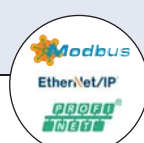




Options



Touch Display

SAFEPOS
energy-packType 3360
for highest control
accuracy

Fieldbus



Electromotive process valve - 2-way globe control valve

- high precise and fast flow control
- several Kvs value per port size due to removable trim kit
- weather, impact and vibration resistant design
- easy cleaning by its design according hygienic demands
- many diagnostic functions by monitoring of valve and operation data

The innovative process controller Bürkert valve Type 3361 is the solution when it comes to demanding control tasks and operating conditions. The electromotive actuator with ball screw positions the control cone with highest precision. A unique feature is its high positioning speed of 6 mm/s, that reacts quasi delay-free to process signals, and can be varied according to customer demands. Pressure variations or shocks in the medium aren't transferred to the valve position. Each flow optimized valve housing can be equipped with up to 5 different valve seats for a precise adaptation according to customer needs. If necessary, the safety position can be approached by an optional energy storage in case of power failure. Actuator and 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 environment are no problem for the Type 3361 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 Type 3361 provides many helpful functions for process monitoring, valve diagnostics and predictive maintenance and thus offers the decisive advantage of a modern process automation.

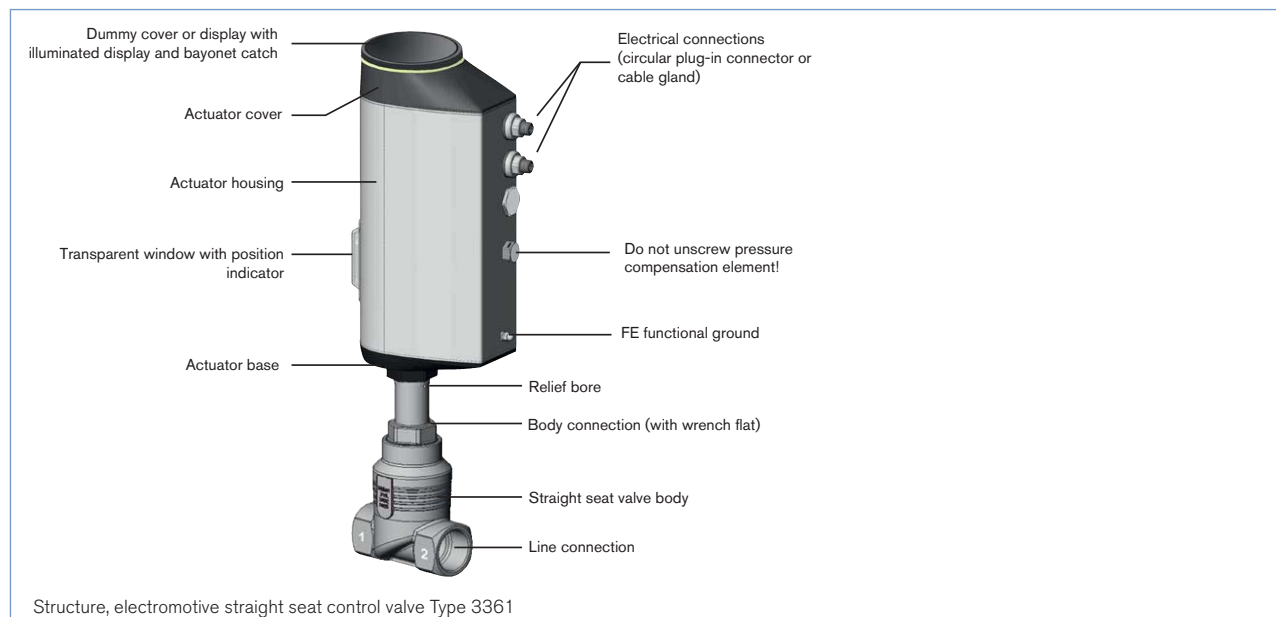
Technical data	
Kvs-Werte	0.4 ... 37 m³/h
Port and seat size	DN 10 ... DN 50 / DN 3 ... DN 50
Operating pressure	16 bar / 1600 kPa / 232 psi
Port connections	<ul style="list-style-type: none"> ▪ Flange ▪ Thread ▪ Weld ends ▪ Clamp
Medium	Neutral Gas, water, alcohol, oil, fuels, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam
Viscosity	max. 600 mm²/s
Media temperature	-10...+185 °C (seat sealing steel/steel) -10...+185 °C (seat sealing PEEK/steel) -10...+130 °C (seat sealing PTFE/steel)
Ambient temperature	-25 °C ... +65 °C (without touch display) -25 °C ... +60 °C (with touch display) -25 °C ... +55 °C (with SAFEPOS energy storage) Note: Derating see temperature chart
Seat leakage according to IEC 534-4/EN 1349	Shut-off class III and IV for steel/steel Shut-off class VI for PTFE/steel and PEEK/steel
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%)
Closing time (100% stroke)	3.3 ... 4.5 s (je nach Hub)
Travel speed	6 mm/s
Duty cycle	100%
Protection class	IP65 / IP67
Analogue control	Setpoint: 0-20 mA, 4-20 mA, 0-5 V, 0-10 V actual value optional
Digital control (fieldbus)	EtherNet/IP, Modbus/TCP, Profinet
Approval and Conformity	FDA, EGV 1935/2004

Structure and function

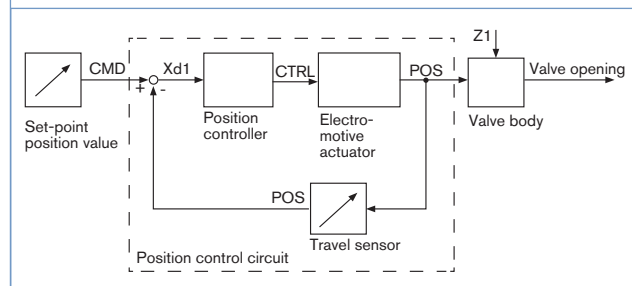
The electromotive linear actuator consists of a brushless direct current motor, gears and a threaded spindle. The valve spindle, which is connected to the threaded spindle, transfers the force to the control cone. The electronic control system of the position controller is actuated either via standard signals (analog) 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 or optionally on a display with touch-screen. 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 3360 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. A special feature of the globe control valve is the screwed valve seat which can be replaced to reduce the nominal diameter.

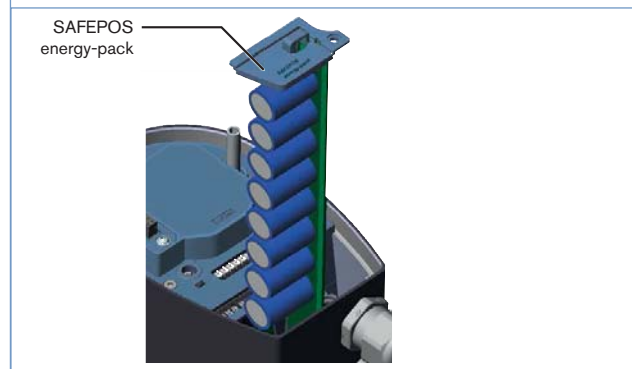


Structure, electromotive straight seat control valve Type 3361



Integrated position controller

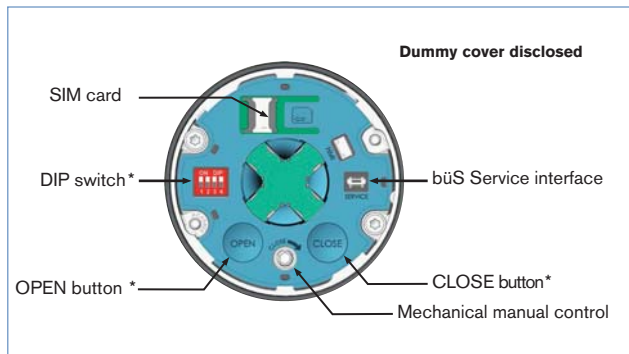
The position of the actuator (stroke) is regulated according to the set-point position value. The set-point position value is specified either by an external standard signal (analog) or via a field bus (digital). The travel sensor records the actual position (POS) of the electric linear actuator. The position controller compares this actual position value with the set-point position value (CMD) which is defined as standard signal. If there is a control difference (Xd1), the electromotive actuator is controlled via the CTRL variable and the actual position value is changed accordingly.



Safety position with energy storage (Option)

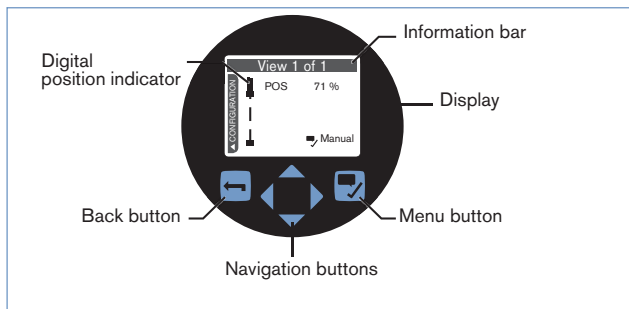
The safety starting positions in case of power interruption is realized with the optional energy storage SAFEPOS energy-pack. The desired position is adjusted from the menu. Here any intermediate position can be defined in addition to the end positions (NO / NC). The energy storage has a lifespan of 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.

Controls and indicators



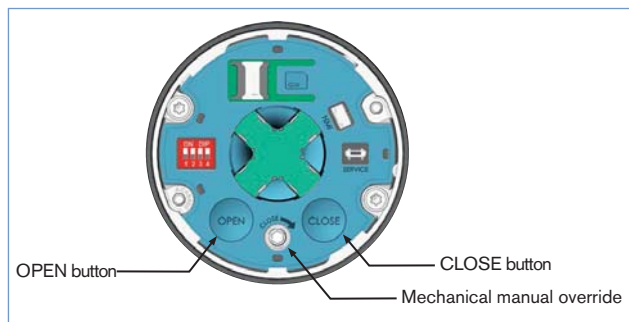
Devices without display module

In the version without control display the basic functions are operated by 4 DIP switches and 2 pushbuttons. 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.



Robust display with control buttons (optional)

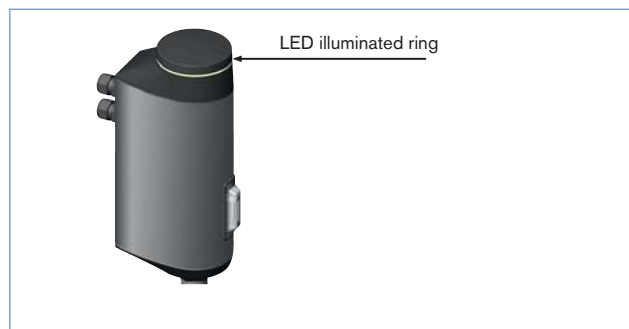
The robust display module is easy to use, it configures and displays all the required functions. In addition to the start screen you can also switch to the configuration view and user-specified views as needed. All functions of the device without display module like bÜS-Service interface are available too.



Manual and electrical operation

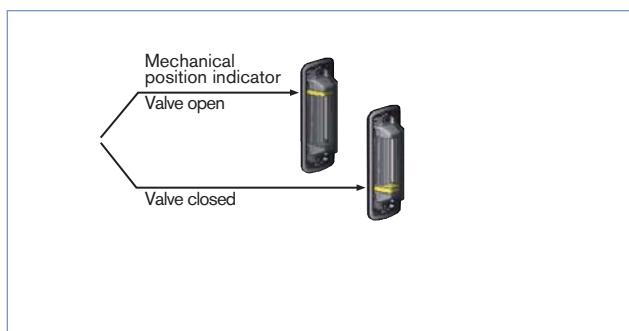
The manual override for mechanical operation of the valve is located under the dummy cover or the display module.

Electrical manual override for the procedure is carried out directly on the touch screen, or in the version without a display by two buttons below the dummy cover.



360°- LED Illuminated ring

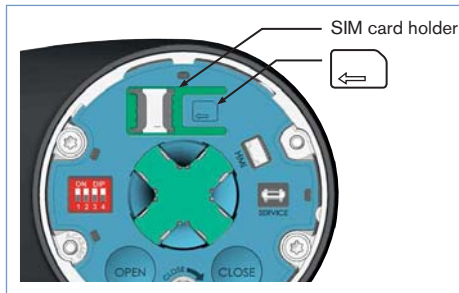
To display the device status, the valve timing and the operating condition a visible 360° LED illuminated ring is mounted around the dummy cover or the display module. The LED ring lights up, flashes or flashes in one or different colors. Depending on customer requirements 4 different LED modes can be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



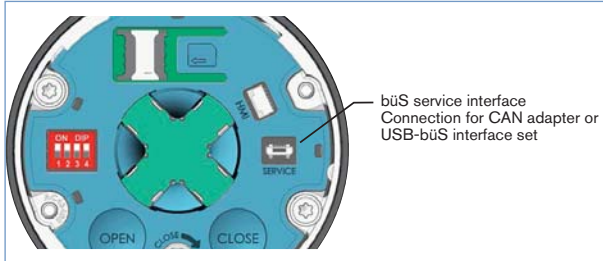
Mechanical position indicator

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

Controls and indicators, continued

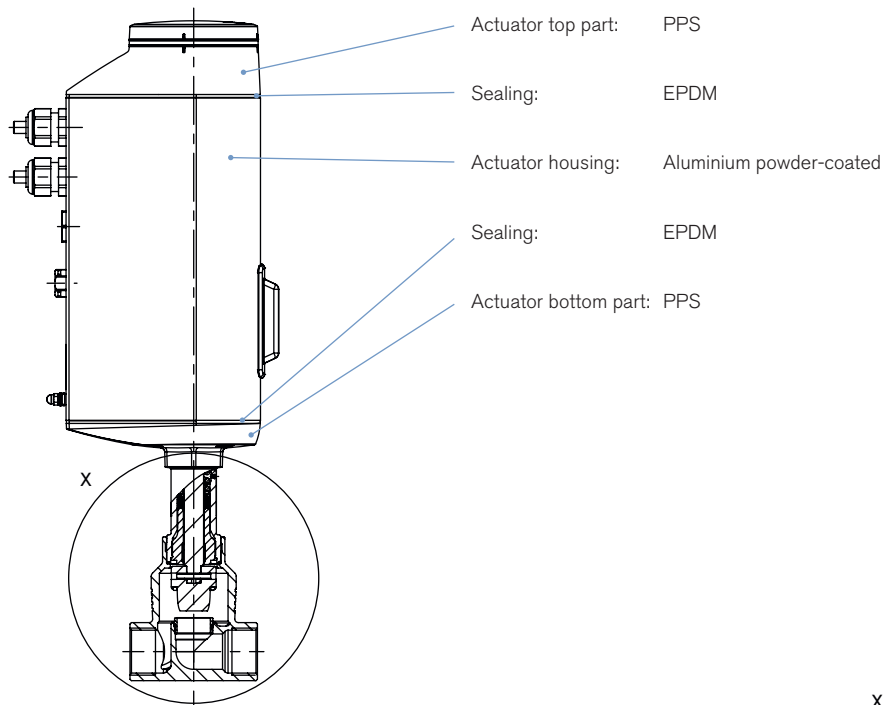
**SIM card as data storage (option)**

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

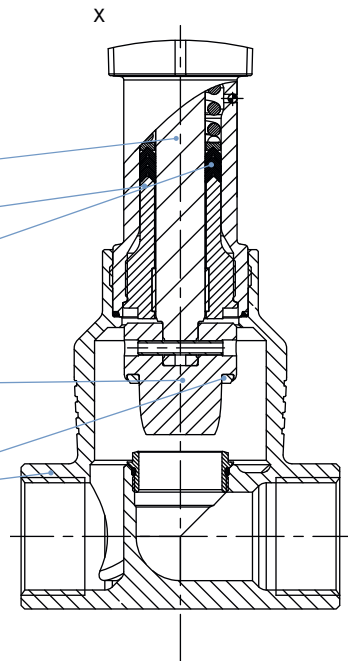
**bÜS service interface**

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



- Spindle: Stainless steel 1.4401 (316) / 1.4404 (316L)
- Spindle guidance: Stainless steel 1.4404 / 316L
- Spindle packing: PTFE V-seals with spring compensation
- Control cone: Stainless steel 1.4571
- Control cone seal: Stainless steel 1.4571 / PTFE or PEEK disc for soft seat sealing
- Valve body: Stainless steel 316 L

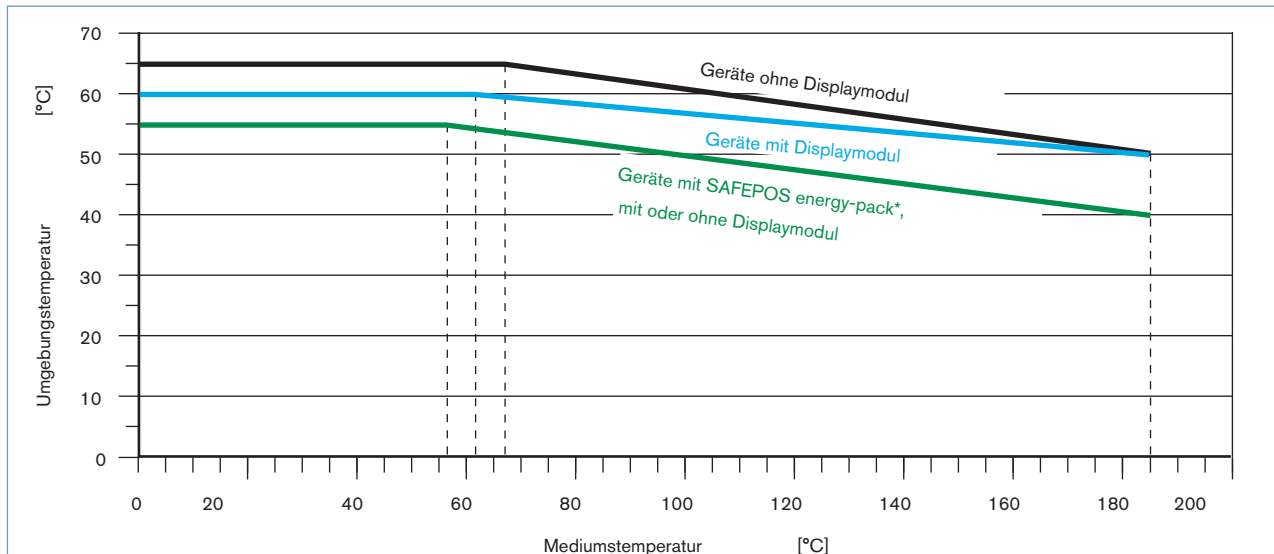


Note: The globe control valve **Type 3361** could be delivered with miscellaneous port connection (thread, weld ends and clamp), there are not be represented in the picture, but are made with same material as the valve body.

Technical data

Temperature chart

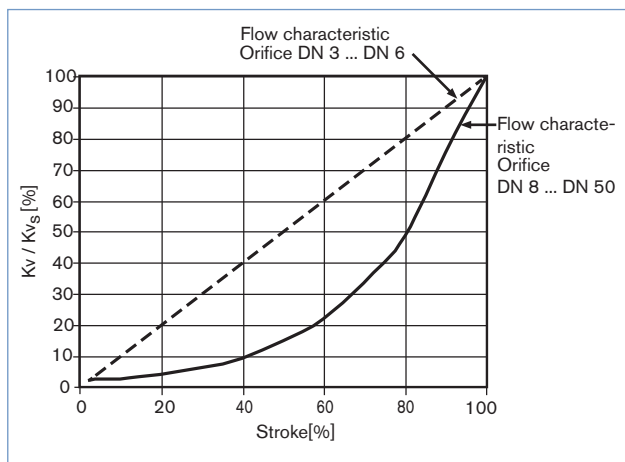
The maximum allowable ambient temperature and media temperature influence each other. The maximum allowable temperature curves of different device variants can be seen in the temperature chart.



Flow characteristic

The straight seat control valve shows different characteristics depending on the orifice.

- Equal percentage of parabolic cone for valve seats with orifice DN 8... DN 50
- Linear cone for valve seats of the orifice DN 4 and DN 6, flow characteristic according to DIN / IEC 534-2-4
- Theoretical setting ratio ($K_vS: K_v0$)
 - Orifice DN 8...DN 50: 50: 1
 - Orifice DN 6: 25: 1
 - Orifice DN 4: 10: 1
- K_vR value⁹⁾ at 5 % of the stroke for DN > 10 mm
 K_vR value at 10 % of the stroke for DN ≤ 10 mm



⁹⁾ K_vR value= the smallest K_v value at which the angularity tolerance according to DIN / IEC 534-2-4 can still be maintained.

Selection chart for seat sealing

Seat sealing type steel / steel is recommended for shut-off class III and IV.

Seat sealing with PTFE is used for shut-off class VI, if fluid temperature is < 130 °C. If the maximum fluid temperature exceeds 130°C temporarily or permanently, then PEEK is used for seat sealing.

Shut-off class VI	PEEK / steel (T Media max. >130°C)	Operation pressure 0 ... 10 bar
	PTFE / steel	
Shut-off class III or VI	STEEL / steel	Operation pressure 0 ... 16 bar
	Fluid temperature -10°C ... 130°C	
	Fluid temperature 130°C ... 185°C	

Technical data, continued

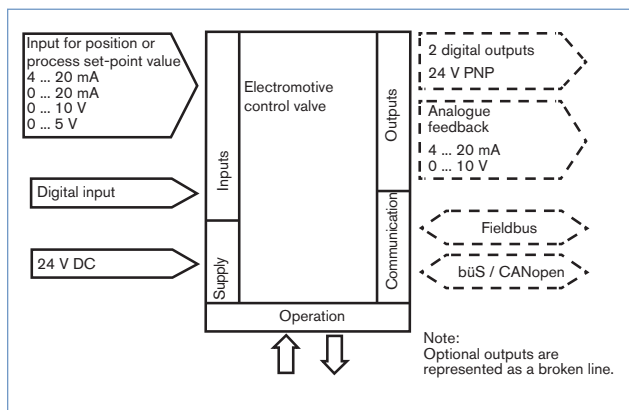
Flow below seat

Port connection (tube)		Seat size		Operating pressure seal / conical seat			Leakage class seal / conical seat		Kv value with stroke [m³/h]						Kvs value
[mm]	[inch]	[mm]	[inch]	stainless steel / stainless steel [bar]	PTFE / stainless steel [bar]	PEEK / stainless steel [bar]	stainless steel	PTFE o. PEEK / stainless steel	5%	10%	30%	50%	70%	90%	
10	3/8	3	0.12	16	-	-	IV	-	0.001	0.003	0.015	0.037	0.065	0.090	0.1
		4 ¹⁾	0.16						0.00	0.02	0.10	0.19	0.27	0.33	0.35
		4	0.16						0.04	0.05	0.16	0.27	0.36	0.44	0.5
		6 ²⁾	0.24						0.05	0.12	0.48	0.76	0.98	1.13	1.2
		6 ³⁾	0.24						0.01	0.007	0.045	0.16	0.41	1.08	1.25
		8	0.31						0.06	0.07	0.12	0.26	0.61	1.50	2.0
		10	0.39						0.09	0.11	0.19	0.48	1.00	2.30	2.7
15	1/2	3	0.12	16	-	-	IV	-	0.001	0.003	0.015	0.037	0.065	0.090	0.1
		4 ¹⁾	0.16						0.005	0.015	0.100	0.190	0.265	0.325	0.35
		4	0.16						0.04	0.05	0.16	0.27	0.36	0.44	0.5
		6 ²⁾	0.24						0.05	0.12	0.48	0.76	0.98	1.13	1.1
		6 ³⁾	0.24						0.005	0.007	0.045	0.160	0.410	1.080	1.25
		8	0.31						0.07	0.08	0.13	0.27	0.63	1.60	2.1
		10	0.39						0.09	0.11	0.19	0.49	1.10	2.50	3.1
		15	0.59						0.14	0.17	0.35	0.80	1.80	3.70	4.3
20	3/4	10	0.39	16	-	-	IV	-	0.11	0.12	0.20	0.52	1.20	2.60	3.2
		15	0.29						0.14	0.17	0.35	0.80	1.80	4.00	5.2
		20	0.79	16	16	10	IV	VI	0.20	0.25	0.45	1.10	2.40	5.20	7.1
25	1	15	0.29	16	-	-	IV	-	0.14	0.17	0.35	0.80	1.80	4.10	5.3
		20	0.79						0.2	0.25	0.47	1.10	2.50	5.40	7.2
		25	0.98						0.35	0.38	1.00	2.20	5.10	9.40	12.0
32	1 1/4	20	0.79	16	16	10	IV	VI	0.22	0.25	0.50	1.10	2.50	5.80	8.0
		25	0.98						0.40	0.47	1.10	2.50	5.40	10.3	13.0
		32	1.3						0.48	0.60	1.30	3.10	6.80	14.0	17.8
40	1 1/2	25	0.98	16	16	10	IV	VI	0.40	0.50	1.10	2.60	5.60	10.7	13.6
		32	1.3						0.48	0.60	1.30	3.20	6.90	15.0	20.2
		40	1.6	10	10	6	III	VI	0.60	0.70	1.70	4.00	9.20	18.2	23.8
50	2	32	1.3	16	16	10	IV	VI	0.48	0.60	1.30	3.20	6.90	16.0	21.0
		40	1.6	10	10	6	III	VI	0.60	0.70	1.70	4.00	9.20	18.9	24.6
		50	2.0	6	6	-	III	VI / -	0.90	1.10	2.90	6.80	15.5	29.3	37.0

¹⁾ low flow²⁾ linear³⁾ equal percentage

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. 5 W
Control	
Input analogue:	galvanically isolated from the supply voltage and analog output 0/4...20 mA (input resistance 60 Ω) 0...5/10 V (input resistance 22 k Ω)
Output analogue:	Max. current 10 mA (for voltage output 0...5/10 V) Bürde (Last) 0...560 Ω (for current output 0/4...20 mA)
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 b \ddot{u} S interface set
Communication Software:	Bürkert communicator



Electrical control and interface

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

Analogue Control

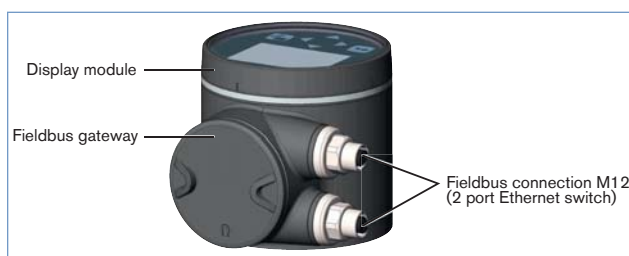
For analogue control 2 variants are available for the inputs and outputs and the connection interface

Input and output:

- * 1 analogue input, 1 binary input
- * 1 analogue input, 1 binary input, 1 analogue output, 2 binary output (option)

Interface:

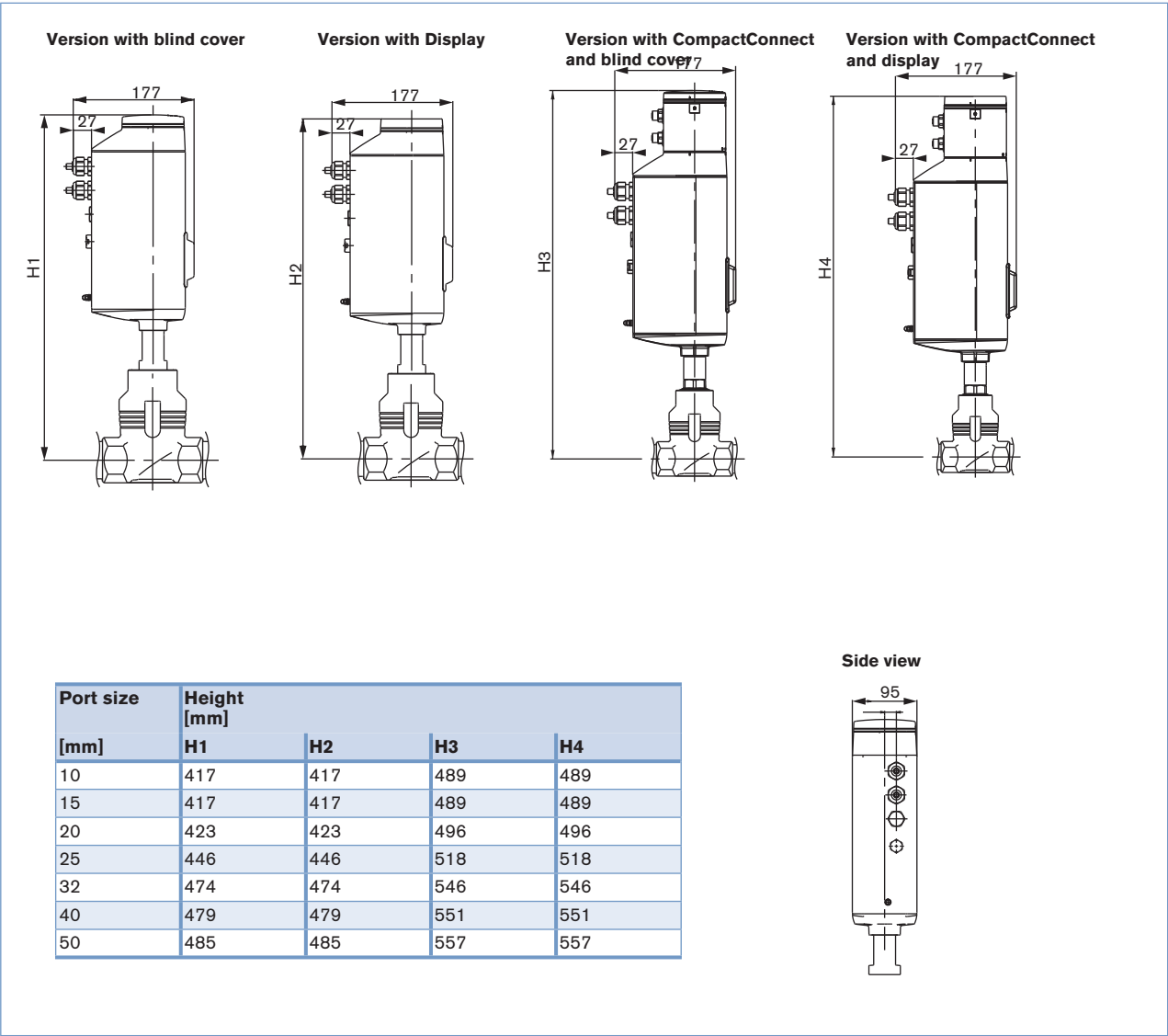
- * cable gland with connection terminal
- * M12 circular connectors M12 (option)



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

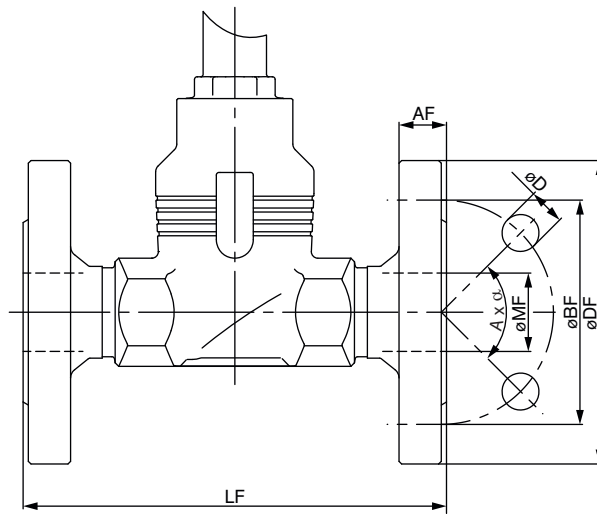
The Fieldbus Gateway for EtherNet / IP, PROFINET and Modbus TCP is integrated into a special module. It has 2 fieldbus connections with 4-pin M12 circular connectors. Under the gateway housing cover are the interfaces for the fieldbus connection and status LEDs. If there is a need to be include it in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

Dimensions [mm] - valve Type 3361 and valve system



Dimensions [mm] - valve body of Type 3361

Flange connection



DIN EN 1092, JIS 10K

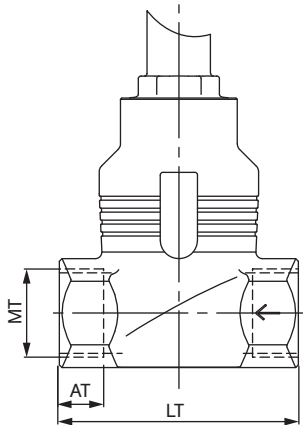
Port size (tube) [mm]	DIN EN 1092 FTF series 1 acc. to DIN EN 558-1						JIS 10K FTF series 10 acc. to DIN EN 558-2					
	ø DF	LF	ø BF	AF	ø D	ø MF	ø DF	LF	ø BF	AF	ø D	ø MF
10	90	130	60	16	14	13.6	—	—	—	—	—	—
15	95	130	65	16	14	18.1	95	108	70	12	15	18.1
20	105	150	75	18	14	23.7	100	117	75	14	15	23.7
25	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 3361

Threaded connection

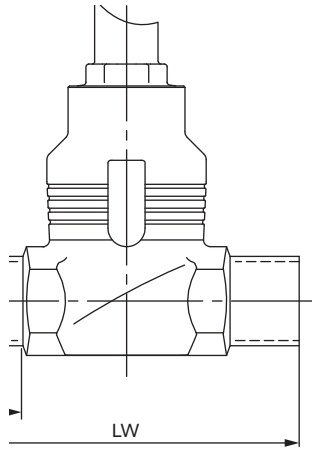


G, RC, NPT (EN ISO 228-1, ISO 7/1 /DIN EN 10226-2, ASME B 1.20.1)

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 3361

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

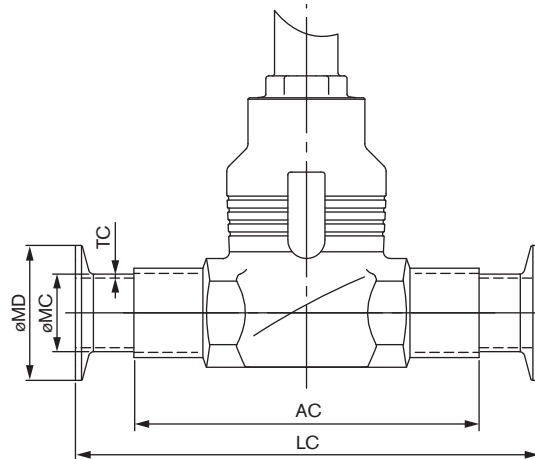
Port size (tube) [mm]	AW	LW	EN ISO 1127 series 1/ ISO 4200/DIN 11866 series B		DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A	
			ø MW	TW	ø MW	TW
10	20	90	17.2	1.6	13	1.5
15	20	90	21.3	1.6	19	1.5
20	20	100	26.9	1.6	23	1.5
25	26	130	33.7	2.0	29	1.5
32	26	140	42.4	2.0	35	1.5
40	26	150	48.3	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 3361

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

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

Hinweis

Sie können die Felder direkt in der Datei ausfüllen, bevor Sie das Formular

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 type="checkbox"/> Process medium	<input type="text"/>	
<input type="checkbox"/> Type of medium	<input type="checkbox"/> Liquid	<input type="checkbox"/> Steam <input type="checkbox"/> Gas
	min.	standard
<input type="checkbox"/> Flow rate (Q, Q _N , W) ¹⁾	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Temperature at valve inlet T1	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Absolute pressure at valve inlet P1	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Absolute pressure at valve outlet P2	<input type="text"/>	<input type="text"/>
Steam Pressure P _v	<input type="text"/>	<input type="text"/>
Kinematic viscosity (ν)	<input type="text"/>	mm ² /s or cSt
Dynamic viscosity (η)	<input type="text"/>	mPa.s or cP
Standard density	<input type="text"/>	Kg/m ³
Max. sound level accepted	<input type="text"/>	dB (A)

¹⁾ standard unit:
Liquid Q = m³/h;
Steam W = kg/h;
Gas Q_N = Nm³/h

Valves features

Cone seal material	<input type="checkbox"/> PTFE/Stainless steel	<input type="checkbox"/> Stainless steel/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"/> Flanged	<input type="checkbox"/> Threaded	<input type="checkbox"/> Welded <input type="checkbox"/> Clamp
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

User display

- ☐ with touch display
- ☐ without touch display

Communication

- ☐ Analogue
- ☐ 1 analogue IN / 1 binary IN
- ☐ 1 analogue IN / 1 binary IN
1 analogue OUT / 2 binary OUT
- ☐ Digital (fieldbus)
- ☐ Ethernet / IP
- ☐ Profinet
- ☐ Modbus TCP
- Electrical connection**
- ☐ Cable gland (without Bus)
- ☐ Multipol connection

SIM card

- ☐ with
- ☐ without

Please specify item no. (if known):

Comments

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Bei speziellen Anforderungen
beraten wir Sie gerne.

Änderungen vorbehalten.
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