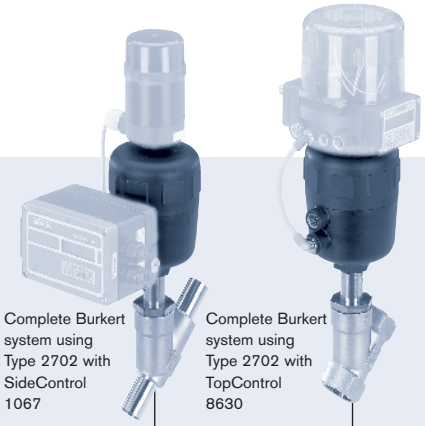
burkert
FLUID CONTROL SYSTEMS

DTS 1000090216 EN Version: - Status: RL (released | freigegeben | validé) printed: 22.09.2017

2/2-way Angle Seat Control Valve, threaded and weld end connections, 1/2" – 2"

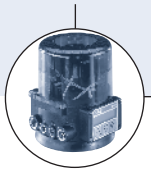


Complete Burkert system using Type 2702 with SideControl 1067

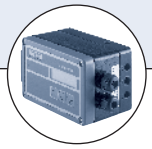
Complete Burkert system using Type 2702 with TopControl 8630

- Excellent control characteristic and high flow rates
- Durable, robust and cost effective
- Compact design, low weight

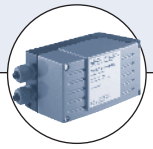
Type 2702 can be combined with...



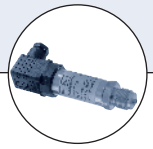
Type 8630
Positioner
TopControl
continuous



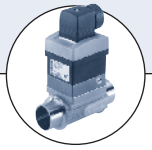
Type 1067
Positioner
SideControl



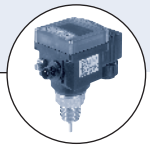
Type 8635
Positioner
SideControl



Type 8323
Pressure
transmitter



Type 8030
Flow sensor



Type 8400
Temperature
transmitter

The 2702 Control Valve consists of an 316L angle seat body with a rugged pneumatic piston actuator.

The parabolic trim results in a flow characteristic approximately 35% larger than conventional control valves. It is available in either stainless steel on stainless steel or with a durable PTFE seal for tight shut-off.

Type 2702 can be actuated by the Continuous TopControl Type 8630 or SideControl Type 1067 and 8635. TopControl/SideControl thus forms a mechanical and functional unit with the pneumatic actuator as a complete control valve system.

This system has been engineered for reliable accurate control in applications where high flow rate is an advantage.

Proven Applications

- **Food and beverage CIP/SIP and auxiliary processes with steam, chilled water and glycol**
- **Textile machinery (steam, water, air) and dyeing**
- **Heat exchangers and autoclaves**
- **Sterilizers and washers**
- **Distillation apparatus**
- **Packaging and filling machinery**

Technical data		
Materials		
Body		Cast stainless steel 316L (conform to 1.4409)
Actuator		PA (polyamide) (PPS on request)
Sealing		SS/SS (stainless steel/stainless steel) PTFE/SS (PTFE/stainless steel)
Seat leakage IEC 534-4/ EN 1349		Shut-off class IV for St.st./St.st. Shut-off class VI for PTFE/St.st.
Process media gases and liquids (vacuum version on request)		For neutral gases, water, alcohols, oils, fuels, hydraulic liquids, salt solutions, lyes, organic solvents, steam (150 PSI/366°F)
Viscosity		Max. .94 in^2/s (600 mm^2/s)
Packing gland		PTFE V-rings (silicone grease) with spring loading
Nominal pressure		362 PSI (body rating); 232 PSI (actuator shutoff)
Temperatures		
Fluid		14°F to 366°F (-10°C to +185°C)[1] (max. 266°F (+130°C) for PTFE/St.st. sealing recommended)
Ambient		14°F to 140°F (-10°C to +60°C)[1]
Control media		Compressed air
Pilot pressure		80 to 100 PSI (5.5 to 7 bar)
Pilot air ports		G 1/4 stainless steel (SS)
Flow direction		Below seat
Mounting position		Any, preferably upright
Flow characteristic		Modified equal percentage
Control ratio (C_{VS}/C_{VO})		More than 50:1
Port connections		
Threaded	NPT	ANSI/ASME B1.20.1 face-to-face DIN 3202-4 M4
	G	DIN ISO 228 face-to-face DIN 3202-4 M4 (on request) face-to-face DIN 3202-4 M8
	Rc	ISO 7 face-to-face DIN 3202-4 M4
Weld end	OD-Tube	ASME BPE
	ISO	ISO 4200 (on request)
	DIN	DIN 11850 series 2 (on request)
	SMS	SMS 3008 (on request)
		BS 4821 part 1 (on request)

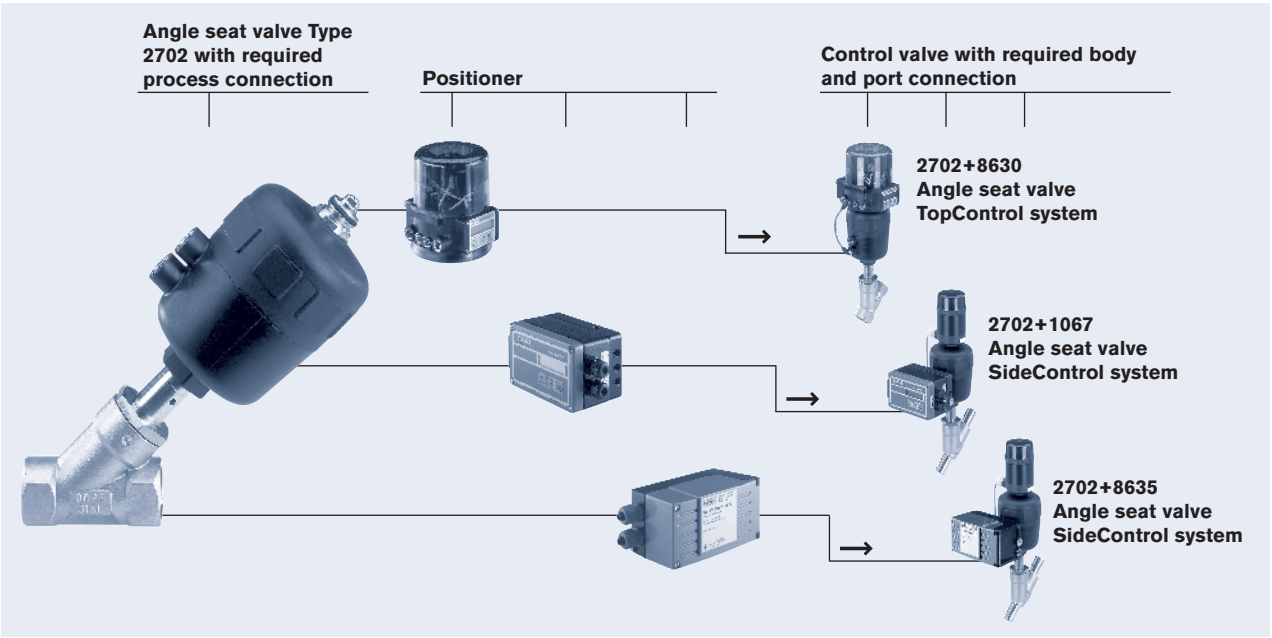
1) high temperature version on request

Angle seat valve system

A complete continuous angle seat valve system consists of an angle seat control valve Type 2702 and a valve actuation system SideControl Type 1067 or Type 8635 or TopControl Type 8630. The positioners are only delivered in combination with an actuator as a part of a complete control valve. The following information is necessary for the selection of a complete control valve:

- **Item no.** of the seat control valve **Type 2702** (see Ordering chart)
- **Item no.** of the desired positioner **Type 8630, 1067 or 8635** (see separate datasheets)

Examples for variations of continuous angle seat valve systems



Valve actuation system:
TopControl Type 8630, 3-wire

0/4-20 mA
0-5/10 V
DeviceNet™

The Type 8630 is a digital electropneumatic positioner to be combined with pneumatically actuated process valves. Its compact design with an integrated position encoder and digital text display was designed for the growing requirements of industrial applications.
Signal processing, regulation, and control of the internal positioning system are done using microprocessor-controlled electronics. Thanks to its easy-to-use operating structure, the positioner is simple and easy to operate despite its wide range of functionality.

Important features:
- Automatic commissioning of the control valve system and the optional process controller using the functions X-Tune or P.Co-Tune
- Automatic or manual definition of correction characteristic curves
- Binary inputs and outputs
- Analog output
- Fit seamlessly to Bükert process valve systems
- 24VDC

Valve actuation system:
SideControl Type 8635, 2-wire, intrinsically safe

4-20 mA

The Type 8635 is a digital electropneumatic positioner to be combined with pneumatically actuated process valves. Its robust, compact design was designed for the growing requirements of the process technology industry.
Signal processing, regulation, and control of the internal positioning system are done using microprocessor-controlled electronics. Thanks to its easy-to-use operating structure, the positioner is simple and easy to operate despite its wide range of functionality.

Important features:
- Automatic commissioning of the control valve system and the optional process controller using the functions X-Tune or P.Co-Tune
- Automatic or manual definition of correction characteristic curves
- Binary inputs and outputs
- Analog output
- Mounting on variable acting valves according to DIN IEC 534-6 (NAMUR) and Bürkert process control valves
- 2-wire, power supply through setpoint or PROFIBUS PA
- ATEX certification
  II 2G EEx ia IIC T6 Zone 1
  II 3G/D EEx ia IIC T6 Zone 2/22
- Robust housing of hardcoated and plastic plated aluminum

Valve actuation system:
SideControl Type 1067, 3-wire

0/4-20 mA
0-10 V

The Type 1067 is a digital electropneumatic positioner to be combined with pneumatically actuated process valves. Its robust, very compact design was designed for the growing requirements of the process technology industry.
Signal processing, regulation, and control of the internal or external positioning system are done using microprocessor-controlled electronics. Thanks to its easy-to-use operating structure, the position is simple and easy to operate despite its wide range of functionality.

Important features:
- Automatic commissioning of the control valve system using the X-Tune functions
- Automatic or manual definition of correction characteristic curves.
- Binary inputs and outputs
- Analog output
- Mounting on variable acting valves according to DIN IEC 534-6 (NAMUR) and Bürkert process control valves
- 3-wire, 24 VDC
- Keypad/display unit
- Remote version with positioner separate from control valve

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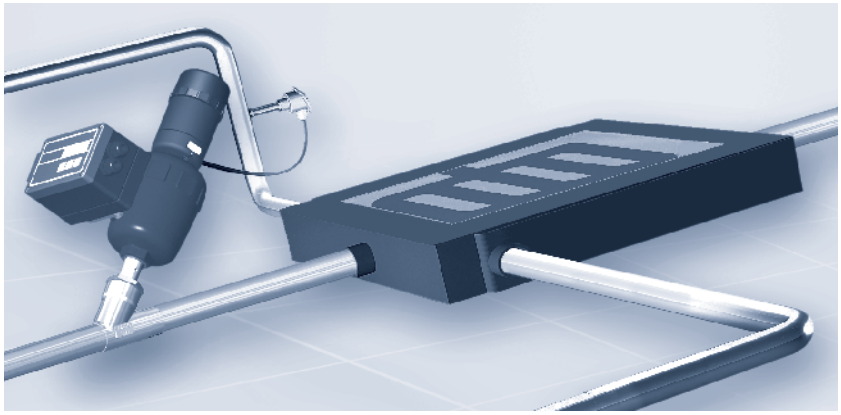
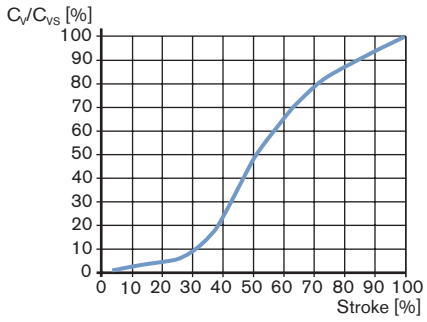
Application example



A 2702 control valve with a 1067 local PID controller. The valve is controlling the exit temperature of a media flowing-through a heat exchanger. The process input is a simple temperature transmitter.

Flow characteristic



Remarks on the flow characteristic

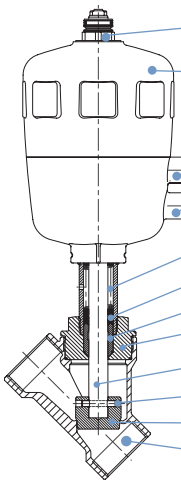
Modified equi-percentile flow characteristic, engineered for a quick response during peak flow demand (an advantage for many processes like heating/cooling with heat exchangers) and fine control at lower flow.

C_V values [gpm]*

Port size and orifice [mm]	Actuator size [mm]	Stroke [%]										
		5	10	20	30	40	50	60	70	80	90	100
13/15	F-80	0.26	0.28	0.30	0.40	0.81	2.1	3.3	4.0	4.6	5.0	5.2
20	F-80	0.35	0.38	0.49	0.81	3.3	6.2	7.7	8.7	9.5	10.0	10.5
25	F-80	0.45	0.47	0.70	1.46	5.2	9.9	12.2	14.2	15.7	16.6	17.5
32	F-80	0.64	0.76	1.11	1.75	4.6	10.8	16.1	19.3	21.9	24.5	26.9
40	G-100	0.76	0.99	1.75	5.8	16.3	23.4	29.2	31.5	35.1	38.6	40.9
50	G-100	1.17	1.52	2.3	5.8	18.7	31.5	39.7	47.9	52.6	57.3	62.0

* Based on water at 68°F, 1 PSI differential

Materials



Adapter: Stainless steel 1.4305

Actuator: PA polyamide (PPS on request)

Pilot air ports: Stainless steel 1.4305

Spring: Stainless steel 1.4568

V-seals: PTFE

Wiper: PTFE

Nipple: Stainless steel 1.4401

Spindle: Stainless steel 1.4401

Pin: Stainless steel 1.4310

Plug: Stainless steel 1.4571 (+PTFE disc for soft seat sealing)

Valve body: Cast stainless steel 316L

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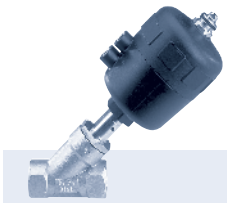
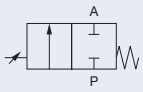
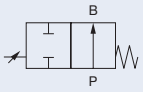
Ordering chart: Angle seat valve (without positioner)

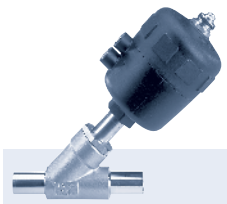
Threaded port

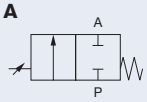
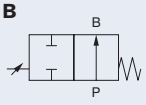


Control function	Port size and orifice [mm]	Port size and orifice [inch]	Actuator size Ø [mm]	C_vS value [gpm][1]	Op. pressure ≤ 366°F [PSI]	Item no. seal system[2] SS/SS	Item no. seal system[2] PTFE/SS
Threaded ports acc. NPT, ANSI/ASME B1.20.1, face-to-face acc. DIN 3202-4 M4, flow below seat							
A  2/2-way, NC by spring return	13	1/2"	F-80	5.2	232	462 101	462 095
	20	3/4"	F-80	10.5	232	462 102	462 096
	25	1"	F-80	17.5	232	462 103	462 097
	32	1 1/4"	F-80	26.9	217.5	462 104	462 098
	40	1 1/2"	G-100	40.9	181.25	462 105	462 099
	50	2"	G-100	62.0	104.4	462 106	462 100
B  2/2-way, NO by spring return	13	1/2"	F-80	5.2	232	462 115	462 107
	20	3/4"	F-80	10.5	232	462 116	462 108
	25	1"	F-80	17.5	232	462 110	462 111
	32	1 1/4"	F-80	26.9	217.5	462 121	462 112
	40	1 1/2"	G-100	40.9	181.25	462 122	462 113
	50	2"	G-100	62.0	104.4	462 123	462 114

[1] Based on water at 68°F, 1 PSI differential
[2] seal system:
- St.st./St.st.: plug stainless steel/seat stainless steel
- PTFE/St.st.: plug ss w/PTFE in seat/seat stainless steel

Weld end



Control function	Port size and orifice [mm]	Port size and orifice [inch]	Connection DS x WS [inch]	Actuator size Ø [mm]	C_vS value [gpm][1]	Op. pressure ≤ 366°F [PSI]	Item no. seal system[2] SS/SS	Item no. seal system[2] PTFE/SS
Weld end acc., U.S. tube ends								
A  2/2-way, NC by spring return	15	1/2"	.50 x .065	F-80	5.2	232	170 392	170 382
	20	3/4"	.75 x .065	F-80	10.5	232	170 440	170 384
	25	1"	1.00 x .065	F-80	17.5	232	170 441	170 386
	40	1 1/2"	1.50 x .065	G-100	40.9	181	170 442	170 388
	50	2"	2.00 x .065	G-100	62.0	104	170 443	170 390
B  2/2-way, NO by spring return	15	1/2"	.50 x .065	F-80	5.2	232	170 464	170 444
	20	3/4"	.75 x .065	F-80	10.5	232	170 465	170 447
	25	1"	1.00 x .065	F-80	17.5	232	170 466	170 461
	40	1 1/2"	1.50 x .065	G-100	40.9	181	170 467	170 462
	50	2"	2.00 x .065	G-100	62.0	104	170 468	170 463

[1] Based on water at 68°F, 1 PSI differential
[2] seal system:
- St.st./St.st.: plug stainless steel/seat stainless steel
- PTFE/St.st.: plug ss w/PTFE in seat/seat stainless steel

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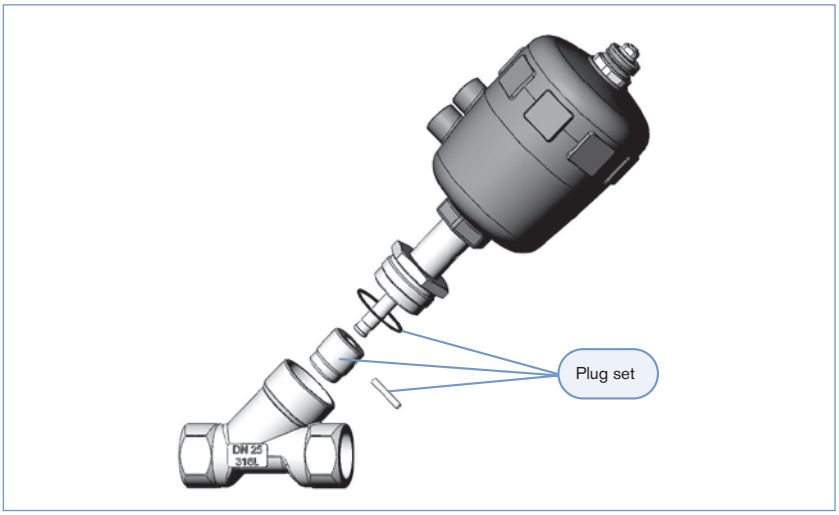
Ordering chart: Angle seat valve (with controller), PG gland electrical connection

Stainless steel/stainless steel valve mounted controller

Port size and orifice [mm]	[inch]	Description	Item no. [NPT]	Item no. [Tube]
Type 8630 position only controller				
13	1/2”	SYST–2702–462101–8630–459321	US11142	–
20	3/4”	SYST–2702–462102–8630–459321	US11143	–
25	1”	SYST–2702–462103–8630–459321	US11144	–
32	1 1/4”	SYST–2702–462104–8630–459321	US11145	–
40	1 1/2”	SYST–2702–462105–8630–459321	US11146	–
50	2”	SYST–2702–462106–8630–459321	US11147	–
15	1/2”	SYST–2702–170392–8630–459321	–	US11137
20	3/4”	SYST–2702–170440–8630–459321	–	US11138
25	1”	SYST–2702–170441–8630–459321	–	US11139
40	1 1/2”	SYST–2702–170442–8630–459321	–	US11140
50	2”	SYST–2702–170443–8630–459321	–	US11141
Type 8630 PID controller				
13	1/2”	SYST–2702–462101–8630–459290	US11153	–
20	3/4”	SYST–2702–462102–8630–459290	US11154	–
25	1”	SYST–2702–462103–8630–459290	US11155	–
32	1 1/4”	SYST–2702–462104–8630–459290	US11156	–
40	1 1/2”	SYST–2702–462105–8630–459290	US11157	–
50	2”	SYST–2702–462106–8630–459290	US11158	–
15	1/2”	SYST–2702–170392–8630–459290	–	US11148
20	3/4”	SYST–2702–170440–8630–459290	–	US11149
25	1”	SYST–2702–170441–8630–459290	–	US11150
40	1 1/2”	SYST–2702–170442–8630–459290	–	US11151
50	2”	SYST–2702–170443–8630–459290	–	US11152
Type 1067 position/PID controller				
13	1/2”	SYST–2702–462101–1067–US04333	US11164	–
20	3/4”	SYST–2702–462102–1067–US04333	US11165	–
25	1”	SYST–2702–462103–1067–US04333	US11166	–
32	1 1/4”	SYST–2702–462104–1067–US04333	US11167	–
40	1 1/2”	SYST–2702–462105–1067–US04334	US11168	–
50	2”	SYST–2702–462106–1067–US04334	US11169	–
15	1/2”	SYST–2702–170392–1067–US04333	–	US11159
20	3/4”	SYST–2702–170440–1067–US04333	–	US11160
25	1”	SYST–2702–170441–1067–US04333	–	US11161
40	1 1/2”	SYST–2702–170442–1067–US04334	–	US11162
50	2”	SYST–2702–170443–1067–US04334	–	US11163

Spare parts for Type 2702 - 1/2” – 2” (DN 13-50)



Spare plug sets

Port size and orifice [mm]	[inch]	Item no. seal system* SS/SS	Item no. seal system* PTFE/SS
13	1/2”	170 322	170 315
20	3/4”	170 323	170 316
25	1”	170 324	170 318
32	1 1/4”	170 325	170 319
40	1 1/2”	170 326	170 320
50	2”	170 327	170 321

*seal system:
- St.st./St.st.: plug stainless steel/seat stainless steel
- PTFE/St.st.: plug ss w/PTFE in seat/seat stainless steel

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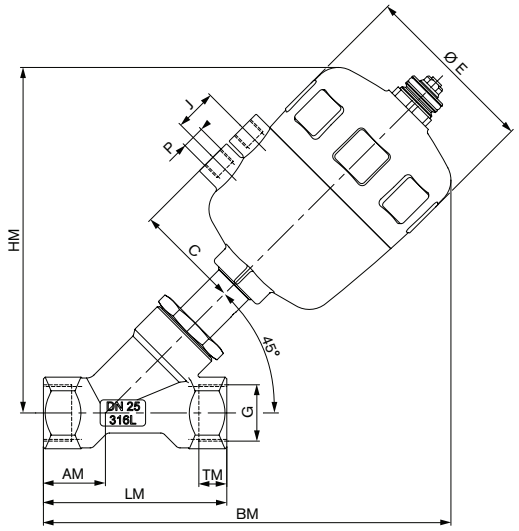
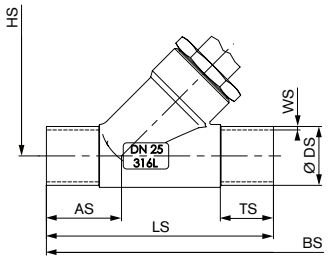
Dimensions [mm]

Angle seat valve with threaded and weld end connection

Threaded body



Weld end body



All actuators

Orifice [mm]	Actuator size	Ø E	C	P	J
13/15	F-80	101	60	G 1/4	24
20	F-80	101	60	G 1/4	24
25	F-80	101	60	G 1/4	24
32	F-80	101	60	G 1/4	24
40	G-100	127	73	G 1/4	30
50	G-100	127	73	G 1/4	30

Threaded ends

All threaded bodies		G, NPT and Rc thread with face-to-face acc. DIN 3202-4 M4									G thread with face-to-face acc. DIN 3202-4 M8				
Orifice					G thread		NPT thread		Rc thread						
[mm]	HM	BM	LM	AM	G	TM	G	TM	G	TM	BM	LM	AM	G	TM
13	193	224	85	31	G 1/2	14	NPT 1/2	13.7	Rc 1/2	13.2	217	65	24	G 1/2	14
20	193	228	95	35	G 3/4	16	NPT 3/4	14	Rc 3/4	14.5	220	75	27	G 3/4	16
25	198	234	105	35.5	G 1	18	NPT 1	16.8	Rc 1	16.8	228	90	29.5	G 1	18
32	205	246	120	41	G 1 1/4	16	NPT 1 1/4	17.3	Rc 1 1/4	19.1	241	110	36	G 1 1/4	16
40	260	300	130	40	G 1 1/2	18	NPT 1 1/2	17.3	Rc 1 1/2	19.1	295	120	35	G 1 1/2	18
50	272	317	150	45	G 2	24	NPT 2	17.6	Rc 2	23.4	–	–	–	–	–

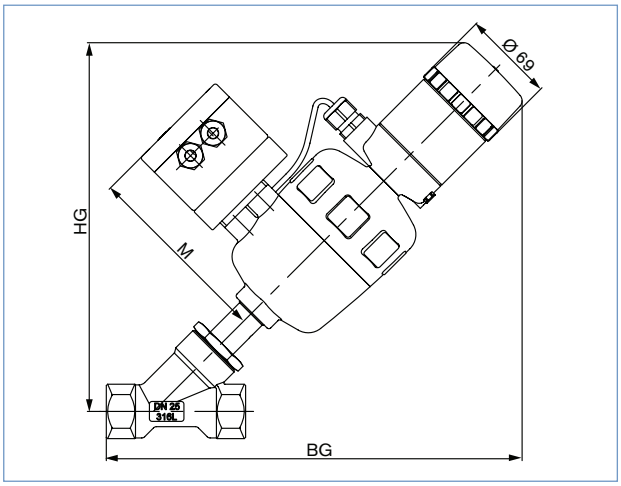
Weld ends

All weld end bodies		ISO 4200 and DIN 11850 series 2									BS 4825 P1, ASME BPE, SMS 3008										
Orifice					ISO 4200			DIN 11850 S2			Orifice				BS 4825[1], ASME BPE[2]				SMS 3008		
[mm]	HS	BS	LS	AS	øDS	TS	WS	øDS	TS	WS	[inch]	BS	LS	AS	øDS	TS	WS[1]	WS[2]	øDS	TS	WS
15	198	232	100	34	21.3	20	1.6	19	20	1.5	1/2”	244	135	46	12.7	38	1.65	1.65	12	38	1
20	198	237	115	39	26.9	25	1.6	23	20	1.5	3/4”	250	145	52	19.05	38	1.65	1.65	18	38	1
25	199	242	130	43	33.7	30	2	29	26	1.5	1”	250	152	51	25.4	38	1.65	1.65	25	38	1.2
32	209	244	145	35	42.4	26	2	35	26	1.5	–	–	–	–	–	–	–	–	–	–	–
40	263	312	160	49	48.3	30	2	41	26	1.5	1 1/2”	323	182	60	38.1	38	1.65	1.65	38	38	1.2
50	277	327	175	50	60.3	30	2.6	53	26	1.5	2”	341	210	64	50.8	45	1.65	1.65	51	45	1.2

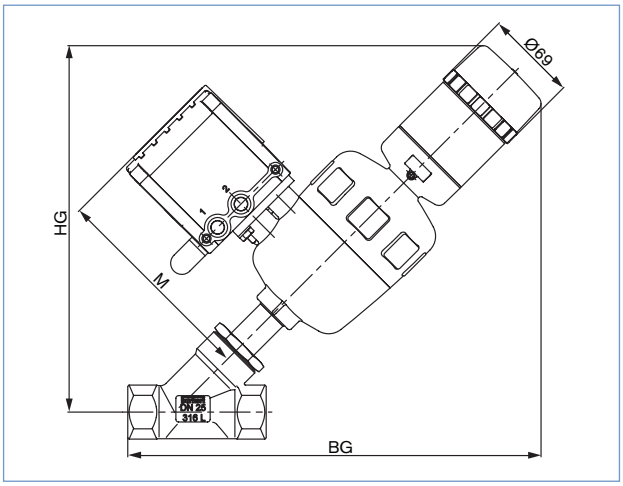
[1] BS 4825 P1 [2] ASME BPE

Dimensions [mm]

Control valve system 2702 + 1067

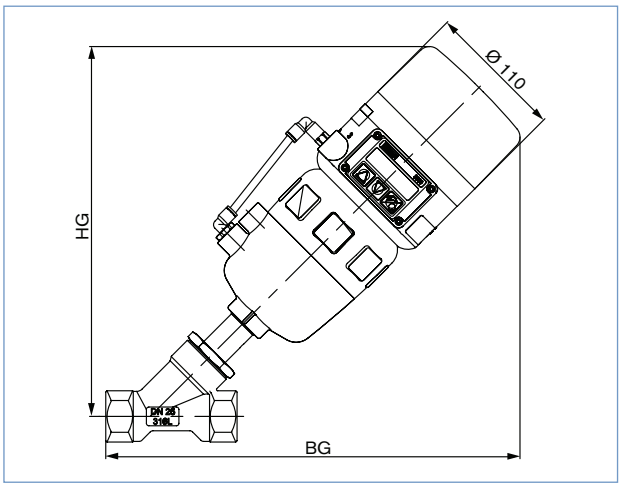


Control valve system 2702 + 8635



All bodies orifice [mm]	Actuator size [mm]	M 2702 + 1067	M 2702 + 8635	Threaded body HG	Threaded body BG G, NPT and Rc thread with face-to-face acc. DIN 3202-4 M4	Threaded body BG G thread with face-to-face acc. DIN 3202-4 M8	Weld end body HG	Weld end body BG ISO 4200 DIN 11850 S2	Weld end body BG BS 4825 P1 ASME BPE SMS 3008
13/15	F-80	142	160	273	304	297	278	312	324
20	F-80	142	160	273	308	300	278	317	330
25	F-80	142	160	278	314	308	279	322	330
32	F-80	142	160	285	326	321	289	324	–
40	G-100	155	173	336	376	371	340	389	400
50	G-100	155	173	349	394	–	354	404	418

Control valve system 2702 + 8630



All bodies orifice [mm]	Actuator size [mm]	Threaded body HG	Threaded body BG G, NPT and Rc thread with face-to-face acc. DIN 3202-4 M4	Threaded body BG G thread with face-to-face acc. DIN 3202-4 M8	Weld end body HG	Weld end body BG ISO 4200 DIN 11850 S2	Weld end body BG BS 4825 P1 ASME BPE SMS 3008
13/15	F-80	291	322	315	296	330	342
20	F-80	291	326	318	296	335	348
25	F-80	296	332	326	297	340	348
32	F-80	303	344	339	307	342	–
40	G-100	354	394	389	358	407	418
50	G-100	367	412	–	372	422	436

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Note

You can fill out the fields directly in the PDF file before printing out the form.

Control valves – request for quotation

Please fill out this form and send to your local Bürkert facility* with your inquiry or order

Company	Contact person
Customer no.	Department
Address	Tel./Fax
Zip code	E-Mail

■ = mandatory fields to fill out Quantity Required delivery date

Operating data

		Min	Standard	Max	unit
Site of control					
Measuring and control task					
Pipeline	DN / PN				
Pipe material					
■ Process medium					
■ Type of media	☐ Liquid ☐ Steam ☐ Gas				
■ Flow rate (Q, QN, W)[1]					
■ Temperature at valve inlet T1					
■ Absolute pressure at valve inlet P1					
■ Absolute pressure at valve outlet P2					
Steam pressure Pv					
Kinematic viscosity (ν)			mm²/s or cSt		
Dynamic viscosity (η)			mPa.s or cP		
Standard density			Kg/m³		
Max. sound level accepted			dB (A)		

[1] standard unit
Liquid Q = m³/h; Steam W = Kg/h; Gas QN = Nm³/h

Valve features

Control valve type	☐ Globe	☐ Angle seat	☐ Diaphragm	☐ Ball valve	☐ Butterfly	☐ Other
Body material	☐ Stainless Steel		☐ PVC	☐ PP	☐ PVDF	☐ Other
Surface finish[2]		internal		external		
Seat sealing material	☐ Metal	☐ PTFE	☐ EPDM[2]	☐ FKM[2]		
Nominal pressure	PN					
Nominal size	DN					
Type of connection	☐ Flange	☐ Socket union	☐ Welded	☐ Int. thread	☐ Ext. thread	☐ Tri-Clamp®
Standard connection	☐ ISO	☐ DIN	☐ ANSI	☐ JIS	☐ Other	
Function	☐ NC	☐ NO	☐ Double-acting			
Pilot pressure		min.		max.		

[2] Only diaphragm valve

Positioner / Controller

☐ Type 1067

☐ Valve mounted ☐ Remote version
Power supply 24 VDC
Communication
Setpoint/ output analog signal

☐ **Positioner version**
Input 0/4 - 20 mA / 0-10 V
Output ☐ 4 - 20mA or ☐ Binary

PID Controller version[3]
☐ Input measuring signal 4 - 20 mA

☐ Type 8630 - 3 wire

Power supply 24 VDC
Communication
Setpoint/ output analog signal or via BUS ☐ Profibus DP ☐ Device Net

☐ **Positioner version**
Input 0/4 - 20 mA / 0 - 5/10 V
Output ☐ 4 - 20mA or/and ☐ Binary

PID Controller version[3]
☐ Input measuring signal 4 - 20 mA / Pt100 / Frequency

Inductive proximity switch ☐ 1 ☐ 2

☐ Type 8635 - 2 wire

☐ Standard ☐ EEx ia
Power supply 24 VDC via setpoint or BUS
Communication
Setpoint/ output analog signal or via BUS ☐ Profibus PA ☐ Hart

☐ **Positioner version**
Input 4 - 20 mA
Output ☐ 4 - 20mA or/and ☐ Binary

PID Controller version[3]
☐ Input measuring signal 4 - 20 mA

Inductive proximity switch ☐ 1 ☐ 2

[3] same setpoint for Input and Output signal as for Positioner version

*To find your nearest Burkert facility, click on the orange box ⟶

Reset forms

In case of special application conditions, please consult for advice.

We reserve the right to make technical changes without notice.

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