

**Valtek GS**

General Service Control Valve

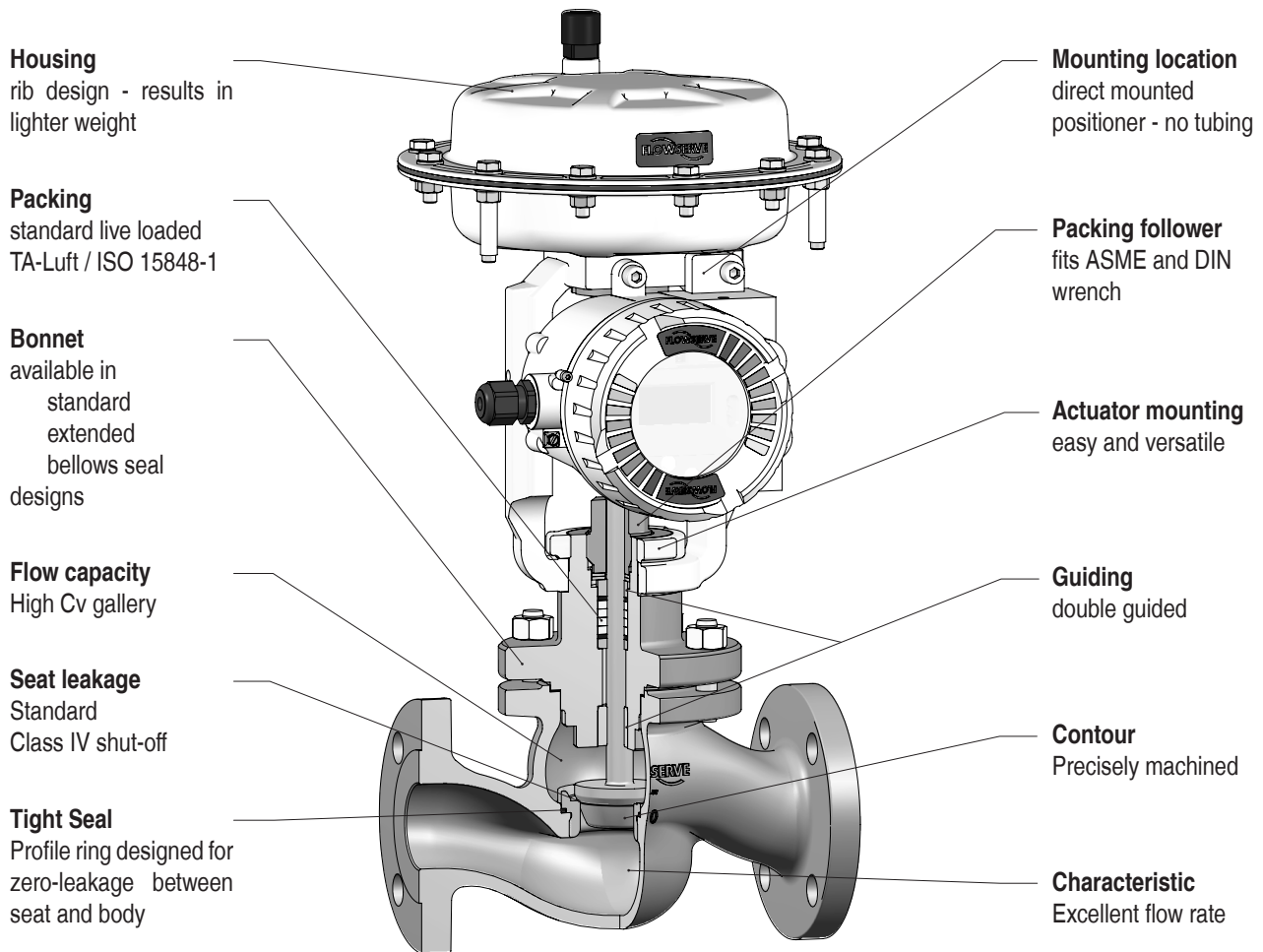
FCD VLENTB0300A4 03/13



# Valtek GS - “General Service Control Valve”

The Valtek GS product line is low cost, compact and light-weight. Yet, it is rugged and can be used safely and confidently in a wide range of general service applications plant-wide. Its modularity provides trim and material options to suit most service situations. Simplicity of design reduces maintenance and parts inventory costs.

Ideally suited for flow and pressure control of liquid and gas media in oil and gas, power, chemical and petrochemical processing and related industries, the Valtek GS package provides flow rates, control accuracy and reliability at levels comparable to special engineered service control valves, but at a significantly lower total cost.

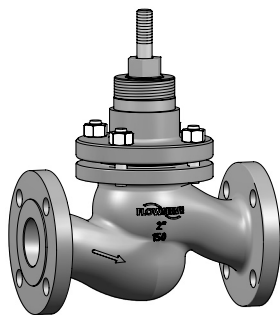


## Specifications

Style	Globe, ASME and DIN
Sizes	½ to 6 inch / 15 to 150 mm
Pressure Classes	ASME 150 and 300 / PN 16 and PN 40
End Connection	Flanged
Body Materials	A216WCC / 1.0619 and A351CF8M / 1.4408
Face to Face	ISA 75.08.06 / EN 558-1 basic series 1
Bonnet	standard, extended, bellows seal
Packing	PTFE and Graphite spring loaded TA-Luft & ISO 15848-1

Trim material	316 stainless steel
Trim types	standard, pressure balanced
Plug & seat facing	standard, seat surface Alloy 6
Characteristic	= %, linear, quick open
Low noise and anti-cavitation	1-stage MultiStream
Leakage rates	Class IV, V and VI ( with optional soft seat )
Actuator	pneumatic diaphragm spring actuator
Standard positioner	Logix 420, direct mounted without tubing

## Body Design - “Integral Flange”

Body Design	Type ( Body ) / Size	Body Material	Bonnet Design	Packing Design	Trim Design
Integral flange	PN 16 40  DN 15 20 25 32 40 50 65 80 100 125 150	 1.0619 1.4408	<b>Unbalanced</b> Standard Bonnet Bellow Seal Bonnet Extended Bonnet  <b>V-Ring pressure balanced</b> Standard Bonnet Bellow Seal Bonnet Extended Bonnet  <b>Piston-Ring pressure balanced</b> Bellow Seal Bonnet Extended Bonnet  <i>see page 4 - 6</i>	<b>spring loaded</b> Teflon TA-Luft Graphite TA-Luft  <i>see page 6</i>	<b>Contoured Plug</b> Standard Partial Hard Facing Contour Hard Facing Soft Seated  <b>Quick Open</b> Standard Soft Seated  <b>Anti-noise Equipment</b> MultiStream 1-stage  <i>see page 7</i>
	Class 150 300  NPS 1/2 3/4 1 1 1/2 2 3 4 6				

## Body Connecting Design - “Detail”

Body Design	Face to Face	End Connections	
Integral flange	Raised Face	EN 558-1:2012-03 Basic Range 1  according to <b>EN 1092-1</b>	<b>Form B1</b>  Ra = 3,2 - 12,5 µm
		ASME / ISA 75.08.01-2002  according to <b>ASME B16.5</b>	<b>Raised Face RF</b>  Ra = 3,2 - 12,5 µm 125 - 250 µin.

## Body Pressure - Temperature Ratings

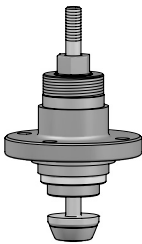
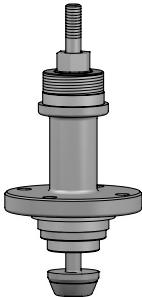
PN Class	Body Material	Maximum Allowable Working Pressure	Service Temperature in °C												
			- 60	- 46	- 29	- 10	50	100	150	200	250	300	350	400	
16	1.0619	bar			12,0	16,0	16,0	13,7	13,3	12,4	11,3	10,2	9,6	9,1	
	1.4408		16,0	16,0	16,0	16,0	15,1	13,7	12,7	11,9	11,0	10,5	10,2		
40	1.0619				30,0	40,0	40,0	34,2	33,3	31,0	28,3	25,7	24,1	22,8	
	1.4408		40,0	40,0	40,0	40,0	40,0	37,9	34,4	31,8	29,9	27,6	26,4	25,7	
150	A216 WCC				19,6	19,6	19,2	17,7	15,8	13,8	12,1	10,2	8,4	6,5	
	A351 CF8M		19,0	19,0	19,0	19,0	18,4	16,2	14,8	13,7	12,1	10,2	8,4	6,5	
300	A216 WCC				51,1	51,1	51,1	46,6	45,1	43,8	41,9	39,8	37,6	34,7	
	A351 CF8M		49,6	49,6	49,6	49,6	48,1	42,2	38,5	35,7	33,4	31,6	30,3	29,4	
Class				Service Temperature in °F											
				- 76	- 51	- 20	14	122	212	302	392	482	572	662	752
150	A216 WCC		psig			284	284	278	257	229	200	176	148	122	94
	A315 CF8M			276	276	276	276	267	235	215	199	176	148	122	94
300	A216 WCC				741	741	741	676	654	635	608	577	545	503	
	A351 CF8M	719		719	719	719	698	612	558	518	484	458	439	426	

## Working Temperature Range dependent on Body / Bonnet / Trim / Packing

Body Material	Bonnet Design	Trim Material MAWT <sup>1)</sup>	Packing Material			
			Teflon - TA-Luft		Graphite - TA-Luft	
			°C	°F	°C	°F
1.0619 A216 WCC	Standard Bonnet	316 SS	- 29 to + 250	- 20 to + 482	-	-
	Bellows Seal Bonnet		- 29 to + 300	- 20 to + 572	+ 300 to + 400	+ 572 to + 752
	Extended Bonnet		+ 250 to + 300	+ 482 to + 572	+ 300 to + 400	+ 572 to + 752
	Standard Bonnet V-Ring pressure balanced		- 29 to + 250	- 20 to + 482	-	-
	Bellows Seal Bonnet V-Ring pressure balanced		- 29 to + 250	- 20 to + 482	-	-
	Extended Bonnet V-Ring pressure balanced		- 29 to + 250	- 20 to + 482	-	-
	Bellows Seal Bonnet Piston-Ring pressure balanced		+ 250 to + 300	+ 482 to + 572	+ 300 to + 400	+ 572 to + 752
	Extended Bonnet Piston-Ring pressure balanced		+ 250 to + 300	+ 482 to + 572	+ 300 to + 400	+ 572 to + 752
1.4408 A351 CF8M	Standard Bonnet		- 46 to + 250	- 51 to + 482	-	-
	Bellows Seal Bonnet		- 60 to + 300	- 76 to + 572	+ 300 to + 400	+ 572 to + 752
	Extended Bonnet		+ 250 to + 300	+ 482 to + 572	+ 300 to + 400	+ 572 to + 752
	Standard Bonnet V-Ring pressure balanced		- 46 to + 250	- 51 to + 482	-	-
	Bellows Seal Bonnet V-Ring pressure balanced		- 60 to + 250	- 76 to + 482	-	-
	Extended Bonnet V-Ring pressure balanced		- 60 to + 250	- 76 to + 482	-	-
	Bellows Seal Bonnet Piston-Ring pressure balanced		+ 250 to + 300	+ 482 to + 572	+ 300 to + 400	+ 572 to + 752
	Extended Bonnet Piston-Ring pressure balanced		+ 250 to + 300	+ 482 to + 572	+ 300 to + 400	+ 572 to + 752

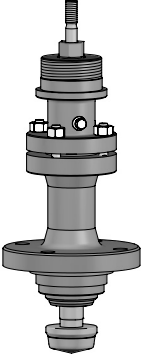
<sup>1)</sup> Maximal Allowable Working Temperature with PTFE soft seat = - 60 to + 250 °C / - 76 to + 482 °F only!

## Bonnet Design - “Unbalanced” for DN 15 to 150 / NPS ½ to 6

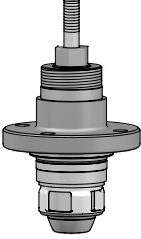
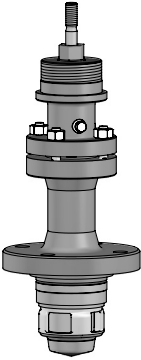
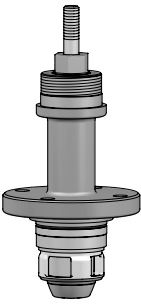
Bonnet Design	Type ( Bonnet )	Body / Bonnet Material	Temperature Range <sup>1)</sup>	Application	Packing Design
Standard Bonnet		dependent on body material  1.0619 / 1.0460 1.4408 / 1.4404  A216 WCC / A105 A351 CF8M / F316	- 46 to + 250 °C - 51 to + 482 °F	Universal use	<b>spring loaded</b> Teflon TA-Luft <i>see page 6</i>
Unbalanced  Extended Bonnet		dependent on body material  1.0619 / 1.0619  A216 WCC / A216 WCC	+ 250 to + 300 °C + 482 to + 572 °F	Universal use dependent on temperature	<b>spring loaded</b> Teflon TA-Luft
		dependent on body material  1.4408 / 1.4408  A351 CF8M / A351 CF8M	+ 301 to + 400 °C + 573 to + 752 °F		<b>spring loaded</b> Graphite TA-Luft
		dependent on body material  1.4408 / 1.4408  A351 CF8M / A351 CF8M	- 60 to + 300 °C - 76 to + 572 °F		<b>spring loaded</b> Teflon TA-Luft
		dependent on body material  1.4408 / 1.4408  A351 CF8M / A351 CF8M	+ 301 to + 400 °C + 573 to + 752 °F		<b>spring loaded</b> Graphite TA-Luft

<sup>1)</sup> see also Working Temperature Range on Page 4

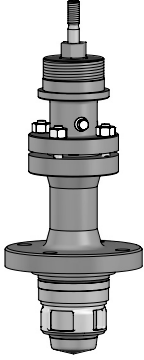
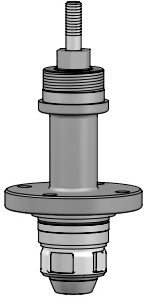
## Bonnet Design - “Unbalanced” for DN 15 to 150 / NPS 1/2 to 6

Bonnet Design	Type ( Bonnet )	Body / Bonnet Material	Temperature Range	Application	Packing Design
Unbalanced	 Bellows Seal Bonnet	dependent on body material 1.0619 / 1.0619 A216 WCC / A216 WCC	- 29 to + 300 °C - 20 to + 572 °F	Use for hazardous, costly media or vacuum	spring loaded Teflon TA-Luft see page 6
		dependent on body material 1.4408 / 1.4408 A351 CF8M / A351 CF8M	- 60 to + 300 °C - 76 to + 572 °F		
		dependent on body material 1.0619 / 1.0619 1.4408 / 1.4408 A216 WCC / A216 WCC A351 CF8M / A351 CF8M	+ 300 to + 400 °C + 572 to + 752 °F		spring loaded Graphite TA-Luft see page 6

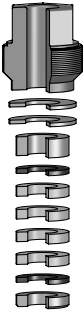

## Bonnet Design - “Pressure balanced” for DN 80 to 150 / NPS 3 to 6

Bonnet Design	Type ( Bonnet )	Body / Bonnet Material	Temperature Range	Application	Packing Design
Standard Bonnet		dependent on body material 1.0619 / 1.0460 1.4408 / 1.4404 A216 WCC → A105 A351 CF8M → F316	- 29 to + 250 °C - 20 to + 482 °F	Universal use	spring loaded Teflon TA-Luft see page 6
V-Ring pressure balanced		dependent on body material 1.0619 / 1.0619 A216 WCC / A216 WCC		Use for hazardous, costly media or vacuum	
Extended Bonnet		dependent on body material 1.4408 / 1.4408 A351 CF8M / A351 CF8M	- 60 to + 250 °C - 76 to + 482 °F	Universal use dependent on temperature	

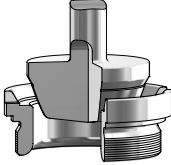
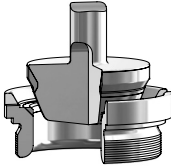
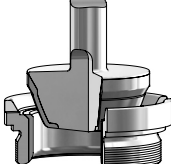
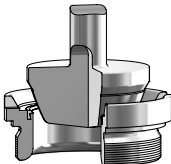
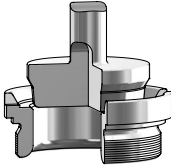
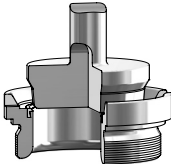
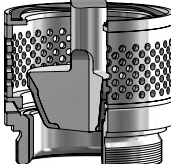
## Bonnet Design - "Pressure balanced" for DN 80 to 150 / NPS 3 to 6

Bonnet Design	Type ( Bonnet )	Body / Bonnet Material	Temperature Range	Application	Packing Design
Piston-Ring pressure balanced	Bellows Seal Bonnet 	dependent on body material  1.0619 / 1.0619 1.4408 / 1.4408	+ 250 to + 400 °C + 482 to + 752 °F  <i>see also Working Temperature Range on Page 4</i>	Use for hazardous, costly media or vacuum	spring loaded Graphite TA-Luft <i>see page 6</i>
	Extended Bonnet 	A216 WCC / A216 WCC A351 CF8M / A351 CF8M		Universal use dependent on temperature	

## Packing Design - "Detail"

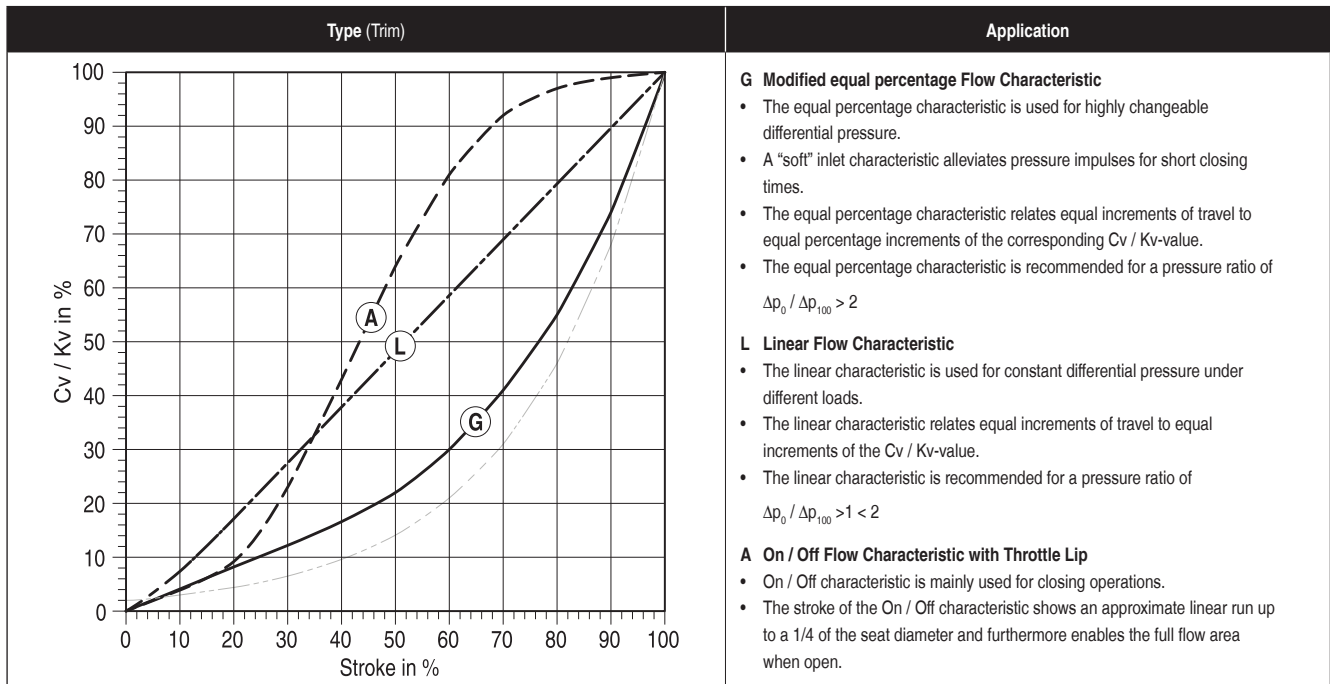
Packing Design	Type ( Packing )	Material	Temperature Range	Application	Approvals
spring loaded	Teflon "TA-Luft" 	<b>Packing Rings</b> Braided PTFE-Yarn impregnated with PTFE-Dispersion  <b>Chamber Washers</b> PTFE-Carbon	- 60 to + 300 °C - 76 to + 572 °F  <i>see also Working Temperature Range on Page 4</i>	Universal chemical resistance.	TA-Luft ISO 15848-1 ( 10 <sup>4</sup> mg * s <sup>-1</sup> * m <sup>-1</sup> ) Tightness class → B Endurance class → CC1
	Graphite "TA-Luft" 	<b>Packing Rings</b> Braided Graphite made out of expanded pure Graphite-Yarn lubricated with a slip additive	301 to + 400 °C 573 to + 752 °F  <i>see also Working Temperature Range on Page 7</i>	Universal chemical resistance. Not suitable for oxidizing medium !	TA-Luft ISO 15848-1 ( 10 <sup>2</sup> mg * s <sup>-1</sup> * m <sup>-1</sup> ) Tightness class → C Endurance class → CC1

# Trim Design - "Standard"

Type ( Trim ) / Material		Medium	Flow	max. allowable Differential Pressure in bar <sup>1)</sup>	Noise Reduction
Contoured Plug Characteristic: mod. equal per. or linear	standard 316 SS 	gases, vapors and liquids	Flow direction <b>under</b> the plug	$\Delta p_1 < x_{Fz} \cdot (p_1 - p_v)$ $\Delta p_c < x_T \cdot p_1$	none - noise reduction with Special Trim Equipment or Noise Insulating provided by customer
	partial hard facing ( seat surface ) 316 SS 			$\Delta p_1 < (x_{Fz} + 0,10) \cdot (p_1 - p_v)$ $\Delta p_c < x_T \cdot p_1$	
	full hard facing ( contour ) 316 SS 			$\Delta p_1 < (x_{Fz} + 0,15) \cdot (p_1 - p_v)$ $\Delta p_c < x_T \cdot p_1$	
	soft seated 316 SS + PTFE 			<ul style="list-style-type: none"> <li>• clean</li> <li>• marginally contaminated with particles</li> <li>• low clogging potential for dirty service</li> </ul>	
Quick Open with Throttle Lip Characteristic: On / Off	standard 316 SS 	Gases and Vapors	Flow direction under the plug	$\Delta p < MAWP$	max. - 10 dB(A)
	soft seated 316 SS + PTFE 				
Contoured Plug with MultiStream	all Standard Trim 	Liquids	Flow direction under the plug	Type: standard $\Delta p_c < x_T \cdot p_1$  Type: soft seated $\Delta p_1 < x_{Fz} \cdot (p_1 - p_v)$  Type: partial hard fac. $\Delta p_1 < (x_{Fz} + 0,10) \cdot (p_1 - p_v)$  Type: full hard facing $\Delta p_1 < (x_{Fz} + 0,15) \cdot (p_1 - p_v)$	max. - 4 dB(A)
Characteristic values of incompressible fluids $\Delta p_1 \rightarrow x_{Fz} \rightarrow 0,79 - 0,24$ respectively compressible fluids $\Delta p_c \rightarrow x_T \rightarrow 0,82 - 0,61$					

<sup>1)</sup> Formulas works only with SI - values ( bar = psi / 14.5038 ) !

# Valve Characteristic



## Contoured Plug

Characteristic: modified - equal percentage resp. linear

cv (gpm)	kvs (m <sup>3</sup> /h)	Seat Ø	Balancing	Material / Design				Possible seat diameter depends on nominal size																
								316 SS				15	20	25	32	40	50	65	80	100	125	150		
				standard	partial hard facing	full hard facing	soft seated <sup>1)</sup>	1/2"	3/4"	1"	32	1 1/2"	2"	65	3"	4"	125	6"						
0.46	0,40	4		•		•	•	•	•	•														
0.73	0,63	6		•		•	•	•	•	•														
1.16	1,0	8		•		•	•	•	•	•														
1.8	1,6	8		•		•	•	•	•	•														
2.9	2,5	10		•		•	•	•	•	•														
4.6	4,0	12		•	•		•	•	•	•														
6.5	5,6	16		•	•		•	•		•														
7.3	6,3	16		•	•		•		•	•														
9.2	8,0	20		•	•		•		•															
11.6	10	20		•	•		•		•	•	•													
16.2	14	25		•	•		•		•															
18.5	16	25		•	•		•		•	•	•													
-	22,4	34		•	•		•		•															
29	25	34		•	•		•			•	•													
36	31,5	40		•	•		•			•														
46	40	42		•	•		•				•													
55	47,5	50		•	•		•				•													
73	63	53		•	•		•																	
-	80	67		•	•		•																	
116	100	67	•	•	•		•															•	•	•
145	125	80	•	•	•		•																	•
185	160	84	•	•	•		•																	•
208	180	100	•	•	•		•																	•
289	250	105	•	•	•		•																	•
410	355	130	•	•	•		•																	•

<sup>1)</sup> Maximal Allowable Working Temperature with PTFE soft seat = - 60 to + 250 °C / - 76 to + 482 °F only !



# MultiStream linked to Contoured Plug

Characteristic: modified - equal percentage resp. linear

CV (gpm)	kvs (m <sup>3</sup> /h)	Seat Ø	Balancing	Material / Design			Possible seat diameter depends on nominal size										
							316 SS			15	20	25	32	40	50	65	80
				standard	partial hard facing	soft seated <sup>1)</sup>	1/2"	3/4"	1"		1 1/2"	2"					
							Stroke = 20 mm / 0.787 in.						40 mm / 1.574 in.			60 mm / 2.362 in.	
4.6	4,0	16		•	•	•	•										
5.8	5,0	16		•	•	•		•									
6.5	5,6	16		•	•	•			•								
7.3	6,3	20		•	•	•		•									
9.2	8,0	20		•	•	•			•								
10.4	9,0	20		•	•	•			•	•							
11.6	10	25		•	•	•			•								
-	12,5	25		•	•	•			•								
16.2	14	25		•	•	•			•	•	•						
-	16	34		•	•	•			•								
23	20	34		•	•	•			•								
26	22,4	34		•	•	•			•								
29	25	40		•	•	•			•								
36	31,5	42		•	•	•			•								
41	35,5	42		•	•	•			•			•	•				
41	35,5	50		•	•	•			•			•					
-	50	53		•	•	•			•			•					
65	56	53		•	•	•			•			•	•				
-	63	67	•	•	•	•			•			•					
92	80	67	•	•	•	•			•			•	•				
104	90	67	•	•	•	•			•			•			•	•	
104	90	80	•	•	•	•			•			•					
145	125	84	•	•	•	•			•			•					
162	140	84	•	•	•	•			•			•			•	•	
162	140	100	•	•	•	•			•			•					
-	180	105	•	•	•	•			•			•			•		
231	200	105	•	•	•	•			•			•					•
324	280	130	•	•	•	•			•			•					•

<sup>1)</sup> Maximal Allowable Working Temperature with PTFE soft seat = - 60 to + 250 °C / - 76 to + 482 °F only !

## Leakage Class for Control Function acc. IEC 60534-4:2006-06 resp. ASME / FCI 70-2

Bonnet Design	Type / Trim Design	Leakage Class acc. IEC 60534	Test Medium	Test Pressure	max. Seat Leakage	Leakage Code
Unbalanced	metal to metal seated	IV	Liquid	Working Pressure	0,000 1 · kvs 0,000 1 · cv	IV L 2
			Gas	Working Pressure, max. 3,5 bar Working Pressure, max. 50.7 psi	0,000 1 · kvs 0,000 1 · cv	IV G 1
	metal to metal seated, lapped seat, increased seal force	V	Liquid	Working Pressure	0,000 018 · Δp · Ø d <sup>1)</sup>	VL 2
			Gas	Working Pressure, max. 3,5 bar Working Pressure, max. 50.7 psi	0,000 010 8 · Ø d	VG 1
	soft seated	VI	Gas	Working Pressure, max. 3,5 bar Working Pressure, max. 50.7 psi	0,3 · Δp · LF <sup>2)</sup>	VI G 1
V-Ring pressure balanced	metal to metal seated	IV	Liquid	Working Pressure	0,000 1 · kvs 0,000 1 · cv	IV L 2
			Gas	Working Pressure, max. 3,5 bar Working Pressure, max. 50.7 psi	0,000 1 · kvs 0,000 1 · cv	IV G 1
	metal to metal seated, lapped seat, increased seal force	V	Liquid	Working Pressure	0,000 018 · Δp · Ø d	VL 2
			Gas	Working Pressure, max. 3,5 bar Working Pressure, max. 50.7 psi	0,000 010 8 · Ø d	VG 1
	soft seated	VI	Gas	Working Pressure, max. 3,5 bar Working Pressure, max. 50.7 psi	0,3 · Δp · LF	VI G 1
Piston-Ring pressure balanced	metal to metal seated	IV	Liquid	Working Pressure	0,000 1 · kvs 0,000 1 · cv	IV L 2

<sup>1)</sup> Ø d = Seat Ø

<sup>2)</sup> LF = Leakage rate factor → see IEC 60534-4 Remark 2

# Quick Open

Characteristic: on / off

CV (gpm)	kvs (m <sup>3</sup> /h)	Seat Ø	Material / Design		Possible seat diameter depends on nominal size											
					15 1/2"	20 3/4"	25 1"	32	40 1 1/2"	50 2"	65	80 3"	100 4"	125	150 6"	
			316 SS		Stroke = 20 mm / 0.787 in.					40 mm / 1.574 in.			60 mm / 2.362 in.			
7.3	6.3	16	•	•	•											
10.4	9.0	20	•	•		•										
18.5	16	25	•	•			•									
-	25	34	•	•				•								
41	35,5	40	•	•					•							
61	53	50	•	•						•						
-	90	67	•	•							•					
162	140	80	•	•							•					
231	200	100	•	•								•				
-	285	105	•	•									•			
462	400	130	•	•										•		

<sup>1)</sup> Maximal Allowable Working Temperature → 316 SS + soft seated = - 60 to + 250 °C / - 76 to + 482 °F only !

## Leakage Class for Quick Open Function acc. DIN EN 12266-1:2003-06

Bonnet Design	Type / Trim Design	Leakage Class acc. EN 12266	Test Medium	Test Pressure (bar)	max. Seat Leakage
Unbalanced	metal to metal seated	A	Liquid	Working Pressure · 1,1	no leakage viewable
	metal to metal seated, lapped seat		Gas	Working Pressure, max. 6	
	soft seated			Working Pressure, max. 6	

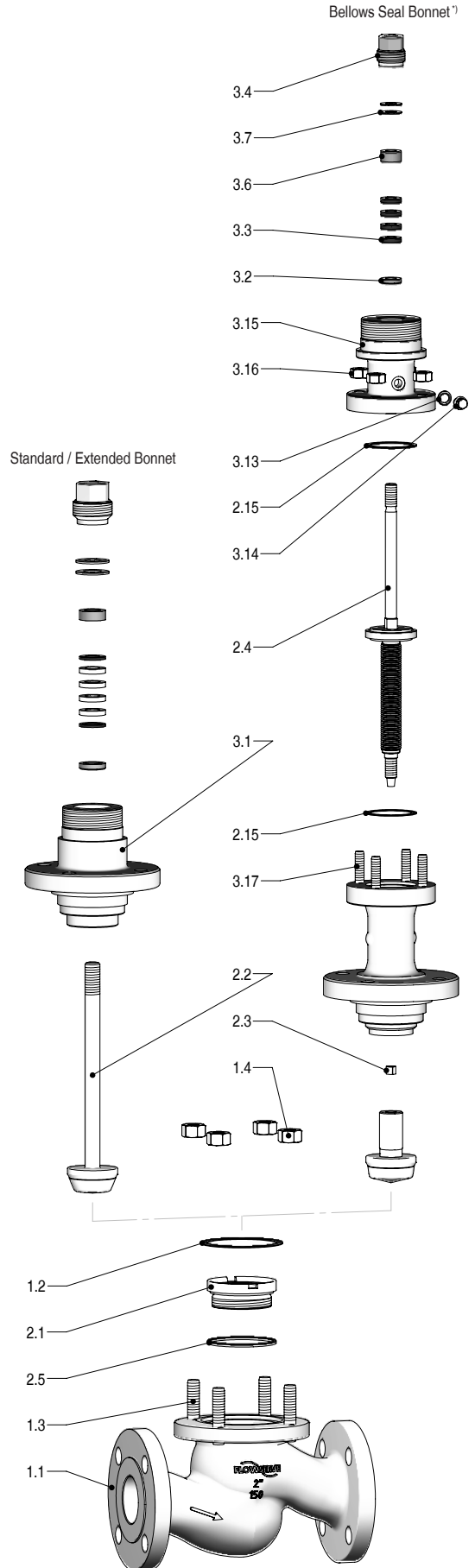
## Max. allowable control - differential pressure

Seat Ø	Δ p ( bar / psi )											
	15 1/2"	20 3/4"	25 1"	32	40 1 1/2"	50 2"	65	80 3"	100 4"	125	150 6"	
	Stroke 20 mm / 0.787 in.						40 mm / 1.574 in.			60 mm / 2.362 in.		
unbalanced	Stem Ø 12 mm / 0.472 in. max. Force 13 500 N / 3035 lbf			Stem Ø 16 mm / 0.630 in. max. Force 23 000 N / 5171 lbf			Stem Ø 20 mm / 0.787 in. max. Force 39 000 N / 8768 lbf			Stem Ø 24 mm / 0.945 in. m. F. 56 000 N / 12 590 lbf		
	4	51 740	51 740	51 740								
	6	51 740	51 740	51 740								
	8	51 740	51 740	51 740								
	10	51 740	51 740	51 740								
	12	51 740	51 740	51 740								
	16	51 740	51 740	51 740								
	20		51 740	51 740	51 740	51 740						
	25			51 740	51 740	51 740						
	34				51 740	51 740	51 740					
	40					48 696						
	42						44 638	51 740	51 740			
	50						32 464					
	53							32 464	32 464	32 464		
	67							20 290	20 290	20 290	24 348	24 348
80								15 218				
84									13 189	15 218	15 218	
100									10 145			
105										10 145	10 145	
130											7 102	
pressure balanced	67							51 740	51 740	51 740	51 740	
	80							51 740				
	84								51 740	51 740	51 740	
	100								51 740			
	105									51 740	51 740	
130										51 740		

# Parts List

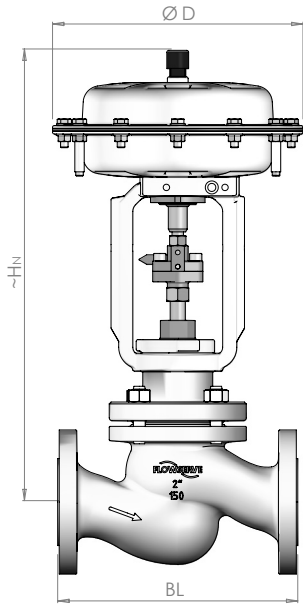
## Materials of Construction

Part	Item	Available Materials			
Body	1.1	1.0619	A216 WCC	1.4408	A351 CF8M
Bonnet Gasket	1.2	Pure Graphite on Support Plate from 1.4401			
Stud Bolt	1.3	KG	A193	A2-70	A193
Hex Nut	1.4	KG	A194	A2-70	A194
Screwed Seat	2.1	316 SS			
Contoured Plug Quick Open	2.2	316 L (Alloy 6)			
Lock Bushing	2.3	316 SS			
Bellows seal Unit	2.4	316 SS			
Profile Ring	2.5	Pure Graphite			
Head Gasket	2.15	Pure Graphite			
Standard Bonnet	3.1	1.0460 or 1.0619	A105 or A216 WCC	1.4404 or 1.4408	316 L or A351 CF8M
Extension Bonnet					
Bellows Seal Bonnet					
Guide Bush	3.1.1	316 SS (nitrided)			
Bottom Ring	3.2	316 SS			
Packing Box	3.3	Teflon-Rings Graphite-Rings			
Gland Screw	3.4	A351 CF8M			
Upper Guide	3.6	316 SS			
Belleville Springs	3.7	1.4310			
Gasket	3.13	Pure Graphite			
Plug Screw	3.14	A2			
Head	3.15	1.0460 or 1.0619	A105 or A216 WCC	1.4404 or 1.4408	316 L or A351 CF8M
Hex Nut	3.16	KG	A194	A2-70	A194
Stud Bolt	3.17	KG	A193	A2-70	A193

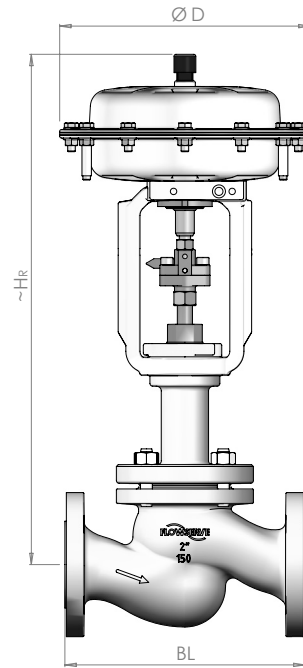


<sup>1</sup>Schematic design - final design is pending!

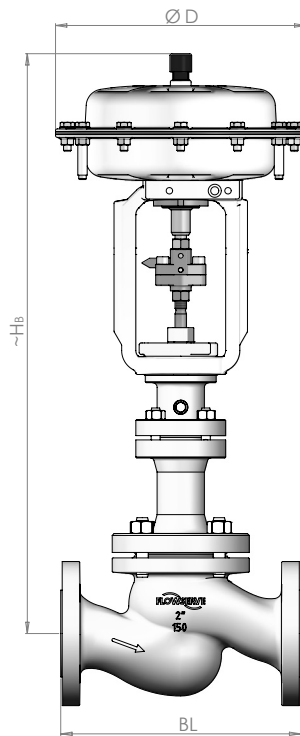
# Dimensional Drawing



Valve with Standard Bonnet and Pneumatic Actuator



Valve with Extension Bonnet and Pneumatic Actuator



Valve with Bellows Seal Bonnet and Pneumatic Actuator

# Dimensions and Weights

Description			Nominal Size										
			15	20	25	32	40	50	65	80	100	125	150
DIN - Valves (mm resp. kg)	Actuator		Stroke 20 mm / 0.787 in.						40 mm / 1.574 in.		60 mm / 2.362 in.		
	Size	Ø D											
BL Face to Face Dimension according to EN 558			130	150	160	180	200	230	290	310	350	400	480
~ H <sub>iv</sub> for Standard Bonnet and Actuator (mm)	IG 253	265	445	445	445	475	475	480					
	IG 503	352	565	565	565	600	600	600	665	665	670		
	IG 701	390				640	640	640	710	710	710	805	805
~ H <sub>is</sub> for Bellows Seal Bonnet and Actuator (mm) <sup>1)</sup>	IG 253	265	600	600	600	600	600	600					
	IG 503	352	720	720	720	720	720	720	870	870	870		
	IG 701	390				760	760	760	910	910	910	1190	1195
~ H <sub>is</sub> for Extension Bonnet and Actuator (mm)	IG 253	265	520	520	520	540	540	540					
	IG 503	352	640	640	640	660	660	660	750	750	750		
	IG 701	390				700	700	700	790	790	790	935	940
~ Weight in kg for Standard Bonnet and Actuator	IG 253		16,5	17,5	18,0	23	24	29					
	IG 503		27	28	28	33	34	39	55	59	75		
	IG 701					40	41	46	62	66	82	105	137
~ Weight in kg for Bellows Seal Bonnet and Actuator <sup>1)</sup>	IG 253		20	21	22	26	27	31					
	IG 503		30	31	32	36	37	41	58	60	76		
	IG 701					43	44	48	65	67	83	117	148
~ Weight in kg for Extension Bonnet and Actuator	IG 253		17,5	18,0	19,0	24	25	30					
	IG 503		28	28	29	34	35	40	57	61	75		
	IG 701					41	42	47	64	68	82	108	141
Flanges drilled and dimensioned according to			EN 1092-1, Form B1										
ASME - Valves (mm resp. kg)	Actuator		1/2"	3/4"	1"	-	1 1/2"	2"	-	3"	4"	-	6"
	Size	Ø D	Stroke 20 mm / 0.787 in.						40 mm / 1.574 in.		60 mm / 2.362 in.		
BL Face to Face Dimension acc. to ASME/ISA 75.08.01	Class 150 RF		184	184	184	-	222	254	-	298	352	-	451
	Class 300 RF		190	194	197	-	235	267	-	318	368	-	473
~ H <sub>is</sub> for Bonnets and Actuators			see DIN - Valves										
~ Weight in kg for Standard Bonnet and Actuator	IG 253		17,0	18,0	19,0	-	29	32					
	IG 503		27	28	29	-	39	42	-	69	94		
	IG 701					-	46	49	-	76	101	-	161
~ Weight in kg for Bellows Seal Bonnet and Actuator <sup>1)</sup>	IG 253		22	22	23	-	31	33					
	IG 503		32	32	33	-	41	43	-	72	91		
	IG 701					-	48	50	-	79	98	-	165
~ Weight in kg for Extension Bonnet and Actuator	IG 253		18,0	19,0	20	-	29	32					
	IG 503		28	29	30	-	40	43	-	71	95		
	IG 701					-	46	49	-	78	102	-	167
Flanges drilled and dimensioned according to			ASME B16.5, Raised Face										
BL Face to Face Dimension acc. to ASME/ISA 75.08.01 (inch)	Class 150 RF		7.25	7.25	7.25	-	8.75	10.00	-	11.75	13.88	-	17.75
	Class 300 RF		7.50	7.62	7.75	-	9.25	10.50	-	12.50	14.50	-	18.62
~ H <sub>iv</sub> for Standard Bonnet and Actuator (inch)	IG 253	10.4	17.5	17.5	17.5	-	18.7	18.9					
	IG 503	13.9	22.2	22.2	22.2	-	23.6	23.6	-	26.2	26.4		
	IG 701	15.4				-	25.2	25.2	-	28.0	28.0	-	31.7
~ H <sub>is</sub> for Bellows Seal Bonnet and Actuator (inch) <sup>1)</sup>	IG 253	10.4	23.6	23.6	23.6	-	23.6	23.6					
	IG 503	13.9	28.3	28.3	28.3	-	28.3	28.3	-	34.3	34.3		
	IG 701	15.4				-	29.9	29.9	-	35.8	35.8	-	47.0
~ H <sub>is</sub> for Extension Bonnet and Actuator (inch)	IG 253	10.4	20.5	20.5	20.5	-	21.3	21.3					
	IG 503	13.9	25.2	25.2	25.2	-	26.0	26.0	-	29.5	29.5		
	IG 701	15.4				-	27.6	27.6	-	31.1	31.1	-	37.0
~ Weight in lbs for Standard Bonnet and Actuator	IG 253		37.5	39.7	41.9	-	63.9	70.5					
	IG 503		59.5	61.7	63.9	-	86.0	92.6	-	152	207		
	IG 701					-	101	108	-	168	223	-	355
~ Weight in lbs for Bellows Seal Bonnet and Actuator <sup>1)</sup>	IG 253		48.5	48.5	50.7	-	68.3	72.8					
	IG 503		70.5	70.5	72.8	-	90.4	94.8	-	159	201		
	IG 701					-	106	110	-	174	216	-	364
~ Weight in lbs for Extension Bonnet and Actuator	IG 253		39.7	41.9	44.1	-	63.9	70.5					
	IG 503		61.7	63.9	66.1	-	88.2	94.8	-	157	209		
	IG 701					-	101	108	-	172	225	-	368

<sup>1)</sup> pending ( preliminary values ) !

## General Service Control Valve - GS order code

Valtek GS	Type							Size	PN	Body material / Certificate					Plug					Seat	kvs	Trim					
	V701	D	K	V	N	U	50			40	1.0619	O	O	A	O	P	O	N	P				1	G	G	42	40
Body design	globe, flanged end		D																								
Flange connection according to	EN 1092-1	Form B1	K																								
	ASME B16.5	RF	F																								
Balancing	without		V																								
	V-ring		O																								
	Piston-ring		K																								
Bonnet	Standard bonnet		N																								
	Bellows seal bonnet		B																								
	Extended bonnet		R																								
Stuffing box packing	PTFE standard, TA-Luft		U																								
	Graphite standard, TA-Luft		V																								
Nominal Size	15 - 20 - 25 - 32 - 40 - 50 - 65 - 80 - 100 - 125 - 150						15 - 150																				
	1/2" - 3/4" - 1" - 1 1/2" - 2" - 3" - 4" - 6"						1/2" - 6"																				
Nominal pressure			PN				16																				
							40																				
			Class				150																				
							300																				
Body material			DIN				1.0619																				
							1.4408																				
							A216WCC																				
			ASME				A351CF8M																				
Regulation for material	without		N																								
	PED		O																								
	PED & AD 2000		A																								
Material certificate	without		O																								
			2.2				Z																				
	EN 10204	3.1 with list of certificates ( without CMTR )		B																							
		3.1 with copy of certificates ( CMTR of body & bonnet & bolting		E																							
Regulation for final test	EN 1349	IEC 534 / FCI 70-2	A																								
Final test certificate	without		O																								
			2.2				Z																				
	EN 10204	3.1		B																							
		3.1		A																							
Plug type	Contoured plug	control service	P																								
	Quick Open	on - off seervice	T																								
Trim equipment	without		O																								
	One-stage	for liquid and gas service	MultiStream	D																							
Plug and seat design	standard		N																								
	Seat surface - Alloy 6		D																								
	Full contour - Alloy 6		K																								
	Soft seat		W																								
Seat leakage	Class IV	IEC / FCI	Test medium	Water	P																						
				Gas	D																						
	Class V	IEC / FCI		Water	S																						
				Gas	F																						
	Class VI	IEC / FCI		Gas	T																						
				Water	A																						
	LR A	EN 12 266		Water	A																						
				Gas	B																						
Plug guiding	Double stem guided / Cage guided with pressure balanced design																	1									
Characteristic	Modified equal percentage																	G									
	Linear																	L									
	Quick Open ( on - off )																	A									
Flow direction	Flow under the plug																	G									
Seat diameter																		4 - 130									
kvs - value	( m³/h )																	0,4 - 355									
cv - value	( gpm )																	0.46 - 410									
Trim material	316 SS																								316 SS		

## Pneumatic multi spring actuator - FlowAct order code

FlowAct				Order code							
				I	G	503	B	FY	O	Z	B
Actuator design	internal air supply			I							
Yoke design	Multi-function yoke for GS only			G							
Actuator size (cm <sup>2</sup> / inch <sup>2</sup> )	250	38.75	Stroke (mm / inch)	20	0.79	253					
	500	77.50		20, 40	0.79, 1.57	503					
	700	108.50		20, 40, 60	0.79, 1.57, 2.36	701					
Color	white, powder coated					B					
Spring range (bar)	Actuator size		253		503		701				
	0,2 - 1,0	2,9 - 14,5	Actuator force (N / lbs)		500	112	1 000	225	1 400	315	AD
	0,5 - 1,9	7,3 - 27,6			1 250	281	2 500	562	3 500	787	BL
	1,0 - 2,4	14,5 - 34,8			2 500	562	5 000	1 124	7 000	1 574	DY
	1,5 - 2,7 <sup>1)</sup>	21,8 - 39,2			3 750	843	7 500	1 686	10 500	2 360	VC
	1,5 - 3,8	21,8 - 55,1			3 750	843	7 500	1 686	10 500	2 360	VI
	2,0 - 4,8	29,0 - 69,6			5 000	1 124	10 000	2 248	14 000	3 147	FY
	2,3 - 3,4 <sup>2)</sup>	33,4 - 49,3			-	-	-	-	16 100	3 619	TD
Hand wheel	without									O	
	side mounted									S	
Safety position at air failure	spring to open									A	
	spring to close									Z	
Stroke (mm / inch)	20	0.79									A
	40	1.57									B
	60	2.36									C

<sup>1)</sup> Stroke 20, 40 mm / 0.79, 1.57 inch only!  
<sup>2)</sup> Stroke 20 mm / 0.79 inch only!

## Electrical linear actuator - PSL order code

PSL Automation				Order code							
				A	G	202	Z	P	O	15	A
Actuator design	A										
Yoke design	Pillar yoke for GS only			G							
Actuator size	PSL 201	Stroke (mm / inch)	20, 40	0.79, 1.57	Actuator force (N / lbs)	1 000	225	201			
	PSL 202 / 202.1		20, 40	0.79, 1.57		2 000	450	202			
	PSL 204		20, 40	0.79, 1.57		4 500	1 012	204			
	PSL 208		20, 40	0.79, 1.57		8 000	1 798	208			
	PSL 210		20, 40	0.79, 1.57		10 000	2 248	210			
	PSL 214		20, 40, 60	0.79, 1.57, 2.36		14 000	3 147	214			
Voltage	AC 220 - 240 V	50 Hz					Z				
	AC 110 - 115 V	50 Hz (not with PSL 202.1)					Y				
	AC 24 V	50 Hz					F				
Transmitter	without									O	
	two additional position switches			2WE						E	
	potentiometer 1000 Ω			PD 210						P	
	tandem - poti 1000 Ω			PD2 210						D	
	transmitter (mA), two-wire			PSPT02						M	
	potentiometer 1000 Ω with two position switches									Q	
	transmitter (mA) with two position switches									N	
Positioner	without									O	
	positioner 0 (4) - 20 mA, standard version			PSAP 2A						M	
Positioning speed (mm / min) (inch / min)	15	0.59	(PSL 201 / 202.1)								15
	27	1.06	(PSL 210 / 214)								27
	30	1.18	(PSL 202 / 204 / 208)								30
Stroke (mm / inch)	20	0.79									A
	40	1.57									B
	60	2.36									C



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