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МЕМБРАННЫЕ КЛАПАНЫ

Type 2105

Pneumatically operated diaphragm valve with ELEMENT actuator





Tank bottom diaphragm valve with pneumatic actuator in stainless steel (Type ELEMENT) for decentralised automation


- Valve housing and diaphragm available in various materials and designs
- Surfaces in contact with the product from Ra ≤ 0.38 µm...1.6 µm (optionally electropolished)
- Available in all common connection sizes and variants


Product variants described in the data sheet may differ from the product presentation and description.


Can be combined with


- 

Type 2034 ▶
Multifunction block and weld solution
- 

Type 8691
Control head for decentralised automation of ELEMENT process valves
- 

Type 8695
Control head for decentralised automation of ELEMENT process valves
- 

Type 8692
Digital electropneumatic Positioner for the integrated mounting on process control valves
- 

Type 8696
Digital electropneumatic positioner for the integrated mounting on process control valves
- 

Type 8098
FLOWave SAW flow-meter

Type description

The externally controlled diaphragm valve, Type 2105, consists of a pneumatically operated piston actuator, a diaphragm and a tank bottom valve housing. The proven and robust actuator with stainless steel housing ensures use under hygienic or aggressive environmental conditions. The flow-efficient valve housing with little dead space enables high flow rates and a wide range of possible uses. The valve housing and the diaphragm are available in all common materials and designs. The actuator has a compact, autoclavable design with a large stainless steel shell and gap-free seals. The integration of automation units of the ELEMENT type is possible in all expansion stages (can be retrofitted) and can be fitted with an integrated fieldbus interface. An explosion-proof ATEX/IECEX device variant is available.

It is a compact, smooth-surfaced and highly integrated system consisting of a valve and an automation unit with integrated control air ducts (no intake of ambient air). The add-on housing is available either in plastic or stainless steel (rotatable 360°). The valve is protected in accordance with protection classes IP65/67 and NEMA Type 4X and has a high level of chemical resistance.

1. General technical data

Product properties	
Dimensions	Detailed information can be found in chapter "4. Dimensions" on page 6.
Material	
Block body (VH) ^{1.)}	Stainless steel 1.4435/316 L
Block body (VI) ^{1.)}	Stainless steel 1.4435/BN2/ASME BPE; Fe <0.5 %/C ≤0.03 %
Diaphragm	EPDM (AD) ^{1.)} , PTFE/EPDM (EA) ^{1.)} , advanced PTFE/EPDM (EU) ^{1.)} , Gylon®/EPDM laminated (ER) ^{1.)}
Actuator/Cover	PPS/Stainless steel 1.4561 (316Ti)
Diaphragm size	8...65
Standard surface quality	
Block body (VH/VI) ^{1.)}	Internal electrically polished : Ra ≤0.38 µm (NO17) ^{1.)} (ASME BPE SF4/DIN HE4) (external Ra ≤ 1.6 µm) Internal mechanically polished : Ra ≤0.5 µm (NO14) ^{1.)} (ASME BPE SF1) (external Ra ≤ 1.6 µm)
Performance data	
Pilot pressure (max.) (CF: A)	10 bar 7 bar for actuator size 130 See "5.1. Medium pressure" on page 12
Pilot air ports	Push-in connector for external, Ø6 mm or ¼" (Standard); thread G ⅛
Medium data	
Medium	Neutral gases and fluids, highly purified, sterile, aggressive or abrasive medium (see Resistance Chart ▶)
Medium temperature	
EPDM (AD) ^{1.)}	-10...+143 °C (steam sterilisation + 150 °C for 60 min)
PTFE/EPDM (EA) ^{1.)}	-10...+130 °C (steam sterilisation + 140 °C for 60 min)
Advanced PTFE/EPDM (EU) ^{1.)}	-5...+143 °C (steam sterilisation + 150 °C for 60 min)
GYLON®/EPDM laminated (ER) ^{1.)}	-5...+130 °C (steam sterilisation + 140 °C for 60 min)
Control medium	Neutral gases, air
Process/Port connection & communication	
Nominal diameter	DN06...DN65 (⅛" ... 2½")
Port connections ^{2.)}	
Welded connection ^{2.)}	DIN EN ISO 1127/ISO 4200/DIN 11866 series B DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A ASME BPE/DIN 11866 series C
Clamp connection ^{2.)}	DIN 32676 series A (DIN pipe) DIN 32676 series B (ISO pipe) ASME BPE
Environment and installation	
Installation position/Installation	See operating manual ▶
Ambient temperature	-10...+60 C

1.) This information is part of the product key (see product enquiry form at the end of this data sheet)

2.) Further versions on request

2. Approvals

Note:

If you need one of these certificates, please contact your Bürkert partner.

Approvals/ Conformity/ Certificate ^{1.)}	Description
	ATEX/IECEx ^{2.)} EPS 18 ATEX 2 008 X II 2G Ex h IIC T4 Gb/II 2D Ex h IIIC T135 °C Db IECEx EPS 18.0007X Ex h IIC T4 Gb/Ex h IIIC T135 °C Db
TA-air	TA-air ^{3.)}
	3-A (3-A Sanitary Standards Symbol Administrative Council) ^{4.)}
	The diaphragms made of EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) are suitable for use with food and beverages (acc. to EC Regulation 1935/2004/EC).
	Diaphragms made of EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) are acc. to USP Class VI tested.
FDA	Diaphragms made of EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) comply with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA).

1.) Further approvals/conformity clarification on request

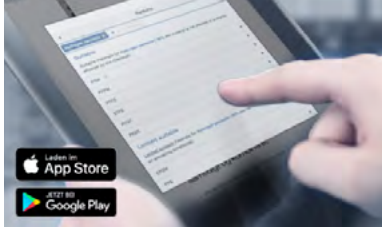
2.) Only in combination with variable code «PX51» (see product enquiry form at the end of this data sheet)

3.) Only in combination with variable code «PM01» (see product enquiry form at the end of this data sheet)

4.) Only in combination with variable code «PE05» (see product enquiry form at the end of this data sheet)

3. Materials

3.1. Chemical Resistance Chart – Bürkert resistApp



Bürkert resistApp – Chemical Resistance Chart

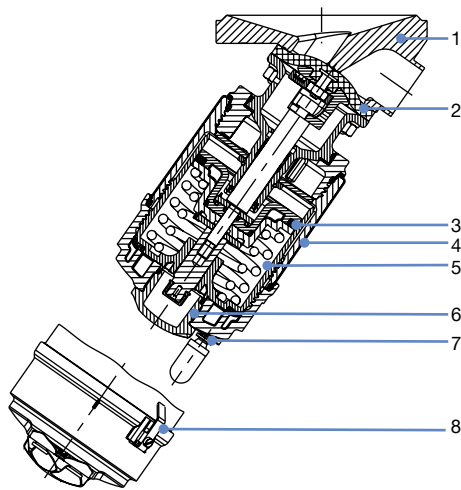
You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

[Start Chemical Resistance Check](#)

3.2. Material specifications

Note:

Exemplary representation may differ from the actual product.



No.	Element	Material
1	Valve body	See “1. General technical data” on page 3
2	Diaphragm	EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU), Gylon®/EPDM laminated (ER)
3	Piston seal	FKM
4	Cover	Stainless steel 1.4561 (316Ti)
5	Actuator	Polyphenylene sulphide PPS
6	Optical position indicator	Polysulfone PSU
7	Pilot air ports	Push-in connector PP (Standard); Thread G 1/8" stainless steel 1.4305
8	Ground terminal	Stainless steel 1.4301/1.4305 (only for ATEX/IECEX version)

3.3. Example of available membrane materials

The diaphragms have been developed to meet the unique challenges of hygienic and sterile requirements. Bürkert offers diaphragms with precise material composition and high accuracy. Bürkert diaphragms are available in a wide range of materials which have been tested and proven in applications in the food and beverage, biotechnology, pharmaceutical and cosmetics industries. The diaphragms are tested during development and production to ensure reliability under difficult process conditions.



- EPDM (AD)
- PTFE/EPDM (EA)
- advanced PTFE/EPDM (EU)
- Gylon®/EPDM laminated (ER)

For further information please refer to our flyer “Diaphragm competence for hygienic applications” on our [website](#) ►.

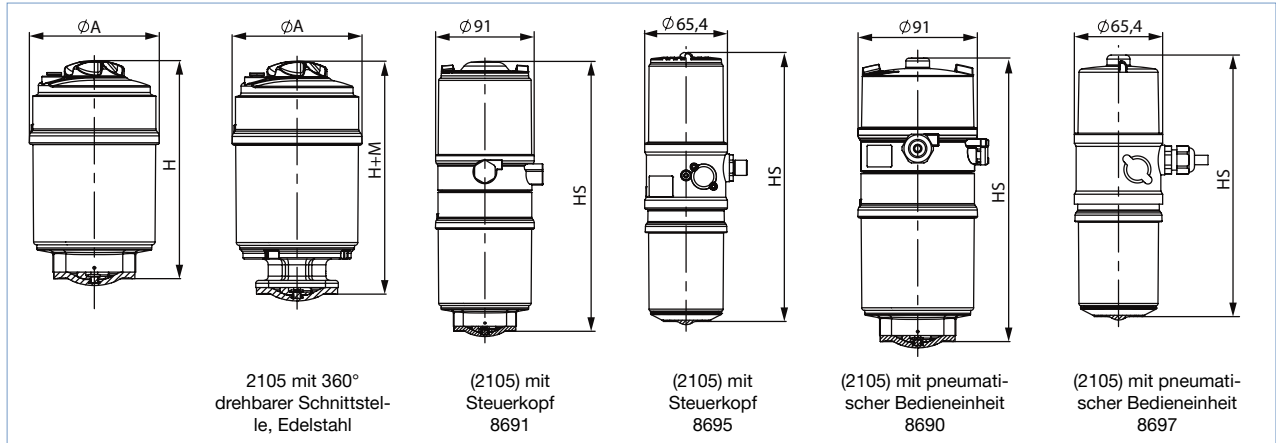
4. Dimensions

4.1. Actuator

ELEMENT actuator

Note:

Dimensions in mm, unless otherwise stated



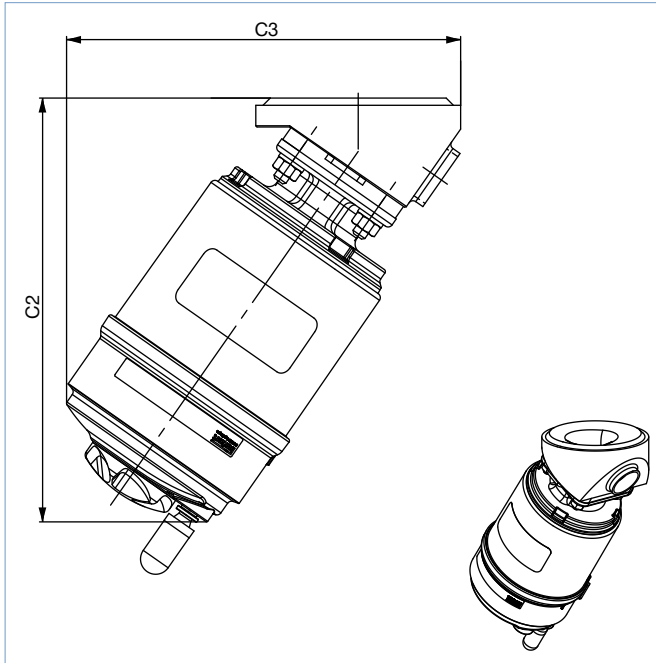
Diaphragm size	Actuator size Ø	ØA	H	HS with		H+M (MT86)
				8691/8695	8690/8697	
8	50 (D)	65	119	207	194	141
15	50 (D)	65	132	220	206	146
	70 (E)	-	-	242	209	-
20	70 (E)	92	153	248	215	165
25	70 (E)	92	154	248	215	171
	90 (N)	120	187	282	249	204
32	90 (N)	120	202	297	264	215
40	90 (N)	120	206	300	268	221
	130 (P)	159	259	353	320	273
50	130 (P)	159	275	369	336	281
65	130 (P)	-	-	-	-	285

Type 2105
Pneumatically operated diaphragm
valve with ELEMENT actuator

ELEMENT actuator with tank bottom body

Note:

Dimensions in mm, unless otherwise stated



Diaphragm size	Actuator size Ø	C2	C3
8	50 (D)	139	124
15	50 (D)	152	138
	70 (E)	173	156
20	70 (E)	176	164
25	70 (E)	188	177
	90 (N)	215	201
40	90 (N)	241	238
	130 (P)	290	285
50	130 (P)	302	302
65	130 (P)	314	321

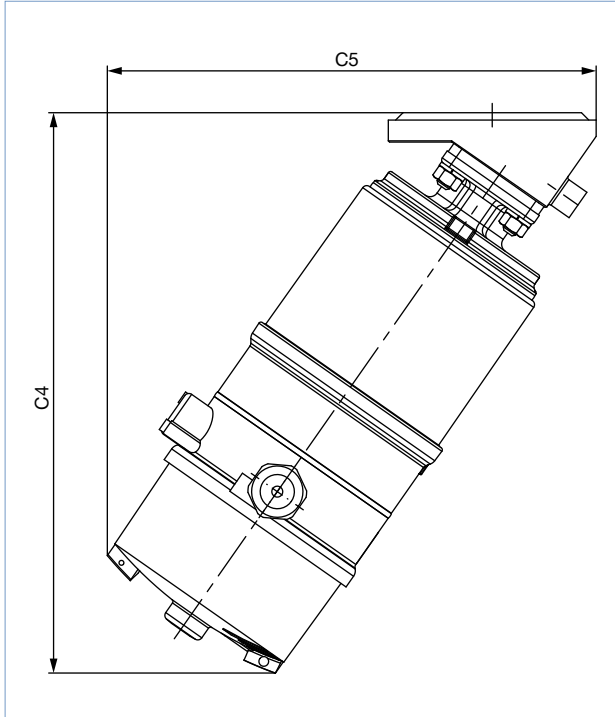
Type 2105
Pneumatically operated diaphragm
valve with ELEMENT actuator

ELEMENT actuator with tank bottom body and pneumatic control unit

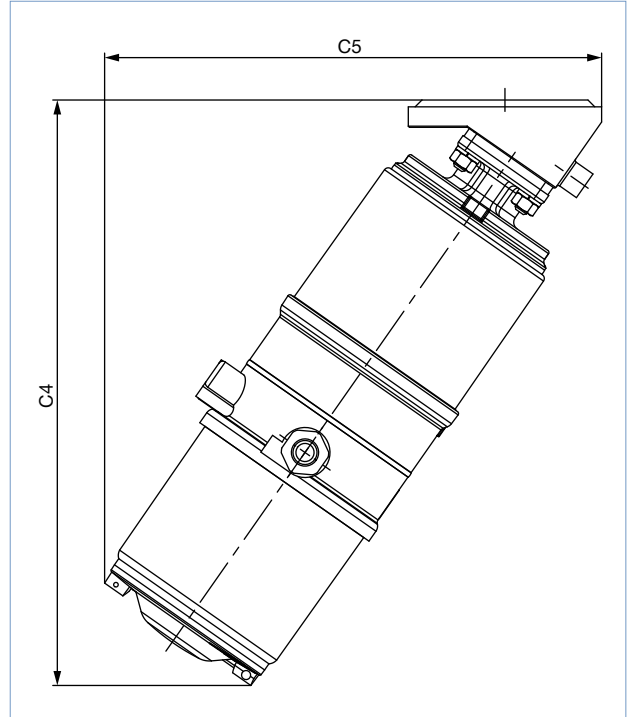
Note:

Dimensions in mm, unless otherwise stated

With Type 8690



With Type 8691



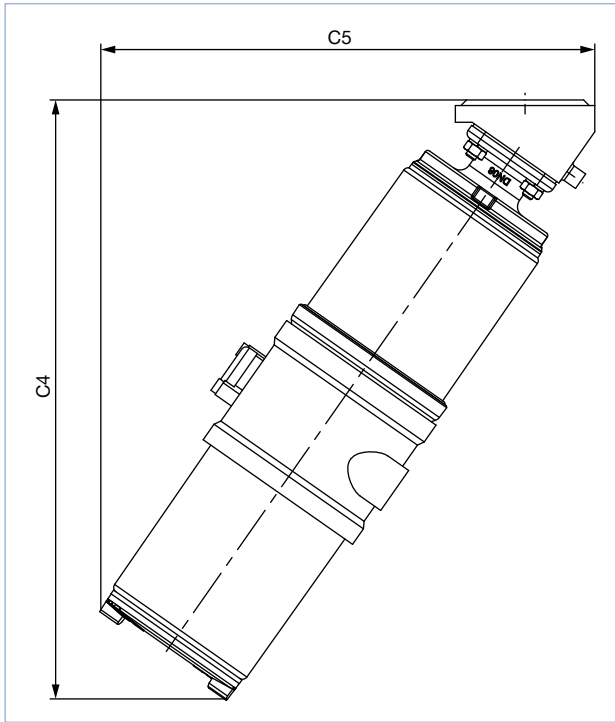
Diaphragm size	Actuator size Ø	C4	C5
15	70 (M)	229.1	190.3
20	70 (M)	232.6	207
25	70 (M)	245.5	221.6
	90 (N)	272.4	240.2
40	90 (N)	298.5	278.4
	130 (P)	341	308
50	130 (P)	354	324.3

Diaphragm size	Actuator size Ø	C4	C5
15	70 (M)	257.4	218.5
20	70 (M)	260.8	225.7
25	70 (M)	273.7	240.2
	90 (N)	300.7	259.1
40	90 (N)	326.7	297
	130 (P)	370	327.3
50	130 (P)	382.2	343.2

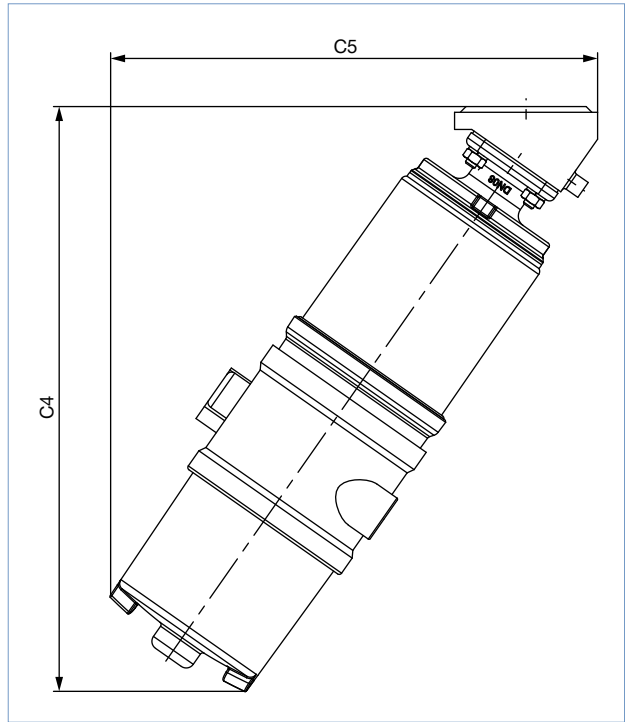
Type 2105
Pneumatically operated diaphragm
valve with ELEMENT actuator



With Type 8695



With Type 8697



Diaphragm size	Actuator size Ø	C4	C5
8	50 (D)	215.3	177.5
15	50 (D)	223.2	189.7

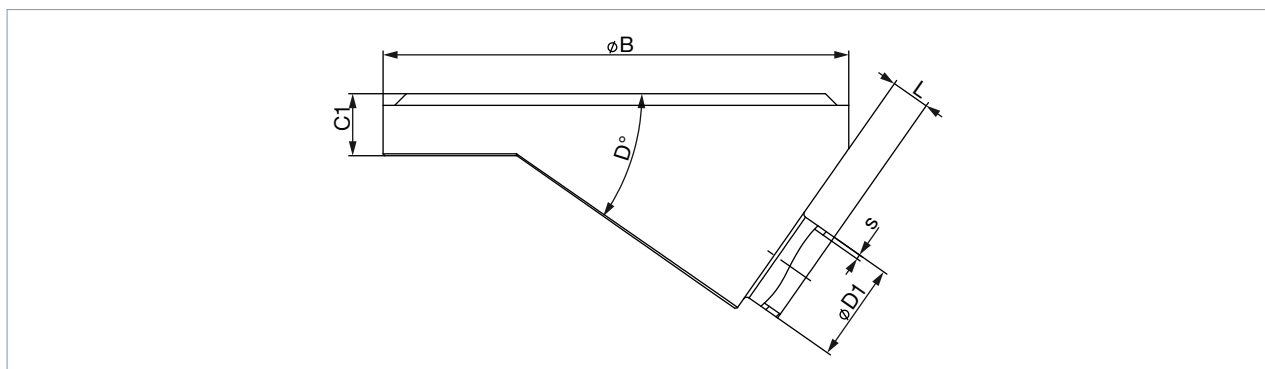
Diaphragm size	Actuator size Ø	C4	C5
8	50 (D)	204	170.3
15	50 (D)	212	182.3

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4.2. Tank bottom body with welded connection

Note:

Dimensions in mm, unless otherwise stated



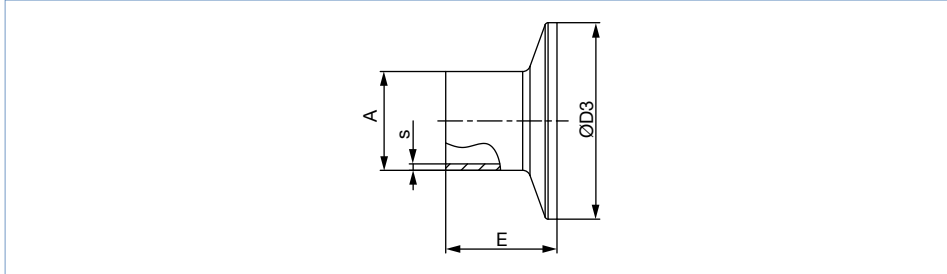
Diaphragm size	Port connection DN	ØB	C1	D	ØA	s	L	Product key ^{1.)}
DIN EN ISO 1127/ISO 4200/DIN 11866 series B								
8	8	50	8	35°	13.5	1.6	5	SA40
15	15	65 (Actuator D)	12	35°	21.3	1.6	4	SA42
		85 (Actuator M)					8	SA42
20	20	85	12	35°	26.9	1.6	5.6	SA43
25	25	120	16	35°	33.7	2	8	SA44
40	32	150	18	35°	42.4 (Port 32)	2	20	SA45
	40				48.3		15	SA46
50	50	180	22	35°	60.3	2	12	SA47
DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A								
8	10	50	8	35°	13	1.5	5	SD40
15	15	85	12	35°	19	1.5	8	SD42
20	20	85	12	35°	23	1.5	7	SD43
25	25	120	16	35°	29	1.5	8	SD44
40	40	150	18	35°	41	1.5	20	SD46
50	50	180	22	35°	53	1.5	15	SD47
ASME BPE/DIN 11866 series C								
8	¼"	50	8	35°	6.35	0.89	6	SA90
15	½"	85	12	35°	12.7	1.65	10	SA92
20	¾"	85	12	35°	19.05	1.65	8	SA93
25	1"	120	16	35°	25.4	1.65	12	SODF
40	1½"	150	18	35°	38.1	1.65	15	SODH
50	1½"	180	22	35°	38.1	1.65	25	SODH
	2"				15		SODI	
	2½"				11		SODJ	
SMS 3008								
25	25	120	16	35°	25	1.2	8	SA60
40	40	150	18	35°	38	1.2	20	SA62
50	50	180	22	35°	51	1.2	15	SA63

1.) This information is part of the product key (see product enquiry form at the end of this data sheet)

4.3. Tank bottom body with clamp connection

Note:

- Dimensions in mm, unless otherwise stated
- Clamp dimensions must be added to the welded connection dimensions.



Port connection		A	s	D3	E	Product key ^{1.)}
[mm]	[inch]					
DIN 32676 series A (DIN pipe)						
10	–	13	1.5	34.0	18	TD41
15	–	19	1.5	34.0	18	TD42
20	–	23	1.5	34.0	18	TD43
25	–	29	1.5	50.5	21.5	TD44
32	–	35	1.5	50.5	21.5	TD45
40	–	41	1.5	50.5	21.5	TD46
50	–	53	1.5	64.0	21.5	TD47
DIN 32676 series B (ISO pipe)						
8	–	13.5	1.6	25.0	28.6	TC40
8	–	13.5	1.6	34.0 ^{2.)}	28.6	TC51 ^{2.)}
10	–	17.2	1.6	34.0 ^{2.)}	28.6	TC41 ^{2.)}
15	–	21.3	1.6	34.0 ^{2.)}	28.6	TC42 ^{2.)}
15	–	21.3	1.6	50.5	28.6	TC52
20	–	26.9	1.6	50.5	28.6	TC43
25	–	33.7	2	50.5	28.6	TC44
32	–	42.4	2	50.5 ^{2.)}	28.6	TC45 ^{2.)}
40	–	48.3	2	64.0	28.6	TC46
50	–	60.3	2	77.5	28.6	TC47
ASME BPE						
8	¼"	6.35	0.89	25.0	28.6	TG50
10	⅜"	9.53	0.89	25.0	28.6	TG01
15	½"	12.7	1.65	25.0	28.6	TG02
20	¾"	19.05	1.65	25.0	28.6	TG03
25	1"	25.4	1.65	50.5	28.6	TG04
40	1½"	38.1	1.65	50.5	28.6	TG05
50	2"	50.8	1.65	64.0	28.6	TG06

1.) This information is part of the product key (see product enquiry form at the end of this data sheet)

2.) Deviating from the standard, because of different clamp outer diameter.

5. Performance specifications

5.1. Medium pressure

Information for control function A


Note:

- For low operating pressures, optional versions with reduced spring force (**EC04**) are recommended.
- Pressure data [bar]: Overpressure to atmospheric pressure. Valve closes dynamically against max. operating pressure.
- Information for control function B and I on request.

Diaphragm size	Actuator size Ø	Pilot pressure	Max. operating pressure for seal material	
			EPDM, FKM	PTFE/EPDM, advanced PTFE/EPDM, GYLON®/EPDM laminated
DN	[mm]	[bar]	[bar]	[bar]
8	50 (D)	5.0...10	10	10
15	50 (D)	5.0...10	7.5	–
	70 (M)		10	10
20	70 (M)	5.0...10	10	10
25	70 (M)	5.0...10	6.5	4.5
	90 (N)		10	8
40	90 (N) ^{1.)}	5.5...10	5.5	5
	130 (P)		10	10
50	130 (P)	5.0...7	8	7
65	130 (P)	5.0...7	5.5	3.5


1.) Gylon version is not available

6. Product accessories

Process controller TopControl	
Type 8693 ▶ Actuator size Ø 70/90/130 mm	Description
	<p>The intelligent process controller Type 8693 is designed for integrated mounting on pneumatic actuators from the process control valve series Type 23xx/2103 and especially for the requirements of hygienic process conditions. Using the TUNE-Functions, the process controller and positioner can be initialized automatically. Easy operation and selection of additional software functions as well as parameterization are carried out via the large graphic display and the keypad. Device configuration and parameterization can also be conveniently carried out by the Bürkert Communicator software tool via a PC interface.</p> <p>Features</p> <ul style="list-style-type: none"> • Contact-free position sensor • Universal positioning system for single and double-acting actuators • Ultra dynamic positioning system without air consumption in steady state • Integrated diagnostic functions for valve monitoring • Automatic initialization of the positioner and process controller using the TUNE-Function • Defined safe position in case of electrical or pneumatic auxiliary power failure • PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP, Bürkert system bus (büS) • Compact and robust hygienic stainless steel design <p>Customer benefits</p> <ul style="list-style-type: none"> • Quick and easy commissioning • Intuitive and simple operation via graphic display with backlight and keypad • High degree of system availability due to increased actuator service life by means of spring chamber ventilation • Guaranteed reliability and predictable maintenance through valve monitoring and diagnostics • Easy maintenance and process monitoring

Positioner TopControl	
Type 8692 ▶ Actuator size Ø 70/90/130 mm	Description <p>The intelligent electropneumatic positioner Type 8692 is designed for integrated attachment to pneumatic actuators of the process control valve series Type 23xx/2103 and especially for the requirements of hygienic process conditions. The positioner can be initialized automatically using the TUNE-Function. Easy operation and the selection of the extensive additional software functions as well as parameterization are carried out via the large graphic display and keypad. The device configuration and parameterization can also be conveniently carried out using the Bürkert Communicator software tool via a PC interface.</p> <p>Features</p> <ul style="list-style-type: none"> • Contact-free position sensor • Universal positioning system for single and double-acting actuators • Ultra dynamic positioning system without air consumption in steady state • Integrated diagnostic functions for valve monitoring • Automatic initialization of the positioner by means of the TUNE-Function • Defined safe position in case of electrical or pneumatic auxiliary power failure • PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP, Bürkert system bus (büS) • Compact and robust hygienic stainless steel design <p>Customer benefits</p> <ul style="list-style-type: none"> • Quick and easy commissioning • Intuitive and simple operation via graphic display with back-light and touch keypad • High degree of system availability due to increased actuator service life by means of spring chamber ventilation • Guaranteed reliability and predictable maintenance through valve monitoring and diagnostics
Positioner TopControl BASIC	
Type 8694 ▶ Actuator size Ø 70/90/130 mm	Description <p>The compact positioner Type 8694/8696 is designed for integrated attachment to pneumatic actuators of the Type 23xx/2103 process control valve series and especially for the requirements of hygienic process conditions. Operation and parameterization are performed via push buttons and DIP switches. The device configuration and parameterization can also be conveniently carried out using the Bürkert Communicator software tool via a PC interface.</p> <p>Features</p> <ul style="list-style-type: none"> • Contact-free position sensor • Universal positioning system for single and double-acting actuators • Ultra dynamic positioning system without internal control air consumption • AS-Interface, IO-Link, Bürkert system bus (büS) (only 8694) • Compact and robust hygienic stainless steel design <p>Customer benefits</p> <ul style="list-style-type: none"> • Simple and safe commissioning through Teach-In function • Minimum space requirement in the plant pipework for more flexibility in plant design • High degree of system availability due to increased actuator service life by means of spring chamber ventilation
Type 8696 ▶ Actuator size Ø 50 mm	

DTS 1000450603 EN Version: A Status: RL (released | freigegeben | validé) printed: 10.02.2021

Process controller SideControl Remote	
Type 8793 ▶ with Remote Sensor 8798 ▶ Actuator size Ø 70/90/130 mm	Description
	<p>The intelligent digital positioner/process controller Type 8793 is designed for mounting on lift or swivel drives with standardization in accordance with IEC 534 - 6 or VDI/VDE 3845 and is designed for demanding control tasks. The version with remote position sensor Type 8798 is used to control Bürkert process control valves. It is operated via a backlit graphic display. The initialization of process and positioner can be done automatically by means of TUNE-Function. Here the type of controlled system is automatically recognized and the appropriate controller structure with the corresponding optimum parameter set is determined.</p> <p>Features</p> <ul style="list-style-type: none"> • Universal control system for single and double-acting actuators • Integrated diagnostic functions for valve monitoring • Automatic initialization of the position and process controller by means of TUNE-Function • Ultra dynamic actuating system without internal control air consumption. • Illuminated graphic display with keypad • PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP, Bürkert system bus (büs) • Compact and robust design • Adaptation acc. to IEC 534 - 6 or VDI/VDE 3845 for lift and swivel drives or as remote version on Bürkert process valves <p>Customer benefits</p> <ul style="list-style-type: none"> • Quick and easy commissioning • Intuitive and simple operation via graphic display with backlight and keypad. • Guaranteed reliability and scheduled maintenance thanks to valve monitoring and diagnostics. • Easy maintenance and process monitoring • Long service life

Positioner SideControl Remote	
Positioner Type 8792 ▶ with Remote Sensor Type 8798 ▶ Actuator size Ø 70/90/130 mm	Description <p>The intelligent digital position/process controller Type 8792 is designed for attachment to lift and swivel drives with standardization according to IEC 534 - 6 or VDI/VDE 3845 for demanding control tasks. The Type 8798 version with remote position sensor is used to control Bürkert process control valves. It is operated via a backlit graphic display. The initialization of process and positioner can be done automatically by means of TUNE-Function.</p> <p>Features</p> <ul style="list-style-type: none"> • Illuminated graphic display with touch screen • Universal control system for single and double-acting actuators • Ultra dynamic actuating system without internal control air consumption. • Integrated diagnostic functions for valve monitoring • PROFIBUS DP-V1, DeviceNet, EtherNet/IP, PROFINET, Modbus TCP, Bürkert system bus (büS) • Compact and robust design • Adaptation acc. to IEC 534 - 6 or VDI/VDE 3845 for lift and swivel drives or as remote version on Bürkert process valves <p>Customer benefits</p> <ul style="list-style-type: none"> • Quick and easy commissioning • Intuitive and simple operation via backlit graphic display and keypad. • Guaranteed reliability and scheduled maintenance thanks to valve monitoring and diagnostics. • Long service life
	
Positioner SideControl BASIC Remote	
Positioner Type 8791 ▶ with Remote Sensor Type 8798 ▶ Actuator size Ø 70/90/130 mm	Description <p>The positioner Type 8791 is designed for mounting on lift or swivel drives with standardization in accordance with IEC 534 - 6 or VDI/VDE 3845 designed for simple control tasks. The variant with the remote sensor Type 8798 is used to control Bürkert process control valves. All operating elements are located inside the housing.</p> <p>Features</p> <ul style="list-style-type: none"> • Simple design • Universal control system for single and double-acting actuators • Ultra dynamic positioning system without air consumption in steady state • Adaptation according to IEC 534 - 6 or VDI/VDE 3845 for lift and swivel drives or as remote version on Bürkert process valves • AS-Interface, IO-Link, Bürkert system bus (büS) (only for Positioner Type 8791 BASIC Remote) <p>Customer benefits</p> <ul style="list-style-type: none"> • Quick and easy commissioning • Simple device for simple control tasks • Low energy consumption
	
Positioner IP20 Type 8791 ▶ with Remote Sensor Type 8798 ▶ Actuator size Ø 70/90/130 mm	
	

DTS 1000450603 EN Version: A Status: RL (released | freigegeben | validé) printed: 10.02.2021

Type 2105
Pneumatically operated diaphragm
valve with ELEMENT actuator

Control head	
Type 8691 ▶ Actuator size Ø 70/90/130 mm	Description The control heads, Type 8691 and 8695, are optimized for integrated mounting on process valves of the 21XX series. The valve position is detected without contact via an analogue sensor element, which automatically detects and stores the valve end positions during commissioning using the Teach-In function. The integrated pilot valve controls single or double-acting actuators. The switching status of the valve is indicated by coloured high-performance LEDs.
	Features <ul style="list-style-type: none"> • Status indication via coloured high-power LEDs • Non-wearing inductive position sensor • Pilot valve with manual override
Type 8695 ▶ Actuator size Ø 50 mm	Description The control heads, Type 8691 and 8695, are optimized for integrated mounting on process valves of the 21XX series. The valve position is detected without contact via an analogue sensor element, which automatically detects and stores the valve end positions during commissioning using the Teach-In function. The integrated pilot valve controls single or double-acting actuators. The switching status of the valve is indicated by coloured high-performance LEDs.
	Features <ul style="list-style-type: none"> • Teach-In function for automatic recognition of the valve end positions • Hygienic stainless steel design • Easy to clean chemical resistant housing according to IP65/67, 4X rating • AS-Interface, DeviceNet, IO-Link, Bürkert system bus (büS) Customer benefits <ul style="list-style-type: none"> • Simple and safe commissioning by means of Teach-In function • Easy process monitoring and fault detection through visible coloured high-power LEDs • High degree of system availability due to increased actuator service life by means of spring chamber ventilation • Minimal space requirement in the plant piping for more flexibility in plant design
Pneumatic control unit/Position feedback	
Type 8690 ▶ Actuator size Ø 70/90/130 mm	Description The pneumatic control units, Type 8690 and 8697, are optimized for integrated mounting on process valves of the 21XX series. Mechanical or inductive limit switches detect the valve position. The integrated pilot valve controls single or double-acting (Type 8690) actuators.
	Features <ul style="list-style-type: none"> • Optical position indicator
Type 8697 ▶ Actuator size Ø 50 mm	Description The pneumatic control units, Type 8690 and 8697, are optimized for integrated mounting on process valves of the 21XX series. Mechanical or inductive limit switches detect the valve position. The integrated pilot valve controls single or double-acting (Type 8690) actuators.
	Features <ul style="list-style-type: none"> • Mechanical or inductive proximity switches for end position detection • Pilot valve with manual override • Compact design • Easy to clean, chemical resistant housing according to IP65/67, 4X rating • Optional intrinsically safe design according to ATEX/IECEx Customer benefits <ul style="list-style-type: none"> • Simple and safe commissioning using the Teach-In function (Type 8697) • Signal reliability due to the automatic adjustment of the limit position switches • Minimal space requirement in the plant piping for more flexibility in plant design

DTS 1000450603 EN Version: A Status: RL (released | freigegeben | validé) printed: 10.02.2021

7. Networking and combination with other Bürkert products

7.1. Possible combinations for ELEMENT control valve system Type 8802-TC with TopControl

The continuous ELEMENT valve system, Type 8802-TC, consists of a diaphragm valve, Type 2105, and a digital electropneumatic positioner, Type 8692 (for valve actuator size Ø 70/90/130 mm), a digital electropneumatic process controller, Type 8693 (for valve actuator size Ø 70/90/130 mm), a basic digital electropneumatic positioner, Type 8694 (for valve actuator size Ø 70/90/130 mm) or a digital electropneumatic positioner, Type 8696 (for valve actuator size Ø 50 mm).

Note:

You order two components and receive a completely assembled and tested valve.

Example:



Type 2105
Pneumatically operated diaphragm
valve with ELEMENT actuator

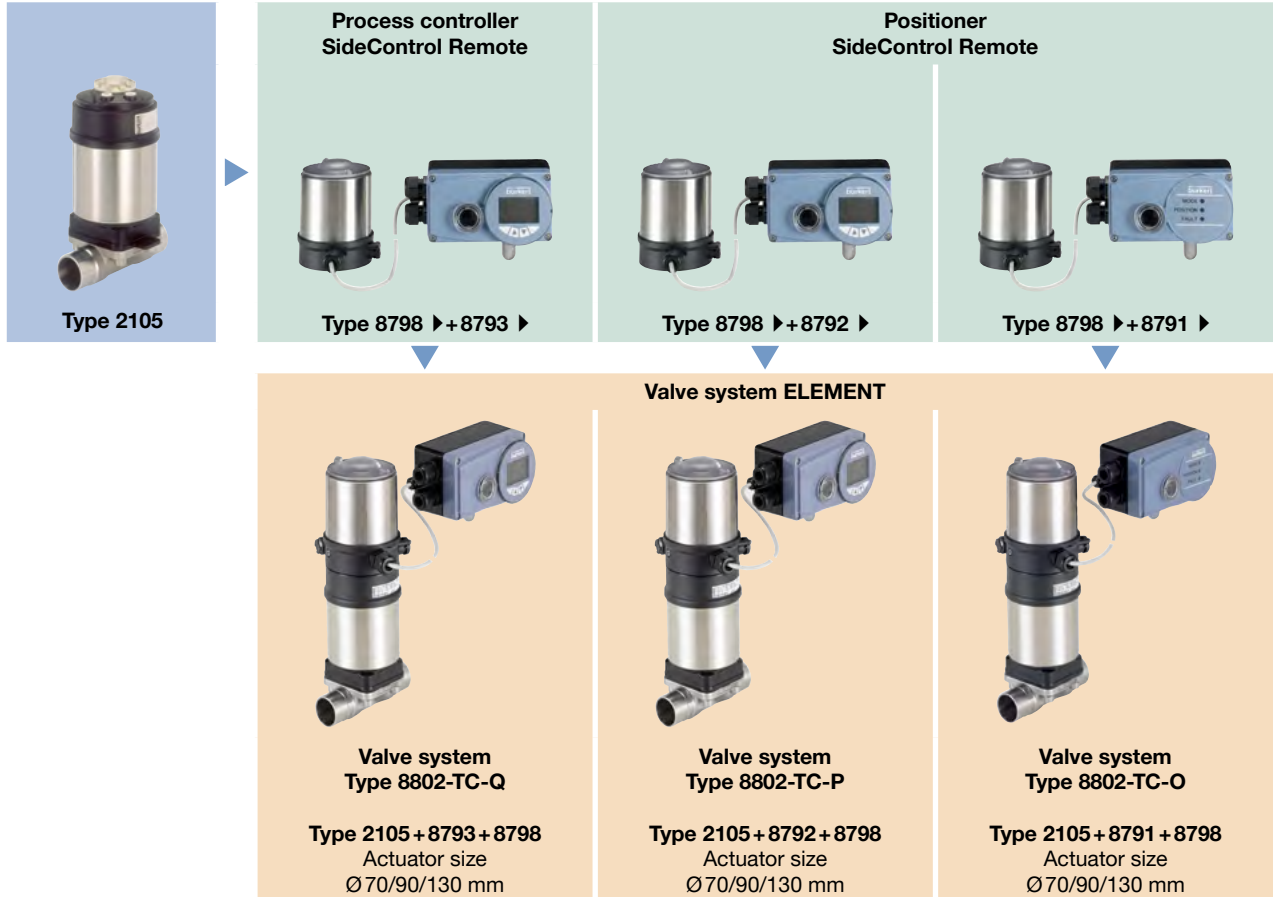
7.2. Possible combinations for control valve system ELEMENT Type 8802-TC with SideControl Remote

The continuous ELEMENT valve system, Type 8802-TC with SideControl, consists of a diaphragm valve, Type 2105 and a digital electropneumatic SideControl process controller Type 8793 (for valve actuator size Ø 70/90/130 mm) or a digital electropneumatic SideControl positioner Type 8792/8791 (for valve actuator size Ø 70/90/130 mm). The SideControls can only be used in combination with the position measuring system Type 8798.

Note:

You order two components and receive a completely assembled and tested valve.

Example:



Type 2105
Pneumatically operated diaphragm
valve with ELEMENT actuator

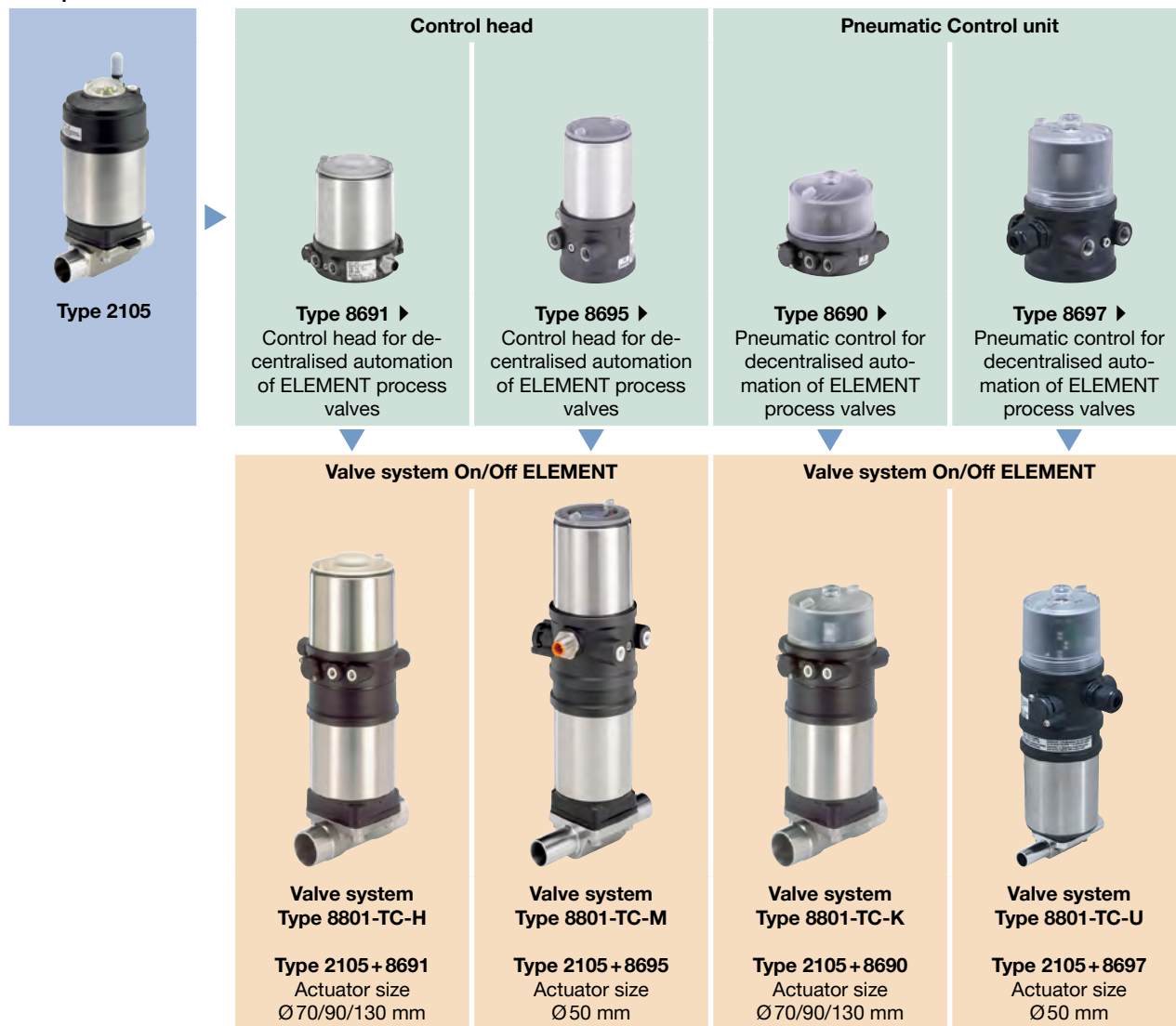
7.3. Possible combinations for ELEMENT control valve system Type 8801-TC with control head or pneumatic control unit/position feedback

A decentralized automated **valve system On/Off ELEMENT, Type 8801-TC**, consists of a **diaphragm valve, Type 2105** and a **valve control head Type 8691/8695** or a **pneumatic control unit Type 8690/8697**.

Note:

You order two components and receive a completely assembled and tested valve.

Example:



8. Ordering information

8.1. Bürkert eShop – Easy ordering and quick delivery



Bürkert eShop – Easy ordering and fast delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

[Order online now](#)

8.2. Bürkert product filter



Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.


[Try out our product filter](#)





8.3. Bürkert product enquiry form





Bürkert product enquiry form: Would you like to make a specific product enquiry based on your technical requirements? Please use our product enquiry form **at the end of this data sheet**. There you will find all the information relevant to your Bürkert contact person that will help us to process your enquiry in the best possible way.

Bürkert specification key: In our product enquiry form you will find a complete explanation of the composition of our specification key. You will find our product enquiry form **at the end of this data sheet**.

Specification key - Examples

2 way diaphragm valve					
Type 2030 ▶ CLASSIC with plastic body 	Type 2031 ▶ CLASSIC with stainless steel body 	Type 2063 ▶ INOX with stainless steel body 	Type 2103 ▶ ELEMENT with stainless steel or plastic body 	Type 3232 ▶ Manually operated with plastic body 	Type 3233 ▶ Manually operated with stainless steel body 

T-diaphragm valve			
Type 2032 ▶ CLASSIC T-valve 	Type 2064 ▶ INOX T-valve 	Type 2104 ▶ ELEMENT T-valve 	Type 3234 ▶ Manually operated T-valve 

Tank bottom diaphragm valve			
Type 2033 ▶ CLASSIC Tank bottom valve 	Type 2065 ▶ INOX Tank bottom valve 	Type 2105 ▶ ELEMENT Tank bottom valve 	Type 3235 ▶ Manually operated tank bottom valve 

	Type	Control function	Nominal diameter diaphragm	Diaphragm material	Body material	Port connection	Port connection	Actuator version	Actuator size	Pilot air port	Actuator	Variable	Variable	Variable
Key Feature	TYP	SF	DN	DWST	WKST	LTA1	LTA2	ANTA	ANTG	STLA	ANTR	VAR1	VAR2	VAR3
Key No. →	1	2	3	4	5	6	6	7	8	9	10	V1	V2	V3

2 way diaphragm valve														
Type 2030 CLASSIC	2030	A	20.0	AD	PV	KM26	-	C	E	-	-			
Type 2031 CLASSIC	2031	A	20.0	AD	VS	SA93	-	C	E	-	-	NK52	NO14	
Type 2063 INOX	2063	A	20.0	AD	VS	SA93	-	H	M	-	-	NK52	NO14	
Type 2103 ELEMENT	2103	A	20.0	AD	PV	KM26	-	G	M	FA01	-			
Type 2103 ELEMENT	2103	A	20.0	AD	VS	SA93	-	G	M	FA01	-	NK52	NO14	
Type 3232	3232	-	20.0	AD	PV	KM26	-	-	-	-	D050			
Type 3233	3233	-	20.0	AD	VS	SA93	-	-	-	-	D051	NK52	NO14	
T-diaphragm valve														
Type 2032 CLASSIC	2032	A	20.0	AD	VH	SODH	SA93	D	E	-	-	NK52	NO14	
Type 2064 INOX	2064	A	20.0	AD	VH	SODH	SA93	-	M	-	-	NK52	NO14	
Type 2104 ELEMENT	2104	A	20.0	AD	VH	SODH	SA93	-	M	FA01	-	NK52	NO14	
Type 3234	3234	-	20.0	AD	VH	SODH	SA93	-	-	-	D050	NK52	NO14	
Tank bottom diaphragm valve														
Type 2033 CLASSIC	2033	A	20.0	AD	VH	SA93	-	D	F	-	-	NK52	NO14	
Type 2065 INOX	2065	A	20.0	AD	VH	SA93	-	-	M	-	-	NK52	NO14	
Type 2105 ELEMENT	2105	A	20.0	AD	VH	SA93	-	-	M	FA01	-	NK52	NO14	
Type 3235	3235	-	20.0	AD	VH	SA93	-	-	-	-	D050	NK52	NO14	

1.) NK52, NOxx only for stainless steel bodies

Key Legend

Note:

- Other versions on request
- Available Type sizes see corresponding data sheet

Key no. 2: Control function (SF)				Key no. 8: Actuator size (ANTG)	
A	Closed with spring force			B	ø 32
B	Open with spring force			C	ø 40
I	Without pressure spring			D	ø 50
Key no. 3: Nominal diameter diaphragm (DN)				E	ø 63
8	25	50	100	F	ø 80
15	32	65		G	ø 100
20	40	80		H	ø 125
Key no. 4: Diaphragm material (DWST)				K	ø 175
AD	EPDM			L	ø 225
EA	PTFE/EPDM			M	ø 70
EU	Advanced PTFE/EPDM laminated			N	ø 90
ER	Gylon®/EPDM laminated			P	ø 130
Key no. 5: Body material (WKST)				Key no. 9: Pilot air port (ELEMENT) (STLA)	
PD	PVDF (Polyvinylidene fluoride)			FA01	Pilot air port Push-In 6/4, 1/4"
PP	PP (Polypropylene)			FA02	Pilot air port G1/8
PV	PVC-U (Polyvinyl chloride)			FA03	Interface ELEMENT control
VG	Stainless steel precision casting 1.4435/316L			Key no. 10: Actuator (ANTR)	
VH	Stainless steel block material 1.4435/316L			D050	Handwheel and attachment PPS
VI	Stainless steel block material 1.4435 BN2/316L ASME BPE			D051 ^{1.)}	Handwheel PPS and attachment St. St.
VP	Stainless steel tube 1.4435 BN2/316L			D052 ^{2.)}	Handwheel and attachment St. St.
VS	Stainless steel-forged 1.4435 BN2/316L ASME BPE			1.) Alternatively D058	
Key no. 6: Port connection (LTA1, LTA2)				2.) Alternatively D059 or D102	
Listed in detail below				Key no. V1, V2, ...: Variable code (VAR1, VAR2, VAR3)	
Key no. 7: Actuator version (ANTA)				NK52 ^{3.)}	Acceptance test certificate 3.1 according to EN 10204
C	PA actuator (only CLASSIC)			NO14 ^{3.)}	Mechanically polished Ra ≤ 0.5 µm (ASME BPE SF1)
D	PPS actuator (only CLASSIC)			NO17 ^{3.)}	Electropolished Ra ≤ 0.38 µm (ASME BPE SF4 / DIN HE4)
G	ELEMENT design actuator (only ELEMENT)			NO06 ^{3.)}	Mechanically polished Ra ≤ 0.76 µm (ASME BPE SF3 / DIN H2)
H	St. St. actuator (only INOX)			NO16 ^{3.)}	Electropolished Ra ≤ 0.6 µm (ASME BPE SF6)
				EC04	Reduced spring force
				3.) NK52, NOxx only for stainless steel bodies	

Key no. 6: Port connection (LTA)

Weld connection								
DN [mm]	EN ISO 1127 / ISO 4200 DIN 11866 R. B	SMS 3008	DIN 11850 R. 0	DIN 11850 R. 1	DIN 11850 R. 2 DIN 11866 R. A	DIN 11850 R. 3	BS4825	ASME BPE DIN 11866 R. C
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
65	SA48-76.1x2.0	SA64-63.5x1.6	-	-	SD48-70.0x2.0	-	-	SODJ-63.5x1.65
80	SA49-88.9x2.3	SA65-76.1x1.6	-	-	SD49-85.0x2.0	-	-	SODK-76.2x1.65
100	SA39-114.3x2.3	SA66-101.6x2.0	-	-	SD50-104.0x2.0	-	-	SODL-101.6x2.11

Product Enquiry Form
Diaphragm valve with straight
way valve, T-valve or tank bottom
valve





Clamp connection					
DN [mm]	Clamp 34,0 similar to DIN 32676 R. B (ISO tube (ISO4200))	DIN 32676 R. A (DIN tube (DIN11850))	DIN 32676 R. B (ISO tube (ISO4200))	ASME BPE	BS 4825 (Clamp BS 4825-3, tube BS 4825-1)
8	TC51-13.5×1.6 Cl: 34.0	TD40-10.0×1.0 Cl: 25.0	TC40-13.5×1.6 Cl: 25.0	TG 50-6.35×0.89 Cl: 25.0	-
10	TC41-17.2×1.6 Cl: 34.0	TD41-13.0×1.5 Cl: 34.0	TC53-17.2×1.6 Cl: 25.0	TG 01-9.53×0.89 Cl: 25.0	-
15	TC42-21.3×1.6 Cl: 34.0	TD42-19.,0×1.5 Cl: 34.0	TC52-21.3×1.6 Cl: 50.5	TG 02-12.7×1.65 Cl: 25.0	TH42-12.7×1.2 Cl: 25.0
20	-	TD43-23.0×1.5 Cl: 34.0	TC43-26.9×1.6 Cl: 50.5	TG 03-19.05×1.65 Cl: 25.0	TH43-19.05×1.2 Cl: 25.0
25	-	TD44-29.0×1.5 Cl: 50.5	TC44-33.7×2.0 Cl: 50.5	TG 04-25.4×1.65 Cl: 50.5	-
32	-	-	-	-	-
40	-	TD46-41.0×1.5 Cl: 50.5	TC46-48.3×2.0 Cl: 64.0	TG 05-38.1×1.65 Cl: 50.5	-
50	-	TD47-53.0×1.5 Cl: 64.0	TC47-60.3×2.0 Cl: 77.5	TG 06-50.8×1.65 Cl: 64.0	-
65	-	-	TC48-76.1×2.0 Cl: 91.0	TG 07-63.5×1.65 Cl: 77.5	-
80	-	-	TC49-88.9×2.3 Cl: 106.0	TG 08-76.2x,65 Cl: 91.0	-
100	-	-	TC50-114.3×2.3 Cl: 130.0	TG 09-101.6×2.11 Cl: 119.0	-



Plastic connection					
DN [mm]	Welded connection socket (only WKST=PD, PP)	Welded connection threaded socket (only WKST=PD, PP)	Adhesive bond socket (only WKST=PV)	Adhesive bond threaded socket (only WKST=PV)	Loose-type flange (up to DN65) Fixed flange (from DN80)
15	SS25 - ø20	SM25 - ø20	KS25 - ø20	KM25 - ø20	FL24
20	SS26 - ø25	SM26 - ø25	KS26 - ø25	KM26 - ø25	FL25
25	SS27 - ø32	SM27 - ø32	KS27 - ø32	KM27 - ø32	FL26
32	SS28 - ø40	SM28 - ø40	KS28 - ø40	KM28 - ø40	FL27
40	SS29 - ø50	SM29 - ø50	KS29 - ø50	KM29 - ø50	FL28
50	SS30 - ø63	SM30 - ø63	KS30 - ø63	KM30 - ø63	FL29
65	-	-	-	-	FL30
80	-	-	-	-	FF31
100	-	-	-	-	FF32

DTS 1000450603 EN Version: A Status: RL (released | freigegeben | validé) printed: 10.02.2021

Positioner / process controller TopControl for control valves of the ELEMENT series

For actuator size $\varnothing 70/\varnothing 90/\varnothing 130$ mm			
Process Controller TopControl Type 8693 ▶		Positioner TopControl Type 8692 ▶	
	<ul style="list-style-type: none"> Intelligent digital positioners and process controllers with integrated PID controller for accurate process control Lighted graphic display with membrane keypad Tune function for automatic start-up Field bus communication Diagnostic functions 		<ul style="list-style-type: none"> Digital positioner without sensor input Lighted graphic display with membrane keypad Tune function for automatic start-up Field bus communication Diagnostic functions
Pneumatic function Single-acting Double-acting		Electrical connection Cable gland M12 Multipole connection Without	
Digital Communication PROFIBUS DP-V1 DeviceNet EtherNet/IP PROFINET Bürkert Systembus (bùS) ^{1.)} Modbus TCP Without		Approvals ATEX cat. 3GD, IECEx Without	
Analogue feedback 0/4...20 mA 0/4...20 mA + 2 binary outputs		Digital outputs and diagnostics Yes No	

1.) Based on CANopen

For actuator size $\varnothing 70/\varnothing 90/\varnothing 130$ mm			For actuator size $\varnothing 50$ mm	
Positioner TopControl BASIC Type 8694 ▶			Positioner TopControl BASIC Type 8696 ▶	
	<ul style="list-style-type: none"> Status LED and DIP switches Tune-function for automatic start-up Positioning system for single-acting actuators Field bus communication 			<ul style="list-style-type: none"> Status LED and DIP switches Tune-function for automatic start-up Positioning system for single-acting actuators
Pneumatic function Single-acting			Electrical connection Cable gland ^{1.)} M12 Multipole connection Without	
Digital Communication AS-Interface ^{1.)} IO-Link Bürkert Systembus (bùS) ^{2.)} Without			Approvals ATEX cat. 3GD, IECEx Without	
Analogue feedback Yes No				



1.) Only available for Type 8694. Not available for Type 8696.

2.) Based on CANopen

DTS 1000450603 EN Version: A Status: RL (released | freigegeben | validé) printed: 10.02.2021

Positioner / process controller SideControl Remote for control valves of the ELEMENT series



For actuator size $\varnothing 70/\varnothing 90/\varnothing 130$ mm

Process Controller SideControl Type 8793 with Remote sensor Type 8798		Positioner SideControl Type 8792 with Remote sensor Type 8798	
	<ul style="list-style-type: none"> Intelligent digital positioners and process controllers with integrated PID controller Lighted graphic display with membrane keypad Tune-function for automatic start-up, linearization and optimization of process characteristics Field bus communication Diagnostic functions 		<ul style="list-style-type: none"> Digital positioner without sensor input Lighted graphic display with membrane keypad Tune function for automatic start-up Field bus communication Diagnostic functions
Pneumatic function		Electrical connection	
Single-acting	Single- and double-acting	Cable gland ^{1.)}	M12 Multipole connection
Digital communication		Approvals	
PROFIBUS DP-V1	DeviceNet	EtherNet/IP	ATEX cat. 3GD, IECEx
PROFINET	Bürkert Systembus (b \ddot{u} S) ^{2.)}		Without
Modbus TCP	Without		
Analogue feedback		Digital outputs and diagnostics	
0/4...20 mA	0/4...20 mA + 2 binary outputs	Yes	No
0/5...10 V	0/5...20 V + 2 binary outputs		

1.) With a cable gland the selection of a fieldbus communication PROFIBUS, EtherNet etc. is not possible. Only variants with M12 Multipole are offered as standard for fieldbus communication.

2.) Based on CANopen

For actuator size $\varnothing 70/\varnothing 90/\varnothing 130$ mm

Positioner SideControl BASIC Type 8791 with Remote sensor Type 8798		Positioner SideControl BASIC IP20 Type 8791 with Remote sensor Type 8798	
	<ul style="list-style-type: none"> „simple positioner“ Universal positioning system for single and double acting actuators Tune function for automatic start-up Field bus communication 		<ul style="list-style-type: none"> „simple positioner“ Universal positioning system for single and double acting actuators Tune function for automatic start-up Switchgear cabinet assembly
Pneumatic function		Electrical connection	
Single-acting (actuator size $\varnothing 70/90$)	Single- and double-acting (actuator size $\varnothing 130$)	Cable gland ^{1.)}	M12 Multipole connection
Digital communication		Approvals	
AS-Interface ^{2.)} :		ATEX cat. 3GD, IECEx ^{2.)}	Without
Analogue profile S-7.3.4 (only set point)			
Analogue profile S-7.A.5 (set point and feedback)			
IO-Link	Bürkert Systembus (b \ddot{u} S) ^{3.)}	Without	
Analogue feedback			
0/4...20 mA	No		


1.) With a cable gland, the selection of a fieldbus communication AS-Interface is not possible. For fieldbus communication, only variants with M12 Multipole are offered as standard.

2.) Only available for Positioner SideControl BASIC Type 8791. Not available for Positioner SideControl BASIC IP20 Type 8791.



3.) Based on CANopen, IO-Link and b \ddot{u} S not available for IP20 Type 8791

DTS 1000450603 EN Version: A Status: RL (released | freigegeben | validé) printed: 10.02.2021

Control heads / pneumatic control for on/off process valves of the ELEMENT series

For actuator size $\varnothing 70/\varnothing 90/\varnothing 130$ mm			For actuator size $\varnothing 50$ mm	
Control head Type 8691 ▶			Control head Type 8695 ▶	
				
<ul style="list-style-type: none"> Inductive position sensor with automatic Teach function Coloured high power LEDs With/without pilot valve for single or double-acting actuators Fieldbus communication Hygienic stainless steel design 				
Pneumatic function			Electrical connection	
Single-acting	Double-acting	Without pilot valve	Cable gland	M12 connector
Communication			Approvals	
AS-Interface	DeviceNet	IO-Link	ATEX cat. 3GD, IECEx	Without
Bürkert Systembus (büS) ^{1.)}			Without	

1.) Based on CANopen

For actuator size $\varnothing 70/\varnothing 90/\varnothing 130$ mm			For actuator size $\varnothing 50$ mm	
Pneumatic control unit / feedback Type 8690 ▶			Pneumatic control unit / feedback Type 8697 ▶	
				
<ul style="list-style-type: none"> Visual status indicator Micro- or proximity switches for end position feedback With/without pilot valve for single- or double-acting actuators Optional intrinsically safe version acc. to ATEX / IECEx 				
Pneumatic function			Electrical connection	
Single-acting	Double-acting (Type 8690)		Cable gland	M12 connector
Without pilot valve				
Number of position feedback switches			Approvals	
1x	2x		ATEX cat. 3GD, IECEx	ATEX cat. 2DG, IECEx
			Without	
Position feedback switch				
Micro-switch 24 V DC		Micro-switch 50...225 V DC/AC (Type 8690)	Inductive switch 3-wire PNP	
Inductive switch 2-wire NAMUR		Inductive switch 2-wire 24 V DC	Without	

