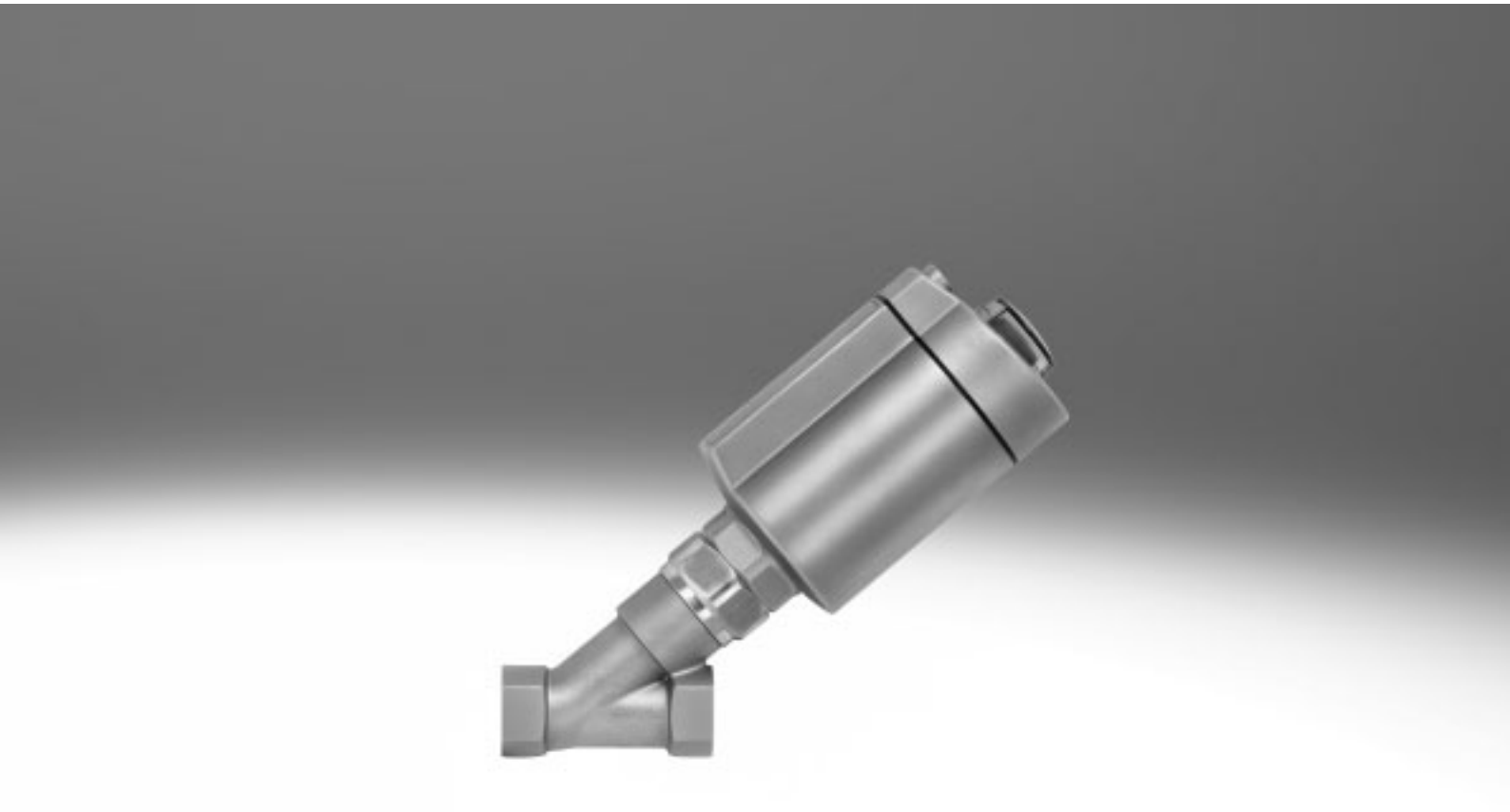
Angle seat valves VZXA



New

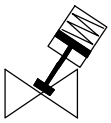
Angle seat valves VZXA

Key features

Function

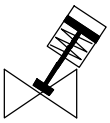
The angle seat valves VZXA are externally actuated valves which are controlled by a direct feed of compressed air and are used to shut off gaseous or liquid media in pipe systems. In the process, a spindle with a soft-sealing valve disc is raised and lowered with the aid of a pneumatic actuator. In all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

NC version (normally closed)



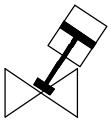
In the normal position, the valve is closed by a spring. When the actuator is supplied with operating pressure, it raises the control piston and, at the same time, the valve disc too – this opens the valve.

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.

DA version (double acting)



The control function is performed by reciprocal pneumatic actuation of the actuator chambers.

Economical

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

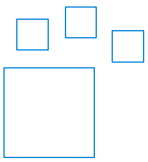
Flexible

- 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
- Angle seat valves VZXA made from stainless steel with PTFE seals have high chemical and thermal resistance
- Temperature of medium
  –10 … +180 °C

Design

- G thread to DIN ISO 228-1
  Parallel Whitworth pipe thread, non-metallically sealing: must either be provided with an annular seal outside 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 sealing in the thread, female thread tapered, male thread tapered
- Rc thread to DIN 10226-2
  Pipe thread for fittings sealing in the thread, female thread tapered, male thread tapered
- Connection sizes
  1/2" … 2" and DN13 … DN50
- Medium pressure: 0 … 30 bar
- Operating pressure: 5 … 10 bar
- Threaded collar connection
- Actuator sizes: piston actuator
  46 mm and 75 mm
- ATEX

Product configurator



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

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

Enter the type (or part number) in the search field:

- VZXA 3539410

Angle seat valves VZXA

Product range overview

Product range overview			
	Type	Control function	Direction of flow
	VZXA-A-...	• Closed via spring force, NC	• Above valve seat • For gaseous media, “closing in the direction of medium flow” is used
	VZXA-B-...	• Closed via spring force, NC • Opened via spring force, NO • Double-acting, DA	• Below valve seat • For gaseous and liquid media, “closing against the direction of medium flow” is used in order to prevent or reduce water hammer effects

New

Angle seat valves VZXA

Type codes

VZXA	–	A	–		–	T	S7	–	1/2"	–	M2	–	V14	T

Type	
VZXA	Process valve

Direction of flow	
A	Above valve seat for gaseous media
B	Below valve seat for gaseous and liquid media

Control of the medium	
–	On/off operation

Line connection	
T	Threaded collar

Connection standard	
S6	DIN ISO 228-1
S7	ANSI/ASME B 1.20.1
S13	DIN 10226

Connection size	
1/2"	1/2"
3/4"	3/4"
1"	1"
11/2"	11/2"
11/4"	11/4"
2"	2"
13	DN13
20	DN20
25	DN25
32	DN32
40	DN40
50	DN50

Temperature of medium	
M2	–10 to +180 °C

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

Seat seal material	
T	PTFE

Angle seat valves VZXA

Type codes

FESTO

– 16 – K – 46 – 17 – PR – [ ] – V4 – [ ]

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

Actuator	
K	Piston actuator

Actuator size	
46	46 mm
75	75 mm

Stroke	
17	17 mm
20	20 mm

Control function	
–	Closed via spring force, NC
D	Double-acting
S	Opened via spring force, NO
PR	Closed via reduced spring force, NC

Position sensing	
–	With mechanical indicator

Actuator housing material	
V4	Stainless steel 1.4408

EU certification	
–	None
EX4	II 2GD

New

Angle seat valves VZXA with piston actuator

Technical data

FESTO

Function

- 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, 11/4"		DN40, 11/2"	DN50, 2"
Actuator			D46	D46	D75	D46	D75	D46	D75	D46	D46
Flow rate Kv	VZXA-A-...	[m3/h]	6.6	–	14.5	–	21.5	–	–	–	–
	VZXA-B-...	[m3/h]	6	13.3	13.5	20.3	22.6	27.9	30.3	41.4	50.1
Design			Poppet valve with piston actuator								
Type of actuation			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 actuation			Externally actuated								
Position sensing			With 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								
Direction of flow	VZXA-A-...		Above valve seat for gaseous media								
	VZXA-B-...		Below valve seat for gaseous and liquid media								

Operating and environmental conditions		
Operating pressure	[bar]	5 ... 10
Ambient temperature	[°C]	0 ... +60
Temperature of medium	[°C]	–10 ... +180
Storage temperature	[°C]	–10 ... +60
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 oil
		Mineral oil
		Water
		Neutral fluids
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]

Angle seat valves VZXA with piston actuator

Technical data

ATEX						
Connection size	DN13, 1/2"	DN20, 3/4"	DN25, 1"	DN32, 11/4"	DN40, 11/2"	DN50, 2"
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 ambient temperature [°C]	0°C ≤ Ta ≤ +60°C					
CE mark (see declaration of conformity)[1)]	–			To EU Pressure Equipment Directive		

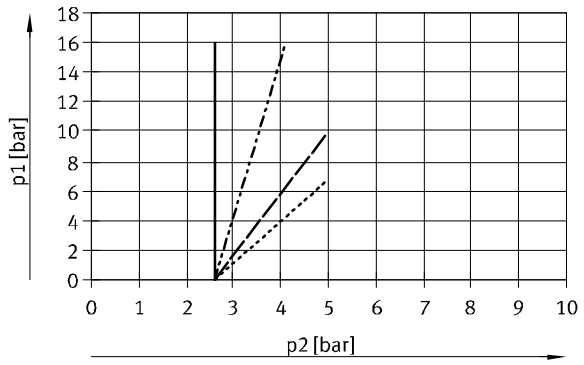
1) Additional information www.festo.com/sp ➔ Certificates.

Materials		Material number
Piston rod	High-alloy stainless steel	
End cap	Stainless steel casting	
Seals	FPM	
Spindle washer	PTFE	
Seat seal	PTFE	
Actuator housing	Stainless steel casting	1.4408
Valve 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 medium pressure for control function NC, type B				
Nominal width	Max. medium pressure		Min. operating pressure	
	D46	D75	D46	D75
DN13, 1/2"	30	–	4.8	–
DN20, 3/4"	12.8	30	4.8	4.6
DN25, 1"	8.3	23	4.8	4.6
DN32, 11/4"	4.4	13.5	4.8	4.6
DN40, 11/2"	–	9.3	–	4.6
DN50, 2"	–	5.6	–	4.6

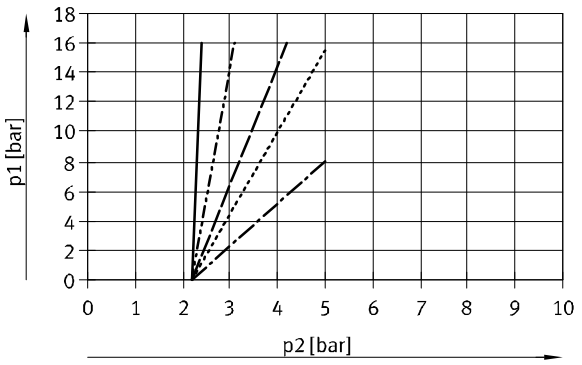
Permissible operating pressure p2 as a function of medium pressure p1 for control function NC, type A

VZXA-A-...-K-46-...-PR



DN13, 1/2"
DN20, 3/4"
DN25, 1"
DN32, 11/4"

VZXA-A-...-K-75-...-PR



DN20, 3/4"
DN25, 1"
DN32, 11/4"
DN40, 11/2"
DN50, 2"

New

Angle seat valves VZXA with piston actuator

Technical data

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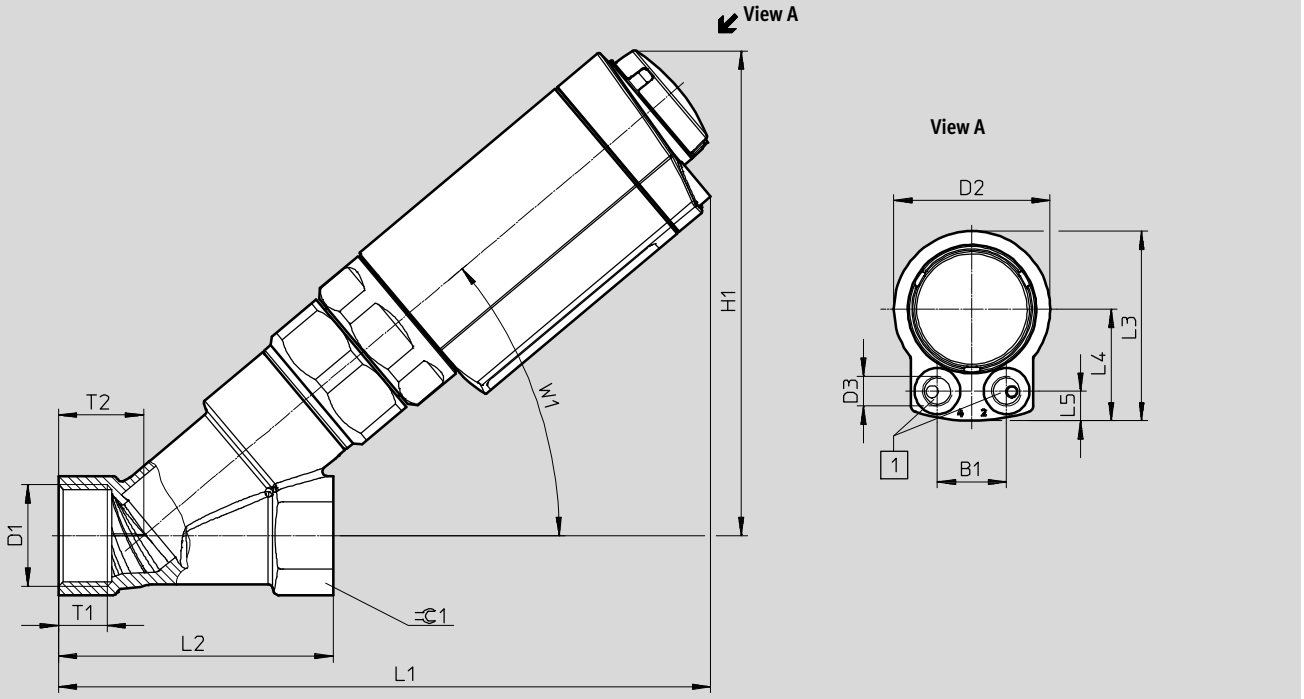
Dimensions Download CAD data ➔ **www.festo.com**



1 Pneumatic connection

Type	B1	D1			D2	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	3/4NPT	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	G11/4	11/4 NPT	Rc11/4	51		168	218	110
VZXA-B-...-32-...-13.5-...-75-20-...	41	G11/4	11/4 NPT	Rc11/4	82.6		198	248	110
VZXA-B-...-40-...-9.3-...-75-20-...	41	G11/2	11/2 NPT	Rc11/2	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

Angle seat valves VZXA with piston actuator

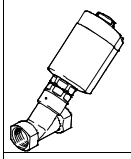
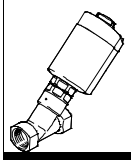
Technical data

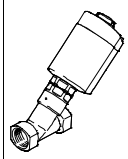
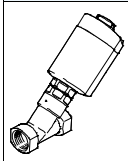
FESTO

Ordering data

Key features:

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

VZXA-A-..., flow direction above valve seat		Flow rate Kv [m³/h]	Medium pressure [bar]	Weight [g]	Part No.	Type
G thread to DIN ISO 228-1						
	DN13, D46 actuator	6.6	0 ... 16	1775	**8060513**	**VZXA-A-TS6-13-M2-V13T-16-K-46-17-PR-V4**
	DN20, D75 actuator	14.5		3155	**8060514**	**VZXA-A-TS6-20-M2-V13T-16-K-75-20-PR-V4**
	DN25, D75 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", D46 actuator	6.6	0 ... 16	1775	**8060520**	**VZXA-A-TS7-1/2"-M2-V14T-16-K-46-17-PR-V4**
	3/4", D75 actuator	14.5		3155	**8060521**	**VZXA-A-TS7-3/4"-M2-V14T-16-K-75-20-PR-V4**
	1", D75 actuator	21.5		3395	**8060522**	**VZXA-A-TS7-1"-M2-V14T-16-K-75-20-PR-V4**

VZXA-B-..., flow direction below valve seat		Flow rate Kv [m³/h]	Medium pressure [bar]	Weight [g]	Part No.	Type
G thread to DIN ISO 228-1						
	DN13, D46 actuator	6	0 ... 30	1830	**8060527**	**VZXA-B-TS6-13-M2-V13T-30-K-46-17-V4**
	DN20, D46 actuator	13.3	0 ... 12.8	1910	**8060528**	**VZXA-B-TS6-20-M2-V13T-12.8-K-46-17-V4**
	DN20, D75 actuator	13.5	0 ... 30	3360	**8060529**	**VZXA-B-TS6-20-M2-V13T-30-K-75-20-V4**
	DN25, D46 actuator	20.3	0 ... 8.3	2150	**8060530**	**VZXA-B-TS6-25-M2-V13T-8.3-K-46-17-V4**
	DN25, D75 actuator	22.6	0 ... 23	3600	**8060531**	**VZXA-B-TS6-25-M2-V13T-23-K-75-20-V4**
	DN32, D46 actuator	27.9	0 ... 4.4	2480	**8060533**	**VZXA-B-TS6-32-M2-V13T-4.4-K-46-17-V4**
	DN32, D75 actuator	30.3	0 ... 13.5	3930	**8060534**	**VZXA-B-TS6-32-M2-V13T-13.5-K-75-20-V4**
	DN40, D75 actuator	41.4	0 ... 9.3	4610	**8060536**	**VZXA-B-TS6-40-M2-V13T-9.3-K-75-20-V4**
	DN50, D75 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", D46 actuator	6	0 ... 30	1830	**8060541**	**VZXA-B-TS7-1/2"-M2-V14T-30-K-46-17-V4**
	3/4", D46 actuator	13.3	0 ... 12.8	1910	**8060542**	**VZXA-B-TS7-3/4"-M2-V14T-12.8-K-46-17-V4**
	3/4", D75 actuator	13.5	0 ... 30	3360	**8060543**	**VZXA-B-TS7-3/4"-M2-V14T-30-K-75-20-V4**
	1", D46 actuator	20.3	0 ... 8.3	2150	**8060544**	**VZXA-B-TS7-1"-M2-V14T-8.3-K-46-17-V4**
	1", D75 actuator	22.6	0 ... 23	3600	**8060545**	**VZXA-B-TS7-1"-M2-V14T-23-K-75-20-V4**
	1 1/4", D46 actuator	27.9	0 ... 4.4	2480	**8060547**	**VZXA-B-TS7-11/4"-M2-V14T-4.4-K-46-17-V4**
	1 1/4", D75 actuator	30.3	0 ... 13.5	3930	**8060548**	**VZXA-B-TS7-11/4"-M2-V14T-13.5-K-75-20-V4**
	1 1/2", D75 actuator	41.4	0 ... 9.3	4610	**8060550**	**VZXA-B-TS7-11/2"-M2-V14T-9.3-K-75-20-V4**
	2", D75 actuator	50.1	0 ... 5.6	5430	**8060552**	**VZXA-B-TS7-2"-M2-V14T-5.6-K-75-20-V4**

New

Angle seat valves VZXA

Ordering data – Modular product system

FESTO

Ordering table

				Condi-tions	Code		Entry code
M	Module no.		**3539410**				
	Product type		VZXA		**VZXA**		VZXA
	Direction of flow		Above valve seat for gaseous media		**–A**		
			Below valve seat for gaseous and liquid media		**–B**		
O	Control of the medium		On/off operation				
M	Line connection		Threaded collar		**–T**		–T
	Connection standard		DIN ISO 228-1		**S6**		
			ANSI/ASME B 1.20.1		**S7**		
			DIN 10226		**S13**		
	Connection size		DN13	5	**–13**		
			DN20	5	**–20**		
			DN25	5	**–25**		
			DN32	5	**–32**		
			DN40	5	**–40**		
			DN50	5	**–50**		
			1/2"	1	**–1/2"**		
			3/4"	1	**–3/4"**		
			1"	1	**–1"**		
			11/4"	1, 2	**–11/4"**		
			11/2"	1	**–11/2"**		
			2"	1	**–2"**		
	Temperature of medium	[°C]	–10 … +180		**–M2**		–M2
	Valve housing material		Stainless steel 1.4409	3	**–V13**		
			Stainless steel ASTM A351-CF3M	4	**–V14**		
↓	Seat seal material		PTFE		**T**		T

1 **1/2", 3/4", 1", 11/4", 11/2", 2"** Not with connection standard S6, S13
2 **30** Not with connection size DN50, 2", DN40, 11/2", DN32, 11/4" or flow direction A
3 **V13** Not with imperial connection size
4 **V14** Not with metric connection size
5 **DN13, 20, 25, 32, 40, 50** Not with connection standard S7

M Mandatory data
O Options

Transfer order code

VZXA	–		–		–	**T**		–		–	**M2**	–		**T**

Angle seat valves VZXA

Ordering data – Modular product system

FESTO

Ordering table

VZXA-...				Condi-tions	Code		Entry code
↓	Medium pressure	[bar]	0 ... 4	6	**–4**		
M		[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	9	**–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		**–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	9	**–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**		
	Actuator size	[mm]	46		**–46**		
		[mm]	75		**–75**		
	Stroke	[mm]	17	10	**–17**		
		[mm]	20	11	**–20**		
O	Control function		Closed via spring force, NC				
			Double-acting	13	**–D**		
			Opened via spring force, NO	13	**–S**		
			Closed via reduced spring force, NC	12	**–PR**		
	Position sensing		With mechanical indicator				
M	Actuator housing material		Stainless steel 1.4408		**–V4**		–V4
O	EU certification		None				
			II 2GD		**–EX4**		

6 **4...6.2, 8.3, 9.3, 11.5, 12.8, 13.5, 2...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 DN50, 2", DN40, 11/2" or flow direction A
9 **30** Not with connection size DN50, 2", DN40, 11/2", DN32, 11/4" or flow direction A
10 **Stroke 17** Only with size 46
11 **Stroke 20** Only with size 75
12 **Control function PR** Must be in combination with flow direction A
13 **Control function D, S** Must be in combination with flow direction B

M Mandatory data
O Options

Transfer order code

– [ ] – [ ] – [ ] – [ ] – [ ] – [V4] – [ ]