

Ball valve actuators VZPR

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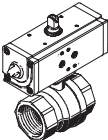
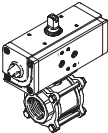


Ball valve actuators VZPR

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 - PN class to DIN EN 1333	- 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

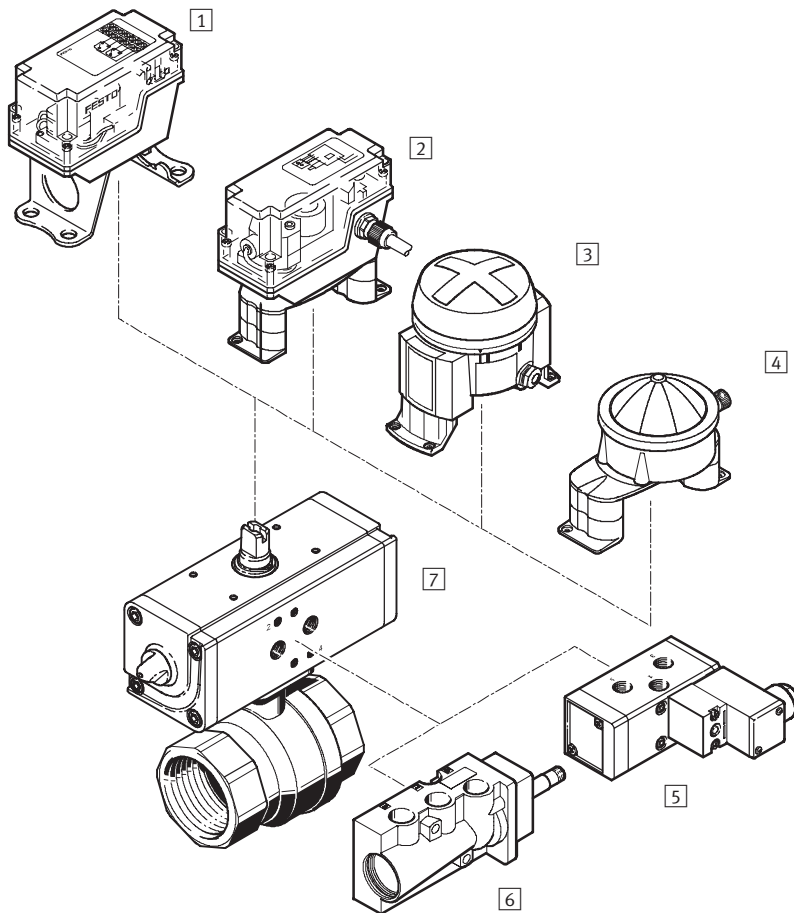
Version	Type	Connecting thread ¹⁾	Nominal diameter [mm]	Nominal pressure of process valve [bar]	→ Page/Internet
Brass					
	VZPR-BPD-...	Rp1/4	15	PN 40	5
		Rp3/8	15	PN 40	
		Rp1/2	15	PN 40	
		Rp3/4	20	PN 40	
		Rp1	25	PN 40	
		Rp1 1/4	32	PN 40	
		Rp1 1/2	40	PN 25	
		Rp2	50	PN 25	
		Rp2 1/2	63	PN 25	
Stainless steel					
	VZPR-BPD-...-R	Rp1/4	10	PN 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 ¹⁾	1								
Food industry approval	No								
Quarter-turn actuator									
Operating pressure ²⁾ [bar]	1 ... 8.4								
Operating medium	Dried air, lubricated or unlubricated								
Ball valve									
Nominal pressure of process valve ³⁾	PN 40	PN 40	PN 40	PN 40	PN 40	PN 40	PN 25	PN 25	PN 25
Operating medium	Compressed air, water, neutral gasses, neutral fluids, vacuum								

- 1) 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.
- 2) Minimum operating pressures vary for single-acting quarter-turn actuators depending upon spring quantity.
- 3) PN class to DIN EN 1333.

Ball valve actuators VZPR-BPD

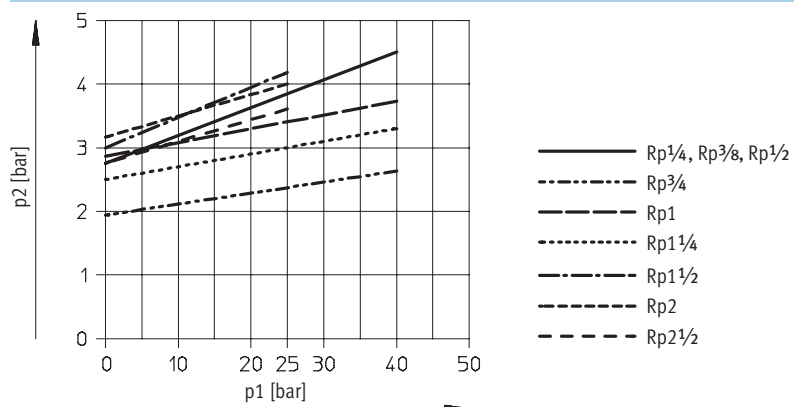
Technical data

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

Weight [g]			
Connecting thread		Connecting thread	
Rp1¼	1300	Rp1¼	3200
Rp¾	1300	Rp1½	3800
Rp½	1200	Rp2	5400
Rp¾	1500	Rp2½	7300
Rp1	1800		

Operating pressure p2 as a function of nominal operating pressure p1



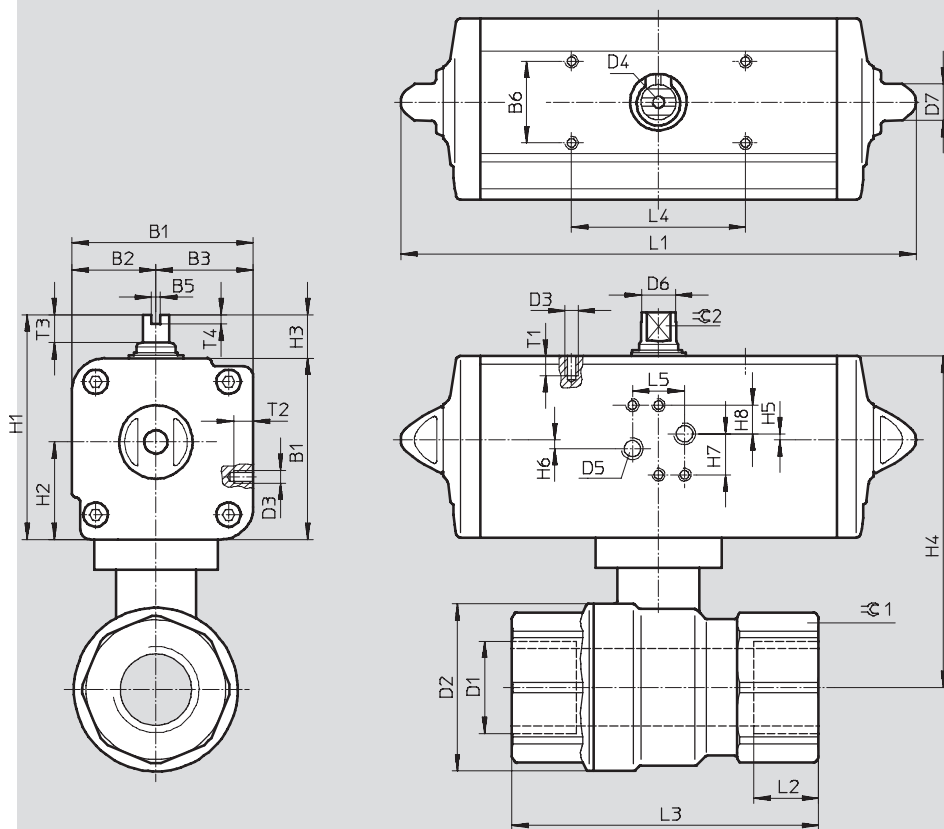
Ball valve actuators VZPR-BPD

Technical data

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Dimensions

Download CAD Data → www.festo.com/us/cad



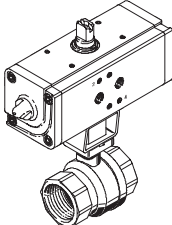
Connecting thread D1	B1	B2	B3	B5	B6	D2 Ø max.	D3	D4	D5	D6 Ø	D7 Ø	H1	H2	H3	H4						
Rp¼	52.2	24.2	28	4	30	35	M5	M6	G¼	9.2	13	72.2	28	20	92.2						
Rp⅜						45				10.9	13	79.2	31.5	20	104.2						
Rp½						55				14.5	13	90.4	37.7	20	130.2						
Rp¾	59.2	27.7	31.5			65				16.2	17	103.3	44.8	20	158.3						
Rp1						75										20.2	22	137.5	56.5	30	192.5
Rp1¼						90															
Rp1½	70.4	32.7	37.7			110															
Rp2	83.3	38.5	44.8																		
Rp2½	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	24	6	7	10	4	26	8	
Rp⅜																
Rp½																
Rp¾					174	16	80					10		32	9	
Rp1																19
Rp1¼	198	21														
Rp1½					21	120	55									
Rp2												236.5		25	140	70
Rp2½	289.9	24														

Ball valve actuators VZPR-BPD

Technical data

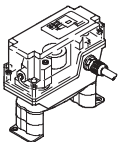
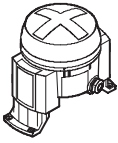
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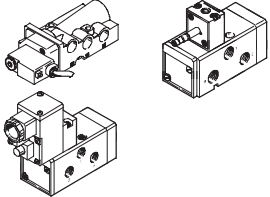
Ordering data – Ball valve actuators			
	Connecting thread	Part No.	Type
	Rp1/4	540 510	VZPR-BPD-22-R14
	Rp3/8	540 511	VZPR-BPD-22-R38
	Rp1/2	540 512	VZPR-BPD-22-R12
	Rp3/4	540 513	VZPR-BPD-22-R34
	Rp1	540 514	VZPR-BPD-22-R1
	Rp1 1/4	540 515	VZPR-BPD-22-R114
	Rp1 1/2	540 516	VZPR-BPD-22-R112
	Rp2	540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

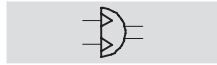
1) Solenoid coil included in scope of delivery

Ball valve actuators VZPR-BPD, stainless steel

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Technical data

Function



Swivel angle
0 ... 90°

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

- | | - Flow rate Kv
16 ... 507 m³/h

- T - 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 pressure of process valve ³⁾	PN 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.
- 3) PN class to DIN EN 1333.

Ball valve actuators VZPR-BPD, stainless steel

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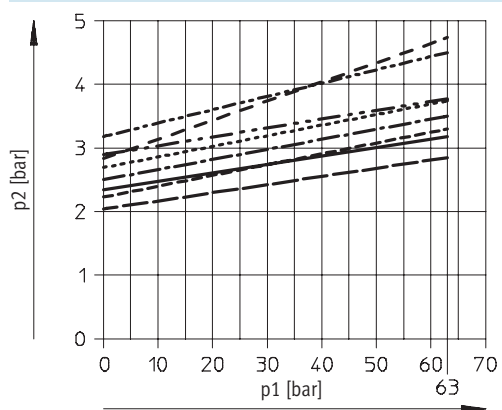
Technical data

Materials			Material number
Housing	High-alloy stainless steel		1.4408
Ball	High-alloy stainless steel		1.4401
Shaft	High-alloy stainless steel		1.4401
Seals	Housing	Polytetrafluoroethylene, fibre glass reinforced	–
	Shaft	Fluoro elastomer	–

Weight [g]			
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

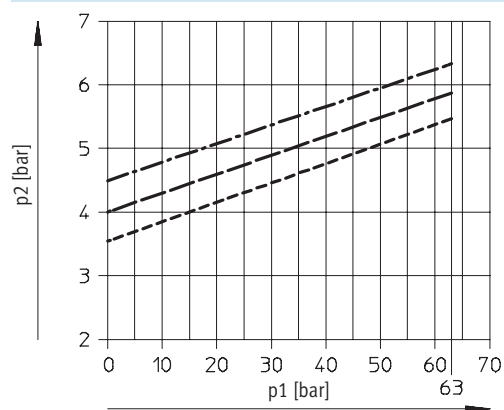
Operating pressure p2 as a function of nominal operating pressure p1

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

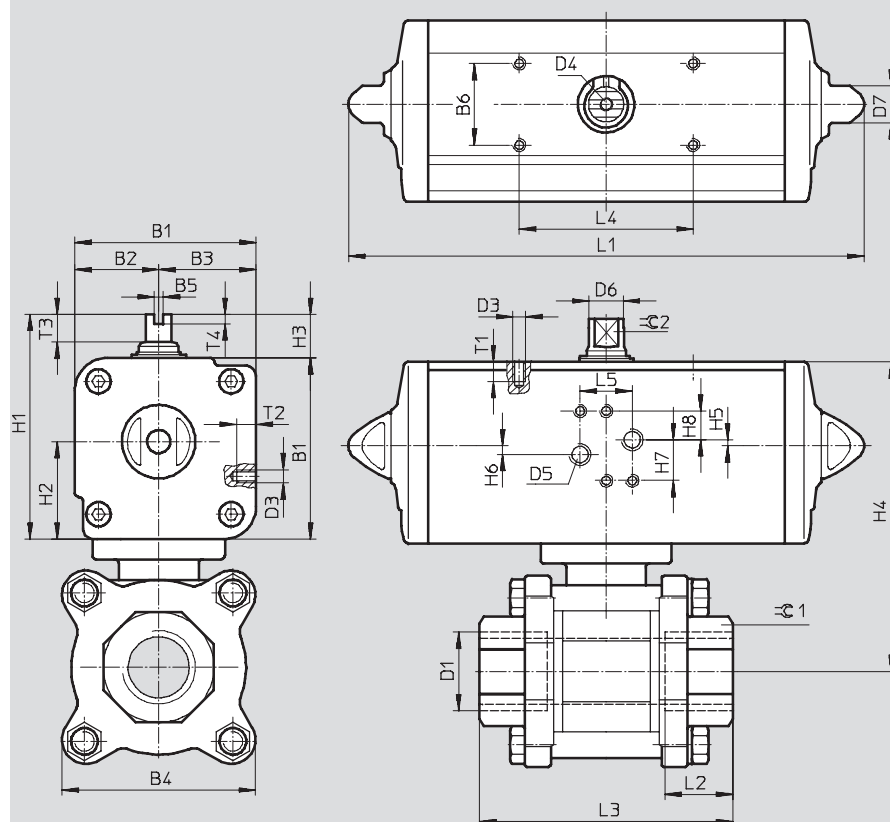
Ball valve actuators VZPR-BPD, stainless steel

Technical data

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Dimensions

Download CAD Data → www.festo.com/us/cad



Ball valve actuators VZPR-BPD, stainless steel

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Technical data

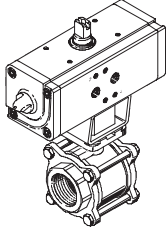
Connecting thread D1	Torque [Nm]	B1	B2	B3	B4 max.	B5 +0.1	B6	D3	D4	D5	D6 Ø	D7 Ø	H1	H2	H3	H4 ±2											
Rp¼	30	59.2	27.7	31.5	50	4	30	M5	M6	G¼	10.9	13	79.2	31.5	20	101.2											
Rp⅜	30				55																						
Rp½	30																										
Rp¾	30																										
Rp¾	60	70.4	32.7	37.7	55						14.5	13	90.4	37.7	20	115.4											
Rp1	60				65											122.4											
Rp1¼	60				75											128.4											
Rp1¼	106				83.3						38.5	44.8	75	16.2	17	103.3	44.8	20	141.3								
Rp1½	106	85	151.3																								
Rp1½	180	85	175.5																								
Rp2	180	107.5	51	56.5									100	20.2	22	137.5	56.5	30	185.5								
Rp2½	240	111.1	51	60.1	170						22.5	22	141.1						60.1	30	210.1						

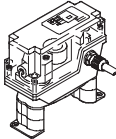
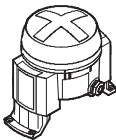
Connecting thread D1	Torque [Nm]	H5	H6 ±0.1	H7	H8	L1	L2	L3 ±2	L4	L5	T1	T2	T3	T4	≈C1	≈C2								
Rp¼	30	0.8	3.2	18	14	174.3	14	65	80	24	6	7	10	4	19	9								
Rp⅜	30						20	75							24									
Rp½	30						19	80							29									
Rp¾	30						19	80							35									
Rp¾	60	–	–			18	14	198.1					19		80	80	24	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
		–	–																					

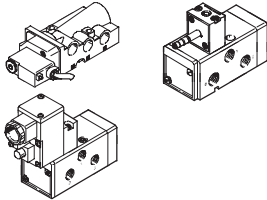
Ball valve actuators VZPR-BPD, stainless steel

Technical data

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Ordering data		Part No.	Type
	Connecting thread		
	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

Product Range and Company Overview

A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



Custom Control Cabinets
Comprehensive engineering support and on-site services



Complete Systems
Shipment, stocking and storage services

The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



Electromechanical
Electromechanical actuators, motors, controllers & drives



Pneumatics
Pneumatic linear and rotary actuators, valves, and air supply



PLCs and I/O Devices
PLC's, operator interfaces, sensors and I/O devices

Supporting Advanced Automation... As No One Else Can!

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