

GEMÜ 649 eSyDrive

Motorized diaphragm valve



Features

- Hermetic separation between medium and actuator
- Installation for optimized draining is possible
- Open/Close function, positioner and process controller
- Force and speed are variably adjustable
- Extensive diagnostic functions
- Operable via web interface eSy-Web or Modbus TCP
- Various functions of add-on components and accessories are already integrated (e.g. position indicators, stroke limiters, etc.)

Description

The GEMÜ 649 eSyDrive diaphragm valve is actuated by a motorized hollow shaft actuator. It is based on technology that does not use brushes or sensors and therefore guarantees high performance and a long service life. In addition to Open/Close applications, the valve is ideal for variable and complex control applications. The actuator has an integrated web server for parameterization and diagnostics purposes.

Technical specifications

- **Media temperature:** -10 to 100 °C
- **Sterilization temperature:** max. 150 °C
- **Ambient temperature:** -10 to 60 °C
- **Operating pressure :** 0 to 10 bar
- **Nominal sizes:** DN 4 to 65
- **Body configurations:** 2/2-way body | i-body | Multi-port body | Tank valve body | T-body | Welding configuration
- **Connection types:** Clamp | Flange | Spigot | Threaded connection
- **Connection standards:** ANSI | ASME | BS | DIN | EN | ISO | JIS | SMS
- **Body materials:** 1.4408, investment casting material | 1.4408, investment casting material, PFA lined | 1.4435 (316L), forged material | 1.4435 (BN2), forged material | 1.4435, investment casting material | 1.4539 (904L), forged material | CW614N, brass | CW617N, brass | EN-GJS-400-18-LT, SG iron material | EN-GJS-400-18-LT, SG iron material with hard rubber lining | EN-GJS-400-18-LT, SG iron material, PFA lined | EN-GJS-400-18-LT, SG iron material, PP lined
- **Body lining:** Hard rubber | PFA | PP
- **Diaphragm materials:** CR | EPDM | FKM | NBR | PTFE/EPDM
- **Supply voltage:** 24 V DC
- **Actuating speed:** max. 6 mm/s
- **Protection class:** IP 65
- **Conformities:** Belgaqua | BSE/TSE | EAC | EHEDG | FDA | Oxygen | Reg. (EU) No. 10/2011 | Regulation (EC) No. 1935/2004 | Regulation (EC) No. 2023/2006 | TA Luft (German Clean Air Act) | USP

Technical data depends on the respective configuration

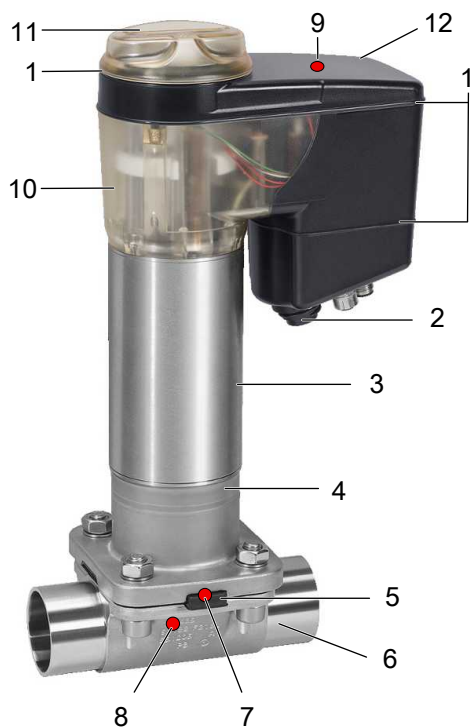


further information
webcode: GW-649



Product description

Construction



| Item | Name | Materials |
|------|--|---|
| 1 | O-rings | EPDM |
| 2 | Electrical connections | |
| 3 | Actuator base | 1.4301 / 1.4305 |
| 4 | Distance piece with leak detection hole | 1.4408 |
| 5 | Diaphragm | CR, EPDM, FKM, NBR, PTFE/EPDM |
| 6 | Valve body | EN-GJS-400-18-LT (GGG 40.3) EN-GJS-400-18-LT (GGG 40.3), PFA lined EN-GJS-400-18-LT (GGG 40.3), PP lined EN-GJS-400-18-LT (GGG 40.3), hard rubber lined 1.4408, investment casting 1.4408, PFA lined 1.4435 (F316L), forged body 1.4435 (BN2), forged body, $\Delta Fe < 0.5\%$ 1.4435, investment casting 1.4539, forged body CW614N, CW617N (brass) |
| 7 | CONEXO diaphragm RFID chip (see Conexo information) | |
| 8 | CONEXO body RFID chip (see Conexo information) | |
| 9 | CONEXO actuator RFID chip (see Conexo information) | |
| 10 | Optical position indicator | PESU (AG0, AG2) PC (AG1) |
| 11 | Cover with high visibility LED, manual override and on-site control | PESU (AG0, AG2) PC (AG1) |

| Item | Name | Materials |
|------|--------------|---|
| 12 | Actuator top | PESU black (AG0, AG2) PC black (AG1) |

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

Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO".

Availability

Availability of grades of surface finish

Internal surface finishes for forged and block material bodies ¹⁾

| Readings for Process Contact Surfaces | Mechanically polished ²⁾ | | Electropolished | |
|---------------------------------------|-------------------------------------|------|-------------------------|------|
| | Hygiene class DIN 11866 | Code | Hygiene class DIN 11866 | Code |
| Ra ≤ 0.80 µm | H3 | 1502 | HE3 | 1503 |
| Ra ≤ 0.60 µm | - | 1507 | - | 1508 |
| Ra ≤ 0.40 µm | H4 | 1536 | HE4 | 1537 |
| Ra ≤ 0.25 µm ³⁾ | H5 | 1527 | HE5 | 1516 |

| Readings for Process Contact Surfaces according to ASME BPE 2016 ⁴⁾ | Mechanically polished ²⁾ | | Electropolished | |
|--|-------------------------------------|------|------------------------------|------|
| | ASME BPE Surface Designation | Code | ASME BPE Surface Designation | Code |
| Ra Max. = 0.76 µm (30 µinch) | SF3 | SF3 | - | - |
| Ra Max. = 0.64 µm (25 µinch) | SF2 | SF2 | SF6 | SF6 |
| Ra Max. = 0.51 µm (20 µinch) | SF1 | SF1 | SF5 | SF5 |
| Ra Max. = 0.38 µm (15 µinch) | - | - | SF4 | SF4 |

Internal surface finishes for investment cast bodies

| Readings for Process Contact Surfaces | Mechanically polished ²⁾ | |
|---------------------------------------|-------------------------------------|------|
| | Hygiene class DIN 11866 | Code |
| Ra ≤ 6.30 µm | - | 1500 |
| Ra ≤ 0.80 µm | H3 | 1502 |
| Ra ≤ 0.60 µm ⁵⁾ | - | 1507 |

Ra acc. to DIN EN ISO 4288 and ASME B46.1

- 1) Surface finishes of customized valve bodies may be limited in special cases.
- 2) Or any other finishing method that meets the Ra value (acc. to ASME BPE).
- 3) The smallest possible Ra finish for pipe connections with an internal pipe diameter < 6 mm is 0.38 µm.
- 4) When using these surfaces, the bodies are marked according to the specifications of ASME BPE.
The surfaces are only available for valve bodies which are made of materials (e.g. GEMÜ material codes 40, 41, F4, 44)) and use connections (e.g. GEMÜ connection codes 59, 80, 88) according to ASME BPE.
- 5) Not possible for GEMÜ connection code 59, DN 8 and GEMÜ connection code 0, DN 4.

Availability of valve bodies**Spigot**

| MG | DN | Connection type code ¹⁾ | | | | | | | | | | | | | | | | |
|-----------|-----------|------------------------------------|------------------|------------------|-------------------------|------------------|------------------|------------------|----|------------------|------------------|----|------------------|----|------------------|------------------|------------------|------------------|
| | | 0 | | 16 | 17 | 18 | 35 | 36 | 37 | | 55 | 59 | | 60 | | 63 | 64 | 65 |
| | | Material code ²⁾ | | | | | | | | | | | | | | | | |
| | | C3 | 40, 42, F4 | 40, 42, F4 | C3, 40, 42, F4 | 40, 42, F4 | 40, 42, F4 | 40, 42, F4 | C3 | 40, 42, F4 | 40, 42, F4 | C3 | 40, 42, F4 | C3 | 40, 42, F4 | 40, 42, F4 | 40, 42, F4 | 40, 42, F4 |
| 8 | 4 | X | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 6 | - | - | - | X | - | - | X | - | - | - | - | - | - | X | X | - | X |
| | 8 | - | - | - | X | - | - | X | - | - | X | X | X | X | X | X | - | X |
| | 10 | - | - | X | X | X | - | - | - | - | X | X | X | - | - | - | - | - |
| | 15 | - | - | - | - | - | - | - | - | - | X | X | X | - | - | - | - | - |
| 10 | 10 | - | - | X | X | X | - | X | - | - | X | - | X | X | X | X | - | X |
| | 15 | - | X | X | X | X | - | X | - | - | X | - | X | X | X | X | X | X |
| | 20 | - | - | - | - | - | - | - | - | - | X | X | X | - | - | - | - | - |
| 25 | 15 | - | X | X | X | X | - | X | - | - | - | - | - | X | X | X | X | X |
| | 20 | - | X | X | X | X | - | X | - | - | X | X | X | X | X | X | X | X |
| | 25 | - | X | X | X | X | X | X | X | X | - | X | X | X | X | X | X | X |
| 40 | 32 | - | X | X | X | X | X | X | - | X | - | - | - | X | X | X | X | X |
| | 40 | - | X | X | X | X | X | X | X | X | - | X | X | X | X | X | X | X |
| 50 | 50 | - | X | X | X | X | X | X | X | X | - | X | X | X | X | X | X | - |
| | 65 | - | - | - | - | - | X | - | - | X | - | - | X | - | - | - | - | - |

MG = diaphragm size, X = standard

1) Connection type

Code 0: Spigot DIN

Code 16: Spigot DIN EN 10357 series B (2014 edition; formerly DIN 11850 series 1)

Code 17: Spigot EN 10357 series A/DIN 11866 series A formerly DIN 11850 series 2

Code 18: Spigot DIN 11850 series 3

Code 35: Spigot JIS-G 3447

Code 36: Spigot JIS-G 3459 schedule 10s

Code 37: Spigot SMS 3008

Code 55: Spigot BS 4825, part 1

Code 59: Spigot ASME BPE/DIN EN 10357 series C (from 2022 edition)/DIN 11866 series C

Code 60: Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B

Code 63: Spigot ANSI/ASME B36.19M schedule 10s

Code 64: Spigot ANSI/ASME B36.19M schedule 5s

Code 65: Spigot ANSI/ASME B36.19M schedule 40s

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, $\Delta Fe < 0.5\%$

Code C3: 1.4435, investment casting

Code F4: 1.4539, forged body

Threaded connection

| MG | DN | Connection type code ¹⁾ | | | | |
|----|----|------------------------------------|----|----|--------|--------|
| | | 1 | | | 31 | 6, 6K |
| | | Material code ²⁾ | | | | |
| | | 12 | 37 | 90 | 37, 90 | 40, 42 |
| 8 | 8 | - | X | - | - | - |
| | 10 | - | - | - | - | W |
| 10 | 10 | - | - | - | - | W |
| | 12 | X | X | - | - | - |
| | 15 | X | X | - | - | W |
| 25 | 15 | - | X | X | X | W |
| | 20 | - | X | X | X | W |
| | 25 | - | X | X | X | W |
| 40 | 32 | - | X | X | X | W |
| | 40 | - | X | X | X | W |
| 50 | 50 | - | X | X | X | W |

MG = diaphragm size, X = standard

W = welded assembly

1) **Connection type**

Code 1: Threaded socket DIN ISO 228

Code 31: NPT female thread

Code 6: Threaded spigot DIN 11851

Code 6K: Cone spigot and union nut DIN 11851

2) **Valve body material**

Code 12: CW614N, CW617N (brass)

Code 37: 1.4408, investment casting

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Flange

| M G | DN | Connection type code ¹⁾ | | | | | | | | |
|--------|-------------------|------------------------------------|------------|----|---------------------------|----|-------------------|----|------------|---|
| | | 8 | | | 34 | 38 | | 39 | | |
| | | Material code ²⁾ | | | | | | | | |
| | 17, 18, 39, 90 | 83 | 40, 42, C3 | 39 | 17, 18 ³⁾ , 39 | 83 | 17, 18, 39, 90 | 83 | 40, 42, C3 | |
| 25 | 15 | X | X | W | X | - | - | X | X | W |
| | 20 | X | X | W | X | X | X | X | X | W |
| | 25 | X | X | W | X | X | X | X | X | W |
| 40 | 32 | X | X | W | X | - | - | X | X | W |
| | 40 | X | X | W | X | X | X | X | X | W |
| 50 | 50 | X | X | W | X | X | X | X | X | W |
| | 65 | X | - | - | - | X | - | X | - | - |

MG = diaphragm size, X = standard

W = welded assembly

1) **Connection type**

Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

Code 34: Flange JIS B2220, 10K, RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

Code 38: Flange ANSI Class 150 RF, face-to-face dimension FTF MSS SP-88, length only for body configuration D

Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) **Valve body material**

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 39: 1.4408, PFA lined

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Code C3: 1.4435, investment casting

3) On request

Clamp

| MG | DN | Connection type code ¹⁾ | | | | | | |
|----|----|------------------------------------|------------|------------|------------|------------|------------|------------|
| | | 80 | 82 | 88 | 8A | 8E | 8P | 8T |
| | | Material code ²⁾ | | | | | | |
| | | 40, 42, F4 | 40, 42, F4 | 40, 42, F4 | 40, 42, F4 | 40, 42, F4 | 40, 42, F4 | 40, 42, F4 |
| 8 | 6 | - | K | - | K | - | - | - |
| | 8 | K | K | - | K | - | K | - |
| | 10 | K | - | - | W | - | K | - |
| | 15 | K | - | W | - | - | K | W |
| 10 | 10 | - | K | - | K | - | - | - |
| | 15 | K | W | K | K | - | K | K |
| | 20 | K | - | K | - | - | K | K |
| 25 | 15 | - | W | - | K | - | - | - |
| | 20 | K | K | K | K | - | K | K |
| | 25 | K | K | K | K | K | K | K |
| 40 | 32 | - | W | - | K | K | - | - |
| | 40 | K | W | K | K | K | K | K |
| 50 | 50 | K | W | K | K | K | K | K |
| | 65 | W | - | W | - | W | W | W |

MG = diaphragm size

K = connections completely machined (not welded)

W = welded assembly

1) Connection type

Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D

Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 88: Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8A: Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D

Code 8E: Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008 face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8P: Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configuration D

Code 8T: Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, $\Delta Fe < 0.5\%$

Code F4: 1.4539, forged body

Availability of product compliance

| | Diaphragm material code ¹⁾ | Body material code ²⁾ |
|----------------|---------------------------------------|----------------------------------|
| Drinking water | | |
| Belgaqua (B) | 28 | 37 |

1) Diaphragm material

Code 28: EPDM

2) Valve body material

Code 37: 1.4408, investment casting

Order data

The order data provide an overview of standard configurations.

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

Order codes

| 1 Type | Code |
|--|------|
| Diaphragm valve, electrically operated, electro-mechanical hollow shaft actuator, eSyDrive | 649 |

| 2 DN | Code |
|-------|------|
| DN 4 | 4 |
| DN 6 | 6 |
| DN 8 | 8 |
| DN 10 | 10 |
| DN 12 | 12 |
| DN 15 | 15 |
| DN 20 | 20 |
| DN 25 | 25 |
| DN 32 | 32 |
| DN 40 | 40 |
| DN 50 | 50 |
| DN 65 | 65 |

| 3 Body configuration | Code |
|--|------|
| Tank bottom valve body | B |
| Body configuration code B: Dimensions and designs on request | |
| 2/2-way body | D |
| T-body | T |
| Body configuration code T: Dimensions on request | |

| 4 Connection type | Code |
|--|------|
| Spigot | |
| Spigot DIN | 0 |
| Spigot DIN EN 10357 series B (2014 edition; formerly DIN 11850 series 1) | 16 |
| Spigot EN 10357 series A/DIN 11866 series A formerly DIN 11850 series 2 | 17 |
| Spigot DIN 11850 series 3 | 18 |
| Spigot JIS-G 3447 | 35 |
| Spigot JIS-G 3459 schedule 10s | 36 |
| Spigot SMS 3008 | 37 |
| Spigot BS 4825, part 1 | 55 |
| Spigot ASME BPE/DIN EN 10357 series C (from 2022 edition)/DIN 11866 series C | 59 |
| Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B | 60 |
| Spigot ANSI/ASME B36.19M schedule 10s | 63 |
| Spigot ANSI/ASME B36.19M schedule 5s | 64 |
| Spigot ANSI/ASME B36.19M schedule 40s | 65 |
| Threaded connection | |
| Threaded socket DIN ISO 228 | 1 |
| NPT female thread | 31 |

| 4 Connection type | Code |
|---|------|
| Threaded spigot DIN 11851 | 6 |
| Cone spigot and union nut DIN 11851 | 6K |
| Flange | |
| Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D | 8 |
| Flange JIS B2220, 10K, RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D | 34 |
| Flange ANSI Class 150 RF, face-to-face dimension FTF MSS SP-88, length only for body configuration D | 38 |
| Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D | 39 |
| Clamp | |
| Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D | 80 |
| Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D | 82 |
| Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D | 88 |
| Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D | 8A |
| Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008 face-to-face dimension FTF EN 558 series 7, length only for body configuration D | 8E |
| Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configuration D | 8P |
| Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configuration D | 8T |

| 5 Valve body material | Code |
|--|------|
| SG iron material | |
| EN-GJS-400-18-LT (GGG 40.3), PFA lined | 17 |
| EN-GJS-400-18-LT (GGG 40.3), PP lined | 18 |
| EN-GJS-400-18-LT (GGG 40.3), hard rubber lined | 83 |
| EN-GJS-400-18-LT (GGG 40.3) | 90 |

| 5 Valve body material | Code |
|---|------|
| Investment casting material | |
| 1.4408, investment casting | 37 |
| 1.4408, PFA lined | 39 |
| 1.4435, investment casting | C3 |
| Forged material | |
| 1.4435 (F316L), forged body | 40 |
| 1.4435 (BN2), forged body, Δ Fe < 0.5% | 42 |
| 1.4539, forged body | F4 |
| Brass | |
| CW614N, CW617N (brass) | 12 |

| 6 Diaphragm material | Code |
|---|------|
| Elastomer | |
| NBR | 2 |
| FKM | 4 |
| CR | 8 |
| EPDM | 13 |
| EPDM | 17 |
| EPDM | 19 |
| EPDM | 28 |
| EPDM | 29 |
| PTFE | |
| PTFE/EPDM one-piece | 54 |
| PTFE/EPDM two-piece | 5M |
| PTFE/FKM two-piece | 5T |
| PTFE/PVDF/EPDM three-piece | 71 |
| Note: The PTFE/EPDM diaphragm (code 5M, code 5T, code 71) is available from diaphragm size 25. | |

| 7 Voltage/Frequency | Code |
|---------------------|------|
| 24 V DC | C1 |

| 8 Control module | Code |
|---|------|
| OPEN/CLOSE, positioner and process controller | L0 |

| 9 Surface | Code |
|---|------|
| Ra \leq 6.3 μ m (250 μ in.) for media wetted surfaces, mechanically polished internal | 1500 |
| Ra \leq 0.8 μ m (30 μ in.) for media wetted surfaces, in accordance with DIN 11866 H3, mechanically polished internal | 1502 |
| Ra \leq 0.8 μ m (30 μ in.) for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external | 1503 |
| Ra \leq 0.6 μ m (25 μ in.) for media wetted surfaces, mechanically polished internal | 1507 |
| Ra \leq 0.6 μ m (25 μ in.) for media wetted surfaces, electropolished internal/external | 1508 |
| Ra \leq 0.4 μ m (15 μ in.) for media wetted surfaces, in accordance with DIN 11866 H4, mechanically polished internal | 1536 |
| Ra \leq 0.4 μ m (15 μ in.) for media wetted surfaces, in accordance with DIN 11866 HE4, electropolished internal/external | 1537 |

| 9 Surface | Code |
|---|------|
| Ra \leq 0.25 μ m (10 μ in.) for media wetted surfaces *), in accordance with DIN 11866 HE5, electropolished internal/external, *) for inner pipe diameters < 6 mm, in the spigot Ra \leq 0.38 μ m | 1516 |
| Ra \leq 0.25 μ m (10 μ in.) for media wetted surfaces *), in accordance with DIN 11866 H5, mechanically polished internal, *) for inner pipe diameters < 6 mm, in the spigot Ra \leq 0.38 μ m | 1527 |
| Ra max. 0.51 μ m (20 μ in.) for media wetted surfaces, in accordance with ASME BPE SF1, mechanically polished internal | SF1 |
| Ra max. 0.64 μ m (25 μ in.) for media wetted surfaces, in accordance with ASME BPE SF2, mechanically polished internal | SF2 |
| Ra max. 0.76 μ m (30 μ in.) for media wetted surfaces, in accordance with ASME BPE SF3, mechanically polished internal | SF3 |
| Ra max. 0.38 μ m (15 μ in.) for media wetted surfaces, in accordance with ASME BPE SF4, electropolished internal/external | SF4 |
| Ra max. 0.51 μ m (20 μ in.) for media wetted surfaces, in accordance with ASME BPE SF5, electropolished internal/external | SF5 |
| Ra max. 0.64 μ m (25 μ in.) for media wetted surfaces, in accordance with ASME BPE SF6, electropolished internal/external | SF6 |

| 10 Actuator version | Code |
|--------------------------------------|------|
| DN 10–20, diaphragm size 10 | |
| Actuator size 0 | 0A |
| DN 15 - 25, diaphragm size 25 | |
| Actuator size 1 | 1A |
| DN 32 - 40, diaphragm size 40 | |
| Actuator size 1 | 1A |
| Actuator size 2 | 2A |
| DN 50–65, diaphragm size 50 | |
| Actuator size 2 | 2A |

| 11 Special version | Code |
|---|------|
| Without | |
| BELGAQUA certification | B |
| Special version for oxygen, maximum medium temperature: 60 °C | S |

| 12 CONEXO | Code |
|---|------|
| Without | |
| Integrated RFID chip for electronic identification and traceability | C |

Order example

| Ordering option | Code | Description |
|-----------------------|------|--|
| 1 Type | 649 | Diaphragm valve, electrically operated, electro-mechanical hollow shaft actuator, eSyDrive |
| 2 DN | 50 | DN 50 |
| 3 Body configuration | D | 2/2-way body |
| 4 Connection type | 60 | Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B |
| 5 Valve body material | 40 | 1.4435 (F316L), forged body |
| 6 Diaphragm material | 5M | PTFE/EPDM two-piece |
| 7 Voltage/Frequency | C1 | 24 V DC |
| 8 Control module | L0 | OPEN/CLOSE, positioner and process controller |
| 9 Surface | 1503 | Ra ≤ 0.8 µm (30 µin.) for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external |
| 10 Actuator version | 2A | Actuator size 2 |
| 11 Special version | S | Special version for oxygen, maximum medium temperature: 60 °C |
| 12 CONEXO | | Without |

Technical data

Medium

Working medium: Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and diaphragm material.
 For special oxygen version (code S): only gaseous oxygen

Temperature

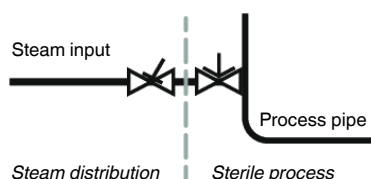
Media temperature:

| Diaphragm material | Standard | Special version for oxygen |
|---------------------|--------------|----------------------------|
| NBR (code 2) | -10 – 100 °C | - |
| FKM (code 4) | -10 – 90 °C | - |
| CR (code 8) | -10 – 100 °C | - |
| EPDM (code 13) | -10 – 100 °C | 0 – 60 °C |
| EPDM (code 17) | -10 – 100 °C | - |
| EPDM (code 19) | -10 – 100 °C | 0 – 60 °C |
| EPDM (code 28) | -10 – 85 °C | - |
| EPDM (code 29) | -10 – 100 °C | - |
| PTFE/EPDM (code 54) | -10 – 100 °C | 0 – 60 °C |
| PTFE/EPDM (code 5M) | -10 – 100 °C | 0 – 60 °C |

Sterilization temperature: EPDM (code 13) max. 150 °C, max. 60 min per cycle
 EPDM (code 17) max. 150 °C, max. 180 min per cycle
 EPDM (code 19) max. 150 °C, max. 180 min per cycle
 PTFE/EPDM (code 54) max. 150 °C, constant temperature per cycle
 PTFE/EPDM (code 5M) max. 150 °C, constant temperature per cycle

The sterilization temperature is only valid for steam (saturated steam) or superheated water. If the sterilization temperatures listed above are applied to the EPDM diaphragms for longer periods of time, the service life of the diaphragms will be reduced. In these cases, maintenance cycles must be adapted accordingly.

PTFE diaphragms can also be used as steam barriers; however, this will reduce their service life. This also applies to PTFE diaphragms exposed to high temperature fluctuations. The maintenance cycles must be adapted accordingly. GEMÜ 555 and 505 globe valves are particularly suitable for use in the area of steam generation and distribution. The following valve arrangement for interfaces between steam pipes and process pipes has proven itself over time: A globe valve for shutting off steam pipes and a diaphragm valve as an interface to the process pipes.



Ambient temperature: -10 – 60 °C

Storage temperature: 0 – 40 °C

Pressure

Operating pressure:

| MG | DN | Actuator version | Diaphragm material | | |
|----|---------|------------------|--------------------|-------------|-----------------------------------|
| | | | Elastomer | PTFE | |
| | | | | Forged body | Cast body with and without lining |
| 8 | 4 - 15 | 0A | 0 - 10 | 0 - 10 | 0 - 6 |
| 10 | 10 - 20 | 0A | 0 - 10 | 0 - 10 | 0 - 6 |
| 25 | 15 - 25 | 1A | 0 - 10 | 0 - 10 | 0 - 6 |
| 40 | 32 - 40 | 1A | 0 - 5 | 0 - 2 | 0 - 2 |
| | | 2A | 0 - 10 | 0 - 10 | 0 - 6 |
| 50 | 50 - 65 | 2A | 0 - 10 | 0 - 10 | 0 - 6 |

MG = diaphragm size

All pressures are gauge pressures. Operating pressure values were determined with static operating pressure applied on one side of a closed valve. Sealing at the valve seat and atmospheric sealing is ensured for the given values.

Information on operating pressures applied on both sides and for high purity media on request.

Pressure rating:

PN 16

Leakage rate:

Leakage rate A to P11/P12 EN 12266-1

Kv values:

| MG | DN | Connection type code | | | | | | | | |
|----|----|----------------------|------|------|------|------|------|------|------|------|
| | | 0 | 16 | 17 | 18 | 37 | 59 | 60 | 1 | 31 |
| 8 | 4 | 0.5 | - | - | - | - | - | - | - | - |
| | 6 | - | - | 1.1 | - | - | - | 1.2 | - | - |
| | 8 | - | - | 1.3 | - | - | 0.6 | 2.2 | 1.4 | - |
| | 10 | - | 2.1 | 2.1 | 2.1 | - | 1.3 | - | - | - |
| | 15 | - | - | - | - | - | 2.0 | - | - | - |
| 10 | 10 | - | 2.4 | 2.4 | 2.4 | - | 2.2 | 3.3 | - | - |
| | 12 | - | - | - | - | - | - | - | 3.2 | - |
| | 15 | 3.3 | 3.8 | 3.8 | 3.8 | - | 2.2 | 4.0 | 3.4 | - |
| | 20 | - | - | - | - | - | 3.8 | - | - | - |
| 25 | 15 | 4.1 | 4.7 | 4.7 | 4.7 | - | - | 7.4 | 6.5 | 6.5 |
| | 20 | 6.3 | 7.0 | 7.0 | 7.0 | - | 4.4 | 13.2 | 10.0 | 10.0 |
| | 25 | 13.9 | 15.0 | 15.0 | 15.0 | 12.6 | 12.2 | 16.2 | 14.0 | 14.0 |
| 40 | 32 | 25.3 | 27.0 | 27.0 | 27.0 | 26.2 | - | 30.0 | 26.0 | 26.0 |
| | 40 | 29.3 | 30.9 | 30.9 | 30.9 | 30.2 | 29.5 | 32.8 | 33.0 | 33.0 |
| 50 | 50 | 46.5 | 48.4 | 48.4 | 48.4 | 51.7 | 50.6 | 55.2 | 60.0 | 60.0 |
| | 65 | - | - | - | - | 62.2 | 61.8 | - | - | - |

MG = diaphragm size

Kv values in m³/h

Kv values determined in accordance with DIN EN 60534 standard, inlet pressure 5 bar, Δp 1 bar, stainless steel valve body and soft elastomer diaphragm. The Kv values for other product configurations (e.g. other diaphragm or body materials) may differ. In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Kv values may exceed the tolerance limits of the standard.

The Kv value curve (Kv value dependent on valve stroke) can vary depending on the diaphragm material and duration of use.

Kv values:

| MG | DN | GGG 40.3 connection type 1, 31 | GGG 40.3 connection type 8, 39 | PFA / PP | Hard rubber |
|----|----|--------------------------------|--------------------------------|----------|-------------|
| 25 | 15 | 8.0 | 10.0 | 5.0 | 6.0 |
| | 20 | 11.5 | 14.0 | 9.0 | 11.0 |
| | 25 | 11.5 | 17.0 | 13.0 | 15.0 |
| 40 | 32 | 28.0 | 36.0 | 23.0 | 29.0 |
| | 40 | 28.0 | 40.0 | 26.0 | 32.0 |
| 50 | 50 | 60.0 | 68.0 | 47.0 | 64.0 |
| | 65 | - | 68.0 | 47.0 | - |

MG = diaphragm size, Kv values in m³/h

Kv values determined in accordance with DIN EN 60534, inlet pressure 5 bar, Δp 1 bar, with connection flange EN 1092 length EN 558 series 1 (or threaded socket DIN ISO 228 for body material GGG40.3) and soft elastomer diaphragm. The Kv values for other product configurations (e.g. other diaphragm or body materials) may differ.

In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Kv values may exceed the tolerance limits of the standard.

The Kv value curve (Kv value dependent on valve stroke) can vary depending on the diaphragm material and duration of use.

Product conformity

Machinery Directive: 2006/42/EC

Pressure Equipment Directive: 2014/68/EU

Food: Regulation (EC) No. 1935/2004*
 Regulation (EC) No. 10/2011*
 FDA*
 USP* Class VI

EMC Directive: 2014/30/EU

Drinking water: Belgaqua*
 * depending on version and/or operating parameters

RoHS Directive: 2011/65/EU

Mechanical data

Protection class: IP 65 acc. to EN 60529

Actuating speed: Actuator version 0A adjustable, max. 6 mm/s
 Actuator version 1A adjustable, max. 6 mm/s
 Actuator version 2A adjustable, max. 4 mm/s

Flow direction: Optional

Installation position: Optional
 Observe the angle of rotation for optimized draining when it comes to installation.
 See separate document, "Angle of rotation technical information".

Weight:

| | |
|---------------------|--------|
| Actuator | |
| Actuator version 0A | 2.1 kg |
| Actuator version 1A | 3.0 kg |
| Actuator version 2A | 9.0 kg |

Body

| Connection type Code | | 0, 16, 17, 18, 35, 36, 37, 55, 59, 60, 63, 64, 65 | 1 | 1 | 1, 31 | 31 | 6, 6K | 8, 38, 39 | 80, 82, 88, 8A, 8E, 8P, 8T |
|----------------------|-----------|---|-----------------|------|-------|------|-----------------|-----------|----------------------------|
| Valve body | | Spigot | Threaded socket | | | | Threaded spigot | Flange | Clamp |
| Material code | | | 12 | 37 | 90 | 37 | | | |
| MG | DN | | | | | | | | |
| 8 | 4 | 0.09 | - | - | - | - | - | - | - |
| | 6 | 0.09 | - | - | - | - | - | - | - |
| | 8 | 0.09 | - | 0.09 | - | - | - | - | 0.15 |
| | 10 | 0.09 | - | - | - | - | 0.21 | - | 0.18 |
| | 15 | 0.09 | - | - | - | - | - | - | 0.18 |
| 10 | 10 | 0.30 | - | - | - | - | 0.33 | - | 0.30 |
| | 12 | - | 0.17 | 0.17 | - | - | - | - | - |
| | 15 | 0.30 | 0.26 | 0.26 | - | - | 0.35 | - | 0.43 |
| | 20 | - | - | - | - | - | - | - | 0.43 |
| 25 | 15 | 0.62 | - | 0.32 | 0.50 | 0.32 | 0.71 | 1.50 | 0.75 |
| | 20 | 0.58 | - | 0.34 | 0.60 | 0.34 | 0.78 | 2.20 | 0.71 |
| | 25 | 0.55 | - | 0.39 | 0.90 | 0.39 | 0.79 | 2.80 | 0.63 |
| 40 | 32 | 1.45 | - | 0.88 | 1.40 | 0.88 | 1.66 | 3.40 | 1.62 |
| | 40 | 1.32 | - | 0.93 | 1.90 | 0.93 | 1.62 | 4.50 | 1.50 |
| 50 | 50 | 2.25 | - | 1.56 | 2.70 | 1.56 | 2.70 | 6.30 | 2.50 |
| | 65 | 2.20 | - | - | - | - | - | 10.30 | 2.30 |

MG = diaphragm size, weight in kg

Actuator duty cycle and service life

- Service life:** **Control operation** - Class C acc. to EN 15714-2 (1,800,000 start-ups and 1200 start-ups per hour).
Open / Close duty - Minimum 1,000,000 switching cycles at room temperature and permissible duty cycle.
- Duty cycle:** **Control operation** - Class C acc. to EN 15714-2.
Open/Close duty - 100%

Electrical data

| Supply voltage: | Actuator size 0 | Actuator size 1 | Actuator size 2 |
|----------------------------|--------------------------------|-----------------|-----------------|
| Voltage | U _v = 24 V DC ± 10% | | |
| Rating | Max. 28 W | Max. 65 W | Max. 120 W |
| Reverse battery protection | Yes | | |

Analogue input signals

Set value

- Input signal:** 0/4 - 20 mA; 0 – 10 V DC (selectable using software)
- Input type:** passive
- Input resistance:** 250 Ω
- Accuracy/linearity:** ≤ ±0.3% of full flow
- Temperature drift:** ≤ ±0.1% / 10°K
- Resolution:** 12 bit
- Reverse battery protection:** No
- Overload proof:** Yes (up to ± 24 V DC)

Process actual value

- Input signal:** 0/4 - 20 mA; 0 – 10 V DC (selectable using software)
- Input type:** passive
- Input resistance:** 250 Ω
- Accuracy/linearity:** ≤ ±0.3% of full flow
- Temperature drift:** ≤ ±0.1% / 10°K
- Resolution:** 12 bit
- Reverse battery protection:** No
- Overload proof:** Yes (up to ± 24 V DC)

Digital input signals

| | |
|-------------------------|--------------------------------|
| Digital inputs: | 3 |
| Function: | Can be selected using software |
| Voltage: | 24 V DC |
| Logic level "1": | >14 V DC |
| Logic level "0": | < 8 V DC |
| Input current: | typ. 2.5 mA (at 24 V DC) |

Analogue output signals

Actual value

| | |
|-----------------------------|--|
| Output signal: | 0/4 - 20 mA; 0 – 10 V DC (selectable using software) |
| Output type: | Active (AD5412) |
| Accuracy: | $\leq \pm 1\%$ of full flow |
| Temperature drift: | $\leq \pm 0.1\%$ / 10°K |
| Load resistor: | ≤ 750 k Ω |
| Resolution: | 10 bit |
| Overload proof: | Yes (up to ± 24 V DC) |
| Short-circuit proof: | Yes |

Digital output signals

Switching outputs 1 and 2

| | |
|---------------------------|---------------------------------|
| Design: | 2x make contact, potential-free |
| Switching voltage: | max. 48 V DC / 48 V AC |
| Switch rating: | max. 60 W / 2A |
| Switch points: | Adjustable 0 - 100 % |

Switching output 3

| | |
|------------------------------|---------------------------|
| Function: | Signal fault |
| Type of contact: | Push-Pull |
| Switching voltage: | Supply voltage |
| Switching current: | ≤ 0.1 A |
| Drop voltage: | Max. 2.5 V DC at 0.1 A |
| Overload proof: | Yes (up to ± 24 V DC) |
| Short-circuit proof: | Yes |
| Pull-Down resistance: | 120 k Ω |

Communication eSy-Web

- Interface:** Ethernet
- Function:** Parameterisation via web browser
- IP address:** 192.168.2.1 alterable via web browser
- Subnet screen:** 255.255.252.0 alterable via web browser

The actuator and the PC must be in the same network to use the web server. The IP address of the actuator is entered in the web browser and the actuator can then be parametrised. In order to use more than one actuator, a definitive IP address must be assigned to each actuator in the same network.

Communication Modus TCP

- Interface:** Modbus TCP
- IP address:** 192.168.2.1 alterable via web browser
- Subnet screen:** 255.255.252.0 alterable via web browser
- Port:** 502

Supported function codes:

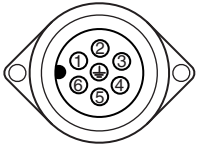
| Code Dezimal | Code Hex | Function |
|--------------|----------|---------------------------------|
| 3 | 0x03 | Read Holding Registers |
| 4 | 0x04 | Read Input Registers |
| 6 | 0x06 | Write Single Register |
| 16 | 0x10 | Write Multiple Registers |
| 23 | 0x17 | Read / Write Multiple Registers |

Behaviour in the event of an error

- Function:** In the event of an error the valve moves to the error position.
Notes: Moving to the error position is only possible with full power supply. This behaviour is not a safety position. The valve must be operated with a GEMÜ 1571 emergency power supply module (see accessories) to ensure the function in case of voltage loss.
- Error position:** Closed, open or hold (adjustable via eSy-web web interface).

Electrical connection

Connection X1



7-pin plug, Binder, type 693

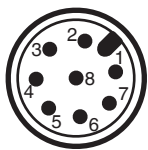
| Pin | Signal name |
|--------|-------------------------------|
| Pin 1 | Uv, 24 V DC supply voltage |
| Pin 2 | Uv GND |
| Pin 3 | Relay output K1, common |
| Pin 4 | Relay output K1, make contact |
| Pin 5 | Relay output K2, common |
| Pin 6 | Relay output K2, make contact |
| Pin PE | Function earth |

Connection X2



5-pin M12 built-in socket, D-coded

| Pin | Signal name |
|-------|-----------------|
| Pin 1 | Tx + (Ethernet) |
| Pin 2 | Rx + (Ethernet) |
| Pin 3 | Tx - (Ethernet) |
| Pin 4 | Rx - (Ethernet) |
| Pin 5 | Shield |

Connection X3

8-pin M12 plug, A-coded

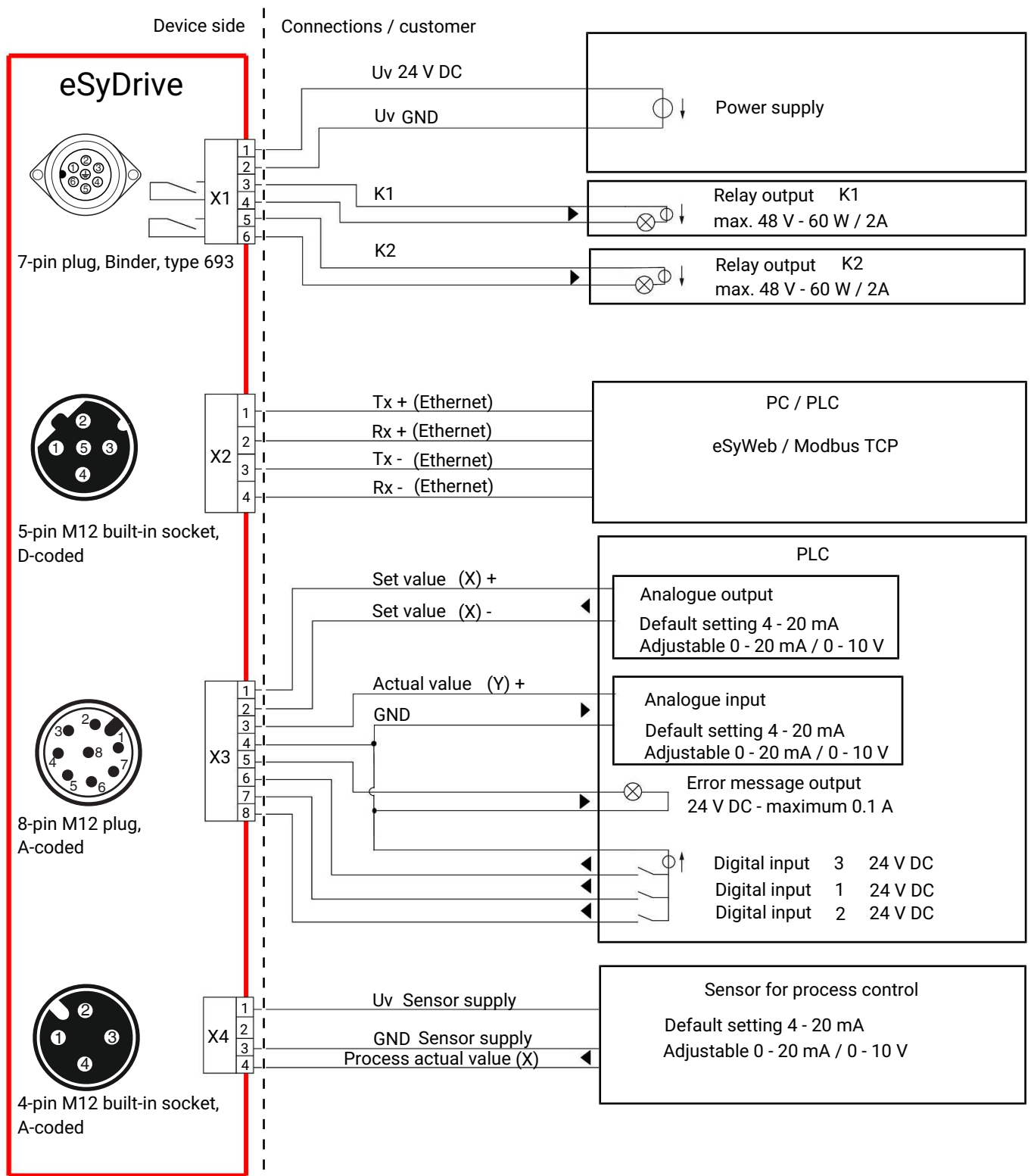
| Pin | Signal name |
|-------|--|
| Pin 1 | W+ set value input |
| Pin 2 | W – set value input |
| Pin 3 | X + actual value output |
| Pin 4 | GND (actual value output, digital input 1 – 3, error message output) |
| Pin 5 | Error message output 24 V DC |
| Pin 6 | Digital input 3 |
| Pin 7 | Digital input 1 |
| Pin 8 | Digital input 2 |

Connection X4

4-pin M12 built-in socket, A-coded

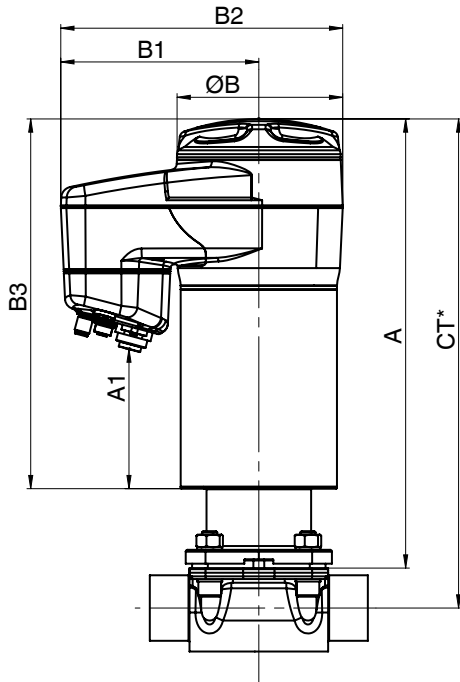
| Pin | Signal name |
|-------|---|
| Pin 1 | UV, 24 V DC actual value supply |
| Pin 2 | n.c. |
| Pin 3 | GND (actual value supply, actual value input) |
| Pin 4 | X+, process actual value input |
| Pin 5 | n.c. |

Connection diagram



Dimensions

Actuator dimensions



| MG | DN | Actuator version | A | A1 | Ø B | B1 | B2 | B3 |
|----|---------|------------------|-------|-------|-------|-------|-------|-------|
| 8 | 4 - 15 | 0A | 215,9 | 44.0 | 68.0 | 126.0 | 160.0 | 190.0 |
| 10 | 10 - 20 | 0A | 230.0 | 44.0 | 68.0 | 126.0 | 160.0 | 190.0 |
| 25 | 15 - 25 | 1A | 305.0 | 83.0 | 82.0 | 132.0 | 172.0 | 250.0 |
| 40 | 32 - 40 | 1A | 303.0 | 75.0 | 82.0 | 132.0 | 172.0 | 243.0 |
| | | 2A | 360.0 | 111.0 | 134.0 | 157.0 | 224.0 | 296.0 |
| 50 | 50 - 65 | 2A | 360.0 | 111.0 | 134.0 | 157.0 | 224.0 | 296.0 |

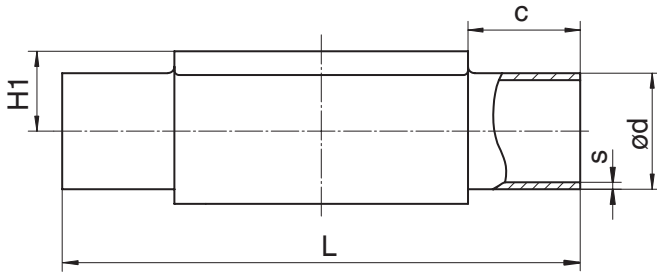
Dimensions in mm

MG = diaphragm size

* CT = A + H1 (see body dimensions)

Body dimensions

Spigot DIN/EN/ISO (code 0, 16, 17, 18, 60)



Connection type spigot DIN/EN/ISO (code 0, 16, 17, 18, 60)¹⁾, forged material (code 40, 42, F4)²⁾

| MG | DN | NPS | c (min) | ød | | | | | H1 | L | s | | | | |
|----|----|--------|---------|-----------------|------|------|------|------|------|-------|-----------------|-----|-----|-----|-----|
| | | | | Connection type | | | | | | | Connection type | | | | |
| | | | | 0 | 16 | 17 | 18 | 60 | | | 0 | 16 | 17 | 18 | 60 |
| 8 | 4 | - | 20.0 | 6.0 | - | - | - | - | 8.5 | 72.0 | 1.0 | - | - | - | - |
| | 6 | - | 20.0 | - | - | 8.0 | - | 10.2 | 8.5 | 72.0 | - | - | 1.0 | - | 1.6 |
| | 8 | 1/4" | 20.0 | - | - | 10.0 | - | 13.5 | 8.5 | 72.0 | - | - | 1.0 | - | 1.6 |
| | 10 | 3/8" | 20.0 | - | 12.0 | 13.0 | 14.0 | - | 8.5 | 72.0 | - | 1.0 | 1.5 | 2.0 | - |
| 10 | 10 | 3/8" | 25.0 | - | 12.0 | 13.0 | 14.0 | 17.2 | 12.5 | 108.0 | - | 1.0 | 1.5 | 2.0 | 1.6 |
| | 15 | 1/2" | 25.0 | 18.0 | 18.0 | 19.0 | 20.0 | 21.3 | 12.5 | 108.0 | 1.5 | 1.0 | 1.5 | 2.0 | 1.6 |
| 25 | 15 | 1/2" | 25.0 | 18.0 | 18.0 | 19.0 | 20.0 | 21.3 | 19.0 | 120.0 | 1.5 | 1.0 | 1.5 | 2.0 | 1.6 |
| | 20 | 3/4" | 25.0 | 22.0 | 22.0 | 23.0 | 24.0 | 26.9 | 19.0 | 120.0 | 1.5 | 1.0 | 1.5 | 2.0 | 1.6 |
| | 25 | 1" | 25.0 | 28.0 | 28.0 | 29.0 | 30.0 | 33.7 | 19.0 | 120.0 | 1.5 | 1.0 | 1.5 | 2.0 | 2.0 |
| 40 | 32 | 1 1/4" | 25.0 | 34.0 | 34.0 | 35.0 | 36.0 | 42.4 | 26.0 | 153.0 | 1.5 | 1.0 | 1.5 | 2.0 | 2.0 |
| | 40 | 1 1/2" | 30.5 | 40.0 | 40.0 | 41.0 | 42.0 | 48.3 | 26.0 | 153.0 | 1.5 | 1.0 | 1.5 | 2.0 | 2.0 |
| 50 | 50 | 2" | 30.0 | 52.0 | 52.0 | 53.0 | 54.0 | 60.3 | 32.0 | 173.0 | 1.5 | 1.0 | 1.5 | 2.0 | 2.0 |

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 0: Spigot DIN

Code 16: Spigot DIN EN 10357 series B (2014 edition; formerly DIN 11850 series 1)

Code 17: Spigot EN 10357 series A/DIN 11866 series A formerly DIN 11850 series 2

Code 18: Spigot DIN 11850 series 3

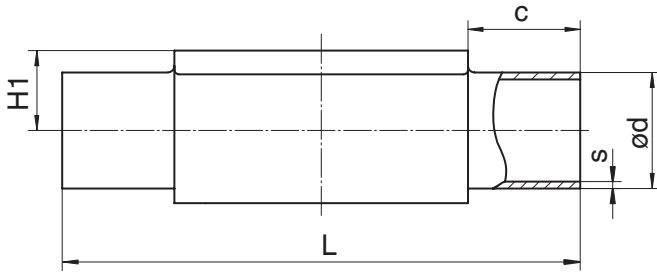
Code 60: Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B

2) **Valve body material**

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body



Connection type spigot DIN/EN/ISO (code 0, 17, 60)¹⁾, investment casting material (code C3)²⁾

| MG | DN | NPS | c (min) | ød | | | H1 | L | s | | |
|----|----|------|---------|-----------------|------|------|------|-------|-----------------|-----|-----|
| | | | | Connection type | | | | | Connection type | | |
| | | | | 0 | 17 | 60 | | | 0 | 17 | 60 |
| 8 | 4 | - | 20.0 | 6,0 | - | - | 8.5 | 72.0 | 1,0 | - | - |
| | 6 | - | 20.0 | - | 8.0 | 10.2 | 8.5 | 72.0 | - | 1.0 | - |
| | 8 | 1/4" | 20.0 | - | 10.0 | 13.5 | 8.5 | 72.0 | - | 1.0 | 1.6 |
| | 10 | 3/8" | 20.0 | - | 13.0 | - | 8.5 | 72.0 | - | 1.5 | - |
| 10 | 10 | 3/8" | 25.0 | - | 13.0 | 17.2 | 12.5 | 108.0 | - | 1.5 | 1.6 |
| | 15 | 1/2" | 25.0 | - | 19.0 | 21.3 | 12.5 | 108.0 | - | 1.5 | 1.6 |
| 25 | 15 | 1/2" | 25.0 | - | 19.0 | 21.3 | 13.0 | 120.0 | - | 1.5 | 1.6 |
| | 20 | 3/4" | 25.0 | - | 23.0 | 26.9 | 16.0 | 120.0 | - | 1.5 | 1.6 |
| | 25 | 1" | 25.0 | - | 29.0 | 33.7 | 19.0 | 120.0 | - | 1.5 | 2.0 |
| 40 | 32 | 1¼" | 25.0 | - | 35.0 | 42.4 | 24.0 | 153.0 | - | 1.5 | 2.0 |
| | 40 | 1½" | 30.5 | - | 41.0 | 48.3 | 26.0 | 153.0 | - | 1.5 | 2.0 |
| 50 | 50 | 2" | 30.0 | - | 53.0 | 60.3 | 32.0 | 173.0 | - | 1.5 | 2.0 |

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 0: Spigot DIN

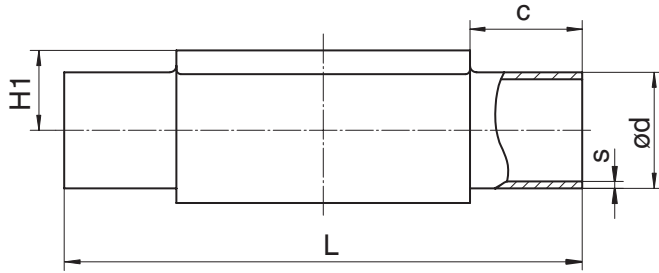
Code 17: Spigot EN 10357 series A/DIN 11866 series A formerly DIN 11850 series 2

Code 60: Spigot ISO 1127/DIN EN 10357 series C (2014 edition)/DIN 11866 series B

2) **Valve body material**

Code C3: 1.4435, investment casting

Spigot ASME/BS (code 55, 59, 63, 64, 65)



Connection type spigot ASME/BS (code 55, 59, 63, 64, 65)¹⁾, forged material (code 40, 42, F4)²⁾

| MG | DN | NPS | c (min) | ød | | | | | H1 | L | s | | | | |
|----|----|--------|---------|-----------------|-------|------|------|------|------|-------|-----------------|------|------|------|------|
| | | | | Connection type | | | | | | | Connection type | | | | |
| | | | | 55 | 59 | 63 | 64 | 65 | | | 55 | 59 | 63 | 64 | 65 |
| 8 | 6 | - | 20.0 | - | - | 10.3 | - | 10.3 | 8.5 | 72.0 | - | - | 1.24 | - | 1.73 |
| | 8 | 1/4" | 20.0 | 6.35 | 6.35 | 13.7 | - | 13.7 | 8.5 | 72.0 | 1.2 | 0.89 | 1.65 | - | 2.24 |
| | 10 | 3/8" | 20.0 | 9.53 | 9.53 | - | - | - | 8.5 | 72.0 | 1.2 | 0.89 | - | - | - |
| | 15 | 1/2" | 20.0 | 12.70 | 12.70 | - | - | - | 8.5 | 72.0 | 1.2 | 1.65 | - | - | - |
| 10 | 10 | 3/8" | 25.0 | 9.53 | 9.53 | 17.1 | - | 17.1 | 12.5 | 108.0 | 1.2 | 0.89 | 1.65 | - | 2.31 |
| | 15 | 1/2" | 25.0 | 12.70 | 12.70 | 21.3 | 21.3 | 21.3 | 12.5 | 108.0 | 1.2 | 1.65 | 2.11 | 1.65 | 2.77 |
| | 20 | 3/4" | 25.0 | 19.05 | 19.05 | - | - | - | 12.5 | 108.0 | 1.2 | 1.65 | - | - | - |
| 25 | 15 | 1/2" | 25.0 | - | - | 21.3 | 21.3 | 21.3 | 19.0 | 120.0 | - | - | 2.11 | 1.65 | 2.77 |
| | 20 | 3/4" | 25.0 | 19.05 | 19.05 | 26.7 | 26.7 | 26.7 | 19.0 | 120.0 | 1.2 | 1.65 | 2.11 | 1.65 | 2.87 |
| | 25 | 1" | 25.0 | - | 25.40 | 33.4 | 33.4 | 33.4 | 19.0 | 120.0 | - | 1.65 | 2.77 | 1.65 | 3.38 |
| 40 | 32 | 1 1/4" | 25.0 | - | - | 42.2 | 42.2 | 42.2 | 26.0 | 153.0 | - | - | 2.77 | 1.65 | 3.56 |
| | 40 | 1 1/2" | 30.5 | - | 38.10 | 48.3 | 48.3 | 48.3 | 26.0 | 153.0 | - | 1.65 | 2.77 | 1.65 | 3.68 |
| 50 | 50 | 2" | 30.0 | - | 50.80 | 60.3 | 60.3 | 60.3 | 32.0 | 173.0 | - | 1.65 | 2.77 | 1.65 | 3.91 |
| | 65 | 2 1/2" | 30.0 | - | 63.50 | - | - | - | 34.0 | 173.0 | - | 1.65 | - | - | - |

Connection type spigot ASME BPE (code 59)¹⁾, investment casting material (code C3)²⁾

| MG | DN | NPS | c (min) | ød | H1 | L | s |
|----|----|--------|---------|-------|------|-------|------|
| 8 | 8 | 1/4" | 20.0 | 6.35 | 8.5 | 72.0 | 0.89 |
| | 10 | 3/8" | 20.0 | 9.53 | 8.5 | 72.0 | 0.89 |
| | 15 | 1/2" | 20.0 | 12.70 | 8.5 | 72.0 | 1.65 |
| 10 | 20 | 3/4" | 25.0 | 19.05 | 12.5 | 108.0 | 1.65 |
| 25 | 20 | 3/4" | 25.0 | 19.05 | 16.0 | 120.0 | 1.65 |
| | 25 | 1" | 25.0 | 25.40 | 19.0 | 120.0 | 1.65 |
| 40 | 40 | 1 1/2" | 30.5 | 38.10 | 26.0 | 153.0 | 1.65 |
| 50 | 50 | 2" | 30.0 | 50.80 | 32.0 | 173.0 | 1.65 |

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 55: Spigot BS 4825, part 1

Code 59: Spigot ASME BPE/DIN EN 10357 series C (from 2022 edition)/DIN 11866 series C

Code 63: Spigot ANSI/ASME B36.19M schedule 10s

Code 64: Spigot ANSI/ASME B36.19M schedule 5s

Code 65: Spigot ANSI/ASME B36.19M schedule 40s

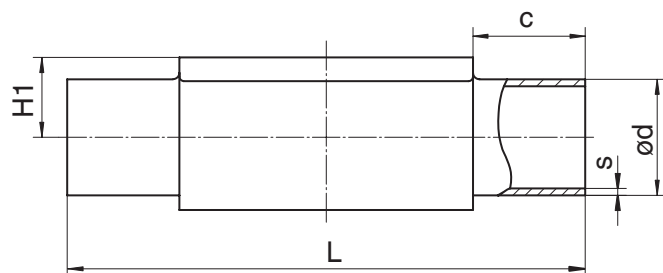
2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code C3: 1.4435, investment casting

Code F4: 1.4539, forged body

Spigot JIS/SMS (code 35, 36, 37)**Connection type spigot JIS/SMS (code 35, 36, 37)¹⁾, forged material (code 40, 42, F4)²⁾**

| MG | DN | NPS | c (min) | ød | | | H1 | L | s | | |
|----|----|--------|---------|-----------------|------|------|------|-------|-----------------|------|-----|
| | | | | Connection type | | | | | Connection type | | |
| | | | | 35 | 36 | 37 | | | 35 | 36 | 37 |
| 8 | 6 | - | 20.0 | - | 10.5 | - | 8.5 | 72.0 | - | 1.20 | - |
| | 8 | 1/4" | 20.0 | - | 13.8 | - | 8.5 | 72.0 | - | 1.65 | - |
| 10 | 10 | 3/8" | 25.0 | - | 17.3 | - | 12.5 | 108.0 | - | 1.65 | - |
| | 15 | 1/2" | 25.0 | - | 21.7 | - | 12.5 | 108.0 | - | 2.10 | - |
| 25 | 15 | 1/2" | 25.0 | - | 21.7 | - | 19.0 | 120.0 | - | 2.10 | - |
| | 20 | 3/4" | 25.0 | - | 27.2 | - | 19.0 | 120.0 | - | 2.10 | - |
| | 25 | 1" | 25.0 | 25.4 | 34.0 | 25.0 | 19.0 | 120.0 | 1.2 | 2.80 | 1.2 |
| 40 | 32 | 1 1/4" | 25.0 | 31.8 | 42.7 | 33.7 | 26.0 | 153.0 | 1.2 | 2.80 | 1.2 |
| | 40 | 1 1/2" | 30.5 | 38.1 | 48.6 | 38.0 | 26.0 | 153.0 | 1.2 | 2.80 | 1.2 |
| 50 | 50 | 2" | 30.0 | 50.8 | 60.5 | 51.0 | 32.0 | 173.0 | 1.5 | 2.80 | 1.2 |
| | 65 | 2 1/2" | 30.0 | 63.5 | - | 63.5 | 34.0 | 173.0 | 2.0 | - | 1.6 |

Connection type spigot SMS (code 37)¹⁾, investment casting material (code C3)²⁾

| MG | DN | NPS | c (min) | ød | H1 | L | s |
|----|----|--------|---------|------|------|-------|-----|
| 25 | 25 | 1" | 25.0 | 25.0 | 19.0 | 120.0 | 1.2 |
| 40 | 40 | 1 1/2" | 30.5 | 38.0 | 26.0 | 153.0 | 1.2 |
| 50 | 50 | 2" | 30.0 | 51.0 | 32.0 | 173.0 | 1.2 |

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 35: Spigot JIS-G 3447

Code 36: Spigot JIS-G 3459 schedule 10s

Code 37: Spigot SMS 3008

2) Valve body material

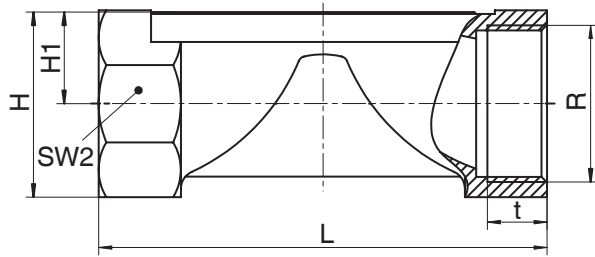
Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code C3: 1.4435, investment casting

Code F4: 1.4539, forged body

Threaded socket DIN (code 1)



Connection type threaded socket (code 1)¹⁾, brass material (code 12)²⁾

| MG | DN | NPS | H | H1 | L | n | R | SW 2 | t |
|----|----|------|------|------|------|---|-------|------|------|
| 10 | 12 | 3/8" | 23.0 | 11.0 | 55.0 | 2 | G 3/8 | 22.0 | 13.0 |
| | 15 | 1/2" | 29.0 | 14.0 | 75.0 | 2 | G 1/2 | 25.0 | 15.0 |

Connection type threaded socket (code 1)¹⁾, investment casting material (code 37)²⁾

| MG | DN | NPS | H | H1 | L | n | R | SW 2 | t |
|----|----|--------|------|------|-------|---|---------|------|------|
| 8 | 8 | 1/4" | 19.0 | 9.0 | 72.0 | 6 | G 1/4 | 18.0 | 11.0 |
| 10 | 12 | 3/8" | 25.0 | 13.0 | 55.0 | 2 | G 3/8 | 22.0 | 12.0 |
| | 15 | 1/2" | 30.0 | 15.0 | 68.0 | 2 | G 1/2 | 27.0 | 15.0 |
| 25 | 15 | 1/2" | 28.3 | 14.8 | 85.0 | 6 | G 1/2 | 27.0 | 15.0 |
| | 20 | 3/4" | 33.3 | 17.3 | 85.0 | 6 | G 3/4 | 32.0 | 16.0 |
| | 25 | 1" | 42.3 | 21.8 | 110.0 | 6 | G 1 | 41.0 | 13.0 |
| 40 | 32 | 1 1/4" | 51.3 | 26.3 | 120.0 | 8 | G 1 1/4 | 50.0 | 20.0 |
| | 40 | 1 1/2" | 56.3 | 28.8 | 140.0 | 8 | G 1 1/2 | 55.0 | 18.0 |
| 50 | 50 | 2" | 71.3 | 36.0 | 165.0 | 8 | G 2 | 70.0 | 26.0 |

Connection type threaded socket (code 1)¹⁾, SG iron material (code 90)²⁾

| MG | DN | NPS | H | H1 | L | n | R | SW 2 | t |
|----|----|--------|------|------|-------|---|---------|------|------|
| 25 | 15 | 1/2" | 32.7 | 16.7 | 85.0 | 6 | G 1/2 | 32 | 15.0 |
| | 20 | 3/4" | 42.0 | 21.5 | 85.0 | 6 | G 3/4 | 41 | 16.3 |
| | 25 | 1" | 46.7 | 23.7 | 110.0 | 6 | G 1 | 46 | 19.1 |
| 40 | 32 | 1 1/4" | 56.0 | 28.5 | 120.0 | 6 | G 1 1/4 | 55 | 21.4 |
| | 40 | 1 1/2" | 66.0 | 33.5 | 140.0 | 6 | G 1 1/2 | 65 | 21.4 |
| 50 | 50 | 2" | 76.0 | 38.5 | 165.0 | 6 | G 2 | 75 | 25.7 |

Dimensions in mm

MG = diaphragm size

n = number of flats

1) Connection type

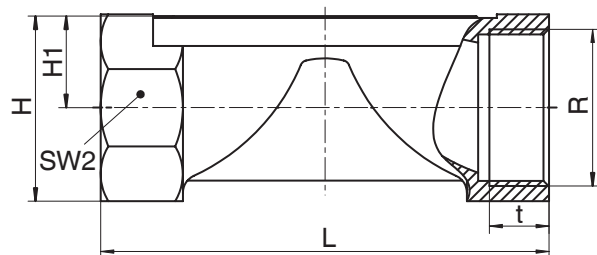
Code 1: Threaded socket DIN ISO 228

2) Valve body material

Code 12: CW614N, CW617N (brass)

Code 37: 1.4408, investment casting

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Threaded socket NPT (code 31)**Connection type threaded socket NPT (code 31)¹⁾, investment casting material (code 37)²⁾**

| MG | DN | NPS | H | H1 | L | n | R | SW 2 | t |
|----|----|--------|------|------|-------|---|-----------|------|------|
| 25 | 15 | 1/2" | 28.3 | 14.8 | 85.0 | 6 | NPT 1/2 | 27.0 | 14.0 |
| | 20 | 3/4" | 33.3 | 17.3 | 85.0 | 6 | NPT 3/4 | 32.0 | 14.0 |
| | 25 | 1" | 42.3 | 21.8 | 110.0 | 6 | NPT 1 | 41.0 | 17.0 |
| 40 | 32 | 1 1/4" | 51.3 | 26.3 | 120.0 | 8 | NPT 1 1/4 | 50.0 | 17.0 |
| | 40 | 1 1/2" | 56.3 | 28.8 | 140.0 | 8 | NPT 1 1/2 | 55.0 | 17.0 |
| 50 | 50 | 2" | 71.3 | 36.3 | 165.0 | 8 | NPT 2 | 70.0 | 18.0 |

Connection type threaded socket NPT (code 31)¹⁾, SG iron material (code 90)²⁾

| MG | DN | NPS | H | H1 | L | n | R | SW 2 | t |
|----|----|--------|------|------|-------|---|-----------|------|------|
| 25 | 15 | 1/2" | 32.7 | 16.7 | 85.0 | 6 | NPT 1/2 | 32 | 13.6 |
| | 20 | 3/4" | 42.0 | 21.5 | 85.0 | 6 | NPT 3/4 | 41 | 14.1 |
| | 25 | 1" | 46.7 | 23.7 | 110.0 | 6 | NPT 1 | 46 | 16.8 |
| 40 | 32 | 1 1/4" | 56.0 | 28.5 | 120.0 | 6 | NPT 1 1/4 | 55 | 17.3 |
| | 40 | 1 1/2" | 66.0 | 33.5 | 140.0 | 6 | NPT 1 1/2 | 65 | 17.3 |
| 50 | 50 | 2" | 76.0 | 38.5 | 165.0 | 6 | NPT 2 | 75 | 17.7 |

Dimensions in mm

MG = diaphragm size

n = number of flats

1) Connection type

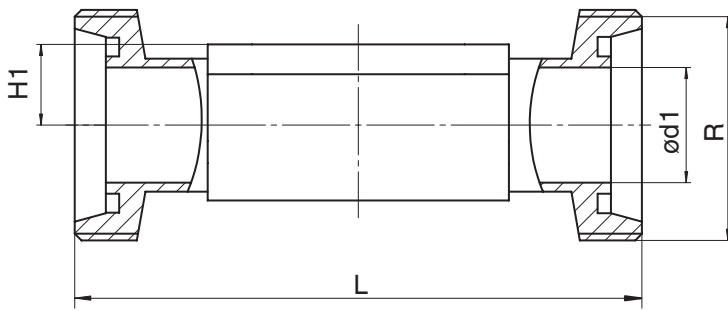
Code 31: NPT female thread

2) Valve body material

Code 37: 1.4408, investment casting

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Threaded spigot DIN (code 6)



Connection type threaded spigot DIN (code 6)¹⁾, forged material (code 40, 42)²⁾

| MG | DN | NPS | ød1 | H1 | L | R |
|----|----|------|------|------|-------|-------------|
| 8 | 10 | 3/8" | 10.0 | 8.5 | 92.0 | Rd 28 x 1/8 |
| 10 | 10 | 3/8" | 10.0 | 12.5 | 118.0 | Rd 28 x 1/8 |
| | 15 | 1/2" | 16.0 | 12.5 | 118.0 | Rd 34 x 1/8 |
| 25 | 15 | 1/2" | 16.0 | 19.0 | 118.0 | Rd 34 x 1/8 |
| | 20 | 3/4" | 20.0 | 19.0 | 118.0 | Rd 44 x 1/6 |
| | 25 | 1" | 26.0 | 19.0 | 128.0 | Rd 52 x 1/6 |
| 40 | 32 | 1¼" | 32.0 | 26.0 | 147.0 | Rd 58 x 1/6 |
| | 40 | 1½" | 38.0 | 26.0 | 160.0 | Rd 65 x 1/6 |
| 50 | 50 | 2" | 50.0 | 32.0 | 191.0 | Rd 78 x 1/6 |

Dimensions in mm

MG = diaphragm size

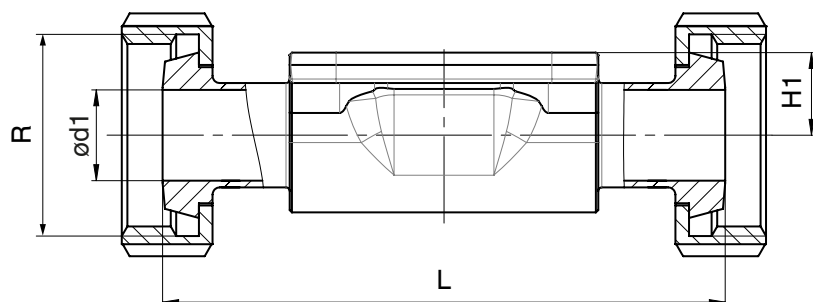
1) Connection type

Code 6: Threaded spigot DIN 11851

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Cone spigot DIN (code 6K)**Connection type cone spigot DIN (code 6K) ¹⁾, forged material (code 40, 42) ²⁾**

| MG | DN | NPS | ød1 | H1 | L | R |
|----|----|--------|------|------|-------|-------------|
| 8 | 10 | 3/8" | 10.0 | 8.5 | 90.0 | Rd 28 x 1/8 |
| 10 | 10 | 3/8" | 10.0 | 12.5 | 116.0 | Rd 28 x 1/8 |
| | 15 | 1/2" | 16.0 | 12.5 | 116.0 | Rd 34 x 1/8 |
| 25 | 15 | 1/2" | 16.0 | 19.0 | 116.0 | Rd 34 x 1/8 |
| | 20 | 3/4" | 20.0 | 19.0 | 114.0 | Rd 44 x 1/6 |
| | 25 | 1" | 26.0 | 19.0 | 127.0 | Rd 52 x 1/6 |
| 40 | 32 | 1 1/4" | 32.0 | 26.0 | 147.0 | Rd 58 x 1/6 |
| | 40 | 1 1/2" | 38.0 | 26.0 | 160.0 | Rd 65 x 1/6 |
| 50 | 50 | 2" | 50.0 | 32.0 | 191.0 | Rd 78 x 1/6 |

Dimensions in mm

MG = diaphragm size

1) Connection type

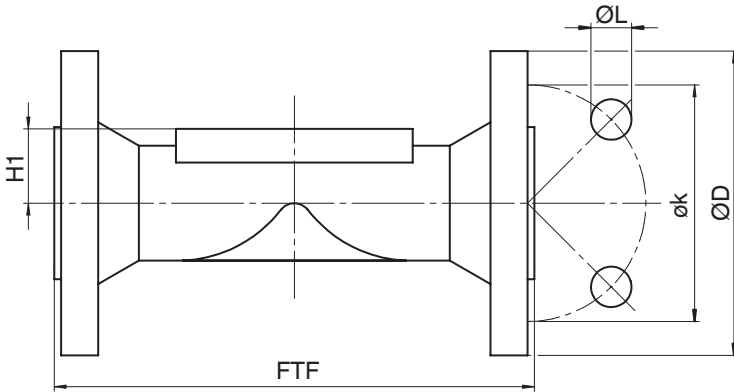
Code 6K: Cone spigot and union nut DIN 11851

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Flange EN (code 8)



Connection type flange, length EN 558 (code 8)¹⁾, SG iron material (code 17, 18, 83, 90), investment casting material (code 39, C3), forged material (code 40, 42)²⁾

| MG | DN | NPS | øD | FTF | | | H1 | | | | | øk | øL | n |
|----|----|------|-------|----------------|-------|------------|------------|--------|------|------|------|-------|------|---|
| | | | | Material | | | Material | | | | | | | |
| | | | | 17, 18, 39, 90 | 83 | 40, 42, C3 | 17, 18, 39 | 40, 42 | C3 | 83 | 90 | | | |
| 25 | 15 | 1/2" | 95.0 | 130.0 | 130.0 | 150.0 | 18.0 | 19.0 | 13.0 | 18.0 | 14.0 | 65.0 | 14.0 | 4 |
| | 20 | 3/4" | 105.0 | 150.0 | 150.0 | 150.0 | 20.5 | 19.0 | 16.0 | 20.5 | 16.5 | 75.0 | 14.0 | 4 |
| | 25 | 1" | 115.0 | 160.0 | 160.0 | 160.0 | 23.0 | 19.0 | 19.0 | 23.0 | 19.5 | 85.0 | 14.0 | 4 |
| 40 | 32 | 1¼" | 140.0 | 180.0 | 180.0 | 180.0 | 28.7 | 26.0 | 24.0 | 28.7 | 23.0 | 100.0 | 19.0 | 4 |
| | 40 | 1½" | 150.0 | 200.0 | 200.0 | 200.0 | 33.0 | 26.0 | 26.0 | 33.0 | 27.0 | 110.0 | 19.0 | 4 |
| 50 | 50 | 2" | 165.0 | 230.0 | 230.0 | 230.0 | 39.0 | 32.0 | 32.0 | 39.0 | 32.0 | 125.0 | 19.0 | 4 |
| | 65 | 2½" | 185.0 | 290.0 | - | - | 51.0 | - | - | - | 38.7 | 145.0 | 19.0 | 4 |

Dimensions in mm

MG = diaphragm size

n = number of bolt holes

1) **Connection type**

Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) **Valve body material**

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 39: 1.4408, PFA lined

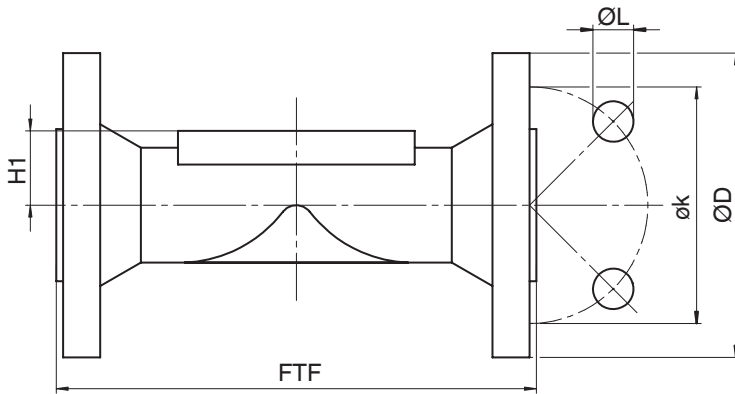
Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Code C3: 1.4435, investment casting

Flange JIS (code 34)**Connection type flange, length 558 (code 34)¹⁾, investment casting material (code 39)²⁾**

| MG | DN | NPS | øD | FTF | H1 | øk | øL | n |
|----|----|------|-------|-------|------|-------|------|---|
| 25 | 15 | 1/2" | 95.0 | 130.0 | 18.0 | 70.0 | 15.0 | 4 |
| | 20 | 3/4" | 100.0 | 150.0 | 20.5 | 75.0 | 15.0 | 4 |
| | 25 | 1" | 125.0 | 160.0 | 23.0 | 90.0 | 19.0 | 4 |
| 40 | 32 | 1¼" | 135.0 | 180.0 | 28.7 | 100.0 | 19.0 | 4 |
| | 40 | 1½" | 140.0 | 200.0 | 33.0 | 105.0 | 19.0 | 4 |
| 50 | 50 | 2" | 155.0 | 230.0 | 39.0 | 120.0 | 19.0 | 4 |

Dimensions in mm

MG = diaphragm size

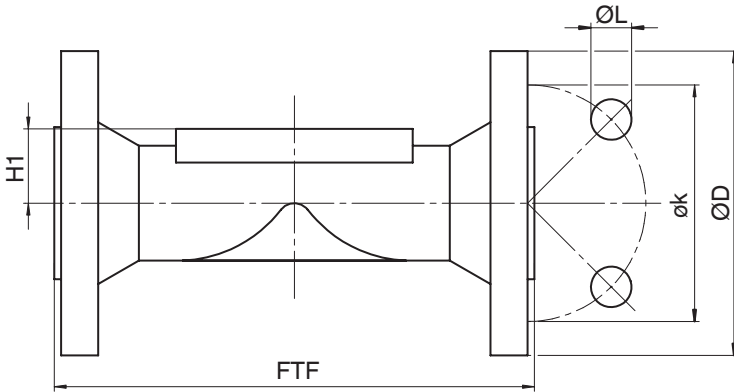
1) Connection type

Code 34: Flange JIS B2220, 10K, RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) Valve body material

Code 39: 1.4408, PFA lined

Flange ANSI Class (code 38, 39)



Connection type flange, length MSS SP-88 (code 38)¹⁾, SG iron material (code 17, 18, 83), investment casting material (code 39)²⁾

| MG | DN | NPS | øD | FTF | | H1 | øk | øL | n |
|----|----|------|-------|------------|-------|------|-------|------|---|
| | | | | Material | | | | | |
| | | | | 17, 18, 39 | 83 | | | | |
| 25 | 20 | 3/4" | 100.0 | 146.0 | 146.4 | 20.5 | 69.9 | 15.9 | 4 |
| | 25 | 1" | 110.0 | 146.0 | 146.4 | 23.0 | 79.4 | 15.9 | 4 |
| 40 | 40 | 1½" | 125.0 | 175.0 | 171.4 | 33.0 | 98.4 | 15.9 | 4 |
| 50 | 50 | 2" | 150.0 | 200.0 | 197.4 | 39.0 | 120.7 | 19.0 | 4 |
| | 65 | 2½" | 180.0 | 226.0 | - | 51.0 | 139.7 | 19.0 | 4 |

Connection type flange, length EN 558 (code 39)¹⁾, SG iron material (code 17, 18, 83, 90), investment casting material (code 39, C3), forged material (code 40, 42)²⁾

| MG | DN | NPS | øD | FTF | | | | H1 | | | | | øk | øL | n |
|----|----|------|-------|----------------|-------|-------|--------|------------|------|------|--------|------|-------|------|---|
| | | | | Material | | | | Material | | | | | | | |
| | | | | 17, 18, 39, 90 | 83 | C3 | 40, 42 | 17, 18, 39 | 83 | C3 | 40, 42 | 90 | | | |
| 25 | 15 | 1/2" | 90.0 | 150.0 | 130.0 | 150.0 | 150.0 | 18.0 | 18.0 | 13.0 | 19.0 | 14.0 | 60.3 | 15.9 | 4 |
| | 20 | 3/4" | 100.0 | 150.0 | 150.0 | 150.0 | 150.0 | 20.5 | 20.5 | 16.0 | 19.0 | 16.5 | 69.9 | 15.9 | 4 |
| | 25 | 1" | 110.0 | 160.0 | 160.0 | 160.0 | 160.0 | 23.0 | 23.0 | 19.0 | 19.0 | 19.5 | 79.4 | 15.9 | 4 |
| 40 | 32 | 1¼" | 115.0 | 180.0 | 180.0 | 180.0 | 180.0 | 28.7 | 28.7 | 24.0 | 26.0 | 23.0 | 88.9 | 15.9 | 4 |
| | 40 | 1½" | 125.0 | 200.0 | 200.0 | 200.0 | 200.0 | 33.0 | 33.0 | 26.0 | 26.0 | 27.0 | 98.4 | 15.9 | 4 |
| 50 | 50 | 2" | 150.0 | 230.0 | 230.0 | 230.0 | 230.0 | 39.0 | 39.0 | 32.0 | 32.0 | 32.0 | 120.7 | 19.0 | 4 |
| | 65 | 2½" | 180.0 | 290.0 | - | - | - | 51.0 | - | - | - | 38.7 | 139.7 | 19.0 | 4 |

Dimensions in mm

MG = diaphragm size

n = number of bolt holes

1) **Connection type**

Code 38: Flange ANSI Class 150 RF, face-to-face dimension FTF MSS SP-88, length only for body configuration D

Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) **Valve body material**

Code 17: EN-GJS-400-18-LT (GGG 40.3), PFA lined

Code 18: EN-GJS-400-18-LT (GGG 40.3), PP lined

Code 39: 1.4408, PFA lined

Code 40: 1.4435 (F316L), forged body

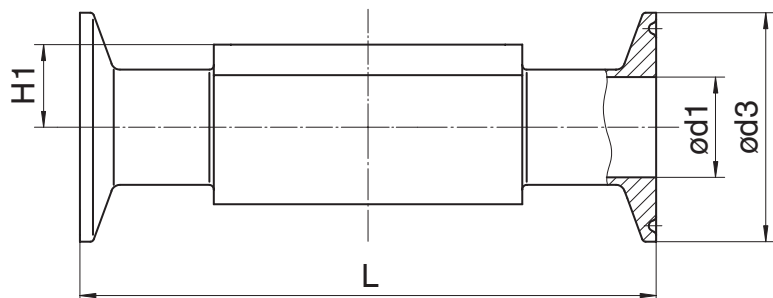
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code 83: EN-GJS-400-18-LT (GGG 40.3), hard rubber lined

Code 90: EN-GJS-400-18-LT (GGG 40.3)

Code C3: 1.4435, investment casting

Clamp (code 80, 82, 88, 8A, 8E, 8P, 8T)



Connection type clamp DIN/ASME (code 80, 88, 8P, 8T)¹⁾, forged material (code 40, 42, F4)²⁾

| MG | DN | NPS | ød1 | | ød3 | | H1 | L | |
|----|----|------|-----------------|--------|-----------------|--------|------|-----------------|--------|
| | | | Connection type | | Connection type | | | Connection type | |
| | | | 80, 8P | 88, 8T | 80, 8P | 88, 8T | | 80, 8P | 88, 8T |
| 8 | 8 | 1/4" | 4.57 | - | 25.0 | - | 8.5 | 63.5 | - |
| | 10 | 3/8" | 7.75 | - | 25.0 | - | 8.5 | 63.5 | - |
| | 15 | 1/2" | 9.40 | 9.40 | 25.0 | 25.0 | 8.5 | 63.5 | 108.0 |
| 10 | 15 | 1/2" | 9.40 | 9.40 | 25.0 | 25.0 | 12.5 | 88.9 | 108.0 |
| | 20 | 3/4" | 15.75 | 15.75 | 25.0 | 25.0 | 12.5 | 101.6 | 117.0 |
| 25 | 20 | 3/4" | 15.75 | 15.75 | 25.0 | 25.0 | 19.0 | 101.6 | 117.0 |
| | 25 | 1" | 22.10 | 22.10 | 50.5 | 50.5 | 19.0 | 114.3 | 127.0 |
| 40 | 40 | 1½" | 34.80 | 34.80 | 50.5 | 50.5 | 26.0 | 139.7 | 159.0 |
| 50 | 50 | 2" | 47.50 | 47.50 | 64.0 | 64.0 | 32.0 | 158.8 | 190.0 |
| | 65 | 2½" | 60.20 | 60.20 | 77.5 | 77.5 | 34.0 | 193.8 | 216.0 |

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D

Code 88: Clamp ASME BPE, for pipe ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8P: Clamp DIN 32676 series C, face-to-face dimension FTF ASME BPE, length only for body configuration D

Code 8T: Clamp DIN 32676 series C, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

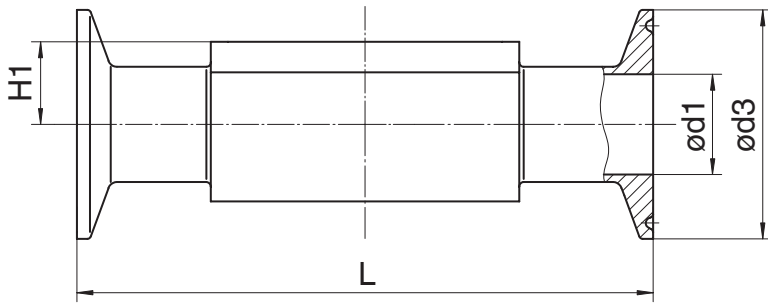
2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body

Dimensions



Connection type clamp DIN/ISO (code 82, 8A, 8E)¹⁾, forged material (code 40, 42, F4)²⁾

| MG | DN | NPS | ød1 | | | ød3 | | | H1 | L | | |
|----|----|--------|-----------------|------|------|-----------------|------|------|------|-----------------|-------|-------|
| | | | Connection type | | | Connection type | | | | Connection type | | |
| | | | 82 | 8A | 8E | 82 | 8A | 8E | | 82 | 8A | 8E |
| 8 | 6 | 1/8" | 7.0 | 6.0 | - | 25.0 | 25.0 | - | 8.5 | 63.5 | 63.5 | - |
| | 8 | 1/4" | 10.3 | 8.0 | - | 25.0 | 25.0 | - | 8.5 | 63.5 | 63.5 | - |
| | 10 | 3/8" | - | 10.0 | - | - | 34.0 | - | 8.5 | - | 88.9 | - |
| 10 | 10 | 3/8" | 14.0 | 10.0 | - | 25.0 | 34.0 | - | 12.5 | 108.0 | 108.0 | - |
| | 15 | 1/2" | 18.1 | 16.0 | - | 50.5 | 34.0 | - | 12.5 | 108.0 | 108.0 | - |
| 25 | 15 | 1/2" | 18.1 | 16.0 | - | 50.5 | 34.0 | - | 19.0 | 108.0 | 108.0 | - |
| | 20 | 3/4" | 23.7 | 20.0 | - | 50.5 | 34.0 | - | 19.0 | 117.0 | 117.0 | - |
| | 25 | 1" | 29.7 | 26.0 | 22.6 | 50.5 | 50.5 | 50.5 | 19.0 | 127.0 | 127.0 | 127.0 |
| 40 | 32 | 1 1/4" | 38.4 | 32.0 | 31.3 | 64.0 | 50.5 | 50.5 | 26.0 | 146.0 | 146.0 | 146.0 |
| | 40 | 1 1/2" | 44.3 | 38.0 | 35.6 | 64.0 | 50.5 | 50.5 | 26.0 | 159.0 | 159.0 | 159.0 |
| 50 | 50 | 2" | 56.3 | 50.0 | 48.6 | 77.5 | 64.0 | 64.0 | 32.0 | 190.0 | 190.0 | 190.0 |
| | 65 | 2 1/2" | - | - | 60.3 | - | - | 77.5 | 34.0 | - | - | 216.0 |

1) Connection type

Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8A: Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D

Code 8E: Clamp ISO 2852 for pipe ISO 2037, clamp SMS 3017 for pipe SMS 3008 face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body

Accessories



GEMÜ 1218

Connector

The GEMÜ 1218 is a connector (cable socket / cable plug), 7-pin. Straight and/or 90° angled plug type.

| GEMÜ 1218 Binder connector | | | |
|--|---------------------------------|--|------------------------|
| Connection X1 – supply voltage, relay outputs | | | |
| Binder plug | 468/eSy series mating connector | Terminal compartment/ screws, 7-pin | 88220649 ¹⁾ |
| | | Terminal compartment/ screws, 7-pin, 90° | 88377714 |
| | | Terminal compartment/ screws, 7-pin, 90°, fitted with a 2 metre cable set | 88770522 |

1) provided in the scope of delivery

**GEMÜ 1219****Cable socket / cable plug M12**

The GEMÜ 1219 is a connector (cable socket / cable plug) M12, 5-pin. Straight and/or 90° angled plug type. Defined cable length or with threaded connection without cable. Various materials available for the threaded ring.

| GEMÜ 1219 Ethernet/M12 cable | | | |
|--|--|-------------------------------|------------------------|
| Connection X2 - network connection | | | |
| M12 cable plug, straight, 4-pin | Fitted with a 1 metre cable set | Ethernet RJ45 | 88450499 |
| | Fitted with a 4 metre cable set | | 88450500 |
| | Fitted with a 15 metre cable set | | 88450502 |
| M12 cable plug, angled, 4-pin | Fitted with a 4 metre cable set | | 88715615 |
| Connection X3 – analogue/digital inputs and outputs | | | |
| M12 cable socket, straight, 8-pin | Without cable, for cable dia. 6-8 mm | | 88304829 ¹⁾ |
| | Fitted with a 5 metre cable set, PUR black cable | | 88758155 |
| M12 cable socket, angled, 8-pin | Without cable, for cable dia. 6-8 mm | | 88422823 |
| | Fitted with a 5 metre cable set, PUR black cable | | 88374574 |
| Connection X4 – actual value supply, actual value input | | | |
| M12 cable plug, straight, 5-pin | Without cable PG7 | Nickel-plated brass | 88208641 ¹⁾ |
| | Fitted with a 2 metre cable set, PUR black cable | 5 x 0.34, nickel-plated brass | 88208643 |
| | Fitted with a 5 metre cable set, PUR black cable | 5 x 0.34, nickel-plated brass | 88208644 |
| M12 cable plug, angled, 5-pin | Without cable, for cable dia. 6-8 mm | Nickel-plated brass | 88208645 |
| | Fitted with a 2 metre cable set, PUR black cable | 5 x 0.34, nickel-plated brass | 88208649 |
| | Fitted with a 5 metre cable set, PUR black cable | 5 x 0.34, nickel-plated brass | 88208650 |

1) provided in the scope of delivery

**GEMÜ 1571****Emergency power supply module**

The GEMÜ 1571 capacitive emergency power supply module is suitable for valves with motorized actuators such as GEMÜ eSyStep and eSyDrive as well as the GEMÜ C53 iComLine control valve. In the event of a power failure, the product provides an uninterrupted power supply so that the valve can be moved to the safety position. The emergency power supply module is available individually or with an expansion module and can supply several valves. The input and output voltage is 24 V.

| GEMÜ 1571 emergency power supply module | | | |
|---|----------------|----------|-------------|
| Input voltage | Output voltage | Capacity | Item number |
| 24 V | 24 V | 1700 Ws | 88660398 |
| 24 V | 24 V | 13200 Ws | 88751062 |

**GEMÜ 1573****Switching power supply unit**

The GEMÜ 1573 switching power supply unit converts unstable input voltages from 100 to 240 V AC into a continuous DC voltage. It can be used as an accessory for valves with motorized actuators e. g. GEMÜ eSyLite, eSyStep und eSyDrive and for additional devices with a 24 V DC power supply. Different power levels, output currents and a 48 V DC version for servoDrive actuators are available.

| GEMÜ 1573 switching power supply unit | | | |
|---------------------------------------|----------------|----------------|-------------|
| Input voltage | Output voltage | Output current | Item number |
| 100 - 240 V AC | 24 V DC | 5 A | 88660400 |
| | | 10 A | 88660401 |



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