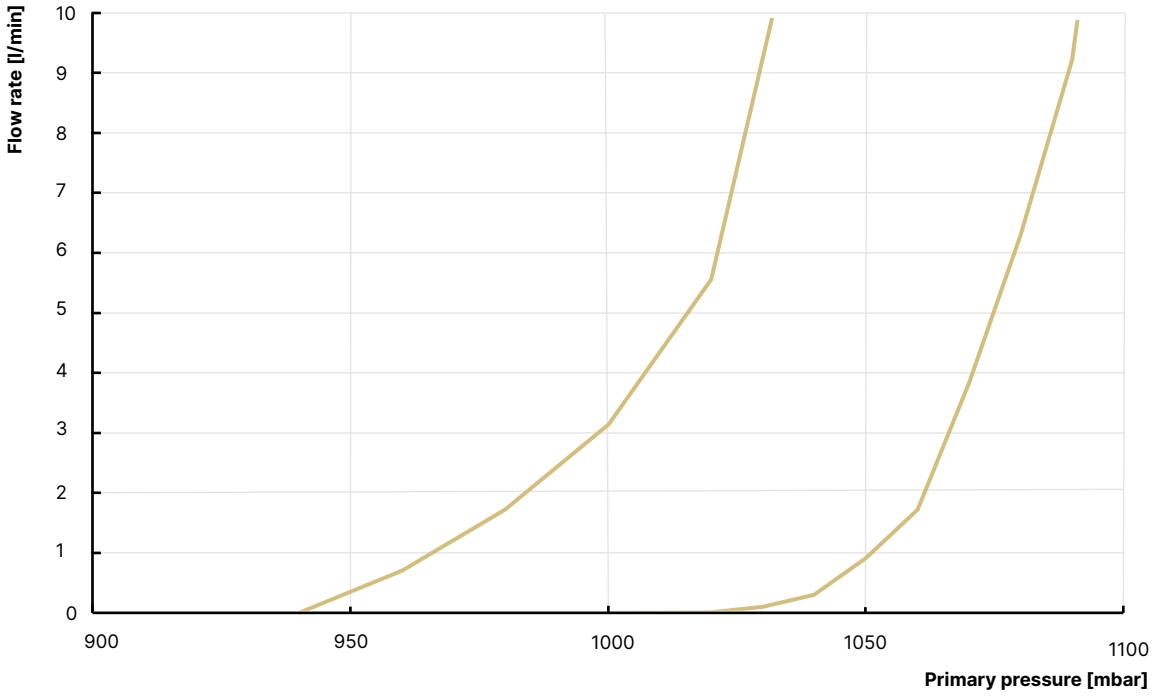
Qualitative opening and closing curve with air, at + 20 °C and 1 bar opening pressure, detailed view (800 mbar...1300 mbar)



Qualitative opening and closing curve with air, at + 20 °C and 1 bar opening pressure, detailed view (900 mbar...1100 mbar)



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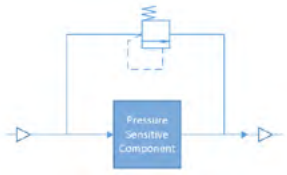
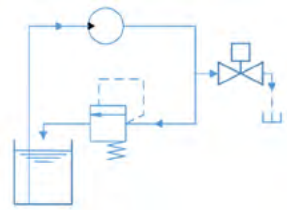
7. Product design and assemply

7.1. Application examples

Application	Description
Overpressure control	
	• Prevents pressure peaks and pressure surges • Protects pressure-sensitive components
Back-pressure control	
	• Can be used to generate a back pressure in a circulation system • Suitable for dosing applications when exact pressures are not required
Pression control function	
	• Creates a controlled pressure range instead of a defined flow rate • Suitable for volumetric pumps such as diaphragm and gear pumps

8. Ordering information

8.1. Bürkert eShop

Bürkert eShop – Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

Order online now

8.2. Bürkert product filter

Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements?
Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

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8.3. Ordering chart

Note:

- Including fixing screws for the following cable connections: Bürkert flange (FB55): M3 × 16 socket head screw
- Other variants with different opening pressure on request
- The adjusted opening pressure is secured with locking varnish as standard (variants without locking varnish are available on request)

Nominal diameter	Seal material	Material	Port connection	Adjusted opening pressure [bar]	Article no.
4	EPDM	PPS	Flange	1	20048736
4	FFKM	PEEK	Flange	1	20048738
4	EPDM	PPS	Flange	Not set	20129612
4	FFKM	PEEK	Flange	Not set	20129613

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