

GEMÜ R649 eSyDrive

Motorized diaphragm valve



Features

- Hermetic separation between medium and actuator
- Installation for optimized draining is possible
- Open/Close function, positioner and process controller
- Actuation force and actuating speed variably adjustable
- Operable via web interface eSy-Web and Modbus TCP
- Extensive functions, such as position feedback, diagnostic functions and opening and closing stroke limitation

Description

The GEMÜ R649 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

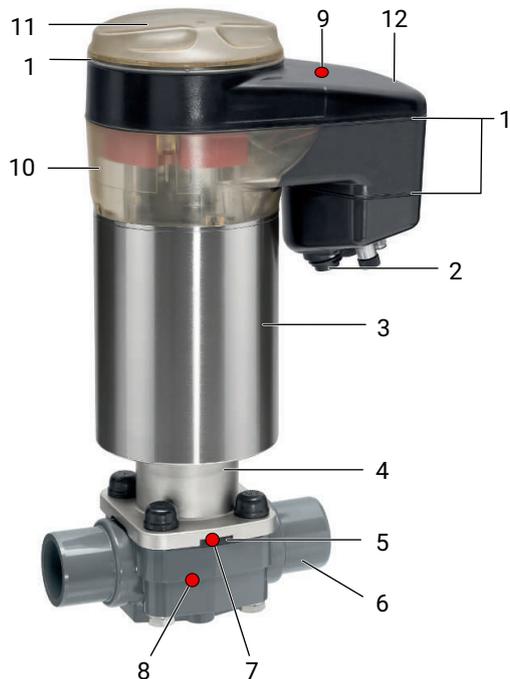
- **Media temperature:** -10 to 80 °C
- **Ambient temperature:** -10 Up to 50 °C
- **Operating pressure :** 0 Up to 10 bar
- **Nominal sizes:** DN 12 to 65
- **Body configurations:** Straight through body
- **Connection types:** Flange | Flare | Solvent cement socket | Spigot | thread | Union end
- **Connection standards :** ANSI | BS | DIN | EN | ISO | JIS
- **Body materials:** ABS | Inliner PP-H, grey / outliner PP, reinforced | Inliner PVDF/outliner PP, reinforced | PP, reinforced | PP-H, natural | PVC-U | PVDF
- **Diaphragm materials:** EPDM | FKM | NBR | PTFE/EPDM
- **Supply voltage:** 24 V DC
- **Actuating speed:** max. 6 mm/s
- **Protection class :** IP 65
- **Conformities:** ACS | EAC | FDA | System 1+

Technical data depends on the respective configuration



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 | EPDM, FKM, NBR, PTFE/EPDM |
| 6 | Valve body | PVC-U, grey ABS PP reinforced PVDF Inliner PP-H, grey Outliner PP, reinforced Inliner PVDF/outliner PP, reinforced PP-H, natural |
| 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 | PC |
| 11 | Cover with high visibility LED, manual override and on-site control | PC |
| 12 | Actuator top | PC black |

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 valve bodies

Spigot

| MG | DN | Connection type code ¹⁾ | | | | | | | |
|----|----|------------------------------------|-------|--------|----|--------|----|------|--------------|
| | | 0 | | | 20 | | 28 | 30 | 7X |
| | | Material code ²⁾ | | | | | | | |
| | | 1 | 5, 20 | 71, 75 | 20 | 71, 75 | 20 | 1, 4 | 1, 4, 71, 75 |
| 10 | 15 | - | - | - | - | - | X | - | X |
| 20 | 15 | X | - | X | - | X | - | X | X |
| | 20 | X | - | X | - | X | - | X | X |
| | 25 | X | - | X | - | X | - | X | X |
| 25 | 32 | X | - | X | - | X | - | X | X |
| 40 | 40 | X | - | X | - | X | - | X | X |
| | 50 | X | - | X | - | X | - | X | X |
| 50 | 65 | X | X | - | X | - | - | X | - |

MG = diaphragm size, X = standard

1) Connection type

Code 0: Spigot DIN

Code 20: Spigot for IR butt welding

Code 28: Spigot for IR butt welding, BCF

Code 30: Spigot – inch, for welding or solvent cementing, depending on the body material

Code 7X: Body with threaded spigots for unions

2) Valve body material

Code 1: PVC-U, grey

Code 4: ABS

Code 5: PP, reinforced

Code 20: PVDF

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

Union end

| MG | DN | Connection type code ¹⁾ | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|------------------------------------|---|---|----|----|----|---|---|---|----|----|----|-----------|----|----|----|----|---|---|----|----|----|----|--|
| | | 07 | | | | | | 7 | | | | | | 7R, 3P | 33 | 3M | 3T | 78 | | | | | | | |
| | | Material code ²⁾ | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 4 | 5 | 20 | 71 | 75 | 1 | 4 | 5 | 20 | N5 | 71 | 75 | 1 | 1 | 4 | 1 | 1 | 5 | 20 | N5 | 71 | 75 | |
| 10 | 12 | X | X | - | - | X | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 15 | X | X | - | - | X | X | X | - | X | X | X | - | - | - | X | - | - | - | X | X | X | - | - | |
| 20 | 15 | X | X | - | - | X | X | X | X | - | - | - | X | X | X | X | X | X | X | X | - | - | - | X | |
| | 20 | X | X | - | - | 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 | |
| 25 | 32 | X | X | - | - | X | X | X | X | - | - | - | X | X | X | X | X | X | X | X | - | - | - | X | |
| 40 | 40 | X | X | - | - | X | X | X | X | - | - | - | X | X | X | X | X | X | X | X | - | - | - | X | |
| | 50 | X | X | - | - | X | X | X | X | - | - | - | X | X | X | X | X | X | X | X | - | - | - | X | |
| 50 | 65 | X | X | X | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 80 | 80 | X | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 100 | 100 | X | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

MG = diaphragm size, X = standard

1) Connection type

Code 07: Spigot body with GEMÜ 1035 union end, DIN insert (socket)

Code 7: Union end with insert (socket) – DIN

Code 7R: Union end with insert (Rp threaded socket) – DIN

Code 33: Union end with inch insert – BS (socket)

Code 3M: Union end with inch insert – ASTM (socket)

Code 3P: Union end with NPT threaded socket insert

Code 3T: Union end with JIS insert (socket)

Code 78: Union end with insert (for IR butt welding) – DIN

2) Valve body material

Code 1: PVC-U, grey

Code 4: ABS

Code 5: PP, reinforced

Code 20: PVDF

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

Code N5: PP-H, natural

Threaded socket

| MG | DN | Connection type code ¹⁾ |
|----|----|--------------------------------------|
| | | Material code 1, 5, 20 ²⁾ |
| 10 | 12 | X |

MG = diaphragm size, X = standard

1) Connection type

Code 1: Threaded socket DIN ISO 228

2) Valve body material

Code 1: PVC-U, grey

Code 5: PP, reinforced

Code 20: PVDF

Solvent cement socket

| MG | DN | Connection type code 2 ¹⁾ |
|----|----|--------------------------------------|
| | | Material code 1 ²⁾ |
| 10 | 12 | X |

MG = diaphragm size, X = standard

- 1) **Connection type**
Code 2: Solvent cement socket DIN
- 2) **Valve body material**
Code 1: PVC-U, grey

Flange

| MG | DN | Connection type code 1 ¹⁾ | | | | | | | | | |
|----|----|--------------------------------------|---|----|----|----|----|---|----|----|----|
| | | 4 | | | | | 39 | | | | |
| | | Material code 2 ²⁾ | | | | | | | | | |
| | | 1 | 5 | 20 | 71 | 75 | 1 | 5 | 20 | 71 | 75 |
| 20 | 15 | X | - | - | X | X | X | - | - | X | X |
| | 20 | X | - | - | X | X | X | - | - | X | X |
| | 25 | X | - | - | X | X | X | - | - | X | X |
| 25 | 32 | X | - | - | X | X | X | - | - | X | X |
| 40 | 40 | X | - | - | X | X | X | - | - | X | X |
| | 50 | X | - | - | X | X | X | - | - | X | X |
| 50 | 65 | X | X | X | - | - | X | X | X | - | - |

MG = diaphragm size, X = standard

- 1) **Connection type**
Code 4: Flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1
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 1: PVC-U, grey
Code 5: PP, reinforced
Code 20: PVDF
Code 71: Inliner PP-H, grey, outliner PP, reinforced
Code 75: Inliner PVDF/outliner PP, reinforced

Flare

| MG | DN | Connection type code 75 ¹⁾ |
|----|----|---------------------------------------|
| | | Material code N5 ²⁾ |
| 10 | 15 | X |
| | 20 | X |

MG = diaphragm size, X = standard

- 1) **Connection type**
Code 75: Flare connection with PVDF union nut
- 2) **Valve body material**
Code N5: PP-H, natural

Availability of product conformity – drinking water hygiene suitability according to system 1+ (special function 1)

| MG | DN | Connection type code ¹⁾ | | | | | | Material code | Diaphragm material code |
|----|----|------------------------------------|---|---|----|---|----|---------------|-------------------------|
| | | 1 | 2 | 0 | 30 | 7 | 33 | | |
| 10 | 12 | X | X | - | - | - | - | X | X |
| | 15 | - | - | - | - | X | X | X | X |
| 20 | 15 | - | - | X | X | X | X | X | X |
| | 20 | - | - | X | X | X | X | X | X |
| | 25 | - | - | X | X | X | X | X | X |
| 25 | 32 | - | - | X | X | X | X | X | X |
| 40 | 40 | - | - | X | X | X | X | X | X |
| | 50 | - | - | X | X | X | X | X | X |
| 50 | 65 | - | - | X | X | - | - | X | X |

MG = diaphragm size

1) Connection type

Code 0: DIN spigot

Code 1: Threaded socket DIN ISO 228

Code 2: Solvent cement socket DIN

Code 7: Fitting screw connection with insert (socket) – DIN

Code 30: Spigot - inch, for welding or gluing, depending on the body material

Code 33: Fitting screw connection with insert inch - BS (socket)

Availability of mounting plate

| MG | DN | Material code ¹⁾ |
|----|----|-----------------------------|
| 10 | 12 | X |
| | 15 | X |
| | 20 | X |

MG = diaphragm size, X = standard

1) **Valve body material**

Code 20: PVDF

Code N5: PP-H, natural

Availability of product compliance

| | Diaphragm material code ¹⁾ | Body material code ²⁾ |
|-------------------|---------------------------------------|----------------------------------|
| Foodstuffs | | |
| FDA | 17, 54, 5M | 20, 71, 75 |

1) **Diaphragm material**

Code 17: EPDM

Code 54: PTFE/EPDM one-piece

Code 5M: PTFE/EPDM two-piece

2) **Valve body material**

Code 20: PVDF

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

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, motorized, electro-mechanical hollow shaft actuator, eSyDrive | R649 |

| 2 DN | Code |
|-------|------|
| 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 |
|----------------------|------|
| 2/2-way body | D |

| 4 Connection type | Code |
|--|------|
| Spigot | |
| Spigot DIN | 0 |
| Spigot for IR butt welding | 20 |
| Spigot for IR butt welding, BCF | 28 |
| Spigot – inch, for welding or solvent cementing, depending on the body material | 30 |
| Body with threaded spigots for unions | 7X |
| Union end | |
| Union end with insert (socket) – DIN | 7 |
| Spigot body with GEMÜ 1035 union end, DIN insert (socket) | 07 |
| Union end with insert (Rp threaded socket) – DIN | 7R |
| Union end with inch insert – BS (socket) | 33 |
| Union end with inch insert – ASTM (socket) | 3M |
| Union end with NPT threaded socket insert | 3P |
| Union end with JIS insert (socket) | 3T |
| Union end with insert (for IR butt welding) – DIN | 78 |
| Threaded socket | |
| Threaded socket DIN ISO 228 | 1 |
| Solvent cement socket | |
| Solvent cement socket DIN | 2 |
| Flange | |
| Flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1 | 4 |
| 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 |

| 4 Connection type | Code |
|--------------------------------------|------|
| Flare | |
| Flare connection with PVDF union nut | 75 |

| 5 Valve body material | Code |
|---|------|
| PVC-U, grey | 1 |
| ABS | 4 |
| PP, reinforced | 5 |
| PVDF | 20 |
| Inliner PP-H, grey, outliner PP, reinforced | 71 |
| Inliner PVDF/outliner PP, reinforced | 75 |
| PP-H, natural | N5 |

| 6 Diaphragm material | Code |
|---|------|
| Elastomer | |
| NBR | 2 |
| FKM | 4 |
| EPDM | 17 |
| EPDM | 29 |
| PTFE | |
| PTFE/EPDM one-piece | 54 |
| PTFE/EPDM two-piece | 5M |
| Note: The PTFE/EPDM diaphragm (code 5M) 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 Actuator version | Code |
|---|------|
| Actuator size 0 | 0A |
| Actuator size 0, diaphragm size 20, with distance piece | E0 |
| Actuator size 1 | 1A |
| Actuator size 2 | 2A |

| 10 Mounting plate | Code |
|--------------------------|------|
| Including mounting plate | M |
| Without | |

| 11 Special version | Code |
|--|------|
| Drinking water hygiene suitability according to system 1+, UBA-BWGL for plastics and other organic materials, Cold and hot water (23 °C–60 °C) | 1 |

Order example

| Ordering option | Code | Description |
|-----------------------|------|--|
| 1 Type | R649 | Diaphragm valve, motorized, electro-mechanical hollow shaft actuator, eSyDrive |
| 2 DN | 40 | DN 40 |
| 3 Body configuration | D | 2/2-way body |
| 4 Connection type | 0 | Spigot DIN |
| 5 Valve body material | 1 | PVC-U, grey |
| 6 Diaphragm material | 17 | EPDM |
| 7 Voltage/Frequency | C1 | 24 V DC |
| 8 Control module | L0 | OPEN/CLOSE, positioner and process controller |
| 9 Actuator version | 2A | Actuator size 2 |
| 10 Mounting plate | | Without |
| 11 Special version | 1 | Drinking water hygiene suitability according to system 1+, UBA-BWGL for plastics and other organic materials, Cold and hot water (23 °C–60 °C) |

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.

Temperature

Media temperature:

| Valve body material | Media temperature |
|---|-------------------|
| PVC-U, grey (code 1) | 10 – 60 °C |
| ABS (code 4) | -10 – 60 °C |
| PP, reinforced (code 5) | 5 – 80 °C |
| PVDF (code 20) | -10 – 80 °C |
| Inliner PP-H grey / outliner PP, reinforced (code 71) | 5 – 80 °C |
| Inliner PVDF / outliner PP, reinforced (code 75) | -10 – 80 °C |
| PP-H, natural (code N5) | 5 – 80 °C |

Ambient temperature:

| Valve body material | Ambient temperature |
|---|---------------------|
| PVC-U, grey (code 1) | 10 – 50 °C |
| ABS (code 4) | -10 – 50 °C |
| PP, reinforced (code 5) | 5 – 50 °C |
| PVDF (code 20) | -10 – 50 °C |
| Inliner PP-H grey / outliner PP, reinforced (code 71) | 5 – 50 °C |
| Inliner PVDF / outliner PP, reinforced (code 75) | -5 – 50 °C |
| PP-H, natural (code N5) | 5 – 50 °C |

Storage temperature: 0 – 40 °C

Pressure

Operating pressure:

| MG | DN | Actuator version | Diaphragm materials | |
|----|---------|------------------|---------------------|--------|
| | | | Elastomer | PTFE |
| 10 | 12 - 20 | 0A | 0 - 6 | 0 - 6 |
| 20 | 15 - 25 | E0 ¹⁾ | 0 - 6 | 0 - 5 |
| | | 1A | 0 - 10 | 0 - 10 |
| 25 | 32 | 1A | 0 - 10 | 0 - 10 |
| 40 | 40 - 50 | 1A | 0 - 5 | 0 - 2 |
| | | 2A | 0 - 10 | 0 - 10 |
| 50 | 65 | 2A | 0 - 10 | 0 - 10 |

¹⁾ E0 actuator version not available with UL approval.

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.

The operating pressures apply at room temperature. In case of deviating temperatures, observe the pressure / temperature correlation.

Pressure rating: PN 10

Leakage rate: Leakage rate A to P11/P12 EN 12266-1

Pressure/temperature correlation:

| MG | Actuator version | Valve body material | | Temperature in °C (valve body) | | | | | | | | | | |
|----------------|------------------|---------------------|------|--------------------------------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| | | Materials | Code | -10 | 0 | 5 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 10, 20 | 0C, 0E | PVC-U | 1 | - | - | - | 6.0 | 6.0 | 6.0 | 6.0 | 3.5 | 1.5 | - | - |
| | | PP-H | 5 | - | - | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 5.5 | 4.0 | 2.7 | 1.5 |
| | | PVDF | 20 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 5.4 | 4.7 |
| | | PP-H-Natur | N5 | - | - | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 5.5 | 4.0 | 2.7 | 1.5 |
| | | ABS | 4 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 4.0 | 2.0 | - | - |
| | | PP-H | 71 | - | - | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 5.5 | 4.0 | 2.7 | 1.5 |
| | | PVDF | 75 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 5.4 | 4.7 |
| 20, 25, 40, 50 | 1A, 2A | PVC-U | 1 | - | - | - | 10.0 | 10.0 | 8.0 | 6.0 | 3.5 | 1.5 | - | - |
| | | ABS | 4 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.0 | 6.0 | 4.0 | 2.0 | - | - |
| | | PP-H | 5 | - | - | 10.0 | 10.0 | 10.0 | 8.5 | 7.0 | 5.5 | 4.0 | 2.7 | 1.5 |
| | | PP-H | 71 | - | - | 10.0 | 10.0 | 10.0 | 8.5 | 7.0 | 5.5 | 4.0 | 2.7 | 1.5 |
| | | PVDF | 20 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.0 | 8.0 | 7.1 | 6.3 | 5.4 | 4.7 |
| | | PVDF | 75 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.0 | 8.0 | 7.1 | 6.3 | 5.4 | 4.7 |

MG = diaphragm size

Actuator version 0E with PTFE diaphragm can be used up to max. 5 bar. At temperatures above 30 °C the maximum operating pressure decreases.

Actuator version 1A in conjunction with diaphragm size MG 40 is limited to 5 bar operating pressure. In conjunction with a PTFE diaphragm to 2 bar. At temperatures above 30 °C the maximum operating pressure decreases. The pressure rating (PN) depends on the diaphragm size.

Data for extended temperature ranges on request. Please note that the ambient temperature and media temperature generate a combined temperature at the valve body which must not exceed the above values.

Depending on the valve configuration, the maximum operating pressure of the pressure rating may be lower. Observe the operating pressure table.

Kv values:

| MG | DN | Kv values |
|----|----|-----------|
| 10 | 12 | 2.8 |
| | 15 | 3.5 |
| | 20 | 3.5 |
| 20 | 15 | 6.0 |
| | 20 | 10.0 |
| | 25 | 12.0 |
| 25 | 32 | 20.0 |
| 40 | 40 | 42.0 |
| | 50 | 46.0 |
| 50 | 65 | 70.0 |

MG = diaphragm size, Kv values in m³/h

Kv values determined acc.to DIN EN 60534 standard, inlet pressure 5 bar, Δp 1 bar, PVC-U 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 term of use.

Product compliance

Machinery Directive: 2006/42/EC

Pressure Equipment Directive: 2014/68/EU

EMC Directive: 2014/30/EU
Interference emission

Category: C3
The product is only intended for operation in industrial environments.
The product is not intended for use in a public low-voltage network supplying residential areas. Connection to a mains of this kind can cause radio frequency interference.

Drinking water: Drinking water hygiene suitability according to system 1+ (special function 1)
UBA-BWGL for plastics and other organic materials,
Cold and hot water (23 °C–60 °C)
System 1+

RoHS Directive: 2011/65/EU

Food: FDA

Materials

Materials:

| Diaphragm material | O-ring material |
|--------------------|-----------------|
| PTFE | FKM |
| NBR | EPDM |
| FKM | FKM |
| EPDM | EPDM |

Mechanical data

Protection class: IP 65 acc. to EN 60529

Actuating speed: Actuator version 0A adjustable, max. 6 mm/s
 Actuator version E0 adjustable, max. 6 mm/s
 Actuator version 1A adjustable, max. 6 mm/s
 Actuator version 2A adjustable, max. 4 mm/s

Weight: **Actuator**
 Actuator version 0A 2.1 kg
 Actuator version E0 2.2 kg
 Actuator version 1A 3.0 kg
 Actuator version 2A 9.0 kg

Valve body

| MG | DN | Spigot | | | Union end | | | | Flange | Threaded socket | Solvent cement socket | Flare |
|----|----|----------------------|------|------|-----------|------|--------|------|--------|-----------------|-----------------------|-------|
| | | Connection type code | | | | | | | | | | |
| | | 0, 30 | 20 | 28 | 3P, 7, 7R | 33 | 3M, 3T | 78 | 4, 39 | 1 | 2 | 75 |
| 10 | 12 | - | - | - | - | - | - | - | - | 0.08 | 0.06 | - |
| | 15 | - | - | 0.13 | 0.18 | 0.13 | - | 0.20 | - | - | - | 0.08 |
| | 20 | - | - | - | - | - | - | - | - | - | - | 0.125 |
| 20 | 15 | 0.12 | 0.10 | - | 0.17 | 0.24 | 0.26 | 0.27 | 0.67 | - | - | - |
| | 20 | 0.13 | 0.12 | - | 0.21 | 0.28 | 0.30 | 0.36 | 0.84 | - | - | - |
| 20 | 25 | 0.16 | 0.14 | - | 0.26 | 0.33 | 0.38 | 0.37 | 1.28 | - | - | - |
| 25 | 32 | 0.22 | 0.18 | - | 0.40 | 0.70 | 0.73 | 0.63 | 1.89 | - | - | - |
| 40 | 40 | 0.50 | 0.40 | - | 0.73 | 0.83 | 0.93 | 1.13 | 2.36 | - | - | - |
| | 50 | 0.57 | 0.47 | - | 1.00 | 1.40 | 1.50 | 1.60 | 3.08 | - | - | - |
| 50 | 65 | 0.92 | 3.57 | - | - | - | - | - | 3.20 | - | - | - |

MG = diaphragm size
 Weights in kg

Installation position: Optional

Flow direction: Optional

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. 100 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: | $\leq \pm 0.1\% / 10^\circ\text{K}$ |
| Load resistor: | $\leq 750\text{ k}\Omega$ |
| Resolution: | 10 bit |
| Overload proof: | Yes (up to $\pm 24\text{ V DC}$) |
| 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: | $\leq 0.1\text{ A}$ |
| Drop voltage: | Max. 2.5 V DC at 0.1 A |
| Overload proof: | Yes (up to $\pm 24\text{ V DC}$) |
| 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:

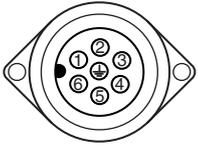
| Code Dezimal | Code Hex | Function |
|--------------|----------|---------------------------------|
| 3 | 0x03 | Read Holding Registers |
| 4 | 0x04 | Read Input Registers |
| 6 | 0x06 | Write Single Register |
| 16 | 0x10 | Write Multiple Registers |
| 23 | 0x17 | Read / Write Multiple Registers |

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

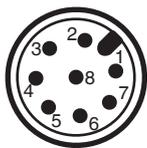
| Pin | Signal name |
|--------|-------------------------------|
| Pin 1 | Uv, 24 V DC supply voltage |
| Pin 2 | Uv GND |
| Pin 3 | Relay output K1, common |
| Pin 4 | Relay output K1, make contact |
| Pin 5 | Relay output K2, common |
| Pin 6 | Relay output K2, make contact |
| Pin PE | Function earth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

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

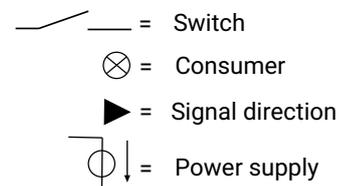
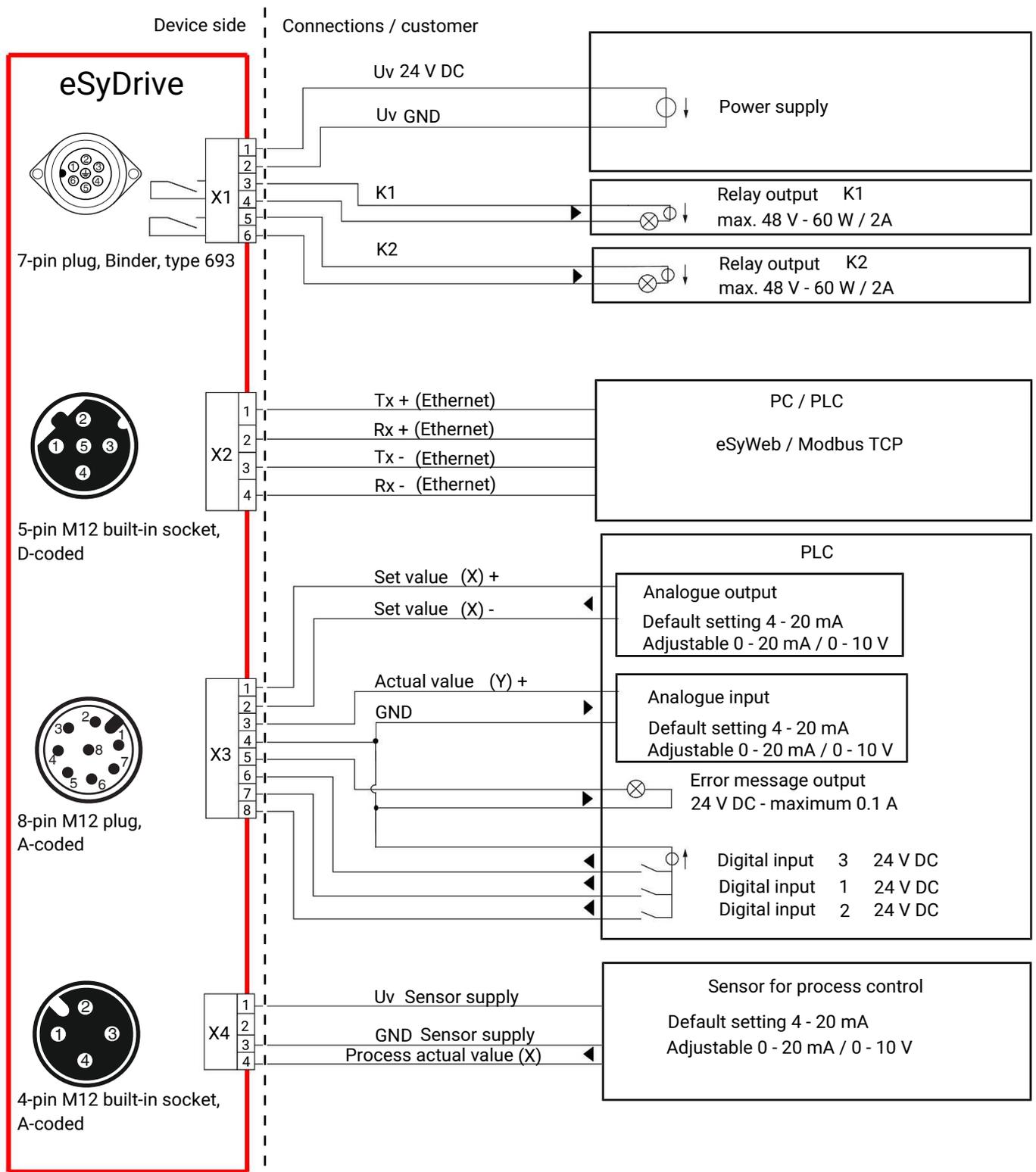
| Pin | Signal name |
|-------|--|
| Pin 1 | W+ set value input |
| Pin 2 | W – set value input |
| Pin 3 | X + actual value output |
| Pin 4 | GND (actual value output, digital input 1 – 3, error message output) |
| Pin 5 | Error message output 24 V DC |
| Pin 6 | Digital input 3 |
| Pin 7 | Digital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

Connection X4

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

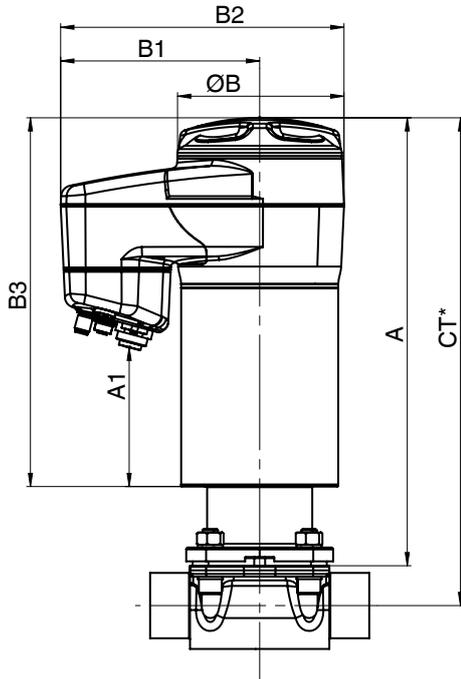
| Pin | Signal name |
|-------|---|
| Pin 1 | UV, 24 V DC actual value supply |
| Pin 2 | n.c. |
| Pin 3 | GND (actual value supply, actual value input) |
| Pin 4 | X+, process actual value input |
| Pin 5 | n.c. |

Connection diagram



Dimensions

Actuator dimensions



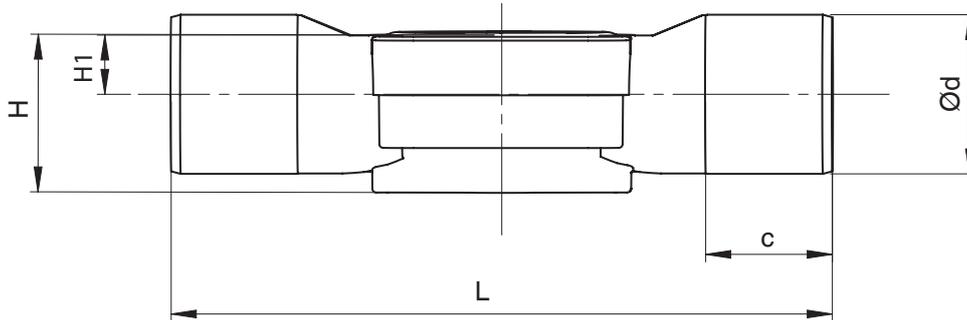
| MG | DN | Actuator version | A | A1 | Ø B | B1 | B2 | B3 |
|----|---------|------------------|-------|-------|-------|-------|-------|-------|
| 10 | 10 - 20 | 0A | 230.0 | 44.0 | 68.0 | 126.0 | 160.0 | 190.0 |
| 20 | 15 - 25 | E0 | 237.0 | 44.0 | 68.0 | 126.0 | 160.0 | 190.0 |
| | | 1A | 299.0 | 83.0 | 82.0 | 132.0 | 172.0 | 250.0 |
| 25 | 32 | 1A | 305.0 | 83.0 | 82.0 | 132.0 | 172.0 | 250.0 |
| 40 | 40, 50 | 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 | 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/inch (code 0, 30)



Connection type spigot DIN (code 0)¹⁾, body material PVC-U (code 1), PP (code 5), PVDF (code 20), inliner/outliner (code 71, 75)²⁾

| MG | DN | NPS | c | | | Ød | H | | | H1 | L |
|----|----|--------|----------|-------|--------|------|----------|-------|--------|------|-------|
| | | | Material | | | | Material | | | | |
| | | | 1 | 5, 20 | 71, 75 | | 1 | 5, 20 | 71, 75 | | |
| 20 | 15 | 1/2" | 16.0 | - | 18.0 | 20.0 | 36.0 | - | 36.0 | 10.0 | 124.0 |
| | 20 | 3/4" | 19.0 | - | 19.0 | 25.0 | 38.0 | - | 38.0 | 12.0 | 144.0 |
| | 25 | 1" | 22.0 | - | 22.0 | 32.0 | 39.0 | - | 39.0 | 13.0 | 154.0 |
| 25 | 32 | 1 1/4" | 32.0 | - | 32.0 | 40.0 | 41.0 | - | 41.0 | 15.0 | 174.0 |
| 40 | 40 | 1 1/2" | 35.0 | - | 26.0 | 50.0 | 63.2 | - | 63.2 | 23.2 | 194.0 |
| | 50 | 2" | 38.0 | - | 33.0 | 63.0 | 63.2 | - | 63.2 | 23.2 | 224.0 |
| 50 | 65 | 2 1/2" | 46.0 | 46.0 | - | 75.0 | 78.8 | 78.8 | - | 38.8 | 284.0 |

Connection type spigot - inch (code 30)¹⁾, body material PVC-U (code 1), ABS (code 4)²⁾

| MG | DN | NPS | c | Ød | H | H1 | L |
|----|----|--------|------|------|------|------|-------|
| 20 | 15 | 1/2" | 24.0 | 21.4 | 36.0 | 10.0 | 141.0 |
| | 20 | 3/4" | 27.0 | 26.7 | 38.0 | 12.0 | 144.0 |
| | 25 | 1" | 30.0 | 33.6 | 39.0 | 13.0 | 154.0 |
| 25 | 32 | 1 1/4" | 33.0 | 42.2 | 41.0 | 15.0 | 174.0 |
| 40 | 40 | 1 1/2" | 35.0 | 48.3 | 63.2 | 23.2 | 194.0 |
| | 50 | 2" | 40.0 | 60.3 | 63.2 | 23.2 | 224.0 |
| 50 | 65 | 2 1/2" | 46.0 | 73.0 | 78.8 | 38.8 | 284.0 |

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 0: Spigot DIN

Code 30: Spigot – inch, for welding or solvent cementing, depending on the body material

2) **Valve body material**

Code 1: PVC-U, grey

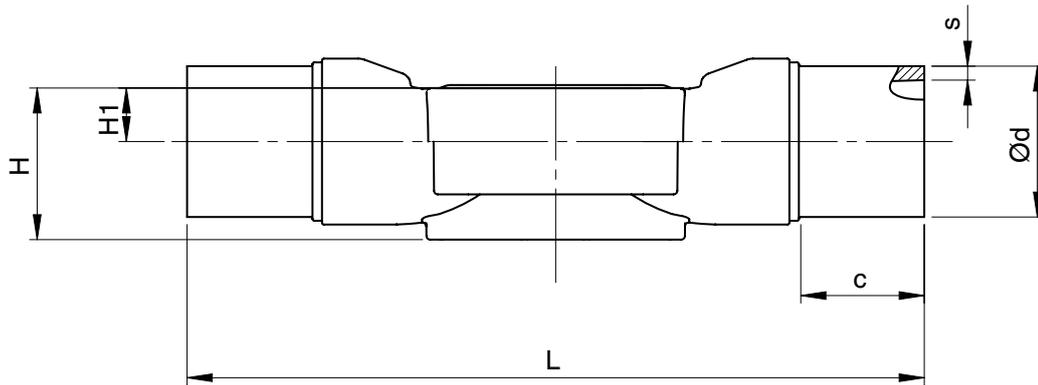
Code 4: ABS

Code 5: PP, reinforced

Code 20: PVDF

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

Spigot IR (code 20)**Connection type spigot IR (code 20)¹⁾, body material inliner/outliner (code 71, 75)²⁾**

| MG | DN | NPS | c | ød | H | H1 | L | s | |
|----|----|------|------|------|------|------|-------|----------|-----|
| | | | | | | | | Material | |
| | | | | | | | | 71 | 75 |
| 20 | 15 | 1/2" | 33.0 | 20.0 | 36.0 | 10.0 | 154.0 | 1.9 | 1.9 |
| | 20 | 3/4" | 33.0 | 25.0 | 38.0 | 12.0 | 154.0 | 2.3 | 1.9 |
| | 25 | 1" | 33.0 | 32.0 | 39.0 | 13.0 | 154.0 | 2.9 | 2.4 |
| 25 | 32 | 1¼" | 33.0 | 40.0 | 41.0 | 15.0 | 194.0 | 3.7 | 2.4 |
| 40 | 40 | 1½" | 33.0 | 50.0 | 63.2 | 23.2 | 194.0 | 4.6 | 3.0 |
| | 50 | 2" | 33.0 | 63.0 | 63.2 | 23.2 | 224.0 | 5.8 | 3.0 |

Connection type spigot IR (code 20)¹⁾, body material PVDF (code 20)²⁾

| MG | DN | NPS | c | ød | H | H1 | L | s |
|----|----|-----|------|------|------|------|-------|-----|
| 50 | 65 | 2½" | 43.0 | 75.0 | 78.8 | 38.8 | 284.0 | 3.6 |

Dimensions in mm

MG = diaphragm size

1) Connection type

Code 20: Spigot for IR butt welding

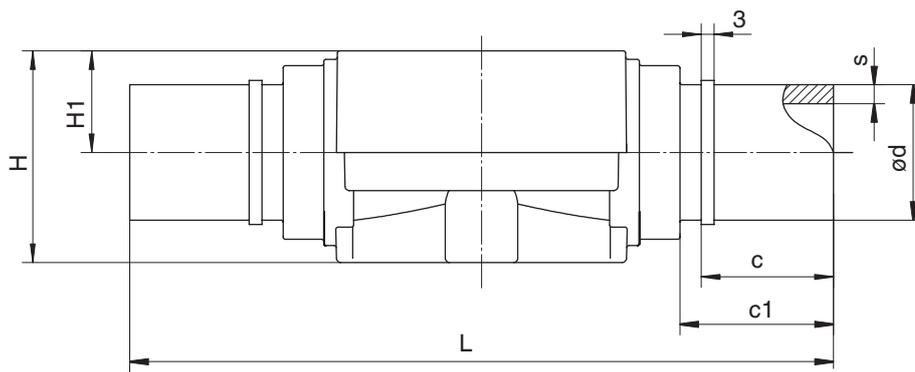
2) Valve body material

Code 20: PVDF

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

Spigot (code 28)



Connection type spigot (code 28)¹⁾, body material PVDF (code 20)²⁾

| MG | DN | NPS | c | c1 | ød | H | H1 | L | s |
|----|----|------|------|------|------|------|------|-------|-----|
| 10 | 15 | 1/2" | 31.0 | 37.0 | 20.0 | 41.0 | 16.0 | 134.0 | 1.9 |

Dimensions in mm

MG = diaphragm size

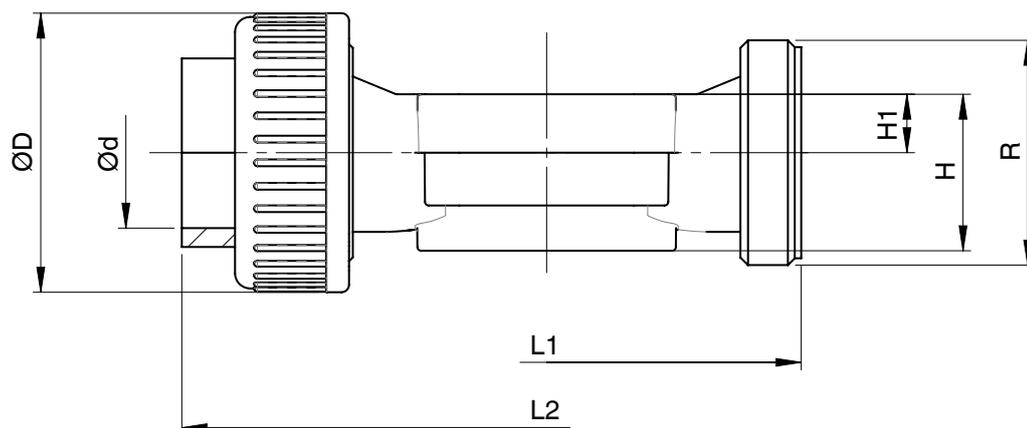
1) Connection type

Code 28: Spigot for IR butt welding, BCF

2) Valve body material

Code 20: PVDF

Union end DIN (code 7)



Connection type union end DIN (code 7)¹⁾, body material PVC-U (code 1), PP (code 5), PVDF (code 20), PP-H (code N5)²⁾, diaphragm size 10

| MG | DN | NPS | ød | øD | H | | H1 | | L1 | L2 | | R |
|----|----|------|------|------|----------|-------|----------|-------|------|----------|-------|-----|
| | | | | | Material | | Material | | | Material | | |
| | | | | | 1, 20 | 5, N5 | 1, 20 | 5, N5 | | 1, 20 | 5, N5 | |
| 10 | 15 | 1/2" | 20.0 | 43.0 | 30.0 | 41.0 | 15.0 | 16.0 | 90.0 | 128.0 | 125.0 | G 1 |

Connection type union end DIN (code 7)¹⁾, body material PVC-U (code 1), ABS (code 4), inliner/outliner (code 71, 75)²⁾, diaphragm size 20 – 40

| MG | DN | NPS | ød | øD | H | H1 | L1 | L2 | | | | R |
|----|----|------|------|-------|------|------|-------|----------|-------|-------|-------|------|
| | | | | | | | | Material | | | | |
| | | | | | | | | 1 | 4 | 71 | 75 | |
| 20 | 15 | 1/2" | 20.0 | 43.0 | 36.0 | 10.0 | 108.0 | 146.0 | 150.0 | 143.0 | 146.0 | G 1 |
| | 20 | 3/4" | 25.0 | 53.0 | 38.0 | 12.0 | 108.0 | 152.0 | 156.0 | 146.0 | 150.0 | G 1¼ |
| | 25 | 1" | 32.0 | 60.0 | 39.0 | 13.0 | 116.0 | 166.0 | 170.0 | 158.0 | 162.0 | G 1½ |
| 25 | 32 | 1¼" | 40.0 | 74.0 | 41.0 | 15.0 | 134.0 | 192.0 | 196.0 | 181.0 | 184.0 | G 2 |
| 40 | 40 | 1½" | 50.0 | 83.0 | 63.2 | 23.2 | 154.0 | 222.0 | 222.0 | 207.0 | 210.0 | G 2¼ |
| | 50 | 2" | 63.0 | 103.0 | 63.2 | 23.2 | 184.0 | 266.0 | 266.0 | 245.0 | 248.0 | G 2¾ |

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 7: Union end with insert (socket) – DIN

2) **Valve body material**

Code 1: PVC-U, grey

Code 4: ABS

Code 5: PP, reinforced

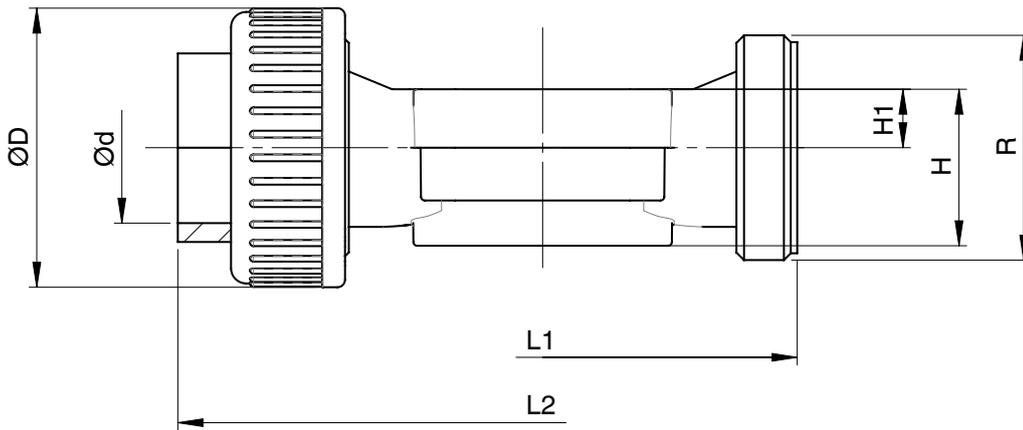
Code 20: PVDF

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

Code N5: PP-H, natural

Union end inch (code 33, 3M, 3T)



Connection type union end inch (code 33)¹⁾, body material PVC-U (code 1)²⁾, diaphragm size 10

| MG | DN | NPS | ød | øD | H | H1 | L1 | L2 | R |
|----|----|------|------|------|------|------|------|-------|----|
| 10 | 15 | 1/2" | 21.4 | 43.0 | 30.0 | 15.0 | 90.0 | 128.0 | G1 |

Connection type union end inch (code 33, 3M, 3T)¹⁾, body material PVC-U (code 1)²⁾, diaphragm sizes 20 - 40

| MG | DN | NPS | ød | | | øD | | H | H1 | L1 | L2 | | | R | |
|----|----|------|-----------------|------|------|--------|--------|------|------|-------|-----------------|-------|-------|--------|--------|
| | | | Connection type | | | | | | | | Connection type | | | | |
| | | | 33 | 3M | 3T | 33, 3M | 3T | | | | 33 | 3M | 3T | 33, 3M | 3T |
| 20 | 15 | 1/2" | 21.4 | 21.4 | 22.0 | 43.0 | 53.0 * | 36.0 | 10.0 | 108.0 | 146.0 | 158.0 | 152.0 | G 1 | G 1¼ * |
| | 20 | 3/4" | 26.8 | 26.7 | 26.0 | 53.0 | 53.0 | 38.0 | 12.0 | 108.0 | 152.0 | 164.0 | 152.0 | G 1¼ | G 1¼ |
| | 25 | 1" | 33.6 | 33.5 | 32.0 | 60.0 | 60.0 | 39.0 | 13.0 | 116.0 | 166.0 | 180.0 | 166.0 | G 1½ | G 1½ |
| 25 | 32 | 1¼" | 42.3 | 42.2 | 38.0 | 74.0 | 74.0 | 41.0 | 15.0 | 134.0 | 192.0 | 204.0 | 192.0 | G 2 | G 2 |
| 40 | 40 | 1½" | 48.3 | 48.3 | 48.0 | 83.0 | 83.0 | 63.2 | 23.2 | 154.0 | 222.0 | 230.0 | 222.0 | G 2¼ | G 2¼ |
| | 50 | 2" | 60.4 | 60.4 | 60.0 | 103.0 | 103.0 | 63.2 | 23.2 | 184.0 | 264.0 | 266.0 | 266.0 | G 2¾ | G 2¾ |

Connection type BS (code 33)¹⁾, body material ABS (code 4)²⁾

| MG | DN | NPS | ød | øD | H | H1 | L1 | L2 | R |
|----|----|------|------|-------|------|------|-------|-------|------|
| 20 | 15 | 1/2" | 21.4 | 43.0 | 36.0 | 10.0 | 108.0 | 150.0 | G 1 |
| | 20 | 3/4" | 26.8 | 53.0 | 38.0 | 12.0 | 108.0 | 156.0 | G 1¼ |
| | 25 | 1" | 33.6 | 60.0 | 39.0 | 13.0 | 116.0 | 170.0 | G 1½ |
| 25 | 32 | 1¼" | 42.3 | 74.0 | 41.0 | 15.0 | 134.0 | 198.0 | G 2 |
| 40 | 40 | 1½" | 48.3 | 83.0 | 63.2 | 23.2 | 154.0 | 220.0 | G 2¼ |
| | 50 | 2" | 60.4 | 103.0 | 63.2 | 23.2 | 184.0 | 264.0 | G 2¾ |

Dimensions in mm

MG = diaphragm size

* Insert requires valve body DN 20

1) Connection type

Code 33: Union end with inch insert – BS (socket)

Code 3M: Union end with inch insert – ASTM (socket)

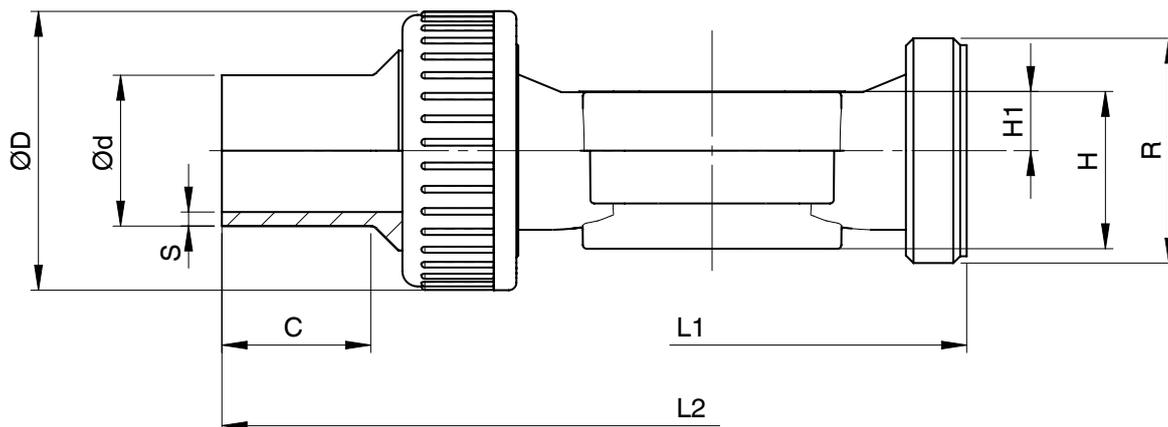
Code 3T: Union end with JIS insert (socket)

2) Valve body material

Code 1: PVC-U, grey

Code 4: ABS

Union end DIN, IR butt welding (code 78)



Connection type union end DIN, IR butt welding (code 78)¹⁾, body materials PP (code 5), PVDF (code 20), PP-H (code N5)²⁾

| MG | DN | NPS | c | ød | øD | H | | H1 | | L1 | L2 | R | s |
|----|----|------|------|------|------|----------|--------|----------|--------|------|-------|-----|-----|
| | | | | | | Material | | Material | | | | | |
| | | | | | | 5 | 20, N5 | 5 | 20, N5 | | | | |
| 10 | 15 | 1/2" | 36.0 | 20.0 | 42.0 | 30.0 | 41.0 | 15.0 | 16.0 | 90.0 | 196.0 | G 1 | 1.9 |

Connection type union end DIN, IR butt welding (code 78)¹⁾, body material inliner/outliner (code 71, 75)²⁾

| MG | DN | NPS | c | ød | øD | H | H1 | L1 | L2 | R | s | |
|----|----|------|------|------|-------|------|------|-------|-------|------|----------|-----|
| | | | | | | | | | | | Material | |
| | | | | | | | | | | | 71 | 75 |
| 20 | 15 | 1/2" | 36.0 | 20.0 | 43.0 | 36.0 | 10.0 | 108.0 | 214.0 | G 1 | 1.9 | 1.9 |
| | 20 | 3/4" | 37.0 | 25.0 | 53.0 | 38.0 | 12.0 | 108.0 | 220.0 | G 1¼ | 2.3 | 1.9 |
| | 25 | 1" | 39.0 | 32.0 | 60.0 | 39.0 | 13.0 | 116.0 | 234.0 | G 1½ | 2.9 | 2.4 |
| 25 | 32 | 1¼" | 39.0 | 40.0 | 74.0 | 41.0 | 15.0 | 134.0 | 258.0 | G 2 | 3.7 | 2.4 |
| 40 | 40 | 1½" | 43.0 | 50.0 | 83.0 | 63.2 | 23.2 | 154.0 | 284.0 | G 2¼ | 4.6 | 3.0 |
| | 50 | 2" | 43.0 | 63.0 | 103.0 | 63.2 | 23.2 | 184.0 | 320.0 | G 2¾ | 5.8 | 3.0 |

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 78: Union end with insert (for IR butt welding) – DIN

2) **Valve body material**

Code 5: PP, reinforced

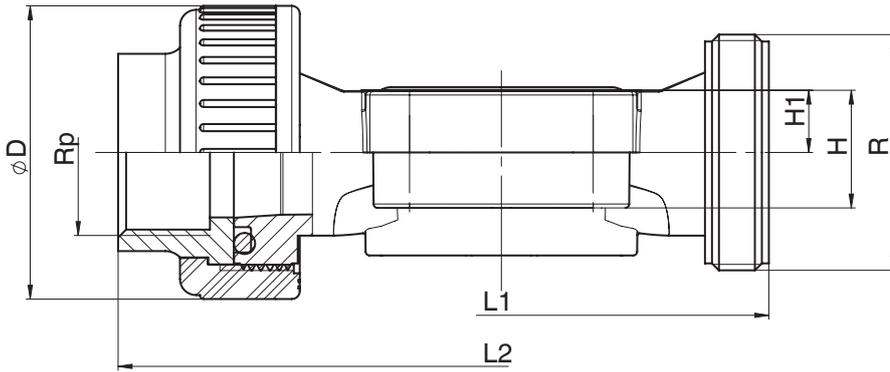
Code 20: PVDF

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

Code N5: PP-H, natural

Union end Rp (code 7R), NPT (code 3P)



Connection type union end Rp (code 7R), NPT (code 3P)¹⁾, body material PVC-U (code 1)²⁾

| MG | DN | NPS | øD | H | H1 | L1 | L2 | R | Rp/NPT |
|----|----|------|-------|------|------|-------|-------|------|--------|
| 20 | 15 | 1/2" | 43.0 | 36.0 | 10.0 | 108.0 | 146.0 | G 1 | 1/2 |
| | 20 | 3/4" | 53.0 | 38.0 | 12.0 | 108.0 | 152.0 | G 1¼ | 3/4 |
| | 25 | 1" | 60.0 | 39.0 | 13.0 | 116.0 | 166.0 | G 1½ | 1 |
| 25 | 32 | 1¼" | 74.0 | 41.0 | 15.0 | 134.0 | 192.0 | G 2 | 1¼ |
| 40 | 40 | 1½" | 83.0 | 63.2 | 23.2 | 154.0 | 222.0 | G 2¼ | 1½ |
| | 50 | 2" | 103.0 | 63.2 | 23.2 | 184.0 | 266.0 | G 2¾ | 2 |

Dimensions in mm

MG = diaphragm size

1) Connection type

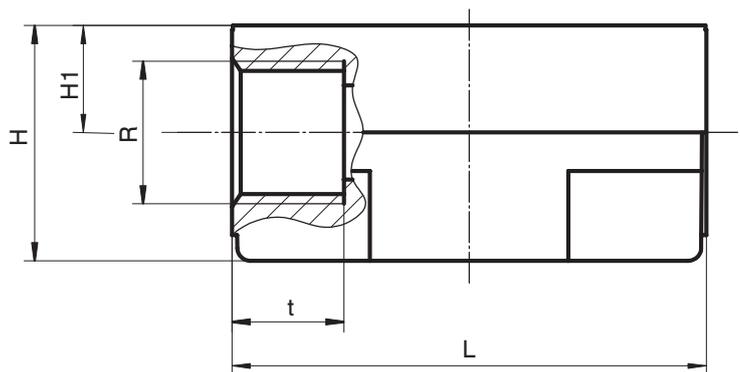
Code 7R: Union end with insert (Rp threaded socket) – DIN

Code 3P: Union end with NPT threaded socket insert

2) Valve body material

Code 1: PVC-U, grey

Threaded socket (code 1)



Connection type threaded socket (code 1)¹⁾, body materials PVC-U (code 1), PP (code 5), PVDF (code 20)²⁾

| MG | DN | NPS | H | | H1 | L | R | t |
|----|----|------|----------|------|------|------|------|------|
| | | | Material | | | | | |
| | | | 1, 5 | 20 | | | | |
| 10 | 12 | 3/8" | 27.5 | 31.5 | 12.5 | 55.0 | G3/8 | 13.0 |

Dimensions in mm

MG = diaphragm size

1) **Connection type**

Code 1: Threaded socket DIN ISO 228

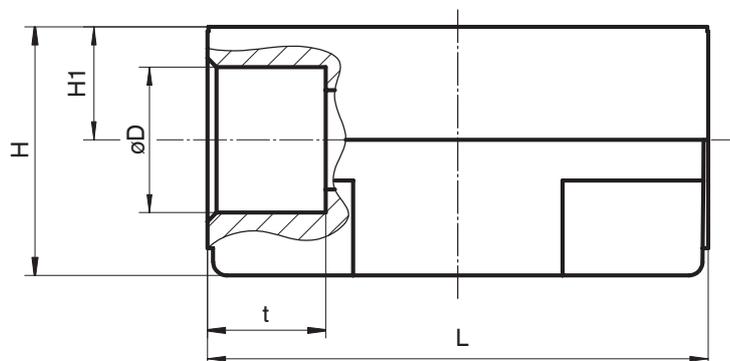
2) **Valve body material**

Code 1: PVC-U, grey

Code 5: PP, reinforced

Code 20: PVDF

Solvent cement socket (code 2)



Connection type solvent cement socket (code 2)¹⁾, body material PVC-U (code 1)²⁾

| MG | DN | NPS | ø D | H | H1 | L | t |
|----|----|------|------|------|------|------|------|
| 10 | 12 | 3/8" | 16.0 | 27.5 | 12.5 | 55.0 | 13.0 |

Dimensions in mm

MG = diaphragm size

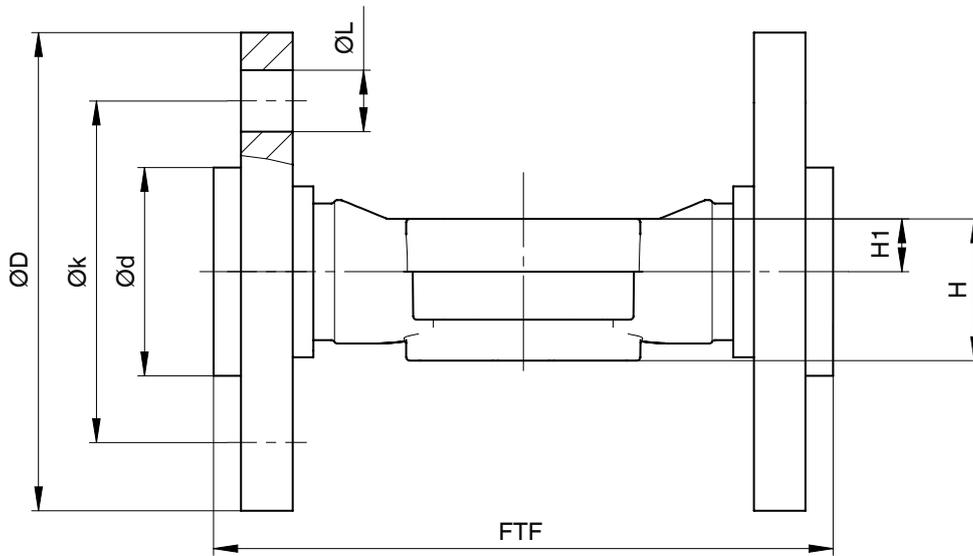
1) **Connection type**

Code 2: Solvent cement socket DIN

2) **Valve body material**

Code 1: PVC-U, grey

Flange EN (code 4)



Connection type flange EN (code 4)¹⁾, body material PVC-U (code 1)²⁾

| MG | DN | NPS | ød | øD | FTF | H | H1 | øk | øL | n |
|----|----|------|-------|-------|-------|------|------|-------|------|---|
| 20 | 15 | 1/2" | 34.0 | 95.0 | 130.0 | 36.0 | 10.0 | 65.0 | 14.0 | 4 |
| | 20 | 3/4" | 41.0 | 105.0 | 150.0 | 38.0 | 12.0 | 75.0 | 14.0 | 4 |
| | 25 | 1" | 50.0 | 115.0 | 160.0 | 39.0 | 13.0 | 85.0 | 14.0 | 4 |
| 25 | 32 | 1¼" | 61.0 | 140.0 | 180.0 | 41.0 | 15.0 | 100.0 | 18.0 | 4 |
| 40 | 40 | 1½" | 73.0 | 150.0 | 200.0 | 63.2 | 23.2 | 110.0 | 18.0 | 4 |
| | 50 | 2" | 90.0 | 165.0 | 230.0 | 63.2 | 23.2 | 125.0 | 18.0 | 4 |
| 50 | 65 | 2½" | 106.0 | 185.0 | 290.0 | 78.8 | 38.8 | 145.0 | 18.0 | 4 |

Connection type flange EN (code 4)¹⁾, body materials PP (code 5), PVDF (code 20)²⁾

| MG | DN | NPS | ød | | øD | FTF | H | H1 | øk | øL | n |
|----|----|-----|----------|-------|-------|-------|------|------|-------|------|---|
| | | | Material | | | | | | | | |
| | | | 5 | 20 | | | | | | | |
| 50 | 65 | 2½" | 122.0 | 120.0 | 185.0 | 290.0 | 78.8 | 38.8 | 145.0 | 18.0 | 4 |

Dimensions in mm

MG = diaphragm size

n = number of bolts

1) Connection type

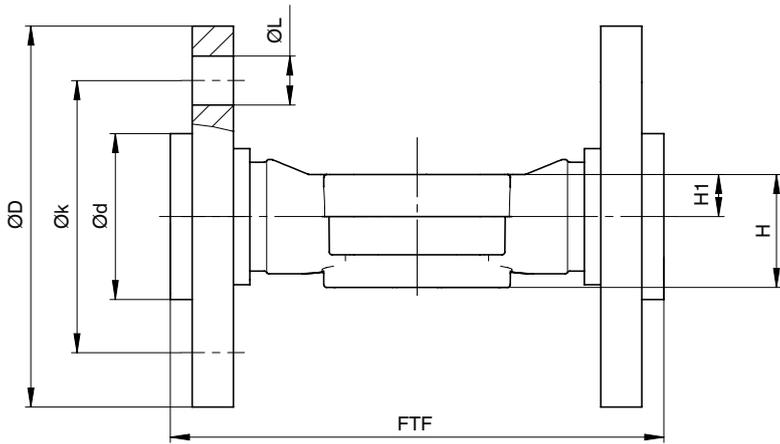
Code 4: Flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) Valve body material

Code 1: PVC-U, grey

Code 5: PP, reinforced

Code 20: PVDF



Connection type flange EN (code 4)¹⁾, body material inliner/outliner (code 71, 75)²⁾

| MG | DN | NPS | ød | øD | FTF | H | H1 | øk | øL | n |
|----|----|------|-------|-------|-------|------|------|-------|------|---|
| 20 | 15 | 1/2" | 45.0 | 95.0 | 130.0 | 36.0 | 10.0 | 65.0 | 14.0 | 4 |
| | 20 | 3/4" | 58.0 | 105.0 | 150.0 | 38.0 | 12.0 | 75.0 | 14.0 | 4 |
| | 25 | 1" | 68.0 | 115.0 | 160.0 | 39.0 | 13.0 | 85.0 | 14.0 | 4 |
| 25 | 32 | 1¼" | 78.0 | 140.0 | 180.0 | 41.0 | 15.0 | 100.0 | 18.0 | 4 |
| 40 | 40 | 1½" | 88.0 | 150.0 | 200.0 | 63.2 | 23.2 | 110.0 | 18.0 | 4 |
| | 50 | 2" | 102.0 | 165.0 | 230.0 | 63.2 | 23.2 | 125.0 | 18.0 | 4 |

Dimensions in mm

MG = diaphragm size

n = number of bolts

1) **Connection type**

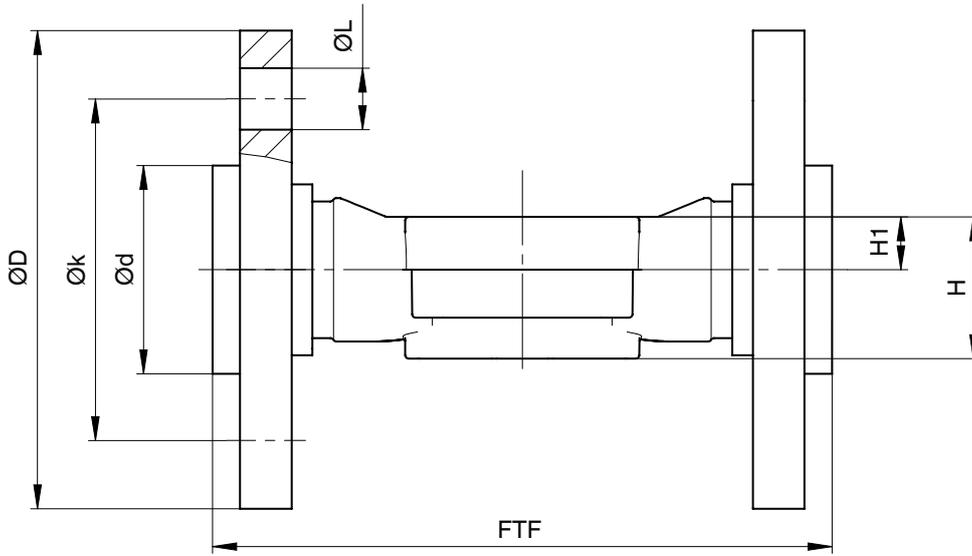
Code 4: Flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) **Valve body material**

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

Flange ANSI (code 39)



Connection type flange ANSI (code 39)¹⁾, body material PVC-U (code 1)²⁾

| MG | DN | NPS | ød | øD | FTF | H | H1 | øk | øL | n |
|----|----|------|-------|-------|-------|------|------|-------|------|---|
| 20 | 15 | 1/2" | 34.0 | 95.0 | 130.0 | 36.0 | 10.0 | 60.0 | 16.0 | 4 |
| | 20 | 3/4" | 41.0 | 105.0 | 150.0 | 38.0 | 12.0 | 70.0 | 16.0 | 4 |
| | 25 | 1" | 50.0 | 115.0 | 160.0 | 39.0 | 13.0 | 79.0 | 16.0 | 4 |
| 25 | 32 | 1¼" | 61.0 | 140.0 | 180.0 | 41.0 | 15.0 | 89.0 | 16.0 | 4 |
| 40 | 40 | 1½" | 73.0 | 150.0 | 200.0 | 63.2 | 23.2 | 98.0 | 16.0 | 4 |
| | 50 | 2" | 90.0 | 165.0 | 230.0 | 63.2 | 23.2 | 121.0 | 19.0 | 4 |
| 50 | 65 | 2½" | 106.0 | 185.0 | 290.0 | 78.8 | 38.8 | 140.0 | 19.0 | 4 |

Connection type flange ANSI (code 39)¹⁾, body material PP (code 5), PVDF (code 20)²⁾

| MG | DN | NPS | ød | | øD | FTF | H | H1 | øk | øL | n |
|----|----|-----|----------|-------|-------|-------|------|------|-------|------|---|
| | | | Material | | | | | | | | |
| | | | 5 | 20 | | | | | | | |
| 50 | 65 | 2½" | 122.0 | 120.0 | 185.0 | 290.0 | 78.8 | 38.8 | 140.0 | 19.0 | 4 |

Dimensions in mm

MG = diaphragm size

n = number of bolts

1) Connection type

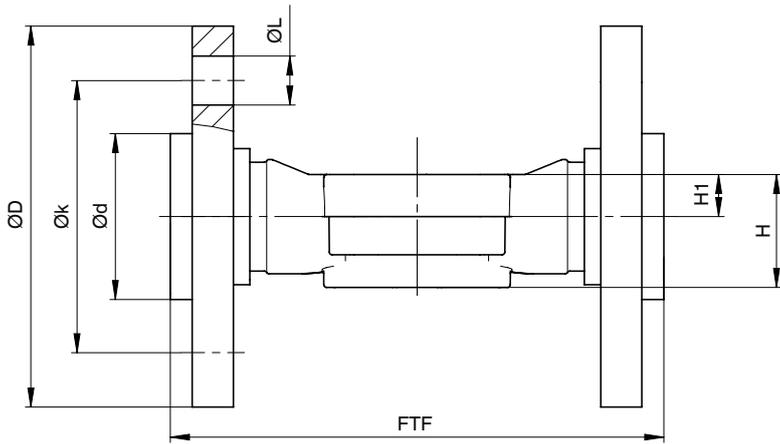
Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1, length only for body configuration D

2) Valve body material

Code 1: PVC-U, grey

Code 5: PP, reinforced

Code 20: PVDF



Connection type flange ANSI (code 39)¹⁾, inliner/outliner body material (code 71, 75)²⁾

| MG | DN | NPS | ød | øD | FTF | H | H1 | øk | øL | n |
|----|----|------|-------|-------|-------|------|------|-------|------|---|
| 20 | 15 | 1/2" | 45.0 | 95.0 | 130.0 | 36.0 | 10.0 | 60.0 | 16.0 | 4 |
| | 20 | 3/4" | 54.0 | 105.0 | 150.0 | 38.0 | 12.0 | 70.0 | 16.0 | 4 |
| | 25 | 1" | 63.0 | 115.0 | 160.0 | 39.0 | 13.0 | 79.0 | 16.0 | 4 |
| 25 | 32 | 1¼" | 73.0 | 140.0 | 180.0 | 41.0 | 15.0 | 89.0 | 16.0 | 4 |
| 40 | 40 | 1½" | 82.0 | 150.0 | 200.0 | 63.2 | 23.2 | 98.0 | 16.0 | 4 |
| | 50 | 2" | 102.0 | 165.0 | 230.0 | 63.2 | 23.2 | 121.0 | 19.0 | 4 |

Dimensions in mm

MG = diaphragm size

n = number of bolts

1) **Connection type**

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

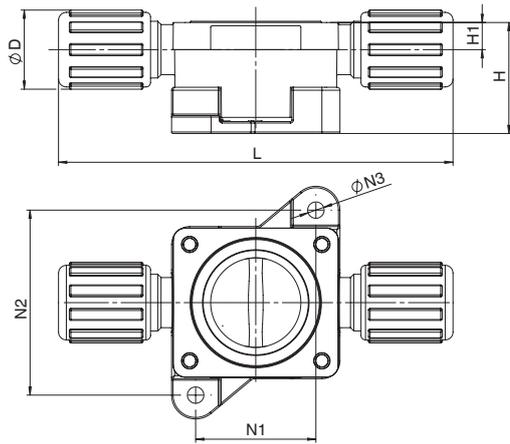
2) **Valve body material**

Code 71: Inliner PP-H, grey, outliner PP, reinforced

Code 75: Inliner PVDF/outliner PP, reinforced

Dimensions

Flare (code 75)



Connection type flare (code 75)¹⁾, body material PP-H (code N5)²⁾

| MG | DN | NPS | ϕD | H | H1 | L | N1 | N2 | $\phi N3$ |
|----|----|------|----------|------|------|-------|------|------|-----------|
| 10 | 15 | 1/2" | 26.5 | 38.1 | 10.0 | 132.0 | 40.0 | 62.0 | 5.5 |
| | 20 | 3/4" | 26.5 | 44.5 | 15.0 | 134.0 | 40.0 | 62.0 | 5.5 |

Dimensions in mm

MG = diaphragm size

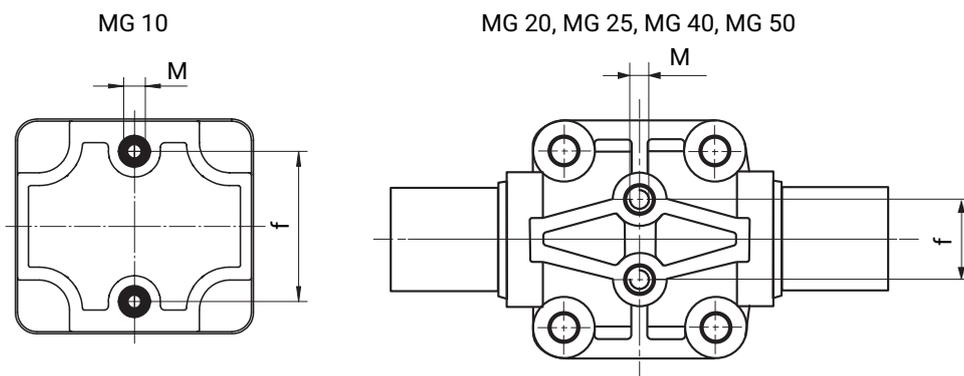
1) Connection type

Code 75: Flare connection with PVDF union nut

2) Valve body material

Code N5: PP-H, natural

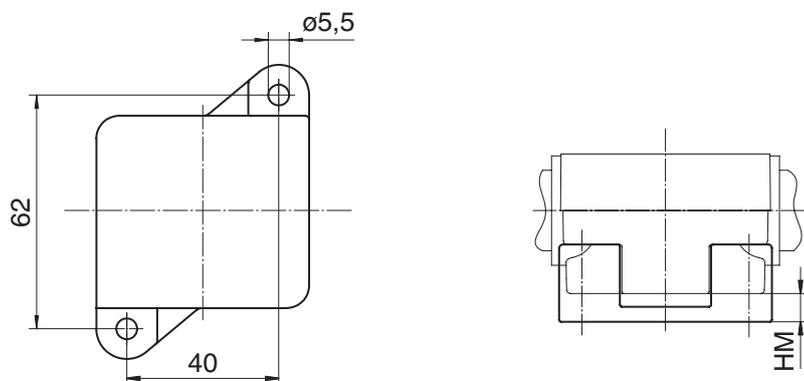
Valve body mounting



| MG | DN | NPS | f | M | |
|----|---------|-------------|------|---|------|
| | | | | Anschlussart | |
| | | | | 0, 4, 7, 7R, 20, 28, 33, 39, 3M, 3T, 78 | 30 |
| 10 | 12 - 20 | 1/4" - 1/2" | 35.0 | M5 | M5 * |
| 20 | 15 - 25 | 1/2" - 1" | 25.0 | M6 | M6 * |
| 25 | 32 | 1 1/4" | 25.0 | M6 | M6 * |
| 40 | 40 - 50 | 1 1/2" - 2" | 44.5 | M8 | M8 * |
| 50 | 65 | 2 1/2" | 44.5 | M8 | M8 * |

* Inch thread on request
Dimensions in mm

Availability of mounting plate



| MG | DN | HM |
|----|----|-----|
| 10 | 12 | 5.0 |
| | 15 | 4.5 |
| | 20 | 4.5 |

Dimensions in mm

Error messages

Accessories



GEMÜ 1218

Connector

GEMÜ 1218 is a connector (cable socket/cable plug), 7-pin. Straight 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 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 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 |
| | 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 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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