

Electromotive process valve - 2 way shut-off globe valve



Type 3321 can be combined with ...



SAFEPOS
energy-pack



Type 3361
Continuous Control
Valve



Fieldbus



powered by
EDIP

The innovative Bürkert process On/Off valve, Type 3321, is the solution when it comes to shut-off tasks under demanding operating conditions. The electromotive actuator with ball screw positions moves the swivel plate at a particularly high rate of 6 mm/s to its desired 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 globe 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 3321 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 3321 provides many helpful functions for process monitoring, valve diagnostics and predictive maintenance and thus offers the decisive advantage of a modern process automation.

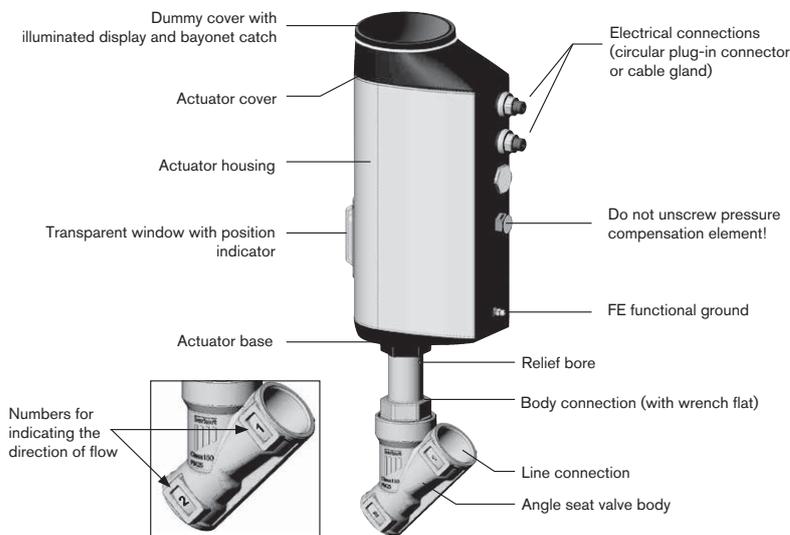
Technical data	
Port size	DN 15 to DN 50
Nominal pressure (max.)	PN25 (valve body)
Port connections	
Flange	DIN EN 1092-1, ANSI B 16.5, JIS 10K
Thread	G, RC, NPT (EN ISO 228-1, ISO 7/1 / DIN EN 10226-2, ASME B 1.20.1)
Weld ends	EN ISO 1127 / ISO 4200, DIN 11850 R2, ASME BPE, BS 4825-1, SMS 3008
Clamp	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 sealing PEEK/steel) -10 to +130 °C (seat sealing PTFE/steel)
Ambient temperature	-25 °C to +65 °C * (without SAFEPOS energy storage) -25 °C to +55 °C * (with SAFEPOS energy storage) * the allowable value decreases with increasing media temperature
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 to 4.3 s (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)
Digital control (fieldbus)	EtherNet/IP, Modbus/TCP, Profinet
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)

Structure and function

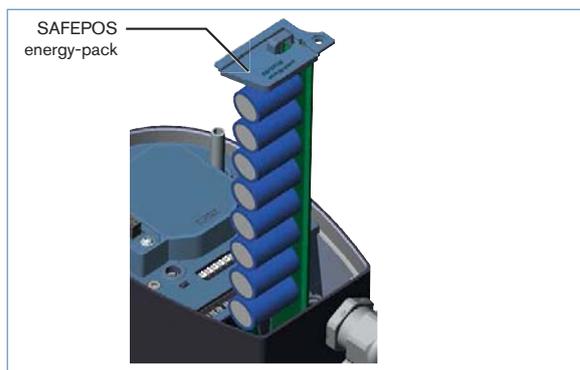
The electromotive linear actuator consists of a brushless direct current motor, gears and a threaded spindle. The valve spindle, which is connected to the threaded spindle, transfers the force to the swivel plate. The electronic control system is actuated either via a standard signal (digital) or via a field bus (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 3321 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.



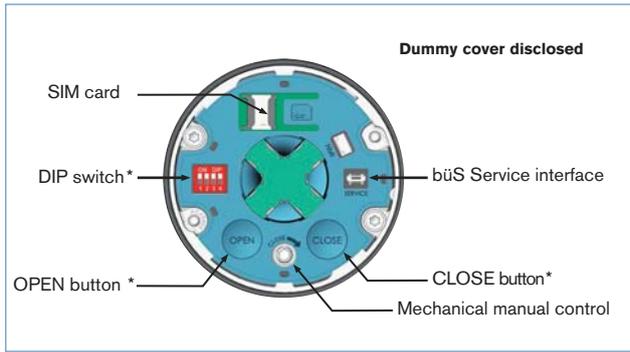
Structure, electromotive angle seat shut-off valve, Type 3321



Safety position with energy storage (Option)

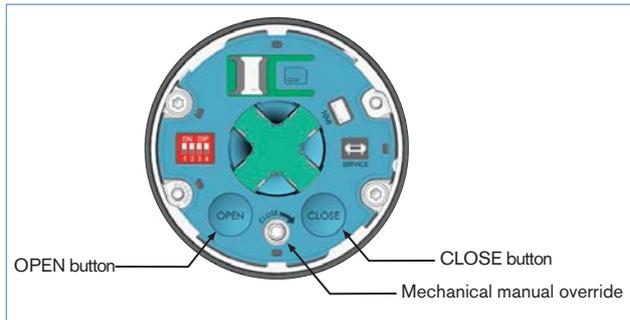
The safety starting positions in case of power interruption is realized with the optional energy storage SAFEPOS energy-pack. The desired position (NO/NC) is adjusted from the menu. The energy storage has a lifespan of up to 10 years, depending on the operating conditions. The power of the energy storage 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

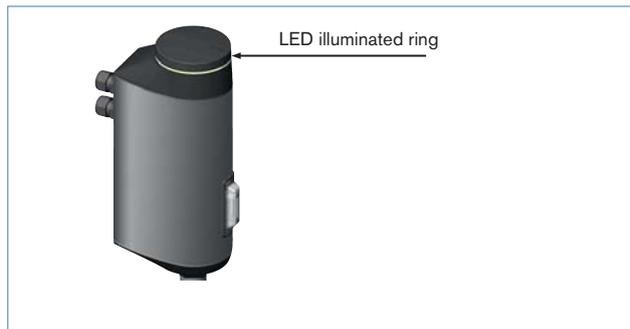
The basic functions are operated by 4 DIP switches and 2 pushbuttons. These are located under the dummy cover which can be removed manually by turning. Through the bÜS service access, the device can also be configured in detail with the Bürkert communicator software. For this, the optional USB-bÜS interface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



Manual and electrical operation

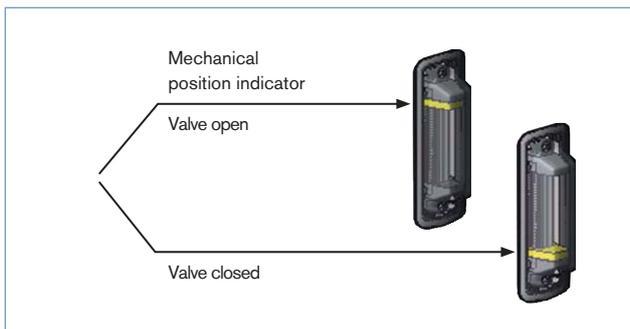
The manual override for mechanical operation of the valve is located under the dummy cover.

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



360°- LED Illuminated ring

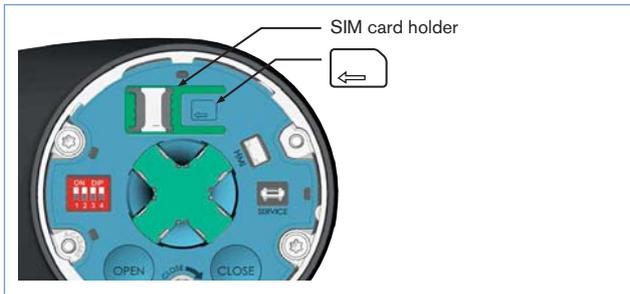
To display the device status, the valve end position and the operating condition, a visible 360° LED illuminated ring is mounted around the dummy cover. The LED ring lights up, flashes or flashes in one or different colors. Depending on customer requirements 4 different LED modes can be selected (Namur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



Mechanical position indicator

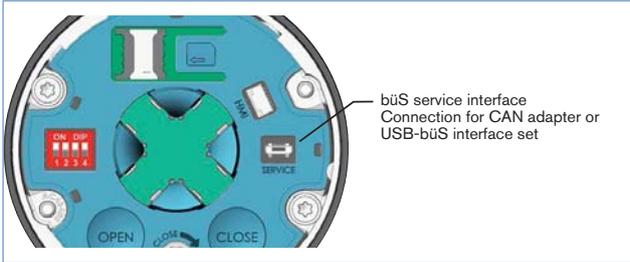
The mechanical position indicator also indicates when the supply voltage of the current valve position fails

Controls and indicators, continued



SIM card as data storage (option)

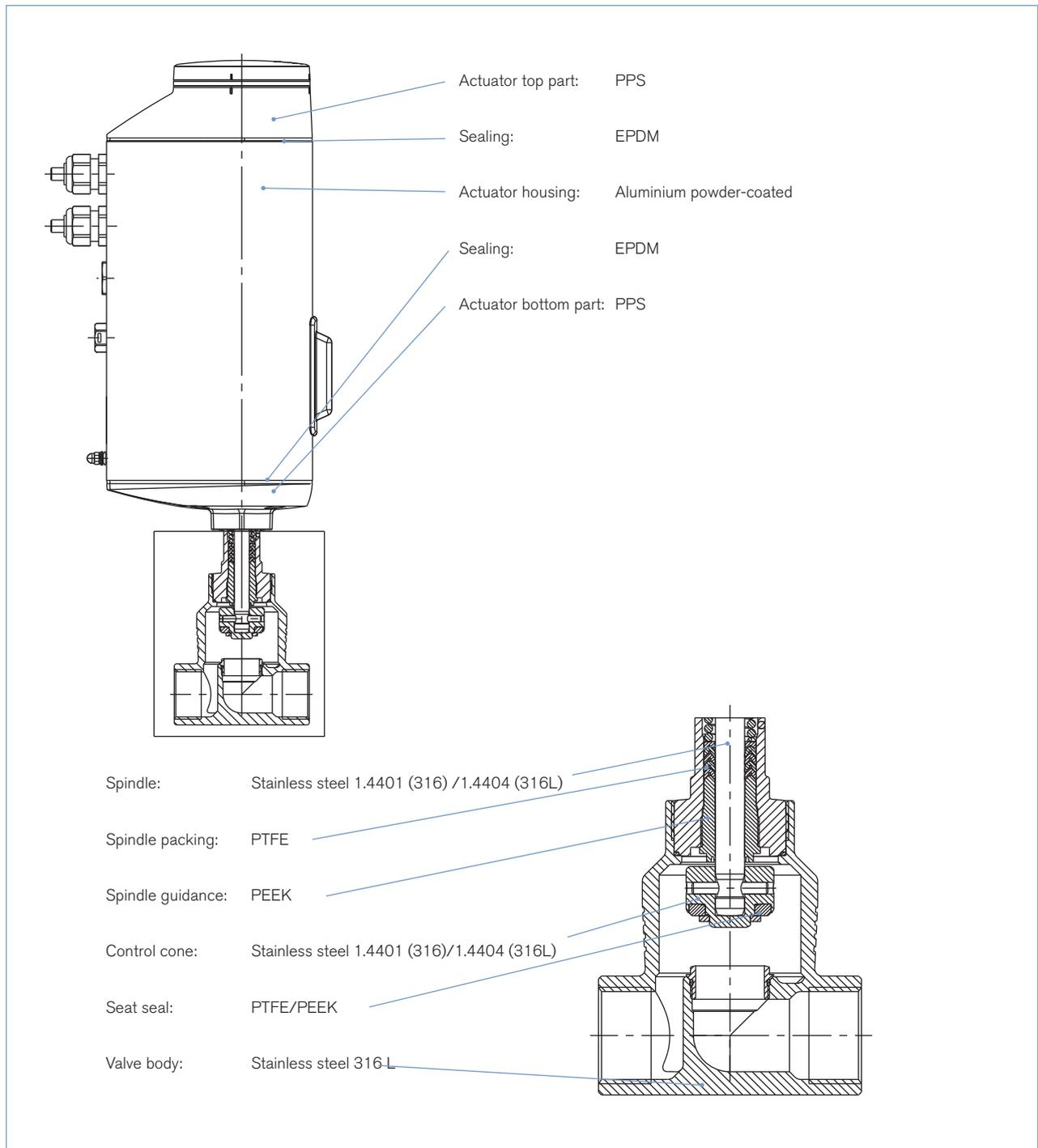
With the SIM card optional device-specific values and user settings can be saved and quickly transferred to another device.



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

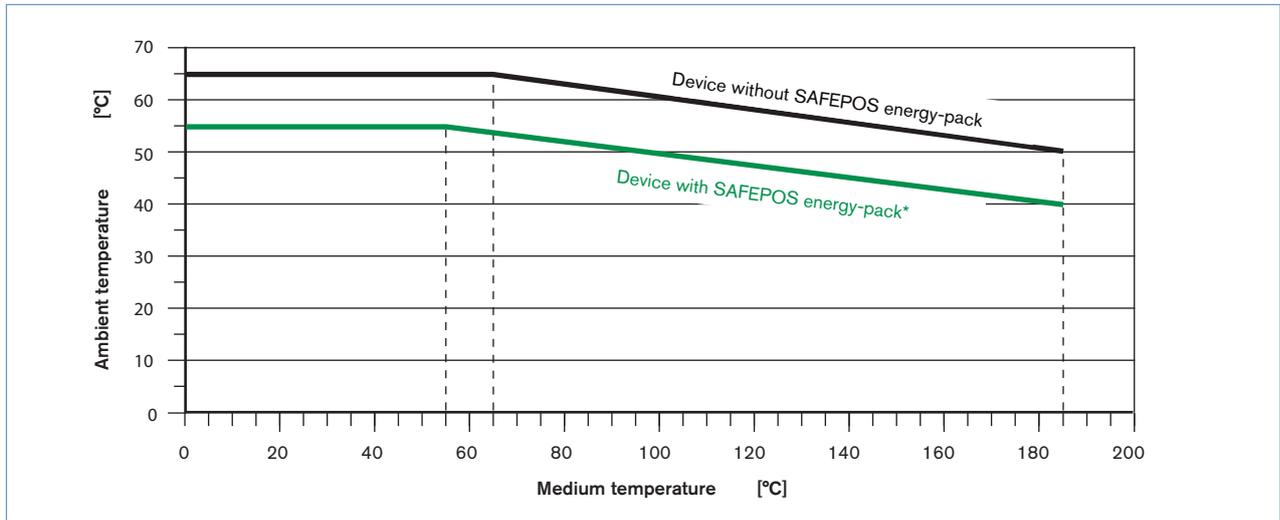


Note: The angle-seat shut-off valve **Type 3321** could be delivered with miscellaneous port connection (flange, thread, weld ends and clamp), there are not represented in the picture, but are made with same material as the valve body.

Technical data

Temperature chart

The maximum allowable ambient temperature and media temperature influence each other. The maximum allowable temperature curves of different device variants can be seen in the temperature chart.



Selection chart for seat sealing

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

PEEK / steel
(T Media max. >130°C)

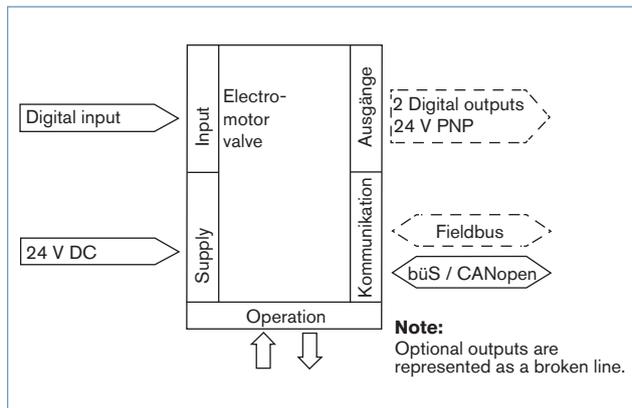
PTFE / steel

Fluid temperature -10°C ... 130°C	Fluid temperature 130°C ... 185°C
--------------------------------------	--------------------------------------

Port connection (tube)		Operating pressure / seat seal		Kv-value water [m³/h]
[mm]	[inch]	Stainless steel or PTFE / Stainless steel [bar]	PEEK / Stainless steel [bar]	
15	1/2	16	16	4.7
20	3/4	16	16	8.1
25	1	16	16	13
32	1 1/4	16	10	19.5
40	1 1/2	10	8	31
50	2	6	5	45

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]*	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)
Electronic without actuator [W]*	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:	Connection to PC via USB bÜS interface set
Communication Software:	Bürkert communicator

**Electrical control and interface**

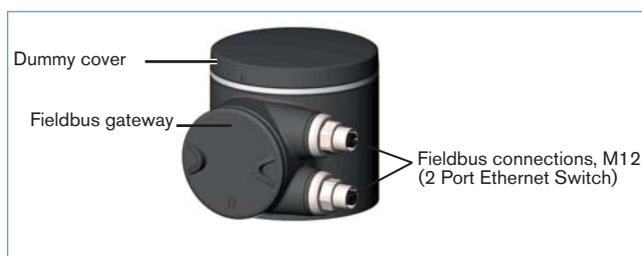
The position of the actuator is regulated according to the Position setpoint. The position setpoint value is specified either by an external standard signal (digital) or via a field bus (digital).

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

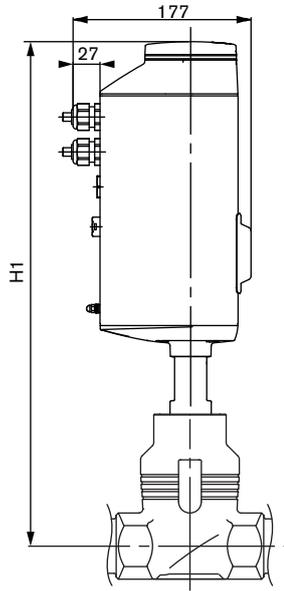
Interface:
* cable gland with connection terminal
* M12 circular connectors (optional)

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

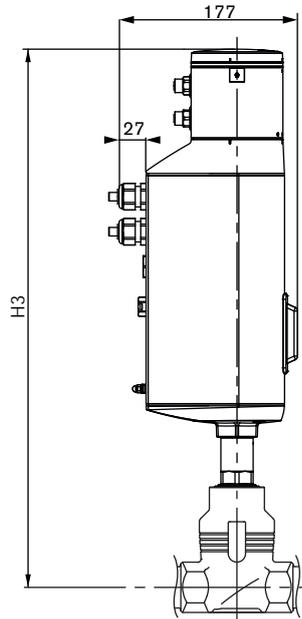
The Fieldbus Gateway for EtherNet / IP, PROFINET and Modbus TCP is integrated into a special module. It has 2 fieldbus connections with 4-pin M12 circular connectors. Under the gateway housing cover are the interfaces for the fieldbus connection and status LEDs. If there is a need to be include it in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

Dimensions [mm] - valve type 3321 and valve system

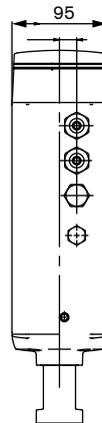
Version with blind cover



Version with CompactConnect and blind cover



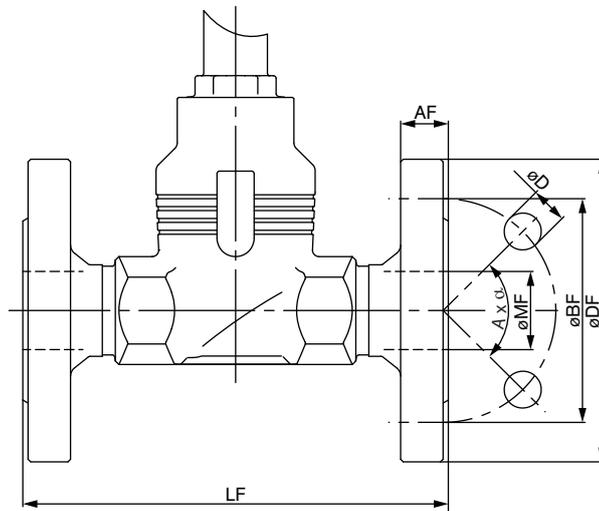
Side view



Port connection [mm]	Height [mm]	
	H1	H3
10	417	489
15	417	489
20	423	496
25	446	518
32	474	546
40	479	551
50	485	557

Dimensions [mm] - body valve type 3321

Flange connection



DIN EN 1092, JIS 10K

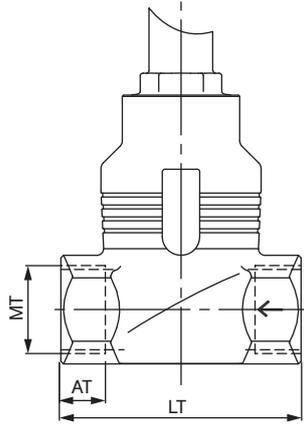
Port size (tube) [mm]	DIN EN 1092 FTF series 1 acc. to DIN EN 558-1						JIS 10K FTF series 10 acc. to DIN EN 558-2					
	ø DF	LF	ø BF	AF	ø D	ø MF	ø DF	LF	ø BF	AF	ø D	ø MF
10	90	130	60	16	14	13.6	—	—	—	—	—	—
15	95	130	65	16	14	18.1	95	108	70	12	15	18.1
20	105	150	75	18	14	23.7	100	117	75	14	15	23.7
25	115	160	85	18	14	29.7	125	127	90	14	19	29.7
32	140	180	100	18	18	38.4	135	140	100	16	19	38.4
40	150	200	110	18	18	44.3	140	165	105	16	19	44.3
50	165	230	125	20	18	56.3	155	203	120	16	19	56.3

ANSI B 16.5

Port size (tube) [inch]	ANSI B 16.5 Class 150 FTF series 37 acc. to DIN EN 558-2					
	ø DF	LF	ø BF	AF	ø D	ø MF
1/2	89	184	60.5	11.2	15.7	15.7
3/4	99	184	69.9	12.7	15.7	20.8
1	108	184	79.2	14.2	15.7	26.7
1 1/2	127	222	98.6	17.5	15.7	40.9
2	152	254	120.7	19.1	19.1	52.6

Dimensions [mm] - valve body of Type 3321

Threaded connection

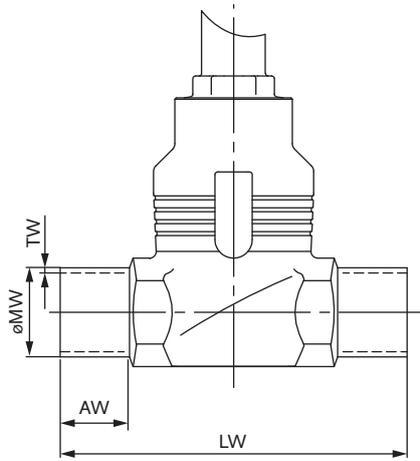


G, RC, NPT (EN ISO 228-1, ISO 7/1 /DIN EN 10226-2, ASME B 1.20.1)

Port size (tube) [mm]	MT G / NPT / RC [inch]	LT	AT		
			G	NPT	Rc
10	3/8	65	12	10.3	10.1
15	1/2	65	14	13.7	13.2
20	3/4	75	16	14	14.5
25	1	90	18	16.8	16.8
32	1 1/4	110	20	17.3	19.1
40	1 1/2	120	22	17.3	19.1
50	2	150	24	17.6	23.4

Dimensions [mm] - valve body of Type 3321

Weld end connection



EN ISO 1127 series 1/ISO 4200/DIN 11866 series B, DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A

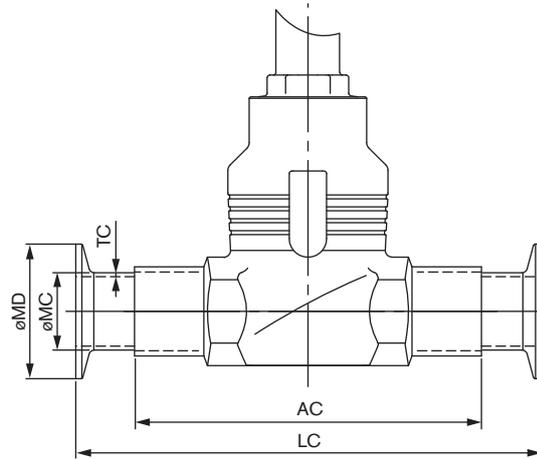
Port size (tube) [mm]	AW	LW	EN ISO 1127 series 1/ ISO 4200/DIN 11866 series B		DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A	
			ø MW	TW	ø MW	TW
10	20	90	17.2	1.6	13	1.5
15	20	90	21.3	1.6	19	1.5
20	20	100	26.9	1.6	23	1.5
25	26	130	33.7	2.0	29	1.5
32	26	140	42.4	2.0	35	1.5
40	26	150	48.3	2.0	41	1.5
50	26	175	60.3	2.0	53	1.5

BS4825 Part 1, ASME BPE/DIN 11866 series C

Port size (tube) [inch]	AW	LW	BS 4825 Part 1		ASME BPE/ DIN 11866 series C	
			ø MW	TW	ø MW	TW
1/2	20	90	12.7	1.2	12.7	1.65
3/4	20	90	19.05	1.2	19.05	1.65
1	20	100	25.4	1.6	25.4	1.65
1 1/2	26	140	38.1	1.6	38.1	1.65
2	26	150	50.8	1.6	50.8	1.65

Dimensions [mm] - valve body of Type 3321

Clamp connection



DIN 32676 series A, ASME BPE/DIN 32676 series C oder BS4825-3

Port size (tube)	AC	LC	Clamp: DIN 32676 series A, tube: DIN 11850 series 2/ DIN 11866 series A/ DIN EN 10357 series A			Clamp: ASME BPE/ DIN 32676 series C, tube: ASME BPE/ DIN 11866 series C			Clamp: BS4825-3, tube: BS4825-1		
			ø MC	ø MD	TC	ø MC	ø MD	TC	ø MC	ø MD	TC
15	90	126	19	34.0	1.5	12.7	25.0	1.65	12.7	25.0	1.2
20	100	136	23	34.0	1.5	19.05	25.0	1.65	19.05	25.0	1.2
25	10	173	29	50.5	1.5	25.4	50.5	1.65	25.4	50.5	1.65
32	140	179	35	50.5	1.5	-	-	-	-	-	-
40	150	193	41	50.5	1.5	38.1	50.5	1.65	38.1	50.5	1.65
50	175	218	53	64.0	1.5	50.8	64.0	1.65	50.8	64.0	1.65

DIN 32676 series B

Port size (tube)	AC	LC	Clamp: DIN 32676 series B, tube: EN ISO 1127 series 1/ ISO 4200/DIN 11866 series B		
			ø MC	ø MD	TC
15	90	146	21.3	50.5	1.6
20	100	136	26.9	50.5	1.6
25	130	164	33.7	50.5	2.0
32	140	178	-	-	-
40	150	193	48.3	64.0	2.0
50	175	218	60.3	77.5	2.0

Valve system – request for quotation

Note

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

▶ 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 out

Quantity:

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

Cone seal material	<input type="checkbox"/> PTFE/Stainless steel	<input type="checkbox"/> PEEK / Stainless steel
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

Item no. (if known):

Notes

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