

Tank Bottom Valve, pneumatically operated



- Fully integrated in Burkert's Process Control Systems
- Monoblock – no welds
- Quality certifications 

Actuator
with
360° rotation
possibility

Type 2105 can be combined with...



Type 8691

Control head



Type 8690

Pneum. control unit
with feedback



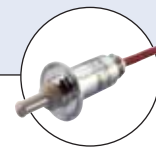
Type 8692

Positioner Top-
Control continuous



Stroke limitation

Min./max. stroke
limitation



Type 8221

Conductivity sensor

The Bürkert Tank Bottom Valve system is designed for control of ultra pure, sterile, aggressive or abrasive fluids. Enables especially optimal filling and emptying vessels with less dead leg.

The valve body consists of a block with no weld seam, machined out of high quality stainless steel. The Tank Bottom Valve has two welding levels to ease the welding and valve positioning operations.

The high quality diaphragms separate hermetically critical fluids from the actuator. The pneumatic actuator can be controlled by pneumatic pilot valves (single pilot valves, valve islands and control heads). Control function A, normally closed by spring return.

Technical data			
Orifice	DN 8 to 50		
Body material	<ul style="list-style-type: none"> ▪ Stainless steel 1.4435 / 316 L ▪ Stainless steel 1.4435BN2 / ASME BPE Fe < 0.5% / C ≤ 0.03% 		
Seal materials	EPDM, PTFE/EPDM, advanced PTFE/EPDM, FKM		
Actuator material	Actuator	PPS	
	Cover	Stainless steel 1.4561 (316Ti)	
Pilot air ports	Stainless steel 1.4305		
Surface Finish	Ra [µm]	Ra [µlnch]	Ra [Grit #]
	internal	internal	internal
mechanical polished	0.6	25	180
electro polished	0.6	25	180
mirror finished	0.25	10	330
Media temperature	EPDM, PTFE/EPDM, advanced PTFE/EPDM ¹⁾ FKM		
	-10 to +130 °C (briefly up to +150 °C for steam sterilisation)		
	-10 to +130 °C		
Ambient temperature	+5 to +60 °C		
Control medium	Neutral gases, air		
Pilot pressure max.	max. 10 bar; Actuator size 130 mm 7 bar		
Port connections	<ul style="list-style-type: none"> ▪ DIN EN ISO 1127 / ISO 4200 / DIN 11866 Series B ▪ DIN 11850 Series 2 / DIN 11866 Series A ▪ ASME BPE / DIN 11866 Series C ▪ DIN 32676 Series A (DIN tube) ▪ DIN 32676 Series B (ISO tube) ▪ ASME BPE 		
Weld end			
Clamp			
Installation for self-draining	Inclined 3 to 5° downwards		

¹⁾ Advanced PTFE/EPDM is recommended for sterilization cycle

Content



Valve specifications

Type 2105

Technical data & ordering info. p. 1-6



System spec. On/Off ELEMENT

Type 8801/8803-TC

Ordering info. & technical data p. 7-10

Request for quotation

Type 8801/8803-TC

p. 11

Technical data valves

Kv-values

Port size		Kv value water (m ³ /h)	Actuator size Ø [mm]	Permitted pilot pressure [bar]		Max. operating pressure [bar] for seal material	
[mm]	[inch]			min.	max.	EPDM, FKM [bar]	PTFE/EPDM, advanced PTFE/ EPDM [bar]
8	1/4"	1.0	50	5	10	10	10
10	3/8"	1.0	50	5	10	10	10
15	1/2"	5.5	70	5	10	10	10
20	3/4"	10.0	70	5	10	10	10
25	1"	14.0	70	5	10	6.5	6
			90	5.5	10	10	8
40	1 1/2"	30.0	130	5.0	7	10	10
50	2"	51.5	130	5.0	7	8	7

Flow rate: Kv-value water (m³/h)

Measured at +20 °C, 1 bar pressure at valve inlet and free outlet.

Pressure values (bar)

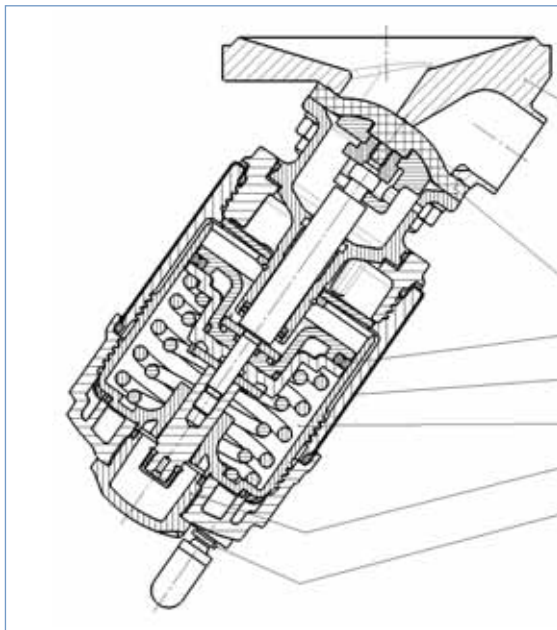
Measured as overpressure to the atmospheric pressure.

Approvals/certifications

- Certification of Conformity for Raw Material EN-ISO 10204 3.1
- Attestation of compliance with the order EN-ISO 10204 2.1
- Test report EN-ISO 10204 2.2
- 3A certification on request
- Certification of Conformity for Pickling and Electropolishing Processes
- Certification of Conformity for the Surface Quality DIN4762-DIN4768-ISO/4287/1
- Certification for the fulfillment of FDA CFR No. 21.177.1550 for PTFE/EPDM and advanced PTFE/EPDM and 21.177.2600 for EPDM
- USP CLASS VI certification for EPDM and PTFE diaphragm
- Test Certification and Conformity Certification for the Final Assembly of Diaphragm Valves
- ISO 9001 Certification

Note: Retrospective manufacturing certification for process diaphragm valves can not be made, therefore please notify when ordering.

Materials



Valve body	Stainless steel 316L/1.4435/BN2
Diaphragm	EPDM, PTFE/EPDM (advanced PTFE/EPDM, FKM on request
Piston seal	FKM
Cover	Stainless steel 1.4561 (316Ti)
Actuator	PPS
Optical position indicator	Transparent cap polysulfone PSU
Pilot air ports	Push-in connector PP (standard) <i>on request:</i> Thread G 1/8" stainless steel 1.4305

Example of available diaphragm materials

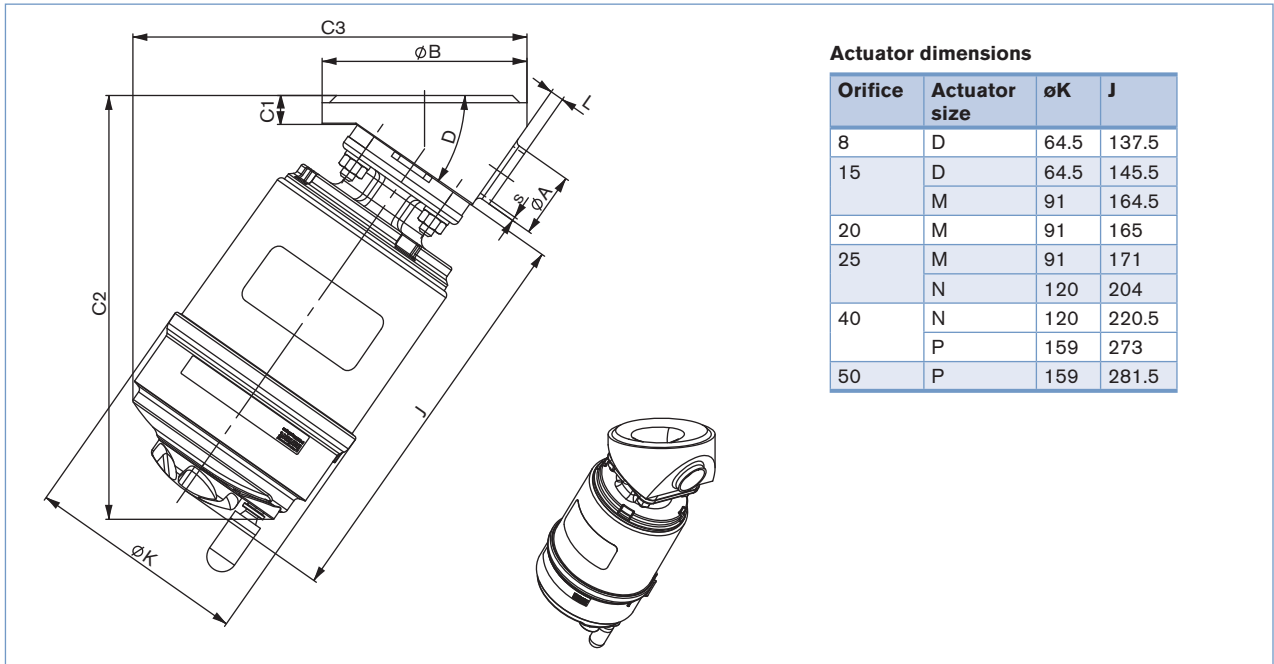
Developed to handle the unique challenges of hygienic and sterile applications, Bürkert offers diaphragms with precise material formula and physical tolerances. Bürkert diaphragms are available in a wide range of materials which have been proven in food & beverage, biotechnology, pharmaceutical and cosmetic industry applications. Bürkert diaphragms are available in a wide range of materials which have been proven in food & beverage, biotechnology, pharmaceutical and cosmetic industry applications. Diaphragms are tested during development and production to ensure reliability in critical processing environments.



- EPDM (Ethylene Propylene Rubber)
- PTFE/EPDM
- advanced PTFE/EPDM
- FKM
- PTFE/FKM

Dimensions [mm]

Welded body acc. to DIN EN ISO 1127 / ISO 4200 / DIN 11866 Series B and ASME BPE



ISO Version

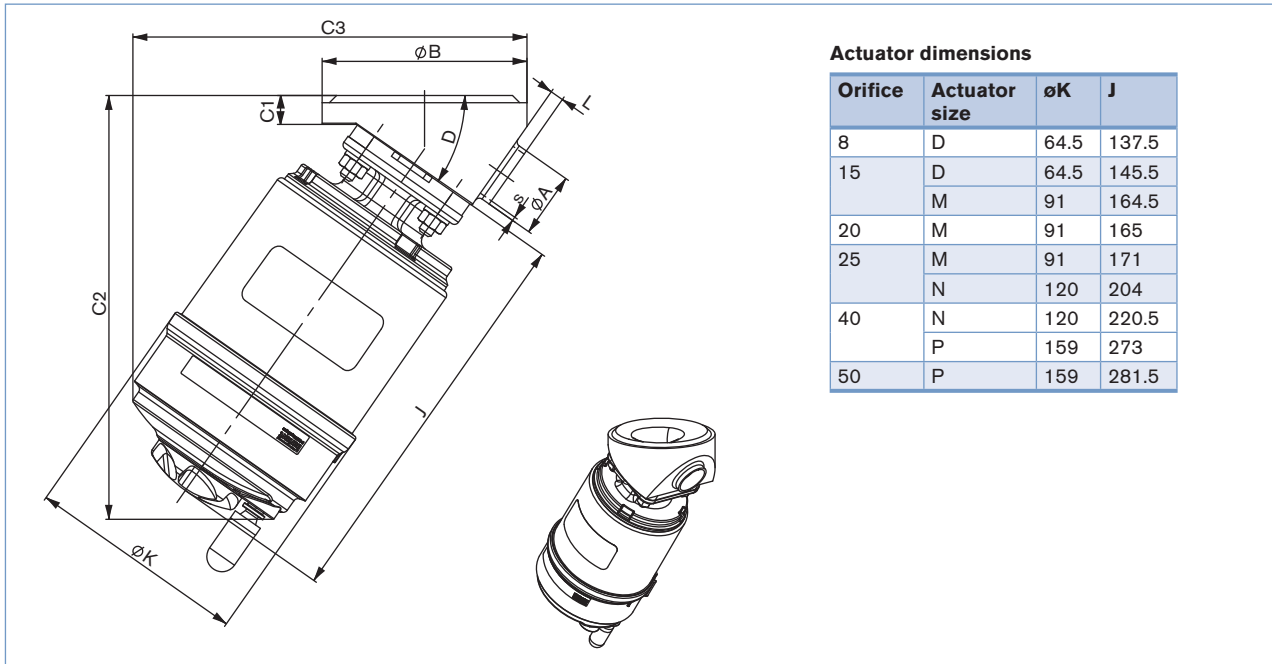
DN-Seat	DN-Orifice	Actuator size	$\phi A \pm 0.1$	$s \pm 0.1$	$\phi B \pm 2$	C1	C2 ± 2	C3 ± 2	D	L
08	08	D	13.5	1.6	50	8	139	121	35°	5
15	15	D	21.3	1.6	65	12	152	137.5	35°	3
		M			85					172.5
20	20	M	26.9	1.6	85	12	176	163.5	35°	5.6
25	25	M	33.7	2	120	16	187.5	177	35°	8
		N								215
40	32	N	42.4	2	150	18	239	241	35°	20
	40		48.3	2						15
40	32	P	42.4	2	150	18	287.5	287.5	35°	20
	40		48.3	2						15
50	50	P	60.3	2	180	22	302.5	302	35°	12

ASME Version

DN-Seat	DN-Orifice	Actuator size	$\phi A \pm 0.1$	$s \pm 0.1$	$\phi B \pm 2$	C1	C2 ± 2	C3 ± 2	D	L
08	08	D	6.35	0.89	50	8	139	121	35°	9
15	15	D	12.7	1.65	85	12	152	137.5	35°	10
		M								172.5
20	20	M	19.05	1.65	85	12	176	163.5	35°	8
25	25	M	25.4	1.65	120	16	187.5	177	35°	8
		N								215
40	40	N	38.1	1.65	150	18	239	241	35°	15
		P								287.5
50	50	P	50.8	1.65	180	22	302.5	302	35°	15

Dimensions [mm], continued

Welded body acc. to DIN 11850 Series 2 / DIN 11866 Series A and SMS 3008



Actuator dimensions

Orifice	Actuator size	øK	J
8	D	64.5	137.5
15	D	64.5	145.5
	M	91	164.5
20	M	91	165
	N	120	204
40	N	120	220.5
	P	159	273
50	P	159	281.5

DIN / S.2 Version

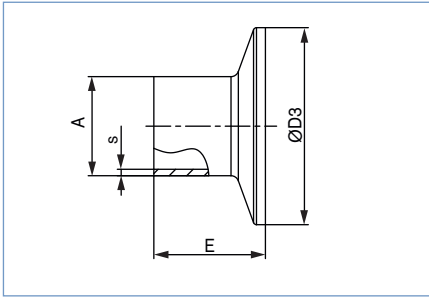
DN-Seat	DN-Orifice	Actuator size	øA ±0.1	s ±0.1	øB ±2	C1	C2 ±2	C3 ±2	D	L
08	08	D	13	1.5	50	8	139	121	35°	6
15	15	D	19	1.5	85	12	152	137.5	35°	8
		M					172.5	156		
20	20	M	23	1.5	85	12	176	163.5	35°	7
25	25	M	29	1.5	120	16	187.5	177	35°	8
		N					215	201		
40	40	N	41	1.5	150	18	239	241	35°	20
		P					287.5	287.5		
50	50	P	53	1.5	180	22	302.5	302	35°	15

SMS Version

DN-Seat	DN-Orifice	Actuator size	øA ±0.1	s ±0.1	øB ±2	C1	C2 ±2	C3 ±2	D	L
25	25	M	25	1.2	120	16	187.5	177	35°	8
		N					215	201		
50	50	P	51	1.2	180	22	302.5	302	35°	15

Dimensions [mm], continued

Clamp body



ASME BPE

Orifice [mm]	Orifice [inch]	A	s	D3	E
08	1/4"	6.35	0.89	25.0	28.6
10	3/8"	9.53	0.89	25.0	28.6
15	1/2"	12.7	1.65	25.0	28.6
20	3/4"	19.05	1.65	25.0	28.6
25	1"	25.4	1.65	50.5	28.6
40	1 1/2"	38.1	1.65	50.5	28.6
50	2"	50.8	1.65	64.0	28.6

DIN 32676 Series A (DIN tube)

Orifice [mm]	A	s	D3	E
10	18	1.5	34.0	18
15	19	1.5	34.0	18
20	23	1.5	34.0	18
25	29	1.5	50.5	21.5
32	35	1.5	50.5	21.5
40	41	1.5	50.5	21.5
50	53	1.5	64.0	21.5

DIN 32676 Series B (ISO tube)

Orifice [mm]	A	s	D3	E
8	13.5	1.6	25.0	28.6
8	13.5	1.6	34.0	28.6
10	17.2	1.6	34.0	28.6
15	21.3	1.6	34.0	28.6
15	21.3	1.6	50.5	28.6
20	26.9	1.6	50.5	28.6
25	33.7	2	50.5	28.6
32	42.4	2	50.5	28.6
40	48.3	2	64.0	28.6
50	60.3	2	77.5	28.6

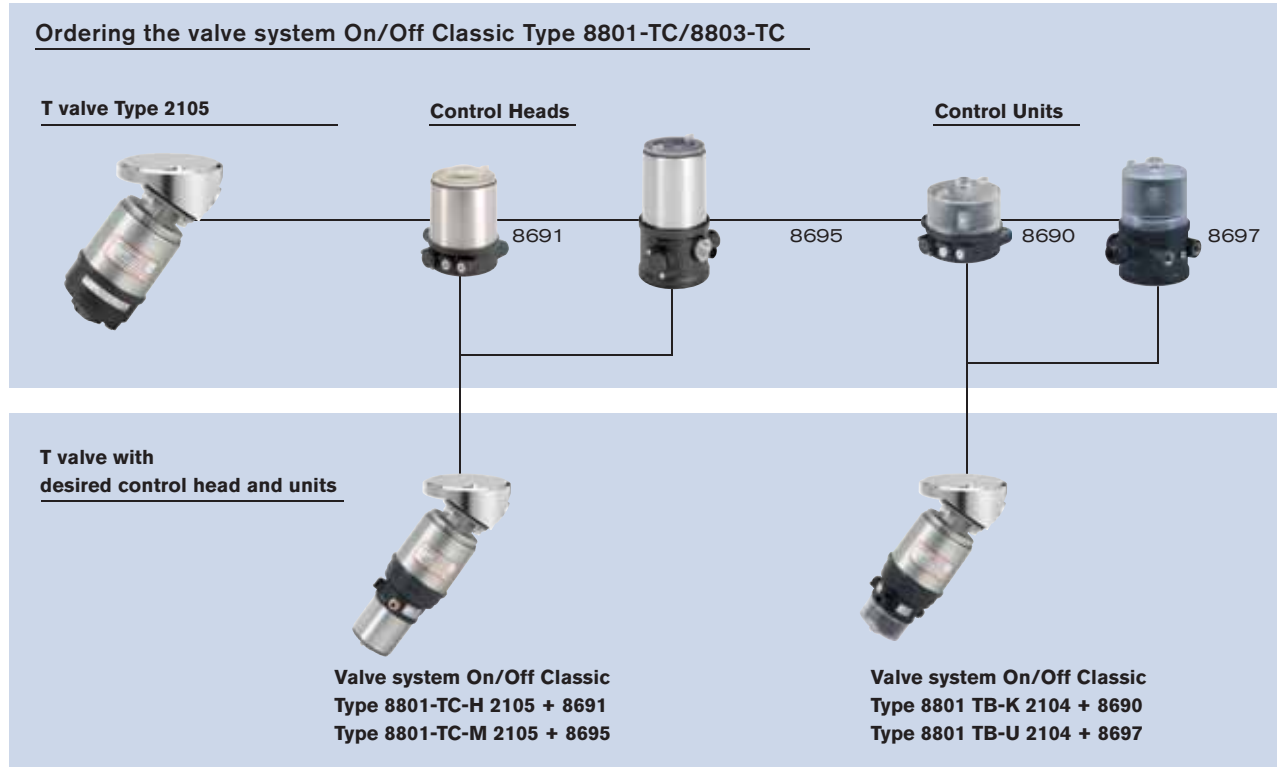
SMS 3017

Orifice [mm]	A	s	D3	E
25	25	1.2	50.5	21.5
40	38	1.2	50.5	28.6
50	51	1.2	64.0	28.6

Ordering information for valve system On/Off Type 8801-TC/8803-TC



A valve system On/Off Classic Type 8801-TC/8803-TC consists of a T valve **Type 2105** and a valve actuation system control head **Type 8691 or 8695**, a pneumatic control unit **Type 8690 or 8697** or an electrical position feedback Type (see separate datasheets). For the configuration of further valve systems please use the "Request for quotation" on p. 9 [go to page](#)
 You order two components and receive a complete assembled and certified valve.

Ordering the valve system On/Off Classic Type 8801-TC/8803-TC



When you click on the orange box "More info." below, you will come to our website for the resp. product where you can download the datasheet.

Control Head Type 8691 [More info.](#)





The new generation of integrated control heads for combination with actuators from the process valve series Type 20xx/21xx is specially designed for the requirements of hygienic process environments. The intelligent control head, Type 8691, detects the valve position by means of a contact-free analog position sensor. Single or double-acting actuators are controlled via the integral pilot valve. Communication interfaces AS-Interface and DeviceNet are available as options.

Main customer benefits:

- Automatic setting of the control head at the push of a button
- Even under dirty or dark environments, a clearly visible status display due to powerful LEDs
- Monitoring and diagnosis: Process valve systems with field bus interface used in modern plant processes
- Integrated pilot valve with manual actuation
- Air intake filter enhances the process valve system availability
- Simple and reliable actuator adaption
- Adaptable to a wide range of 3rd Party actuators


Control Head Type 8695 [More info.](#)





The new generation of integrated control heads for combination with small actuators from the process valve series Type 21xx is specially designed for the requirements of hygienic process environments. The intelligent control head, Type 8695, detects the valve position by means of a contact-free analog position sensor circumventing excessive wear of mechanical parts. Single and double-acting actuators are controlled via the integral pilot valve. The option of AS interface communication is available.

Main customer benefits:

- Compact, hygienic designed valve system with integrated controller meets the requirements of cleanliness through choice of materials, external seals and integrated control air supply to the actuator
- Automatic setting of the control head at the push of a button
- Visual status display on the control head
- Monitoring and diagnosis: Process valve systems with fieldbus interface for modern process landscape
- Integrated pilot valve
- Simple and reliable actuator adaption

Pneumatic control unit Type 8690 or 8697 [More info.](#) 

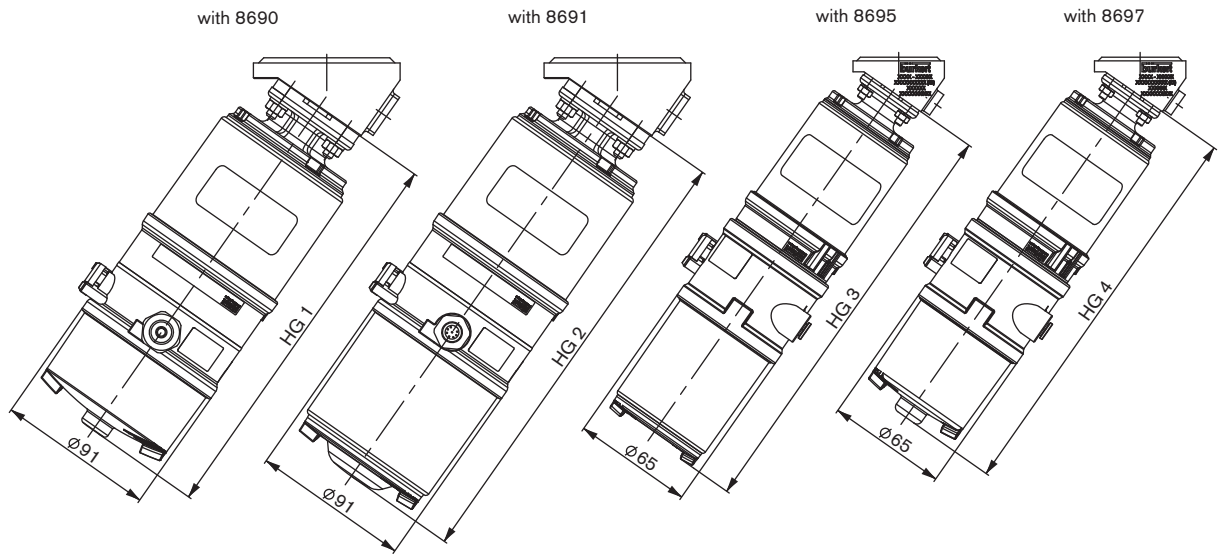



The new generation of integrated controllers for combination with actuators from the process valve series Type 20xx/21xx is specially designed for the requirements of hygienic process environments. The pneumatic control unit Type 8690/8697 combines electrical position feedback and pneumatic control for single or double-acting actuators, and is also optionally available as an intrinsically safe model to ATEX.

Main customer benefits:

- Integrated pilot valve with manual actuation
- Air intake filter enhances the process valve system availability
- Simple and reliable actuator adaption
- Adaptable to a wide range of 3rd Party actuators

Dimensions Valve system On/Off ELEMENT Type 8801-TC [mm]



Nominal seat [mm]	Actuator size [mm]	HG 1 [mm]
15	70	227.5
20	70	228
25	70	234
	90	267
40	90	283.5
	130	336
50	130	344.5

Nominal seat [mm]	Actuator size [mm]	HG 2 [mm]
15	70	260.5
20	70	261
25	70	267
	90	300
40	90	316.5
	130	369
50	130	377.5

Nominal seat [mm]	Actuator size [mm]	HG 3 [mm]
8	50	231
15	50	239

Nominal seat [mm]	Actuator size [mm]	HG 4 [mm]
8	50	217.5
15	50	225.5

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

Valve system On/Off Element Type 8801-TC/8803-TC – Request for quotation

▶ Please fill out and send to your nearest Bürkert facility* with your inquiry or order

Company	Contact person
Customer No	Department
Address	Tel./Fax
Postcode/Town	E-mail

= mandatory fields to fill out Quantity Required delivery date

Operating data

Pipe dimensions	Main tube $\varnothing D1 \times s1$ <input type="text"/>	Outlet tube $\varnothing D2 \times s2$ <input type="text"/>
	Clamp main tube <input type="text"/>	Clamp outlet <input type="text"/>
Pipe material	<input type="text"/>	
Surface finish Ra int.	<input type="text"/>	
Process medium	<input type="text"/>	
Type of medium	<input type="checkbox"/> Liquid	<input type="checkbox"/> Steam <input type="checkbox"/> Gas
	nominal	unit
Flow rate (Q, QN, W) ¹⁾	<input type="text"/>	<input type="text"/>
Temperature at valve inlet T1	<input type="text"/>	<input type="text"/>
Absolute pressure at valve inlet P1	<input type="text"/>	<input type="text"/>
Absolute pressure at valve outlet P2	<input type="text"/>	<input type="text"/>
Steam pressure Pv	<input type="text"/>	<input type="text"/>

¹⁾ Standard unit:
Liquids Q = m³/h; Steam W = Kg/h; Gas QN = nm³/h

Valve features

Specification key
automatically transferred from last page

[go to page](#)

Control unit features

When you click on the orange box "More info." below, you will come to our website for the resp. product where you can download the datasheet.

Control head	Electrical position feedback	Control Head
<input type="checkbox"/> Type 8691 More info.	<input type="checkbox"/> Type 8695 More info.	<input type="checkbox"/> Type 8690 More info. Type 8697 More info.
Pneumatic function <input type="checkbox"/> Single-acting <input type="checkbox"/> Double-acting	Pneumatic function <input type="checkbox"/> Single-acting <input type="checkbox"/> Double-acting	Pneumatic function <input type="checkbox"/> Single-acting <input type="checkbox"/> Double-acting <input type="checkbox"/> Without pilot valve
Pilot air ports <input type="checkbox"/> Push-in connector external \varnothing 6 mm or 1/4" <input type="checkbox"/> Thread G 1/8"	Pilot air ports <input type="checkbox"/> Push-in connector external \varnothing 6mm or 1/4" <input type="checkbox"/> Thread G 1/8"	Position feedback <input type="checkbox"/> 1x inductive <input type="checkbox"/> 2x inductive <input type="checkbox"/> 1x inductive (NAMUR) <input type="checkbox"/> 2x inductive <input type="checkbox"/> 1x mechanical <input type="checkbox"/> 2x mechanical
Communication <input type="checkbox"/> ASI <input type="checkbox"/> Multipole M12 <input type="checkbox"/> Flat cable clip, 1 m cable <input type="checkbox"/> DeviceNet	Communication <input type="checkbox"/> ASI	Supply voltage <input type="checkbox"/> 24 V / DC (ATEX Zone 2/22) <input type="checkbox"/> Ex ia IIC T6 (ATEX Zone 1)
Pilot air ports <input type="checkbox"/> Push-in connector <input type="checkbox"/> Thread G 1/8" external \varnothing 6 mm or 1/4"		Pilot air ports <input type="checkbox"/> Push-in connector <input type="checkbox"/> Thread G 1/8" external \varnothing 6 mm or 1/4"
Please specify item no. if known: <input type="text"/>	Please specify item no. if known: <input type="text"/>	Please specify item no. if known: <input type="text"/>

continued on next page →

* To find your nearest Bürkert facility, click on the orange box → www.burkert.com

Valve system On/Off Element Type 8801-TC/8803-TC – Request for quotation, *continued*

Certifications

- Attestation of compliance with the order EN-ISO 10204 2.1 (Item no. 440 788)
- Test report EN-ISO 10204 2.2 (Item no. 803 722)
- Certification of Conformity for Raw Material EN-ISO 10204 3.1 (will be supplied)
- EN161 (European Gas Device guideline)
- FDA - USP certificate

Comment / sketch

Valve features

Example

A 15 AB VH SA42 SA42 NO14

Specification key

Please make a choice

CONTROL FUNCTION

A	Normally closed by spring action
B	normally open by spring action
I	double acting

SIZE [mm] (Diaphragm)

8
15
20
25
40
50

SEAL MATERIAL

AB	EPDM in food quality
EU	Advanced PTFE
FF	FPM (Viton)

Body material

VH	1.4435/AISI 316 L
VI	1.4435 acc. to BN2/ASME

VARIABLE CODES

Surface finish external

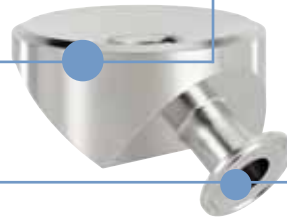
NO03	Ext. Mirror finished Ra=0.25 µm
NO15	Electro polished Ra=0.8 µm
NO34	Mechanical polished Ra=1.2 µm
NO22	Mechanical polished Ra=1.2 µm

Surface finish, internal

NO07	Int. Mirror finished Ra=0.25 µm
NO14	Mechanical polished Ra=0.5 µm
NO17	Int. electro polished Ra=0.38 µm
NO23	Int. mechanical polished Ra=0.6 µm
NO16	Int. electro polished Ra=0.6 µm
NK52	3.1 Certificate integrated

øD1 main tube connection

øD2 outlet tube connection



DN [mm]	EN ISO 1127/ ISO 4200 DIN 11866 S. B	SMS 3008	Port connection weld end						ASME BPE DIN 11866 S. C
			DIN 11850 S. 0	DIN 11850 S. 1	DIN 11850 S. 2 DIN 11866 S. A	DIN 11850 S. 3	BS4825		
4			SC40 - 6.0x1.0						
6	SA78 - 10.2x1.6		SC41 - 8.0x1.0						SA89 - 3.17x0.56
8	SA40 - 13.5x1.6		SC42 - 10.0x1.0					SODB - 6.35x1.2	SA90 - 6.35x0.89
10	SA41 - 17.2x1.6			SF40 - 12.0x1.0	SD40 - 13.0x1.5	SE40 - 14.0x2.0	SODC - 9.53x1.2		SA91 - 9.53x0.89
15	SA42 - 21.3x1.6	SA58 - 12.0x1.0	SC43 - 18.0x1.5	SF41 - 18.0x1.0	SD42 - 19.0x1.5	SE42 - 20.0x2.0	SODD - 12.7x1.2		SA92 - 12.7x1.65
20	SA43 - 26.9x1.6	SA59 - 18.0x1.0	SC44 - 22.0x1.5	SF42 - 22.0x1.0	SD43 - 23.0x1.5	SE43 - 24.0x2.0	SODE - 19.05x1.2		SA93 - 19.05x1.65
25	SA44 - 33.7x2.0	SA60 - 25.0x1.2	SC45 - 28.0x1.5	SF43 - 28.0x1.0	SD44 - 29.0x1.5	SE44 - 30.0x2.0			SODF - 25.4x1.65
32	SA45 - 42.4x2.0	SA61 - 33.7x1.2	SC46 - 34.0x1.5	SF44 - 34.0x1.0	SD45 - 35.0x1.5	SE45 - 36.0x2.0			
40	SA46 - 48.3x2.0	SA62 - 38.0x1.2	SC47 - 40.0x1.5	SF45 - 40.0x1.0	SD46 - 41.0x1.5	SE46 - 42.0x2.0			SODH - 38.1x1.65
50	SA47 - 60.3x2.0	SA63 - 51.0x1.2	SC48 - 52.0x1.5	SF46 - 52.0x1.0	SD47 - 53.0x1.5	SE47 - 54.0x2.0			SODI - 50.8x1.65

DN [mm]	Port connection Clamp				
	Clamp 34.0 like DIN 32676 S. B (ISO-tube (ISO4200))	DIN 32676 S. A (DIN-tube (DIN11850))	DIN 32676 S. B (ISO-tube (ISO4200))	ASME BPE	BS 4825 (Clamp BS 4825-3, tube BS 4825-1)
8	TC51 - 13.5x1.6 Cl: 34.0	TD40 - 10.0x1.0 Cl: 25.0	TC40 - 13.5x1.6 Cl: 25.0	TG50 - 6.35x0.89 Cl: 25.0	
10	TC41 - 17.2x1.6 Cl: 34.0	TD41 - 13.0x1.5 Cl: 34.0	TC53 - 17.2x1.6 Cl: 25.0	TG01 - 9.53x0.89 Cl: 25.0	
15	TC42 - 21.3x1.6 Cl: 34.0	TD42 - 19.0x1.5 Cl: 34.0	TC52 - 21.3x1.6 Cl: 50.5	TG02 - 12.7x1.65 Cl: 25.0	TH42 - 12.7x1.2 Cl: 25.0
20		TD43 - 23.0x1.5 Cl: 34.0	TC43 - 26.9x1.6 Cl: 50.5	TG03 - 19.05x1.65 Cl: 25.0	TH43 - 19.05x1.2 Cl: 25.0
25		TD44 - 29.0x1.5 Cl: 50.5	TC44 - 33.7x2.0 Cl: 50.5	TG04 - 25.4x1.65 Cl: 50.5	
32					
40		TD46 - 41.0x1.5 Cl: 50.5	TC46 - 48.3x2.0 Cl: 64.0	TG05 - 38.1x1.65 Cl: 50.5	
50		TD47 - 53.0x1.5 Cl: 64.0	TC47 - 60.3x2.0 Cl: 77.5	TG06 - 50.8x1.65 Cl: 64.0	

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

Subject to alteration
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