



Electromotive 2/2 way angle seat valve

- Fail-safe position by energy storage
- Rapid flow shut off
- Weather and impact resistant design
- Designed according to hygienic demands
- Many diagnostic functions

Type 3320 can be combined with...



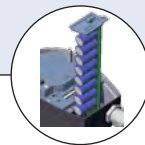
Type 3360
Control valve



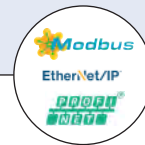
Type 3361
Control valve



Type 3321
Globe valve



SAFEPOS
energy-pack



Fieldbus



powered by
EDIP

The innovative Bürkert On/Off process valve Type 3320 is the solution when it comes to shut-off tasks under demanding operating conditions. The electromotive actuator with ball screw moves the swivel plate at a particularly high rate of 6 mm/s to its end position. Thereby it reacts almost instantaneously to process signals. If necessary, the safety position can be approached by an optional energy storage in case of power failure. The actuator and shut-off valve are adapted perfectly to each other with closed design and robust surface. This ensures the hygienic requirements of a fast and residue-free cleaning. Harsh environments are no problem for the Type 3320 because of the protection class IP65 / IP67 and its high impact and vibration resistance. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with exchangeable V-seals. The fieldbus suitable for Type 3320 provides many helpful functions for process monitoring, valve diagnostics and predictive maintenance and thus offers the decisive advantage of a modern process automation.

Technical data	
Port size	DN15 to DN50
Nominal pressure (max.)	PN25 (valve body)
Port connections	
Thread	G, RC, NPT (EN ISO 228-1, ISO 7/1 / DIN EN 10226-2, ASME B 1.20.1)
Welded	EN ISO 1127 / ISO 4200, DIN 11850 R2, ASME BPE, BS 4825-1, SMS 3008
Clamp	DIN 32676 A, DIN 32676 B, ASME BPE, BS 4825
Medium	neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam
Viscosity	max. 600 mm ² /s
Medium temperature	-10 to +185 °C (seat seal PEEK) -10 to +130 °C (seat seal PTFE)
Ambient temperature	-25 to +65 °C * (without SAFEPOS energy-pack) -25 to +55 °C * (with SAFEPOS energy-pack) * Note: Derating see temperature chart
Safety position at power failure	with SAFEPOS energy-pack: opened, closed or free programmable without SAFEPOS energy-pack: blocked in last position
Power supply	24 V DC ±10% (max. residual ripple 10%)
Closure time	<2.3...4.3 sec. (depending on stroke)
Travel speed	6 mm/s
Duty cycle	100%
Protection class	IP65 / IP67
Binary control	0...5 V (log. 0) 10...30 V (log. 1)
Fieldbus communication	büs (Bürkert-System-Bus) (Standard) CANopen, EtherNet/IP, Modbus/TCP, PROFINET (optional)
Vibration, sinusoidal	5 g according to IEC 60068-2-6 Test Fc
Shock, mechanical	50 g according to IEC 60068-2-27 Test Ea
Approval and Conformity	EGV 1935/2004 (standard) FDA (optional) ATEX / IECEx (optional) cULus Cert. No. 238179 (optional)
Ignition protection	II 3G Ex ec IIC T4 Gc II 3D Ex tc IIIC T135 °C Dc

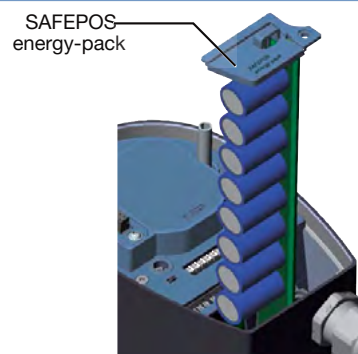
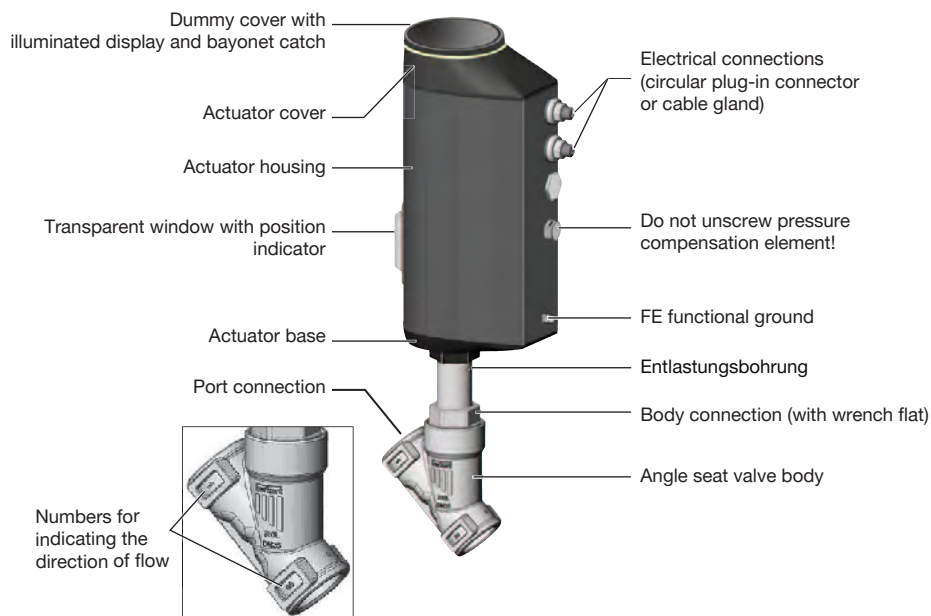
Structure and function

The electromotive linear actuator consists of a brushless direct current motor, gears and a threaded spindle. The valve spindle, which is connected to the threaded spindle, transfers the force to the swivel plate. The electronic control system is actuated either via a standard signal (digital) or via a fieldbus (digital). Optionally there is the energy pack (SAFEPOS energy-pack) for the device. If the supply voltage fails, the energy pack supplies the actuator with the required energy to move the valves into the required position which can be adjusted via a menu.

The valve position can be manually changed in 2 ways. Either over an electrical manual control or over mechanical manual control, if no supply voltage applied. The device can be set and operated either via 2 capacitive buttons and 4 DIP switches. There is also the option of setting the device via the bus Service interface and by using the PC software "Bürkert-Communicator".

The intelligent process valve Type 3320 offers the operator options for process monitoring, valve diagnostics and predictive maintenance. Internal measurements for the operating state are evaluated and, if issued as a warning or error message. This signal, for example, undue environmental and process conditions, functional deviations of components or the state of the energy accumulator. Internal measurements for operating state are evaluated and, possible a warning or error message is issued. This signal indicates, for example, bad environmental and process conditions, functional deviations of components or the state of the energy accumulator.

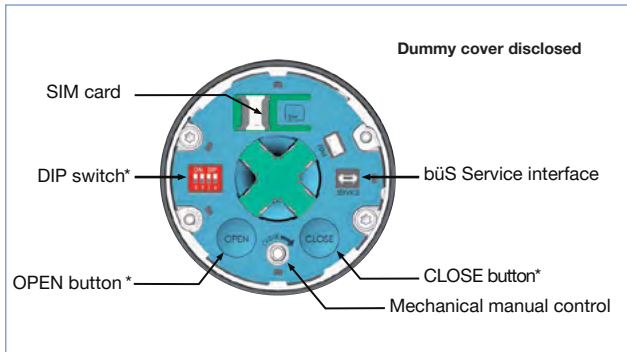
Structure, electromotive angle seat shut-off valve, Type 3320



Safety position with energy storage (Option)

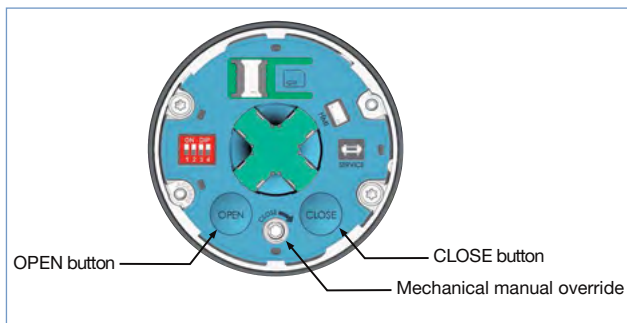
The safety starting positions in case of power interruption is realized with the optional energy storage SAFEPOS energy-pack. The desired position (NO/NC) is adjusted from the menu. The energy storage has a lifespan of up to 10 years, depending on the operating conditions. The power of the energy storage is monitored and a warning is displayed to indicate its life is coming to an end. The memory is designed as a plug-in module making it easy to exchange. Without energy storage, the valve remains in the last position. The energy storage is fully charged after maximum 100 seconds (depending on the operating conditions) and ready to use.

Controls and indicators



Control elements

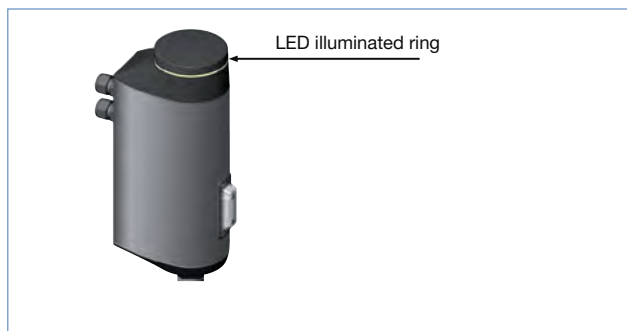
The basic functions are operated by 4 DIP switches and 2 push-buttons. These are located under the dummy cover which can be removed manual by turning. Through the büS service access, the device can also be configured in detail with the Bürkert communicator software. For this, the optional USB-büS interface kit is required.



Manual and electrical operation

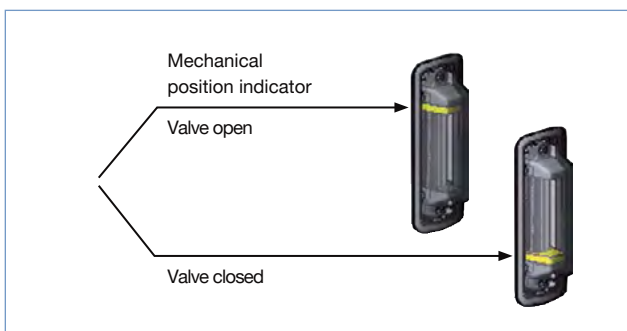
The manual override for mechanical operation of the valve is located under the dummy cover.

Electrical manual override for the procedure is carried out by two buttons below the dummy cover.



360° - LED Illuminated ring

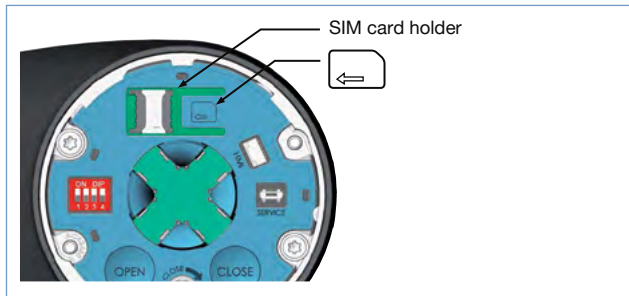
To display the device status, the valve end position and the operating condition, a visible 360° LED illuminated ring is mounted around the dummy cover. The LED ring lights up, flashes or flashes in one or different colors. Depending on customer requirements 4 different LED modes can be selected (Namur mode, valve mode without warnings, valve mode with warnings, LED off)



Mechanical position indicator

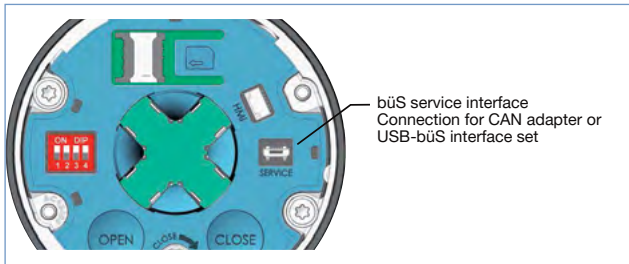
The mechanical position indicator also indicates when the supply voltage of the current valve position fails

Controls and indicators, continued



SIM card as data storage (option)

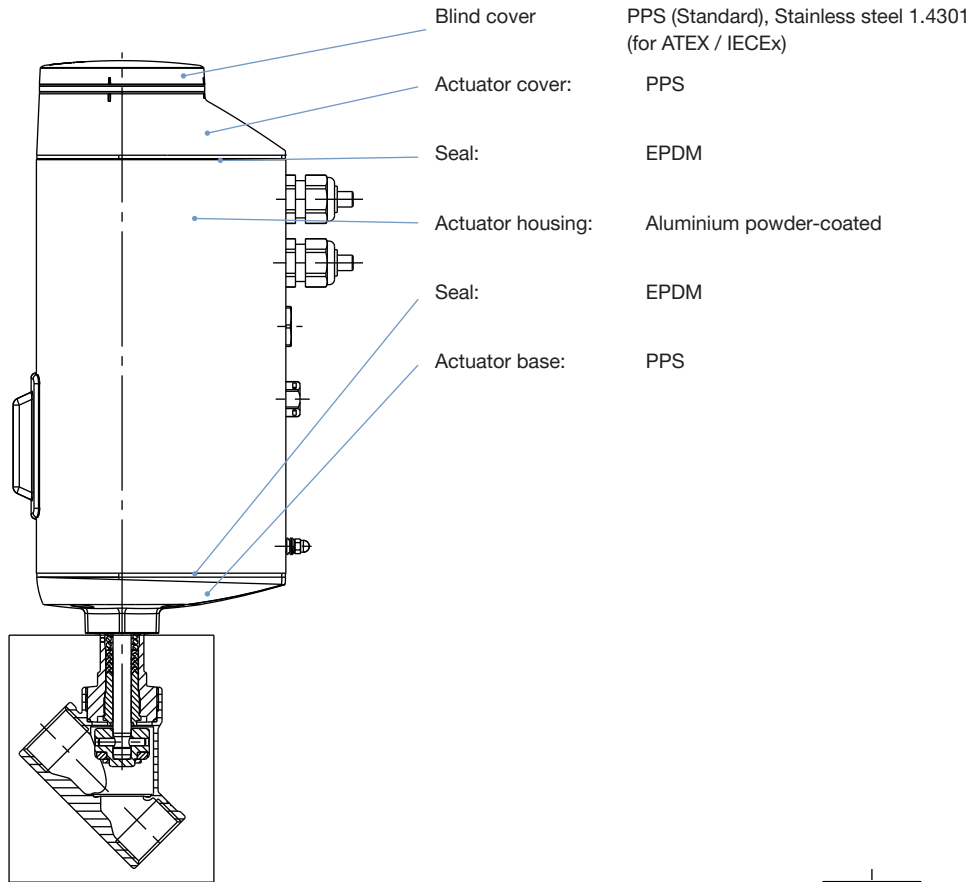
With the SIM card optional device-specific values and user settings can be saved and quickly transferred to another device.



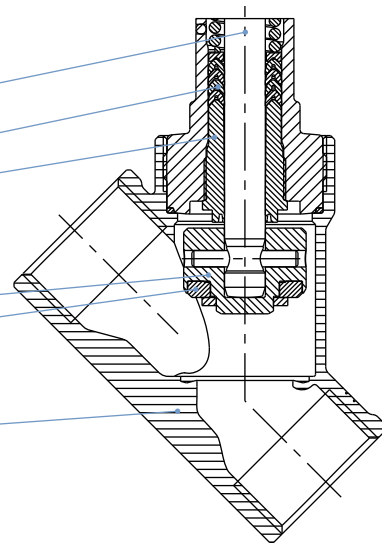
bÜS service interface

The bÜS service interface connects the device to the communicator software on a PC, laptop or smartphone. From there, a configuration of the device or failure diagnosis can be performed.

Design and materials view



- Blind cover: PPS (Standard), Stainless steel 1.4301 (for ATEX / IECEx)
- Actuator cover: PPS
- Seal: EPDM
- Actuator housing: Aluminium powder-coated
- Seal: EPDM
- Actuator base: PPS
- Spindle: Stainless steel 1.4401 (316) /1.4404 (316L)
- Spindle seal: PTFE V-seals with spring compensation
- Spindle guidance: PEEK
- Swivel plate: Stainless steel 1.4401 (316)/1.4404 (316L)
- Seat seal: PTFE or PEEK
- Valve body: Stainless steel 316 L

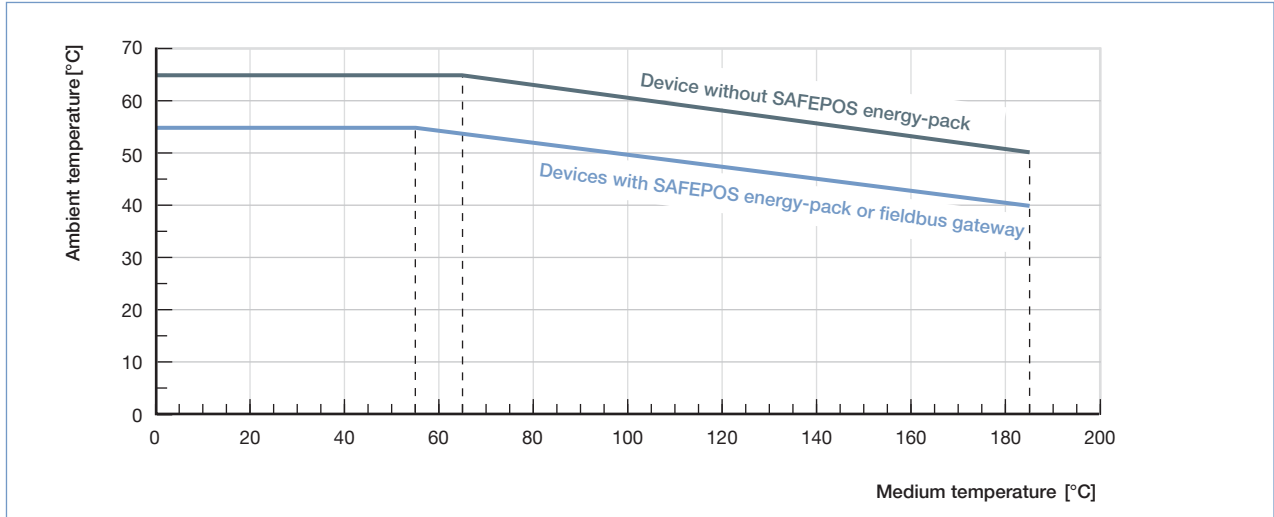


Note: The angle-seat shut-off valve **Type 3320** could be delivered with miscellaneous port connection (thread, welded and clamp), there are not represented in the picture, but are made with same material as the valve body.

Technical data

Temperature chart

The maximum allowable ambient temperature and temperature of the medium influence each other. The maximum allowable temperature curves of different device variants can be seen in the temperature chart. The curves were determined for maximum operating conditions (max. operating pressure and motor power). For deviating operating conditions an individual verification can be performed. Please contact your Bürkert office for more information.



Selection chart for seat seal

Seat seal with PTFE is used, if temperature of the medium is <130 °C. If the maximum temperature of the medium exceeds 130 °C temporarily or permanently, then PEEK fits best.

PEEK
 (T Medium max. >130 °C)

PTFE

Medium temperature -10 °C ... 130 °C	Medium temperature 130 °C ... 185 °C
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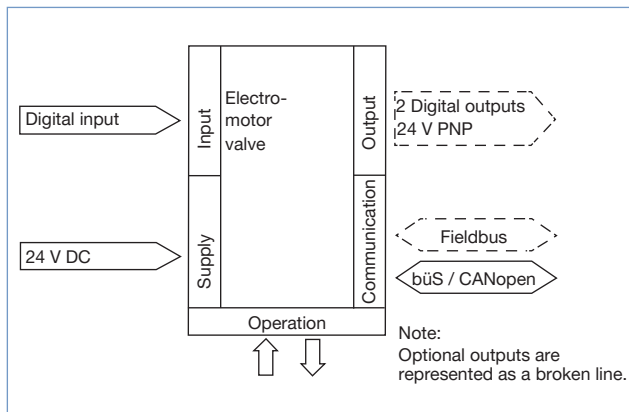
Flow direction below seat

Port size (pipe)		Operating pressure / valve seat seal		K _v value water [m ³ /h]
[DN]	[inch]	PTFE [bar]	PEEK [bar]	
15	½	16	16	5
20	¾	16	16	11
25	1	16	16	18
32	1¼	16	10	31
40	1½	10	8	42
50	2	6	5	62

Electrical control

Electrical data	
Protection class	3 acc. to DIN EN 61140
Electrical connections	Cable gland, 2 x M20 or 2 circular plug-in connector M12, 5 pin and 8 pin
Operating voltage	24 V DC $\pm 10\%$ max. residual ripple 10 %
Operating current [A] ^{1.)}	max. 3 A including actuator at max. load and charging current of the optional SAFEPOS energy-pack (charging current approx. 1 A)
Lifelong energy storage SAFEPOS energy-pack	up to 10 years (depending on operating conditions)
Average power electronics without drive [W] ^{1.)}	min. 2 W, max. 4 W
Control	
Output digital	current limit 100 mA
Input digital	0...5 V = log "0", 10...30 V = log "1" inverted input reversed accordingly
Communication interface (bùS)	Connection to PC via USB bùS interface set (connection terminals, circular connectors or bùS service interface)
Communication Software (bùS)	Bürkert communicator Type 8920

1.) All values refer to a supply voltage of 24 V at 25 °C



Electrical control and interface

The position of the actuator is regulated according to the digital input. The setting is made either by an external standard signal (digital) or via a fieldbus (digital).

Digital Control

For digital control 2 variants are available for the inputs and outputs and the connection interface

Input and output:

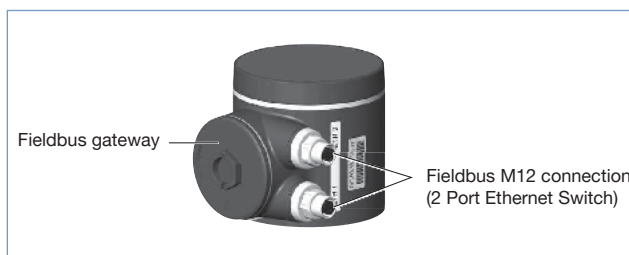
- 1 digital input, 2 digital output

Interface:

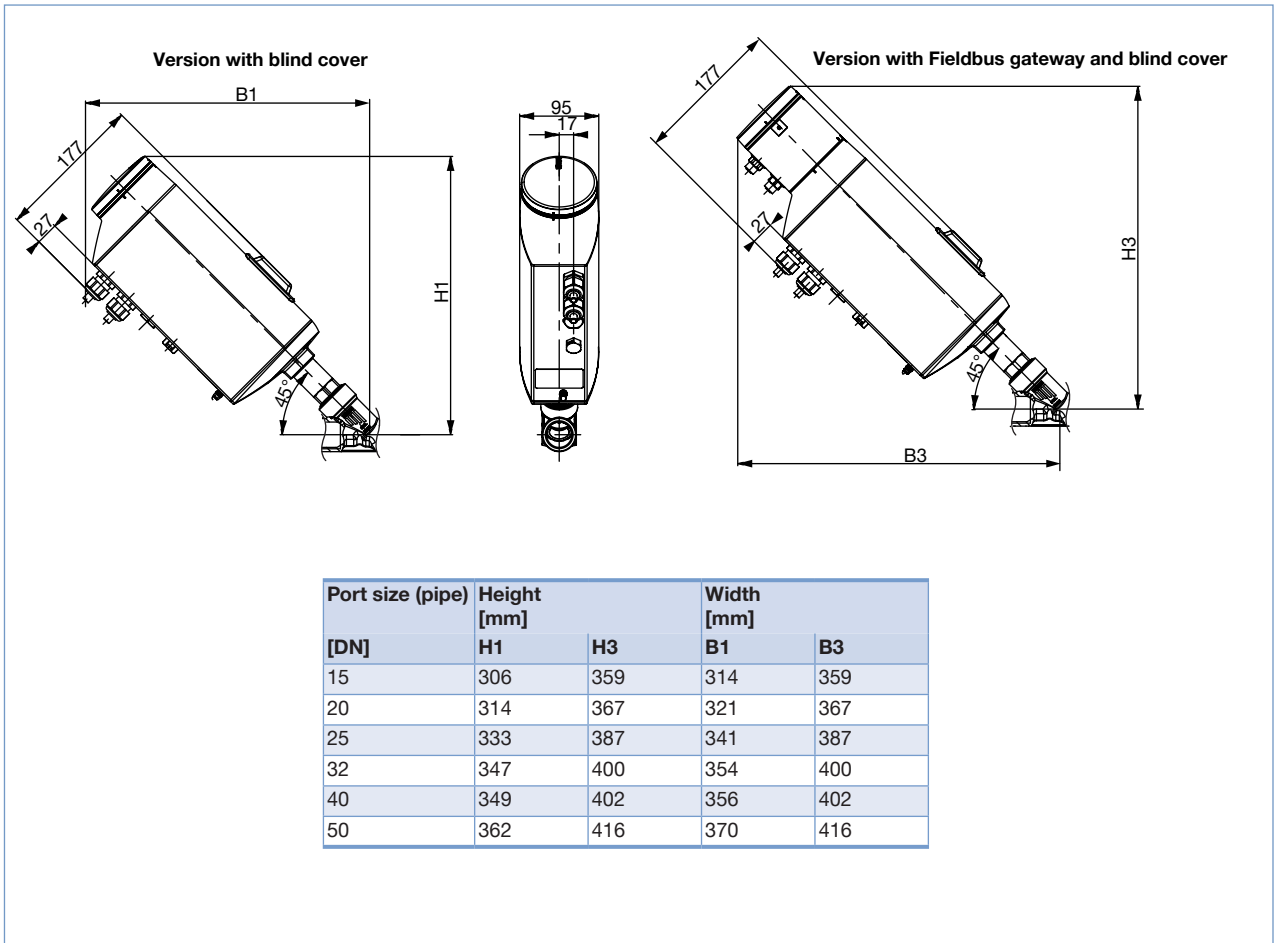
- Cable gland with connection terminal
- M12 circular connectors (optional)

Fieldbus: EtherNet/IP, PROFINET, Modbus TCP (option)

The Fieldbus Gateway for EtherNet / IP, PROFINET and Modbus TCP is integrated into a special module. It has 2 fieldbus connections with 4 pin M12 circular connectors. Under the gateway housing cover are the interfaces for the fieldbus connection and status LEDs. If there is a need to be include it in a network then the configuration of the Ethernet can be performed via the web server.

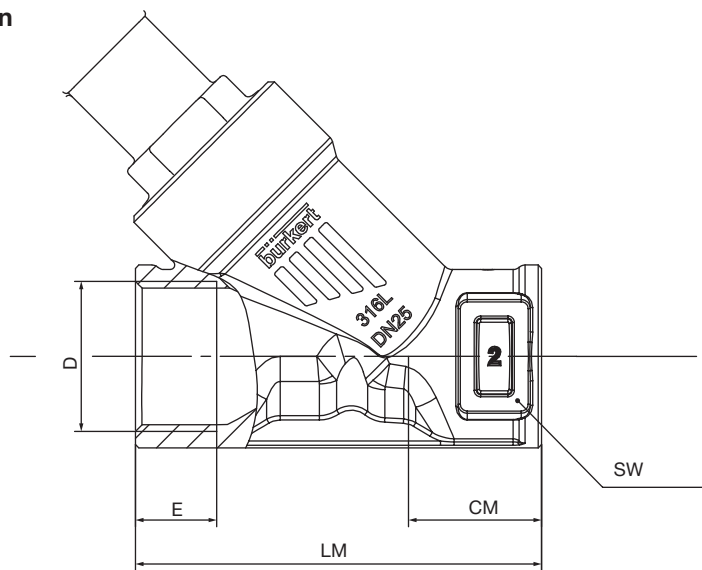


Dimensions [mm] - valve Type 3320 and valve system



Dimensions [mm] - body valve Type 3320

Threaded connection

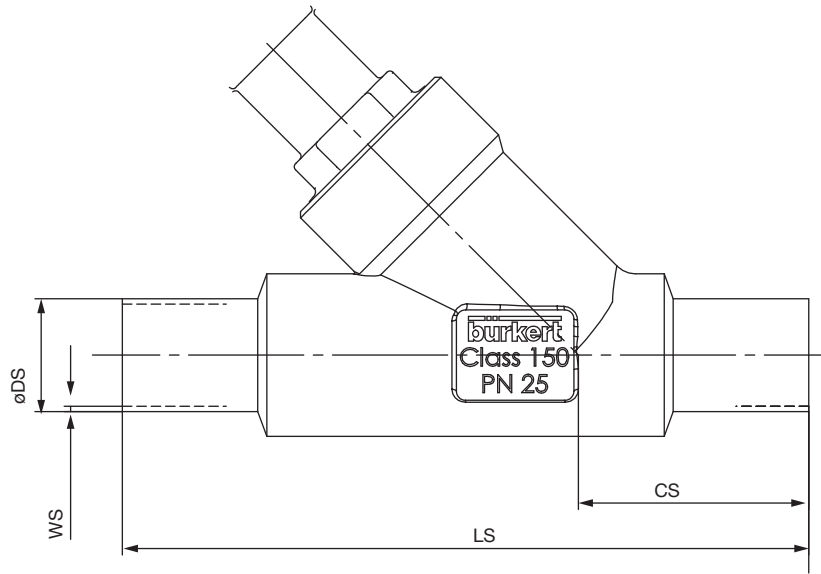


G, RC, NPT (EN ISO 228-1, ISO 7/1 /DIN EN 10226-2, ASME B 1.20.1)

Port size (pipe)	CM	LM	SW	G	E	NPT	RC	D	E
[DN]	[mm]	[mm]	[mm]	D [mm]	[mm]	D [mm]	D [mm]	[mm]	[mm]
15	24	65	27	G ½	14	NPT ½	RC ½	13.2	13.2
20	27	75	34	G ¾	16	NPT ¾	RC ¾	14.0	14.5
25	29.5	90	41	G 1	18	NPT 1	RC 1	16.8	16.8
32	36	110	50	G 1¼	16	NPT 1¼	RC 1¼	17.3	19.1
40	35	120	55	G 1½	18	NPT 1½	RC 1½	17.3	19.1
50	45	150	70	G 2	24	NPT 2	RC 2	17.6	23.4

Dimensions [mm] - body valve Type 3320

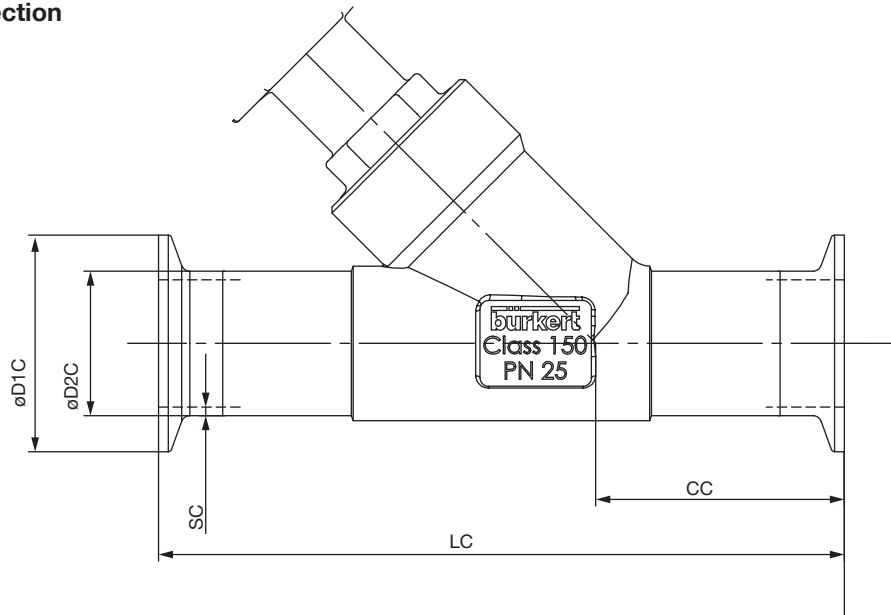
Welded connection



Port size (pipe) [DN]	EN ISO 1127 Series 1 ISO 4200 DIN 11866 Series B				DIN 11850 R2 DIN 11866 Series A DIN EN 10357 Series A				ASME BPE DIN 11866 Series C			
	CS [mm]	LS [mm]	ØDS [mm]	WS [mm]	CS [mm]	LS [mm]	ØDS [mm]	WS [mm]	CS [mm]	LS [mm]	ØDS [mm]	WS [mm]
15	34	100	21.3	1.6	34	100	19	1.5	34	100	12.7	1.65
20	39	115	26.9	2.0	39	115	23	1.5	39	115	19.05	1.65
25	43	130	33.7	2.0	43	130	29	1.5	43	130	25.4	1.65
32	40	145	42.4	2.0	40	145	35	1.5	-	-	-	-
40	49	160	48.3	2.0	49	160	41	1.5	49	160	38.1	1.65
50	50	175	60.3	2.6	50	175	53	1.5	50	175	50.8	1.65













Dimensions [mm] - body valve Type 3320

Clamp connection



Port size (pipe)	Clamp: DIN 32676 Series B Tube: EN ISO 1127 Series 1 ISO 4200 DIN 11866 Series B					Clamp: ASME BPE DIN 32676 Series C Tube: ASME BPE DIN 11866 Series C					Clamp: BS 4825-3 Tube: BS 4825-1					Clamp: DIN 32676 Series A Tube: DIN 11850 Series 2 DIN 11866 Series A DIN EN 10357 Series A				
	LC	CC	ØDC1	ØDC2	SC	LC	CC	ØDC1	ØDC2	SC	LC	CC	ØDC1	ØDC2	SC	LC	CC	ØDC1	ØDC2	SC
[DN]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
15	156	49.0	50.5	21.3	1.6	130	49.0	25.0	12.7	1.65	130	49.0	25.0	12.7	1.20	130	49.5	19	34.0	1.5
20	150	56.5	50.5	26.9	1.6	150	56.5	25.0	19.05	1.65	150	56.5	25.0	19.05	1.20	150	57.0	23	34.0	1.5
25	160	58.0	50.5	33.7	2.0	160	58.0	50.5	25.4	1.65	160	58.0	50.5	25.4	1.65	160	58.5	29	50.5	1.5
32	200	57.5	50.5	42.4	2.0	-	-	-	-	-	-	-	-	-	-	180	58.0	35	50.5	1.5
40	200	69.0	64.0	48.3	2.0	200	69.0	50.5	38.1	1.65	200	69.0	50.5	38.1	1.65	200	69.5	41	50.5	1.5
50	230	77.5	77.5	60.3	2.6	230	77.5	64.0	50.8	1.65	230	77.5	64.0	50.8	1.65	230	78.0	53	64.0	1.5

Ordering chart for accessories

Accessories	Article no.
Connection cable:	
Connection cable with M12 socket, 4 pin, (length 5 m) for operating voltage	918038 
Connection cable with M12 socket, 8 pin, (length 2 m) for input and output signals	919061 
USB-büS interface set:	
büS stick set 1 (including power supply unit, bus-stick, terminating resistor, Y-distributor, 0.7 m cable with M12 connector)	772426 
büS stick set 2 (including bus-stick, terminating resistor, Y-distributor, 0.7 m cable with M12 connector)	772551 
büS adapter for büS interface set (M12 on büS service interface Micro-USB)	773254 
büS cable extensions from M12 plug to M12 socket:	
Connecting cable, length 1 m	772404 
Connecting cable, length 3 m	772405 
Connecting cable, length 5 m	772406 
Connecting cable, length 10 m	772407 
Miscellaneous	
Bürkert Communicator	Infos at www.burkert.com
SIM card	291773 
Holding device for line connection DN15 to DN20	693770 
Holding device for line connection DN25 to DN50	693771 

Valve system – request for quotation

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

Company:	Contact person:
Customer no.:	Department:
Address:	Tel./Fax.:
Postcode/town:	E-Mail:

 = mandatory fields to fill outQuantity: Required delivery date: **Operating data**

Pipe line	DN <input type="text"/>	PN <input type="text"/>
Pipe Material	<input type="text"/>	
<input checked="" type="checkbox"/> Process medium	<input type="text"/>	
<input checked="" type="checkbox"/> Type of medium	<input type="checkbox"/> Liquid	<input type="checkbox"/> Steam <input type="checkbox"/> Gas

Valves features

Valve seat seal	<input type="checkbox"/> PTFE	<input type="checkbox"/> PEEK
Nominal pressure	PN <input type="text"/>	
Seat size (orifice)	DN <input type="text"/>	
Type of connection	<input type="checkbox"/> Threaded	<input type="checkbox"/> Welded <input type="checkbox"/> Clamp
Specify connection	<input type="text"/>	
Control function	<input type="checkbox"/> with energy storage (delivey status NO)	<input type="checkbox"/> without energy storage (blocked in last position)
	<input type="checkbox"/> with energy storage (delivey status NC)	

Valve system – request for quotation, *continued*

Control unit features

Communication

- Binary

 Digital (Fieldbus)
- 1 binary IN

 EtherNet/IP
- 2 binary OUT

 PROFINET
- Modbus TCP

Electrical connection

- Cable gland
(without Fieldbus)

 Multipol

SIM card

- with
- without

Approval and Conformity (optional)

- ATEX II Cat 3G/D / IECEx
- cULus Cert. No. 238179

Article no. (if known):

Notes

To find your nearest Bürkert office, click on the orange box →

www.burkert.com

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

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