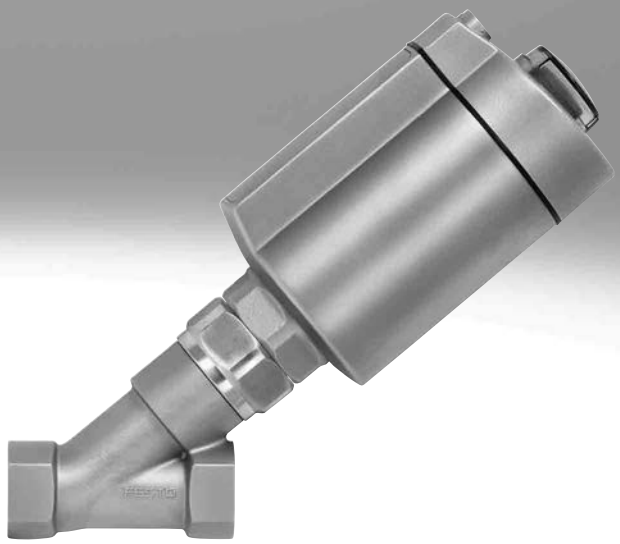
Angle seat valves VZXA

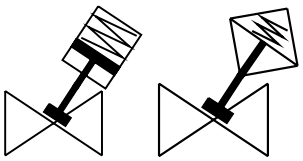


Key features

Function

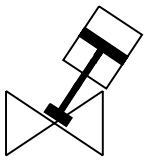
The angle seat valves VZXA are externally actuated valves that are controlled by a direct supply of compressed air and are used to shut off gaseous or liquid media in pipe systems. In the process, a spindle with a soft-sealing valve disc is raised and lowered using a pneumatic actuator. In all the versions 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)



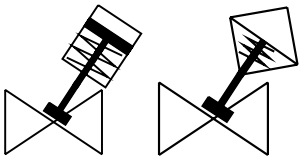
In the normal position, the valve is closed by springs. When the actuator is supplied with operating pressure, it raises the control piston and, at the same time, the valve disc too – this opens the valve.

DA version (double-acting)



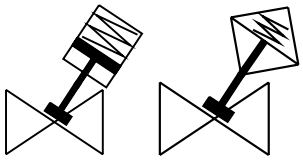
The control function is performed by alternate pneumatic actuation of the actuator chambers. Only available for the piston actuator.

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

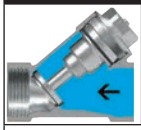
Design

- 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

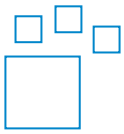
- Piston actuator with low space requirement, can close against pressures up to 10 bar, in actuator sizes 46 mm and 75 mm
- Diaphragm actuator without stick-slip effect, ideal for high force requirements and control applications, in actuator size 90 mm
- The interface screws between the valve body and the piston and diaphragm actuators are identical to spanner size AF46

Product range overview

Product range overview

	Type	Control function	Flow direction
	VZXA-A-...	• Closed via reduced spring force, NC	• Over the valve seat • For gaseous media, "closing in the direction of the medium flow" is used
	VZXA-B-...	• Closed via spring force, NC • Opened via spring force, NO • Double-acting, DA	• 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

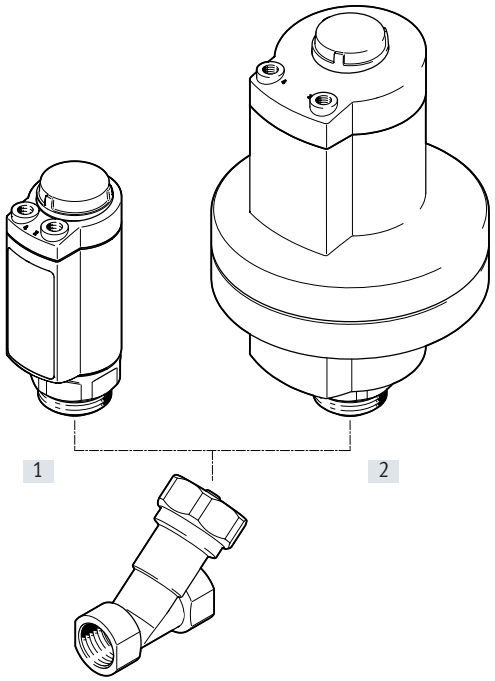


Configurable product
This product and all its product options can be ordered using the configurator.

The configurator can be found under Products on the DVD or at
➔ **www.festo.com/catalogue/...**

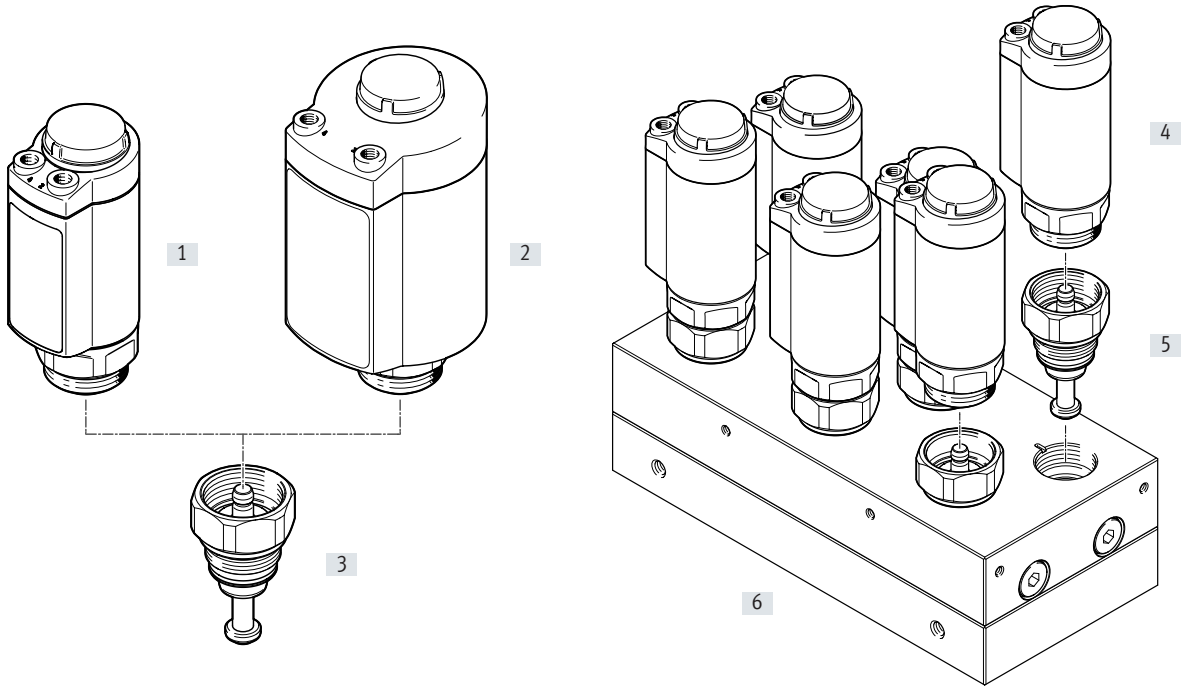
Part no.	Type
3539410	VZXA

Peripherals overview



Designation		Description	→ Page
Angle seat valve VZXA			
[1]	Piston actuator	• In actuator sizes 46 mm and 75 mm • Minimal space requirement	7
[2]	Diaphragm actuator	• 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]	Cover kit VAVC	• Includes spindles and sealing components • Can be ordered separately as an accessory	22
[4]	Piston actuator DFPK	• In actuator sizes 46 mm and 75 mm • Can be ordered separately as an accessory	20
[5]	Cover kit VAVC	• Includes spindles and sealing components • Can be ordered separately as an accessory	22
[6]	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	

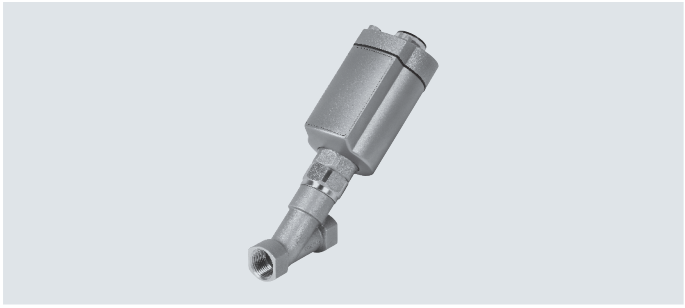
013	Control function	
	Closed via spring force, N/C	
D	Double-acting	
S	Opened via spring force, N/O	
PR	Closed via reduced spring force, N/C	

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	D46	D75	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	30.3	41.4	50.1
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								

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	[mm²/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)

	Min. pressure of medium [bar]		Max. pressure of medium [bar]		Min. operating pressure [bar]	
Actuator size	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)

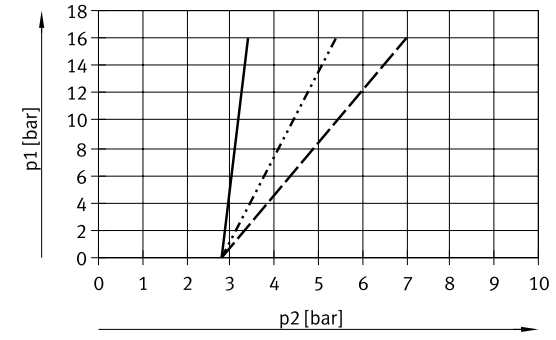
	Max. pressure of medium [bar]		Min. operating pressure [bar]	
Actuator size	46 mm	75 mm	46 mm	75 mm
DN13, 1/2"	11.5	–	2.6	–
DN20, 3/4"	6	16	2.6	2.2
DN25, 1"	–	9.3	–	2.2
DN32, 1 1/4"	–	4.8	–	2.2
DN40, 1 1/2"	–	4	–	2.2

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

	Max. pressure of medium [bar]		Min. operating pressure [bar]	
Actuator size	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

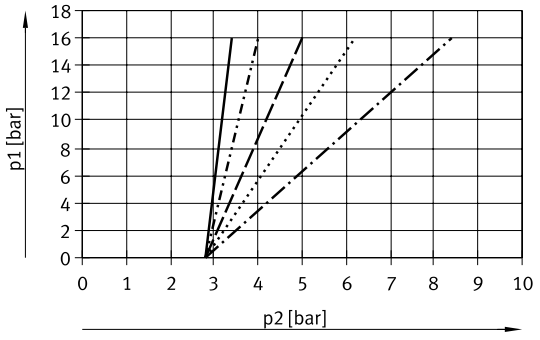
Pressure of medium p1 and operating pressure p2 for control function NO, opened via spring force, VZXA-B-...-S (flow direction under the valve seat)

Piston actuator size 46 mm



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

Piston actuator size 75 mm



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

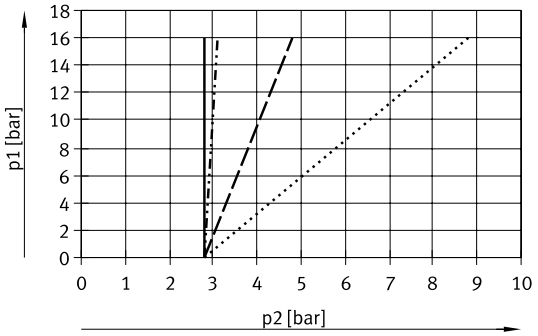
Data sheet

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

	Max. pressure of medium [bar]		Min. operating pressure [bar]	
Actuator size	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

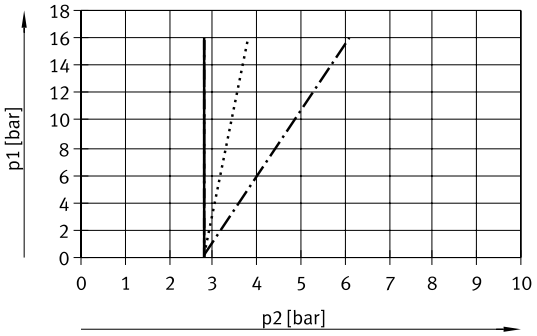
Pressure of medium p1 and operating pressure p2 for double-acting control function, VZXA-B-...-D (flow direction under the valve seat)

Piston actuator size 46 mm



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

Piston actuator size 75 mm



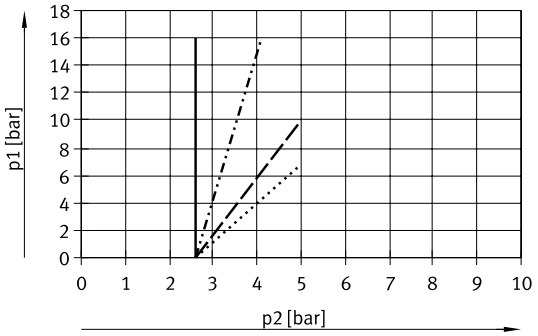
DN20, 3/4" and DN25, 1" and DN32, 1 1/4"
DN40, 1 1/2"
DN50, 2"

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

	Max. pressure of medium [bar]		Min. operating pressure [bar]	
Actuator size	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

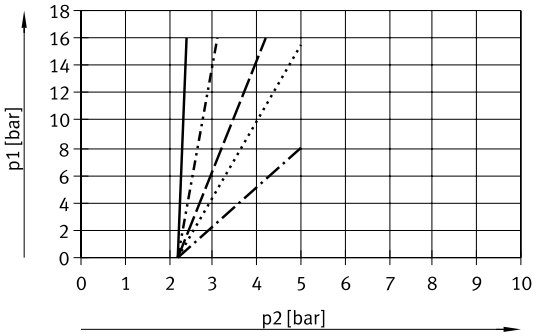
Pressure of medium p1 and operating pressure p2 for control function NC with reduced spring force, VZXA-A-...-PR (flow direction over the valve seat)

Piston actuator size 46 mm



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

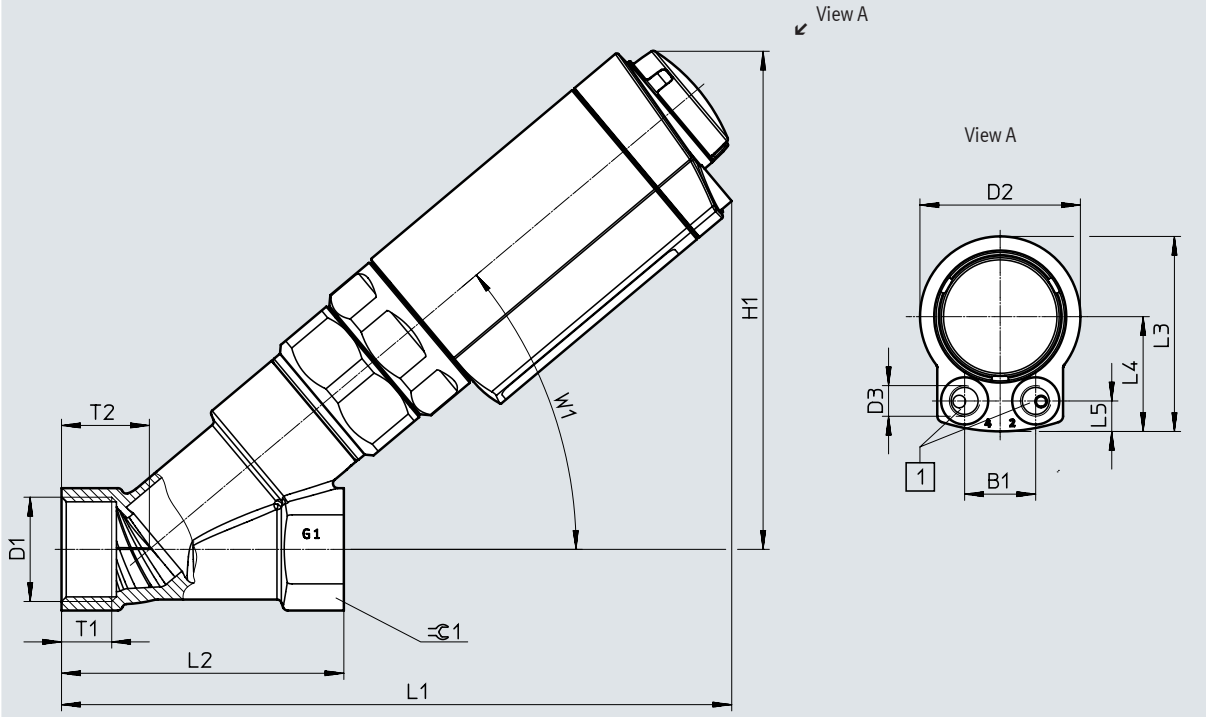
Piston actuator size 75 mm



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	D3	H1	L1	L2
		S6	S7	S13	ø				
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	3/4NPT	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

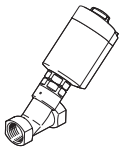
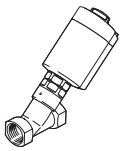
Type	L3	L4	L5	T1			T2	W1	⌯1
				S6	S7	S13			
VZXA-A-...-13-...-16-...-46-17-...	62	36.5	26.8	14	13.7	13.2	21.5	40	25
VZXA-A-...-20-...-16-...-75-20-...	94.4	53.1	41	16	14	14.5	24	40	32
VZXA-A-...-25-...-16-...-75-20-...	94.4	53.1	41	16	16.8	16.8	28	40	41
VZXA-B-...-13-...-30-...-46-17-...	62	36.5	26.8	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

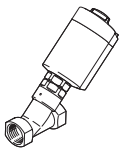
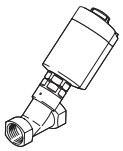
Data sheet

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

Line connection			DN25, 1"	DN32, 1 1/4"	DN40, 1 1/2"	DN50, 2"	DN65, 2 1/2"
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		0.00000014
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

Data sheet

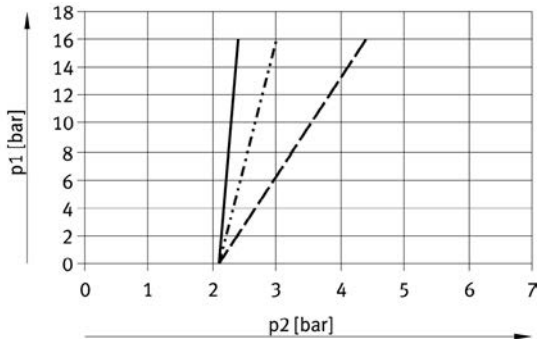
Materials		Material number
Piston rod	High-alloy stainless steel	
Cover	Stainless steel casting	
Seals	NBR	
Spindle seal	PTFE	
Seat seal	PTFE	
Actuator housing	Stainless steel casting	1.4408
Angle seat housing	Stainless steel casting	1.4409
		ASTM A351-CF3M
Note on materials	Contains paint-wetting impairment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

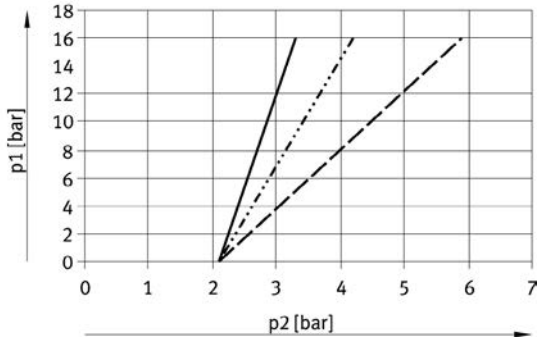
Diaphragm actuator size 90 mm



DN25, 1"
DN32, 1 1/4"
DN40, 1 1/2"

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

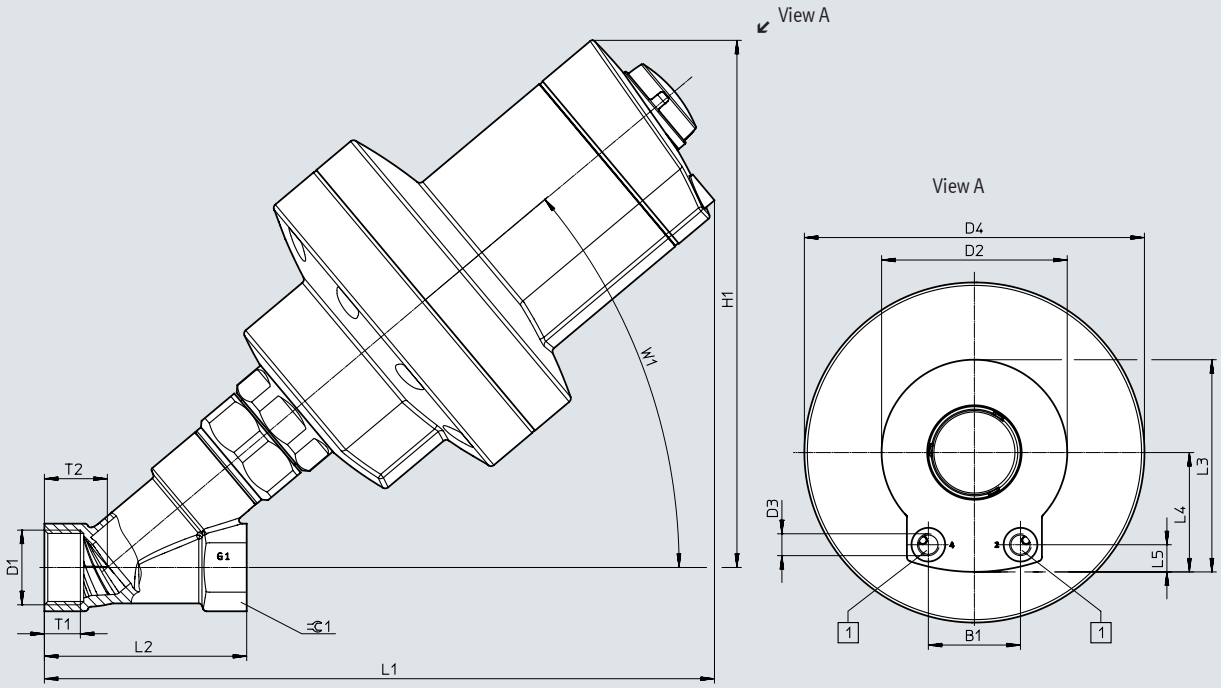


DN32, 1 1/4"
DN40, 1 1/2"
DN50, 2"

Data sheet

Dimensions Download CAD data ➔ www.festo.com

Size 90 mm



[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

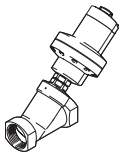
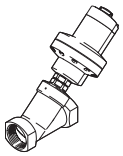
Type	L3	L4	L5	T1			T2	W1	⌀C1
				S6	S7	S13			
VZXA-A-...-32-...-16-...-PR-...	94.4	53.1	12.1	20	17.3	19.1	36	42	50
VZXA-A-...-40-...-16-...-PR-...	94.4	53.1	12.1	22	17.3	19.1	38	42	55
VZXA-A-...-50-...-16-...-PR-...	94.4	53.1	12.1	24	17.6	23.4	43	40	65
VZXA-A-...-65-...-8-...-PR-...	94.4	53.1	12.1	27	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

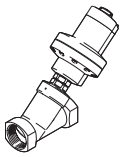
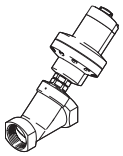
Data sheet

Ordering data

Characteristics:

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

VZXA-A-..., flow direction over the valve seat		Flow rate Kv [m³/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 [m³/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

VZXA-...		Conditions	Code	Enter code
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

VZXA-...			Conditions	Code	Enter code
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**	
	[bar]	0 ... 16		**–16**	
	[bar]	0 ... 23	[8], [6]	**–23**	
	[bar]	0 ... 25	[8], [6]	**–25**	
	[bar]	0 ... 30	[9], [6]	**–30**	
Actuator		Piston actuator		**–K**	
		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	Not in conjunction with flow direction A
[7]	6.8, 8, 15.5	Not in conjunction with flow direction B
[8]	18, 20, 23, 25	Not with connection size DN65, 2 1/2", DN50, 2", DN40, 1 1/2" or flow direction A
[9]	30	Not with connection size DN65, 2 1/2", DN50, 2", DN40, 1 1/2", DN32, 1 1/4" or flow direction A
[10]	Stroke 17	Only with actuator K and size 46
[11]	Stroke 20	Only with actuator K and size 75
[12]	Stroke 26	Only with actuator M
[13]	Control function PR	Must be in conjunction with flow direction A
[14]	Control function D, S	Must be in conjunction with flow direction B
[15]	Size 90	Not with actuator K

NEW

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

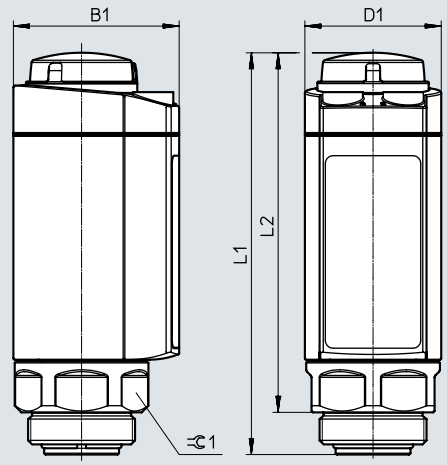
Materials		Material number
Housing	Stainless steel casting	1.4408
Piston rod	High-alloy stainless steel	
Cover	Stainless steel casting	
Seals	FPM	
Note on materials	Contains paint-wetting impairment substances	
	RoHS-compliant	

Note

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

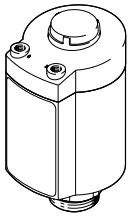
Accessories

Dimensions Download CAD data ➔ www.festo.com



	B1	D1 ø	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)

NEW

Accessories

Cover kit VAVC

- Nominal width DN 13 ... 50

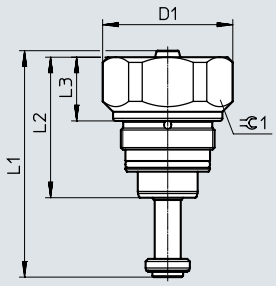
General technical data	
Nominal width DN	13
	20
	25
	32
	40
	50
Mounting position	Any

Operating and environmental conditions		
Medium		Vapour
		Mineral oil-based hydraulic fluid
		Inert gases
		Mineral oil
		Water
		Filtered compressed air, grade of filtration 200 µm
		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

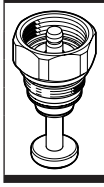
Accessories

Dimensions Download CAD data ➔ www.festo.com



	D1 ø	L1	L2	L3	⫧1
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

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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)

Festo - Your Partner in Automation

1 Festo Inc.

5300 Explorer Drive
Mississauga, ON L4W 5G4
Canada

Festo Customer Interaction Center
Tel: 1 877 463 3786
Fax: 1 877 393 3786
Email: customer.service.ca@festo.com

2 Festo Pneumatic

Av. Ceylán 3,
Col. Tequesquináhuac
54020 Tlalnepantla,
Estado de México

Multinational Contact Center
01 800 337 8669

ventas.mexico@festo.com

3 Festo Corporation

1377 Motor Parkway
Suite 310
Islandia, NY 11749

Festo Customer Interaction Center
1 800 993 3786
1 800 963 3786
customer.service.us@festo.com

4 Regional Service Center

7777 Columbia Road
Mason, OH 45040

Connect with us

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