

Ball valve actuators VZPR

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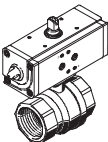
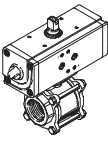


Ball valve actuators VZPR

Key features and product range overview

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General	Construction	Characteristics	
-  - 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 → Internet: namur Limit switch attachments with Namur mounting-hole pattern → Internet: dapz

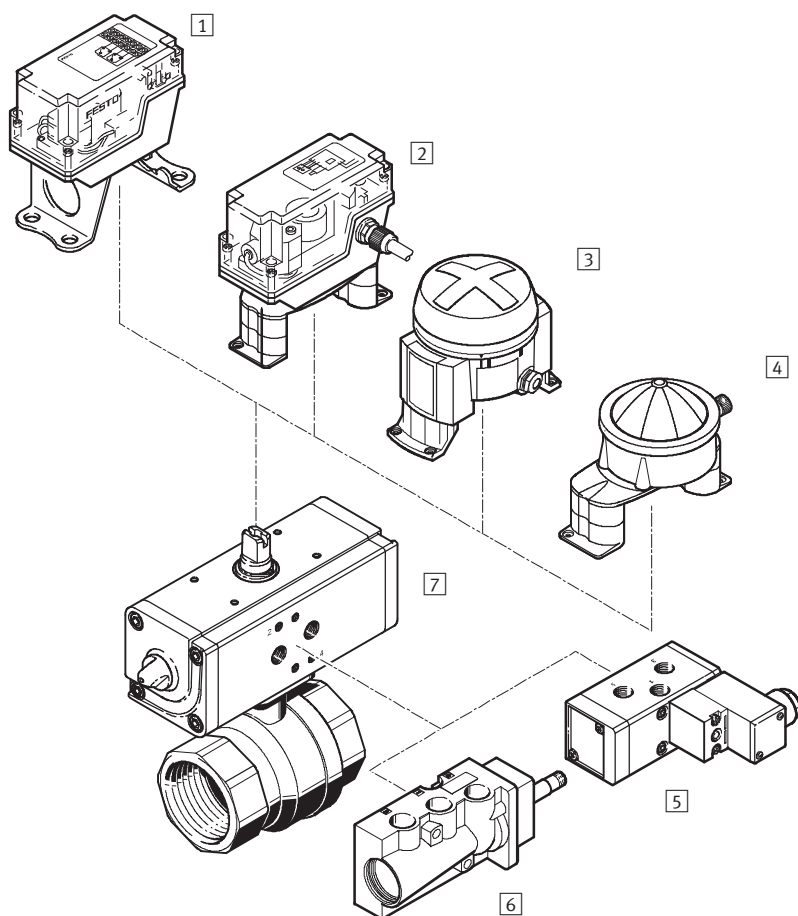
Version	Type	Connecting thread ¹⁾	Nominal diameter [mm]	Nominal operating pressure [bar]	→ Page/Internet
Brass					
	VZPR-BPD-...	Rp1/4	15	40	5
		Rp3/8	15	40	
		Rp1/2	15	40	
		Rp3/4	20	40	
		Rp1	25	40	
		Rp1 1/4	32	40	
		Rp1 1/2	40	25	
		Rp2	50	25	
		Rp2 1/2	63	25	
Stainless steel					
	VZPR-BPD-...-R	Rp1/4	10	63	10
		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

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Mounting attachments and accessories		
	Brief description	→ Page/Internet
1	Limit switch attachment QH-DR-E	Square design Pneumatic, electrical or inductive sensing qh-dr-e
2	Limit switch attachment DAPZ	Square design Electrical, electrically explosion-proof or inductive sensing dapz
3	Limit switch attachment DAPZ	Round design, variant AR Electrical, inductive or inductively explosion-proof sensing dapz
4	Limit switch attachment DAPZ	Round design, variant RO dapz
5	Solenoid valve MFH	Basic valve with pilot control valve for F solenoid coil 9
	Solenoid valve MN1H	Basic valve with pilot control valve for N1 solenoid coil 9
	Solenoid valve MGTBH	Basic valve with pilot control valve, solenoid coil and socket 9
6	Solenoid valve NVF3	For F solenoid coil and explosion-proof F solenoid coil 9
7	Ball valve actuator VZPR	Combination of quarter-turn actuator and ball valve Variants: Brass or stainless steel 8

Ball valve actuators VZPR

Type codes

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		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												
38	Rp3/8												
12	Rp1/2												
34	Rp3/4												
1	Rp1												
114	Rp1 1/4												
112	Rp1 1/2												
2	Rp2												
212	Rp2 1/2												
Variant													
R	Stainless steel version												

Ball valve actuators VZPR-BPD

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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 [m³/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	Rp11/4	Rp11/2	Rp2	Rp21/2
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

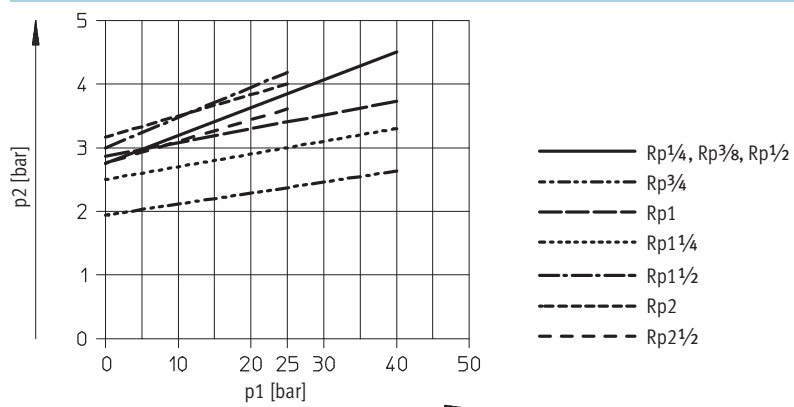
Technical data

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

Weight [g]		Connecting thread	
Connecting thread		Connecting thread	
Rp1/4	1300	Rp1/4	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



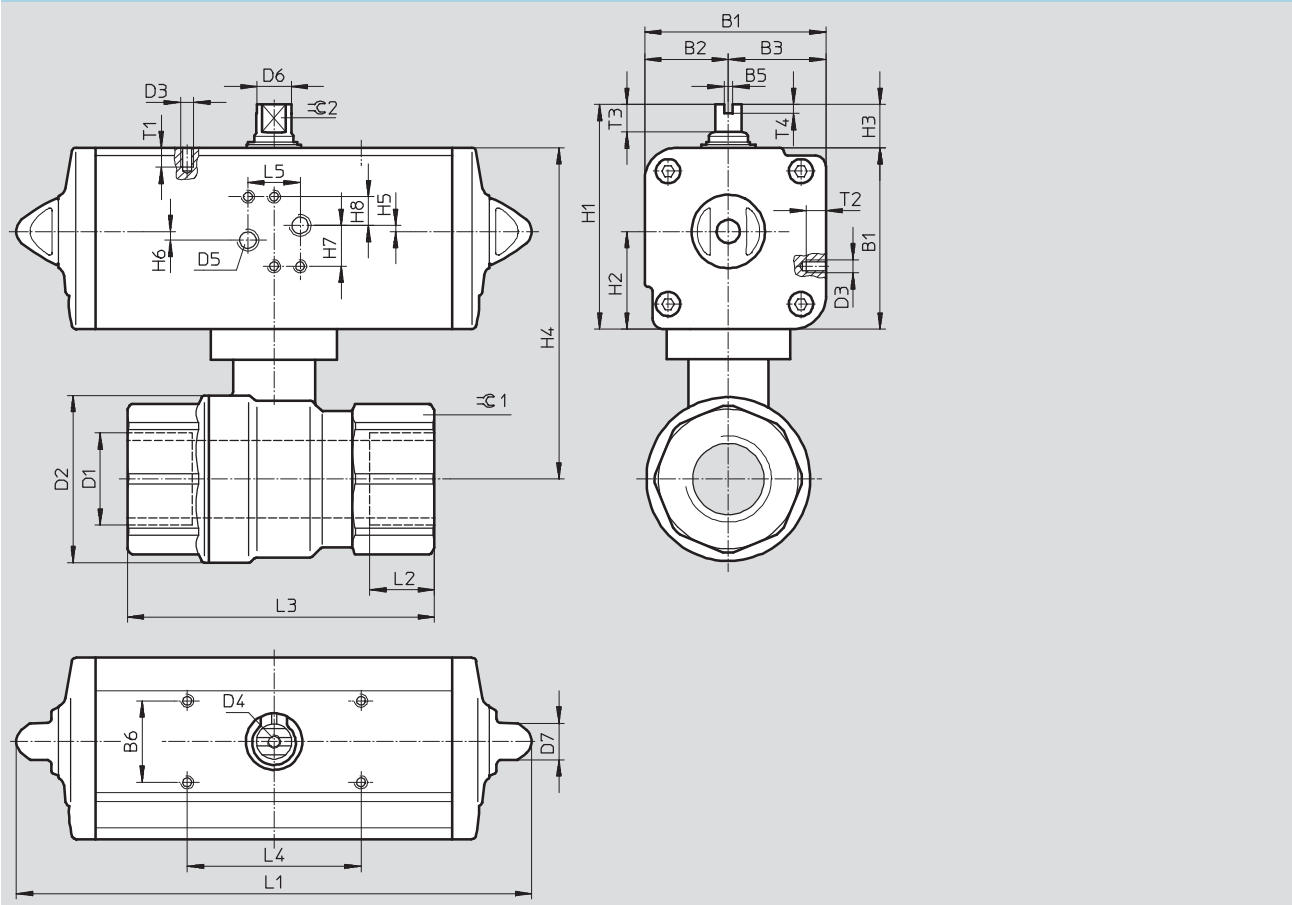
Ball valve actuators VZPR-BPD

Technical data

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Dimensions

Download CAD data → www.festo.com



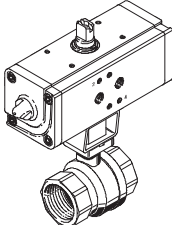
Connecting thread D1	B1	B2	B3	B5	B6	D2 Ø max.	D3	D4	D5	D6 Ø	D7 Ø	H1	H2	H3	H4	
Rp¼	52.2	24.2	28	3.2	30	35	M5	M6	G¼	9.2	13	72.2	28	20	92.5	
Rp¾																
Rp½																
Rp¾	59.2	27.7	31.5			45				10.9	13	79.2	31.5	20	104.2	
Rp1																55
Rp1¼																65
Rp1½	70.4	32.7	37.7			75				14.5	13	90.4	37.7	20	130.2	
Rp2																90
Rp2½																110
	83.3	38.5	44.8													
	107.5	51	56.5													

Connecting thread D1	H5	H6	H7	H8	L1	L2	L3	L4	L5	T1	T2	T3	T4	≈C1	≈C2	
Rp¼	0.8	3.2	18	14	159	15	75	80	19.2	6	7	10	4	26	8	
Rp⅜																
Rp½																
Rp¾	–	4			174	16	80					10		32	9	
Rp1						19	90									41
Rp1¼						198	21									110
Rp1½	21	120			55											
Rp2	236.5	25			140		13					70		12		
Rp2½	–	4			289.9	24	143					16		83	15	

Ball valve actuators VZPR-BPD

Technical data

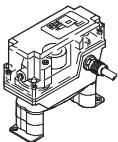
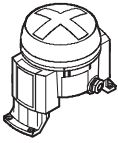
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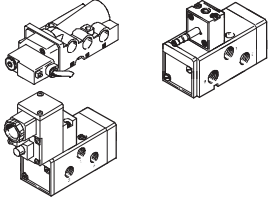
Ordering data – Ball valve actuators			
	Connecting thread	Part No.	Type
	Rp1/4	540 510	VZPR-BPD-22-R14
	Rp3/8	540 511	VZPR-BPD-22-R38
	Rp1/2	540 512	VZPR-BPD-22-R12
	Rp3/4	540 513	VZPR-BPD-22-R34
	Rp1	540 514	VZPR-BPD-22-R1
	Rp1 1/4	540 515	VZPR-BPD-22-R114
	Rp1 1/2	540 516	VZPR-BPD-22-R112
	Rp2	540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

Ball valve actuators VZPR-BPD

Technical data

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Ordering data – Limit switch attachments (Nimur)			Technical data → Internet: dapz, qh-dr	
	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-30DC-DR-AR
	Inductive	■	534 476	DAPZ-SB-I-25DC-EXDR-AR

Ordering data – Solenoid valves (Nimur)			Technical data → Internet: solenoid valves	
	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

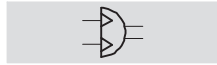
1) Solenoid coil included in scope of delivery

Ball valve actuators VZPR-BPD, stainless steel

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Technical data

Function



-  - Swivel angle
0 ... 90°

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

-  - Flow rate Kv
16 ... 507 m³/h

-  - Torque
30 ... 240 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
Drive									
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]	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 [m³/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	Polytetrafluoroethylene, fibre glass reinforced
Shaft	Fluoro elastomer

Ball valve actuators VZPR-BPD, stainless steel

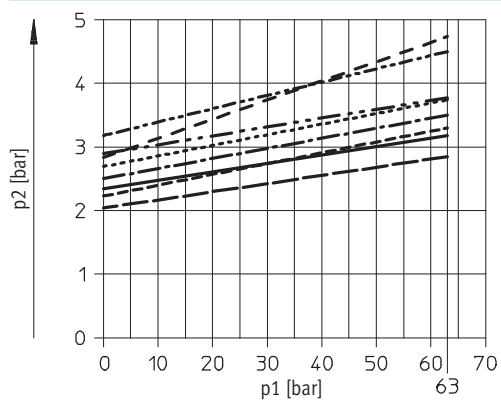
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Technical data

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

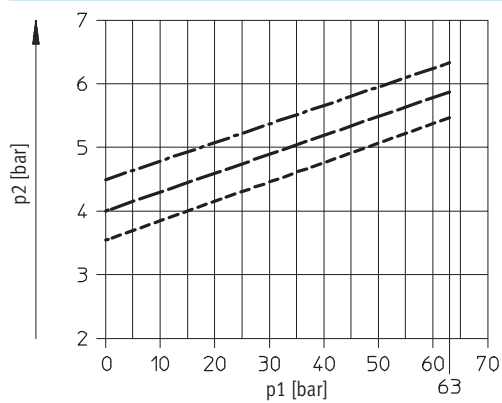
Operating pressure p₂ as a function of nominal operating pressure p₁

Standard torque



— Rp1/4, Rp3/8, Rp1/2 - · - · - Rp1 1/2
 - - - - - Rp3/4 - - - - - Rp2
 — Rp1 - - - - - Rp2 1/2
 ········· Rp1 1/4

High torque



— Rp3/4
 - · - · - Rp1 1/4
 - - - - - Rp1 1/2

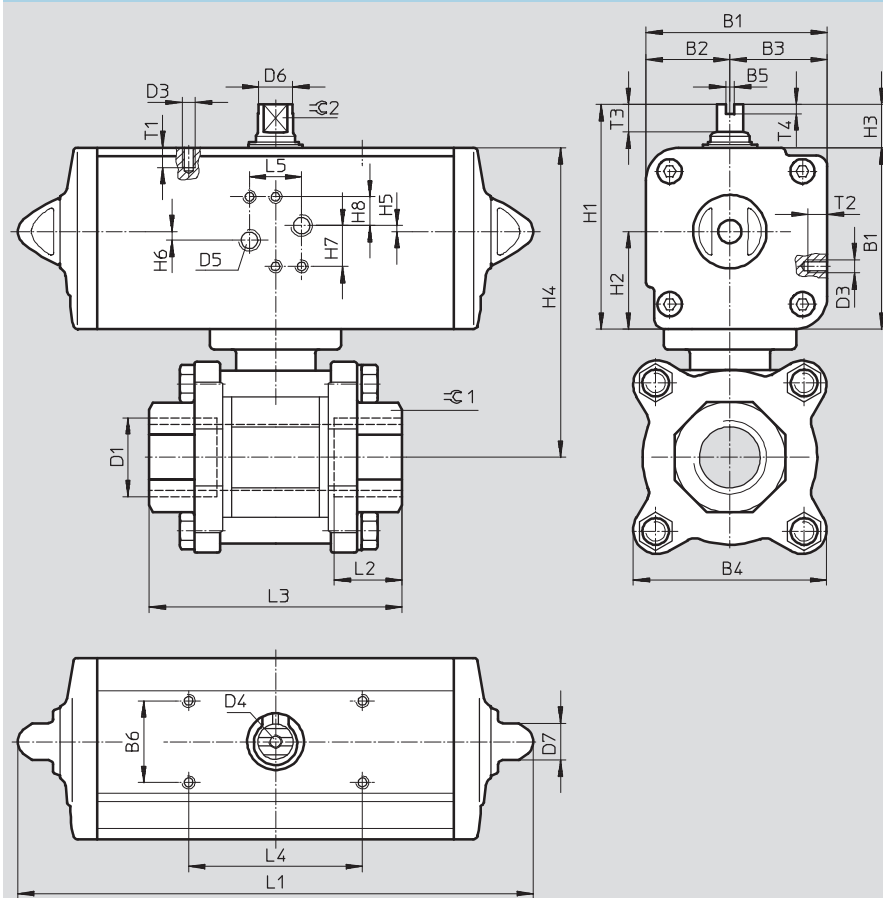
Ball valve actuators VZPR-BPD, stainless steel

Technical data

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Dimensions

Download CAD data → www.festo.com



Ball valve actuators VZPR-BPD, stainless steel

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Technical data

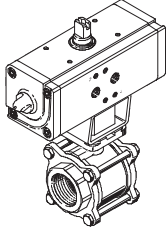
Connecting thread D1	Torque [Nm]	B1	B2	B3	B4	B5	B6	D3	D4	D5	D6 Ø	D7 Ø	H1	H2	H3	H4											
					max.											±2											
Rp¼	30	59.2	27.7	31.5	50	3.2	30	M5	M6	G¼	10.9	13	79.2	31.5	20	101.2											
Rp⅜	30																										
Rp½	30																										
Rp¾	30																										
Rp¾	60	70.4	32.7	37.7	55															115.4							
Rp1	60				65																122.4						
Rp1¼	60				75																128.4						
Rp1¼	106				75																141.3						
Rp1½	106	83.3	38.5	44.8	85											16.2	17	103.3	44.8	20	151.3						
Rp1½	180				85																						175.5
Rp2	180				100																						185.5
Rp2½	240				170																						210.1
		111.1	51	60.1	170						22.5	22	141.1	60.1	30	210.1											

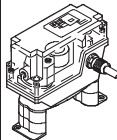
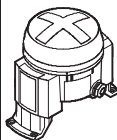
Connecting thread D1	Torque [Nm]	H5	H6	H7	H8	L1	L2	L3	L4	L5	T1	T2	T3	T4	≈C1	≈C2										
								±2																		
Rp¼	30	0.8	4	18	14	174.3	14	65	80	19.2	6	7	10	4	19	9										
Rp⅜	30						20	75							24											
Rp½	30						19	80							29											
Rp¾	30						19	80							35											
Rp¾	60	–	–			18	14	198.1					19		80	80	19.2	6	7	13	4	35	10			
Rp1	60												21		90							41				
Rp1¼	60												23		110							50				
Rp1¼	106												23		110							50		12		
Rp1½	106	–	–					237.1					25		120					58						
Rp1½	180												–		–					289.9		25	120		58	15
Rp2	180																					28	140		73	
Rp2½	240																					38	185	90	19	

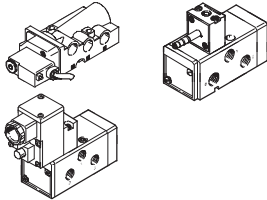
Ball valve actuators VZPR-BPD, stainless steel

Technical data

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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 → Internet: dapz, qh-dr	
	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-30DC-DR-AR
	Inductive	■	534 476	DAPZ-SB-I-25DC-EXDR-AR

Ordering data – Solenoid valves (Namur)				Technical data → Internet: solenoid valves	
	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