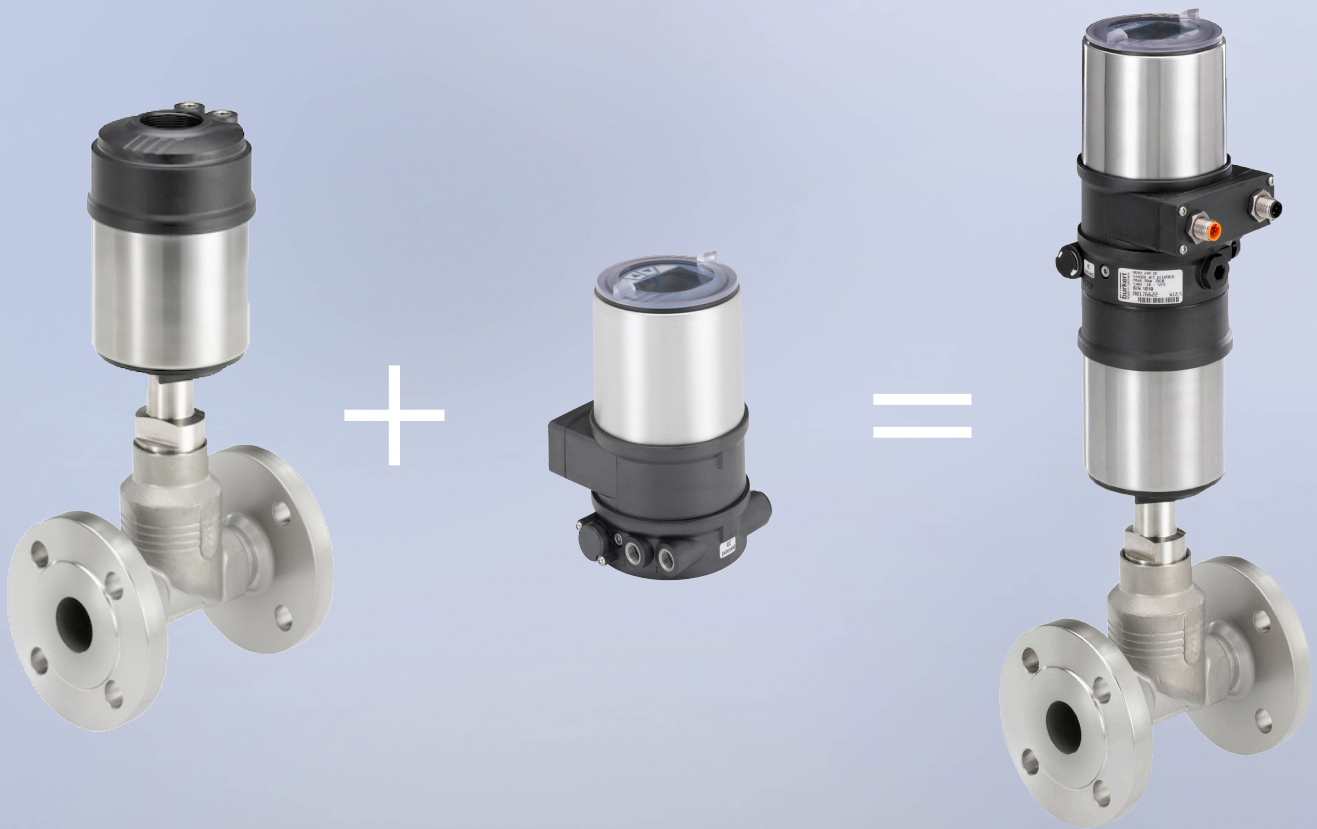


# Globe Valve System for continuous control

Type 8802/2301 electro-pneumatically operated globe valve



TWO YEAR WARRANTY  
on this valve system

# Burkert Type 8802/2301



**Type 2301 Series**  
Globe valve

+



**Type 8692 continuous**  
controller

=



**Type 8802 continuous**  
control valve

The design of the System Type 8802 Pneumatically-operated ELEMENT globe valve enables the easy integration of automation modules whether they are electrical/ optical position feedback, pneumatic control units or an optional integrated fieldbus interface.

The fully integrated system with valve and automation system has a compact and smooth design, integrated pneumatic lines, IP65/67/ NEMA4X protection class and superior chemical resistance.

**Support documentation for 2301 + 8692**



2301 Datasheet



8692 Datasheet

# Burkert Type 2301



- Excellent control characteristics and impact resistance
- High cycle life and maintenance-free operation
- Flow optimised body in stainless steel
- Several Kvs value per port size due to removable trim kit
- Control units can be mounted directly without external tubing

Technical Data	
<b>Cvs values</b>	See Chart
<b>Port/Seat Size</b> (orifice)	DN10 (3/8")...DN100 (4") / DN3...DN100 (4")
<b>Nominal pressure</b>	365 PSI
<b>Port Connections</b>	
Flange	ANSI B 16.5
Thread	NPT ( ASME B 1.20.1)
Weld ends	ASME BPE
Clamp	ASME BPE
<b>Medium</b>	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam, optional fuel gas (EC Gas appliances Directive 2009/142/EG)
<b>Viscosity</b>	max. 600 mm <sup>2</sup> /s
<b>Medium temperature</b>	14°F to 365°F; -10°C to 185°C (stainless steel seal / stainless steel cone) 14°F to 266°F; -10°C to 130°C (PTFE seal / stainless steel cone)
<b>Ambient temperature</b>	32°F to 131°F (when used with positioner or process controllers)
<b>Seat leakage per IEC 534-4/ EN 1349</b>	Shut-off class III and IV for St.st/St.st. Shut-off class VI for PTFE/St.st. and PEEK/St.st. (see details in ordering chart)
<b>Safety position</b>	A: normally closed by spring action (NC)
<b>Control medium</b>	instrument air acc. DIN ISO 8573-1
<b>Approval and Conformity</b>	FDA, EGV 1935/2004; (ATEX and DVGW on request)

In line with Burkert's philosophy the construction of the 2301 globe valve fulfils tough criteria for process environments. Unrivaled cycle life and sealing integrity is guaranteed by the proved self adjusting spindle packing with exchangeable V-Seals.

Each globe valve body can be fitted with up to five sizes of trim sets. These parabolic trims provide a reliable and repeatable characteristic to vary the flow. The control cones are available in either stainless steel or with a durable PTFE seal or PEEK seal for tight shut-off. Leakage class III, IV or VI are available.

The design enables the easy integration of automation modules whether they are digital electropneumatic positioner or process controller.

The fully integrated system has a compact and smooth design, integrate pneumatic lines, IP65/67 protection class and superior chemical resistance.

# Burkert Type 8692

- Compact, robust stainless steel NEMA 4X design
- Contact-free position sensor
- Integrated control air routing
- Electrically isolated inputs and outputs
- Industry leading diagnostics alarms as standard
- Easy start-up by automatic X-Tune function



Technical Data	
<b>Material</b>	Body Cover Sealing
	PPS, stainless steel PC EPDM
<b>Power supply</b>	24 VDC +/- 10% UL; NEC Class 2
<b>Residual ripple</b>	max. 10%
<b>Setpoint setting</b>	0/4 to 20mA and 0 to 5/10 V
<b>Output resistance</b>	0/4 to 20 mA: 180 Ω 0 to 5/10 V: 19 k Ω
<b>Control medium</b>	neutral gases, air, quality classes acc. to ISO 8573-1
Dust concentration	Class 7 (<40µm particle size)
Particle density	Class 5 (<10mg/m <sup>3</sup> )
Pressure condensation point	Class 3 (<-20°C)
Oil concentration	Class X (<25mg/m <sup>3</sup> )
<b>Ambient temperature</b>	0°C to 55°C; 32°F to 131°F
<b>Pilot air ports</b>	Threaded ports G1/8 stainless steel
<b>Supply pressure</b>	Low air flow rate 0 to 100 psi <sup>1)</sup> High air flow rate 43.5 to 100 psi
<b>Air input filter</b>	Exchangeable (mesh aperture ~0.1mm)
<b>Actuator system</b>	
Actuator series ELEMENT 23XX	Low air flow rate Ø Actuator 70 / 90 mm High air flow rate Ø Actuator 130 mm
<b>Position detection module</b>	Contact-free, wear-free
<b>Installation</b>	As required, preferably with actuator in upright position
<b>Protection type</b>	IP65 and IP67 according to EN 60529
<b>Power consumption</b>	< 5 W
<b>Electrical connection</b>	
Multipole	M12, 8-pins or 4-pins
<b>Approvals</b>	cULus Cert. No 238179
<b>Protection class</b>	3 acc. to DIN EN 61140
<b>Conformity</b>	EMC directive 2014/30/EU

The control air channel is integrated in the actuator without external tubings. The easy handling and the selection of additional software functions are done either on a big graphic display with backlight and keypad or over a PC interface.

The Positioner registers the valve position without deterioration through a contact-free, analog position sensor. The control of single or double-acting actuators is done without internal air consumption. With integrated diagnostic functions operation conditions of the control valve can be monitored. Through status signals valve diagnostic messages are transmitted according to NAMUR NE107 and recorded as history entries.

The housing is easy to clean and features proved IP protection and chemically resistant materials for use in hygienic processing, in food, beverage, and pharmaceutical industries. Combine with Burkert ELEMENT actuators the unique pilot valve system enables a compressed air recycling that avoids actuator chambers contamination from the environment.

<sup>1)</sup> The supply pressure has to be 7.25 - 14.5 psi above the minimum required pilot pressure for the valve actuator

Flow direction below the seat, Control function A (NC) Flanged & NPT

Port Size	Seat size		Actuator size Ø	Operating pressure Seal/ control cone	Pilot pressure	Leakage Class Seal/ control cone		CV values at stroke [gpm]						CV values
	[inch]	[mm]				[inch]	[mm]	[PSI]	[PSI]	PTFE or PEEK/ St.st.	St.st./ St.st.	5%	10%	
1/2	15	0/59	70	232	80-100	VI	IV	0.16	0.19	0.40	0.93	2.09	4.30	5
3/4	20	0.79	70	232	80-100	VI	IV	0.23	0.29	0.52	1.28	2.79	6.04	8.26
1	25	0/98	90	232	80-100	VI	IV	0.40	0.44	1.16	2.56	5.93	10.93	13.95
1 1/2	40	1.6	130	232	80-100	VI	IV	0.69	0.81	1.97	4.65	10.69	21.16	27.67
2	50	2.0	130	232	80-100	VI	IV	1.04	1.27	3.37	7.90	18.02	34.06	43.02
2 1/2	65	2.6	130	232	81-100	VI	IV	1.86	2.32	5.81	15.69	38.37	65.11	75.58
3	80	3.2	130	145	80-100	VI	III	2.9	3.95	12.44	31.39	67.44	101.16	116.27
4	100	3.9	130	87	81-100	VI	III	4.41	6.04	17.44	54.06	104.65	148.83	162.79

Flow direction below the seat, Control function A (NC) OD Tube BW & Clamp

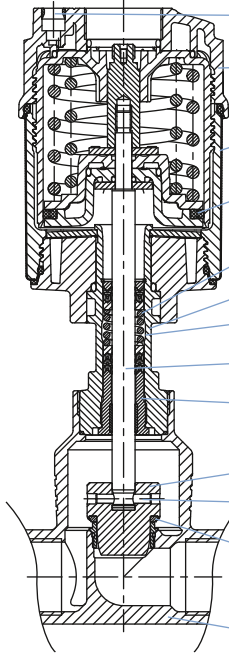
Port Size	Seat size		Actuator size Ø	Operating pressure Seal/ control cone	Pilot pressure	Leakage Class Seal/ control cone		CV values at stroke [gpm]						CV values
	[inch]	[mm]				[inch]	[mm]	[PSI]	[PSI]	PTFE or PEEK/ St.st.	St.st./ St.st.	5%	10%	
1/2	10	0.39	70	232	80-100	VI	IV	0.1	0.13	0.22	0.56	1.16	2.67	3.14
	15	0.59						0.16	0.2	0.41	0.93	2.09	4.3	5.0 *
3/4	15	0.59	70	232	80-100	VI	IV	0.16	0.20	0.41	0.93	2.09	4.3	5.0
1	20	0.79	70	232	80-100	VI	IV	0.23	0.29	0.52	1.28	2.79	6.05	8.26
1 1/2	32	1.3	130	232	80-100	VI	IV	0.56	0.70	1.51	3.60	7.91	16.28	20.7
2	40	1.6	130	232	80-100	VI	IV	0.70	0.81	1.98	4.65	10.70	21.16	27.67
2 1/2	50	2.0	130	232	81-100	VI	IV	1.05	1.28	3.37	7.91	18.02	34.07	43.02
3	65	2.6	130	232	80-100	VI	III	1.86	2.33	5.81	15.70	38.37	65.12	75.58
4	100	3.9	130	87	81-100	VI	III	4.42	6.05	17.44	54.07	104.65	148.84	162.79

\* For 1/2" clamp connection with 15 mm orifice only

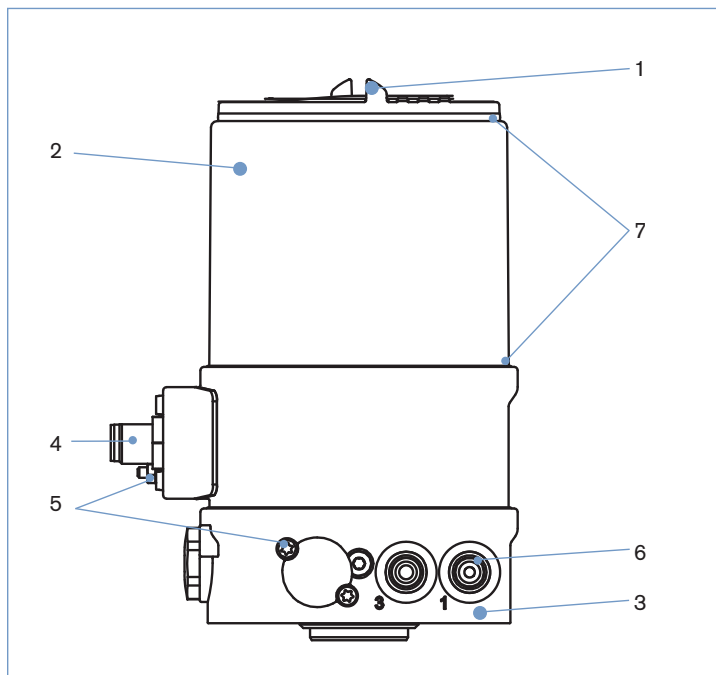
## Design and materials view

The detailed parts and materials are displayed in the following picture:

Note: as the **globe control valve Type 2301** could be delivered with miscellaneous port connection (flange, thread, weld ends and clamp), there will not be represented on the picture, but are made with same material as the valve body.

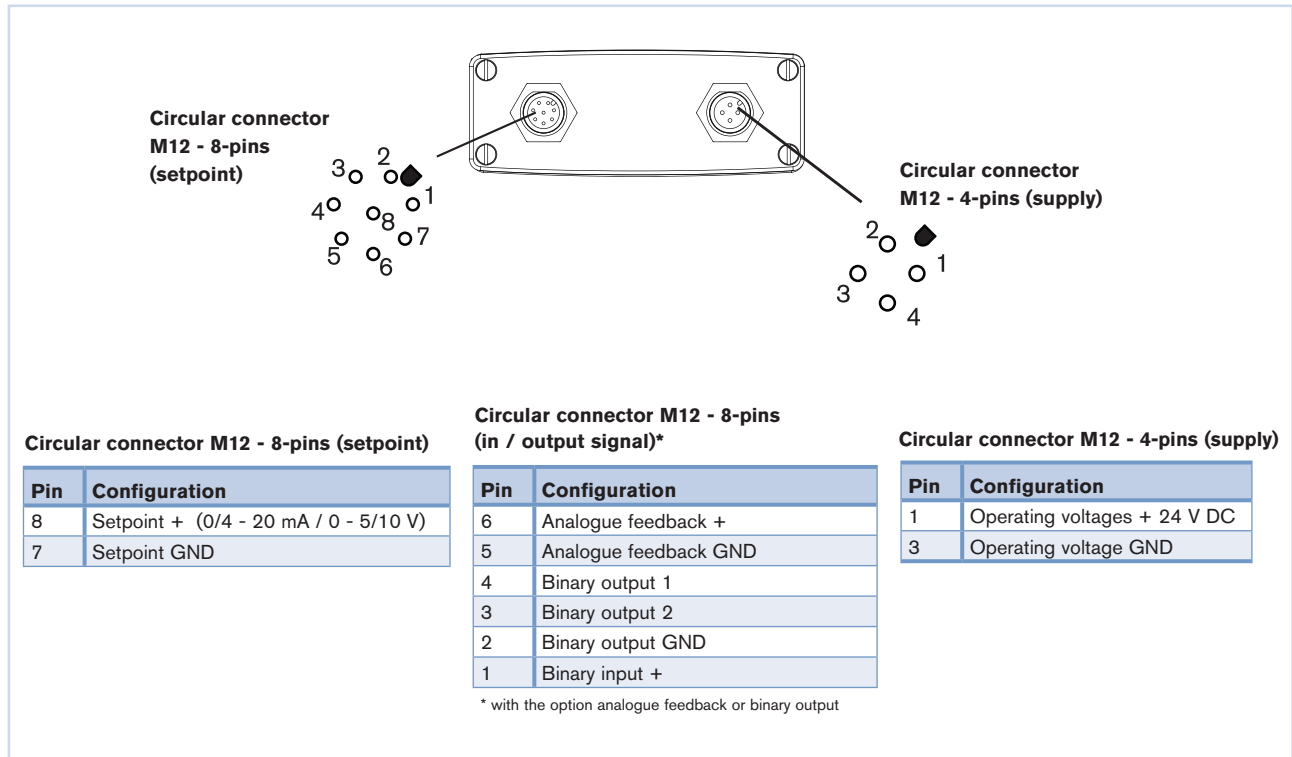
2301 globe control valve	Description	Material
	<b>Pilot air ports</b>	Push-in connector PP
	<b>Actuator</b>	PPS
	<b>Cover</b>	Stainless steel 1.4561 (316Ti)
	<b>Piston seal</b>	FKM
	<b>Spring</b>	Stainless steel 1.4310
	<b>Tube</b>	Stainless steel 1.4401 (316)
	<b>Spindle packing</b>	PTFE
	<b>Spindle</b>	Stainless steel 1.4401 (316) / 1.4404 (316L)
	<b>Spindle guidance</b>	Stainless steel 1.4404 (316L)
	<b>Control cone</b>	Stainless steel 1.4571
	<b>Spring straight pin</b>	Stainless steel 1.4310
	<b>Control cone seal</b>	Stainless steel 1.4571 / PTFE or PEEK disc for soft seat sealing
<b>Valve body</b>	Cast stainless steel 316L	

## Materials

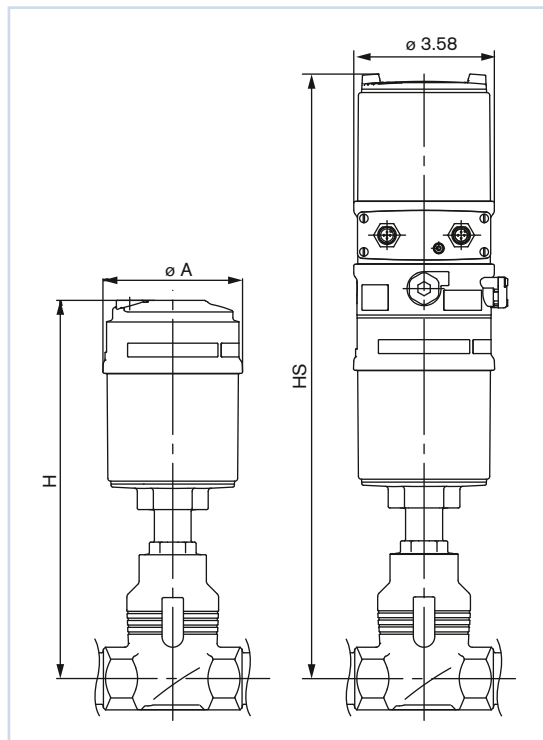


<b>1 Cover</b>	PC
<b>2 Body casing</b>	Stainless steel
<b>3 BASIC body</b>	PPS
<b>4 Plug M12</b>	Stainless steel
<b>5 Screws</b>	Stainless steel
<b>6 Threaded ports G 1/8</b>	Stainless steel
<b>7 Sealing</b>	EPDM

## Connection multipole

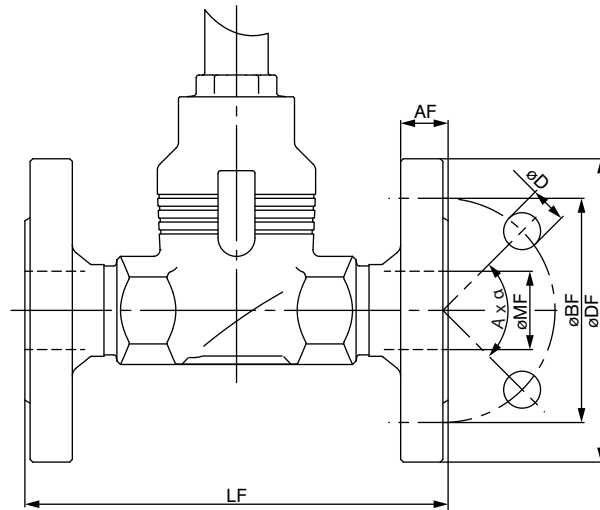


## Dimensions valve actuator/controller



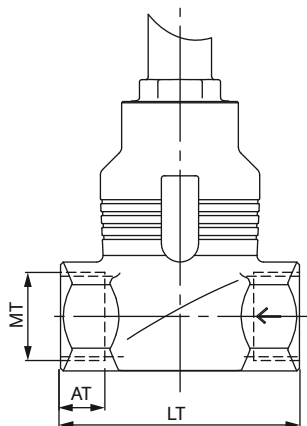
Port size (tube)	Actuator size (mm)	Ø A	H	HS with 8692
1/2	70	3.583	9.409	15.079
3/4	70	3.583	9.646	15.315
1	90	4.724	11.850	17.520
1-1/2	130	6.260	15.197	20.866
2	130	6.260	15.433	21.102
2-1/2	130	6.260	17.559	23.228
3	130	6.260	17.874	23.543
4	130	6.260	18.268	23.937

### Body valve Continuous ELEMENT Type 2301



Port size (tube) [inch]	Actuator size [mm]	ANSI B 16.5 Class 150					
		Ø DF	LF	Ø BF	AF	Ø D	Ø MF
1/2	70	3.504	7.244	2.382	0.441	0.618	0.618
3/4	70	3.898	7.244	2.752	0.5	0.618	0.819
1	90	4.252	7.244	3.118	0.559	0.618	1.051
1-1/2	130	5.0	8.740	3.882	0.689	0.618	1.051
2	130	5.984	10.0	4.752	0.752	0.752	2.071
2-1/2	130	7.008	10.866	5.5	0.878	0.752	2.48
3	130	7.48	11.732	6.004	0.941	0.752	3.071
4	130	9.016	13.858	7.5	0.941	0.752	4.016

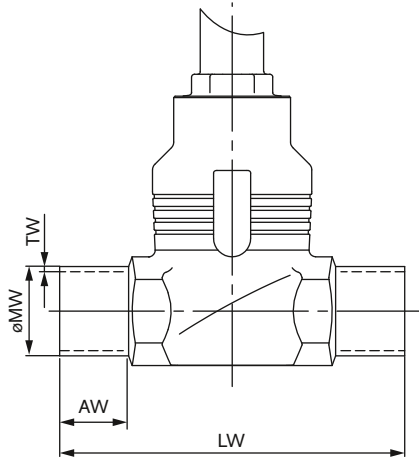
### Thread port connection - NPT (ASME B 1.20.1)



Port size MT NPT	Actuator size [mm]	LT	AT NPT
1/2	70	2.559	0.539
3/4	70	2.953	0.551
1	90	3.543	0.661
1-1/2	130	4.724	0.681
2	130	5.906	0.693
2-1/2	130	7.283	0.933

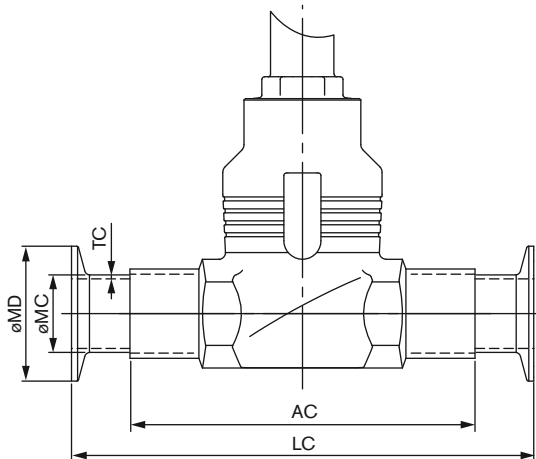


## Weld end port connection - ASME BPE



Port size (tube) [inch]	Actuator size [mm]	AW	LW	ASME BPE	
				ø MW	TW
1/2	70	0.787	3.543	0.500	0.065
3/4	70	0.787	3.543	0.750	0.065
1	90	0.787	3.937	1.0	0.065
1-1/2	130	1.024	5.512	1.5	0.065
2	130	1.024	5.906	2.0	0.065
2-1/2	130	1.024	6.89	2.5	0.065
3	130	1.024	8.268	3.0	0.065
4	130	1.024	10.236	4.0	0.079

## Clamp port connection



Port size (tube) [inch]	Actuator size [mm]	AC	LC	Clamp: ASME BPE		
				ø MW	TW	TC
1/2	70	3.543	4.961	0.5	0.984	0.065
3/4	70	3.937	5.354	0.75	0.984	0.065
1	70	3.937	6.811	1.0	1.988	0.065
1-1/2	130	5.906	7.598	1.5	1.988	0.065
2	130	6.89	8.583	2.0	2.52	0.065

## Ordering chart Globe Control Valve Type 2301

### Flange & NPT connections

Port Size (tube)		Seat size		Actuator size Ø	Cvs-value	Item no. ANSI B 16.5 flange		Item no. NPT	
[mm]	[inch]	[mm]	[inch]	[mm]	[gpm]	Seal/Cone		Seal/Cone	
						PTFE/ St.st.	St.st./ St.st.	PTFE/ St.st.	St.st./ St.st.
15	1/2	15	0.59	70	5	304 897	302 600	303 832	304 177
20	3/4	20	0.79	70	8.26	304 899	302 601	304 907	304 178
25	1	25	0.98	90	13.95	304 900	302 602	304 908	304 179
40	1 1/2	40	1.6	130	27.67	304 901	302 603	304 909	304 180
50	2	50	2.0	130	43	304 903	294 206	304 912	304 182
65	2 1/2	65	2.6	130	75.6	304 904	299 242	304 913	304 183
80	3	80	3.2	130	116.28	304 905	296 792	-	-
100	4	100	3.9	130	162.79	304 906	302 604	-	-

Flow direction below the seat, Control function A (NC)

### OD TUBE BW & Clamp Connections

Port Size (tube)		Seat size		Actuator size Ø	Cvs-value	Item no. ASME BPE OD Tube		Item no. ASME BPE clamp	
[mm]	[inch]	[mm]	[inch]	[mm]	[gpm]	Seal/Cone		Seal/Cone	
						PTFE/ St.st.	St.st./ St.st.	PTFE/ St.st.	St.st./ St.st.
						Connection MW x TW		Connection MC x TC, TC	
15	1/2					0.5 x 0.065		0.5 x 0.065, 0.984	
		10	0.39	70	3.6	304 965	302 595	-	-
		15	0.59	70	5	-	-	305 463	305 459
20	3/4					0.75 x 0.065		0.75 x 0.065, 0.984	
		15	0.59	70	5	304 967	302 597	305 481	305 483
25	1					1.0 x 0.065		1.0 x 0.065, 1.988	
		20	0.79	70	8.26	304 968	301 358	305 465	305 460
40	1 1/2					1.5 x 0.065		1.5 x 0.065, 1.988	
		32	1.3	130	20.7	304 969	290 901	305 466	305 484
50	2					2.0 x 0.065		2.0 x 0.065, 2.52	
		40	1.6	130	27.67	300 246	301 302	305 467	305 462
65	2 1/2					2.5 x 0.065			
		50	2.0	130	43.02	304 970	304 964	-	-
80	3					3.0 x 0.065			
		65	2.6	130	75.58	304 971	302 598	-	-
100	4					4.0 x 0.079			
		100	3.9	130	162.79	304 972	302 599	-	-

Flow direction below the seat, Control function A (NC)



### Ordering chart accessories

Description	Item no.
M12 socket, 8-pins, 5m assembled cable	919 267
M12 socket, 4-pins, 5m assembled cable	918038
Silencer G1/8 (spare part)	788934
Sensor puck (spare part)	682 240
G1/8 X 1/4" push tube connector (spare part)	98132544

*All valve systems come pre-assembled and tested. 1/4" push tube connections and air mufflers are also included.*

**One M12 socket, 8-pin cable and one M12 socket, 4-pin is required. See accessories chart for ID#.**

**Burkert Fluid Control Systems**

**USA**

US Headquarters  
11425 Mt. Holly-Huntersville Road  
Huntersville, NC 28078

Phone: 1-800-325-1405

Fax: 949-223-3198

[marketing-usa@burkert.com](mailto:marketing-usa@burkert.com)

[www.burkert-usa.com](http://www.burkert-usa.com)

**Canada**

5002 South Service Road  
Burlington, Ontario L7L 5Y7

Phone: 905-632-3033

Fax: 905-632-3833

[sales.ca@burkert.com](mailto:sales.ca@burkert.com)

[www.burkert.ca](http://www.burkert.ca)