

Ball valve actuators VZPR

Key features


FESTO




Standard directional control valves
Ball valve actuators

2.3

VZPR
VZPR-...-R

-  - Connecting thread
Rp1/4 ... Rp2 1/2

-  - Flow rate Kv
5.9 ... 535 m³/h

- Brass design
VZPR-...
- Stainless steel design
VZPR-...-R
- Port pattern to Namur
VDI/VDE 3845

- Combination of a pneumatic quarter-turn actuator and a ball valve
- Flow is fully opened or closed in both directions
- 5/2-way valve with Namur port pattern can be mounted directly on the drive unit
- Limit switch attachments for end-position sensing can be mounted directly on the drive unit

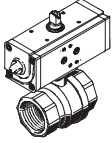
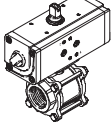
Valves with Namur port pattern
→ 7 / 2.1-5

Limit switch attachments with Namur mounting-hole pattern → 7 / 1.2-98

Ball valve actuators VZPR

Product range overview

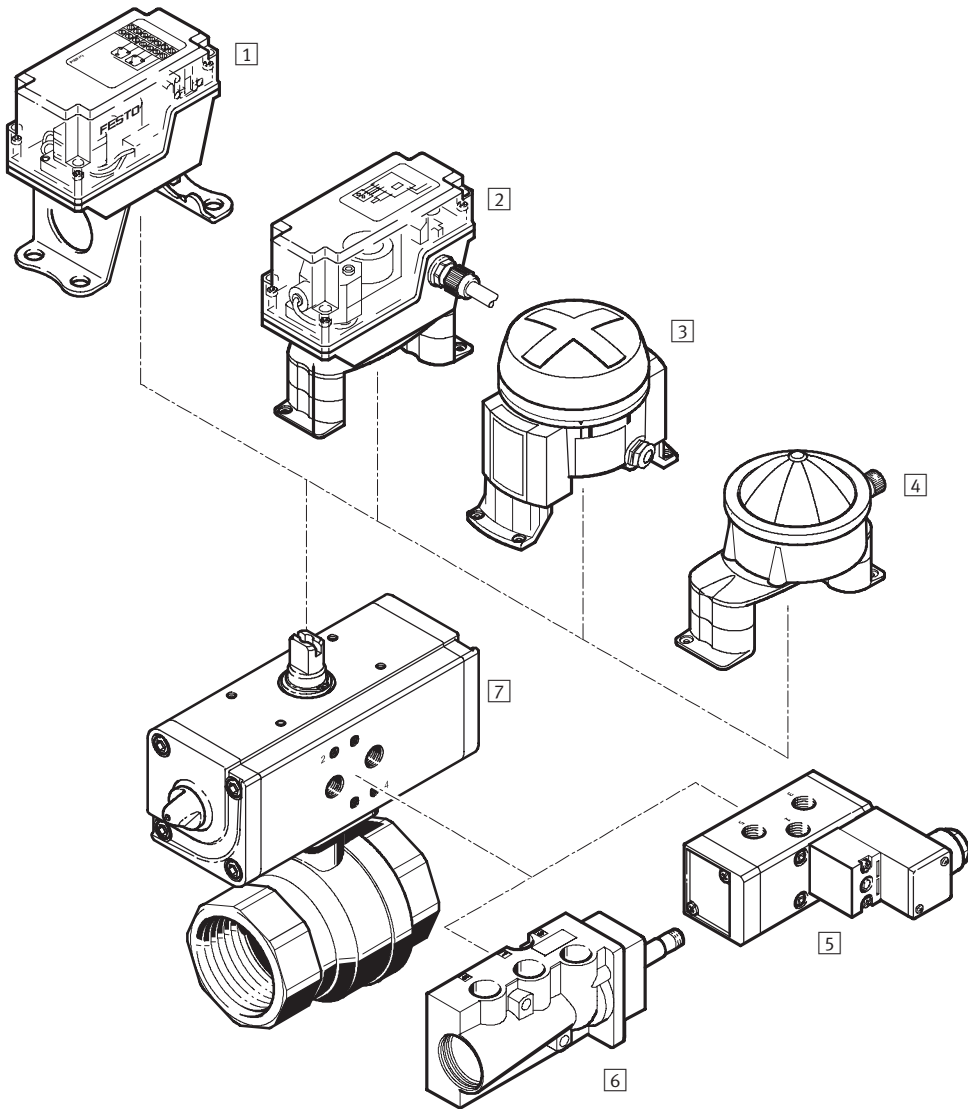


Version	Type	Connecting thread ¹⁾	Nominal diameter [mm]	Nominal operating pressure [bar]	→ Page
Brass					
	VZPR-BPD-...	Rp1/4	15	40	7 / 2.3-20
		Rp3/8	15	40	
		Rp1/2	15	40	
		Rp3/4	20	40	
		Rp1	25	40	
		Rp1 1/4	32	40	
		Rp1 1/2	40	25	
		Rp2	50	25	
		Rp2 1/2	63	25	
Stainless steel					
	VZPR-BPD-...-R	Rp1/4	10	63	7 / 2.3-24
		Rp3/8	12		
		Rp1/2	16		
		Rp3/4	20		
		Rp1	25		
		Rp1 1/4	32		
		Rp1 1/2	40		
		Rp2	50		
		Rp2 1/2	65		

1) Cylindrical barrel with female thread to DIN ISO 228-1

Ball valve actuators VZPR

Peripherals overview



Ball valve actuators VZPR

Peripherals overview

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Mounting attachments and accessories		
	Brief description	→ Page
1	Limit switch attachment QH-DR-E Square design Pneumatic, electrical or inductive sensing	7 / 1.2-106
2	Limit switch attachment DAPZ Square design Electrical, electrically explosion-proof or inductive sensing	7 / 1.2-99
3	Limit switch attachment DAPZ Round design, variant AR Electrical, inductive or inductively explosion-proof sensing	7 / 1.2-103
4	Limit switch attachment DAPZ Round design, variant RO	7 / 1.2-101
5	Solenoid valve MFH Basic valve with pilot control valve for F solenoid coil	7 / 2.1-10
	Solenoid valve MN1H Basic valve with pilot control valve for N1 solenoid coil	7 / 2.1-10
	Solenoid valve MGTBH Basic valve with pilot control valve, solenoid coil and socket	7 / 2.1-10
6	Solenoid valve NVF3 For F solenoid coil and explosion-proof F solenoid coil	7 / 2.1-4
7	Ball valve actuator VZPR Combination of quarter-turn actuator and ball valve Variants: Brass or stainless steel	7 / 2.2-2

Ball valve actuators VZPR

Type codes

		VZPR	-	B	P	D	H	-	22	-	R	38	R
Type		VZPR											
	Ball valve actuator												
Valve		B											
	Ball valve												
Drive		P											
	Quarter-turn actuator DAPS												
Mode of operation		D											
	Double-acting												
Torque		H											
	With high torque												
Valve function		22											
	2/2-way valve												
Closing direction		R											
	Closes to right												
Connecting thread		14											
	Rp1/4												
	Rp3/8												
	Rp1/2												
	Rp3/4												
	Rp1												
	Rp1 1/4												
	Rp1 1/2												
	Rp2												
	Rp2 1/2												
Variant		R											
	Stainless steel version												

Ball valve actuators VZPR-BPD

Technical data



Function



- - Swivel angle
0 ... 90°
- - Flow rate Kv
5.9 ... 535 m³/h



- - Connecting thread
Rp1/4 ... Rp2 1/2
- - Torque
15 ... 180 Nm

General technical data										
Connecting thread		Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp1 1/4	Rp1 1/2	Rp2	Rp2 1/2
Quarter-turn actuator										
Pneumatic connection		G1/8								
Constructional design		Scotch yoke mechanism, double-acting								
Type of mounting		Via female threads								
Mounting position		Any								
Swivel angle	[°]	90								
Closing direction		Closes to right								
Torque at 5.6 bar and 0° swivel angle	[Nm]	15	15	15	30	30	60	60	106	180
Ball valve										
Valve function		2/2								
Constructional design		2-way ball valve								
Sealing principle		Soft								
Actuation type		Pneumatic								
Direction of flow		Reversible								
Nominal diameter	[mm]	15	15	15	20	25	32	40	50	63
Flow rate Kv	[m ³ /h]	5.9	9.4	17	41	70	121	200	292	535

Operating and environmental conditions										
Connecting thread		Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp1 1/4	Rp1 1/2	Rp2	Rp2 1/2
Ambient temperature	[°C]	-20 ... +80								
Temperature of medium	[°C]	-20 ... +150								
Corrosion resistance class CRC ²⁾		1								
Food industry approval		No								
Quarter-turn actuator										
Operating pressure ¹⁾	[bar]	1 ... 8.4								
Operating medium		Dried air, lubricated or unlubricated								
Ball valve										
Nominal operating pressure	[bar]	40	40	40	40	40	40	25	25	25
Operating medium		Compressed air, water, neutral gasses, neutral fluids, vacuum								

1) Minimum operating pressures vary for single-acting quarter-turn actuators depending upon spring quantity.

2) Corrosion resistance class 1 to Festo standard 940 070

Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Ball valve actuators VZPR-BPD

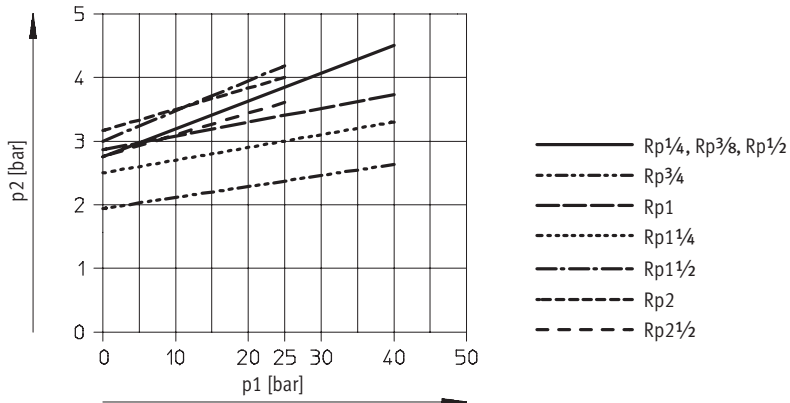
Technical data



Materials		
Housing		Brass
Ball		Brass
Seals	Housing	Polytetrafluoroethylene, fibre glass reinforced
	Shaft	Fluoro elastomer

Weight [g]			
Connecting thread		Connecting thread	
Rp1/4	1300	Rp1 1/4	3200
Rp3/8	1300	Rp1 1/2	3800
Rp1/2	1200	Rp2	5400
Rp3/4	1500	Rp2 1/2	7300
Rp1	1800		

Operating pressure p2 as a function of nominal operating pressure p1

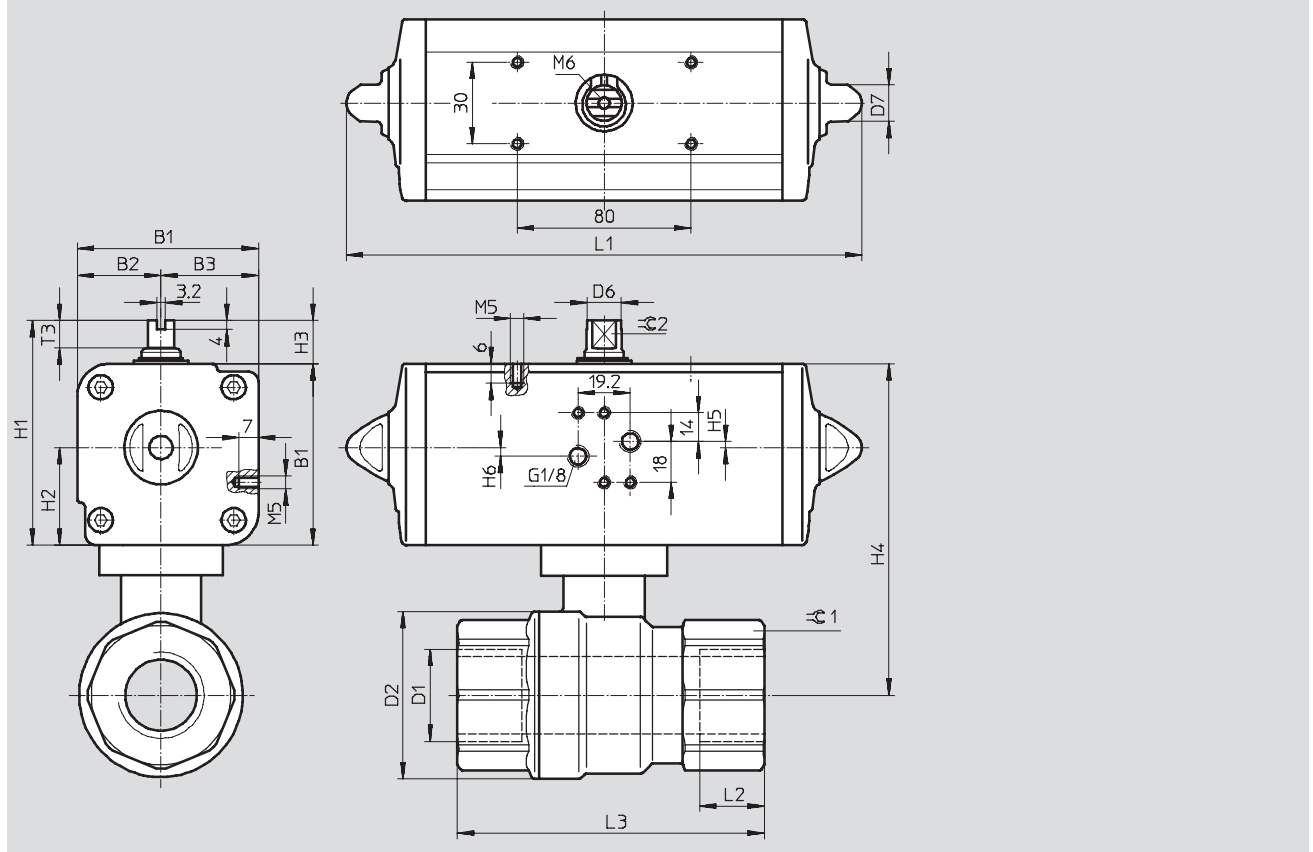


Ball valve actuators VZPR-BPD

Technical data



Dimensions Download CAD data → www.festo.com/en/engineering



Standard directional control valves
Ball valve actuators

2.3

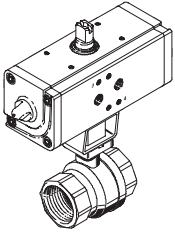
Connecting thread D1	B1	B2	B3	D2 Ø max.	D6 Ø	D7 Ø	H1	H2	H3
Rp1/4	52.2	24.2	28	35	9.2	13	72.2	28	20
Rp3/8									
Rp1/2									
Rp3/4	59.2	27.7	31.5	45	10.9	13	79.2	31.5	20
Rp1				55					
Rp1 1/4	70.4	32.7	37.7	65	14.5	13	90.4	37.7	20
Rp1 1/2				75					
Rp2	83.3	38.5	44.8	90	16.2	17	103.3	44.8	20
Rp2 1/2	107.5	51	56.5	110	20.2	22	137.5	56.5	30

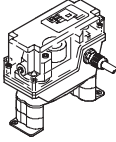
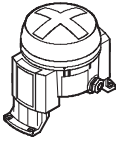
Connecting thread D1	H4	H5	H6	L1	L2	L3	T3	∅1	∅2
Rp1/4	92.5	0.8	3.2	159	15	75	10	26	8
Rp3/8									
Rp1/2									
Rp3/4	104.2	-	4	174	16	80	10	32	9
Rp1					19	90		41	
Rp1 1/4	130.2	-	4	198	21	110	13	50	10
Rp1 1/2					21	120		55	
Rp2	158.3	-	4	236.5	25	140	13	70	12
Rp2 1/2	192.5			289.9	24	143	16	83	15

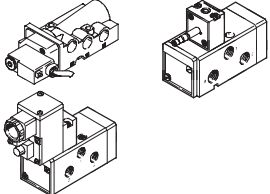
Ball valve actuators VZPR-BPD

Technical data

FESTO

Ordering data – Ball valve actuators			
	Connecting thread	Part No.	Type
	Rp1/4	540 510	VZPR-BPD-22-R14
	Rp3/8	540 511	VZPR-BPD-22-R38
	Rp1/2	540 512	VZPR-BPD-22-R12
	Rp3/4	540 513	VZPR-BPD-22-R34
	Rp1	540 514	VZPR-BPD-22-R1
	Rp1 1/4	540 515	VZPR-BPD-22-R114
	Rp1 1/2	540 516	VZPR-BPD-22-R112
	Rp2	540 517	VZPR-BPD-22-R2
	Rp2 1/2	540 874	VZPR-BPD-22-R212

Ordering data – Limit switch attachments (Namur)				Technical data → 7 / 1.2-98	
	Sensing principle	Explosion-proof	Part No.	Type	
	Square design				
	Electrical	–	534 468	DAPZ-SB-M-250AC-DSM-RO	
	Electrical	■	534 470	DAPZ-SB-M-250AC-EXS-RO	
	Inductive	–	534 473	DAPZ-SB-I-30DC-DSAM-RO	
	Pneumatic	–	164 855	QH-DR-E-S3-PK-3-B-B	
	Electrical	–	164 854	QH-DR-E-S3-E-SW-B	
	Inductive	–	164 853	QH-DR-E-SIEN-M12-NB-B	
	Round design				
		Electrical	–	534 469	DAPZ-SB-M-250AC-DR-RO
Inductive		–	534 471	DAPZ-SB-I-30DC-DR-RO	
Inductive		■	534 472	DAPZ-SB-I-25DC-R-RO	
Electrical		–	534 474	DAPZ-SB-M-250AC-DR-AR	
Inductive		–	534 475	DAPZ-SB-I-36DC-DR-AR	
Inductive		■	534 476	DAPZ-SB-I-25DC-EXDR-AR	

Ordering data – Solenoid valves (Namur)				Technical data → 7 / 2.1-2	
	Standard nominal flow rate	For coil type	Part No.	Type	
	900	F solenoid coil		535 987	NVF3-MOH-5/2-K-1/4-EX
		V solenoid coil		535 988	NVF3-MOH-5/2-K-1/4-IA-EX
	1000	F solenoid coil		183 973	MFH-5/2K-FR-NA
		N1 solenoid coil		183 974	MN1H-5/2K-FR-NA
		1)		184 105	MGTBH-3/2-1,2-24DC
		1)		185 246	MGTBH-3/2-1,2-110AC
		1)		185 248	MGTBH-3/2-1,2-230AC

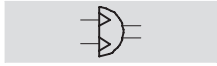
1) Solenoid coil included in scope of delivery

Ball valve actuators VZPR-BPD, stainless steel

Technical data



Function



- - Connecting thread
Rp $\frac{1}{4}$... Rp $\frac{2}{2}$

- - Torque
30 ... 240 Nm

- - Swivel angle
0 ... 90°

- - Flow rate Kv
16 ... 507 m 3 /h



General technical data									
Connecting thread	Rp $\frac{1}{4}$	Rp $\frac{3}{8}$	Rp $\frac{1}{2}$	Rp $\frac{3}{4}$	Rp1	Rp1 $\frac{1}{4}$	Rp1 $\frac{1}{2}$	Rp2	Rp2 $\frac{1}{2}$
Drive									
Pneumatic connection	G $\frac{1}{8}$								
Constructional design	Scotch yoke mechanism, double-acting								
Type of mounting	Via female threads								
Mounting position	Any								
Swivel angle [°]	90								
Closing direction	Closes to right								
Torque at 5.6 bar and 0° swivel angle [Nm]	30	30	30	30/60 ¹⁾	60	60/106 ¹⁾	106/180 ¹⁾	180	240
Ball valve									
Valve function	2/2								
Constructional design	2-way ball valve								
Sealing principle	Soft								
Actuation type	Pneumatic								
Direction of flow	Reversible								
Nominal diameter [mm]	10	12	16	20	25	32	40	50	65
Flow rate Kv [m 3 /h]	16	21	35	46	72	105	170	275	507

1) With this connecting thread there are two ball valve actuators with different torques available for selection.

Operating and environmental conditions	
Ambient temperature [°C]	-20 ... +80
Temperature of medium [°C]	-20 ... +150
Corrosion resistance class CRC ¹⁾	3
Food industry approval	No
Quarter-turn actuator	
Operating pressure ²⁾ [bar]	1 ... 8.4
Operating medium	Dried air, lubricated or unlubricated
Ball valve	
Nominal operating pressure [bar]	63
Operating medium	Compressed air, water, neutral gasses, neutral fluids, vacuum

- 1) Corrosion resistance class 3 to Festo standard 940 070
Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.
- 2) Minimum operating pressures vary for single-acting quarter-turn actuators depending upon spring quantity.

Materials	
Housing	High-alloy stainless steel
Ball	High-alloy stainless steel
Seals	Housing: Polytetrafluoroethylene, fibre glass reinforced
	Shaft: Fluoro elastomer

Ball valve actuators VZPR-BPD, stainless steel

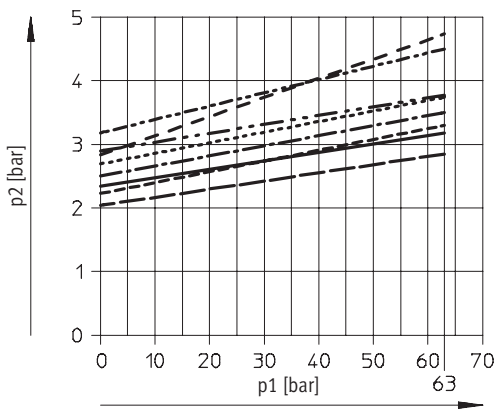
Technical data



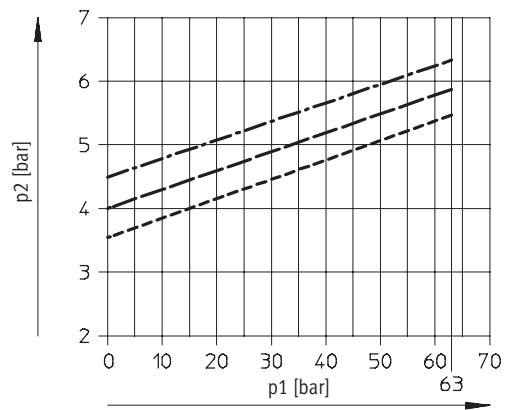
Weight [g]		Connecting thread	
Connecting thread		Connecting thread	
Rp1/4	1200	Rp1/4, torque: 60 Nm	3800
Rp3/8	1200	Rp1/4, torque: 100 Nm	4200
Rp1/2	1700	Rp1/2, torque: 100 Nm	5100
Rp3/4, torque: 30 Nm	1800	Rp1/2, torque: 180 Nm	7000
Rp3/4, torque: 60 Nm	2700	Rp2	8700
Rp1	3100	Rp2 1/2	14400

Operating pressure p2 as a function of nominal operating pressure p1

Standard torque



High torque



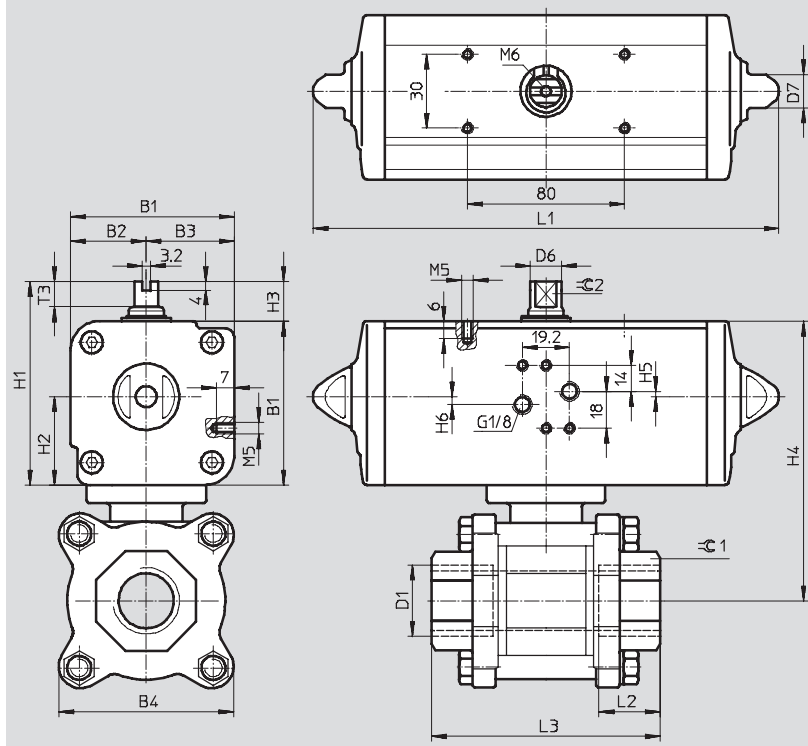
- Rp1/4, Rp3/8, Rp1/2
- - - Rp3/4
- Rp1
- · - · Rp1 1/4

- · - · Rp1 1/2
- - - Rp2
- - - Rp2 1/2

- - - Rp3/4
- - - Rp1 1/4
- - - Rp1 1/2

Dimensions

Download CAD data → www.festo.com/en/engineering



Ball valve actuators VZPR-BPD, stainless steel



Technical data

Connecting thread D1	Torque [Nm]	B1	B2	B3	B4 max.	D6 ∅	D7 ∅	H1	H2	H3
Rp1/4	30	59.2	27.7	31.5	50	10.9	13	79.2	31.5	20
Rp3/8	30									
Rp1/2	30									
Rp3/4	30									
Rp3/4	60	70.4	32.7	37.7	55	14.5	13	90.4	37.7	20
Rp1	60				65					
Rp1 1/4	60				75					
Rp1 1/4	106	83.3	38.5	44.8	75	16.2	17	103.3	44.8	20
Rp1 1/2	106				85					
Rp1 1/2	180	107.5	51	56.5	85	20.2	22	137.5	56.5	30
Rp2	180				100					
Rp2 1/2	240	111.1	51	60.1	170	22.5	22	141.1	60.1	30

Connecting thread D1	Torque [Nm]	H4 ±2	H5	H6	L1	L2	L3 ±2	T3	≈C1	≈C2
Rp1/4	30	101.2	0.8	4	174.3	14	65	10	19	9
Rp3/8	30								24	
Rp1/2	30								29	
Rp3/4	30								35	
Rp3/4	60	115.4	-	-	198.1	19	80	13	35	10
Rp1	60	122.4							41	
Rp1 1/4	60	128.4							50	
Rp1 1/4	106	141.3	-	-	237.1	23	110	13	50	12
Rp1 1/2	106	151.3							58	
Rp1 1/2	180	175.5	-	-	289.9	25	120	16	58	15
Rp2	180	185.5							73	
Rp2 1/2	240	210.1	-	-	313.6	38	185	17	90	19

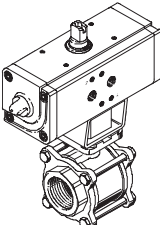
Standard directional control valves
Ball valve actuators

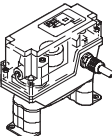
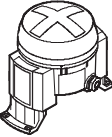
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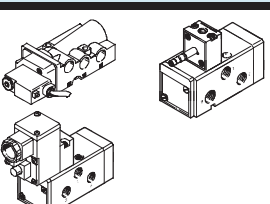
Ball valve actuators VZPR-BPD, stainless steel



Technical data

Ordering data			
	Connecting thread	Part No.	Type
	Rp1/4	540 526	VZPR-BPD-22-R14R
	Rp3/8	540 527	VZPR-BPD-22-R38R
	Rp1/2	540 528	VZPR-BPD-22-R12R
	Rp3/4, torque: 30 Nm/operating pressure: 5.6 bar	540 529	VZPR-BPD-22-R34R
	Rp3/4, torque: 60 Nm/operating pressure: 5.6 bar	540 875	VZPR-BPDH-22-R34R
	Rp1	540 530	VZPR-BPD-22-R1R
	Rp1 1/4, torque: 60 Nm/operating pressure: 5.6 bar	540 531	VZPR-BPD-22-R114R
	Rp1 1/4, torque: 100 Nm/operating pressure: 5.6 bar	540 876	VZPR-BPDH-22-R114R
	Rp1 1/2, torque: 100 Nm/operating pressure: 5.6 bar	540 532	VZPR-BPD-22-R112R
	Rp1 1/2, torque: 180 Nm/operating pressure: 5.6 bar	540 877	VZPR-BPDH-22-R112R
	Rp2	540 533	VZPR-BPD-22-R2R
	Rp2 1/2	540 878	VZPR-BPD-22-R212R

Ordering data – Limit switch attachments (Namur)				Technical data → 7 / 1.2-98	
	Sensing principle	Explosion-proof	Part No.	Type	
Square design					
	Electrical	–	534 468	DAPZ-SB-M-250AC-DSM-RO	
	Electrical	■	534 470	DAPZ-SB-M-250AC-EXS-RO	
	Inductive	–	534 473	DAPZ-SB-I-30DC-DSAM-RO	
	Pneumatic	–	164 855	QH-DR-E-S3-PK-3-B-B	
	Electrical	–	164 854	QH-DR-E-S3-E-SW-B	
	Inductive	–	164 853	QH-DR-E-SIEN-M12-NB-B	
Round design					
	Electrical	–	534 469	DAPZ-SB-M-250AC-DR-RO	
	Inductive	–	534 471	DAPZ-SB-I-30DC-DR-RO	
	Inductive	■	534 472	DAPZ-SB-I-25DC-R-RO	
	Electrical	–	534 474	DAPZ-SB-M-250AC-DR-AR	
	Inductive	–	534 475	DAPZ-SB-I-36DC-DR-AR	
	Inductive	■	534 476	DAPZ-SB-I-25DC-EXDR-AR	

Ordering data – Solenoid valves (Namur)				Technical data → 7 / 2.1-2	
	Standard nominal flow rate	For coil type	Part No.	Type	
	900	F solenoid coil	535 987	NVF3-MOH-5/2-K-1/4-EX	
		V solenoid coil	535 988	NVF3-MOH-5/2-K-1/4-IA-EX	
	1000	F solenoid coil	183 973	MFH-5/2K-FR-NA	
		N1 solenoid coil	183 974	MN1H-5/2K-FR-NA	
		1)	184 105	MGTBH-3/2-1,2-24DC	
		1)	185 246	MGTBH-3/2-1,2-110AC	
		1)	185 248	MGTBH-3/2-1,2-230AC	

1) Solenoid coil included in scope of delivery