

Pinch valves VZQA



Pinch valves VZQA

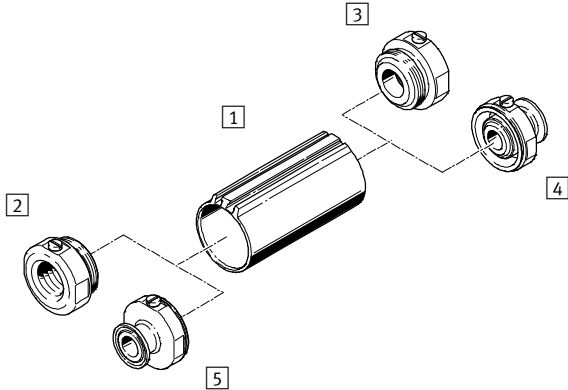
Features

FESTO

VZQA-C-M22C function

The pinch valve is a 2/2-way valve for controlling material flows. It is closed in normal position. The shut-off element is a tubular pinch valve sleeve made from elastomer. The sleeve opens when the valve is pressurised, releasing the material flow. When pressure is no longer applied, a spring will close the

normally open valve. The valve can be used with liquid and gaseous media. The free passage when the valve is opened ensures minimum flow resistance and prevents the valve becoming blocked or clogged.

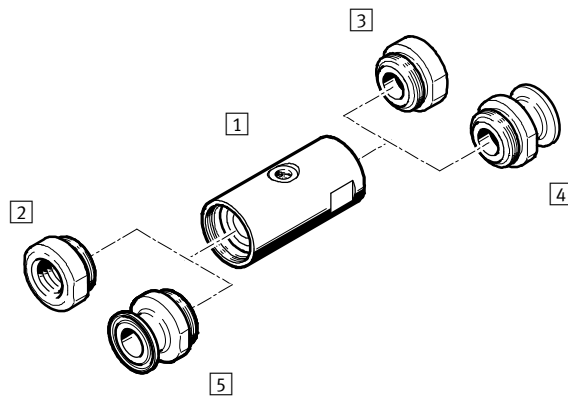


- 1 Body, normally closed
- 2 Process valve connection 1
G female thread, NPT female thread
- 3 Process valve connection 2
G female thread, NPT female thread
- 4 Process valve connection 1
Clamp to DIN 32676, clamp to ASME-BPE
- 5 Process valve connection 2
Clamp to DIN 32676, clamp to ASME-BPE

VZQA-C-M22U function

The pinch valve is a 2/2-way valve for controlling material flows. It is open in normal position. The shut-off element is a tubular pinch valve sleeve made from elastomer. The sleeve closes when the valve is pressurised, completely shutting off the material flow. When pressure is no longer applied, the normally closed valve will open due to the inherent stress of the pinch valve

sleeve or the pressure of the medium. The valve can be used to shut off liquid and dusty media, solids (granulate) and mixtures of substances. The free passage when the valve is opened ensures minimum flow resistance and prevents the valve becoming blocked or clogged.



- 1 Body, normally open
- 2 Process valve connection 1
G female thread, NPT female thread
- 3 Process valve connection 2
G female thread, NPT female thread
- 4 Process valve connection 1
Clamp to DIN 32676, clamp to ASME-BPE
- 5 Process valve connection 2
Clamp to DIN 32676, clamp to ASME-BPE

Application

- The valve can be used to control liquid and dusty media, solids and material mixtures.

Design

- Easy-to-clean housing (clean design)
- Open or closed in normal position
- Pinch valve sleeve made from elastomer

 Note

Pilot air port 12:
G $\frac{1}{8}$ at DN15 (-M22U), M5 at DN6 (-M22U) and DN15 (-M22C), max. permissible thread length 5 mm.

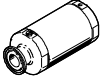
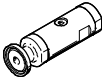
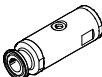
Areas of application


The pinch valve may only be used in systems where a damaged or leaking seal cartridge cannot pose a hazard to people or property. The media circuit must be sized for the set pilot pressure. The designer and operator of the system are responsible for ensuring the product is suitable for the system as well as

for ensuring that the seal cartridge material is resistant to the medium used. Appropriate tests are generally required to assess the suitability. The risks associated with a leaking seal cartridge and the corresponding consequences must be taken into account when planning the system.

Pinch valves VZQA

Product range overview

Feature	Type	Nominal width DN	Process valve connection	Flow rate [m ³ /h]	→ Page/Internet
	VZQA-C-M22C-...	15	G1/2	5	5
			1/2 NPT		
			Clamp to DIN 32676		
			Clamp to ASME-BPE		
	VZQA-C-M22U-...	6	G1/4	0.7	8
			1/4 NPT		
			Clamp to DIN 32676		
			Clamp to ASME-BPE		
	VZQA-C-M22U-...	15	G1/2	5	8
			1/2 NPT		
			Clamp to DIN 32676		
			Clamp to ASME-BPE		

 Note

The hermetic separation between the media circuit and control circuit is no longer guaranteed if wear causes the pinch valve sleeve to leak. The flow medium can then get into the control circuit, from where it can escape. Any potential hazard (e.g. due to aggressive or hot media) must be ruled out. The compressed air supply to the control valve must be protected against the

ingress of the flow medium using a suitable check valve, or a suitable protection against return flow must be integrated in the pilot line in the immediate vicinity of the media valve. Pilot medium can get into the media circuit if the pinch valve sleeve fails. The media circuit must therefore be sized for the set pilot pressure. Any potential hazard must be ruled out.

Pinch valves VZQA

Type codes

VZQA - C - M22U - 6 - G G - V4 V4 N - 4 - E

Type

VZQA	Pinch valve, pneumatically actuated
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Product version

C	Easy-to-clean design
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Valve function

M22C	2/2-way valve, normally closed
M22U	2/2-way valve, normally open

Nominal width DN

6	6 mm
15	15 mm

Connection type 1

G	G female thread
T	NPT female thread
S1	Clamp to ASME-BPE
S5	Clamp to DIN 32676

Connection type 2

G	G female thread
T	NPT female thread
S1	Clamp to ASME-BPE
S5	Clamp to DIN 32676

Housing material

AL	Aluminium
V2	Stainless steel
V4	Stainless steel

Housing cover material

AL	Aluminium
V4	Stainless steel
POM	Polyoxymethylene

Shut-off element material

E	EPDM
N	NBR
S1	Silicone

Pressure range of media

4	0 ... 4 bar
6	0 ... 6 bar

Sensing type

-	None
E	End positions

Pinch valves VZQA

Technical data M22C

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Function



General technical data			
VZQA-C-M22C-15...	-S5S5-V2V4E-6	-S5S5-ALV4E-6-E	-GG-V2V4E-6
Nominal width DN	15		
Design	Pinch valve, pneumatically actuated		
Type of actuation	Pneumatic		
Sealing principle	Soft		
Mounting position	Any		
Valve function	2/2-way, closed, monostable		
Direction of flow	Reversible		
Reset method	Mechanical spring		
Type of piloting	Externally actuated		
Type of mounting	In-line installation		
Process valve connection	Clamp to DIN 32676		G1/2
Auxiliary pilot air port 12	M5		

Operating and environmental conditions		
Switching time on	[ms]	150
Switching time off	[ms]	250
Flow rate Kv	[m ³ /h]	5
Medium pressure	[bar]	0 ... 6
Nominal pressure of process valve PN		10
Pilot pressure	[bar]	3.5 ... 6
Burst pressure	[bar]	16
Medium		Compressed air to ISO 8573-1:2010 [-:~:1] Water
Pilot medium		Compressed air to ISO 8573-1:2010 [7:4:1]
Ambient temperature	[°C]	-5 ... +60
Temperature of medium	[°C]	-5 ... +100
Max. viscosity	[mm ² /s]	4000
Corrosion resistance class CRC ¹⁾		4

1) Corrosion resistance class 4 to Festo standard 940 070

Components subject to high corrosion stress. Parts exposed to aggressive media, e.g. in the food or chemical industry. These applications may need to be safeguarded by means of special testing using the media.

Materials				
VZQA-C-M22C-15...	-S5S5-V2V4E-6	-S5S5-ALV4E-6-E	-GG-V2V4E-6	Material number
Housing	High-alloy stainless steel	-	High-alloy stainless steel	1.4435
	-	Wrought aluminium alloy	-	-
Housing cover	High-alloy stainless steel			1.4435
Seals	FPM			-
Shut-off element	EPDM			-
Note on materials	Contains paint-wetting impairment substances			-
	RoHS compliant			-

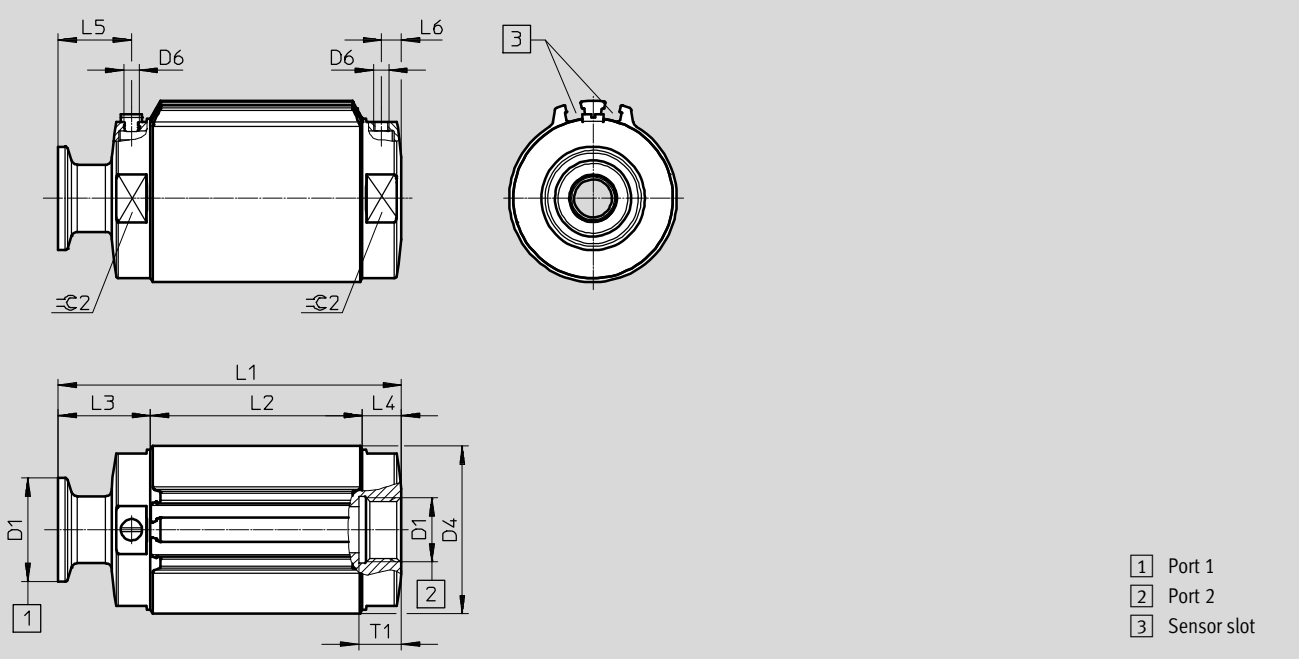
Pinch valves VZQA

Technical data M22C

Dimensions

Download CAD data → www.festo.com

Illustration of port 1: clamp to DIN 32676, port 2: G $\frac{1}{2}$



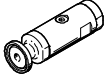
- 1 Port 1
- 2 Port 2
- 3 Sensor slot

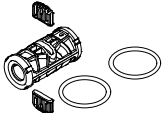
Variant	D1		D6	L1	L2	L3	L4	L5	L6	T1	≈ 2
	Port 1	Port 2									
...GG...	G $\frac{1}{2}$	G $\frac{1}{2}$	M5	95	69.5	12.8	12.8	6.8	6.8	14	50
...TT...	1/2 NPT	1/2 NPT		95		12.8	12.8	6.8	6.8		
...GT...	G $\frac{1}{2}$	1/2 NPT		95		12.8	12.8	6.8	6.8		
...TG...	1/2 NPT	G $\frac{1}{2}$		95		12.8	12.8	6.8	6.8		
...S1S1...	ASME-BPE	1/4 ASME-BPE		130		30.3	30.3	24	24		
...S1G...	ASME-BPE	G $\frac{1}{2}$		112.5		12.8	12.8	6.8	6.8		
...S1T...	ASME-BPE	1/2 NPT		112.5		12.8	12.8	6.8	6.8		
...GS1...	G $\frac{1}{2}$	1/4 ASME-BPE		112.5		12.8	12.8	6.8	6.8		
...TS1...	1/2 NPT	1/4 ASME-BPE		112.5		12.8	12.8	6.8	6.8		
...S1S5...	ASME-BPE	1/4 DIN 32676 clamp		130		30.3	30.3	24	24		
...S5S1...	DIN 32676 clamp	1/4 ASME-BPE		130		30.3	30.3	24	24		
...S5S5...	DIN 32676 clamp	1/4 DIN 32676 clamp		130		30.3	30.3	24	24		
...S5G...	DIN 32676 clamp	G $\frac{1}{2}$		112.5		12.8	12.8	6.8	6.8		
...S5T...	DIN 32676 clamp	1/2 NPT		112.5		12.8	12.8	6.8	6.8		
...GS5...	G $\frac{1}{2}$	1/4 DIN 32676 clamp		112.5		12.8	12.8	6.8	6.8		
...TS5...	1/2 NPT	1/4 DIN 32676 clamp		112.5		12.8	12.8	6.8	6.8		

Housing material	D4 ∅
AL	55
V2	52.4

Pinch valves VZQA

Technical data M22C

Ordering data					
	Nominal width DN	Process valve connection	Weight [g]	Part No.	Type
	15	Clamp to DIN 32676	666	3412424	VZQA-C-M22C-15-S5S5-V2V4E-6
		Clamp to DIN 32676	607	3412425	VZQA-C-M22C-15-S5S5-ALV4E-6-E
		G $\frac{1}{2}$	536	3412426	VZQA-C-M22C-15-GG-V2V4E-6

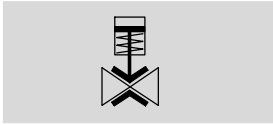
Ordering data					
Seal cartridge	Nominal width DN	Information on materials, shut-off element	Note on materials	Part No.	Type
	15	EPDM	RoHS compliant	3418619	VAVC-Q-M22C-15-E

Pinch valves VZQA

Technical data M22U

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Function



General technical data				
VZQA-C-M22U-...	-6-GG-...	-6-S5S5-...	-15-GG-...	-15-S5S5-...
Nominal width DN	6		15	
Design	Pinch valve, pneumatically actuated			
Type of actuation	Pneumatic			
Sealing principle	Soft			
Mounting position	Any			
Valve function	2/2-way, open, monostable			
Direction of flow	Reversible			
Reset method	Rebound resilience			
Type of piloting	Externally actuated			
Type of mounting	In-line installation			
Process valve connection	G $\frac{1}{4}$	Clamp to DIN 32676	G $\frac{1}{2}$	Clamp to DIN 32676
Auxiliary pilot air port 12	M5		G $\frac{1}{8}$	

Operating and environmental conditions				
VZQA-C-M22U-...	-6-GG-...	-6-S5S5-...	-15-GG-...	-15-S5S5-...
Switching time on	[ms]	125	250	
Switching time off	[ms]	125	250	
Flow rate Kv	[m ³ /h]	0.7	5	
Medium pressure	[bar]	0 ... 4		
Nominal pressure of process valve PN		10		
Overload pressure	[bar]	7.8		
Pilot pressure	[bar]	1 ... 6.5		
Differential pressure	[bar]	2.5		
Burst pressure	[bar]	16		
Ambient temperature	[°C]	-5 ... +60		
Max. viscosity	[mm ² /s]	4000		
Corrosion resistance class CRC ¹⁾		4		

1) Corrosion resistance class 4 to Festo standard 940 070

Components subject to high corrosion stress. Parts exposed to aggressive media, e.g. in the food or chemical industry. These applications may need to be safeguarded by means of special testing using the media.

Pinch valves VZQA

Technical data M22U



Operating and environmental conditions									
VZQA-C-M22U-...	-6-GG- V4V4E-4	-6-S5S5- V4V4E-4	-15-GG- V4V4E-4	-15-S5S5- V4V4E-4	-6-GG- ALV4N-4	-15-GG- V4V4N-4	-15-GG- ALV4N-4	-15-GG- ALPOMN-4	
Medium	Compressed air to ISO 8573-1:2010 [:-:1]				Compressed air to ISO 8573-1:2010 [:-:~]				
	Water				-				
Pilot medium	Compressed air to ISO 8573-1:2010 [7:4:1]				Compressed air to ISO 8573-1:2010 [7:4:4]				
Temperature of medium [°C]	-5 ... +100				-5 ... +60				

Materials									
VZQA-C-M22U-...	-6-GG- V4V4E-4	-6-S5S5- V4V4E-4	-15-GG- V4V4E-4	-15-S5S5-V 4V4E-4	-15-GG- V4V4N-4	-6-GG- ALV4N-4	-15-GG- ALV4N-4	-15-GG- ALPOMN-4	Material number
Housing	High-alloy stainless steel				-		Wrought aluminium alloy		1.4435
	-								-
Housing cover	High-alloy stainless steel						-		1.4435
	-						POM		-
Seals	FPM								
Shut-off element	EPDM				NBR				
Note on materials	Contains paint-wetting impairment substances								-
	RoHS compliant								-

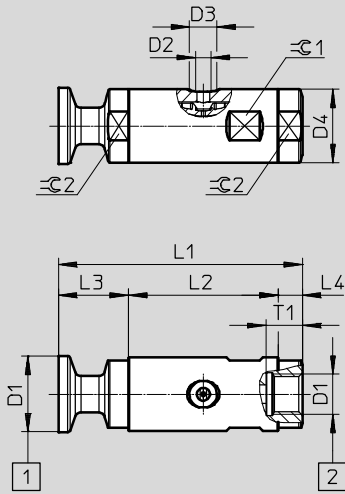
Pinch valves VZQA

Technical data M22U

Dimensions

Download CAD data → www.festo.com

Illustration of port 1: clamp to DIN 32676, port 2: G $\frac{1}{2}$



1 Port 1
2 Port 2

Variant	D1		D2	D3 ∅	D4 ∅	L1	L2	L3	L4	T1	⊕ 1	⊕ 2
	Port 1	Port 2										
Nominal width DN6												
...-GG-...	G $\frac{1}{4}$	G $\frac{1}{4}$	M5	9	24	65	49	8	8	12	22	22
...-TT-...	$\frac{1}{4}$ NPT	$\frac{1}{4}$ NPT				65		8	8			
...-GT-...	G $\frac{1}{4}$	$\frac{1}{4}$ NPT				65		8	8			
...-TG-...	$\frac{1}{4}$ NPT	G $\frac{1}{4}$				65		8	8			
...-S1S1-...	ASME-BPE	$\frac{1}{4}$ ASME-BPE				95		23	23			
...-S1G-...	ASME-BPE	G $\frac{1}{4}$				80		23	8			
...-S1T-...	ASME-BPE	$\frac{1}{4}$ NPT				80		23	8			
...-GS1-...	G $\frac{1}{4}$	$\frac{1}{4}$ ASME-BPE				80		8	23			
...-TS1-...	$\frac{1}{4}$ NPT	$\frac{1}{4}$ ASME-BPE				80		8	23			
...-S1S5-...	ASME-BPE	$\frac{1}{4}$ DIN 32676 clamp				95		23	23			
...-S5S1-...	DIN 32676 clamp	$\frac{1}{4}$ ASME-BPE				95		23	23			
...-S5S5-...	DIN 32676 clamp	$\frac{1}{4}$ DIN 32676 clamp				95		23	23			
...-S5G-...	DIN 32676 clamp	G $\frac{1}{4}$				80		23	8			
...-S5T-...	DIN 32676 clamp	$\frac{1}{4}$ NPT				80		23	8			
...-GS5-...	G $\frac{1}{4}$	$\frac{1}{4}$ DIN 32676 clamp				80		8	23			
...-TS5-...	$\frac{1}{4}$ NPT	$\frac{1}{4}$ DIN 32676 clamp				80		8	23			

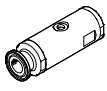
Pinch valves VZQA

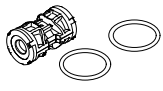
Technical data M22U

Variant	D1		D2	D3 ∅	D4 ∅	L1	L2	L3	L4	T1	≈ 1	≈ 2
	Port 1	Port 2										
Nominal width DN15												
...-GG-...	G½	G½	G¼	15	38	95	81	7	7	14	36	36
...-TT-...	½ NPT	½ NPT				95		7	7			
...-GT-...	G½	½ NPT				95		7	7			
...-TG-...	½ NPT	G½				95		7	7			
...-S1S1-...	¼ ASME-BPE	¼ ASME-BPE				130		24.5	24.5			
...-S1G-...	¼ ASME-BPE	G½				112.5		24.5	7			
...-S1T-...	¼ ASME-BPE	½ NPT				112.5		24.5	7			
...-GS1-...	G½	¼ ASME-BPE				112.5		7	24.5			
...-TS1-...	½ NPT	¼ ASME-BPE				112.5		7	24.5			
...-S1S5-...	¼ ASME-BPE	¼ DIN 32676 clamp				130		24.5	24.5			
...-S5S1-...	¼ DIN 32676 clamp	¼ ASME-BPE				130		24.5	24.5			
...-S5S5-...	¼ DIN 32676 clamp	¼ DIN 32676 clamp				130		24.5	24.5			
...-S5G-...	¼ DIN 32676 clamp	G½				112.5		24.5	7			
...-S5T-...	¼ DIN 32676 clamp	½ NPT				112.5		24.5	7			
...-GS5-...	G½	¼ DIN 32676 clamp				112.5		7	24.5			
...-TS5-...	½ NPT	¼ DIN 32676 clamp				112.5		7	24.5			
...-...-V4POM-...	-	-				G¼		15	38			
...-...-ALPOM-...	-	-										

Pinch valves VZQA

Technical data M22U

Ordering data					
	Nominal width DN	Process valve connection	Weight [g]	Part No.	Type
	6	G $\frac{1}{4}$	157	2931678	VZQA-C-M22U-6-GG-V4V4E-4
		G $\frac{1}{4}$	105.5	2931679	VZQA-C-M22U-6-GG-ALV4N-4
		Clamp to DIN 32676	215	2931681	VZQA-C-M22U-6-S5S5-V4V4E-4
	15	G $\frac{1}{2}$	431	3022829	VZQA-C-M22U-15-GG-V4V4E-4
		G $\frac{1}{2}$	431	3022830	VZQA-C-M22U-15-GG-V4V4N-4
		G $\frac{1}{2}$	265	3022831	VZQA-C-M22U-15-GG-ALV4N-4
		G $\frac{1}{2}$	158	3022832	VZQA-C-M22U-15-GG-ALPOMN-4
	Clamp to DIN 32676	559	3022833	VZQA-C-M22U-15-S5S5-V4V4E-4	

Ordering data					
Seal cartridge	Nominal width DN	Information on materials, shut-off element	Note on materials	Part No.	Type
	6	NBR	RoHS compliant	2392881	VAVC-Q2-M22U-6-N
		EPDM		2392882	VAVC-Q2-M22U-6-E
		Silicone		2392883	VAVC-Q2-M22U-6-S1
	15	Silicone		3019144	VAVC-Q2-M22U-15-S1
		EPDM		3019148	VAVC-Q2-M22U-15-E
		NBR		3019151	VAVC-Q2-M22U-15-N

Pinch valves VZQA

Ordering data – Modular product system

Ordering table					
VZQA-C-...	M22C	M22U	Condi- tions	Code	Entry code
M Module no.	3174282	2037881			
Product type	Pinch valve			VZQA	VZQA
Version	Easy-to-clean design			-C	-C
Valve function	2/2-way valve, normally closed	–		-M22C	
	–	2/2-way valve, normally open		-M22U	
Nominal diameter DN	–	6		-6	
	15			-15	
Process valve connection type 1	G female thread			-G	
	Clamp to ASME-BPE			[1] -S1	
	Clamp to DIN 32676			[1] -S5	
	NPT female thread			-T	
Process valve connection type 2	G female thread			G	
	Clamp to ASME-BPE			[1] S1	
	Clamp to DIN 32676			[1] S5	
	NPT female thread			T	
Housing material	Aluminium			-AL	
	Stainless steel (chrome-nickel, austenitic)	–		-V2	
	–	Stainless steel (chrome-nickel-molybdenum, austenitic)		-V4	
Housing cover material	Aluminium			AL	
	–	Polyoxymethylene	[3]	POM	
	Stainless steel (chrome-nickel-molybdenum)			V4	
Shut-off element material	EPDM			E	
	–	NBR		N	
	–	Silicone		S1	
Pressure range of media [bar]	–	0 ... 4		-4	
	0 ... 6	–		-6	
O Sensing type	None				
	End positions			[2] [4] -E	

- [1] S1, S5** Only in combination with housing cover material V4 (stainless steel)
- [2] E** Only in combination with valve function M22C
- [3] POM** Not in combination with nominal diameter DN6
- [4] E** Not in combination with housing material V2 (stainless steel)

M Mandatory data
O Options

Transfer order code

VZQA - **C** - - - - - -