



EN Operating instructions





further information webcode: GW-B56

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| 9 10 11 12 13 14 15 16 | Dimen Manuf 10.1 10.2 10.3 10.4 Installa 11.1 11.2 Electri 12.1 12.2 Limit s 13.1 13.2 Comm 0perat 15.1 15.2 15.3 | sions | 19 23 23 23 23 23 23 23 24 26 27 33 34 35 35 35 35 35 35 |
| 9 10 11 12 13 14 15 16 | Dimen Manuf 10.1 10.2 10.3 10.4 Installa 11.1 11.2 Electri 12.1 12.2 Limit s 13.1 13.2 Comm Operat 15.1 15.2 15.3 Troubl | sions | 19 23 23 23 23 23 23 24 26 27 33 34 35 35 35 35 35 35 35 35 37 |
| 9 10 11 12 13 14 15 16 17 | Dimen Manuf 10.1 10.2 10.3 10.4 Installa 11.1 11.2 Electri 12.1 12.2 Limit s 13.1 13.2 Comm Operat 15.1 15.2 15.3 Troubl Inspec | sions | 19 23 24 26 26 27 23 23 24 26 27 26 27 26 27 26 27 26 27 28 29 20 20 20 20 21 2 |

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1 General information

1.1 Information

- The descriptions and instructions apply to the standard versions. For special versions not described in this document the basic information contained herein applies in combination with any additional special documentation.
- Correct installation, operation, maintenance and repair work ensure faultless operation of the product.
- Should there be any doubts or misunderstandings, the German version is the authoritative document.
- Contact us at the address on the last page for staff training information.

1.2 Symbols used

The following symbols are used in this document:

| Symbol | Meaning | |
|--------|-----------------------|--|
| • | Fasks to be performed | |
| ► | Response(s) to tasks | |
| _ | Lists | |

1.3 Definition of terms

Working medium

The medium that flows through the GEMÜ product.

1.4 Warning notes

Wherever possible, warning notes are organised according to the following scheme:

| SIGNAL WORD | | |
|--|--|--|
| Possible symbol for the specific danger | Type and source of the danger Possible consequences of non-observance. Measures for avoiding danger. | |

Warning notes are always marked with a signal word and sometimes also with a symbol for the specific danger.

The following signal words and danger levels are used:

►

▲ DANGER

- Imminent danger!
 - Non-observance can cause death or severe injury.

Potentially dangerous situation!

 Non-observance can cause death or severe injury.



Potentially dangerous situation!

 Non-observance can cause moderate to light injury.

NOTICE

Potentially dangerous situation!

 Non-observance can cause damage to property.

The following symbols for the specific dangers can be used within a warning note:

| Symbol | Meaning |
|------------|------------------------|
| | Corrosive chemicals! |
| <u>sss</u> | Hot plant components! |
| 4 | Risk of electric shock |

2 Safety information

The safety information in this document refers only to an individual product. Potentially dangerous conditions can arise in combination with other plant components, which need to be considered on the basis of a risk analysis. The operator is responsible for the production of the risk analysis and for compliance with the resulting precautionary measures and regional safety regulations.

The document contains fundamental safety information that must be observed during commissioning, operation and maintenance. Non-compliance with these instructions may cause:

- Personal hazard due to electrical, mechanical and chemical effects.
- Hazard to nearby equipment.
- · Failure of important functions.
- Hazard to the environment due to the leakage of dangerous materials.

The safety information does not take into account:

- Unexpected incidents and events, which may occur during installation, operation and maintenance.
- Local safety regulations which must be adhered to by the operator and by any additional installation personnel.

Prior to commissioning:

- 1. Transport and store the product correctly.
- 2. Do not paint the bolts and plastic parts of the product.
- 3. Carry out installation and commissioning using trained personnel.
- 4. Provide adequate training for installation and operating personnel.
- 5. Ensure that the contents of the document have been fully understood by the responsible personnel.
- 6. Define the areas of responsibility.
- 7. Observe the safety data sheets.
- 8. Observe the safety regulations for the media used.

During operation:

- 9. Keep this document available at the place of use.
- 10. Observe the safety information.
- 11. Operate the product in accordance with this document.
- 12. Operate the product in accordance with the specifications.
- 13. Maintain the product correctly.
- 14. Do not carry out any maintenance work and repairs not described in this document without consulting the manufacturer first.

In cases of uncertainty:

15. Consult the nearest GEMÜ sales office.

3 Product description

3.1 Construction





| ltem | Name | Materials |
|------|--|---|
| 1 | Ball valve body | 1.4408 / CF8M |
| 2 | Pipe connections | 1.4408 / CF8M |
| 3 | Mounting flange ISO 5211 | 1.4408 / CF8M |
| 3a | Actuator housing cover Actuator version 1015 Actuator version 2015, 3035 Actuator version 2070 Actuator version 4100, 4200 | PPO (10% glass fibre reinforced) PP (30% glass fibre re- inforced) ABS Aluminium |
| 3b | Actuator housing base Actuator version 1015, 2015, 3035 Actuator version 2070 Actuator version 4100, 4200 | PP (30% glass fibre re- inforced) ABS Aluminium |
| 4 | Optical position indicator | PP-R natural |
| | Seal | PTFE |
| 5 | Antistatic unit | 1.4408 |
| С | CONEXO RFID chip | |

3.2 Pressure-relief hole



3.3 Control ball



Note: The control ball cannot be retrofitted to standard 2/2way bodies at a later date.

3.4 Description

The GEMÜ B56 3-piece 2/2-way metal ball valve is motorized. It has a plastic actuator housing. A manual override and an optical position indicator are integrated as standard. The seat seal is made of PTFE.

3.5 Function

The product is equipped with a top flange in stainless steel. It has an electric actuator with a powerful DC motor. The reduction gear in the motor, consisting of a threaded spindle with a lever, provides the rotation through 90°. The actuator has an optical position indicator and a manual override as standard.

4 GEMÜ CONEXO

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.



Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

For further information on GEMÜ CONEXO please visit: www.gemu-group.com/conexo

Installing the RFID chip

In the corresponding design with CONEXO, this product has an RFID chip (1) for electronic recognition. The position of the RFID chip can be seen below.



5 Correct use

Improper use of the product

- Risk of severe injury or death.
- Manufacturer liability and guarantee will be void.
- Only use the product in accordance with the operating conditions specified in the contract documentation and in this document.

The product is suitable for installation in piping and for controlling a media flow. The operating conditions according to the technical data apply to the media to be controlled.

The product is controlled via a motorized actuator.

The product is not intended for use in potentially explosive areas.

6 Order data

6.1 Ball valve with GEMÜ 9428, 9468 actuator

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

| 1 Туре | Code |
|---|------|
| Ball valve, metal, motorized, one-piece body, com- | B56 |
| pact flange | |
| 2 DN | Code |
| DN 15 | 15 |
| DN 20 | 20 |
| DN 25 | 25 |
| DN 32 | 32 |
| DN 40 | 40 |
| DN 50 | 50 |
| DN 65 | 65 |
| DN 80 | 80 |
| DN 100 | 100 |
| 3 Body/ball configuration | Code |
| 2/2-way body | D |
| 2/2-way body, V-ball 30° | U |
| (for Kv value see datasheet) | |
| 2/2-way body, V-ball 90° | W |
| (for Kv value see datasheet) | |
| 2/2-way body, V-ball 60° | Y |
| | |
| 4 Connection type | Code |
| Flange ANSI Class 125/150 RF | 39 |
| Flange EN 1092, PN 16/PN40, form B DN 15 to DN | 68 |
| 80, flange EN 1092 PN 16 form B DN 100 only | |
| | |
| 5 Ball valve material | Code |
| 1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft) | 37 |
| 6 Seal material | Code |
| PTFE | 5 |
| 7 Voltage/Frequency | Code |
| 12 VDC | B1 |
| 24 VDC | C1 |
| 8 Control module | Code |
| ON/OFF actuator | A0 |
| ON/OFF actuator, 2 additional potential-free limit | AE |
| switches, | |
| Class A (EN15714-2) | |
| ON/OFF actuator, relay, not reversible | 00 |

| 8 Continuation of Control module | Code |
|--|------|
| ON/OFF actuator, 2 additional potential-free limit switches, relay, not reversible | 0E |
| ON/OFF actuator, potentiometer output, relay, not reversible | 0P |
| 9 Actuator version | Code |
| GEMÜ actuator, motorized, size 1, operating time 11 s, torque 15 Nm, supply voltage B1, C1 | 1015 |
| GEMÜ actuator, motorized, size 2, operating time 15 s, torque 70 Nm, supply voltage C1 | 2070 |
| GEMÜ actuator, motorized, size 4, operating time 20 s, torque 100 Nm, supply voltage C1 | 4100 |
| GEMÜ actuator, motorized, size 4, operating time 16 s, torque 200 Nm, supply voltage C1 | 4200 |
| 10 CONEXO | Code |
| without | |
| Integrated RFID chip for electronic identification and traceability | С |

Order example

| Order option | Code | Description |
|---------------------------|------|--|
| 1 Туре | B56 | Ball valve, metal, motorized, one-piece body, compact flange |
| 2 DN | 15 | DN 15 |
| 3 Body/ball configuration | D | 2/2-way body |
| 4 Connection type | 39 | Flange ANSI Class 125/150 RF |
| 5 Ball valve material | 37 | 1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft) |
| 6 Seal material | 5 | PTFE |
| 7 Voltage/Frequency | C1 | 24 VDC |
| 8 Control module | A0 | ON/OFF actuator |
| 9 Actuator version | 1015 | GEMÜ actuator, motorized, size 1, operating time 11 s, torque 15 Nm, supply voltage B1, C1 |
| 10 CONEXO | | without |

6.2 Ball valve with J+J actuator

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

| 1 Туре | Code | 8 Continuation of Control module | Code |
|---|------|--|--------|
| Ball valve, metal, motorized, one-piece body, com- pact flange | B56 | ON/OFF actuator, 2 additional potential-free limit switches, Class A (FN15714-2) | AE |
| 2 DN | Code | ON/OFF actuator 2 additional potential-free limit | AF1 |
| DN 15 | 15 | switches, | , |
| DN 20 | 20 | BSR battery pack (NC) | |
| DN 25 | 25 | ON/OFF actuator, 2 additional potential-free limit | AE2 |
| DN 32 | 32 | switches, | |
| DN 40 | 40 | BSR battery pack (NO) | 4.5 |
| DN 50 | 50 | ON/OFF actuator, potentiometer output, Class A (EN15714-2) | AP |
| DN 65 | 65 | ON/OEE actuator 2 additional notential-free limit | ۸D1 |
| DN 80 | 80 | switches. | AFT |
| DN 100 | 100 | potentiometer output 5 kOhm, Failsafe battery | |
| 2 Pody/ball configuration | Codo | pack (NC), | |
| 2/2 way body | D | preferred direction adjustable | |
| 2/2-way body | | Control actuator, external set value 0-10 VDC | ET |
| (for Kv value see datasheet) | 0 | Positioner DPS, external set value 0-10V, BSR bat- tery pack (NC) | E11 |
| 2/2-way body, V-ball 90° | W | Control actuator, external set value 0/4-20 mA | E2 |
| (for Kv value see datasheet) | | Positioner DPS, external set value 4-20mA, BSR | E22 |
| 2/2-way body, V-ball 60° (for Kv value see datasheet) | Y | battery pack (NO) | |
| 4 Connection type | Code | 9 Actuator version | Code |
| Elange ANSI Class 125/150 RE | 30 | J+J actuator, motorized, type J4C, operating time | J4C20 |
| Elange EN 1092 PN 16/PN/0 form B DN 15 to DN | 68 | 10 S, torque 20 NM, beating JP 67 | |
| 80, | 00 | .1+,1 actuator motorized type .14C operating time | .14035 |
| flange EN 1092, PN 16, form B DN 100 only | | 10 s, torque 35 Nm, | 01000 |
| 5 Ball valve material | Code | heating, IP 67 | |
| 1 4408 / CE8M (body connection) 1 4401 / SS316 | 37 | J+J actuator, motorized, type J4C, operating time | J4C85 |
| (ball, shaft) | 0, | 30 s, torque 85 Nm, | |
| | Orde | heating, IP 67 | 14014 |
| o Seal material | Loae | 34 s torque 140 Nm | J4C14 |
| | 3 | heating, IP 67 | |
| 7 Voltage/Frequency | Code | J+J actuator, motorized, type J4C, operating time | J4C30 |
| 24-240V AC/DC | U5 | 58 s, torque 300 Nm, | |
| 8 Control module | Code | heating, IP 67 | |
| ON/OFF 3-position actuator, additional potential- | A3 | 10 CONEXO | Code |
| free limit switches | | without | |
| | | Integrated RFID chip for electronic identification | С |

Order example

| Order option | Code | Description |
|--------------|------|--|
| 1 Туре | B56 | Ball valve, metal, motorized, one-piece body, compact flange |

and traceability

| Order option | Code | Description |
|---------------------------|-------|--|
| 2 DN | 15 | DN 15 |
| 3 Body/ball configuration | D | 2/2-way body |
| 4 Connection type | 39 | Flange ANSI Class 125/150 RF |
| 5 Ball valve material | 37 | 1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft) |
| 6 Seal material | 5 | PTFE |
| 7 Voltage/Frequency | U5 | 24-240V AC/DC |
| 8 Control module | AE | ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2) |
| 9 Actuator version | J4C20 | J+J actuator, motorized, type J4C, operating time 10 s, torque 20 Nm, heating, IP 67 |
| 10 CONEXO | | without |

6.3 Ball valve with Bernard actuator

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

| 1 TypeCodeBall valve, metal, motorized, one-piece body, compact flangeB562 DNCodeDN 1515DN 2020DN 2525DN 3232DN 4040DN 5050DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)Y2/2-way body, V-ball 90° (for Kv value see datasheet)Y2/2-way body, V-ball 90° (for Kv value see datasheet)Y2/2-way body, V-ball 90° (for Kv value see datasheet)S2/2-way body, V-ball 90° (for Kv value see datasheet)S2/2-way body, V-ball 90° (for Kv value see datasheet)Y2/2-way body, V-ball 90° (for Kv value see datasheet)Y2/2-way body, V-ball 90° (for Kv value see datasheet)S2/2-way body, V-ball 90° (for Kv value see datasheet)S2/2-way body, V-ball 60° (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Z2/2-way body, V-ball 60° (for Kv value see datasheet) </th <th></th> <th></th> | | |
|---|---|------|
| Ball valve, metal, motorized, one-piece body, compact flangeB562 DNCodeDN 1515DN 2020DN 2525DN 3232DN 4040DN 5050DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 onlyS5 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (additional potential-freeT6 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuato | 1 Туре | Code |
| 2 DNCodeDN 1515DN 2020DN 2525DN 3232DN 4040DN 5050DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way body, V-ball 30°U(for Kv value see datasheet)U2/2-way body, V-ball 90°W(for Kv value see datasheet)Y2/2-way body, V-ball 90°W(for Kv value see datasheet)Y2/2-way body, V-ball 90°Y(for Kv value see datasheet)Y2/2-way body, V-ball 60°Y(for Kv value see datasheet)S2/2-way body, V-ball 60°Y(for Kv value see datasheet)Z2/2-way body, CBZ2/2-way body, CBZ2/2-way body, CBZ | Ball valve, metal, motorized, one-piece body, com- pact flange | B56 |
| DN 1515DN 2020DN 2525DN 3232DN 4040DN 5050DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y2/2-way body, V-ball 60° | 2 DN | Code |
| DN 2020DN 2525DN 3232DN 4040DN 5050DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Y1CodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only6855Code1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, A (EN15714-2)AE | DN 15 | 15 |
| DN 2525DN 3232DN 4040DN 5050DN 6565DN 8080DN 100100 3 Body/ball configuration Code2/2-way bodyD2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Y5Elange ANSI Class 125/150 RF39Flange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685576 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, A (EN15714-2)AE | DN 20 | 20 |
| DN 3232DN 4040DN 5050DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Y5Gotto typeCodeFlange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685SCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, A (EN15714-2)AE | DN 25 | 25 |
| DN 4040DN 5050DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 90° (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, A (EN15714-2)AE | DN 32 | 32 |
| DN 5050DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30°U(for Kv value see datasheet)U2/2-way body, V-ball 90°W(for Kv value see datasheet)Y2/2-way body, V-ball 60°Y(for Kv value see datasheet)Y2/2-way body, V-ball 60°Y(for Kv value see datasheet)S2/2-way body, V-ball 60°Y(for Kv value see datasheet)S39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only5 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, A (EN15714-2)AE | DN 40 | 40 |
| DN 6565DN 8080DN 1001003 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30°U(for Kv value see datasheet)U2/2-way body, V-ball 90°W(for Kv value see datasheet)Y2/2-way body, V-ball 60°Y(for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free limit switches, A (EN15714-2)AE | DN 50 | 50 |
| DN 8080DN 1001003 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30°U(for Kv value see datasheet)Y2/2-way body, V-ball 90°W(for Kv value see datasheet)Y2/2-way body, V-ball 60°Y(for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, A (EN15714-2)AE | DN 65 | 65 |
| DN 1001003 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | DN 80 | 80 |
| 3 Body/ball configurationCode2/2-way bodyD2/2-way body, V-ball 30°U(for Kv value see datasheet)U2/2-way body, V-ball 90°W(for Kv value see datasheet)Y2/2-way body, V-ball 60°Y(for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, A (EN15714-2)AE | DN 100 | 100 |
| 2/2-way bodyD2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN (for I.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCode7 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AE | 3 Body/ball configuration | Code |
| 2/2-way body, V-ball 30° (for Kv value see datasheet)U2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCode7 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | 2/2-way body | D |
| (for Kv value see datasheet)W2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN (flange EN 1092, PN 16, form B DN 100 only)685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | 2/2-way body, V-ball 30° | U |
| 2/2-way body, V-ball 90° (for Kv value see datasheet)W2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCode7 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free limit switches, Class A (EN15714-2)AE | (for Kv value see datasheet) | |
| (for Kv value see datasheet)Y2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCode7 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free limit switches, Class A (EN15714-2)AE | 2/2-way body, V-ball 90° | W |
| 2/2-way body, V-ball 60° (for Kv value see datasheet)Y4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | (for Kv value see datasheet) | |
| 4 Connection typeCodeFlange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free limit switches, Class A (EN15714-2)AE | 2/2-way body, V-ball 60° (for Kv value see datasheet) | Y |
| Flange ANSI Class 125/150 RF39Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit | 4 Connection type | Code |
| Flange EN 1092, PN 16/PN40, form B DN 15 to DN 80, flange EN 1092, PN 16, form B DN 100 only685 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | Flange ANSI Class 125/150 RF | 39 |
| 80, flange EN 1092, PN 16, form B DN 100 only5 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)ABON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | Flange EN 1092, PN 16/PN40, form B DN 15 to DN | 68 |
| Tiange EN 1092, PN 16, form B DN 100 only5 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS31637(ball, shaft)6 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)AEON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | 80, | |
| 5 Ball valve materialCode1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)ABON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | flange EN 1092, PN 16, form B DN 100 only | |
| 1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft)376 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)ABON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | 5 Ball valve material | Code |
| 6 Seal materialCodePTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)ABON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)AE | 1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft) | 37 |
| PTFE57 Voltage/FrequencyCode230V 50HzL224VDC 85-260VACY58 Control moduleCodeON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)ABON/OFF actuator, 2 additional potential-free limit | 6 Seal material | Code |
| 7 Voltage/Frequency Code 230V 50Hz L2 24VDC 85-260VAC Y5 8 Control module Code ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2) AB ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2) AE | PTFE | 5 |
| 230V 50Hz L2 24VDC 85-260VAC Y5 8 Control module Code ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2) AB ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2) AE | 7 Voltage/Frequency | Code |
| 24VDC 85-260VAC Y5 8 Control module Code ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2) AB ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2) AE | 230V 50Hz | L2 |
| 8 Control module Code ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2) AB ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2) AE | 24VDC 85-260VAC | Y5 |
| 8 Control module Code ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2) AB ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2) AE | | |
| ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2) ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2) | 8 Control module | Code |
| additional potential-free torque switches, Class A (EN15714-2) ON/OFF actuator, 2 additional potential-free limit AE switches, Class A (EN15714-2) | UN/UFF actuator, 2 additional potential-free limit | AB |
| (EN15714-2) ON/OFF actuator, 2 additional potential-free limit AE switches, Class A (EN15714-2) | additional potential-free torque switches, Class A | |
| ON/OFF actuator, 2 additional potential-free limit AE switches, Class A (EN15714-2) | (EN15714-2) | |
| switches, Class A (EN15714-2) | ON/OFF actuator, 2 additional potential-free limit | AE |
| | switcnes, Class A (EN15714-2) | |

| | 1 |
|---|------|
| 8 Continuation of Control module | Code |
| ON/OFF actuator, potentiometer output, Class A (EN15714-2) | AP |
| ON/OFF actuator, analogue position feedback, ex- ternal set value 0/4-20mA, 2 additional potential-free limit switches | AT |
| Control actuator, external set value 0/4-20 mA | E2 |
| ON/OFF actuator, on-site control, 2 additional po- tential-free limit switches, Basic (Logic ON/OFF), (S4 30% duty, 120 starts/ hour, actuator class A/B) | ALS |
| Position control, external set value 4-20mA, input and output, on-site control, 2 additional potential-free limit switches, Basic (Logic Positioner), (S4 50% duty, 360 starts/ hour, actuator class C) | ELS |
| 9 Actuator version | Code |
| BERNARD actuator, motorized, type AQ1L, operat- ing time 13s, torque 15Nm, 2 additional limit switches, heating, manual over- ride, aluminium housing, RAL5002, IP 67 | BC1L |
| BERNARD actuator, motorized, type AQ, operating time 15s, torque 30Nm, 2 additional limit switches, heating, manual over- ride, aluminium housing, RAL5002, IP 67 | BC3L |
| BERNARD actuator, motorized, type AQ07, operat- ing time 15s, torque 70Nm, 2 additional limit switches, heating, manual over- ride, aluminium housing, RAL5002, IP 67 | BC7L |
| BERNARD actuator, motorized, type AQ15, operat- ing time 30s, torque 150Nm, 2 additional limit switches, heating, manual over- ride, aluminium housing, RAL1014. IP 68 | BC15 |
| BERNARD actuator, motorized, type AQ25, operat- ing time 30s, torque 250Nm, 2 additional limit switches, heating, manual over- ride, aluminium housing, RAL1014, IP 68 | BC25 |
| 10 CONEXO | Code |
| without | |
| Integrated RFID chip for electronic identification and traceability | С |

Order example

| Order option | Code | Description |
|---------------------------|------|--|
| 1 Туре | B56 | Ball valve, metal, motorized, one-piece body, compact flange |
| 2 DN | 15 | DN 15 |
| 3 Body/ball configuration | D | 2/2-way body |
| 4 Connection type | 39 | Flange ANSI Class 125/150 RF |
| 5 Ball valve material | 37 | 1.4408 / CF8M (body, connection), 1.4401 / SS316 (ball, shaft) |
| 6 Seal material | 5 | PTFE |
| 7 Voltage/Frequency | Y5 | 24VDC 85-260VAC |
| 8 Control module | AE | ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2) |
| 9 Actuator version | BC1L | BERNARD actuator, motorized, type AQ1L, operating time 13s, torque 15Nm, 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP 67 |
| 10 CONEXO | | without |

7 Ball valve technical data

7.1 Medium

Working medium:

Corrosive, inert, gaseous and liquid media and steam which have no negative impact on the physical and chemical properties of the body and seal material.

7.2 Temperature

| Media temperature: | -20 to 180 °C |
|----------------------|--------------------------------|
| Ambient temperature: | -20 bis 60 °C |
| | Higher temperatures on request |

5 - 40 °C

Storage temperature:

7.3 Pressure

Leakage rate:

Leakage rate according to ANSI FCI70 – B16.104 Leakage rate according to EN12266, 6 bar air, leakage rate A

Pressure/temperature diagram:



Pressure rating:

DN 15 - 50: PN40 DN 65 - 100: PN16

Kv values:

| DN | NPS | Kv values |
|-----|-------|-----------|
| 15 | 1/2" | 12.8 |
| 20 | 3/4" | 29.1 |
| 25 | 1" | 47.8 |
| 32 | 1¼" | 2.6 |
| 40 | 1½" | 0.2 |
| 50 | 2" | 213.7 |
| 65 | 21⁄2″ | 273.3 |
| 80 | 3" | 495.3 |
| 100 | 4" | 871.1 |

Kv values in m³/h

Kv values:

V-ball 30° (code U)

| DN | NPS | | Opening angle | | | | | | | | | |
|-----|-------------|---|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0 | 15% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| 15 | 1/2" | 0 | 0.085 | 0.085 | 0.17 | 0.255 | 0.425 | 0.68 | 0.935 | 1.36 | 1.87 | 2.21 |
| 20 | 3/4" | 0 | 0.085 | 0.17 | 0.425 | 0.595 | 0.935 | 1.53 | 2.04 | 2.805 | 3.825 | 4.59 |
| 25 | 1" | 0 | 0.085 | 0.255 | 0.68 | 1.105 | 1.955 | 2.975 | 4.335 | 8.33 | 7.225 | 8.5 |
| 32 | 1¼" | 0 | 0.17 | 0.34 | 0.935 | 1.7 | 3.145 | 4.675 | 6.8 | 8.5 | 11.05 | 12.75 |
| 40 | 1½" | 0 | 0.255 | 0.51 | 1.36 | 2.55 | 4.25 | 6.375 | 9.35 | 11.9 | 14.45 | 17.0 |
| 50 | 2" | 0 | 0.34 | 1.02 | 3.23 | 5.1 | 8.5 | 12.75 | 19.55 | 26.35 | 36.55 | 51.0 |
| 65 | 2 ½" | 0 | 0.34 | 0.85 | 3.4 | 6.8 | 10.2 | 15.3 | 23.8 | 31.45 | 52.7 | 63.75 |
| 80 | 3" | 0 | 0.425 | 1.02 | 3.4 | 6.8 | 11.9 | 19.55 | 28.05 | 39.1 | 55.25 | 69.7 |
| 100 | 4" | 0 | 0.51 | 1.7 | 5.1 | 12.75 | 24.65 | 40.8 | 60.35 | 85.0 | 110.5 | 135.2 |

Kv values in m³/h

V-ball 60° (code V)

| DN | NPS | | Opening angle | | | | | | | | | |
|-----|-------------|---|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0 | 15% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| 15 | 1/2" | 0 | 0.085 | 0.085 | 0.255 | 0.425 | 0.765 | 1.19 | 1.7 | 2.805 | 3.74 | 5.1 |
| 20 | 3/4" | 0 | 0.085 | 0.17 | 0.595 | 0.85 | 1.445 | 2.38 | 3.4 | 5.525 | 7.65 | 10.2 |
| 25 | 1" | 0 | 0.17 | 0.34 | 0.935 | 1.53 | 2.89 | 4.505 | 6.715 | 10.46 | 13.01 | 17.85 |
| 32 | 1¼" | 0 | 0.17 | 0.51 | 1.53 | 2.55 | 4.675 | 8.075 | 10.88 | 16.15 | 22.1 | 33.15 |
| 40 | 1½" | 0 | 0.34 | 0.68 | 2.125 | 3.4 | 6.8 | 11.05 | 16.15 | 22.95 | 34.0 | 44.2 |
| 50 | 2" | 0 | 0.34 | 1.275 | 3.91 | 7.65 | 14.03 | 22.95 | 33.15 | 46.75 | 70.55 | 93.5 |
| 65 | 2 ½" | 0 | 0.34 | 1.275 | 4.25 | 8.5 | 17.85 | 28.9 | 45.05 | 63.75 | 87.55 | 127.5 |
| 80 | 3" | 0 | 0.425 | 2.125 | 5.1 | 11.9 | 21.25 | 34.0 | 55.25 | 77.35 | 108.8 | 140.3 |
| 100 | 4" | 0 | 0.595 | 2.55 | 9.35 | 21.25 | 34.0 | 50.15 | 76.5 | 119.9 | 180.2 | 302.6 |

Kv values in m³/h

V-ball 90° (code W)

| DN | NPS | | Opening angle | | | | | | | | | |
|-----|-------------|---|---------------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| | | 0 | 15% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| 15 | 1/2" | 0 | 0.085 | 0.17 | 0.34 | 0.51 | 0.765 | 1.275 | 1.87 | 3.23 | 4.59 | 5.865 |
| 20 | 3/4" | 0 | 0.17 | 0.34 | 0.68 | 1.02 | 1.7 | 2.635 | 3.91 | 6.8 | 9.605 | 11.9 |
| 25 | 1" | 0 | 0.17 | 0.51 | 1.53 | 2.89 | 4.335 | 6.885 | 9.69 | 13.6 | 17.85 | 24.65 |
| 32 | 1¼" | 0 | 0.255 | 0.68 | 1.7 | 4.25 | 6.8 | 11.9 | 16.15 | 23.8 | 33.15 | 46.75 |
| 40 | 1½" | 0 | 0.425 | 0.765 | 2.975 | 5.95 | 11.05 | 17.0 | 26.35 | 35.7 | 53.55 | 66.3 |
| 50 | 2" | 0 | 0.595 | 1.7 | 5.1 | 10.2 | 18.7 | 29.75 | 38.25 | 59.5 | 89.25 | 114.8 |
| 65 | 2 ½" | 0 | 0.425 | 1.445 | 5.95 | 11.9 | 23.8 | 40.8 | 59.5 | 90.1 | 136.0 | 185.3 |
| 80 | 3" | 0 | 0.595 | 2.975 | 6.8 | 15.3 | 29.75 | 51.0 | 76.5 | 114.8 | 174.3 | 263.5 |
| 100 | 4" | 0 | 0.85 | 2.975 | 13.6 | 34.0 | 63.75 | 106.3 | 161.5 | 250.8 | 375.7 | 569.5 |

Kv values in m³/h

7.4 Product conformities

| Pressure Equipment Dir- ective: | 2014/68/EU |
|------------------------------------|---|
| Explosion protection: | ATEX (2014/34/EU) and IECEx, order code Special version X |
| ATEX marking: | The ATEX marking of the product depends on the respective product configuration with valve body and actuator. It can be found in the product-specific ATEX documentation and the ATEX type plate. |

7.5 Mechanical data

Torques:

| DN | NPS | Breakaway torque |
|-----|-------------|---------------------|
| 15 | 1/2" | 7 |
| 20 | 3/4" | 8 |
| 25 | 1" | 10 |
| 32 | 1¼" | 14 |
| 40 | 1½" | 29 |
| 50 | 2" | 58 |
| 65 | 2 ½" | 62 |
| 80 | 3" | 120 |
| 100 | 4" | 174 |

Torques in Nm

Ball valve

Weight:

| DN | NPS | Weight |
|-----|-------------|--------|
| 15 | 1/2" | 1.3 |
| 20 | 3/4" | 2.0 |
| 25 | 1" | 2.8 |
| 32 | 1¼" | 4.2 |
| 40 | 1½" | 5.3 |
| 50 | 2" | 6.7 |
| 65 | 2 ½" | 11.9 |
| 80 | 3" | 14.9 |
| 100 | 4" | 20.4 |

Weights in kg

8 Technical data of actuator

8.1 GEMÜ 9428, 9468 actuators

8.1.1 Mechanical data

| Weight: | GEMÜ 9428 |
|---------|-----------|
| | |

| Supply voltage 24 V / 100-250 V | 2.4 kg |
|---------------------------------|---------|
| Actuator type 9468 | |
| Actuator version 2070: | 4.6 kg |
| Actuator version 4100: | 11.6 kg |
| Actuator version 4200: | 11.6 kg |

8.1.2 Product compliance

| Machinery Directive: | 2006/42/EU |
|---------------------------|------------|
| EMC Directive: | 2014/30/EU |
| Low Voltage Directive: | 2014/35/EU |

8.1.3 Electrical data

| Rated voltage: | 12 V / 24 V AC or DC (± 10 %) |
|----------------|-------------------------------|
| | 100 – 250 V AC (± 10 %) |
| | |

| Rated frequency: | 50/60 Hz (at AC rated voltage |
|------------------|-------------------------------|
| Rated frequency: | 50/60 Hz (at AC rated voltag |

| I (DIN EN 61140) |
|------------------|
| |

class:

Power consumption:

| Actuator version (code) | Control module (code) | 12 V DC (code B1) | 24 V DC (code C1) |
|-------------------------|--------------------------|----------------------|-------------------|
| 1015 | A0, AE | 30.0 | 30.0 |
| 2070 | 00, 0E, 0P | - | 63.0 |
| 4100 | 00, 0E, 0P | - | 105.0 |
| 4200 | 00, 0E, 0P | - | 90.0 |

Power consumption in W

Current consumption:

| • | Actuator version (code) | Control module (code) | 12 V DC (code B1) | 24 V DC (code C1) |
|---|-------------------------|--------------------------|----------------------|-------------------|
| | 1015 | A0, AE | 2.2 | 1.20 |
| | 2070 | 00, 0E, 0P | - | 2.60 |
| | 4100 | 00, 0E, 0P | - | 4.40 |
| | 4200 | 00, 0E, 0P | - | 3.60 |

Current data in A

| Max. switching current: | Actuator version (code) | Control module (code) | 12 V DC (code B1) | 24 V DC (code C1) |
|-------------------------|-------------------------|--------------------------|----------------------|-------------------|
| | 1015 | A0, AE | 9.2 | 3.8 |
| | 2070 | 00, 0E, 0P | - | 14.0 |
| | 4100 | 00, 0E, 0P | - | 35.0 |
| | 4200 | 00, 0E, 0P | - | 35.0 |

Current data in A

| Input signal: | 24 V DC, 24 V AC, 120 V AC, 230 V AC dependent on rated voltage |
|------------------------|---|
| Duty cycle: | Supply voltage 12 V / 24 V: Continuous duty Supply voltage 100 - 250 V: 40 % duty Actuator version 2070: Continuous duty |
| Electrical protection: | GEMÜ 9428 Supply voltage 12 V / 24 V: Motor protective system by customer Supply voltage 100 - 250 V: Integrated stall and overload protection plus excess current release T 1A 5x20 mm |
| | GEMÜ 9468 |

Internal for functional module 0x Actuator version 2070: MT 6.3 A Actuator version 4100, 4200: MT 10.0 A

Motor protective system by customer, see "Recommended motor protection"

Recommended motor protection:

GEMÜ 9428

| Voltage | | 12 V DC | 24 V DC | |
|--|------------------------|------------------------|------------------------|--|
| Motor protection switch type Siemens 3RV | | Siemens 3RV 1011-1CA10 | Siemens 3RV 1011-1BA10 | |
| Set current | | 2.20 | 1.70 | |
| Current data in A GEMÜ 9468 | | | | |
| Motor protection switch | Siemens 3RV 1011-1FA10 | | | |
| Set current: | 4.0 A | | | |

8.2 Bernard, J+J actuators

Note: For technical data see manufacturer's original datasheets

9 Dimensions

9.1 Actuator dimensions

9.1.1 GEMÜ 9428, 9468 actuators

Note on actuator mounting:

Standard mounting orientation – actuator positioned in-line with piping Only with flanged connections the actuator is mounted across the piping

9.1.1.1 Actuator version 1015, 2015





* Standard with supply voltage code O4

| Actuator version | А | В | С |
|------------------|------|-------|------|
| 1006, 1015 | 69.0 | 94.0 | 49.0 |
| 2006, 2015 | 96.0 | 122.0 | 53.0 |

Dimensions in mm

9.1.1.2 Actuator version 2070





Dimensions in mm

9.1.1.3 Actuator version 4100, 4200



Dimensions in mm

9.1.2 Bernard, AUMA, J+J actuators

For more detailed information on third-party actuators, refer to the manufacturers' documentation

9.2 Ball valve

9.2.1 Actuator flange





| DN | G | F1 | R1 | F2 | R2 | SW | | | М |
|-----|-------------|-------|-----|-------|-----|------|------|------|-----|
| 15 | 1/2" | 36.0 | 3.0 | 42.0 | 3.0 | 9.0 | 9.5 | 5.5 | M12 |
| 20 | 3/4" | 36.0 | 3.0 | 42.0 | 3.0 | 9.0 | 7.5 | 5.5 | M12 |
| 25 | 1" | 42.0 | 3.5 | 50.0 | 3.5 | 11.0 | 13.0 | 7.0 | M14 |
| 32 | 1¼" | 42.0 | 3.5 | 50.0 | 3.5 | 11.0 | 13.0 | 6.5 | M14 |
| 40 | 1½" | 50.0 | 4.5 | 70.0 | 3.5 | 14.0 | 15.0 | 7.5 | M18 |
| 50 | 2" | 50.0 | 4.5 | 70.0 | 3.5 | 14.0 | 16.0 | 8.5 | M18 |
| 65 | 2 ½" | 50.0 | 4.5 | 70.0 | 3.5 | 17.0 | 18.0 | 8.5 | M22 |
| 80 | 3" | 70.0 | 5.5 | 102.0 | 4.5 | 17.0 | 18.0 | 10.5 | M22 |
| 100 | 4" | 102.0 | 5.5 | 125.0 | 4.5 | 17.0 | 18.0 | 10.5 | M22 |

Dimensions in mm

9.2.2 Body dimensions





| DN | øc | ØD | øk | t | FTF | H1 | n x ØL |
|-----|-------|-------|-------|------|-------|-------|---------|
| 15 | 15.0 | 82.0 | 65.0 | 14.0 | 42.0 | 48.5 | 4 x M12 |
| 20 | 20.0 | 98.0 | 75.0 | 14.0 | 44.0 | 54.0 | 4 x M12 |
| 25 | 25.0 | 115.0 | 85.0 | 14.0 | 50.0 | 65.0 | 4 x M12 |
| 32 | 32.0 | 140.0 | 100.0 | 16.0 | 60.0 | 78.0 | 4 x M16 |
| 40 | 38.0 | 150.0 | 110.0 | 15.0 | 69.0 | 85.0 | 4 x M16 |
| 50 | 50.0 | 165.0 | 125.0 | 16.0 | 82.0 | 93.0 | 4 x M16 |
| 65 | 65.0 | 185.0 | 145.0 | 15.0 | 103.0 | 107.0 | 4 x M16 |
| 80 | 76.0 | 200.0 | 160.0 | 17.0 | 119.0 | 119.0 | 8 x M16 |
| 100 | 100.0 | 220.0 | 180.0 | 17.0 | 150.0 | 132.0 | 8 x M16 |

Dimensions in mm

10 Manufacturer's information

10.1 Delivery

• Check that all parts are present and check for any damage immediately upon receipt.

The product's performance is tested at the factory. The scope of delivery is apparent from the dispatch documents and the design from the order number.

10.2 Packaging

The product is packaged in a cardboard box which can be recycled as paper.

10.3 Transport

- 1. Only transport the product by suitable means. Do not drop. Handle carefully.
- 2. After the installation dispose of transport packaging material according to relevant local or national disposal regulations / environmental protection laws.

10.4 Storage

- 1. Store the product free from dust and moisture in its original packaging.
- 2. Avoid UV rays and direct sunlight.
- 3. Do not exceed the maximum storage temperature (see chapter "Technical data").
- 4. Do not store solvents, chemicals, acids, fuels or similar fluids in the same room as GEMÜ products and their spare parts.

11 Installation in piping

11.1 Preparing for installation

A WARNING

The equipment is subject to pressure!

- Risk of severe injury or death.
- Depressurize the plant.
- Completely drain the plant.



- Corrosive chemicals!
- Risk of caustic burns.
- Wear suitable protective gear.
 - Completely drain the plant.

- Hot plant components! ► Risk of burns.
 - Only work on plant that has cooled down.

Exceeding the maximum permissible pressure.

- ► Damage to the product.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

Use as step.

- Damage to the product.
- ► Risk of slipping-off.
- Choose the installation location so that the product cannot be used as a foothold.
- Do not use the product as a step or a foothold.

NOTICE

Suitability of the product!

The product must be appropriate for the piping system operating conditions (medium, medium concentration, temperature and pressure) and the prevailing ambient conditions.

NOTICE

Tools

- The tools required for installation and assembly are not included in the scope of delivery.
- Use appropriate, functional and safe tools.
- 1. Ensure the product is suitable for the relevant application.
- 2. Check the technical data of the product and the materials.
- 3. Keep appropriate tools ready.
- 4. Wear appropriate protective gear, as specified in the plant operator's guidelines.
- 5. Observe appropriate regulations for connections.
- 6. Have installation work carried out by trained personnel.
- 7. Shut off plant or plant component.
- 8. Secure plant or plant component against recommissioning.
- 9. Depressurize the plant or plant component.
- 10. Completely drain the plant (or plant component) and let it cool down until the temperature is below the media vaporization temperature and cannot cause scalding.
- 11. Decontaminate, rinse and ventilate the plant or plant component properly.
- 12. Lay piping so that the product is protected against transverse and bending forces, and also from vibrations and tension.
- 13. Only mount the product between matching aligned pipes (see following chapters).
- 14. Flow direction and installation position are optional.

11.2 Installation with flanged connections

NOTICE

Observe valid standards for mounting flanges!



- 1. Ensure sealing surfaces on the mating flanges are clean and undamaged.
- 2. Only use connector elements made of approved materials!
- 3. Install the ball valve in the state it is delivered.
- 4. Carefully align the ball valve body 1 centrally between the pipes with flanges (F1 and F2).
- 5. Centre the seals **D** accurately. Seals are not included in the scope of delivery.
- 6. Connect the ball valve flange and the piping flange using appropriate sealing material and matching bolting. Sealing material and bolts are not included in the scope of delivery.



- 7. Insert bolts **SN** in all holes in the flange.
- 8. Slightly tighten the bolts **SN** and nuts **M** diagonally.

- 9. Check the alignment of the piping.
- 10. Tighten nuts **M** diagonally.
- Comply with appropriate regulations for the connections!

After the installation:

11. Re-attach or reactivate all safety and protective devices.

12 Electrical connection

12.1 Connection and wiring diagram – actuator version 1015

- 12.1.1 Control module A0/AE
- 12 V DC (code B1) / 24 V DC (code C1)

Assignment of the terminal strips



| ltem | Description |
|------|---------------------------------|
| 1 | Uv+, direction of travel CLOSED |
| 2 | Uv-, direction of travel CLOSED |
| 3 | Uv+, direction of travel OPEN |
| 4 | Uv-, direction of travel OPEN |
| 5 | PE, protective earth conductor |

Connection diagram



| S3 | Actuator |
|--------|----------------------------|
| CLOSED | Direction of travel CLOSED |
| 0 | OFF |
| OPEN | Direction of travel OPEN |

12.2 Connection and wiring diagram – actuator version 2070, 4100, 4200

12.2.1 Control module A0

24 V DC (code C1), 120 V AC (code G4) and 230 V AC (code L4)

Position of the connectors



Actuator version 2070

Electrical connection



Plug assignment X1

| Pin | Description |
|-----|--------------------------------------|
| 1 | L1 / Uv+, supply voltage |
| 2 | N / Uv-, supply voltage |
| 3 | L1 / Uv+, direction of travel CLOSED |
| 4 | N / Uv-, direction of travel CLOSED |
| 5 | L1 / Uv+, direction of travel OPEN |
| 6 | N / Uv-, direction of travel OPEN |
| | PE, protective earth conductor |

N/L- signals in the unit are separated.

The potential must be assigned by the user.

When the OPEN and CLOSED switches are operated simultaneously the actuator moves in the "CLOSED" direction. Pins 2, 4 and 6 can be connected in the connector plug, so you can also use a 5-wire cable.

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Actuator version 4100, 4200

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Connection diagram





12.2.2 Control module AE

24 V DC (code C1), 120 V AC (code G4) and 230 V AC (code L4)

Position of the connectors



Actuator version 2070

Electrical connection



Plug assignment X1



Actuator version 4100, 4200



Plug assignment X2

| Pin | Description |
|-----|--------------------------------------|
| 1 | L1 / Uv+, supply voltage |
| 2 | N / Uv-, supply voltage |
| 3 | L1 / Uv+, direction of travel CLOSED |
| 4 | N / Uv-, direction of travel CLOSED |
| 5 | L1 / Uv+, direction of travel OPEN |
| 6 | N / Uv-, direction of travel OPEN |
| | PE, protective earth conductor |

| Pin | Description |
|-----|---|
| 1 | Change-over contact limit switch CLOSED |
| 2 | Make contact limit switch CLOSED |
| 3 | Break contact limit switch CLOSED |
| 4 | Break contact limit switch OPEN |
| 5 | Make contact limit switch OPEN |
| 6 | Change-over contact limit switch OPEN |
| Ð | PE, protective earth conductor |

N/L- signals in the unit are separated.

The potential must be assigned by the user.

When the OPEN and CLOSED switches are operated simultaneously the actuator moves in the "CLOSED" direction. Pins 2, 4 and 6 can be connected in the connector plug, so you can also use a 5-wire cable.

Connection diagram



Connection assignment X1

Connection assignment X2

12.2.3 Control module 00

12.2.3.1 On/Off actuator with relay (code 00), 24 V DC (code C1)

12.2.3.1.1 Position of the connectors



Actuator version 2070

12.2.3.1.2 Electrical connection



Plug assignment X1

| Pin | Description |
|-----|--------------------------------------|
| 1 | L1 / Uv+, direction of travel CLOSED |
| 2 | L1 / Uv+, direction of travel OPEN |
| 3 | N / Uv-, neutral conductor |
| | PE, protective earth conductor |

N / L- signals in the unit are separated.

The potential must be assigned by the user.

When the OPEN and CLOSED switches are operated simultaneously the actuator "CLOSES".

X2

0

0

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Actuator version 4100, 4200

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12.2.3.1.3 Connection diagram



Connection assignment X1

12.2.4 Control module 0E

12.2.4.1 On/Off actuator with 2 additional potential-free limit switches, with relay (code 0E), 24 V DC (code C1)

12.2.4.1.1 Position of the connectors



Actuator version 2070



Actuator version 4100, 4200

12.2.4.1.2 Electrical connection



Plug assignment X1

| Pin | Description |
|-----|--------------------------------------|
| 1 | L1 / Uv+, direction of travel CLOSED |
| 2 | L1 / Uv+, direction of travel OPEN |
| 3 | N / Uv-, neutral conductor |
| | PE, protective earth conductor |
| | |
| | |
| | |



Plug assignment X2

| Pin | Description |
|-----|---|
| 1 | Change-over contact limit switch CLOSED |
| 2 | Make contact limit switch CLOSED |
| 3 | Break contact limit switch CLOSED |
| 4 | Break contact limit switch OPEN |
| 5 | Make contact limit switch OPEN |
| 6 | Change-over contact limit switch OPEN |
| Ð | PE, protective earth conductor |

N / L- signals in the unit are separated.

The potential must be assigned by the user.

When the OPEN and CLOSED switches are operated simultaneously the actuator "CLOSES".

12.2.4.1.3 Connection diagram





Connection assignment X1

Connection assignment X2

12.2.5 Control module 0P

12.2.5.1 On/Off actuator with potentiometer output, with relay (code OP), 24 V DC (code C1)

12.2.5.1.1 Position of the connectors



Actuator version 2070



Actuator version 4100, 4200

12.2.5.1.2 Electrical connection



Plug assignment X1

| Pin | Description |
|-----|--------------------------------------|
| 1 | L1 / Uv+, direction of travel CLOSED |
| 2 | L1 / Uv+, direction of travel OPEN |
| 3 | N / Uv-, neutral conductor |
| | PE, protective earth conductor |
| | |
| | |
| | |



Plug assignment X2

| Pin | Description |
|-----|--|
| 1 | n. c. |
| 2 | n. c. |
| 3 | n. c. |
| 4 | Us-, actual value potentiometer signal voltage minus |
| 5 | Us _r, actual value potentiometer signal output |
| 6 | Us+, actual value potentiometer signal voltage plus |
| Ð | PE, protective earth conductor |

N / L- signals in the unit are separated.

The potential must be assigned by the user.

When the OPEN and CLOSED switches are operated simultaneously the actuator "CLOSES".

12.2.5.1.3 Connection diagram



Connection assignment X1

Actual value potentiometer



Connection assignment X2

13 Limit switches

A DANGER

Risk of electric shock

- Risk of injury or death (if operating voltage is higher than safe extra low voltage).
- Adjustments are made with the actuator cover removed.
- Electric shock can cause severe burns and fatal injury.
- Always disconnect the product from power supply!
- Therefore, have all work performed only by gualified electricians.

Incorrectly adjusted limit switch!

- Actuator continues running.
- ► Damage to the actuator.
- Do not move the limit switch too far outwards.

NOTICE

Tools required for setting the limit switches:

- Allen key SW3
- Small Philips head screw driver

NOTICE

- Always switch the limit switch for signal so that the motor switch is actuated first.
- ⇒ Limit switches for signal and motor are already preset.

13.1 Setting the limit switch for 1015, 2015 and 3035

The motorized actuator versions 1015, 2015 and 3035 are supplied in the open position.

The "OPEN" and "CLOSED" end positions are set using limit switches. These are actuated using the levers and can be adjusted by loosening the 2 screws.

The following drawings differ depending on the actuator version!

1. Disconnect the plant from power supply and secure against recommissioning.



- 2. Remove the protective caps 1.
- 3. Undo screws 2.
- 4. Remove the cover of the actuator **3**.



- 5. Undo the screws on the corresponding limit switch (4 = "CLOSED",
 5 = "OPEN").
- 6. Move limit switches to the desired position.
- 7. Tighten limit switch screws.



8. Put on cover of actuator **3**.

- 9. Tighten cover 3.
- 10. Put on protective caps 1.
- ⇒ Limit switches are set.

13.2 Setting the limit switch for 2070, 4100, 4200

The motorized actuator versions 2070, 4100 and 4200 are supplied in the open position.

The "OPEN" and "CLOSED" end positions are set using limit switches. These are actuated using the levers and can be adjusted by loosening the 2 screws.

Incorrectly adjusted limit switch!

- Actuator continues running.
- Damage to the actuator.
- Do not move the limit switch too far outwards.

Versions 00, 0E, 0P:

- The actuator is not reversible, i.e. it must be held briefly when switching over from "OPEN" to "CLOSED" or "CLOSED" to "OPEN".
- For the above actuator types, overall height 1 applies.

Versions A0, AE, AP, E1, E2:

- The actuator is reversible, i.e. it can be switched directly from "OPEN" to "CLOSED". To this end, a dead zone of 200 ms is integrated into the electronic system, i.e. when switching over, the actuator does not run for this time.
- Independent of the supply voltage, the OPEN/CLOSE control is freely selectable via a mains supply of 24 V DC, 24 V AC up to 250 V AC or operated directly via a PLC.
- An electronic current limitation limits the torque.
- For the above actuator types (except for code 2070), overall height 2 applies.

A DANGER

Risk of electric shock

- Risk of injury or death (if operating voltage is higher than safe extra low voltage).
- Adjustments are made with the actuator cover removed.
- Electric shock can cause severe burns and fatal injury.
- Always disconnect the product from power supply!
- Therefore, have all work performed only by qualified electricians.

14 Commissioning

- ✓ The product is installed in piping.
- ✓ The product is connected electrically.
- ✓ Limit switches on the product are set.
- 1. Check the tightness and the function of the product (close and reopen the product).
- 2. Flush the piping system of new plant and following repair work (the product must be fully open).
 - ⇒ Harmful foreign matter has been removed.
 - \Rightarrow The product is ready for use.
- 3. Commission the product.

15 Operation

15.1 Normal operation

For opening or closing, the product must be activated in accordance with the electrical connection.

15.2 Optical position indicator

The actuator has an optical position indicator which indicates the position of the actuator.

Actuator versions 1015, 2015, 3035



Actuator version 2070



Actuator versions 4100, 4200



15.3 Manual override

Only actuate the manual override when the power is switched off.

Damage to the actuator!

Set the actuator position to "centred" after using the manual override!

- Trip cams may be outside the limit switches as the limit switch position was manually exceeded by the manual override.
- ► Damage to the actuator.
- Set the actuator position to "centred" before electrical operation.

15.3.1 Manual overrides 1015, 2015, 3035



1 = CLOSED

Actuator version 1015 and 2015



- 1. Disconnect the plant from power supply and secure against recommissioning.
- 2. Remove red protective cap.
- 3. To open the valve, turn the Allen key (SW3) clockwise **1** until the position indicator shows "open".
- 4. To close the valve turn the Allen key (SW3) anti-clockwise **2** until the position indicator shows "closed".
- 5. Reinsert red protective cap.

15.3.2 Manual overrides 2070, 4100, 4200

On the side of the actuator there is a blanking cover for the manual override. The crank handle for manual override is located on the base of the actuator. Actuation of the manual override additionally actuates a switch that shuts off power to the actuator.

Example: Actuator version 2070



If manual override is required, take the following steps:

1. Unscrew the blanking cover using a screw driver.

2. Insert crank handle and actuate the actuator by hand.

Crank into the desired valve position (in the direction indicated on label):

| Actuator ve | ersion 2070 |
|------------------|----------------|
| Clockwise: | OPEN |
| Anticlockwise: | CLOSED |
| Actuator version | ons 4100, 4200 |
| Clockwise: | CLOSED |
| Anticlockwise: | OPEN |

16 Troubleshooting

| Error | Possible cause | Troubleshooting |
|---|--|---|
| Valve doesn't open/close or doesn't open/close fully | Operating pressure too high | Operate the product with operating pres- sure specified in datasheet |
| | The actuator design is not suitable for the operating conditions | Use an actuator that is designed for the operating conditions |
| | Seat and flange seals incorrectly moun- ted | Replace seat and flange seals or mount them correctly (see chapter "Replacing seals") |
| | Actuator defective | Replace the actuator |
| | Voltage is not connected | Connect voltage |
| | Cable ends incorrectly wired | Wire cable ends correctly |
| | End positions incorrectly set | Correctly set the end positions |
| | Foreign matter in the product | Remove and clean the product |
| The product leaks between actuator and | Actuator/valve body damaged | Replace actuator/valve body |
| valve body | Bolting between valve body and actuator loose | Retighten bolting between valve body and actuator |
| | Seals faulty | Replace seals |
| Connection between valve body and pip- | Incorrect installation | Check installation of valve body in piping |
| ing leaking | Flange bolting loose/thread leaking | Retighten flange bolting / reseal threads |
| | Flange seals faulty | Replace flange seals |
| Valve body leaks | Incorrect installation | Check installation of valve body in piping |
| | Seat and flange seals incorrectly moun- ted | Mount seat and flange seals correctly (see chapter "Replacing seat seals") |
| | Wrong seat and flange seals mounted | Replace seat and flange seals (see chapter "Replacing seat seals") |
| | Seat and flange seals faulty | Replace seat and flange seals (see chapter "Replacing seat seals") |
| | Valve body leaks or is corroded | Check valve body for damage, replace valve body if necessary |

17 Inspection/maintenance

The equipment is subject to pressure!

- Risk of severe injury or death.
- Depressurize the plant.
- Completely drain the plant.



- Risk of burns.
 - Only work on plant that has cooled down.

- Servicing and maintenance work must only be performed • by trained personnel.
- Do not extend hand lever. GEMÜ shall assume no liability whatsoever for damages caused by improper handling or third-party actions.
- In case of doubt, contact GEMÜ prior to commissioning.
- 1. Use appropriate protective gear as specified in plant operator's guidelines.
- 2. Shut off plant or plant component.
- 3. Secure against recommissioning.
- 4. Depressurize the plant or plant component.

Ball valves are maintenance-free. No lubrication or routine maintenance of the ball valve shaft is required. The shaft is guided through a PTFE gland packing in the ball valve body. The shaft seal is pretensioned and self-adjusting. However, the operator must carry out regular visual examinations of the ball valves, dependent on the operating conditions and the potential danger in order to prevent leakage and damage.

If there is a leakage at the spindle nut, this can generally be rectified by retightening the spindle nut. However, overtightening the spindle nut must be avoided.

Usually, retightening by between 30° and 60° will be sufficient to rectify the leakage.

17.1 Spare parts



| Item | Name | Order designation |
|------|--------------------------|--|
| 1 | Ball valve body assembly | BB06 |
| 4 | Seat and flange seals | |
| 5 | Seal | |
| 6 | Seal | |
| 7 | Conical spindle seal | BB06DN |
| 9 | V-ring spindle packing | |
| 10 | V-ring | |
| 21 | O-ring | |
| A | Actuator | See actuator designation. Dependent on the actuator version. |

17.2 General information regarding actuator replacement

NOTICE

- The following tools are required for actuator replacement:
- Open-end wrench
- Ring wrench



- Check the position of the ball indicated by the groove **SZ** and compare with position indicator, rotate ball valve to correct position if necessary.
- ⇒ Groove transverse to piping direction: Ball valve closed.
- ⇒ Groove in piping direction: Ball valve open.

NOTICE

▶ For flanged bodies, the actuator is fitted offset by 90°.

17.3 Replacing the actuator

\Lambda DANGER **Risk of electric shock** Risk of injury or death (if operating ► voltage is higher than safe extra low voltage). Adjustments are made with the actuator cover removed. Electric shock can cause severe burns ► and fatal injury. Always disconnect the product from power supply! Therefore, have all work performed

only by qualified electricians.

17.3.1 Removing the actuator



- 1. Disconnect the actuator from the power supply.
- 2. Remove the protective caps 30.
- 3. Unscrew the hexagon screws 32.
- 4. Do not lose the washers 31.
- 5. The actuator **A** can be removed from the ball valve body.

17.3.2 Mounting the actuator



- 1. Push the new actuator **A** onto the ball valve body.
- 2. Turn the actuator until the hexagon screws **32** can be inserted.
- 3. Tighten the hexagon screws **32** with their washers **31** until hand tight.
- 4. Diagonally tighten the hexagon screws **32** evenly until they are hand tight.
- 5. Put the protective caps **30** back on.
- 6. Reconnect the actuator to the power supply.

17.4 Replacing the seals

NOTICE

- Only use genuine GEMÜ spare parts.
- When ordering spare parts, specify the complete order number of the ball valve.
- 1. Remove actuator (see chapter "Removing the actuator").



2. Bend the tab 13 of the screw locking device downwards.



- 3. Loosen spindle nut **14** and remove.
- 4. Remove screw locking device 13.
- 5. Remove upper spring washer 12.
- 6. Remove lower spring washer 12.
- 7. Remove stainless steel sleeve 11.



- 8. Loosen bolts SN with nuts M and remove with seals D.
- 9. Remove the ball valve from the piping.



- 10. Remove screwed in side piece **2** of the ball valve: - Insert a suitable tool into the holes **2a**.
 - Unscrew the side piece 2.

NOTICE

- ► DN 100: Seal 4 non existent.
- 11. Remove seals **4**, **5** and front seat seal **6** from main part of ball valve.



- 12. Move the ball to the closed position.
- 13. Remove the ball 3 and the rear seat seal 6.



14. Press shaft carefully into the body and remove it.



15. Remove seals 9 upwards from the ball valve.

NOTICE

- ► Seals 9:
- DN 15-80: 2 pieces
- DN 100: 3 pieces
- 16. Take off O-ring **7** from shaft.
- 17. Take off seal **21** from shaft.
- 18. Mount the seals and the ball valve in reverse order.

18 Removal from piping

- 1. Remove the clamp or screw connections in reverse order to installation.
- 2. Remove welded or solvent cemented connections using a suitable cutting tool.
- 3. Observe the safety information and accident prevention regulations.

19 Disposal

- 1. Pay attention to adhered residual material and gas diffusion from penetrated media.
- 2. Dispose of all parts in accordance with the disposal regulations/environmental protection laws.

20 Returns

Legal regulations for the protection of the environment and personnel require that the completed and signed return delivery note is included with the dispatch documents. Returned goods can be processed only when this note is completed. If no return delivery note is included with the product, GEMÜ cannot process credits or repair work but will dispose of the goods at the operator's expense.

- 1. Clean the product.
- 2. Request a return delivery note from GEMÜ.
- 3. Complete the return delivery note.
- 4. Send the product with a completed return delivery note to GEMÜ.

21 Declaration of Incorporation according to 2006/42/EC (Machinery Directive)

Declaration of Incorporation

according to the EC Machinery Directive 2006/42/EC, Annex II, 1.B for partly completed machinery

| We, | GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Straße 6-8 74652 Ingelfingen Griechech, Cormony |
|---|---|
| | 74653 ingeningen-chesbach, Germany |
| declare that the following product | |
| Make | GEMÜ B56 |
| Serial number Project number | from 01.01.2019 KGH-Metall-elektrisch 2020 |
| Commercial name: | B56 |
| meets the following essential requirement | nts of the Machinery Directive 2006/42/EC: |
| 1.1.3, 1.1.5, 1.1.7, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.5.9, 1.5.13, 1.5.14, 1.5.16, 1.6.1, 1.6.3, 1. | 1.2.5, 1.2.6, 1.3., 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.8, 1.3.9, 1.5.3, 1.5.5, 1.5.6, 1.5.7, 1.5.8, 6.5, 1.7.1.2 |
| We also declare that the specific technic | al documentation has been compiled in accordance with part B of Annex VII. |
| Reference of the harmonised standards (| or parts thereof) applied in accordance with Article 7(2): |
| EN ISO 12100:2010-11 | Safety of machinery – General principles for design – Risk assessment and risk re- duction (ISO 12100:2010) |
| EN 1983:2013 | Industrial valves - Steel ball valves |
| Citation of other technical standards and | specifications used: |
| EN 558:2017-05 | Industrial valves – Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems |
| ISO 5211:2017-03 | Industrial valves - Part-turn actuator attachments |
| The manufacturer or his authorised repre- thorities, relevant information on the partl | sentative undertake to transmit, in response to a reasoned request by the national au- y completed machinery. This transmission takes place: |
| Electronically | |
| Authorised documentation officer | GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG |
| | Fritz-Müller-Straße 6-8 |
| | 74653 Ingelfingen, Germany |

This does not affect the industrial property rights!

Important note! The partly completed machinery may be put into service only if it was determined, where appropriate, that the machinery into which the partly completed machinery is to be installed meets the provisions of this Directive.

2020-08-03

Joachim Brien Head of Technical Department

22 Declaration of conformity according to 2014/30/EU (EMC Directive)

EU Declaration of Conformity *in accordance with 2014/30/EU (EMC Directive)*

| we. |
|-----|
|-----|

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG Fritz-Müller-Straße 6-8 74653 Ingelfingen-Criesbach, Germany

declare that the product listed below complies with the safety requirements of the EMC Directive 2014/30/EU.

GEMÜ B56

Description of the product:

Technical standards used:

Interference emission: Interference resistance: DIN EN 61800-3 DIN EN 61326-1 (industrial processes) DIN EN 61800-3

2018-07-03

Joachim Brien Head of Technical Department







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