

Angle seat valves VZXF, NPT

FESTO



Angle seat valves VZXF, NPT

Key features

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Function



Angle seat valves are externally controlled valves. These valves are actuated by a direct supply of compressed air. In this process, the seat of the process valve is raised by a pneumatic actuator. In the normal

position, the valve is closed by a spring. When the actuator is supplied with operating pressure, it raises the control piston as well as the valve disc – the valve opens.

The valve seat is slanted at an angle of approx. 50° in relation to the media flow. The flow direction is determined by the design of the valve. Angle seat valves are used in

applications in which absolute purity of the medium cannot be ensured, in which high-viscosity media are to be controlled or in vapour applications.

Design

-  Connecting thread
1/2 NPT ... 2 NPT
-  Flow rate Kv
3.3 ... 43 m³/h

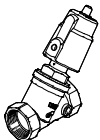
- Gunmetal (red brass) variant
- Stainless steel casting variant
- Stainless steel casting variant, nickel-plated actuator head

General

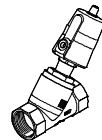
- Angle seat valves are simple and sturdy and are thus perfectly suitable for almost all media with a viscosity of up to 600 mm²/s
- Angle seat valves control suitable gaseous and liquid media in rigid piping systems without the need for any pressure differential
- No differential pressure required between the input and output
- Low flow resistance
- Insensitive to vapour or slightly contaminated media
- Long service life
- Low maintenance
- The valves have a high chemical and thermal resistance thanks to their design
- The N/C function ensures that the valve is closed in the event of pressure loss in the control circuit
- Different designs of angle seat valves are available depending on the pressure of the medium
- There is a choice of two versions: "closing in the direction of media flow" is used for gaseous media. "Closing against the direction of media flow" is used for liquid media.
- "Suitable for vacuum" is used for angle seat valves in packaging machines which need to generate a vacuum

Variants

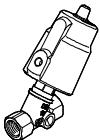
VZXF-L-...-M-A-N112-350-H3B1-50-8



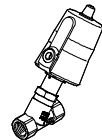
VZXF-L-...-M-A-N112-350-M1-V4V4T-50-7



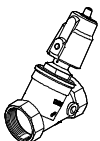
VZXF-L-...-M-A-N12-120-M1-H3B1-50-16



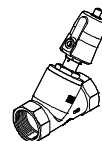
VZXF-L-...-M-B-N12-130-M1-V4V4T-50-40



VZXF-L-...-M-B-N2-430-H3B1-50-3






VZXF-L-...-M-B-N2-450-M1-V4V4T-50-3



Angle seat valves VZXF, NPT

Product range overview

Version		Type	Process valve connection	Nominal width DN	Temperature of medium [°C]	Flow rate Kv [m³/h]	Process valve nominal pressure PN	→ Page/Internet
Gunmetal (red brass)		Temperature of medium –10 ... +80 °C						
		VZXF-L-...-H3B1-...	1/2 NPT	15	–10 ... +80	3.5 ... 28	16	6
			3/4 NPT	20				
			1 NPT	25				
			1 1/4 NPT	32				
			1 1/2 NPT	40				
2 NPT	50							
Stainless steel casting		Temperature of medium –40 ... +200 °C						
		VZXF-L-...-V4V4T-...	1/2 NPT	15	–40 ... +200	3.3 ... 43	40	8
			3/4 NPT	20				
			1 NPT	25				
			1 1/4 NPT	32				
			1 1/2 NPT	40				
	2 NPT	50						
		Nickel-plated actuator head						
		VZXF-L-...-V4B2T-...	1/2 NPT	15	–40 ... +200	3.3 ... 34.5	40	12
			3/4 NPT	20				
			1 NPT	25				
			1 1/4 NPT	32				
1 1/2 NPT			40					
2 NPT	50							

Angle seat valves VZXF, NPT

Type codes

VZXF - L - M22C - M - A - N12 - 120 -

Type

VZXF	Angle seat valve, externally controlled
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Type of directional control valve

L	In-line valve
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Valve function

M22C	2/2-way valve, normally closed
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Reset method for monostable valves

M	Mechanical spring
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Flow direction

A	Over valve seat, for gaseous media
B	Under valve seat, for gaseous and liquid media

Line connection

N12	Thread 1/2 NPT
N34	Thread 3/4 NPT
N1	Thread 1 NPT
N114	Thread 1 1/4 NPT
N112	Thread 1 1/2 NPT
N2	Thread 2 NPT

Nominal width DN

120	12 mm
130	13 mm
160	16 mm
180	18 mm
230	23 mm
240	24 mm
290	29 mm
310	31 mm
350	35 mm
430	43 mm
450	45 mm

Temperature range of medium

-	Standard, -10 ... +80 °C
M1	-40 ... +200 °C

Angle seat valves VZXF, NPT

Type codes

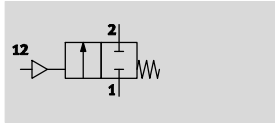
		H3	B1		-	50	-	16
Housing materials								
H3	Gunmetal (red brass)							
V4	Stainless steel							
Actuator housing material								
AL	Aluminium							
AN	Nickel-plated aluminium							
B1	Brass							
B2	Nickel-plated brass							
V4	Stainless steel							
Sealing material								
-	Standard, NBR							
T	PTFE							
V	FPM							
Actuator size								
50	50 mm							
80	80 mm							
Medium pressure								
V	-0.9 ... 0 bar							
3	Max. 3 bar							
4	Max. 4 bar							
5	Max. 5 bar							
6	Max. 6 bar							
7	Max. 7 bar							
8	Max. 8 bar							
9	Max. 9 bar							
10	Max. 10 bar							
12	Max. 12 bar							
16	Max. 16 bar							
20	Max. 20 bar							
22	Max. 22 bar							
25	Max. 25 bar							
40	Max. 40 bar							

Angle seat valves VZXF, NPT

Gunmetal (red brass), temperature of medium -10 ... +80 °C

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Function



Flow rate Kv
3.5 ... 28 m³/h

Connecting thread
1/2 NPT ... 2 NPT



General Technical data						
Line connection	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Nominal width DN [mm]	12	16	23	29	35	43
Design	Piston actuator with poppet valve					
Actuation type	Pneumatic					
Type of mounting	In-line installation					
Line connection	Threaded collar to ANSI/ASME B 1.20.1					
Sealing principle	Soft					
Mounting position	Optional					
Valve function	2/2-way, closed, monostable					
Pneumatic connection	Female thread G1/8					
Flow direction	Non-reversible					
Type of control	Externally controlled					
Reset method	Mechanical spring					
Exhaust air function	No flow control					
Flow direction	VZXF-...-A-...	Over valve seat, for gaseous media				
	VZXF-...-B-...	Under valve seat, for gaseous and liquid media				

Operating and environmental conditions						
Line connection	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Nominal pressure of process valve PN	16					
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Operating pressure [bar]	6 ... 10					
Medium	Vapour					
	Inert gases					
	Filtered compressed air, grade of filtration 200 µm					
	VZXF-...-B-... additionally	Mineral oil-based hydraulic fluid				
		Mineral oil				
		Neutral fluids				
		Water				
Max. viscosity [mm ² /s]	600					
Ambient temperature [°C]	-10 ... +60					
Temperature of medium [°C]	-10 ... +80					
CE marking (see declaration of conformity) ¹⁾	-			To EU Pressure Equipment Directive		

1) Additional information www.festo.com/sp → Certificates.

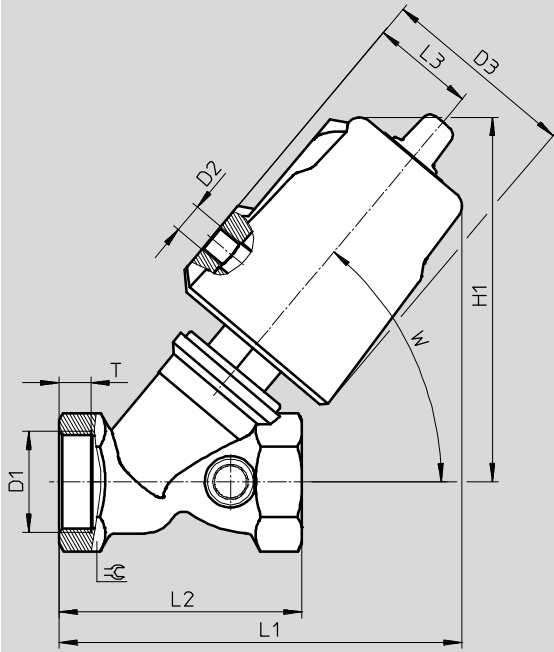
Materials	Material number
Process valve housing	Gunmetal (red brass) CC499K
Actuator housing	Brass
Spindle washer	NBR
Seat seal	PTFE
Note on materials	Contains PWIS (paint-wetting impairment substances) RoHS-compliant

Angle seat valves VZXF, NPT

Gunmetal (red brass), temperature of medium -10 ... +80 °C

Dimensions

Download CAD data → www.festo.com



Type	D1	D2	D3 Ø	H1	L1	L2	L3	T	W	∠
VZXF-L-...-N12-...-H3B1-50-...	1/2 NPT	G1/8	62	112	123	66	34	8	50°	27
VZXF-L-...-N34-...-H3B1-50-...	3/4 NPT			117	130	75		9		33
VZXF-L-...-N1-...-H3B1-50-...	1 NPT			121	133	80		10.5		41
VZXF-L-...-N114-...-H3B1-50-...	1 1/4 NPT			139	154	97		12.5		50
VZXF-L-...-N112-...-H3B1-50-...	1 1/2 NPT			145	161	107		14.5		56
VZXF-L-...-N2-...-H3B1-50-...	2 NPT			154	171	124		16.5		68

Ordering data

	Line connection	Flow rate Kv [m³/h]	Medium pressure [bar]	Corrosion resistance CRC ¹⁾	Product weight [g]	Part no.	Type	
	1/2 NPT	3.5	0 ... 16	1	1200	1002533	VZXF-L-M22C-M-A-N12-120-H3B1-50-16	
		3.7				1002534	VZXF-L-M22C-M-B-N12-120-H3B1-50-16	
	3/4 NPT	6.7	0 ... 16		1300	1002535	VZXF-L-M22C-M-A-N34-160-H3B1-50-16	
		5.2				1002536	VZXF-L-M22C-M-B-N34-160-H3B1-50-16	
	1 NPT	10.8	0 ... 16		1500	1002537	VZXF-L-M22C-M-A-N1-230-H3B1-50-16	
		9.6				1002538	VZXF-L-M22C-M-B-N1-230-H3B1-50-10	
	1 1/4 NPT	19	0 ... 10		1900	1002539	VZXF-L-M22C-M-A-N114-290-H3B1-50-10	
		6				1002540	VZXF-L-M22C-M-B-N114-290-H3B1-50-7	
	1 1/2 NPT	23	0 ... 8		2300	1002541	VZXF-L-M22C-M-A-N112-350-H3B1-50-8	
		16.5				1002542	VZXF-L-M22C-M-B-N112-350-H3B1-50-6	
	2 NPT	28	0 ... 4		2800	1002543	VZXF-L-M22C-M-A-N2-430-H3B1-50-4	
		23				1002544	VZXF-L-M22C-M-B-N2-430-H3B1-50-3	
			0 ... 3					

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

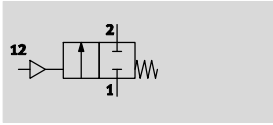
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Angle seat valves VZXF, NPT

Stainless steel casting, temperature of medium -40 ... +200 °C



Function



- - Flow rate Kv
3.3 ... 43 m³/h

- - Connecting thread
1/2 NPT ... 2 NPT



General Technical data		1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Line connection		13	18	24	31	35	45
Nominal width DN	[mm]	13	18	24	31	35	45
Design	Piston actuator with poppet valve						
Actuation type	Pneumatic						
Type of mounting	In-line installation						
Line connection	Threaded collar to ANSI/ASME B 1.20.1						
Sealing principle	Soft						
Mounting position	Optional						
Valve function	2/2-way, closed, monostable						
Pneumatic connection	Female thread G1/8						
Flow direction	Non-reversible						
Type of control	Externally controlled						
Reset method	Mechanical spring						
Exhaust air function	No flow control						
Flow direction	VZXF-...-A-...	Over valve seat, for gaseous media					
	VZXF-...-B-...	Under valve seat, for gaseous and liquid media					

Angle seat valves VZXF, NPT

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Stainless steel casting, temperature of medium -40 ... +200 °C

Operating and environmental conditions						
Line connection	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Nominal pressure of process valve PN	40					
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Operating pressure [bar]	6 ... 10					
Medium	Vapour					
	Inert gases					
	Filtered compressed air, grade of filtration 200 µm					
	VZXF-...-B-... additionally	Mineral oil-based hydraulic fluid				
		Mineral oil				
		Neutral fluids				
	Water					
Max. viscosity [mm ² /s]	600					
Ambient temperature [°C]	-10 ... +60					
Temperature of medium [°C]	-40 ... +200					
CE marking (see declaration of conformity) ¹⁾	-			To EU Pressure Equipment Directive		

1) Additional information www.festo.com/sp → Certificates.

Materials	Material number
Process valve housing	Stainless steel casting 1.4408
Actuator housing	High-alloy stainless steel
Spindle washer	PTFE
Seat seal	PTFE
Note on materials	Contains PWIS (paint-wetting impairment substances) RoHS-compliant

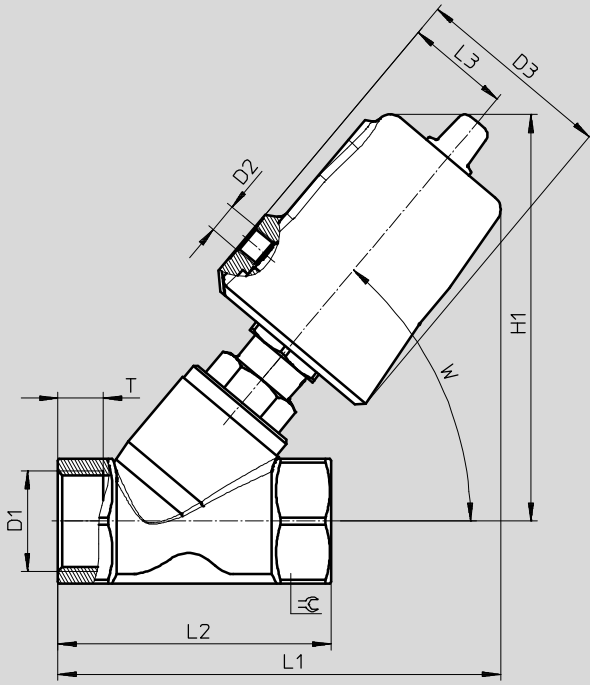
Angle seat valves VZXF, NPT

Stainless steel casting, temperature of medium -40 ... +200 °C



Dimensions


Download CAD data → www.festo.com



Type	D1	D2	D3 Ø	H1	L1	L2	L3	T	W	☉
VZXF-L-...-N12-...-V4V4T-50-...	1/2 NPT	G1/8	62	129	135	65	34	12	50°	27
VZXF-L-...-N34-...-V4V4T-50-...	3/4 NPT			130	138	75		13		32
VZXF-L-...-N1-...-V4V4T-50-...	1 NPT			135	146	90	15	42		
VZXF-L-...-N1-...-V4V4T-80-...	1 NPT		94	177	184	48	17	50		
VZXF-L-...-N114-...-V4V4T-50-...	1 1/4 NPT		62	151	155	110				34
VZXF-L-...-N114-...-V4V4T-80-...	1 1/4 NPT		94	183	194	48	19	55		
VZXF-L-...-N112-...-V4V4T-50-...	1 1/2 NPT		62	155	174	120				34
VZXF-L-...-N112-...-V4V4T-80-...	1 1/2 NPT		94	187	202	48	21	70		
VZXF-L-...-N2-...-V4V4T-50-...	2 NPT		62	167	193	150				34
VZXF-L-...-N2-...-V4V4T-80-...	2 NPT		94	199	222	48				

Angle seat valves VZXF, NPT

Stainless steel casting, temperature of medium -40 ... +200 °C

Ordering data								
	Line connection	Flow rate Kv [m³/h]	Medium pressure [bar]	Corrosion resistance CRC ¹⁾	Product weight [g]	Part no.	Type	
	1/2 NPT	3.8	0 ... 16	3	1300	1002545	VZXF-L-M22C-M-A-N12-130-M1-V4V4T-50-16	
		3.3	0 ... 40			1002546	VZXF-L-M22C-M-B-N12-130-M1-V4V4T-50-40	
	3/4 NPT	7.5	0 ... 16		1400	1002547	VZXF-L-M22C-M-A-N34-180-M1-V4V4T-50-16	
		6.5	0 ... 20			1002548	VZXF-L-M22C-M-B-N34-180-M1-V4V4T-50-20	
	1 NPT	12	0 ... 16		1600	1002549	VZXF-L-M22C-M-A-N1-240-M1-V4V4T-50-16	
		11	0 ... 10			1002550	VZXF-L-M22C-M-B-N1-240-M1-V4V4T-50-10	
		12.5	0 ... 16			3600	1002551	VZXF-L-M22C-M-A-N1-240-M1-V4V4T-80-16
		12	0 ... 22				1002552	VZXF-L-M22C-M-B-N1-240-M1-V4V4T-80-22
	1 1/4 NPT	18.5	0 ... 9		2200	1002553	VZXF-L-M22C-M-A-N114-310-M1-V4V4T-50-9	
		10.7	0 ... 7			1002554	VZXF-L-M22C-M-B-N114-310-M1-V4V4T-50-7	
		19	0 ... 16			3800	1002555	VZXF-L-M22C-M-A-N114-310-M1-V4V4T-80-16
		17.5	0 ... 10				1002556	VZXF-L-M22C-M-B-N114-310-M1-V4V4T-80-10
	1 1/2 NPT	25	0 ... 7		2500	1002557	VZXF-L-M22C-M-A-N112-350-M1-V4V4T-50-7	
		17.5	0 ... 6			1002558	VZXF-L-M22C-M-B-N112-350-M1-V4V4T-50-6	
		29	0 ... 16			4300	1002559	VZXF-L-M22C-M-A-N112-350-M1-V4V4T-80-16
		28	0 ... 8				1002560	VZXF-L-M22C-M-B-N112-350-M1-V4V4T-80-8
	2 NPT	34.5	0 ... 4		3500	1002561	VZXF-L-M22C-M-A-N2-450-M1-V4V4T-50-4	
		19.5	0 ... 3			1002562	VZXF-L-M22C-M-B-N2-450-M1-V4V4T-50-3	
		43	0 ... 12			5400	1002563	VZXF-L-M22C-M-A-N2-450-M1-V4V4T-80-12
		39	0 ... 5				1002564	VZXF-L-M22C-M-B-N2-450-M1-V4V4T-80-5

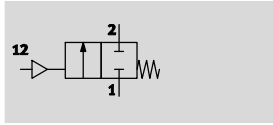
1) Corrosion resistance class CRC 3 to Festo standard FN 940070
 High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

Angle seat valves VZXF, NPT

Stainless steel casting, nickel-plated actuator head

FESTO

function



Flow rate Kv
3.3 ... 34.5 m³/h

1/2 NPT ... 2 NPT



General Technical data						
Line connection	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Nominal width DN [mm]	13	18	24	31	35	45
Design	Piston actuator with poppet valve					
Actuation type	Pneumatic					
Type of mounting	In-line installation					
Line connection	Threaded collar to ANSI/ASME B 1.20.1					
Sealing principle	Soft					
Mounting position	Optional					
Valve function	2/2-way, closed, monostable					
Pneumatic connection	Female thread G1/8					
Flow direction	Non-reversible					
Type of control	Externally controlled					
Reset method	Mechanical spring					
Exhaust air function	No flow control					
Flow direction	VZXF-...-A-...	Over valve seat, for gaseous media				
	VZXF-...-B-...	Under valve seat, for gaseous and liquid media				

Operating and environmental conditions						
Line connection	1/2 NPT	3/4 NPT	1 NPT	1 1/4 NPT	1 1/2 NPT	2 NPT
Nominal pressure of process valve PN	40					
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Operating pressure [bar]	6 ... 10					
Medium	Vapour					
	Inert gases					
	Filtered compressed air, grade of filtration 200 µm					
	VZXF-...-B-... additionally	Mineral oil-based hydraulic fluid				
		Mineral oil				
		Neutral fluids				
		Water				
Max. viscosity [mm ² /s]	600					
Ambient temperature [°C]	-10 ... +60					
Temperature of medium [°C]	-40 ... +200					
CE marking (see declaration of conformity) ¹⁾	-			To EU Pressure Equipment Directive		

1) Additional information www.festo.com/sp → Certificates.

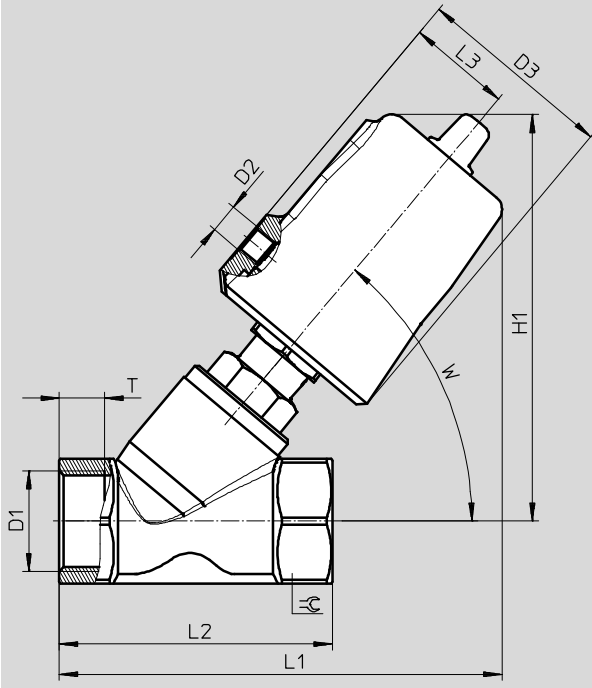
Materials	Material number
Process valve housing	Stainless steel casting 1.4408
Actuator housing	Nickel-plated brass
Spindle washer	PTFE
Seat seal	PTFE
Note on materials	Contains paint-wetting impairment substances RoHS-compliant

Angle seat valves VZXF, NPT

Stainless steel casting, nickel-plated actuator head

Dimensions

Download CAD data → www.festo.com



Type	D1	D2	D3 ∅	H1	L1	L2	L3	T	W	∅
VZXF-L-...-N12-...-V4B2T-50-...	1/2 NPT	G1/8	62	128	133	65	34	12	50°	27
VZXF-L-...-N34-...-V4B2T-50-...	3/4 NPT			128	136.5	75		13		32
VZXF-L-...-N1-...-V4B2T-50-...	1 NPT			133	145	90		15		41
VZXF-L-...-N114-...-V4B2T-50-...	1 1/4 NPT			150	163.5	110		17		50
VZXF-L-...-N112-...-V4B2T-50-...	1 1/2 NPT			153	172	120		19		55
VZXF-L-...-N2-...-V4B2T-50-...	2 NPT			167	193	150		21		70

Ordering data

	Line connection	Flow rate Kv [m³/h]	Medium pressure [bar]	Corrosion resistance CRC ¹⁾	Product weight [g]	Part no.	Type
	1/2 NPT	3.3	0 ... 40	2	1300	3539722	VZXF-L-M22C-M-B-N12-130-M1-V4B2T-50-40
		3/4 NPT	7.5		0 ... 16	1400	3539746
	6.5		0 ... 20			3539747	VZXF-L-M22C-M-B-N34-180-M1-V4B2T-50-20
	1 NPT	12	0 ... 16		1600	3539784	VZXF-L-M22C-M-A-N1-240-M1-V4B2T-50-16
		11	0 ... 10			3539785	VZXF-L-M22C-M-B-N1-240-M1-V4B2T-50-10
	1 1/4 NPT	18.5	0 ... 9		2200	3539817	VZXF-L-M22C-M-A-N114-310-M1-V4B2T-50-9
		10.7	0 ... 7			3539818	VZXF-L-M22C-M-B-N114-310-M1-V4B2T-50-7
	1 1/2 NPT	25	0 ... 7		2500	3539928	VZXF-L-M22C-M-A-N112-350-M1-V4B2T-50-7
		17.5	0 ... 6			3539929	VZXF-L-M22C-M-B-N112-350-M1-V4B2T-50-6
	2 NPT	34.5	0 ... 4		3500	3540143	VZXF-L-M22C-M-A-N2-450-M1-V4B2T-50-4
		19.5	0 ... 3			3540144	VZXF-L-M22C-M-B-N2-450-M1-V4B2T-50-3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

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