



## Electromotive process valve - 2 way angle-seat shut-off 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...



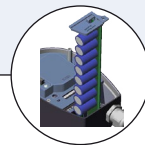
**Type 3360**  
Control valve



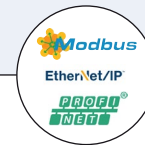
**Type 3361**  
Control valve



**Type 3321**  
Globe valve



**SAFEPOS**  
energy-pack



**Feldbus**



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.

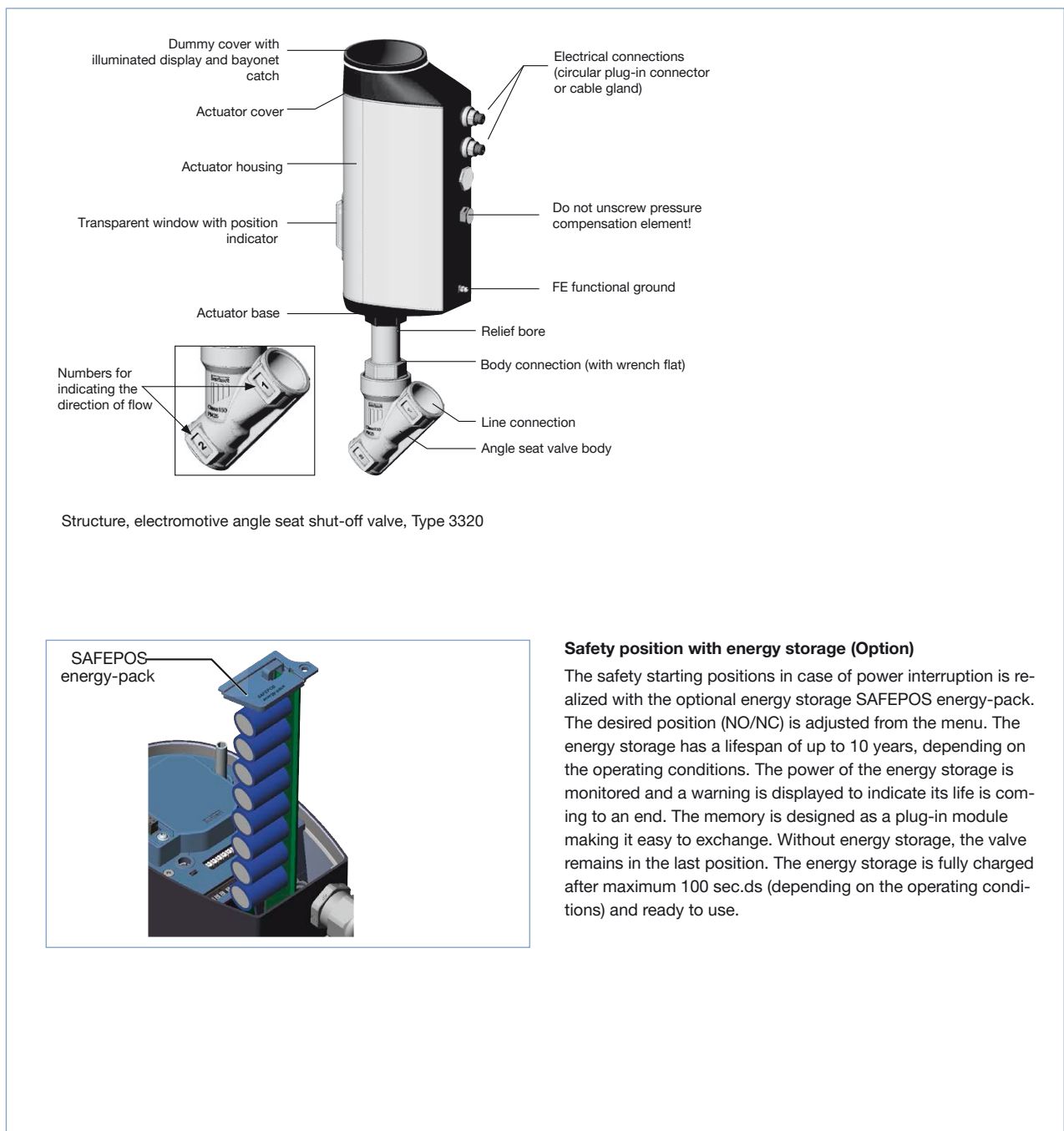
| Technical data                          |   |
|---|---|
| <b>Port size</b>                        | DN15 to DN50  |
| <b>Nominal pressure (max.)</b>          | PN25 (valve body)   |
| <b>Port connections</b>                 |   |
| <b>Thread</b>                           | G, RC, NPT (EN ISO 228-1,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

## Structure and function

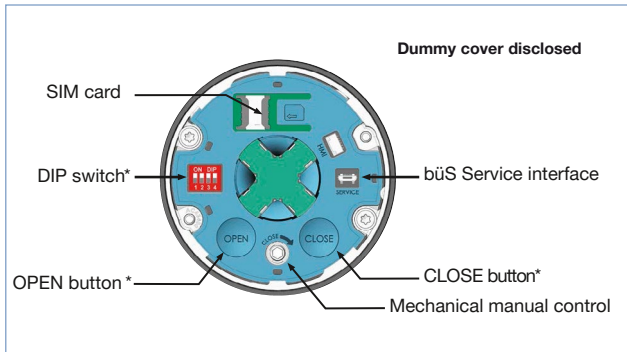
The electromotive linear actuator consists of a brushless direct current motor, gears and a threaded spindle. The valve spindle, which is connected to the threaded spindle, transfers the force to the swivel plate. The electronic control system is actuated either via a standard signal (digital) or via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

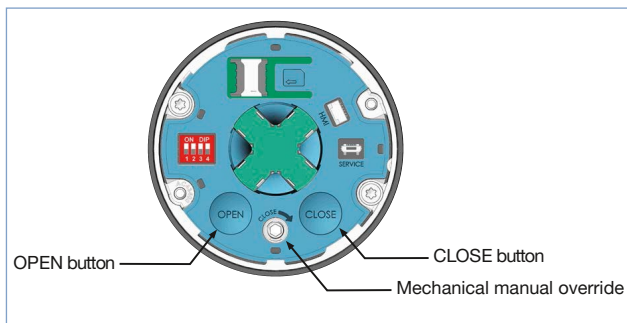


## Controls and indicators



### Control elements

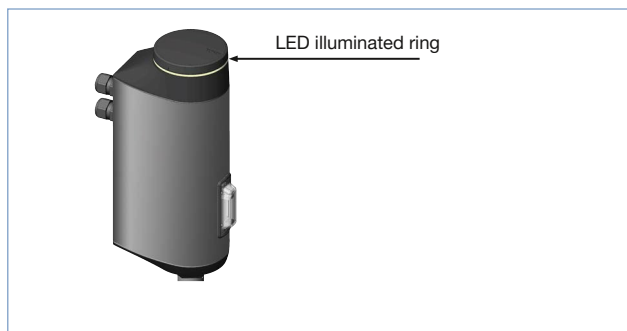
The basic functions are operated by 4 DIP switches and 2 push-buttons. These are located under the dummy cover which can be removed manual by turning. Through the büS service access, the device can also be configured in detail with the Bürkert communicator software. For this, the optional USB-büS interface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



### Manual and electrical operation

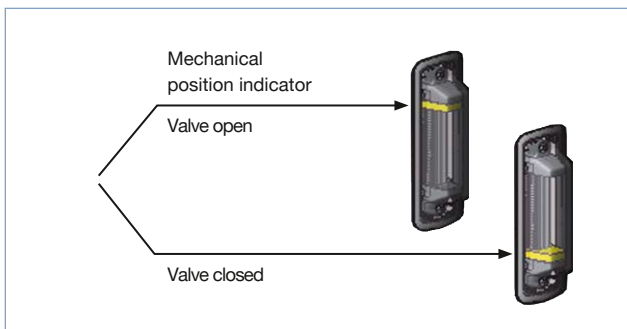
The manual override for mechanical operation of the valve is located under the dummy cover.

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



### 360°- LED Illuminated ring

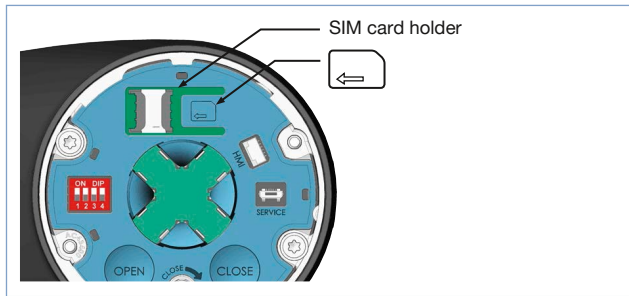
To display the device status, the valve end position and the operating condition, a visible 360° LED illuminated ring is mounted around the dummy cover. The LED ring lights up, flashes or flashes in one or different colors. Depending on customer requirements 4 different LED modes can be selected (Namur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



### Mechanical position indicator

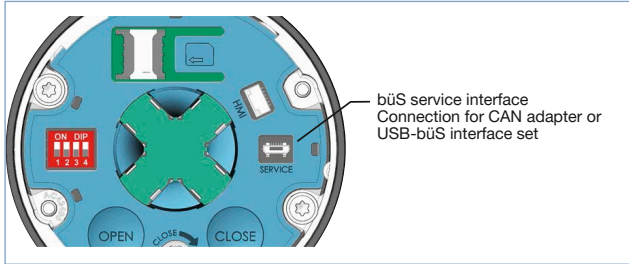
The mechanical position indicator also indicates when the supply voltage of the current valve position fails

## Controls and indicators, continued



### SIM card as data storage (option)

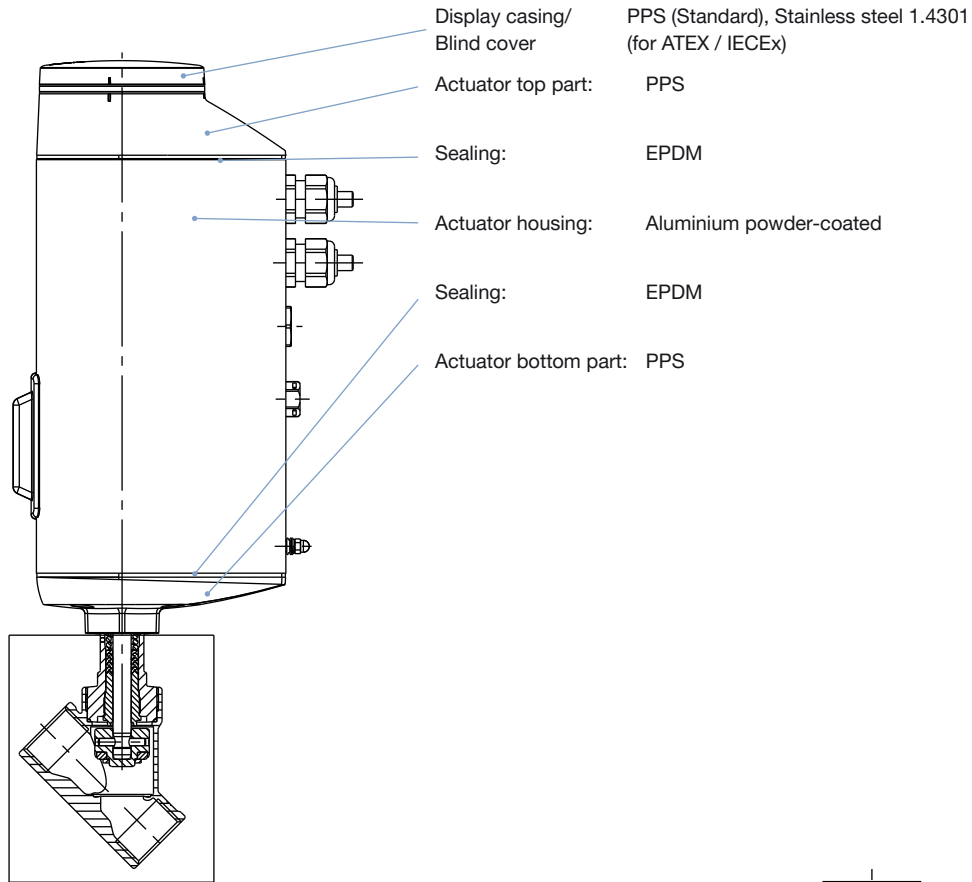
With the SIM card optional device-specific values and user settings can be saved and quickly transferred to another device.



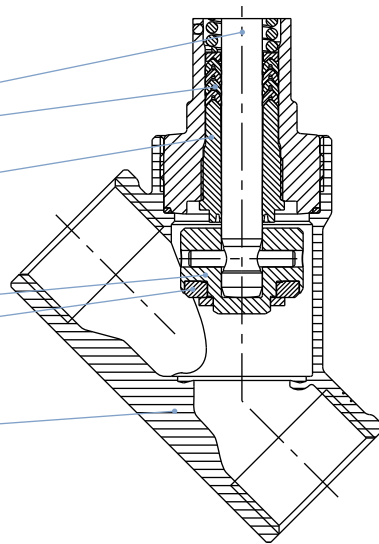
### bÜS service interface

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



- Spindle: Stainless steel 1.4401 (316) /1.4404 (316L)
- Spindle packing: PTFE
- Spindle guidance: PEEK
- Control cone: Stainless steel 1.4401 (316)/1.4404 (316L)
- Seat seal: PTFE/PEEK
- Valve body: Stainless steel 316 L

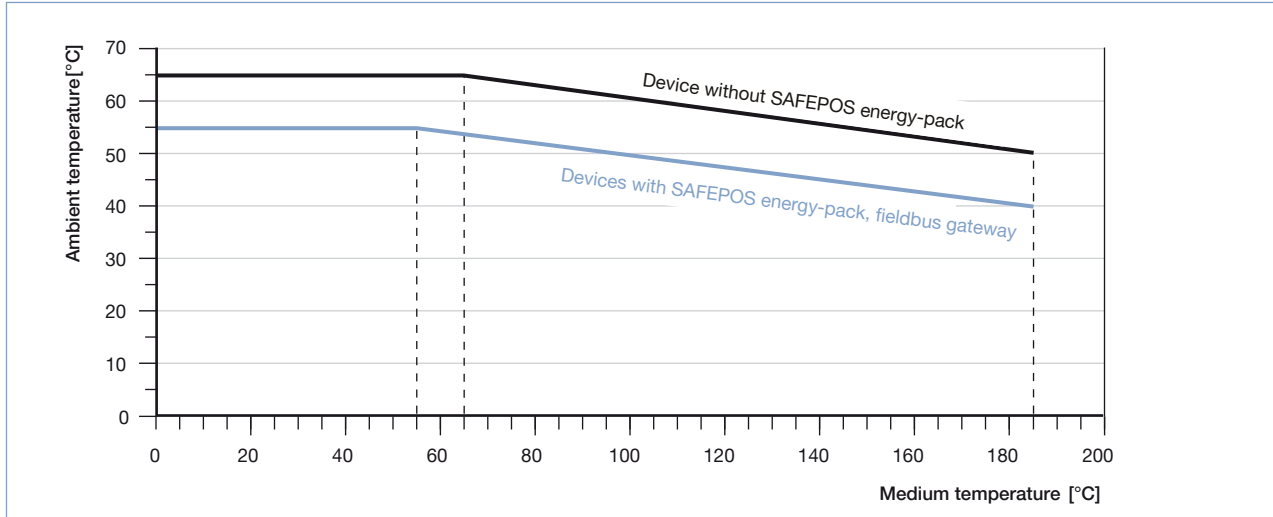


Note: The angle-seat shut-off valve **Type 3320** could be delivered with miscellaneous port connection (thread, weld ends and clamp), there are not represented in the picture, but are made with same material as the valve body.

## Technical data

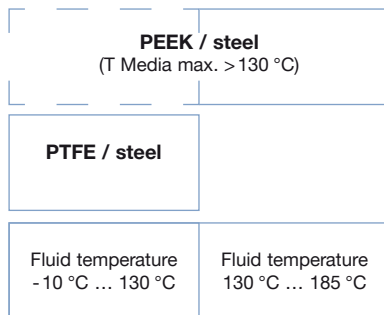
### Temperature chart

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. 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 sealing

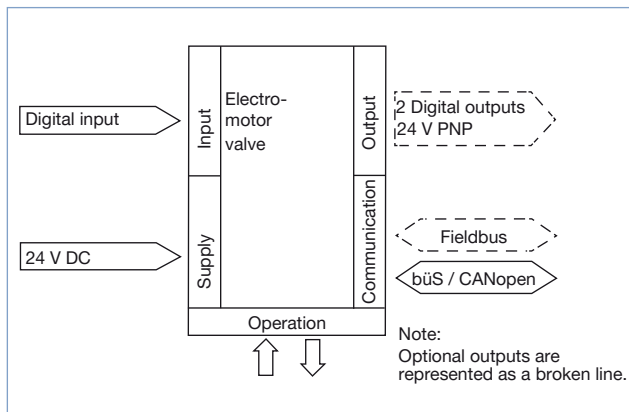
Seat sealing with PTFE is used, if fluid temperature is < 130 °C. If the maximum fluid temperature exceeds 130 °C temporarily or permanently, then PEEK fits best.



| Port connection (tube) |        | Operating pressure / seat seal |                              | K <sub>v</sub> value water [m <sup>3</sup> /h] |
|------------------------|--------|--------------------------------|------------------------------|--|
| [mm]                   | [inch] | PTFE / Stainless steel [bar]   | PEEK / Stainless steel [bar] |  |
| 15                     | ½      | 16                             | 16                           | 5.0  |
| 20                     | ¾      | 16                             | 16                           | 11.0   |
| 25                     | 1      | 16                             | 16                           | 18.0   |
| 32                     | 1¼     | 16                             | 10                           | 28.0   |
| 40                     | 1½     | 10                             | 8                            | 42.0   |
| 50                     | 2      | 6                              | 5                            | 62.0   |

## Electrical control

| Electrical data                                |  |
|--|--|
| Protection class                               | 3 acc. to DIN EN 61140   |
| Electrical connections                         | Cable gland, 2 x M20 or<br>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<br>including actuator at max. load and charging current of the optional<br>SAFEPOS energy-pack (charging current approx. 1 A) |
| Lifelong energy storage<br>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"<br>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

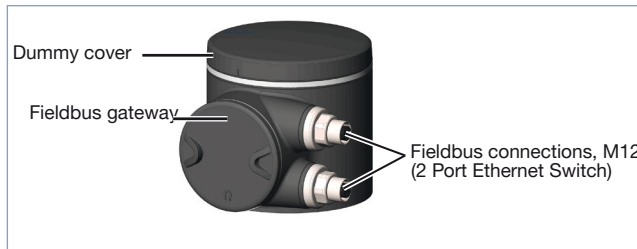
For digital control 2 variants are available for the inputs and outputs and the connection interface

### Input and output:

\* 1 digital input, 2 digital output

### Interface:

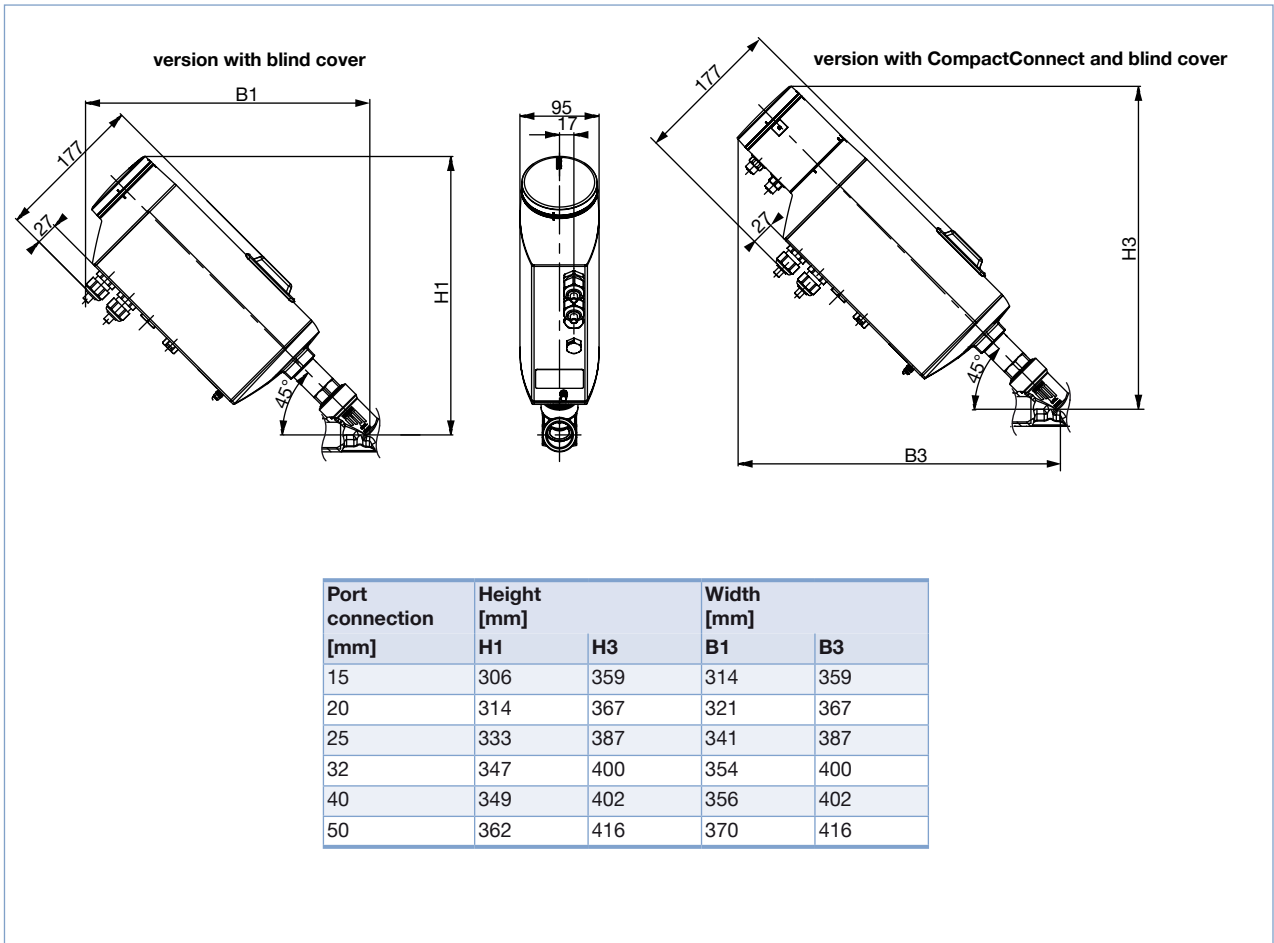
\* cable gland with connection terminal  
\* M12 circular connectors (optional)



### 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.

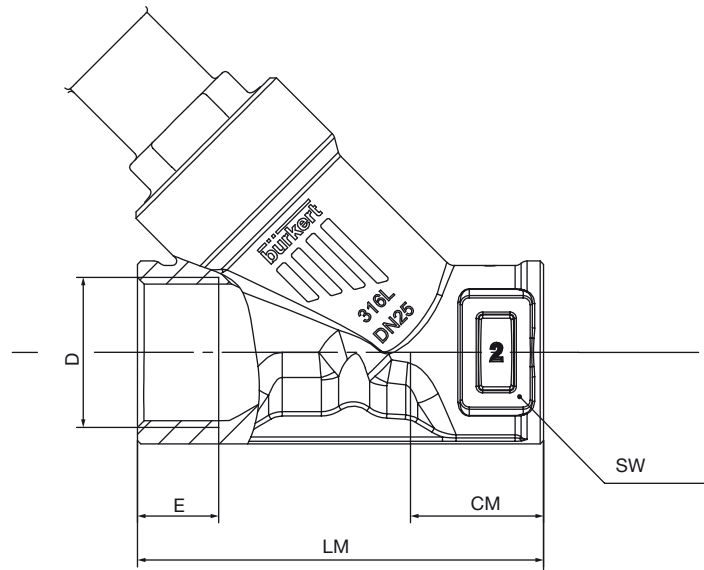
Dimensions [mm] - valve Type 3320 and valve system





## Dimensions [mm] - body valve Type 3320

Threaded connection

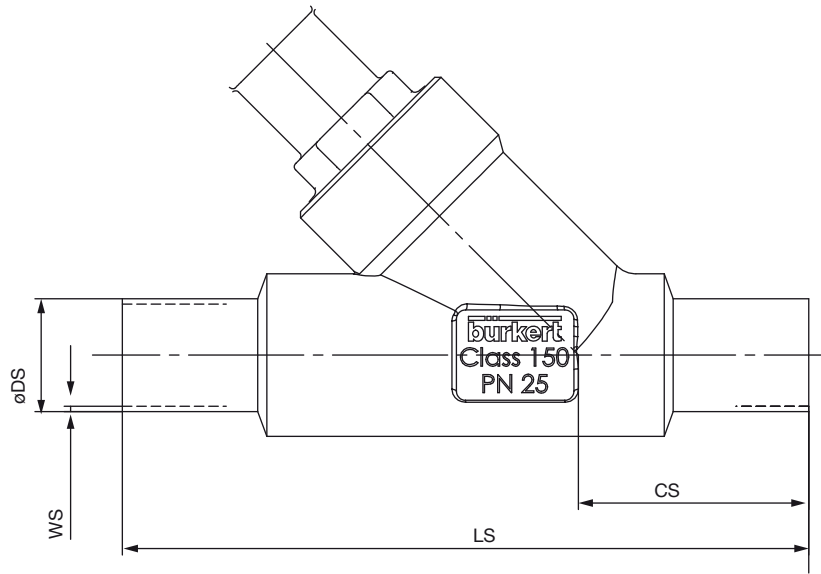


G, RC, NPT (EN ISO 228-1, ISO 7/1 /DIN EN 10226-2, ASME B 1.20.1)

| Port size<br>[mm] | CM<br>[mm] | LM<br>[mm] | SW<br>[mm] | G<br>D<br>[mm] | E<br>[mm] | NPT<br>D<br>[mm] | E<br>[mm] | RC<br>D<br>[mm] | E<br>[mm] |
|-------------------|------------|------------|------------|----------------|-----------|------------------|-----------|-----------------|-----------|
| 15                | 24         | 65         | 27         | G ½            | 14        | NPT ½            | 13.7      | RC ½            | 13.2      |
| 20                | 27         | 75         | 34         | G ¾            | 16        | NPT ¾            | 14.0      | RC ¾            | 14.5      |
| 25                | 29.5       | 90         | 41         | G 1            | 18        | NPT 1            | 16.8      | RC 1            | 16.8      |
| 32                | 36         | 110        | 50         | G 1¼           | 16        | NPT 1¼           | 17.3      | RC 1¼           | 19.1      |
| 40                | 35         | 120        | 55         | G 1½           | 18        | NPT 1½           | 17.3      | RC 1½           | 19.1      |
| 50                | 45         | 150        | 70         | G 2            | 24        | NPT 2            | 17.6      | RC 2            | 23.4      |

## Dimensions [mm] - body valve Type 3320

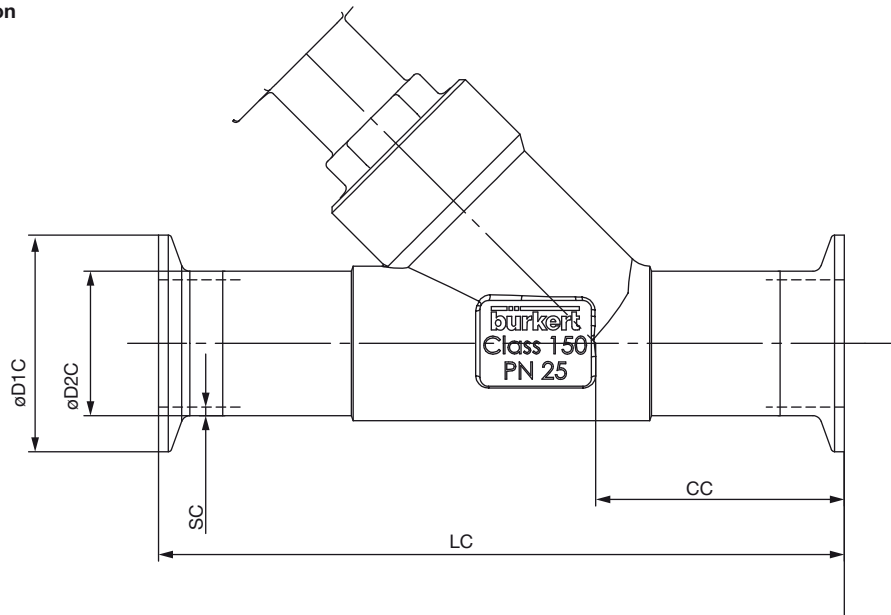
Weld ends port connection



| Port size<br>[mm] | EN ISO 1127 Series 1<br>ISO 4200<br>DIN 11866 Series B |            |             |            | DIN 11850 R2<br>DIN 11866 Series A<br>DIN EN 10357 Series A |            |             |            | ASME BPE<br>DIN 11866 Series C |            |             |            |
|-------------------|--|------------|-------------|------------|---|------------|-------------|------------|--------------------------------|------------|-------------|------------|
|                   | CS<br>[mm]   | LS<br>[mm] | ØDS<br>[mm] | WS<br>[mm] | CS<br>[mm]  | LS<br>[mm] | ØDS<br>[mm] | WS<br>[mm] | CS<br>[mm]                     | LS<br>[mm] | ØDS<br>[mm] | WS<br>[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 | Clamp: DIN 32676 Series B<br>Tube: EN ISO 1127 Series 1<br>ISO 4200<br>DIN 11866 Series B |      |      |      |      | Clamp: ASME BPE<br>DIN 32676 Series C<br>Tube: ASME BPE<br>DIN 11866 Series C |      |      |       |      | Clamp: BS 4825-3<br>Tube: BS 4825-1 |      |      |       |      | Clamp: DIN 32676 Series A<br>Tube: DIN 11850 Series 2<br>DIN 11866 Series A<br>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   |      |
| [mm]      | [mm]  | [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.  |
|--|--|
| <b>Connection cable:</b>   |  |
| Connection cable with M12 socket, 4 pin, (length 5 m)<br>for operating voltage   | 918038  |
| Connection cable with M12 socket, 8 pin, (length 2 m)<br>for input and output signals  | 919061  |
| <b>USB-büS interface set:</b>  |  |
| büS stick set 1<br>(including power supply unit, bus-stick, terminating resistor, Y-distributor, 0.7 m cable with M12 connector) | 772426  |
| büS stick set 2<br>(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  |
| <b>büS cable extensions from M12 plug to M12 socket:</b>   |  |
| Connecting cable, length 1 m   | 772404  |
| Connecting cable, length 3 m   | 772405  |
| Connecting cable, length 5 m   | 772406  |
| Connecting cable, length 10 m  | 772407  |
| <b>Miscellaneous</b>   |  |
| Bürkert Communicator   | Infos at <a href="http://www.burkert.com">www.burkert.com</a>                              |
| 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**

|                     |   |   |
|---------------------|---|---|
| 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<br>(delivey status NO) | <input type="checkbox"/> without energy storage<br>(blocked in last position) |
|                     | <input type="checkbox"/> with energy storage<br>(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](http://www.burkert.com)

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

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