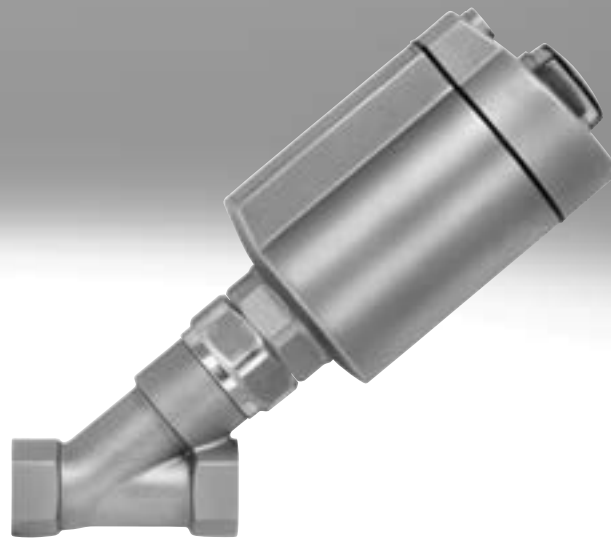


Angle seat valves VZXA

FESTO

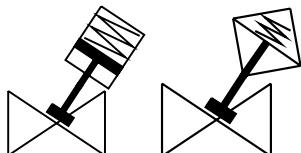


Key features

Function

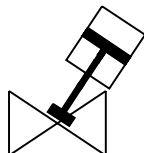
The angle seat valves VZXA are externally actuated valves that are controlled by a direct supply of compressed air and are used to shut off gaseous or liquid media in pipe systems. In the process, a spindle with a soft-sealing valve disc is raised and lowered using a pneumatic actuator. In all the versions mentioned below, the valve seat is slanted around 40° in relation to the medium flow. The flow direction is determined by the design of the valve (angle seat and actuator).

NC version (normally closed)



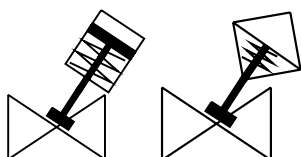
In the normal position, the valve is closed by springs. When the actuator is supplied with operating pressure, it raises the control piston and, at the same time, the valve disc too – this opens the valve.

DA version (double-acting)



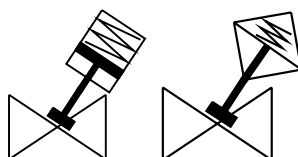
The control function is performed by alternate pneumatic actuation of the actuator chambers. Only available for the piston actuator.

NO version (normally open)



In the normal position, the valve is opened by a spring. When the actuator is supplied with operating pressure, it lowers the control piston and, at the same time, the valve disc too – this closes the valve.

NC version (normally closed) with reduced spring force



In the normal position the valve is closed by a spring (reduced spring force for low operating pressures). When the actuator is supplied with operating pressure, it raises the control piston and, at the same time, the valve disc too – this opens the valve.


Economical

- Modular design
- Hygienic design, insensitive to dirt
- Long service life
- Quick and easy maintenance
- High flow rates achievable

Versatile

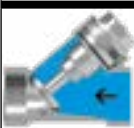

- Control of medium flows (gaseous and liquid) in closed and open circuits
- The angle seat valves VZXA are simple and sturdy and are thus perfectly suitable for almost all media with a viscosity of up to 600 mm²/s
- The angle seat valves VZXA made from stainless steel with PTFE seals have high chemical and thermal resistance
- Also suitable for vacuum applications
- Temperature of medium –30 ... +200°C

Design

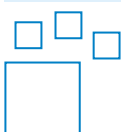
- G thread to DIN ISO 228-1 Parallel Whitworth pipe thread, non-metallic seal: must either be provided with an annular seal on the outside of the thread or must be sealed by wrapping the thread with PTFE or hemp
- NPT thread to ANSI/ASME B 1.20.1 American tapered pipe thread with sealing material in the thread, female thread tapered, male thread tapered
- Rc thread to DIN 10226-2 Pipe thread for sealing joints in the thread, female thread tapered, male thread tapered
- Connection sizes DN13 ... DN65 and 1/2" ... 2 1/2"
- Pressure of medium 0 ... 30 bar
- Operating pressure 5 ... 10 bar
- Threaded collar connection
- ATEX
 - 
 - Piston actuator with low space requirement, can close against pressures up to 10 bar, in actuator sizes 46 mm and 75 mm
 - Diaphragm actuator without stick-slip effect, ideal for high force requirements and control applications, in actuator size 90 mm
 - The interface screws between the valve body and the piston and diaphragm actuators are identical to spanner size AF46



Product range overview

Product range overview			
	Type	Control function	Flow direction
	VZX-A-...	<ul style="list-style-type: none"> Closed via reduced spring force, NC 	<ul style="list-style-type: none"> Over the valve seat For gaseous media, "closing in the direction of the medium flow" is used
	VZX-B-...	<ul style="list-style-type: none"> Closed via spring force, NC Opened via spring force, NO Double-acting, DA 	<ul style="list-style-type: none"> Under the valve seat For gaseous and liquid media, "closing against the direction of medium flow" is used in order to prevent or reduce water hammer

Ordering data – Product options

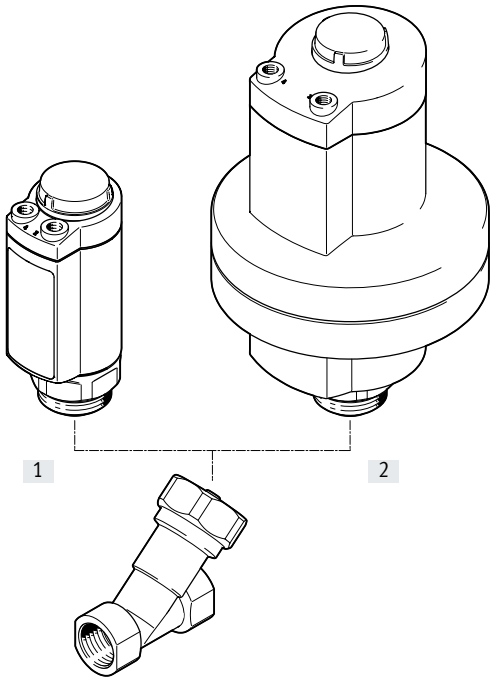


Configurable product
 This product and all its product options can be ordered using the configurator.

The configurator can be found under Products on the DVD or at
[→ www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

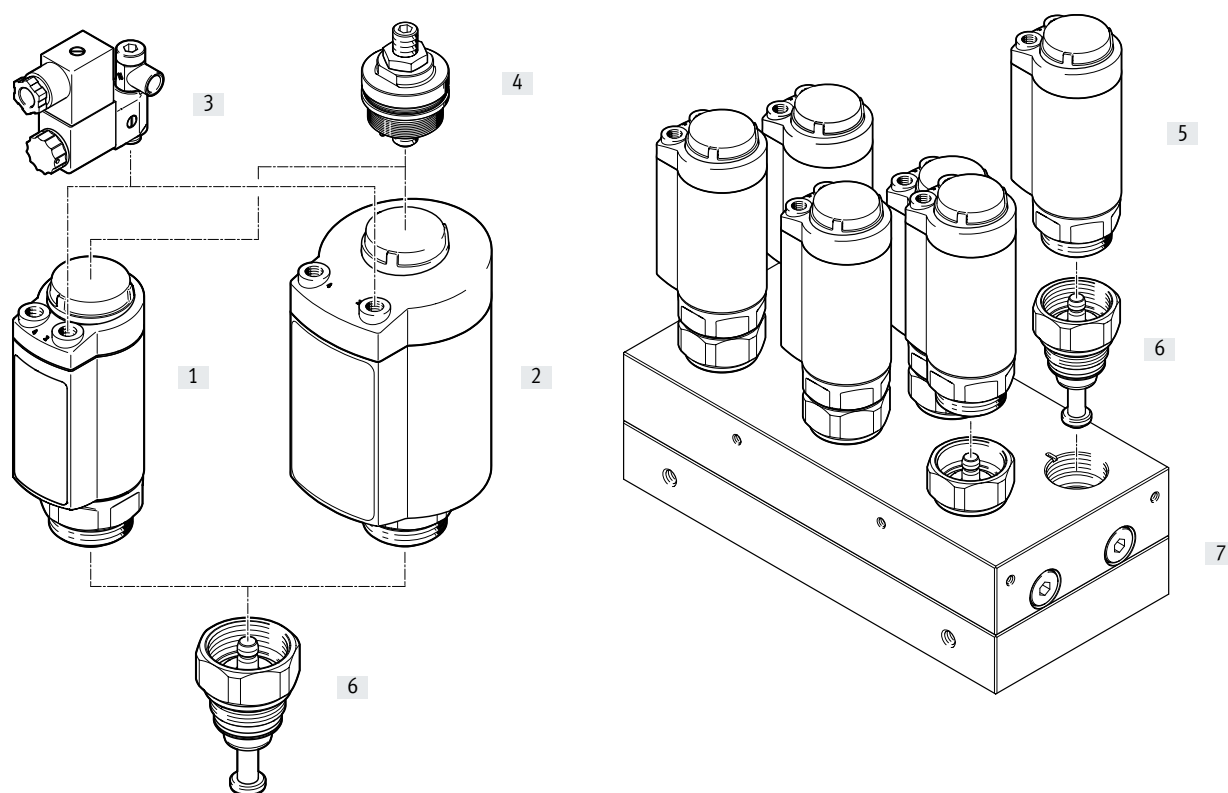
Part no.	Type
3539410	VZX

Peripherals overview



Designation	Description	→ Page
Angle seat valve VZXA		
[1] Piston actuator	<ul style="list-style-type: none"> In actuator sizes 46 mm and 75 mm Minimal space requirement 	7
[2] Diaphragm actuator	<ul style="list-style-type: none"> In actuator size 90 mm Without stick-slip effect, ideal for high force requirements and control applications 	13

Peripherals overview



Mounting components and accessories

	Description	→ Page
Parts available to purchase separately for customised valve block solutions		
[1]	Piston actuator DFPK	Actuator size 46 mm 20
[2]	Piston actuator DFPK	Actuator size 75 mm 20
[3]	Pilot valve VOFX	<ul style="list-style-type: none"> • Mounted directly on the actuator • Can be ordered separately as an accessory 24
[4]	Stroke reducing kit VAVA	<ul style="list-style-type: none"> • Piston rod stroke is reduced using a threaded pin or shock absorber • For angle seat valves VZXA with piston and diaphragm actuator • For piston actuators DFPK • Can be ordered separately as an accessory 26
[5]	Piston actuator DFPK	<ul style="list-style-type: none"> • In actuator sizes 46 mm and 75 mm • Can be ordered separately as an accessory 20
[6]	Cover kit VAVC	<ul style="list-style-type: none"> • Includes spindles and sealing components • Can be ordered separately as an accessory 22
[7]	Manifold block	Requirements and dimensions for manufacturing → www.festo.com/sp (Expert knowledge) -

Type codes

001	Series
VZXA	Process valve

002	Flow direction
A	Above valve seat, for gaseous media
B	Below valve seat, for gaseous and liquid media

003	Cable connection
T	Threaded collar

004	Connection standard
S6	G thread to DIN ISO 228
S7	NPT thread to ANSI/ASME B 1.20.1
S13	Rc thread to DIN 10226

005	Connection size
1/2"	1/2"
3/4"	3/4"
1"	1"
1 1/4"	1 1/4"
1 1/2"	1 1/2"
2"	2"
2 1/2"	2 1/2"
13	DN13
20	DN20
25	DN25
32	DN32
40	DN40
50	DN50
65	DN65

006	Temperature of medium
M2	-10 ... +180°C
M3	-10 ... +200°C

007	Valve housing material
V13	Stainless steel 1.4409
V14	Stainless steel ASTM A351-CF3M
B1	Brass

008	Seat seal material
T	PTFE
TP	PTFE modified

009	Medium pressure
4	0 ... 4 bar
4.4	0 ... 4.4 bar
4.8	0 ... 4.8 bar
5.6	0 ... 5.6 bar
5.8	0 ... 5.8 bar
6	0 ... 6 bar
6.2	0 ... 6.2 bar
6.8	0 ... 6.8 bar
7.5	0 ... 7.5 bar
8	0 ... 8 bar
8.3	0 ... 8.3 bar
9.3	0 ... 9.3 bar
10	0 ... 10 bar
11.5	0 ... 11.5 bar
12.2	0 ... 12.2 bar
12.8	0 ... 12.8 bar
13.5	0 ... 13.5 bar
14.5	0 ... 14.5 bar
15.5	0 ... 15.5 bar
16	0 ... 16 bar
23	0 ... 23 bar
25	0 ... 25 bar
30	0 ... 30 bar

010	Drive
K	Piston drive
M	Diaphragm actuator

011	Drive size
46	46 mm
75	75 mm
90	90 mm

012	Stroke
17	17
20	20
26	26

013	Control function
	Closed via spring force, N/C
D	Double-acting
S	Opened via spring force, N/O
PR	Closed via reduced spring force, N/C

014	Drive housing material
V4	Stainless steel 1.4408

015	EU certification
	None
EX4	II 2GD

Data sheet



- Poppet valve with piston actuator
- Line connection
1/2" ... 2", DN13 ... DN50
- Stroke
17 ... 20 mm


General technical data

Line connection		DN13, 1/2"	DN20, 3/4"	DN25, 1"	DN32, 1 1/4"	DN40, 1 1/2"	DN50, 2"
Actuator		D46	D46	D75	D46	D75	D75
Flow rate Kv	VZXA-A-... [m ₃ /h]	6.6	–	14.5	–	21.5	–
	VZXA-B-... [m ₃ /h]	6	13.3	13.5	20.3	22.6	27.9
Design	Poppet valve with piston actuator						
Actuation type	Pneumatic						
Type of mounting	In-line installation						
Mounting position	Any						
Valve function	2/2						
Pneumatic connection	Female thread G1/8						
Flow direction	Non-reversible						
Reset method	Mechanical spring						
Type of control	Externally controlled						
Position sensing	Via mechanical indicator						
Control of the medium	On/off operation						
Control function	VZXA-A-...	Closed via reduced spring force, NC					
	VZXA-B-...	Closed via spring force, NC					
Flow direction	VZXA-A-...	Over the valve seat, for gaseous media					
	VZXA-B-...	Under the valve seat, for gaseous and liquid media					

Angle seat valves VZXA, with piston actuator

Data sheet

Operating and environmental conditions		
Operating pressure ¹⁾	[bar]	5 ... 10
Ambient temperature	[°C]	0 ... +60
Temperature of medium ²⁾	[°C]	-10 ... +180
Storage temperature	[°C]	-10 ... +60
CE marking (see declaration of conformity) ³⁾		To EU Machinery Directive
Certification		CRN
Certificate issuing authority		CRN0C20829.5C
Degree of protection		IP65 IP67 IP69K
Max. viscosity	[mm ² /s]	600
Medium		Vapour Inert gases Filtered compressed air, grade of filtration 200 µm VZXA-B-... additionally Mineral oil-based hydraulic fluid Mineral oil Water Neutral fluids
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Safety Integrity Level (SIL)		SIL 2
PFH		0.00000014
PFD		0.000595
Certificate issuing authority		German Technical Control Board (TÜV) 968/V 1039.0 0/18

- 1) See table "pressure of medium and operating pressure" for control function
 2) Temperature of medium -30 ... +200°C only possible in conjunction with modified PTFE seat seal (see modular product system)
 3) Additional information is available at www.festo.com/sp → Certificates.

ATEX ¹⁾		
ATEX category for gas		II 2G
Type of ignition protection for gas		c T6 ... T3 X
ATEX category for dust		II 2D
Type of ignition protection for dust		c T80°C ... T200°C X
Explosion-proof ambient temperature	[°C]	0 °C ≤ Ta ≤ +60°C

- 1) Selected types → www.festo.com

Materials	Material number	
Piston rod	High-alloy stainless steel	
Cover	Stainless steel casting	
Seals	FPM	
Spindle seal	PTFE	
Seat seal	PTFE	
Actuator housing	Stainless steel casting	1.4408
Angle seat housing	Stainless steel casting	1.4409 ASTM A351-CF3M
Note on materials	Contains paint-wetting impairment substances RoHS-compliant	

Data sheet

Pressure of medium and operating pressure for control function NC, VZXA-B (flow direction under the valve seat)						
Actuator size	Min. pressure of medium [bar]		Max. pressure of medium [bar]		Min. operating pressure [bar]	
	46 mm	75 mm	46 mm	75 mm	46 mm	75 mm
DN13, 1/2"	-0.9 ¹⁾	-	30 ¹⁾	-	4.8	-
DN20, 3/4"	-0.9 ¹⁾	-0.9 ¹⁾	12.8 ¹⁾	30 ¹⁾	4.8	4.6
DN25, 1"	-0.9 ¹⁾	-0.9 ¹⁾	8.3 ¹⁾	23 ¹⁾	4.8	4.6
DN32, 1 1/4"	-0.9 ¹⁾	-0.9 ¹⁾	4.4 ¹⁾	13.5 ¹⁾	4.8	4.6
DN40, 1 1/2"	-	-0.9 ¹⁾	-	9.3 ¹⁾	-	4.6
DN50, 2"	-	-0.9 ¹⁾	-	5.6 ¹⁾	-	4.6

1) Also suitable for vacuum applications

Pressure of medium and operating pressure for control function NC with reduced spring force, VZXA-B-...-PR (flow direction under the valve seat)				
Actuator size	Max. pressure of medium [bar]		Min. operating pressure [bar]	
	46 mm	75 mm	46 mm	75 mm
DN13, 1/2"	11.5	-	2.6	-
DN20, 3/4"	6	16	2.6	2.2
DN25, 1"	-	9.3	-	2.2
DN32, 1 1/4"	-	4.8	-	2.2
DN40, 1 1/2"	-	4	-	2.2

Pressure of medium and operating pressure for control function NO opened via spring force, VZXA-B-...-S (flow direction under the valve seat)				
Actuator size	Max. pressure of medium [bar]		Min. operating pressure [bar]	
	46 mm	75 mm	46 mm	75 mm
DN13, 1/2"	16	-	3.4	-
DN20, 3/4"	13.5	16	5	3.4
DN25, 1"	8.3	16	5	4
DN32, 1 1/4"	-	16	-	5
DN40, 1 1/2"	-	10	-	5
DN50, 2"	-	6.2	-	5

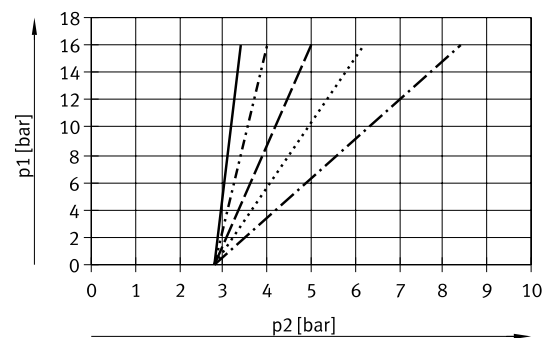
Pressure of medium p₁ and operating pressure p₂ for control function NO, opened via spring force, VZXA-B-...-S (flow direction under the valve seat)

Piston actuator size 46 mm

Piston actuator size 75 mm



- DN13, 1/2"
- · - · - · DN20, 3/4"
- - - - - DN25, 1"



- DN20, 3/4"
- · - · - · DN25, 1"
- - - - - DN32, 1 1/4"
- - · - · - · DN40, 1 1/2"
- · - · - · DN50, 2"

Data sheet

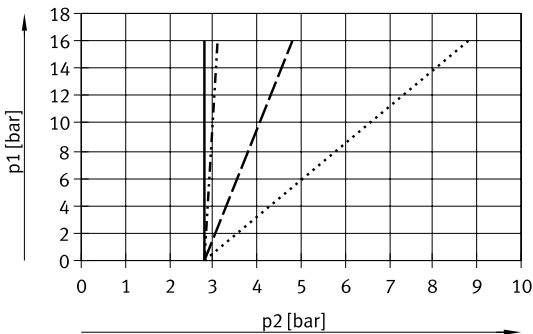
Pressure of medium and operating pressure for double-acting control function, VZXA-B-...-D (flow direction under the valve seat)

Actuator size	Max. pressure of medium [bar]		Min. operating pressure [bar]	
	46 mm	75 mm	46 mm	75 mm
DN13, 1/2"	16	–	2.8	–
DN20, 3/4"	16	16	3.1	2.8
DN25, 1"	16	16	4.8	2.8
DN32, 1 1/4"	6	16	5	2.8
DN40, 1 1/2"	–	16	–	3.8
DN50, 2"	–	10	–	5

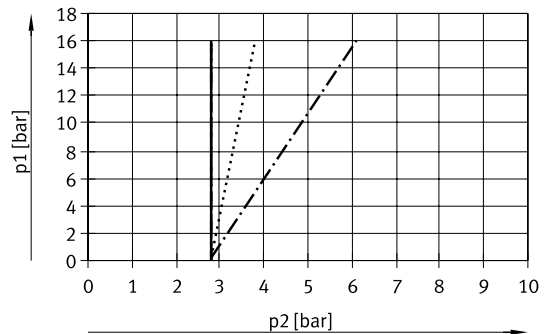
Pressure of medium p1 and operating pressure p2 for double-acting control function, VZXA-B-...-D (flow direction under the valve seat)

Piston actuator size 46 mm

Piston actuator size 75 mm



- DN13, 1/2"
- DN20, 3/4"
- DN25, 1"
- · - · DN32, 1 1/4"



- DN20, 3/4" and DN25, 1" and DN32, 1 1/4"
- DN40, 1 1/2"
- · - · DN50, 2"

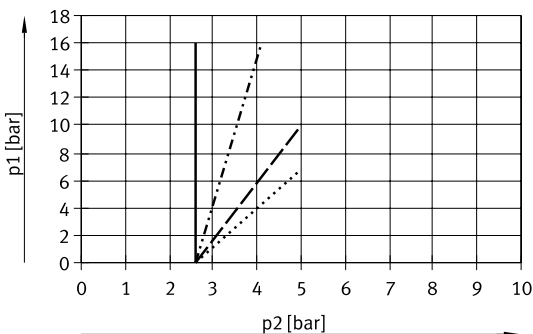
Pressure of medium and operating pressure for control function NC with reduced spring force, VZXA-A-...-PR (flow direction over the valve seat)

Actuator size	Max. pressure of medium [bar]		Min. operating pressure [bar]	
	46 mm	75 mm	46 mm	75 mm
DN13, 1/2"	16	–	2.6	–
DN20, 3/4"	16	16	4.1	2.4
DN25, 1"	10	16	5	3.1
DN32, 1 1/4"	6.8	16	5	4.2
DN40, 1 1/2"	–	15.5	–	5
DN50, 2"	–	8	–	5

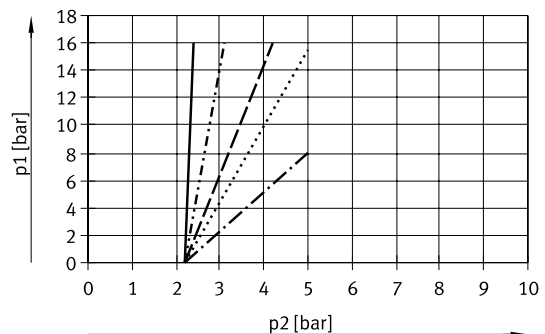
Pressure of medium p1 and operating pressure p2 for control function NC with reduced spring force, VZXA-A-...-PR (flow direction over the valve seat)

Piston actuator size 46 mm

Piston actuator size 75 mm



- DN13, 1/2"
- DN20, 3/4"
- DN25, 1"
- · - · DN32, 1 1/4"

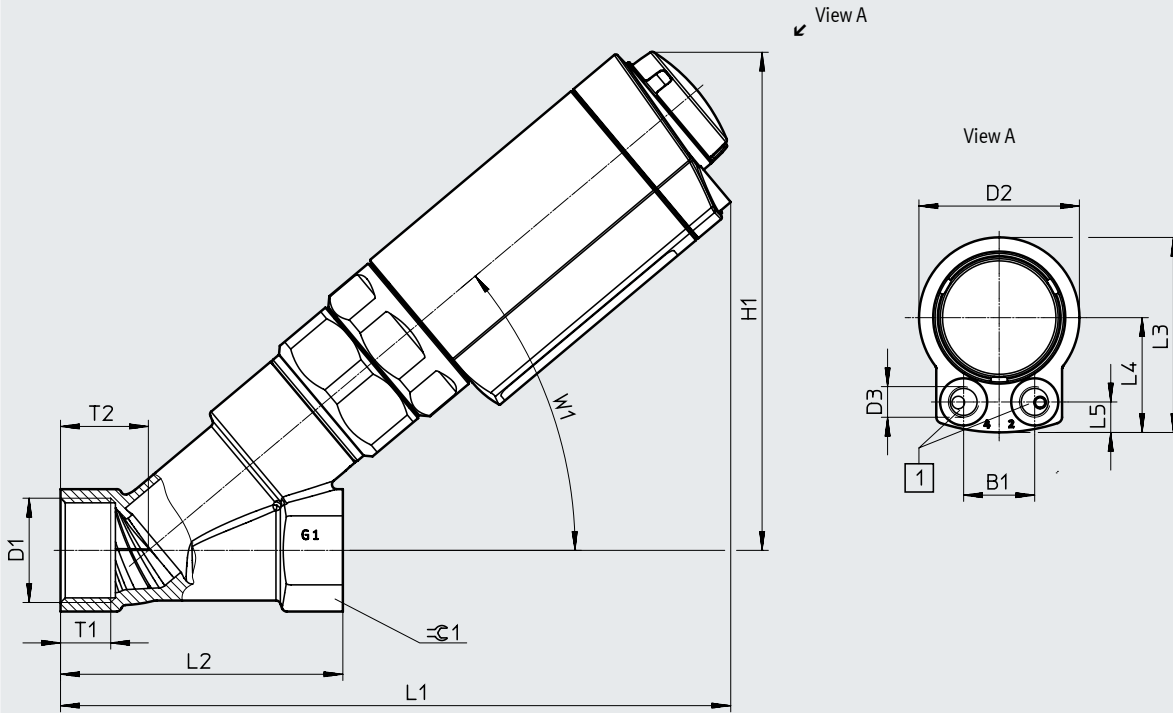


- DN20, 3/4"
- DN25, 1"
- DN32, 1 1/4"
- DN40, 1 1/2"
- · - · DN50, 2"

Data sheet

Dimensions

Download CAD data → www.festo.com



[1] Pneumatic connection

Type	B1	D1			D2 ø	D3	H1	L1	L2
		S6	S7	S13					
VZXA-A-...13-...16-...46-17-...	22.6	G1/2	1/2 NPT	Rc1/2	51	G1/8	159	202	65
VZXA-A-...20-...16-...75-20-...	41	G3/4	3/4 NPT	Rc3/4	82.6		187	234	75
VZXA-A-...25-...16-...75-20-...	41	G1	1 NPT	Rc1	82.6		192	244	90
VZXA-B-...13-...30-...46-17-...	22.6	G1/2	1/2 NPT	Rc1/2	51		159	202	65
VZXA-B-...20-...12.8-...46-17-...	22.6	G3/4	3/4 NPT	Rc3/4	51		158	203	75
VZXA-B-...20-...30-...75-20-...	41	G3/4	3/4 NPT	Rc3/4	82.6		187	234	75
VZXA-B-...25-...8.3-...46-17-...	22.6	G1	1 NPT	Rc1	51		164	214	90
VZXA-B-...25-...23-...75-20-...	41	G1	1 NPT	Rc1	82.6		192	244	90
VZXA-B-...32-...4.4-...46-17-...	22.6	G1 1/4	1 1/4 NPT	Rc1 1/4	51		168	218	110
VZXA-B-...32-...13.5-...75-20-...	41	G1 1/4	1 1/4 NPT	Rc1 1/4	82.6		198	248	110
VZXA-B-...40-...9.3-...75-20-...	41	G1 1/2	1 1/2 NPT	Rc1 1/2	82.6		216	270	120
VZXA-B-...50-...5.6-...75-20-...	41	G2	2 NPT	Rc2	82.6		215	286	150

Type	L3	L4	L5	T1			T2	W1	≈C1
				S6	S7	S13			
VZXA-A-...13-...16-...46-17-...	62	36.5	26.8	14	13.7	13.2	21.5	40	25
VZXA-A-...20-...16-...75-20-...	94.4	53.1	41	16	14	14.5	24	40	32
VZXA-A-...25-...16-...75-20-...	94.4	53.1	41	16	16.8	16.8	28	40	41
VZXA-B-...13-...30-...46-17-...	62	36.5	26.8	14	13.7	13.2	21.5	40	25
VZXA-B-...20-...12.8-...46-17-...	62	36.5	26.8	16	14	14.5	24	40	32
VZXA-B-...20-...30-...75-20-...	94.4	53.1	41	16	14	14.5	24	40	32
VZXA-B-...25-...8.3-...46-17-...	62	36.5	26.8	16	16.8	16.8	28	40	41
VZXA-B-...25-...23-...75-20-...	94.4	53.1	41	16	16.8	16.8	28	40	41
VZXA-B-...32-...4.4-...46-17-...	62	36.5	26.8	20	17.3	19.1	36	42	50
VZXA-B-...32-...13.5-...75-20-...	94.4	53.1	41	20	17.3	19.1	36	42	50
VZXA-B-...40-...9.3-...75-20-...	94.4	53.1	41	22	17.3	19.1	38	42	55
VZXA-B-...50-...5.6-...75-20-...	94.4	53.1	41	24	17.6	23.4	43	40	65

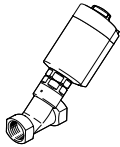
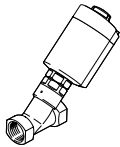
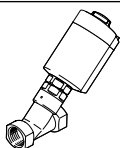
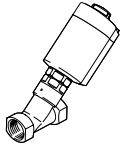
Angle seat valves VZXA, with piston actuator

Data sheet

Ordering data

Characteristics:

- Control function closed via spring force, NC
- Without ATEX certification

VZXA-A-..., flow direction over the valve seat		Flow rate Kv [m ³ /h]	Pressure of medium [bar]	Weight [g]	Part no.	Type
G thread to DIN ISO 228-1						
	DN13, 46 mm actuator	6.6	0 ... 16	1775	8060513	VZXA-A-TS6-13-M2-V13T-16-K-46-17-PR-V4
	DN20, 75 mm actuator	14.5		3155	8060514	VZXA-A-TS6-20-M2-V13T-16-K-75-20-PR-V4
	DN25, 75 mm actuator	21.5		3395	8060515	VZXA-A-TS6-25-M2-V13T-16-K-75-20-PR-V4
NPT thread to ANSI/ASME B 1.20.1						
	1/2", 46 mm actuator	6.6	0 ... 16	1775	8060520	VZXA-A-TS7-1/2"-M2-V14T-16-K-46-17-PR-V4
	3/4", 75 mm actuator	14.5		3155	8060521	VZXA-A-TS7-3/4"-M2-V14T-16-K-75-20-PR-V4
	1", 75 mm actuator	21.5		3395	8060522	VZXA-A-TS7-1"-M2-V14T-16-K-75-20-PR-V4
VZXA-B-..., flow direction under the valve seat		Flow rate Kv [m ³ /h]	Pressure of medium [bar]	Weight [g]	Part no.	Type
G thread to DIN ISO 228-1						
	DN13, 46 mm actuator	6	0 ... 30	1830	8060527	VZXA-B-TS6-13-M2-V13T-30-K-46-17-V4
	DN20, 46 mm actuator	13.3	0 ... 12.8	1910	8060528	VZXA-B-TS6-20-M2-V13T-12.8-K-46-17-V4
	DN20, 75 mm actuator	13.5	0 ... 30	3360	8060529	VZXA-B-TS6-20-M2-V13T-30-K-75-20-V4
	DN25, 46 mm actuator	20.3	0 ... 8.3	2150	8060530	VZXA-B-TS6-25-M2-V13T-8.3-K-46-17-V4
	DN25, 75 mm actuator	22.6	0 ... 23	3600	8060531	VZXA-B-TS6-25-M2-V13T-23-K-75-20-V4
	DN32, 46 mm actuator	27.9	0 ... 4.4	2480	8060533	VZXA-B-TS6-32-M2-V13T-4.4-K-46-17-V4
	DN32, 75 mm actuator	30.3	0 ... 13.5	3930	8060534	VZXA-B-TS6-32-M2-V13T-13.5-K-75-20-V4
	DN40, 75 mm actuator	41.4	0 ... 9.3	4610	8060536	VZXA-B-TS6-40-M2-V13T-9.3-K-75-20-V4
DN50, 75 mm actuator	50.1	0 ... 5.6	5430	8060538	VZXA-B-TS6-50-M2-V13T-5.6-K-75-20-V4	
NPT thread to ANSI/ASME B 1.20.1						
	1/2", 46 mm actuator	6	0 ... 30	1830	8060541	VZXA-B-TS7-1/2"-M2-V14T-30-K-46-17-V4
	3/4", 46 mm actuator	13.3	0 ... 12.8	1910	8060542	VZXA-B-TS7-3/4"-M2-V14T-12.8-K-46-17-V4
	3/4", 75 mm actuator	13.5	0 ... 30	3360	8060543	VZXA-B-TS7-3/4"-M2-V14T-30-K-75-20-V4
	1", 46 mm actuator	20.3	0 ... 8.3	2150	8060544	VZXA-B-TS7-1"-M2-V14T-8.3-K-46-17-V4
	1", 75 mm actuator	22.6	0 ... 23	3600	8060545	VZXA-B-TS7-1"-M2-V14T-23-K-75-20-V4
	1 1/4", 46 mm actuator	27.9	0 ... 4.4	2480	8060547	VZXA-B-TS7-1 1/4"-M2-V14T-4.4-K-46-17-V4
	1 1/4", 75 mm actuator	30.3	0 ... 13.5	3930	8060548	VZXA-B-TS7-1 1/4"-M2-V14T-13.5-K-75-20-V4
	1 1/2", 75 mm actuator	41.4	0 ... 9.3	4610	8060550	VZXA-B-TS7-1 1/2"-M2-V14T-9.3-K-75-20-V4
	2", 75 mm actuator	50.1	0 ... 5.6	5430	8060552	VZXA-B-TS7-2"-M2-V14T-5.6-K-75-20-V4

Data sheet



- Poppet valve with diaphragm actuator
- Line connection
1/2" ... 2 1/2", DN13 ... DN65
- Stroke
26 mm



General technical data		DN25, 1"	DN32, 1 1/4"	DN40, 1 1/2"	DN50, 2"	DN65, 2 1/2"
Line connection						
Actuator size	[mm]	90				
Stroke	[mm]	26				
Flow rate Kv	VZXA-A-... [m ³ /h]	–	35.4	47.4	68.5	77.4
	VZXA-B-... [m ³ /h]	23.6	33.1	49	60.4	77.9
Design	Poppet valve with diaphragm actuator					
Actuation type	Pneumatic					
Type of mounting	In-line installation					
Mounting position	Any					
Valve function	2/2					
Pneumatic connection	Female thread G1/8					
Flow direction	Non-reversible					
Reset method	Mechanical spring					
Type of control	Externally controlled					
Position sensing	Via mechanical indicator					
Control of the medium	On/off operation					
Control function	VZXA-A-...	–	Closed via reduced spring force, NC			
	VZXA-B-...	Closed via spring force, NC				
Flow direction	VZXA-A-...	–	Over the valve seat, for gaseous media			
	VZXA-B-...	Under the valve seat, for gaseous and liquid media				

Data sheet

Operating and environmental conditions		
Operating pressure ¹⁾	[bar]	5 ... 7
Ambient temperature	[°C]	0 ... +60
Temperature of medium ²⁾	[°C]	-10 ... +180
Storage temperature	[°C]	-10 ... +60
CE marking (see declaration of conformity) ³⁾		To EU Machinery Directive
Certification		CRN
Certificate issuing authority		CRN0C20829.5C
Degree of protection		IP65 IP67 IP69K
Max. viscosity	[mm ² /s]	600
Medium		Vapour Inert gases Filtered compressed air, grade of filtration 200 µm VZXA-B-... additionally Mineral oil-based hydraulic fluid Mineral oil Water Neutral fluids
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Safety Integrity Level (SIL)		SIL 2
PFH		0.0000014
PFD		0.000595
Certificate issuing authority		German Technical Control Board (TÜV) 968/V 1039.0 0/18

- 1) See table "pressure of medium and operating pressure" for control function
- 2) Temperature of medium -30 ... +200°C only possible in conjunction with modified PTFE seat seal (see modular product system)
- 3) Additional information is available at www.festo.com/sp → Certificates.

ATEX ¹⁾		
ATEX category for gas		II 2G
Type of ignition protection for gas		c T6 ... T3 X
ATEX category for dust		II 2D
Type of ignition protection for dust		c T80°C ... T200°C X
Explosion-proof ambient temperature	[°C]	0 °C ≤ Ta ≤ +60°C

- 1) Selected types → www.festo.com

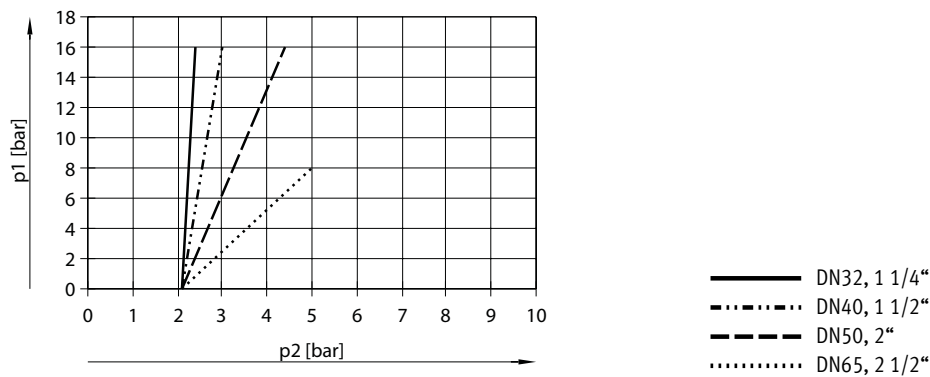
Data sheet

Materials		Material number
Piston rod	High-alloy stainless steel	
Cover	Stainless steel casting	
Seals	NBR	
Spindle seal	PTFE	
Seat seal	PTFE	
Actuator housing	Stainless steel casting	1.4408
Angle seat housing	Stainless steel casting	1.4409
		ASTM A351-CF3M
Note on materials	Contains paint-wetting impairment substances	
	RoHS-compliant	

Permissible operating pressure as a function of pressure of medium for control function NC, VZXA-B-...		
	Min. operating pressure [bar]	Max. pressure of medium [bar]
Actuator size	90 mm	
DN25, 1"	5	30
DN32, 1 1/4"	5	25
DN40, 1 1/2"	5	16
DN50, 2"	5	10

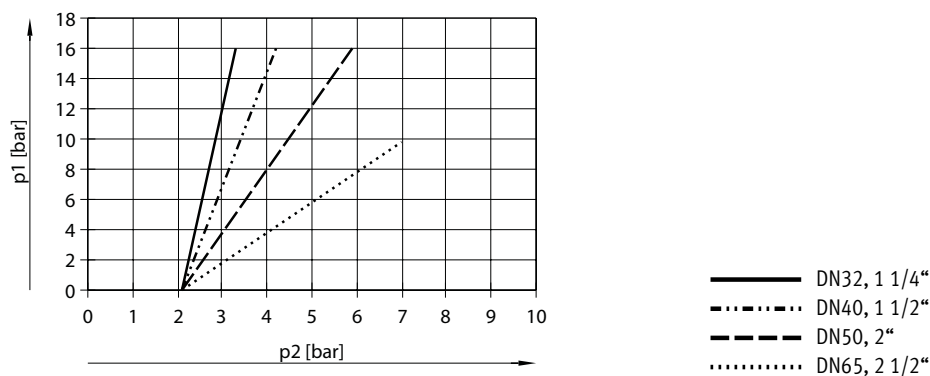
Pressure of medium p1 and operating pressure p2 for control function NC with reduced spring force, VZXA-A-...-PR (flow direction over the valve seat)

Diaphragm actuator size 90 mm



Pressure of medium p1 and operating pressure p2 for control function NO, opened via spring force, VZXA-B-...-S (flow direction under the valve seat)

Diaphragm actuator size 90 mm

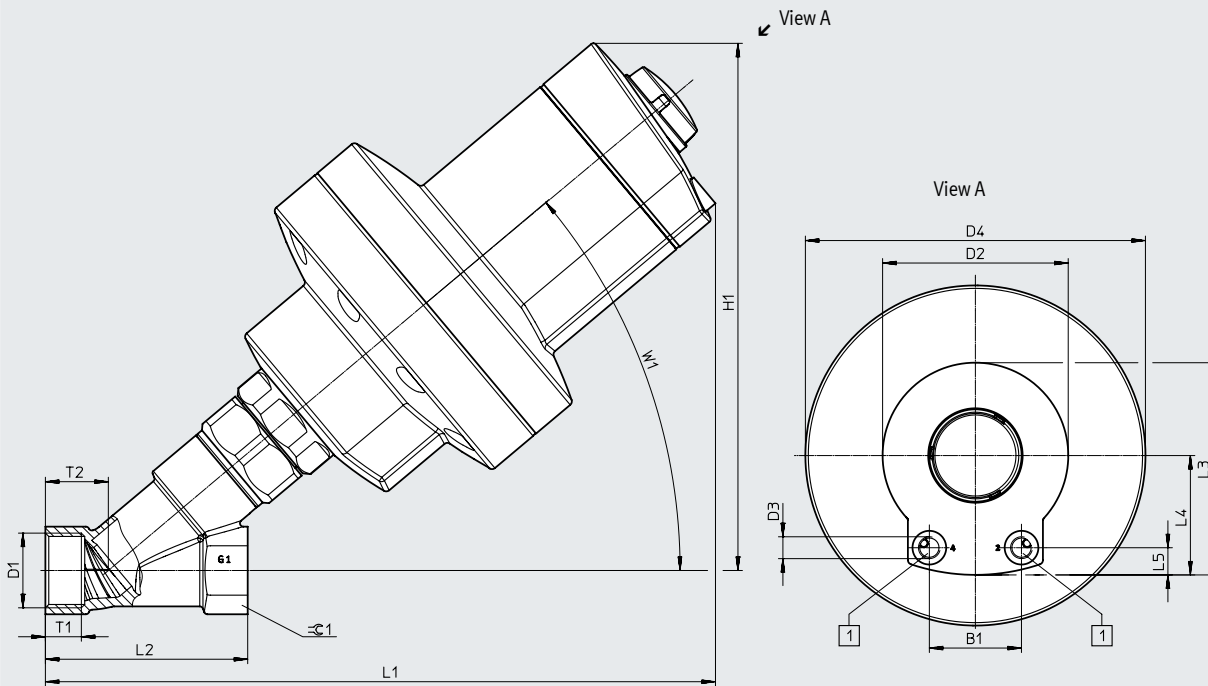


Data sheet

Dimensions

Size 90 mm

Download CAD data → www.festo.com



[1] Pneumatic connection

Type	B1	D1			D2 ∅	D3	D4 ∅	H1	L1	L2
		S6	S7	S13						
VZXA-A-...-32-...-16-...-PR-...	41	G1 1/4	1 1/4 NPT	Rc1 1/4	82.6	G1/8	151.3	245	300	110
VZXA-A-...-40-...-16-...-PR-...	41	G1 1/2	1 1/2 NPT	Rc1 1/2	82.6	G1/8	151.3	263	322	120
VZXA-A-...-50-...-16-...-PR-...	41	G2	2 NPT	Rc2	82.6	G1/8	151.3	260	340	150
VZXA-A-...-65-...-8-...-PR-...	41	G2 1/2	2 1/2 NPT	Rc2 1/2	82.6	G1/8	151.3	273	366	190
VZXA-B-...-25-...-30-...	41	G1	1 NPT	Rc1	82.6	G1/8	151.3	238	298	90
VZXA-B-...-32-...-25-...	41	G1 1/4	1 1/4 NPT	Rc1 1/4	82.6	G1/8	151.3	245	300	110
VZXA-B-...-40-...-16-...	41	G1 1/2	1 1/2 NPT	Rc1 1/2	82.6	G1/8	151.3	263	322	120
VZXA-B-...-50-...-10-...	41	G2	2 NPT	Rc2	82.6	G1/8	151.3	260	340	150

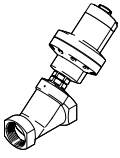
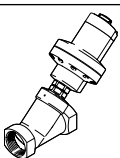
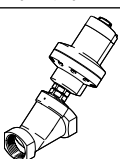
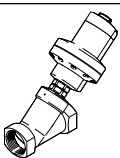
Type	L3	L4	L5	T1			T2	W1	≈∅1
				S6	S7	S13			
VZXA-A-...-32-...-16-...-PR-...	94.4	53.1	12.1	20	17.3	19.1	36	42	50
VZXA-A-...-40-...-16-...-PR-...	94.4	53.1	12.1	22	17.3	19.1	38	42	55
VZXA-A-...-50-...-16-...-PR-...	94.4	53.1	12.1	24	17.6	23.4	43	40	65
VZXA-A-...-65-...-8-...-PR-...	94.4	53.1	12.1	27	24	27	53	40	85
VZXA-B-...-25-...-30-...	94.4	53.1	12.1	16	16.8	16.8	28	40	41
VZXA-B-...-32-...-25-...	94.4	53.1	12.1	20	17.3	19.1	36	42	50
VZXA-B-...-40-...-16-...	94.4	53.1	12.1	22	17.3	19.1	38	42	55
VZXA-B-...-50-...-10-...	94.4	53.1	12.1	24	17.6	23.4	43	40	65
VZXA-B-...-65-...-5.6-...	94.4	53.1	12.1	27	24	27	53	40	85

Data sheet

Ordering data

Characteristics:

- Control function closed via spring force, NC
- Without ATEX certification

VZXA-A-..., flow direction over the valve seat		Flow rate Kv [m ³ /h]	Pressure of medium [bar]	Weight [g]	Part no.	Type
G thread to DIN ISO 228-1						
	DN32, 90 mm actuator	35.4	0 ... 16	6595	8060516	VZXA-A-TS6-32-M2-V13T-16-M-90-26-PR-V4
	DN40, 90 mm actuator	47.4	0 ... 16	7275	8060517	VZXA-A-TS6-40-M2-V13T-16-M-90-26-PR-V4
	DN50, 90 mm actuator	68.5	0 ... 16	8095	8060518	VZXA-A-TS6-50-M2-V13T-16-M-90-26-PR-V4
	DN65, 90 mm actuator	77.4	0 ... 8	10185	8060519	VZXA-A-TS6-65-M2-V13T-8-M-90-26-PR-V4
NPT thread to ANSI/ASME B 1.20.1						
	1 1/4", 90 mm actuator	35.4	0 ... 16	6595	8060523	VZXA-A-TS7-1 1/4"-M2-V14T-16-M-90-26-PR-V4
	1 1/2", 90 mm actuator	47.4	0 ... 16	7275	8060524	VZXA-A-TS7-1 1/2"-M2-V14T-16-M-90-26-PR-V4
	2", 90 mm actuator	68.5	0 ... 16	8095	8060525	VZXA-A-TS7-2"-M2-V14T-16-M-90-26-PR-V4
	2 1/2", 90 mm actuator	77.4	0 ... 8	10185	8060526	VZXA-A-TS7-2 1/2"-M2-V14T-8-M-90-26-PR-V4
VZXA-B-..., flow direction under the valve seat						
		Flow rate Kv [m ³ /h]	Pressure of medium [bar]	Weight [g]	Part no.	Type
G thread to DIN ISO 228-1						
	DN25, 90 mm actuator	23.6	0 ... 30	6780	8060532	VZXA-B-TS6-25-M2-V13T-30-M-90-26-V4
	DN32, 90 mm actuator	33.1	0 ... 25	7110	8060535	VZXA-B-TS6-32-M2-V13T-25-M-90-26-V4
	DN40, 90 mm actuator	49	0 ... 16	7790	8060537	VZXA-B-TS6-40-M2-V13T-16-M-90-26-V4
	DN50, 90 mm actuator	60.4	0 ... 10	8610	8060539	VZXA-B-TS6-50-M2-V13T-10-M-90-26-V4
	DN65, 90 mm actuator	77.9	0 ... 5.6	10700	8060540	VZXA-B-TS6-65-M2-V13T-5.6-M-90-26-V4
NPT thread to ANSI/ASME B 1.20.1						
	1", 90 mm actuator	23.6	0 ... 30	6780	8060546	VZXA-B-TS7-1"-M2-V14T-30-M-90-26-V4
	1 1/4", 90 mm actuator	33.1	0 ... 25	7110	8060549	VZXA-B-TS7-1 1/4"-M2-V14T-25-M-90-26-V4
	1 1/2", 90 mm actuator	49	0 ... 16	7790	8060551	VZXA-B-TS7-1 1/2"-M2-V14T-16-M-90-26-V4
	2", 90 mm actuator	60.4	0 ... 10	8610	8060553	VZXA-B-TS7-2"-M2-V14T-10-M-90-26-V4
	2 1/2", 90 mm actuator	77.9	0 ... 5.6	10700	8060554	VZXA-B-TS7-2 1/2"-M2-V14T-5.6-M-90-26-V4

Ordering data – Modular product system

Ordering table		Conditions	Code	Enter code
VZXA-...				
Module no.	3539410			
Product type	VZXA		VZXA	VZXA
Flow direction	Over the valve seat, for gaseous media		-A	
	Under the valve seat, for gaseous and liquid media		-B	
Control of the medium	On/off operation			
Line connection	Threaded collar		-T	-T
Connection standard	DIN ISO 228-1		S6	
	ANSI/ASME B 1.20.1		S7	
	DIN 10226-2		S13	
Connection size	DN13	[4]	-13	
	DN20	[4]	-20	
	DN25	[4]	-25	
	DN32	[4]	-32	
	DN40	[4]	-40	
	DN50	[4]	-50	
	DN65	[4]	-65	
	1/2"	[1]	-1/2"	
	3/4"	[1]	-3/4"	
	1"	[1]	-1"	
	1 1/4"	[1]	-1 1/4"	
	1 1/2"	[1]	-1 1/2"	
	2"	[1]	-2"	
2 1/2"	[1]	-2 1/2"		
Temperature of medium [°C]	-10 ... +180		-M2	
	-30 ... +200		-M3	
Angle seat housing material	Stainless steel 1.4409	[2]	-V13	
	Stainless steel ASTM A351-CF3M	[3]	-V14	
Seat seal material	PTFE		T	
	Modified PTFE	[5]	TP	

- [1] 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2" Not with connection standard S6, S13
- [2] V13 Not with imperial connection size
- [3] V14 Not with metric connection size
- [4] DN13, DN20, DN25, DN32, DN40, DN50, DN65 Not with connection standard S7
- [5] TP Only with M3 temperature of medium

Ordering data – Modular product system

Ordering table		Conditions	Code	Enter code	
VZXA-...					
Pressure of medium	[bar]	0 ... 4	[6]	-4	
	[bar]	0 ... 4.4	[6]	-4.4	
	[bar]	0 ... 4.8	[6]	-4.8	
	[bar]	0 ... 5.6	[6]	-5.6	
	[bar]	0 ... 5.8	[6]	-5.8	
	[bar]	0 ... 6	[6]	-6	
	[bar]	0 ... 6.2	[6]	-6.2	
	[bar]	0 ... 6.8	[7]	-6.8	
	[bar]	0 ... 7.5	[6]	-7.5	
	[bar]	0 ... 8	[7]	-8	
	[bar]	0 ... 8.3	[6]	-8.3	
	[bar]	0 ... 9.3	[6]	-9.3	
	[bar]	0 ... 10	[6]	-10	
	[bar]	0 ... 11.5	[6]	-11.5	
	[bar]	0 ... 12.2	[6]	-12.2	
	[bar]	0 ... 12.8	[6]	-12.8	
	[bar]	0 ... 13.5	[6]	-13.5	
	[bar]	0 ... 14.5	[6]	-14.5	
	[bar]	0 ... 15.5	[7]	-15.5	
	Actuator		Piston actuator		
		Diaphragm actuator		-M	
Actuator size	[mm]	46	[14]	-46	
	[mm]	75	[14]	-75	
	[mm]	90	[15]	-90	
Stroke	[mm]	17	[10]	-17	
	[mm]	20	[11]	-20	
	[mm]	26	[12]	-26	
Control function		Closed via spring force, NC			
		Double-acting	[14]	-D	
		Opened via spring force, NO		-S	
		Closed via reduced spring force, NC	[13]	-PR	
Position sensing		Via mechanical indicator			
Actuator housing material		Stainless steel 1.4408		-V4	-V4
EU certification		None			
		II 2GD		-EX4	

[6] 4 ... 6.2, 7.5, 8.3, 9.3, 11.5 ... 14.5, 23 ... 30

[7] 6.8, 8, 15.5

[8] 18, 20, 23, 25

[9] 30

[10] Stroke 17

[11] Stroke 20

[12] Stroke 26

[13] Control function PR

[14] Control function D, S

[15] Size 90

Not in conjunction with flow direction A

Not in conjunction with flow direction B

Not with connection size DN65, 2 1/2", DN50, 2", DN40, 1 1/2" or flow direction A

Not with connection size DN65, 2 1/2", DN50, 2", DN40, 1 1/2", DN32, 1 1/4" or flow direction A

Only with actuator K and size 46

Only with actuator K and size 75

Only with actuator M

Must be in conjunction with flow direction A

Must be in conjunction with flow direction B

Not with actuator K

Accessories

Piston actuator DFPK

- Actuator sizes
46 mm with 17 mm stroke
75 mm with 20 mm stroke



General technical data

Size of valve actuator	46
	75
Stroke [mm]	17
	20
Mounting position	Any
Position sensing	Via mechanical indicator
Control function	Closed via spring force, NC
	Closed via reduced spring force, NC
	Opened via spring force, NO
	Double-acting
Pneumatic connection	Female thread G1/8

Operating and environmental conditions

Operating pressure [bar]	5 ... 10
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Ambient temperature [°C]	0 ... 60
Storage temperature [°C]	-10 ... +60
Degree of protection	IP65
	IP67
	IP69K

ATEX

ATEX category for gas	II 2G
Type of ignition protection for gas	Ex h IIC T6...T4 Gb
ATEX category for dust	II 2D
Type of ignition protection for dust	Ex h IIIC T80°C...T120°C Db
Explosion-proof ambient temperature [°C]	0°C ≤ Ta ≤ +60°C

Materials

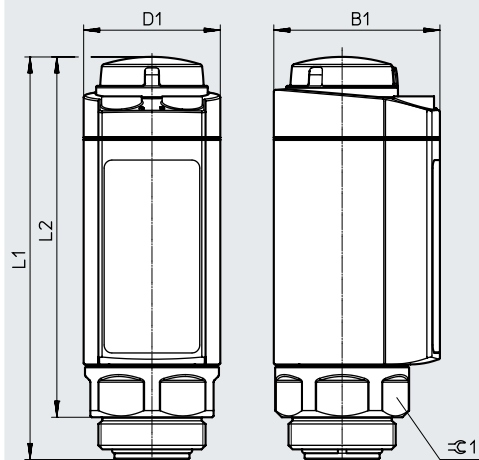
		Material number
Housing	Stainless steel casting	1.4408
Piston rod	High-alloy stainless steel	
Cover	Stainless steel casting	
Seals	FPM	
Note on materials	Contains paint-wetting impairment substances	
	RoHS-compliant	

Note

For characteristic values of the respective medium or operating pressures, see page → 9

Accessories

Dimensions

Download CAD data → www.festo.com

	B1	D1 ∅	L1	L2	⊕1
DFPK-46-17-V4	62	51	150.3	134.5	46
DFPK-46-17-PR-V4					
DFPK-46-17-S-V4					
DFPK-46-17-D-V4					
DFPK-75-20-V4	94.4	82.5	181	165.2	
DFPK-75-20-PR-V4					
DFPK-75-20-S-V4					
DFPK-75-20-D-V4					

Ordering data

	Control function	Product weight [g]	Part no.	Type
	Closed via spring force, NC	1298	8083959	DFPK-46-17-V4
	Closed via reduced spring force, NC	1243	8083960	DFPK-46-17-PR-V4
	Opened via spring force, NO	1243	8083961	DFPK-46-17-S-V4
	Double-acting	1210	8083962	DFPK-46-17-D-V4
	Closed via spring force, NC	2746	8083963	DFPK-75-20-V4
	Closed via reduced spring force, NC	2539	8083964	DFPK-75-20-PR-V4
	Opened via spring force, NO	2539	8083965	DFPK-75-20-S-V4
	Double-acting	2412	8083966	DFPK-75-20-D-V4

Note

The cover kit VAVC can be combined in conjunction with the piston actuator DFPK to form a valve block solution. In this case, the cover kits are installed together with the actuators in a valve block.

The valve block acts as a valve housing and must be manufactured individually. Requirements and dimensions for manufacturing can be found at → www.festo.com/sp (Expert knowledge)

Accessories

Cover kit VAVC

- Nominal width DN 13 ... 50



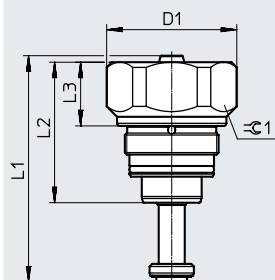
General technical data	
Nominal width DN	13
	20
	25
	32
	40
	50
Mounting position	Any

Operating and environmental conditions	
Medium	Vapour
	Mineral oil-based hydraulic fluid
	Inert gases
	Mineral oil
	Water
	Filtered compressed air, grade of filtration 200 µm
Note on the medium	Neutral fluids
Note on the medium	Gaseous media are only permitted with inflow over the valve seat
Temperature of medium [°C]	-30 ... +200
Ambient temperature [°C]	0 ... 60
Storage temperature [°C]	-10 ... +60

Materials	
Cover	High-alloy stainless steel
Spindle seal	PTFE
Seat seal	Modified PTFE
Note on materials	Contains paint-wetting impairment substances
	RoHS-compliant

Accessories

Dimensions

Download CAD data → www.festo.com

	D1 ∅	L1	L2	L3	⊕C1
VAVC-F12-SCC-13-TP	50	87	54	24.5	46
VAVC-F12-SCC-20-TP		85.6			
VAVC-F12-SCC-25-TP		94.4			
VAVC-F12-SCC-32-TP		94.4		17	
VAVC-F12-SCC-40-TP	55	121.5	80.1	32.2	
VAVC-F12-SCC-50-TP	67.5	129.7	85.9	21.5	

Ordering data

	Nominal width DN	Product weight [g]	Part no.	Type
	13	358	8084035	VAVC-F12-SCC-13-TP
	20	363	8084036	VAVC-F12-SCC-20-TP
	25	385	8084042	VAVC-F12-SCC-25-TP
	32	424	8084034	VAVC-F12-SCC-32-TP
	40	846	8084032	VAVC-F12-SCC-40-TP
	50	1180	8084045	VAVC-F12-SCC-50-TP

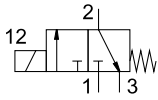
Note

The cover kit VAVC can be combined in conjunction with the piston actuator DFPK to form a valve block solution. In this case, the cover kits are installed together with the actuators in a valve block.

The valve block acts as a valve housing and must be manufactured individually. Requirements and dimensions for manufacturing can be found at → www.festo.com/sp (Expert knowledge)

Accessories

Pilot valve VOFX



General technical data		
Width	[mm]	22
Nominal width DN	[mm]	1.3
Valve function		3/2-way, closed, single solenoid
Actuation type		Electrical
Design		Directly actuated poppet valve
Exhaust air function		Can be throttled
Reset method		Mechanical spring
Sealing principle		Soft
Mounting position		Any
Manual override		Detenting
Type of control		Direct
Pilot air supply		Internal
Flow direction		Non-reversible
Pneumatic connection 1		G1/8
Pneumatic connection 2		G1/8
Pneumatic connection 3		M5
Electrical connection		3-pin Type B Plug To EN 175301-803
Switching time off	[ms]	46
Switching time on	[ms]	31
Duty cycle	[%]	100
Characteristic coil data		24 V DC: 3.0 W
Permissible voltage fluctuations	[%]	+/- 10
Product weight	[g]	160

Operating and environmental conditions		
Operating pressure	[bar]	-0.9 ... 8
Ambient temperature	[°C]	-10 ... +50
Temperature of medium	[°C]	-10 ... +50
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Degree of protection		IP65
Standard nominal flow rate qnN	[l/min]	50
Corrosion resistance class CRC ¹⁾		2

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

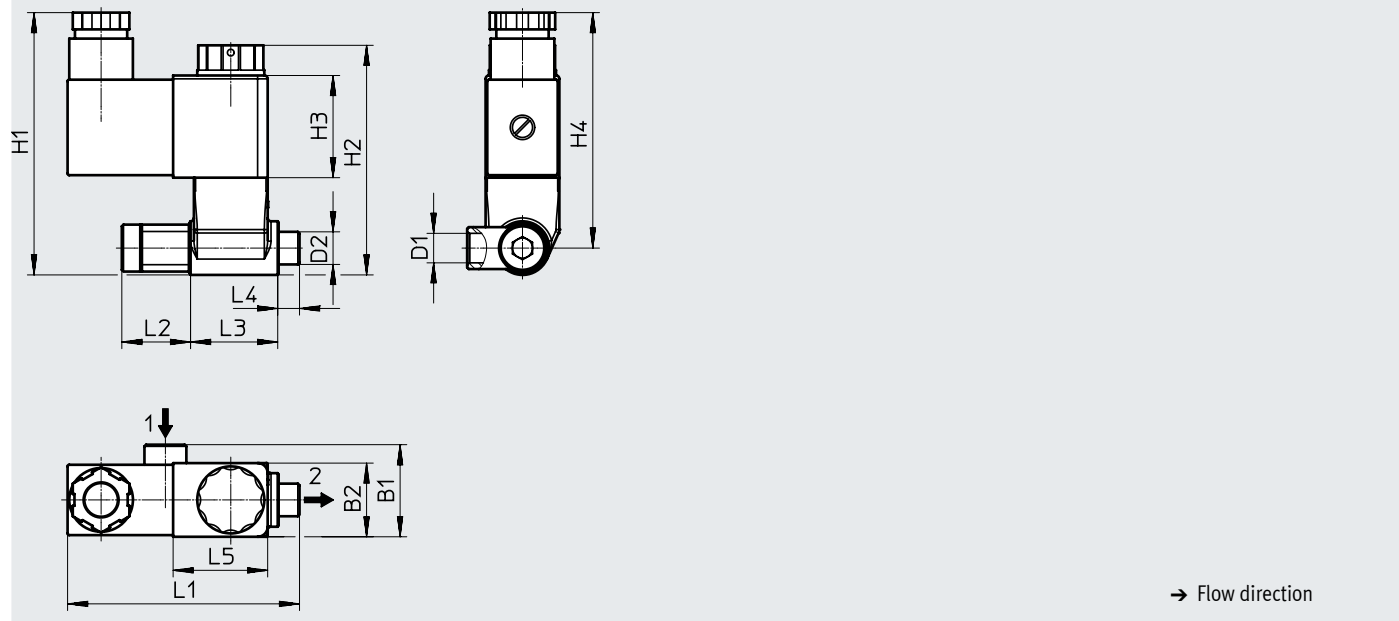
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Materials	
Seals	NBR
Housing	PA
Note on materials	Contains paint-wetting impairment substances RoHS-compliant

Accessories

Dimensions

Download CAD data → www.festo.com



	B1	B2	D1	D2	H1	H2	H3	H4	L1	L2	L3	L4	L5
VOFX	27.5	22	G1/8	G1/8	~78.3	68.5	30.5	~70.3	69.2	20.5	26	6.5	28.2

Ordering data

	Description	Part no.	Type
		Pilot valve, 3/2-way, closed, single solenoid	8119587

Angle seat valves VZXA

Accessories

Stroke reducing kit VAVA

- Opening stroke of the piston rod is reduced using a threaded pin or shock absorber
- For angle seat valves VZXA with piston and diaphragm actuator
- For piston actuators DFPK



General technical data		
	VAVA-F12-H-H1	VAVA-F12-H-H6
Design	Opening stroke limitation	Opening stroke limitation with cushioning
Application information	The SIL certification for the entire product is invalidated when used with angle seat valve VZXA.	
Mounting position	Any	
Product weight	253 g	249 g

Operating and environmental conditions		
	VAVA-F12-H-H1	VAVA-F12-H-H6
Ambient temperature [°C]	-50 ... +100	-10 ... +80
Storage temperature [°C]	-10 ... +60	
Degree of protection	IP6X	
Corrosion resistance class CRC ¹⁾	3	2

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

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. Externally visible parts with primarily functional surface requirements which are in direct contact with a normal industrial environment.

Materials	
Seals	EPDM
Nut	High-alloy stainless steel
Screws	High-alloy stainless steel
Shock absorber	High-alloy steel
Connector	High-alloy stainless steel
Note on materials	RoHS-compliant

Ordering data			
	Description	Part no.	Type
	Opening stroke limitation	8089993	VAVA-F12-H-H1
		8107369	VAVA-F12-H-H6

1) Special-purpose tool not required