bürkert
FLUID CONTROL SYSTEMS









# Electromotive 2/2 way angle seat valve (on/off)

- Safety position via energy storage
- Rapid flow shut off
- Weather and impact resistant design
- Hygienically designed surface
- Versatile diagnostic options

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

## Can be combined with



**Type ME61** ▸
EDIP process display



**Type ME63** ▸
Industrial Ethernet gateway, IP65/IP67/IP69k



**Type ME43** ▸
Fieldbus gateway



**Type 8008** ▸
Flowmeter for gases



**Type 8098** ▸
FLOWave SAW flowmeter

## Type description

The innovative Bürkert on/off valve Type 3320 is the solution when it comes to shut-off tasks under demanding operating conditions. The electromotive actuator of the angle seat valve with ball screw moves the swivel plate at a particularly high speed up to 6 mm/s to the 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 electromotive actuator and shut-off valve are adapted perfectly to each other with closed design and robust surface. This ensures the hygienic requirements of fast and residue-free cleaning. Harsh ambient conditions are no problem for the electromotive angle seat valve Type 3320 due to the degree of protection IP65/IP67 and the high impact and vibration resistance. Thanks to the tried-and-tested, self-adjusting packing gland with exchangeable V-seals, the angle seat valve achieves maximum service life and tightness. The fieldbus-compatible Type 3320 shut-off valve offers the operator many helpful functions for process monitoring, valve diagnostics and preventive maintenance and thus the decisive advantage of modern process automation.

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# 1. General technical data

**Note:**

- AG2: actuator size 2 with a nominal force of 1300 or 2500 N for seat size 15...50
- AG3: actuator size 3 with a nominal force of 7700 or 10000 N for seat size 40...80

| | |
|---|---|
| **Product properties** | |
| Dimensions | Further information can be found in chapter "4. Dimensions" on page 10. |
| Material | Further information can be found in chapter "3. Materials" on page 8. |
| Design | Angle seat on/off valve |
| Nominal diameter (port connection) | DN 15...DN 80, NPS ½...3 |
| Safety setting in case of power failure | With energy storage SAFEPOS energy-pack: open, closed or freely programmable position<br>Without energy storage SAFEPOS energy-pack: blocked in last position |
| Flow direction | Against closing direction (below seat) |
| Weight | Depending on actuator variant up to:<br>AG2: 5.5 kg<br>AG3: 16 kg<br>(Total weight including valve body depending on port connection) |
| **Performance data** | |
| Operating pressure | 0...25 bar(g) (see "6.1. Fluidic data" on page 20)<br>Vacuum variant...- 0.9 bar(g) (optional) |
| Nominal pressure | PN 25 (DIN EN 1333), Class 150 (DIN EN 1759) |
| Seat leakage | Leakage rate A (DIN EN 12266 - 1), seat seal PTFE and PEEK, test medium air |
| $K_V$ value | 5.0...140 $m^3/h$ (see "6.1. Fluidic data" on page 20) |
| Closing time [1.] | AG2: 2.3...6.6 s<br>AG3: 8.7 s<br>(Depending on travel speed, stroke and operating conditions) |
| Travel speed [1.] | 6 mm/s (for AG2 actuator force 1300 N)<br>4 mm/s (for AG2 actuator force 2500 N)<br>3 mm/s (for AG3 actuator force 7700 N and 10000 N)<br>(Depending on operating conditions) |
| **Electrical data** | |
| Operating voltage | 24 V DC ± 10 % (maximum residual ripple 10 %) |
| Operating current [1.] | AG2: maximum 3 A (at maximum load and including 1 A charging current of the optional energy storage SAFEPOS energy-pack). At minimum operating temperature additionally 2 A<br><br>AG3: maximum 5 A (at maximum load and including charging current of the optional energy storage SAFEPOS energy-pack). At minimum operating temperature additionally 6 A |
| Protection class (DIN EN 61140) | III |
| Duty cycle | 100 % |
| Standby consumption [1.] | 2...4 W |
| **Communication and control** | |
| Standard signal (binary) | 0...5 V (log „0")<br>10...30 V (log „1") |
| Fieldbus (digital) | Bürkert system bus (büS) (standard)<br>CANopen (optional)<br>EtherNet/IP, PROFINET, Modbus TCP, EtherCAT (optional via integrated gateway) |
| **Medium data** | |
| Operating medium | Steam, neutral gases, water, alcohols, oils, fuels, hydraulic fluids, salt solutions, lyes, organic solvents, oxygen (optional) |
| Medium temperature | - 40...+ 230 °C (see "6.2. Operating limits" on page 21) |
| Viscosity | Up to 600 $mm^2/s$ |

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| | |
|---|---|
| **Product connections** | |
| **Port connection** [2.] | |
| Welded connection | DIN EN ISO 1127 / ISO 4200 / DIN 11866 series B<br>DIN 11850 - 2 / DIN 11866 series A<br>ASME BPE / DIN 11866 series C<br>SMS 3008 |
| Clamp connection | DIN 32676 series B (pipe: ISO 4200)<br>DIN 32676 series A (pipe: DIN 11850 - 2)<br>ASME BPE |
| Threaded connection | G (DIN ISO 228 - 1)<br>NPT (ASME B1.20.1)<br>RC (ISO 7 - 1) |
| **Electrical connection** | |
| Actuator | Terminal strip with cable bushing, 2 x M20 (only AG2) or 2 x M12 circular plugs, 5-pin and 8-pin |
| Fieldbus gateway | 2 x M12 circular sockets, 4-pin (only with Industrial Ethernet)<br>Further information can be found in chapter "5. Product connections" on page 17. |
| **Approvals and conformities** | |
| Further information can be found in chapter "2. Approvals and conformities" on page 6. | |
| Detergent resistance | According to Ecolab test method: F&E/P3-E No. 40 - 1 |
| **Environment and installation** | |
| Ambient temperature | - 25...+ 65 °C (only without additional modules)<br>(Derating see "Operating limits for ambient and medium temperature" on page 22) |
| Degree of protection | IP65/IP67 (DIN EN 60529), NEMA 4X |
| Installation position | Any, preferably with actuator upright |

1.) All values relate to a supply voltage of 24 V at + 25 °C.
2.) Others are available on request.

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# 2. Approvals and conformities

## 2.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants can be supplied with the below mentioned approvals or conformities.

## 2.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

## 2.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

## 2.4. Explosion protection

| Approval | Description |
|---|---|
| | **Optional: Explosion protection (valid for the variable code PX48)**<br>As a category 3 device suitable for zone 2/22.<br><br>**ATEX:**<br>BVS 17 ATEX E 117 X<br>II 3G Ex ec IIC T4 Gc<br>II 3D Ex tc IIIC T135 °C Dc<br><br>**IECEx:**<br>IECEx BVS 17.0100X<br>Ex ec IIC T4 Gc<br>Ex tc IIIC T135 °C Dc |

## 2.5. North America (USA/Canada)

| Approval | Description |
|---|---|
| | **Optional: Actuators UL Listed for the USA and Canada (valid for the variable code PU11)**<br>The actuators are UL Listed for the USA and Canada according to:<br>• UL 61010-1 (ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE – Part 1: General Requirements)<br>• CAN/CSA-C22.2 No. 61010-1 |

## 2.6. Drinking water

| Conformity | Description |
|---|---|
| $H_2O$ | **Optional: Suitable for use in drinking water applications (valid for the variable code PF39)**<br>The materials comply with the assessment principles (UBA) for materials in contact with drinking water (TrinkwasserV).<br><br>PF39: Suitable for products with a maximum temperature of + 85 °C (hot water) |

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## 2.7. Foods and beverages/Hygiene

| Conformity | Description |
|---|---|
| FDA | **FDA – Code of Federal Regulations (valid for the variable code PL02, PL03)**<br>All wetted materials are compliant with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA) according to the manufacturer's declaration. |
| USP | **United States Pharmacopeial Convention (USP) (valid for the variable code PL04)**<br>All wetted materials are biocompatible according to the manufacturer's declaration. |
|  | **EC Regulation 1935/2004 of the European Parliament and of the Council (valid for the variable code PL01, PL02)**<br>All wetted materials are compliant with EC Regulation 1935/2004/EC according to the manufacturer's declaration. |
|  | **China food GB Standards of the People's Republic of China (valid for the variable code PL10)**<br>All wetted materials are compliant with the requirement of China food GB Standards according to the manufacturer's declaration. |

## 2.8. Others

**Oxygen**

| Conformity | Description |
|---|---|
| $O_2$ | **Optional: Suitability for oxygen (valid for the variable code NL02)**<br>The products are suitable for use with gaseous oxygen, according to the manufacturer's declaration. |

**TA Luft**

| Conformity | Description |
|---|---|
| TA Luft | **Technical instruction on air quality control (valid for the variable code PM01)** |

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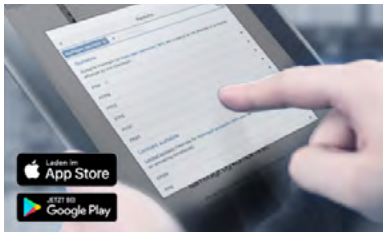
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# 3. Materials

## 3.1. Bürkert resistApp



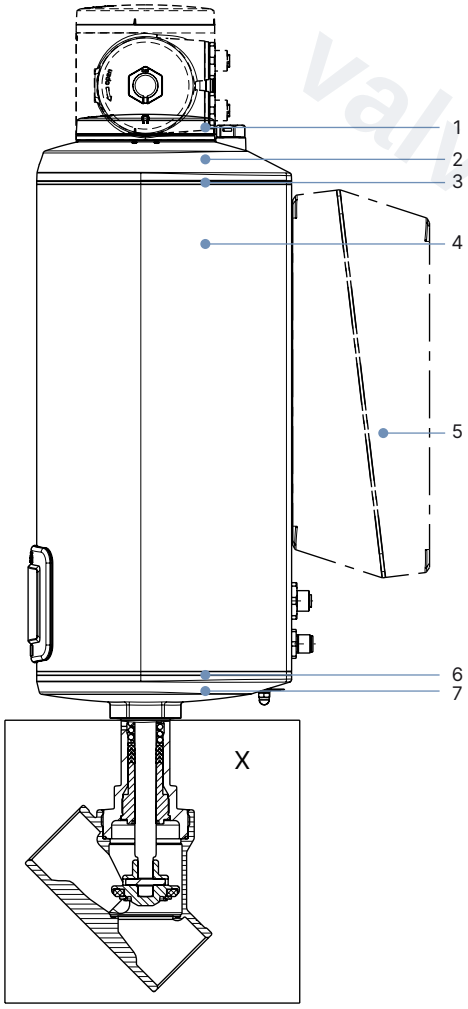

**Bürkert resistApp – Chemical resistance chart**

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:**
The Type 3320 angle seat valve is supplied with different port connections (thread, welded and clamp connections). These connections are not shown. They are made of the same material as the valve body.




**AG2**

| No. | Component | Material |
|---|---|---|
| 1 | Blind cover/gateway housing | PPS (standard),<br>stainless steel 1.4301 (for ATEX/IECEx) |
| 2 | Actuator cover | PPS |
| 3 | Seal | EPDM |
| 4 | Actuator housing | Powder-coated aluminium |
| 6 | Seal | EPDM |
| 7 | Actuator base | PPS |

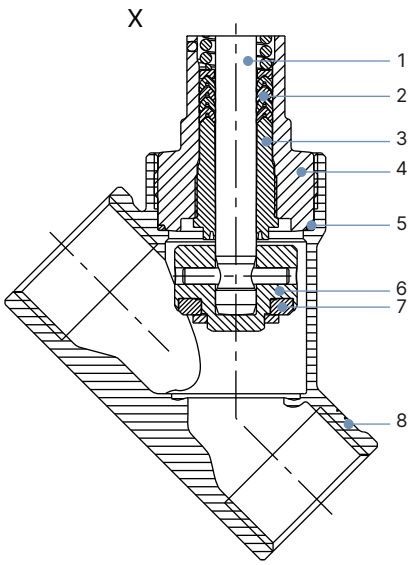
**AG3**

| No. | Component | Material |
|---|---|---|
| 1 | Blind cover/gateway housing | PPS (standard),<br>stainless steel 1.4301 (for ATEX/IECEx) |
| 2 | Actuator cover | PC |
| 3 | Seal | EPDM |
| 4 | Actuator housing | Powder-coated aluminium |
| 5 | Energy storage SAFEPOS energy-pack housing | PC |
| 6 | Seal | EPDM |
| 7 | Actuator base | Stainless steel 1.4308 |

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| No. | Component | Material |
|---|---|---|
| **1** | Spindle | Stainless steel 1.4401 (316) /1.4404 (316L) |
| **2** | Spindle seal | PTFE V-seals (filled) with spring compensation |
| **3** | Spindle guide | PEEK or stainless steel 1.4404 (316L) |
| **4** | Packing gland tube | Stainless steel 1.4401 (316) |
| **5** | Seal valve body | Graphite or PTFE |
| **6** | Swivel plate | Stainless steel 1.4401 (316)/1.4404 (316L) |
| **7** | Valve seat seal | PTFE or PEEK sealing washer |
| **8** | Valve body | Stainless steel CF3M |

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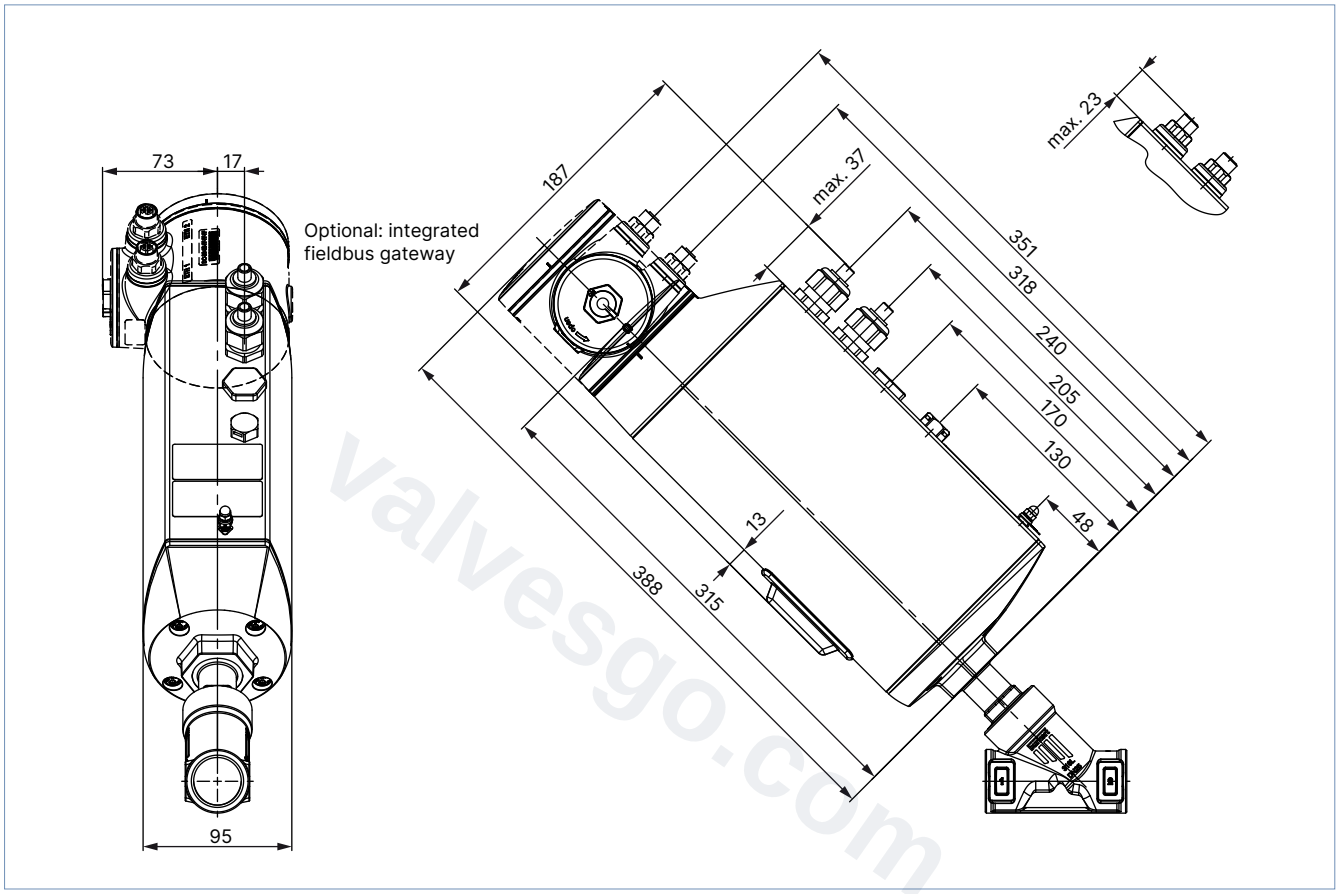
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# 4. Dimensions

## 4.1. Actuator

**AG2**

**Note:**
Dimensions in mm, unless otherwise stated

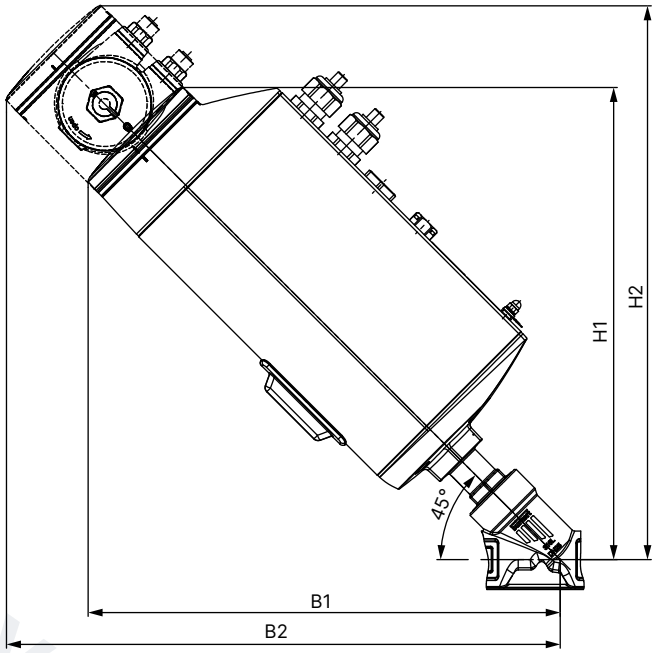



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| Nominal diameter (port connection) | | Height/width [1.] | |
|---|---|---|---|
| **DN** | **NPS** | **H1/B1**<br>**Standard variant** | **H2/B2** [2.]<br>**Fieldbus variant (KOMM ≠ G, N, L)** |
| 15 | ½ | 311 | 362 |
| 20 | ¾ | 319 | 369 |
| 25 | 1 | 321 | 372 |
| 32 | 1¼ | 330 | 381 |
| 40 | 1½ | 333 | 384 |
| 50 | 2 | 367 | 418 |

1.) Dimensions without sealing function: the actuator is raised by approx. 2 mm in the closed position.
2.) Optional: integrated fieldbus gateway

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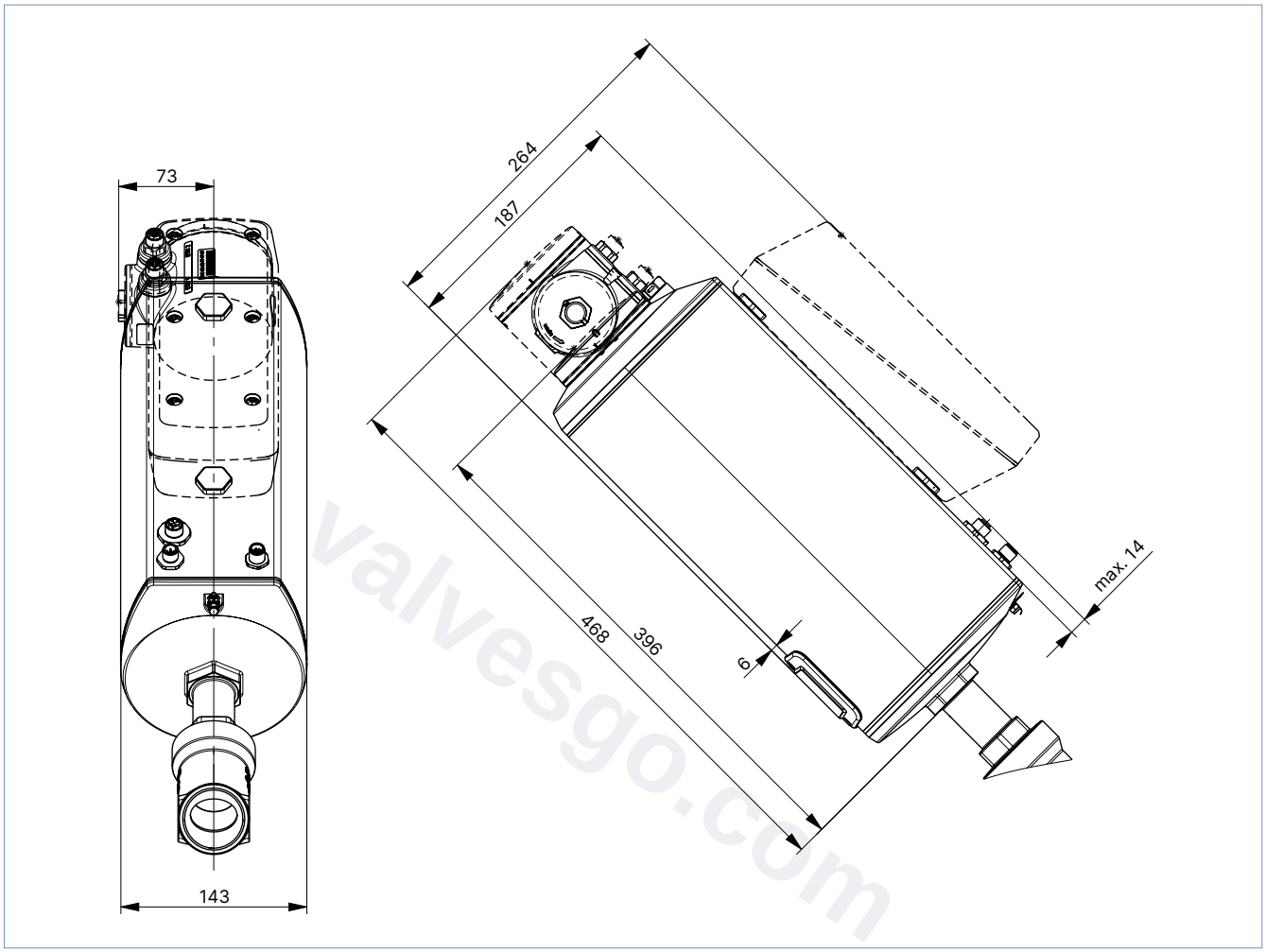
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### AG3

**Note:**
Dimensions in mm, unless otherwise stated

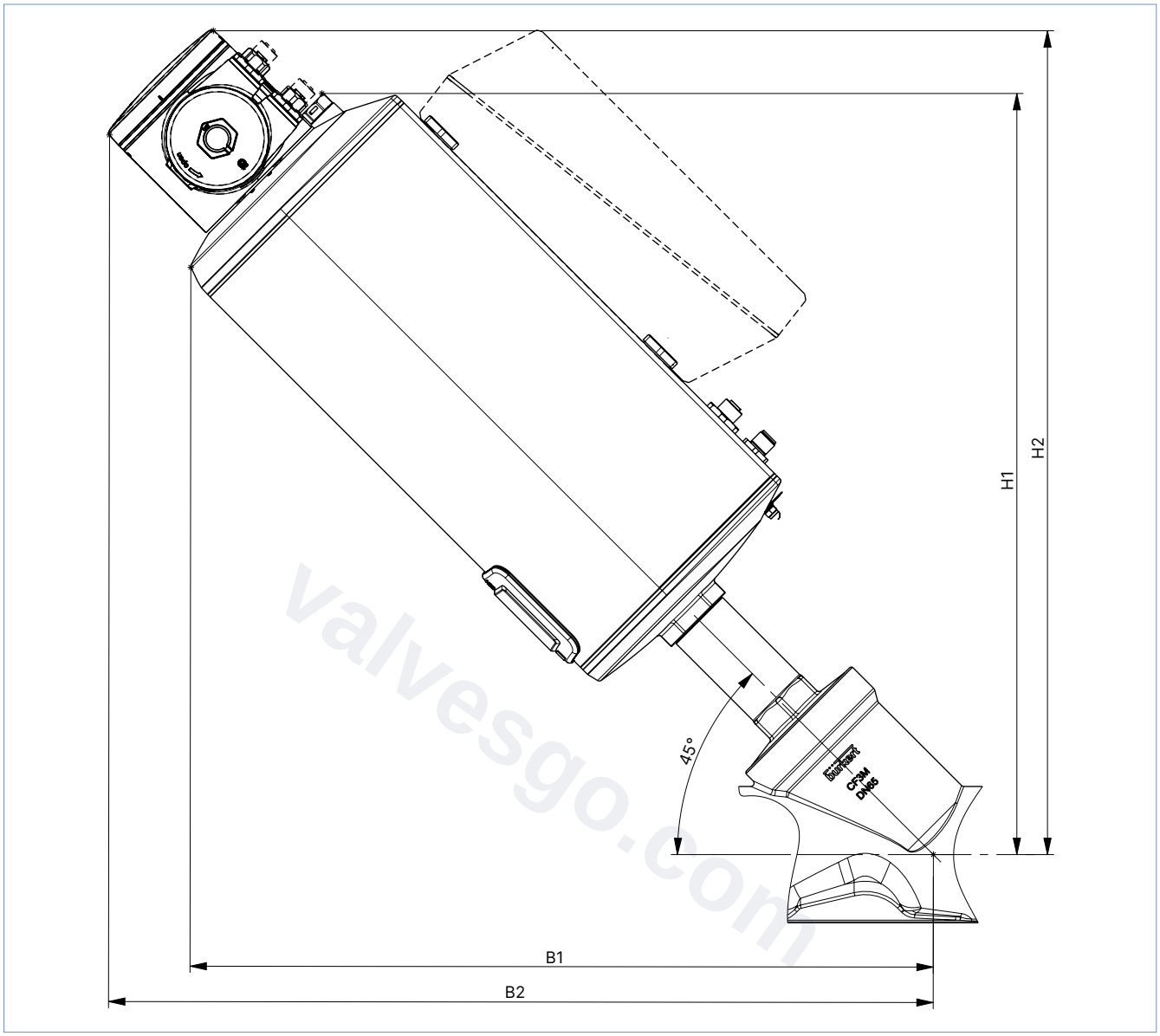



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| Nominal diameter (port connection) | | Height/width [1.] | |
|---|---|---|---|
| **DN** | **NPS** | **H1/B1**<br>**Standard variant** | **H2/B2** [2.]<br>**Fieldbus variant (KOMM ≠ G, N, L)** |
| 40 | 1½ | 439 | 479 |
| 50 | 2 | 454 | 494 |
| 65 | 2½ | 467 | 507 |

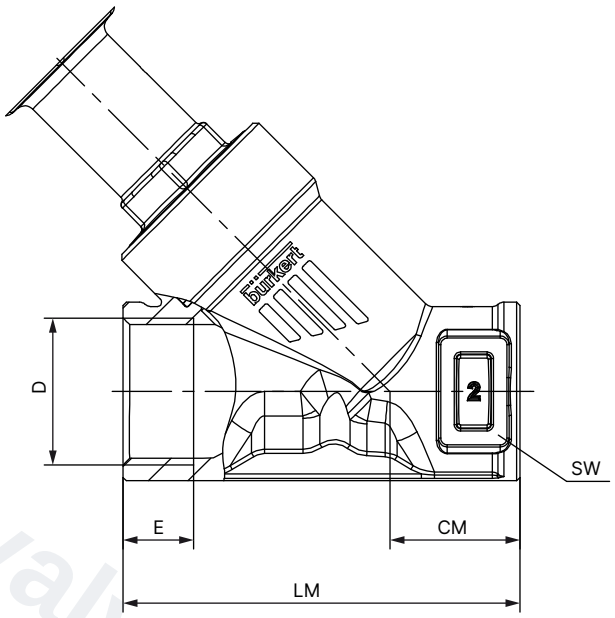
1.) Dimensions without sealing function: the actuator is raised by approx. 2 mm in the closed position.
2.) Optional: integrated fieldbus gateway



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## 4.2. Body with threaded connection

**Note:**
Dimensions in mm, unless otherwise stated



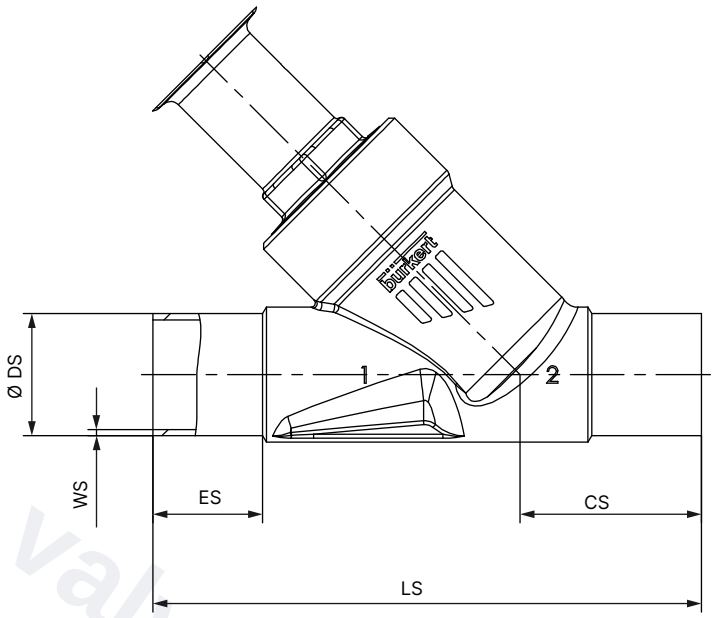

| Nominal diameter (port connection) | G (DIN ISO 228-1)<br>NPT (ASME B1.20.1)<br>RC (ISO 7-1) | | | | | | |
|---|---|---|---|---|---|---|---|
| | D | E | | | CM | LM | SW |
| DN | NPS | G | NPT | RC | | | |
| 15 | ½ | 14 | 13.7 | 13.2 | 24 | 65 | 27 |
| 20 | ¾ | 16 | 14 | 14.5 | 27 | 75 | 34 |
| 25 | 1 | 18 | 16.8 | 16.8 | 29.5 | 90 | 41 |
| 32 | 1¼ | 16 | 17.3 | 19.1 | 36 | 110 | 50 |
| 40 | 1½ | 18 | 17.3 | 19.1 | 35 | 120 | 55 |
| 50 | 2 | 24 | 17.6 | 23.4 | 45 | 150 | 70 |
| 65 | 2½ | 26 | 23.7 | 26.7 | 57 | 185 | 85 |
| 80 | 3 | 28 | 30.5 | 29.8 | 71 | 220 | 100 |

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## 4.3. Body with welded connection

**Note:**
Dimensions in mm, unless otherwise stated




| Nominal diameter (port connection) | DIN EN ISO 1127 / ISO 4200 / DIN 11866 series B | | | | | DIN 11850 - 2 / DIN 11866 series A | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DN | ES | CS | LS | Ø DS | WS | ES | CS | LS | Ø DS | WS |
| 15 | 19 | 34 | 100 | 21.3 | 1.6 | 19 | 34 | 100 | 19 | 1.5 |
| 20 | 20 | 39 | 115 | 26.9 | 1.6 | 20 | 39 | 115 | 23 | 1.5 |
| 25 | 26 | 43 | 130 | 33.7 | 2 | 26 | 43 | 130 | 29 | 1.5 |
| 32 | 26 | 45 | 145 | 42.4 | 2 | 26 | 45 | 145 | 35 | 1.5 |
| 40 | 26 | 49 | 160 | 48.3 | 2 | 26 | 49 | 160 | 41 | 1.5 |
| 50 | 26 | 50 | 175 | 60.3 | 2 | 26 | 50 | 175 | 53 | 1.5 |
| 65 | 26 | 50 | 210 | 76.1 | 2 (2.3) | 26 | 50 | 210 | 70 | 2 |
| 80 | 26 | 88.5 | 266 | 88.9 | 2.3 | 26 | 88.5 | 266 | 85 | 2 |

| Nominal diameter (port connection) | ASME BPE / DIN 11866 series C | | | | |
|---|---|---|---|---|---|
| NPS | ES | CS | LS | Ø DS | WS |
| ½ | 30 | 46 | 135 | 12.7 | 1.65 |
| ¾ | 30 | 52 | 145 | 19.05 | 1.65 |
| 1 | 30 | 51 | 152 | 25.4 | 1.65 |
| 1½ | 30 | 60 | 182 | 38.1 | 1.65 |
| 2 | 30 | 64 | 210 | 50.8 | 1.65 |
| 2½ | 26 | 56 | 230 | 63.5 | 1.65 |
| 3 | 26 | 88.5 | 266 | 76.2 | 1.65 |

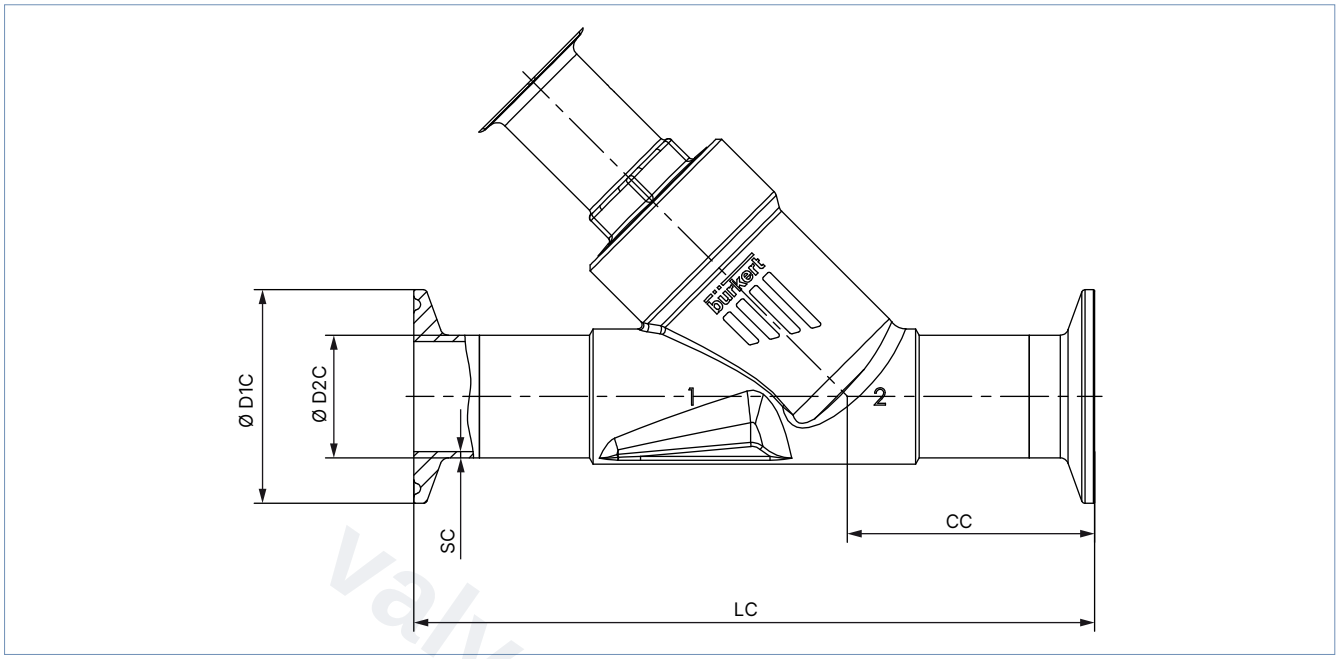
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## 4.4. Body with clamp connection

**Note:**
Dimensions in mm, unless otherwise stated




| Nominal diameter (port connection) | Clamp: DIN 32676 series B<br>Pipe: DIN EN ISO 1127 / ISO 4200 / DIN 11866 series B | | | | | Clamp: DIN 32676 series A<br>(DN 15 similar to DIN 32676 series B)<br>Pipe: DIN 11850 - 2 / DIN 11866 series A | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **DN** | **LC** | **CC** | **Ø DC** | **Ø D2 C** | **SC** | **LC** | **CC** | **Ø D1 C** | **Ø D2 C** | **SC** |
| 15 | 156 | 49.0 | 50.5 | 21.3 | 1.6 | 130 | 49.5 | 34 | 19 | 1.5 |
| 20 | 150 | 56.5 | 50.5 | 26.9 | 1.6 | 150 | 57 | 34 | 23 | 1.5 |
| 25 | 160 | 58.0 | 50.5 | 33.7 | 2 | 160 | 58.5 | 50.5 | 29 | 1.5 |
| 32 | 200 | 57.5 | 50.5 | 42.4 | 2 | 180 | 58 | 50.5 | 35 | 1.5 |
| 40 | 200 | 69.0 | 64 | 48.3 | 2 | 200 | 69.5 | 50.5 | 41 | 1.5 |
| 50 | 230 | 77.5 | 77.5 | 60.3 | 2.6 | 230 | 78 | 64 | 53 | 1.5 |
| 65 | 265 | 77.5 | 91 | 76.1 | 2 | 265 | 78 | 91 | 70 | 2 |

| Nominal diameter (port connection) | Clamp: ASME BPE<br>Pipe: ASME BPE / DIN 11866 series C | | | | |
|---|---|---|---|---|---|
| **NPS** | **LC** | **CC** | **Ø D1 C** | **Ø D2 C** | **SC** |
| ½ | 130 | 49 | 25 | 12.7 | 1.65 |
| ¾ | 150 | 56.5 | 25 | 195 | 1.65 |
| 1 | 160 | 58 | 50.5 | 25.4 | 1.65 |
| 1½ | 200 | 69 | 50.5 | 38.1 | 1.65 |
| 2 | 230 | 77.5 | 64 | 50.8 | 1.65 |
| 2½ | 286 | 83 | 77.5 | 63.5 | 1.65 |

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# 5. Product connections

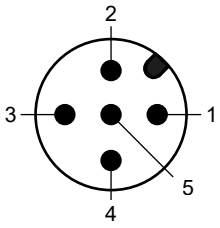
## 5.1. Electrical connection

**Note:**
For the terminal assignment of the connection variant “cable gland with connection terminals”, see **operating instructions Type 3320** ▶.

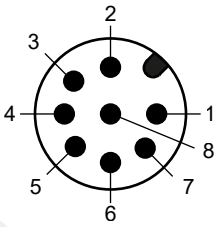
**Description of circular plug-in connectors**

**AG2 variant**



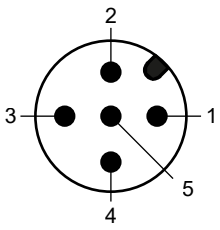

X3 – Circular plug M12, 5-pin, A-coded
Operating voltage AG2 and büS/CANopen



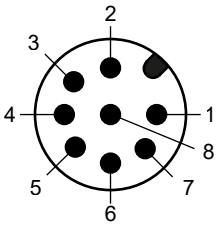

X1 – Circular plug M12, 8-pin, A-coded
Input and output signals

**AG3 variant**

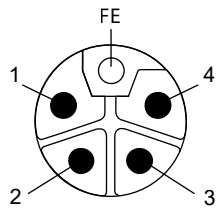



X3 – Circular plug M12, 5-pin, A-coded
büS/CANopen




X1 – Circular plug M12, 8-pin, A-coded
Input and output signals




X4 – Circular plug M12, 5-pin, L-coded
Actuator supply AG3

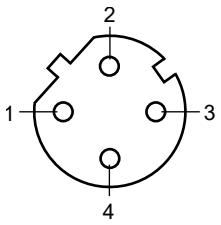
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### Fieldbus gateway (optional)






X7 – M12 round socket, 4-pin, D-coded,
fieldbus connection (2-port Ethernet switch)

**The following circular plug-in connectors are used depending on the device variant:**

| Circular plug-in connector | AG2 | | | AG3 | | |
|---|---|---|---|---|---|---|
| | Electrical variant | | | Electrical variant | | |
| | Binary with digital input (büS service interface) | With fieldbus gateway | büS/CANopen | Binary with digital input (büS service interface) | With fieldbus gateway | büS/CANopen |
| | 0...5 V (log „0“)<br>10...30 V (log „1“) | for EtherNet/IP, PROFINET, Modbus TCP, EtherCAT protocols | | 0...5 V (log „0“)<br>10...30 V (log „1“) | for EtherNet/IP, PROFINET, Modbus TCP, EtherCAT protocols | |
| X1 | X | – | – | X | – | – |
| X3 | X | X | X | – | X | X |
| X4 | – | – | – | X | X | X |
| X7 | – | X | – | – | X | – |

X = available
– = not available

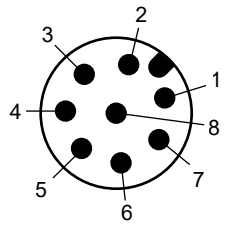
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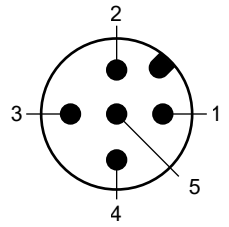
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### Circular plug-in connector with pin assignment

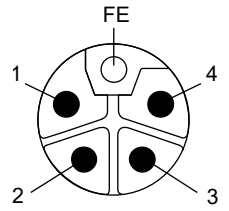
#### Input and output signals

| X1 – Circular plug M12, 8-pin, A-coded | Pin | Assignment |
|---|---|---|
|  | **1** | Digital input + |
| | **2** | GND for digital input and digital outputs |
| | **3** | Digital output 2 + |
| | **4** | Digital output 1 + |
| | **5** | Do not connect |
| | **6** | Do not connect |
| | **7** | Do not connect |
| | **8** | Do not connect |

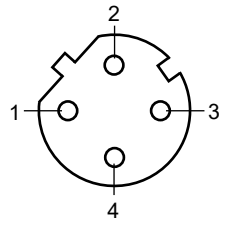
#### Operating voltage AG2 and büS/CANopen

| X3 – Circular plug M12, 5-pin, A-coded | Pin | Assignment |
|---|---|---|
|  | **1** | CAN Shield / shield |
| | **2** | Operating voltage 24 V DC ± 10 % |
| | **3** | GND / CAN_GND |
| | **4** | CAN_H |
| | **5** | CAN_L |

#### Operating voltage AG3

| X4 – Circular plug M12, 5-pin, L-coded | Pin | Assignment |
|---|---|---|
|  | **1** | Operating voltage 24 V DC ± 10 % |
| | **2** | Do not connect |
| | **3** | GND |
| | **4** | Do not connect |
| | **FE** | Functional earth, connected to housing |

#### Fieldbus connection

| X7 – Circular socket M12, 4-pin, D-coded | Pin | Assignment |
|---|---|---|
|  | **1** | Transmit + |
| | **2** | Receive + |
| | **3** | Transmit - |
| | **4** | Receive - |

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# 6. Performance specifications

## 6.1. Fluidic data

**Overview of flow characteristics with flow below seat**

**Note:**

- $K_V$ value [m³/h]: measurement with water according to DIN EN 60534 - 2 - 4
- For operating limits see "6.2. Operating limits" on page 21
- Flow rates depend on the specific pipe connection and the applicable standard

| Nominal diameter (port connection) | | Actuator force 1.) | Max. operating pressure | | $K_V$ value water | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Seat seal | | Port connection | | | |
| | | | PTFE (...+ 130 °C) | PEEK (...+ 230 °C) | Thread G, NPT and RC | Welded connection DIN 11850 series 2, DIN 11866 series A, DIN EN 10357 series A<br><br>Clamp DIN 32676 series A | Welded connection ISO 4200, DIN EN ISO 1127, DIN 11866 series B<br><br>Clamp DIN 32676 series B<br><br>Flange DIN EN 1092 - 1 (PN 25) | Welded connection ASME BPE, DIN 11866 series C<br><br>Clamp ASME BPE |
| DN | NPS | [N] | [bar(g)] | | [m³/h] | | | |
| 15 | ½ 2.) | 1300 | 25 | 25 | 5.4 | 5.4 | 5.4 | 1.5 |
| 20 | ¾ 2.) | | | | 11 | 11 | 11 | 9.4 |
| 25 | 1 2.) | | | | 20 | 18 | 20 | 16 |
| 32 | 1¼ 2.) | 1300 | 16 | 16 | 32 | 30 | 32 | – |
| | | 2500 | 25 | 25 | | | | |
| 40 | 1½ 2.) | 1300 | 10 | 10 | 47 | 41 | 47 | 41 |
| | | 2500 | 18 | 18 | | | | |
| | | 7700 | – | 25 | | | | |
| 50 | 2 2.) | 1300 | 6 | 6 | 62 | 60 | 62 | 58 |
| | | 2500 | 10 | 10 | | | | |
| | | 7700 | – | 25 | | | | |
| 65 | 2½ 2.) | 10000 | – | 25 | 91 | 91 | 91 | 85 |
| 80 | 3 2.) | 10000 | – | 17 | 140 | 140 | 140 | 140 |

1.) AG2: actuator size 2 with a nominal force of 1300 or 2500 N
AG3: actuator size 3 with a nominal force of 7700 or 10000 N

2.) Deviation for port connections according to ASME BPE: the largest nominal diameter (port connection) next in size is used, e.g. NPS 1 instead of NPS ¾.

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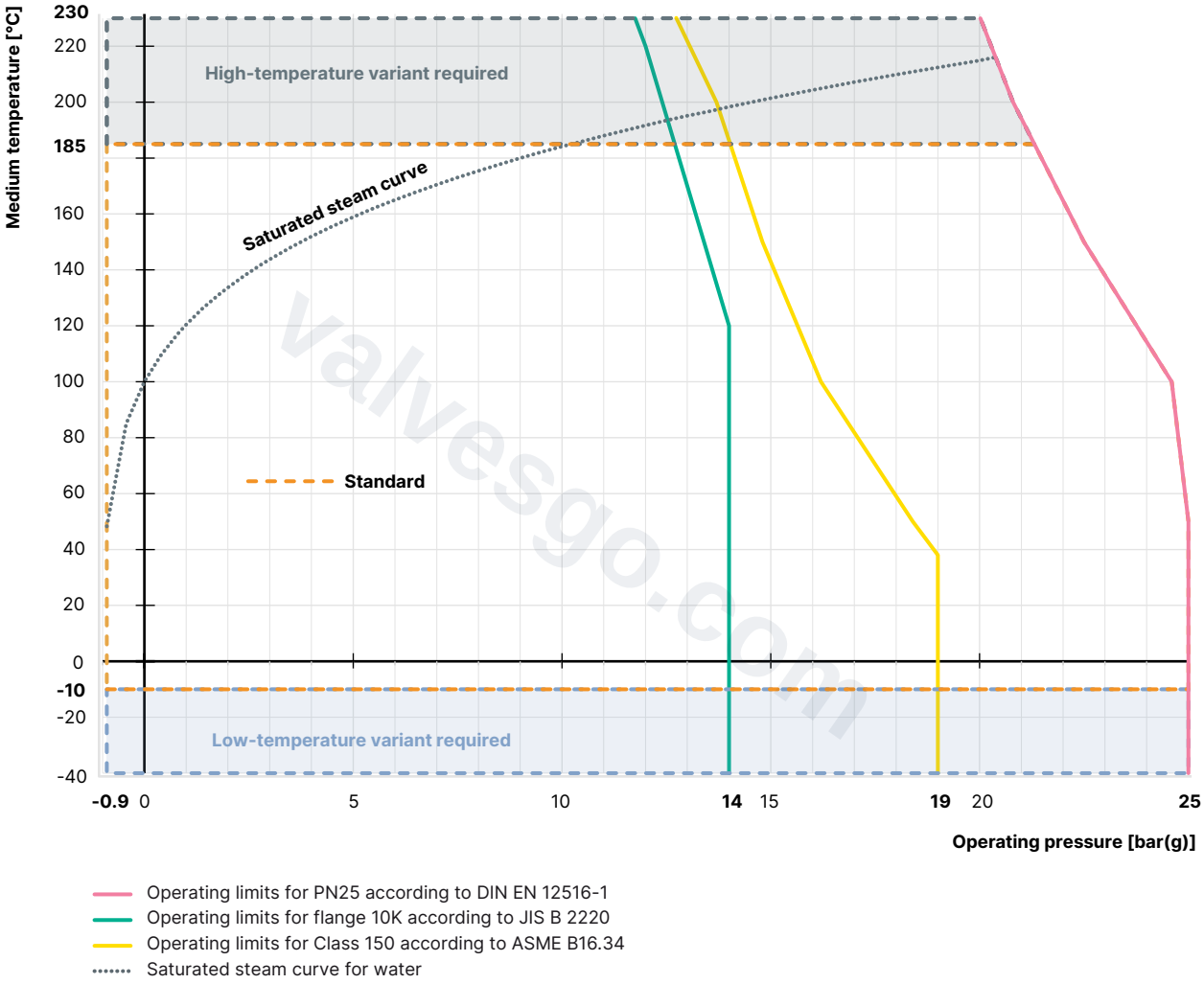
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## 6.2. Operating limits

**Note:**
For device variants with approvals or conformities, deviating technical operating limits (temperature, pressure) may apply. Refer to the corresponding approval-related documentation.

### Operating limits for medium temperature and operating pressure

In addition to the maximum operating pressures, the application range of Bürkert process valves is limited by the nominal pressure in accordance with the relevant standard.




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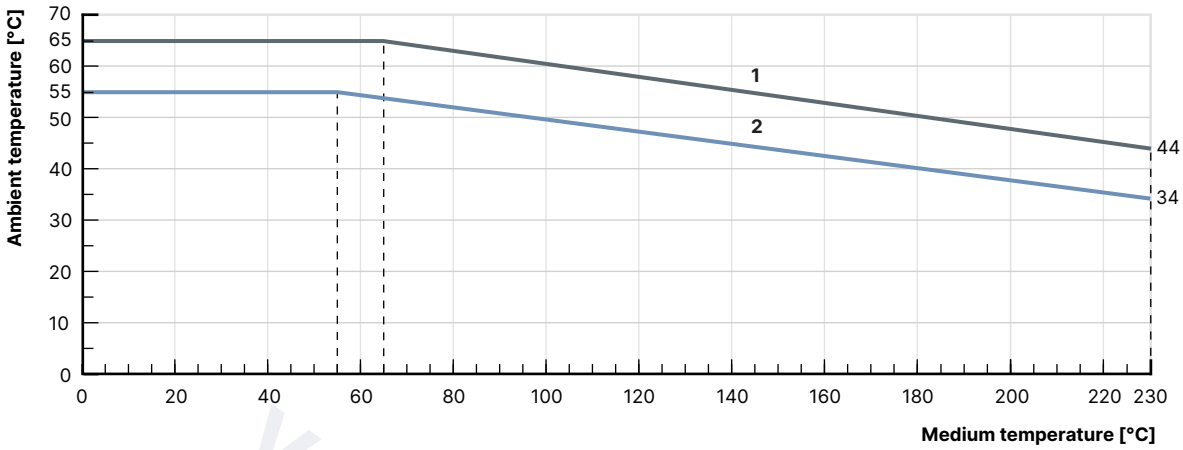


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### Operating limits for ambient and medium temperature

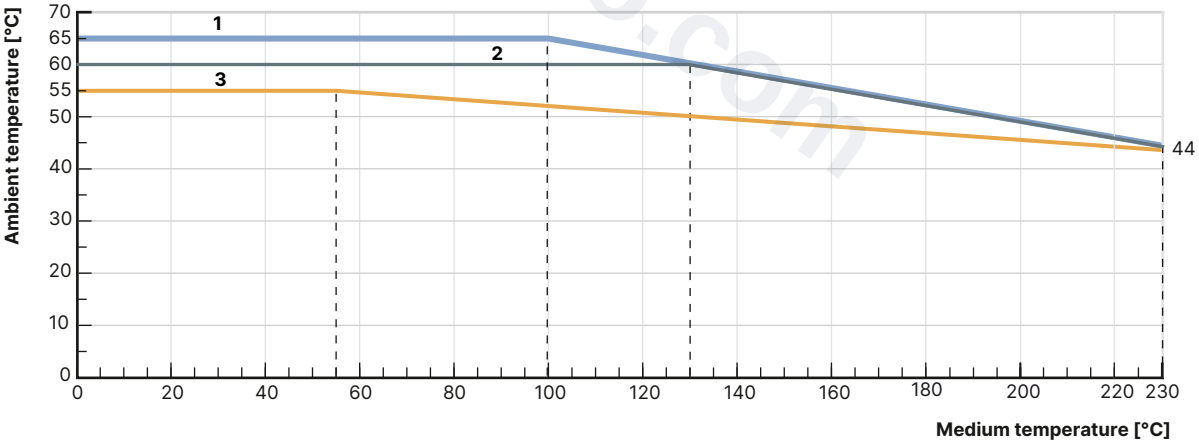
The maximum permissible temperature for the environment and the medium are dependent on each other. The maximum allowable temperature curves of different device variants are shown in the temperature chart. The curves were determined for maximum operating conditions (maximum operating pressure and motor power). For deviating operating conditions an individual verification can be carried out. Contact your Bürkert sales department for more information.

#### AG2




| No. | Description |
|---|---|
| 1 | Devices without module |
| 2 | Devices with energy storage SAFEPOS energy-pack or fieldbus gateway |

#### AG3




| No. | Description |
|---|---|
| 1 | Devices without module |
| 2 | Devices with energy storage SAFEPOS energy-pack |
| 3 | Devices with fieldbus gateway |

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### Operating limits for seat seal

PTFE is used for a maximum medium temperature of <+ 130 °C. If the maximum medium temperature temporarily or permanently exceeds + 130 °C, PEEK as a seal material is the appropriate solution.

### Operating limits for optional variants

**High-temperature variant**
Thanks to an adaption of the spindle seal, this variant is suitable for applications with steam, neutral gases and other heat transfer mediums up to + 230 °C.

**Drinking water variant**
Wetted materials are tested in contact with the medium are tested for suitability with drinking water up to + 85 °C.

**Vacuum variant**
Without leakage bore, this design is suitable for pressures down to - 0.9 bar.

**Low-temperature variant**
Suitable for minimum medium temperatures down to - 40 °C.

**Variant for oxygen**
Non-metallic wetted materials are tested for suitability with oxygen and are suitable for operating pressures up to 25 bar(g) and medium temperatures up to + 60 °C.

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## 6.3. Electrical control and interfaces

**Interface diagram**

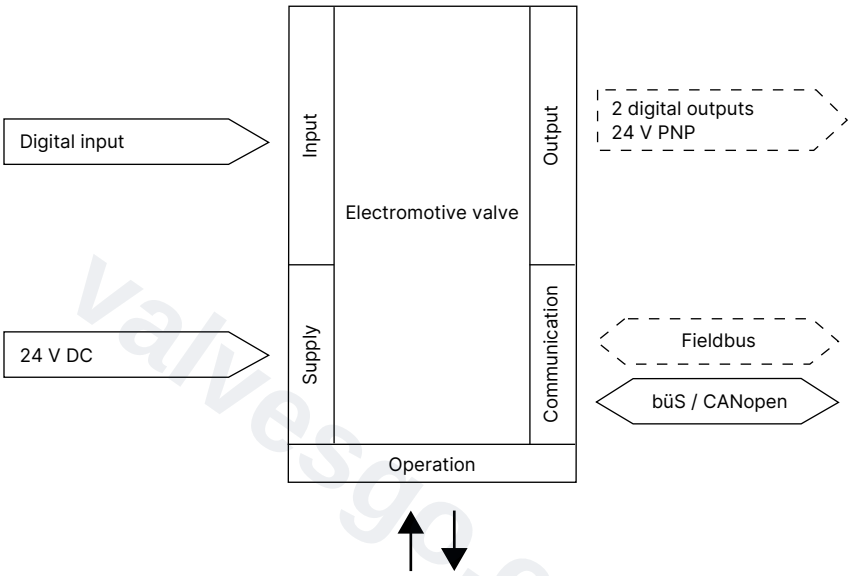
The actuator position is controlled according to the digital input. The selection is made either by an external standard signal or via a fieldbus (digital).

**Inputs and outputs:**

- 1 digital input, 2 digital outputs

**Interface:**

- Cable gland with connection terminals (only AG2)
- M12 circular plug-in connectors (optional)




**Note:**
Optional outputs are represented as a broken line.

| **Control data** | |
|---|---|
| Digital input | 0...5 V = log „0“, 10...30 V = log „1“, inverted input reversed accordingly |
| Digital output | Current limitation 100 mA |
| **Communication** | |
| Communication interface (büS) | Connection to PC via USB büS interface set<br>(connection terminals, circular plug-in connector or büS service interface) |
| Communication software (büS) | Bürkert Communicator, see **Type 8920** ▶ |

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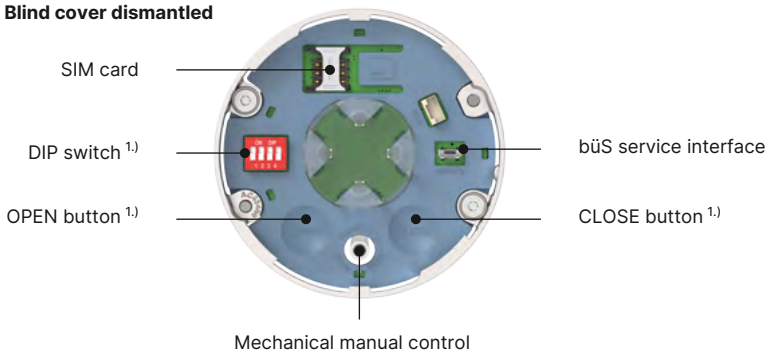


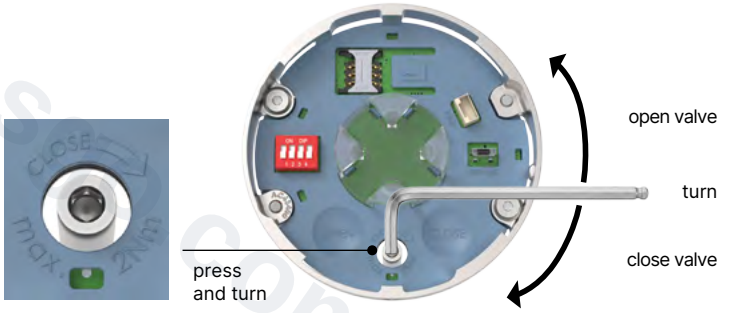
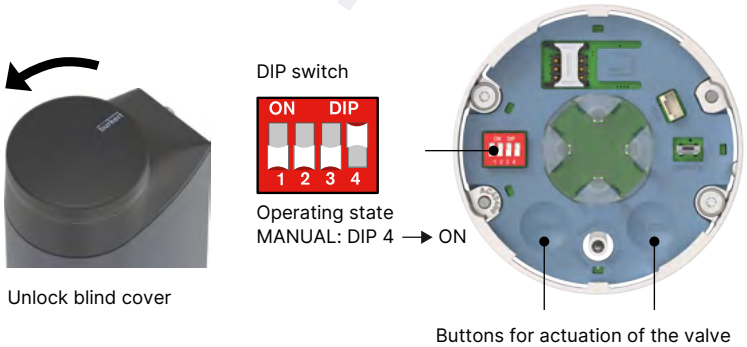
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# 7. Product design and assembly

## 7.1. Product features

**Note**
Further information can be found in the **operating instructions Type 3320** ▶.

| User interface | |
|---|---|
| The basic functions are operated by 4 DIP switches and 2 push buttons. These are located under the blind cover which can be removed manually by turning. Through the büS service interface, the device can also be configured in detail with the Bürkert Communicator software.<br><br>For this, the optional USB-büS interface set is required (see "8.4. Ordering chart accessories" on page 31). | **Blind cover dismantled**<br><br><br>1.) Non-functional in devices with display module. The display must be used for operation. |

| Actuation | |
|---|---|
| **Mechanical manual override**<br>The manual override for mechanical movement of the valve is located for AG2 under the blind cover and for AG3 under the pressure compensation element. It ensures that the actuator can be operated even if the power supply fails. | Mechanical manual override AG2<br><br> |
| **Electrical manual override**<br>The electrical manual override for the procedure is carried out via two buttons under the blind cover. | <br> |

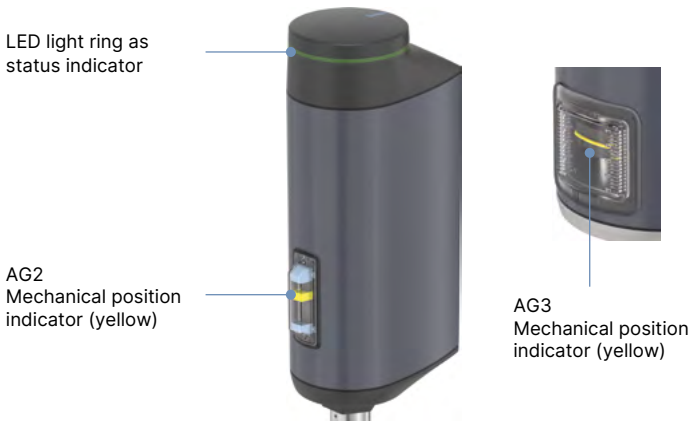
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## Display elements

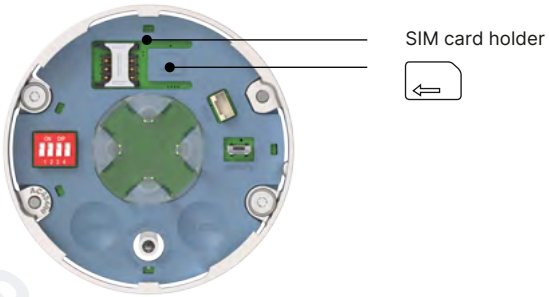
**Display 360° LED light ring**
A clearly visible 360° LED ring is attached to the blind cover to indicate the device status, the valve end position and the operating state. The LED light ring lights up, blinks or flashes in one or changing colours, depending on the LED mode set.

Mechanical position indicator:
The mechanical position indicator shows the current valve position even if the supply voltage fails.

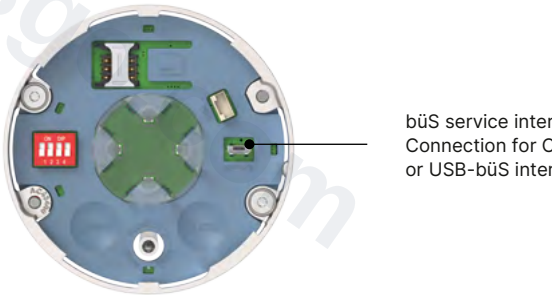



## Data transmission (optional)

**SIM card (optional)**
With the optionally available SIM card, device-specific values and user settings can be stored and quickly transferred to another device.




**büS service interface**
The büS service interface connects the device with the Bürkert Communicator software on a PC, laptop or smartphone. From there a configuration of the device or error diagnosis can be carried out.

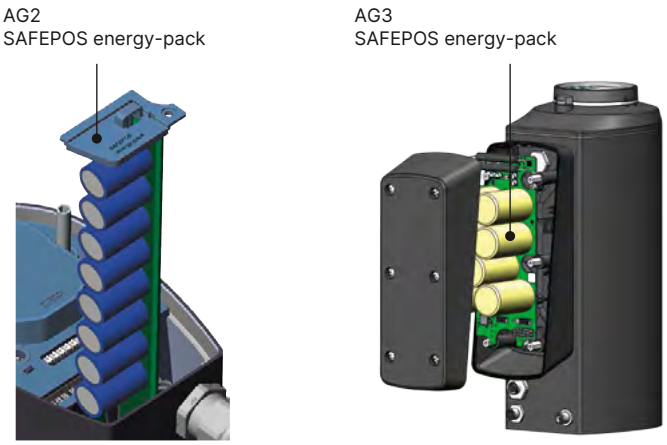



## Safety position via energy storage (optional)

The safety starting positions in case of power interruption is realised with the optional energy storage SAFEPOS energy-pack. The desired position is set via the menu. In addition to the end positions (open/closed), any desired intermediate position can be defined here. 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 service life is coming to an end. The storage device is designed as a plug-in module to facilitate replacement. Without energy storage, the valve remains in the last position it was in.

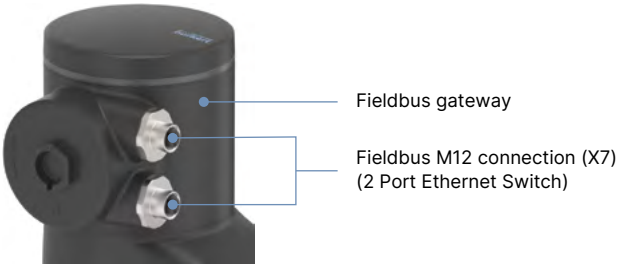
The energy storage device is fully charged and ready for operation after a maximum of 120 seconds (depending on the operating conditions).

The energy storage device cannot be retrofitted in the field.




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| Fieldbus: EtherNet/IP, PROFINET, Modbus TCP, EtherCAT (optional) | |
|---|---|
| The fieldbus gateway for EtherNet/IP, PROFINET, Modbus TCP and EtherCAT is integrated in an additional module. It has 2 fieldbus connections with 4-pin M12 circular sockets. The interfaces for the fieldbus connection and the status LEDs are located under the gateway housing cover. If there is a need for it to be included in a network, the Ethernet configuration can be performed via the web server.<br><br>The gateway cannot be retrofitted in the field. |  |

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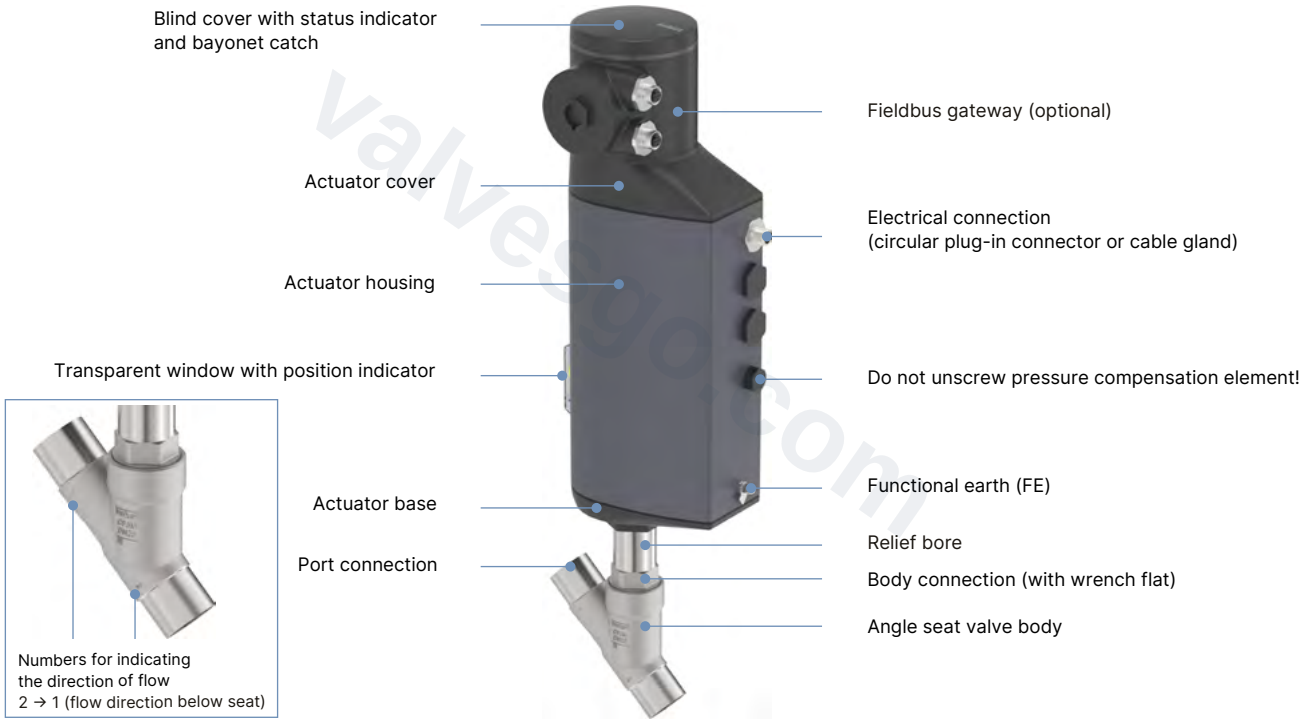
## 7.2. Product assembly

The electromotive linear drive consists of a brushless DC motor, a gear and a spindle system that transfers the force to the closing element. The integrated control electronics are controlled either by standard signals or via a fieldbus (digital). A positioner and a process controller are available as controller variants. The electromotive linear actuator is designed to provide optimum efficiency. At the same time, it keeps the valve tight and in position even at the maximum specified medium pressure in a powerless standstill. The optional energy storage device SAFEPOS energy-pack is available for the device. If the supply voltage fails, it supplies the actuator with the energy required to move the valve into the desired position, which can be set in the menu.

The valve position can be changed manually in 2 ways. Either via the electrical manual control or via a mechanical manual override if no supply voltage is available. The device can be set and operated either via 2 capacitive keys switches or, optionally, on a display with touch screen. Additionally, you can always operate the device via the büS service interface and using the software Bürkert Communicator.

The intelligent process valve Type 3320 offers the operator options for process monitoring, valve diagnosis and preventive maintenance. Internal measurements of the operating status are evaluated and, if necessary, issued as a warning or error message. These signal, for example, impermissible ambient and process conditions, functional deviations of components, or the status of the energy storage device.

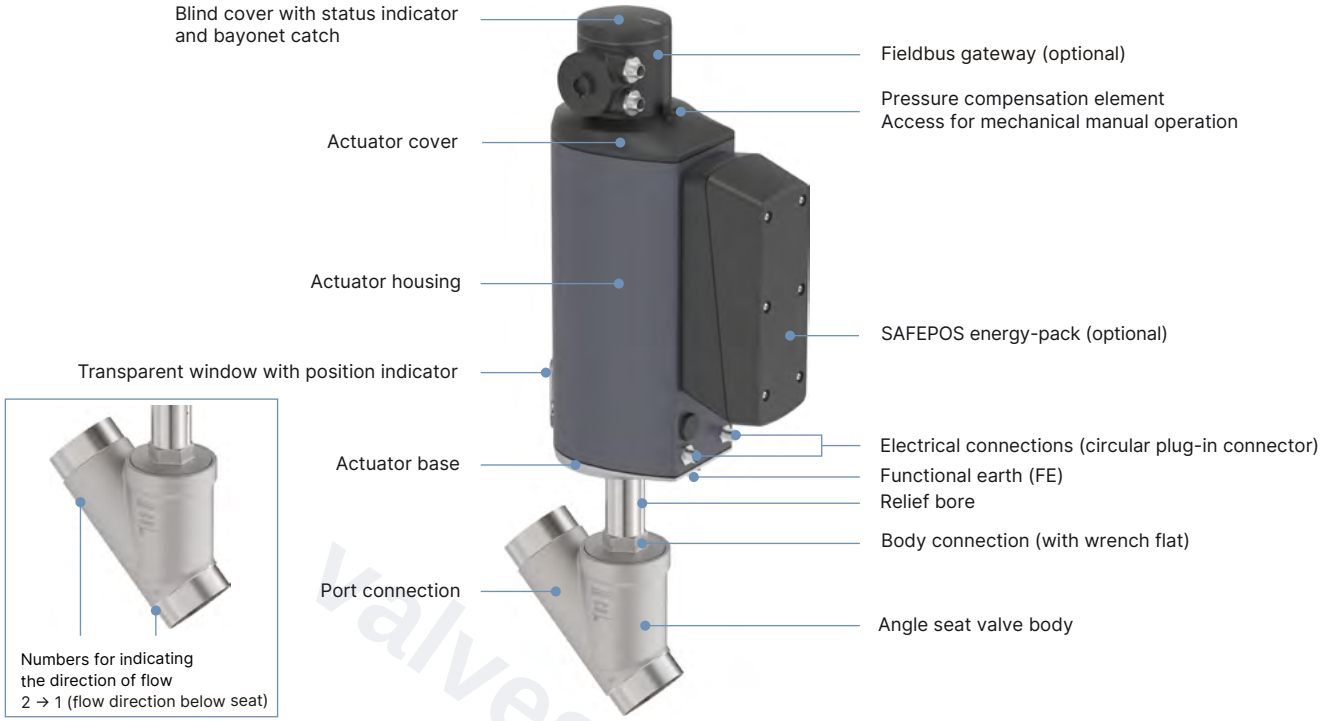
**Design of the electromotive valve Type 3320 AG2**




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## Design of the electromotive valve Type 3320 AG3




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# 8. Ordering information

## 8.1. Bürkert eShop



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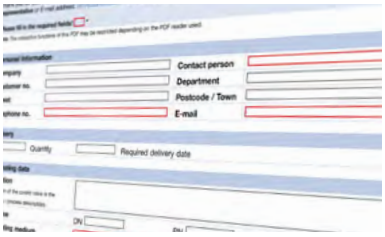


**Bürkert product filter – Get quickly to the right product**

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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 – Your enquiry quickly and compactly**

Would you like to make a specific product enquiry based on your technical requirements? Use our Product Enquiry Form for this purpose. There you will find all the relevant information for your Bürkert contact. This will enable us to provide you with the best possible advice.

Fill out the form now

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## 8.4. Ordering chart accessories

**Note:**
For device variants with approvals or conformities, additional accessories may be required for intended use. Refer to the relevant approval documentation.

### Standard accessories

| Description | Artikel-Nr. |
|---|---|
| SIM card for data transmission between units | 291773 |
| Holding device for port connection DN 15...40 | 693770 |
| Holding device for port connection DN 50 | 693771 |
| Blind cover made of plastic | 277881 |
| Wearing part energy storage SAFEPOS energy-pack (AG2) | 285834 |
| Wearing part energy storage SAFEPOS energy-pack (AG3) | 20046438 |

### Connection cable

**Note:**
For connection to a büS/CANopen network see „Supplement | Cabling guide büS/EDIP“ on our website under „User Manuals“, **Type 3320** ▶.

| Description | Artikel-Nr. |
|---|---|
| M12 circular socket with cable, 4-pin, A-coded, cable length: 5 m, for X3, operating voltage AG2 (without communication) | 918038 |
| M12 circular socket with cable, 5-pin, L-coded, cable length: 5 m, for X4, operating voltage AG3 (without communication) | 20010840 |
| M12 circular socket with cable, 8-pin, A-coded, cable length: 2 m, for X1, input and output signals | 919061 |
| M12 circular plug with cable, 4-pin, D-coded to M12 straight plug, cable length: 5 m, for X7, fieldbus connection | 775043 |
| M12 circular plug with cable, 4-pin, D-coded to RJ45 plug, cable length: 5 m, for X7, fieldbus connection | 775053 |

### büS interface

**Note:**

- For connection to a büS/CANopen network see „Supplement | Cabling guide büS/EDIP“ on our website under „User Manuals“, **Type 3320** ▶.
- Detailed charts of accessories can be found in the cabling guide, see „Supplement | Cabling guide büS/EDIP“ on our website under „User Manuals“, **Type 3320** ▶.

| Description | Artikel-Nr. |
|---|---|
| Bürkert Communicator software, Type 8920 | **Type 8920** ▶ |
| USB-büS interface set 1 (Type 8923) | 772426 |
| USB-büS interface set 2 (Type 8923) | 772551 |
| büS adapter for büS service interface (M12 on büS service interface micro USB), cable length: 0.3 mm | 774931 |

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