Positive displacement flow sensors | VZGG | VZVA


VZGG


VZVA

Highlights

- High-precision measurement with excellent repeatability
- HT version for temperatures up to 150 °C (302 °F) with thermally insulated preamplifier (option)
- Variety of casing and sealing materials → Universally use for different measurement media
- Standard process connection via connecting plates → Quickly replaceable without lengthy interruptionsto the process

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Technical data

Technical data								
Type	**VZ0.025**	**VZ0.04**	**VZ0.1**	**VZ0.2**	**VZ0.4**	**VZ1**	**VZ3**	**VZ5**
Size	0.025	0.04	0.1	0.2	0.4	1	3	5
Process connection	Via subplate with lateral female thread connection							
Measuring range* [l/min]	0.008...2	0.02...4	0.04...8	0.16...16	0.2...40	0.4...80	0.6...160	1...250
Measuring range* [l/h]	0.48...120	1.2...240	2.4...480	9.6...960	12...2,400	24...4,800	36...9,600	60...15,000
Measuring range* [GPM]	0.002...0.53	0.005...1.06	0.01...2.1	0.04...4.23	0.05...10.6	0.11...21	0.16...42	0.26...66
Measuring range* [GPH]	0.13...31.7	0.32...63.5	0.6...127	2.5...254	3.17...635	6.3...1,270	9.5...2,540	15.9...3,968
Geometric gear volume [cm³]	0.025	0.04	0.1	0.245	0.4	1.036	3	5.222
Measuring accuracy	±0.3 % of reading (≥20 mm²/s)							
Repeatability	< 0.1 % under same conditions							
Start of gear wheel rotation [l/min]	0.001	0.004	0.008	0.01	0.01	0.02	0.03	0.04
Start of gear wheel rotation [l/h]	0.06	0.24	0.48	0.6	0.6	1.2	1.8	2.4
Start of gear wheel rotation [GPM]	0.0003	0.001	0.002	0.003	0.003	0.005	0.008	0.01
Start of gear wheel rotation [GPH]	0.016	0.06	0.13	0.16	0.16	0.32	0.48	0.63
Viscosity of medium	1...100 000 mm²/s							
Medium temperature range**	**FKM**		**FEP**			**EPDM**		
→ Standard	-15...120 °C (5...248 °F)		-30...120 °C (-22...248 °F)			-30...120 °C (-22...248 °F)		
→ Without preamplifier (for TD8250)	0...60 °C (32...140 °F)		0...60 °C (32...140 °F)			0...60 °C (32...140 °F)		
→ High temperature	-40...150 °C (-40...302 °F)		-40...150 °C (-40...302 °F)			-40...150 °C (-40...302 °F)		
Ambient temperature range**	**FKM**		**FEP**			**EPDM**		
	-15...80 °C (5...176 °F)		-30...80 °C (-22...176° F)			-30...80 °C (-22...176 °F)		
Maximum pressure rating	480 bar	480 bar	480 bar	480 bar	480 bar	480 bar	350 bar	350 bar
Maximum pressure rating	6962 psi	6962 psi	6962 psi	6962 psi	6962 psi	6962 psi	5076 psi	5076 psi
Maximum foreign particle size								
→ Versions with ball bearing	20 µm							
→ Versions with plain bearing	30 µm							
Degree of protection EN 60529	IP65							
Output signals								
→ Puls rate [pulses/l]	40,000	25,000	10,000	4,081.63	2,500	965.25	333.33	191.5
→ Puls rate [pulses/gallon]	151,417.60	94,636.00	37,854.00	15,450.77	9,463.60	3,653.90	1,261.81	724.90
→ Resolution [ml/pulse]	0.025	0.04	0.1	0.245	0.4	1.036	3	5.222
→ Signal shape	2-channel, squarewave, PNP, pulse duty ratio 1:1							
Electrical data								
Electrical connection	Plug connector incl. cable socket							
Power supply	12...30 VDC / max. 90 mA							
Power consumtion [short-circuit proof]	0.9 W							

* For media with high viscosity the measuring range is reduced. The max. pressure drop shouldn't exceeded 16 bar (230 psi) (see pressure drop diagrams).
** Depending on sealing material

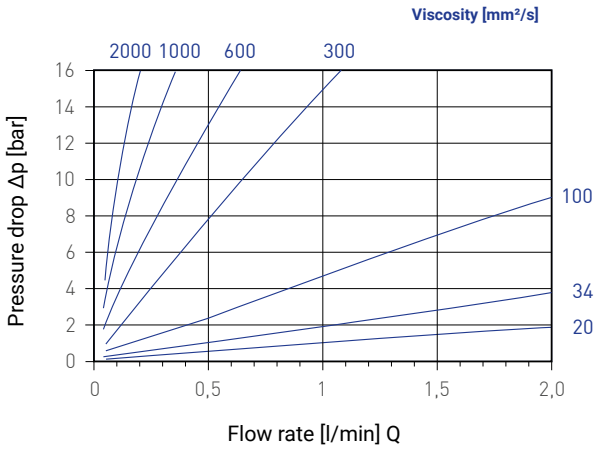
Options

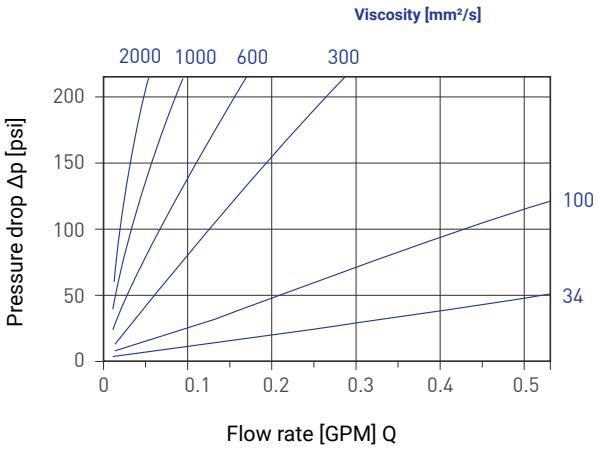
Options	
For type	**On request**
VZVA	→ Direct process connection

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SIKA

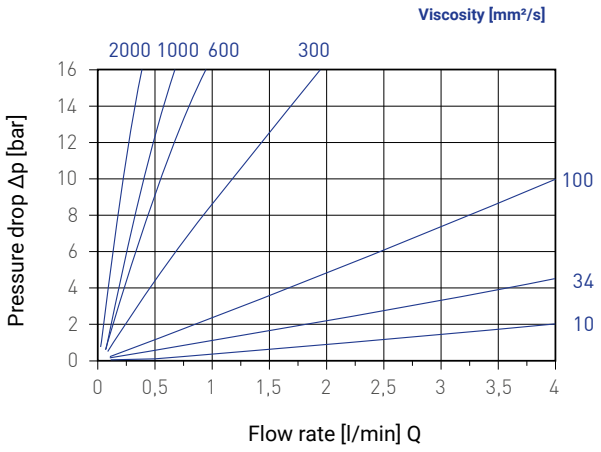
Typical pressure drop | VZ0.025 | VZ0.04 | VZ0.1

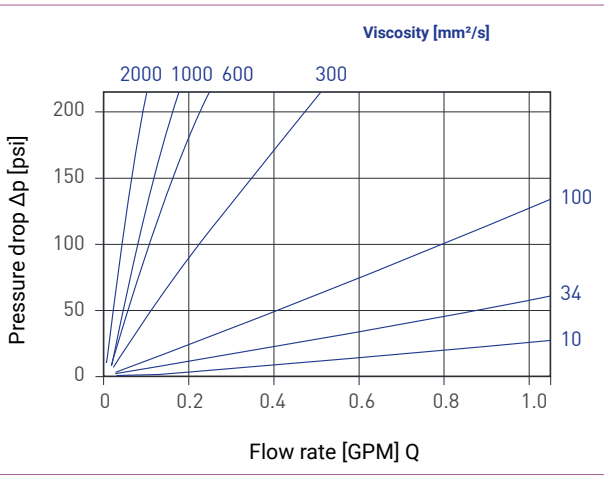
Typical pressure drop VZ0.025



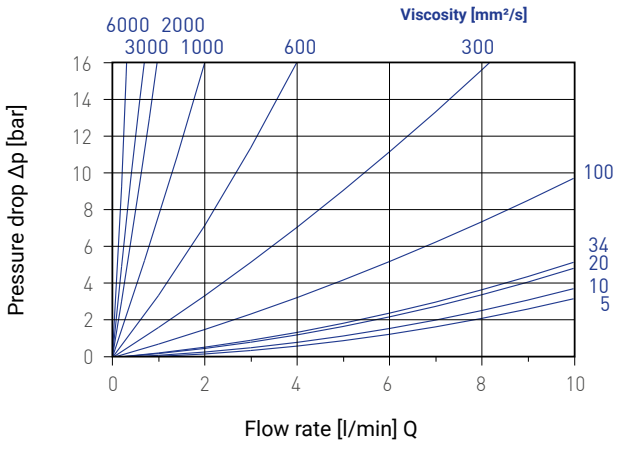


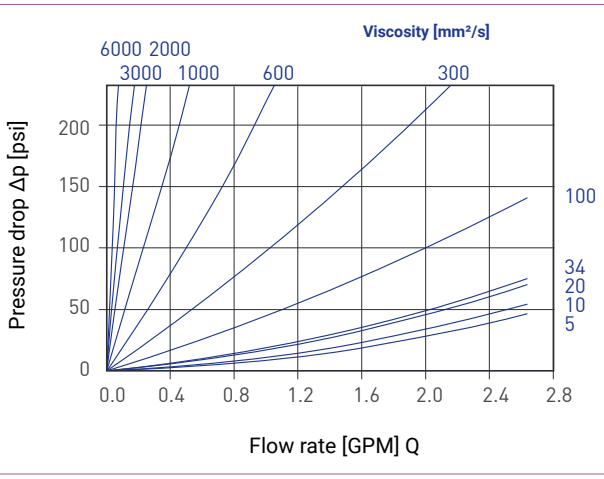
Typical pressure drop VZ0.04





Typical pressure drop VZ0.1

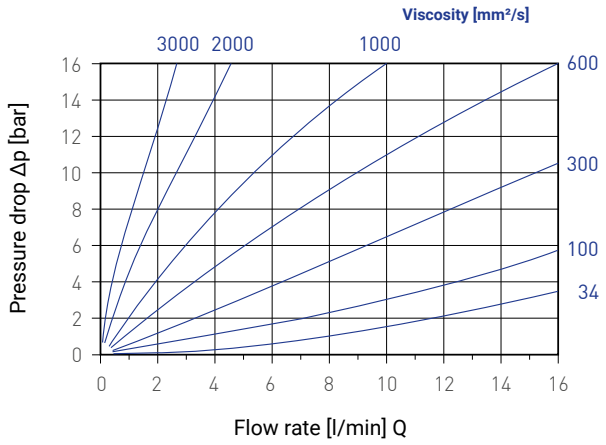


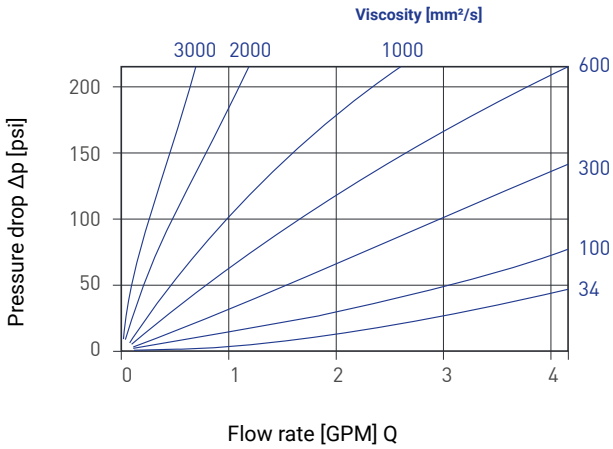


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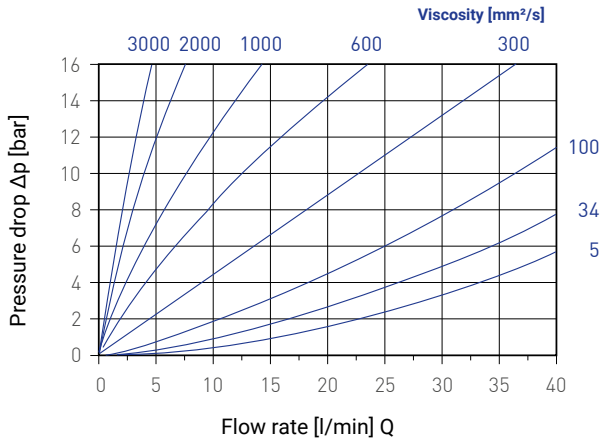
Typical pressure drop | VZ0.2 | VZ0.4 | VZ1

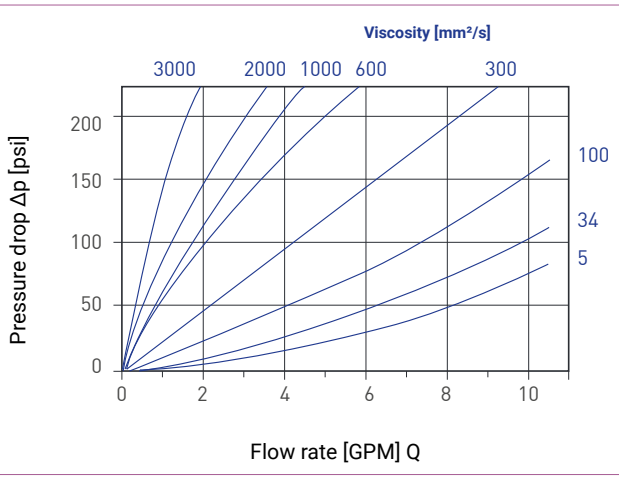
Typical pressure drop VZ0.2



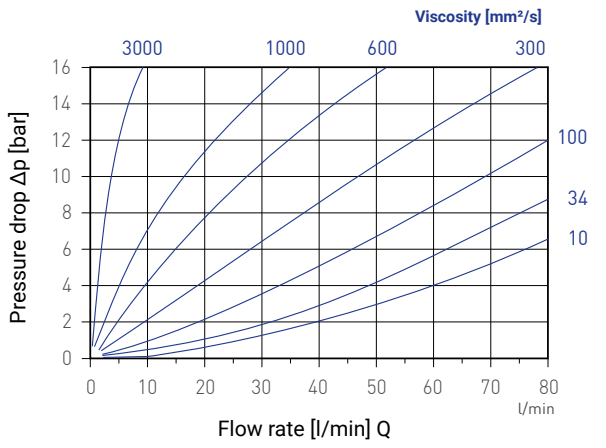


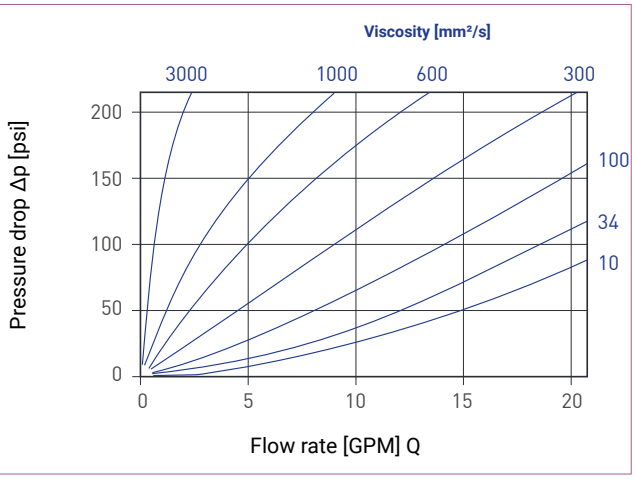
Typical pressure drop VZ0.4





Typical pressure drop VZ1

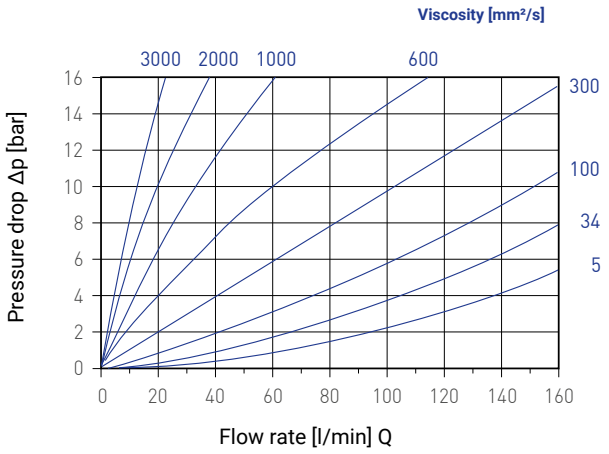


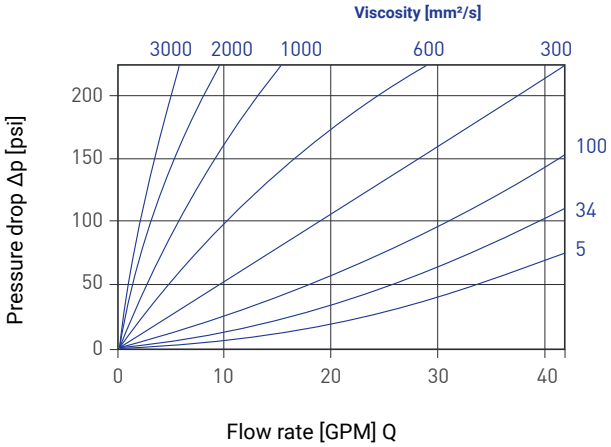


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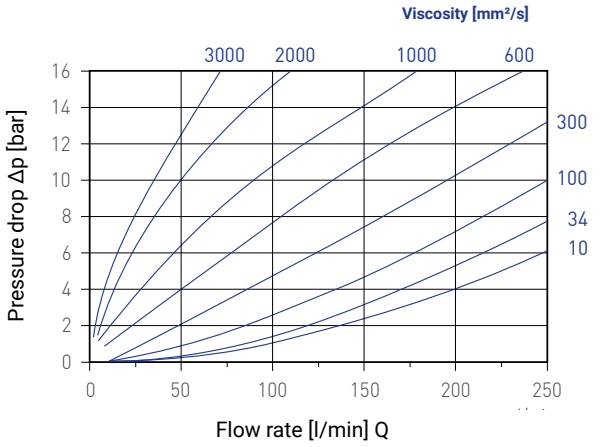
Typical pressure drop | VZ3 | VZ5

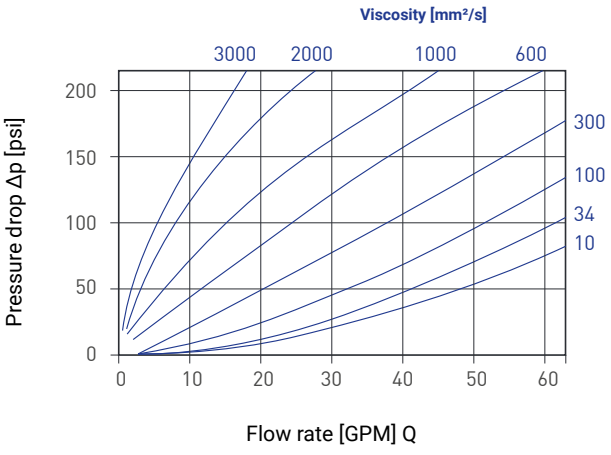
Typical pressure drop VZ3





Typical pressure drop VZ5

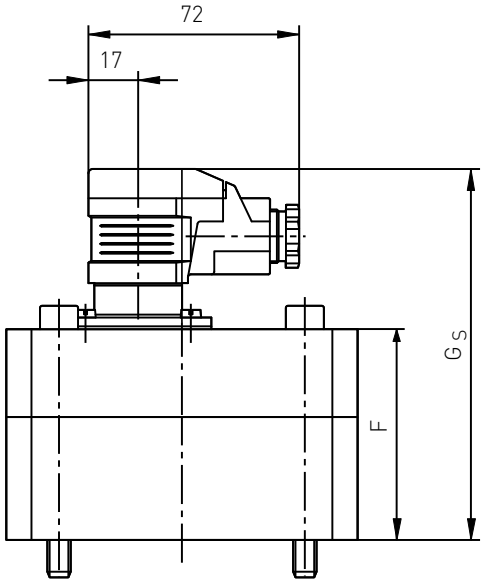


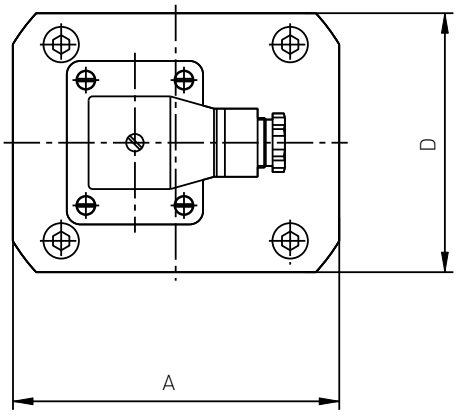


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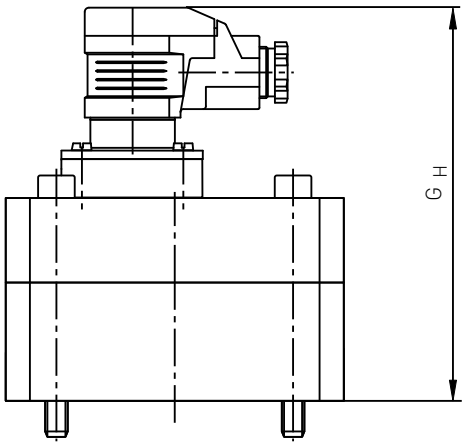
VZGG | Technical drawings | Materials | Dimensions

VZGG





Standard version



High temperature version

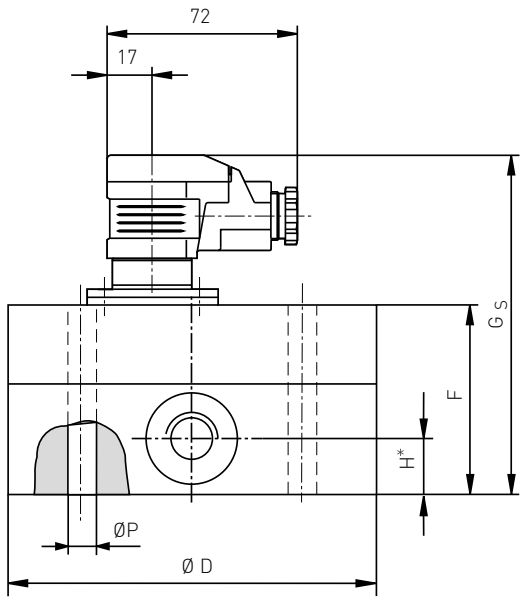
Materials	
Housing	Ductile iron EN-GJS-400-15
Gear wheels	Steel 1.7139
Bearings	Standard: Ball bearings stainless steel Option: Hard metal plain bearing
Seals	Standard: FKM Option: EPDM, FEP

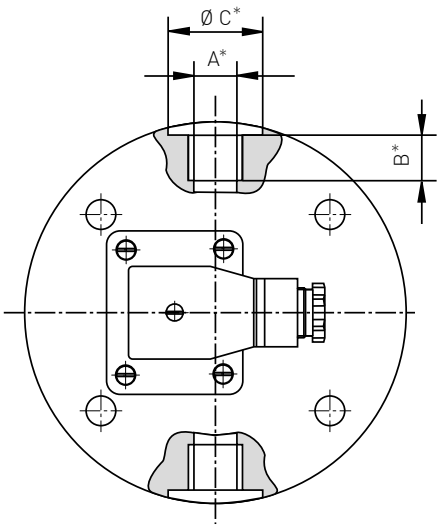
Dimensions								
Type	**VZ0.025GG**	**VZ0.04GG**	**VZ0.1GG**	**VZ0.2GG**	**VZ0.4GG**	**VZ1GG**	**VZ3GG**	**VZ5GG**
A [mm]	85	85	85	85	100	120	170	170
D [mm]	60	60	60	60	90	95	120	120
F [mm]	50	56	65	57	63	72	89	105
GS [mm]	101	107	106	108	114	123	140	156
GH [mm]	113	119	118	120	126	135	152	168
Weight [kg]	1.8	2	2.5	2	3.7	5.2	9	13

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VZVA | Technical drawings | Materials | Dimensions

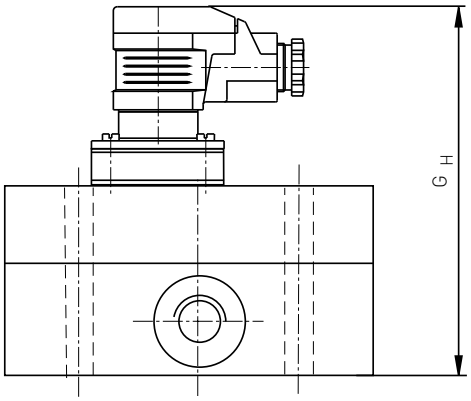
VZVA





Standard version

* For direct process connection



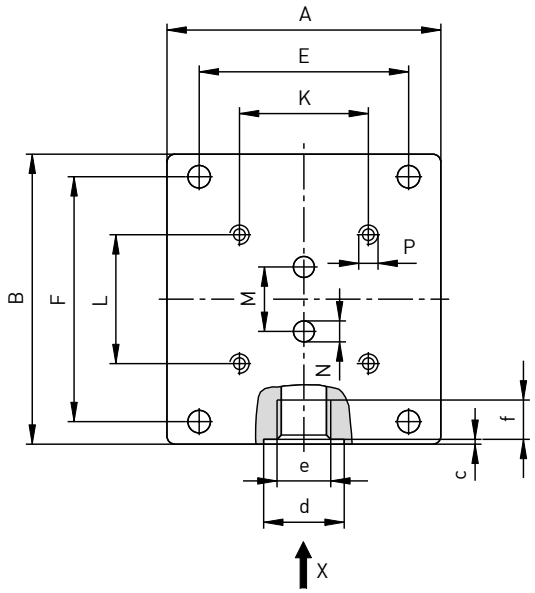
High temperature version

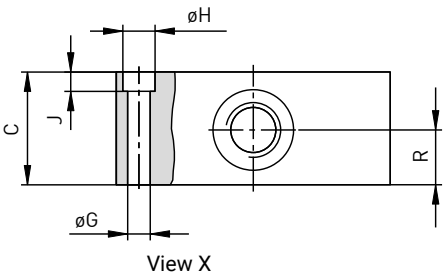
Material	
Housing	Stainless steel 1.4404
Gear wheels	Stainless steel 1.4462
Bearings	Standard: Ball bearings stainless steel Option: Hard metal plain bearing
Seals	Standard: FKM Option: EPDM, FEP

Dimensions							
Type	**VZ0.025VA**	**VZ0.04VA**	**VZ0.1VA**	**VZ0.2VA**	**VZ1VA**	**VZ3VA**	**VZ5VA**
D [mm]	94	94	94	94	124	170	170
F [mm]	55	56	55	57	72	89	105
GS [mm]	106	107	106	108	123	140	156
GH [mm]	118	119	118	120	135	152	168
Weight [kg]	3	3	3	3.1	7	15.9	18.7
Direct process connection							
A [mm]	G⅛	G¼	G⅜	G⅜	G½	G 1	G 1
B [mm]	9	13	13	13	15	19	19
C [mm]	17	21	25	25	29	42	42
H [mm]	15	15	20	16	22	30	30

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VZGG | Subplates

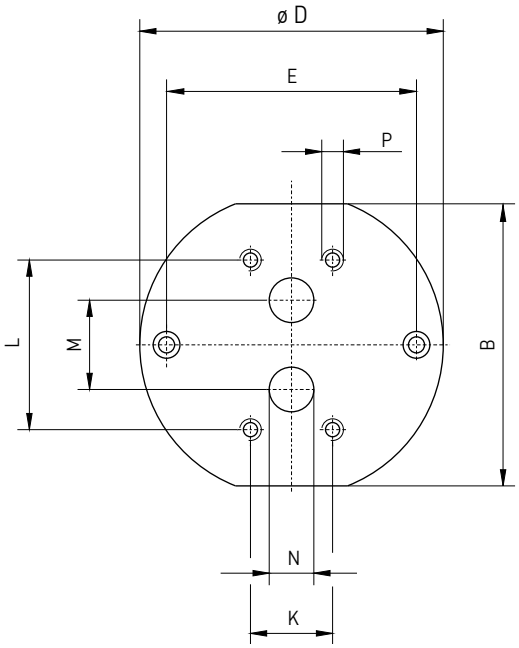


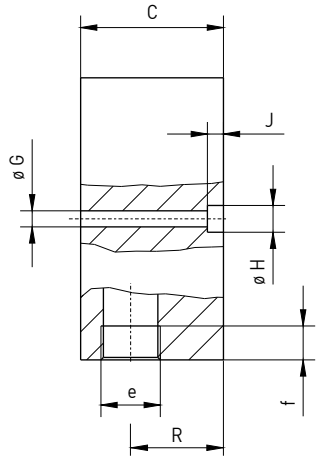


For type	VZ0.025GG / VZ0.04GG / VZ0.1GG / VZ0.2GG	VZ0,4GG	VZ1GG	VZ3GG / VZ5GG
A [mm]	85	100	100	160
B [mm]	90	110	120	165
C [mm]	35	37	37	80
c [mm]	0.7	0,7	0.7	1
d [mm]	25	29	29	42
E [mm]	65	86	80	140
e	G⅜	G½	G½	G 1
F [mm]	76	96	106	145
f [mm]	13	15	15	19
G [mm]	7	7	7	9
H [mm]	11	11	11	15
J [mm]	7	7	7	9
K [mm]	70	80	84	46
L [mm]	40	38	72	95
M [mm]	20	34	35	50
N [mm]	6,5	16	12	25
P [mm]	M 6/14t	M 8/18t	M 8/18t	M 12/24t
R [mm]	17	18.5	17.5	28
Weight [kg]	1.8	2.7	2.9	14
Material	Ductile iron EN-GJL-250	Ductile iron EN-GJL-400-15		Ductile iron EN-GJL-250

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VZVA | Subplates





For type	VZ0.025VA / VZ0.04VA / VZ0.1VA / VZ0.2VA	VZ1VA	VZ3VA / VZ5VA
B [mm]	85	116	158
C [mm]	35	37	80
D [mm]	94	124	170
E [mm]	75	100	140
e	G ⅜	G ½	G 1
f [mm]	13	15	19
G [mm]	7	9	9
H [mm]	11	15	15
J [mm]	7	9	9
K [mm]	70	84	46
L [mm]	40	72	95
M [mm]	20	35	50
N [mm]	6.5	12	25
P [mm]	M 6/14t	M 8/18t	M 12/24t
R [mm]	18	19.5	52
Weight [kg]	1.7	3.2	13.9
Material	Stainless steel 1.4404		

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Article numbers

Order code						
Type	**Size**					
VZ0.025	0.025	VZ0025				
VZ0.04	0.04	VZ004				
VZ0.1	0.1	VZ010				
VZ0.2	0.2	VZ020				
VZ0.4	0.4 (only ductile iron)	VZ040				
VZ1	1	VZ100				
VZ3	3	VZ300				
VZ5	5	VZ500				
Material						
Ductile iron			GG			
Stainless steel			VA			
Seals						
FKM				V3		
EPDM				E3		
FEP				P3		
Process connection						
Via subplates					2	
Direct (only for stainless steel)					1	
Preamplifier						
Integrated						I0
Without preamplifier, for TD8250						K0
Isolated for high temperature version						E0
Bearings						
Ball bearings stainless steel						0S
Hard metal plain bearing						PS
Example order number		**VZ0025**	**GG**	**V3**	**2**	**I0**	**0S**

Order code				
Subplates appropriate to				
VZ0.025 / VZ0.04 / VZ0.1 / VZ0.2		AP004		0380S
VZ0.4 (only ductile iron)		AP040		0120S
VZ1		AP100		0120S
VZ3 / VZ5		AP500		1000S
Material				
Ductile iron			GG	
Stainless steel			VA	
Example order number		**AP004**	**GG**	**0380S**

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