

GEMÜ M75

Electrically operated solenoid valve



Features

- Compact design thanks to the small solenoid
- Resistant against corrosive media
- Low maintenance
- Suitable for vacuum
- GEMÜ electrical position indicator can be fitted

Description

The GEMÜ M75 directly controlled 2/2-way process solenoid valve has innovative double bellows as a seal, with which the pressure forces can be compensated. The plastic-encapsulated compact coil is available in several supply voltages. O-rings in various designs ensure hermetic separation between medium and actuator. The valve is suitable for liquid and gaseous media in Open/Close applications with short operating times. The GEMÜ M75 process solenoid valve has a manual override and an energy-saving reduction in holding current as standard.

Technical specifications

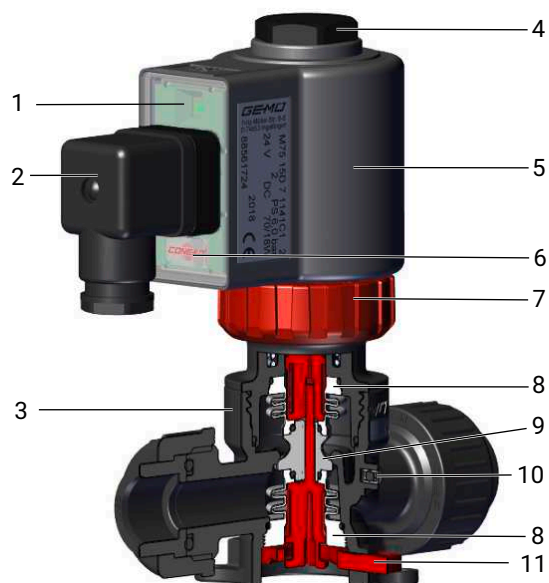
- **Media temperature :** -10 to 90 °C
- **Ambient temperature:** -10 to 60 °C
- **Operating pressure :** 0 to 6 bar
- **Nominal sizes:** DN 8 to 20
- **Connection types:** Solvent cement socket | Spigot | Threaded connection | Union end
- **Connection standards:** DIN
- **Body materials:** PP-H, grey | PVC-U, grey | PVDF
- **Supply voltages:** 110–230 V AC/DC | 20 - 48 V AC/DC | 24 V DC
- **Protection class:** IP 65
- **Conformities:** EAC | UL Recognized US

Technical data depends on the respective configuration



Product description

Construction



| Item | Name | Materials |
|------|--|-------------------------------|
| 1 | Transparent cover with LED status indication | PC |
| 2 | Plug | PA |
| 3 | Valve body | PVC-U, PVDF, PP-H, grey |
| 4 | M16x1 thread for position indicator | |
| 5 | Electromagnetic actuator | PP-H, grey |
| 6 | CONEXO RFID chip on the actuator | |
| 7 | Union nut (service/solenoid replacement) | PP-H, grey |
| 8 | Bellows | PTFE |
| 9 | Throttle element | PTFE |
| 10 | CONEXO RFID chip on the valve body | |
| 11 | Emergency override (only with control function 1 (NC)) | |
| | Seal materials | EPDM, FKM, FFKM |

Function

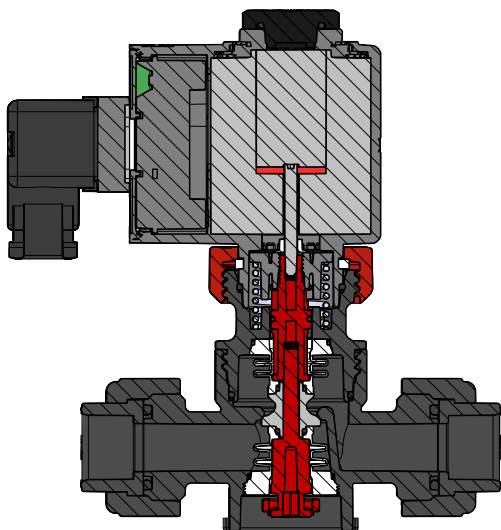


Fig. 1: Sectional view of control function 1 (NC)

The valve fulfils a simple, directly controlled Open/Close function. Medium pressure is used for pressure compensation. Applying medium pressure produces opposing tensile forces on the bellows and throttle element that ultimately cancel each other out. The installed compression spring serves to ensure safe sealing and opening at the seat. Activating the solenoid produces an imbalance of power in the valve centre axis that opens and closes the valve. Upon deactivating the magnet, the default settings are reset by the tensile force of the bellows and spring; the valve closes and opens.

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.

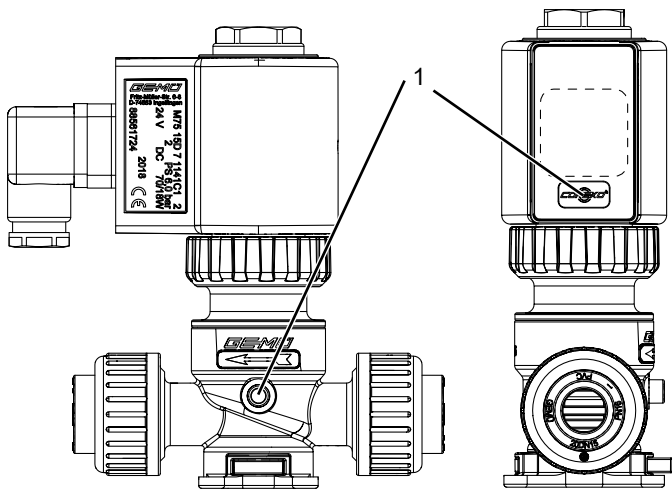
For further information on GEMÜ CONEXO please visit:

www.gemu-group.com/conexo

Ordering

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

Installing the RFID chip (1)



Availabilities

Availability of valve bodies

Spigot

| DN | Material code ¹⁾ | | |
|----|-----------------------------|---|----|
| | 1 | 5 | 20 |
| 8 | - | - | - |
| 10 | - | - | - |
| 15 | X | X | X |

1) **Valve body material**

Code 1: PVC-U, grey

Code 5: PP-H, grey

Code 20: PVDF

Threaded socket

| DN | Material code ¹⁾ | | |
|----|-----------------------------|---|----|
| | 1 | 5 | 20 |
| 8 | X | X | X |
| 10 | X | X | X |
| 15 | X | X | X |

1) **Valve body material**

Code 1: PVC-U, grey

Code 5: PP-H, grey

Code 20: PVDF

Solvent cement socket

| DN | Material code ¹⁾ | | |
|----|-----------------------------|---|----|
| | 1 | 5 | 20 |
| 8 | X | - | - |
| 10 | X | - | - |
| 15 | X | - | - |

1) **Valve body material**

Code 1: PVC-U, grey

Code 5: PP-H, grey

Code 20: PVDF

Union end

| DN | Material code ¹⁾ | | |
|----|-----------------------------|---|----|
| | 1 | 5 | 20 |
| 8 | - | - | - |
| 10 | X | X | X |
| 15 | X | X | X |
| 20 | X | X | X |

For nominal size DN 20, a nominal size adapter (see accessories) is required.

1) **Valve body material**

Code 1: PVC-U, grey

Code 5: PP-H, grey

Code 20: PVDF

Seal materials

| DN | FKM (Code 4) | FFKM (Code F5) | EPDM (Code 14) |
|--------|--------------|----------------|----------------|
| 8 - 20 | X | X* | X |

* on request

Availability of actuator

| Actuator version (code) ¹⁾ | Media | Spring | Control function | |
|--|---------|--------|----------------------------------|--------------------------------|
| | | | Normally closed (NC) (code 1) | Normally open (NO) (code 2) |
| 2F | Liquid | 50 N | - | X |
| | | 80 N | X | - |
| 2G | Gaseous | 50 N | - | X |
| | | 130 N | X | - |

1) Actuator version

Code 2F: Actuator size 2 NC = 80 N NO = 50 N

Code 2G: Actuator size 2 NC = 130 N NO = 50 N

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 |
|----------------|------|
| Solenoid valve | M75 |

| 2 DN | Code |
|-------|------|
| DN 8 | 8 |
| DN 10 | 10 |
| DN 15 | 15 |
| DN 20 | 20 |

| 3 Body configuration | Code |
|----------------------|------|
| 2/2-way body | D |

| 4 Connection type | Code |
|--------------------------------------|------|
| Spigot DIN | 0 |
| Threaded socket DIN ISO 228 | 1 |
| Solvent cement socket DIN | 2 |
| Union end with insert (socket) – DIN | 7 |
| Union end with JIS insert (socket) | 3T |

| 5 Valve body material | Code |
|-----------------------|------|
| PVC-U, grey | 1 |
| PVDF | 20 |
| PP-H, grey | 5 |

| 6 Seal material | Code |
|-----------------|------|
| EPDM | 14 |
| FKM | 4 |
| FFKM | F5 |

| 7 Control function | Code |
|----------------------|------|
| Normally closed (NC) | 1 |
| Normally open (NO) | 2 |

| 8 Actuator version | Code |
|--|------|
| Actuator size 2 NC = 80 N NO = 50 N | 2F |
| Actuator size 2 NC = 130 N NO = 50 N | 2G |

| 9 Voltage/Frequency | Code |
|---------------------|------|
| 24 V DC | C1 |
| 20–48 V AC/DC | Q5 |
| 110–230 V AC/DC | X5 |

| 10 Electrical connection | Code |
|--|------|
| Plug design A, without cable socket | 00 |
| Plug design A, with cable socket, without cable | 01 |

| 11 Special version | Code |
|--------------------|------|
| Without | |
| UL approval | U |

| 12 CONEXO | Code |
|---|------|
| Integrated RFID chip for electronic identification and traceability | C |

Order example

| Ordering option | Code | Description |
|--------------------------|------|---|
| 1 Type | M75 | Solenoid valve |
| 2 DN | 15 | DN 15 |
| 3 Body configuration | D | 2/2-way body |
| 4 Connection type | 7 | Union end with insert (socket) – DIN |
| 5 Valve body material | 20 | PVDF |
| 6 Seal material | 14 | EPDM |
| 7 Control function | 1 | Normally closed (NC) |
| 8 Actuator version | 2F | Actuator size 2 NC = 80 N NO = 50 N |
| 9 Voltage/Frequency | C1 | 24 V DC |
| 10 Electrical connection | 00 | Plug design A, without cable socket |
| 11 Special version | | Without |
| 12 CONEXO | C | Integrated RFID chip for electronic identification and traceability |

Technical data

Medium

Working medium:

Without UL approval

Inert gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and seal material.

With UL approval

Air, water and noble gases

The following applies to both versions:

With control function 1 (normally closed (NC)), a distinction must be made between gaseous and liquid media.

Temperature

Media temperature:

| UL approval | Valve body material | | |
|-------------|---------------------|----------------|---------------------|
| | PVC-U (code 1) | PVDF (code 20) | PP-H, grey (code 5) |
| without | 10 – 40 °C | -20 – 100 °C | 5 – 80 °C |
| with | | | 5 – 65 °C |

Ambient temperature:

| UL approval | Valve body material | | |
|--------------|---------------------|----------------|---------------------|
| | PVC-U (code 1) | PVDF (code 20) | PP-H, grey (code 5) |
| without/with | 10 – 40 °C | -20 – 60 °C | 5 – 60 °C |

Storage temperature:

0 – 40 °C

Pressure

Operating pressure:

| UL approval | Valve body material | | |
|-------------|---------------------|----------------|---------------------|
| | PVC-U (code 1) | PVDF (code 20) | PP-H, grey (code 5) |
| without | 0 - 6 bar | 0 - 6 bar | 0 - 4 bar* |
| with | 0 - 5 bar | | 0 - 4 bar |

* 0 - 6 bar on request

Vacuum:

| UL approval | Valve body material | | |
|-------------|--|----------------|----------------------|
| | PVC-U (code 1) | PVDF (code 20) | PP-H, grey (code 5)* |
| without | Up to -950 mbar (relative)/63.25 mbar (absolute) | | |
| with | - | - | - |

*only control function 1 (Normally Closed)

Pressure/temperature diagram:

| Valve body material | Temperature | | | | | | | | | | | | | | |
|---------------------|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | -20 | -10 | ±0 | 5 | 10 | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| | Permissible operating pressure | | | | | | | | | | | | | | |
| PVC-U | - | - | - | - | 6.0 | 6.0 | 6.0 | 4.8 | 3.6 | - | - | - | - | - | - |
| PVDF | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 5.4 | 4.8 | 4.3 | 3.8 | 3.2 | 2.8 | 2.2 | 1.0 |
| PP-H | - | - | - | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 3.3 | 2.4 | 1.6 | 0.9 | - | - |

All pressures are gauge pressures.

The permissible operating pressure depends on the working medium temperature.

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.

Technical data

Kv values: DN 8: 1.1 m³/h
DN 10: 1.6 m³/h
DN 15: 2.5 m³/h
DN 20: 2.5 m³/h
Kv values determined acc. to DIN EN 60534, PP-H valve body with union end and DIN insert.

Note: The piping system must be equipped with fixtures for damping the water hammer. The valve is designed with twofold security at the max. operating pressure.

| Pressure rating: | UL approval | Valve body material | | |
|------------------|-------------|---------------------|----------------|---------------------|
| | | PVC-U (code 1) | PVDF (code 20) | PP-H, grey (code 5) |
| | without | PN 6 | PN 6 | PN 4* |
| | with | PN 5 | | PN 4 |

* PN 6 on request

Leakage rate: **External**
A (acc. to EN 12266-1)

At the seat
C (acc. to EN 12266-1)

Product conformity

Machinery Directive: 2006/42/EC

EMC Directive: 2014/30/EU
EN 55011:1991 (150 kHz to 30 MHz)
EN 55014:1993 (148.5 kHz to 30 MHz)

UL approval: yes
Versions with a supply voltage of 110–230 V AC/DC only.
Versions with a supply voltage of 20–48 V AC/DC and 24 V DC on request.

Mechanical data

Protection class: IP 65

Weight: Approx. 1 kg

Cable gland: M16 x 1.5

Cross section of wire: 0.25 - 1.5 mm²

Cable diameter: 4.5 - 10 mm

Flow direction: Not optional, dependent on the control function, see arrow on the valve

Duty cycle: Continuous duty

Electrical data

| Supply voltage: | Voltage/Frequency | | |
|-----------------|-------------------|-----------------------|-------------------------|
| | Code C1 | Code Q5 | Code X5 |
| | 24 V DC ±10% | 20 to 48 V AC/DC ±10% | 110 to 230 V AC/DC ±10% |

Permissible voltage tolerance: ±10 % to VDE 0580

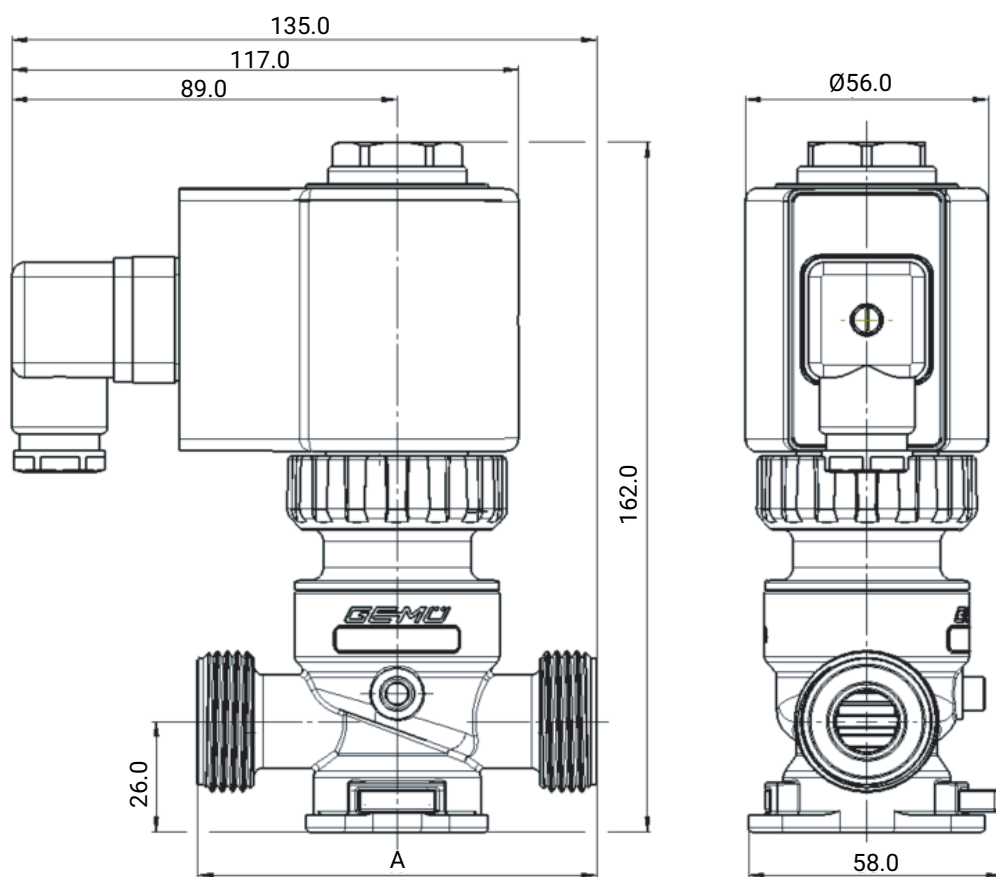
Current consumption:

| Voltage/Frequency | Order code | Max. current | |
|-------------------|------------|--------------|---------|
| | | Pull in | Hold in |
| 24 V DC | C1 | 1.40 A | 0.32 A |
| 20–48 V AC/DC | Q5 | 1.97 A | 0.73 A |
| 110–230 V AC/DC | X5 | 0.40 A | 0.09 A |

Switching frequency: 1 s/1 s (on/off)**Rated frequency:** 50/60 Hz ± 2.5 Hz (at AC rated voltage)

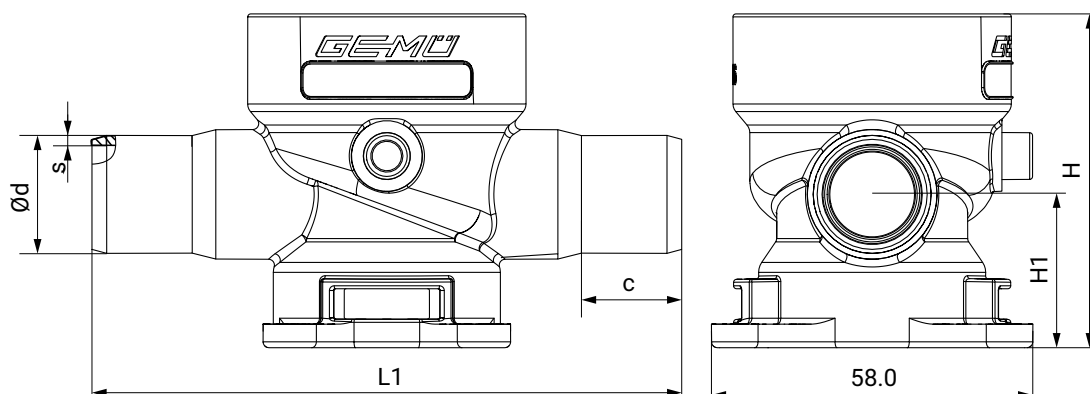
Dimensions

Overall dimensions



| DN | Connection | | | | |
|-----------|--------------------|-----------------------------|--------------------------------------|-----------------------|------------------------|
| | Spigot (code 0) | Threaded socket (code 1) | Solvent cement socket (code 2) | Union end (code 7) | Union end (code 3T) |
| | A | | | | |
| 8 | - | 65.0 | 65.0 | - | - |
| 10 | - | 76.0 | 76.0 | - | - |
| 15 | 100.0 | 76.0 | 76.0 | 92.0 | 108.0 |

Dimensions in mm

Valve body**Spigot (code 0)**

| DN | L1 | c | Ød | s | | | H | H1 |
|----|-------|------|------|------------------------------------|-----|-----|------|------|
| | | | | Valve body materials ¹⁾ | | | | |
| | | | | 1 | 5 | 20 | | |
| 15 | 100.0 | 17.0 | 20.0 | 1.5 | 2.5 | 1.9 | 56.6 | 26.0 |

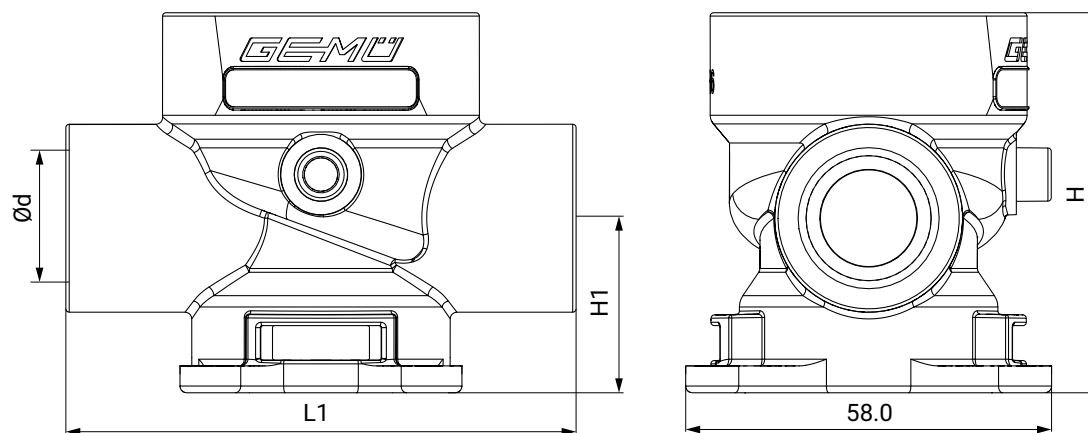
1) Valve body material

Code 1: PVC-U, grey

Code 5: PP-H, grey

Code 20: PVDF

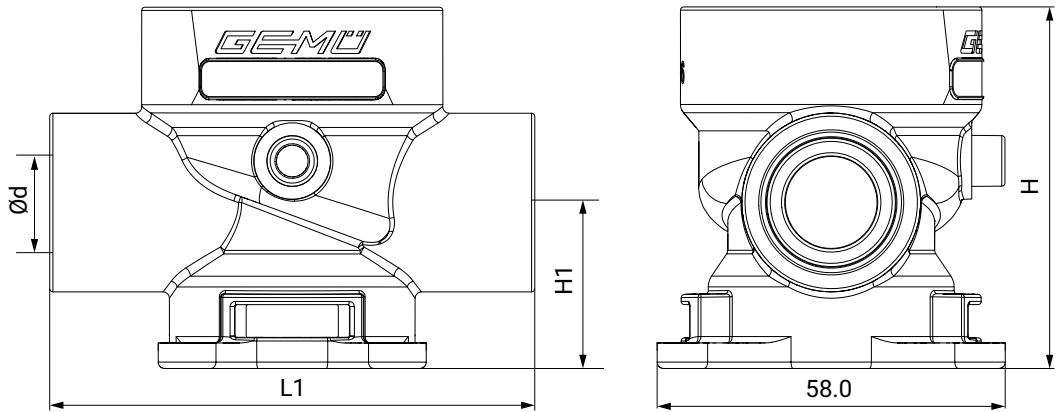
Dimensions in mm

Threaded socket (code 1)

| DN | L1 | Ød | H | H1 |
|----|------|------|------|------|
| 8 | 65.0 | G1/4 | 56.6 | 26.0 |
| 10 | 76.0 | G3/8 | 56.6 | 26.0 |
| 15 | 76.0 | G1/2 | 56.6 | 26.0 |

Dimensions in mm

Solvent cement socket (code 2)

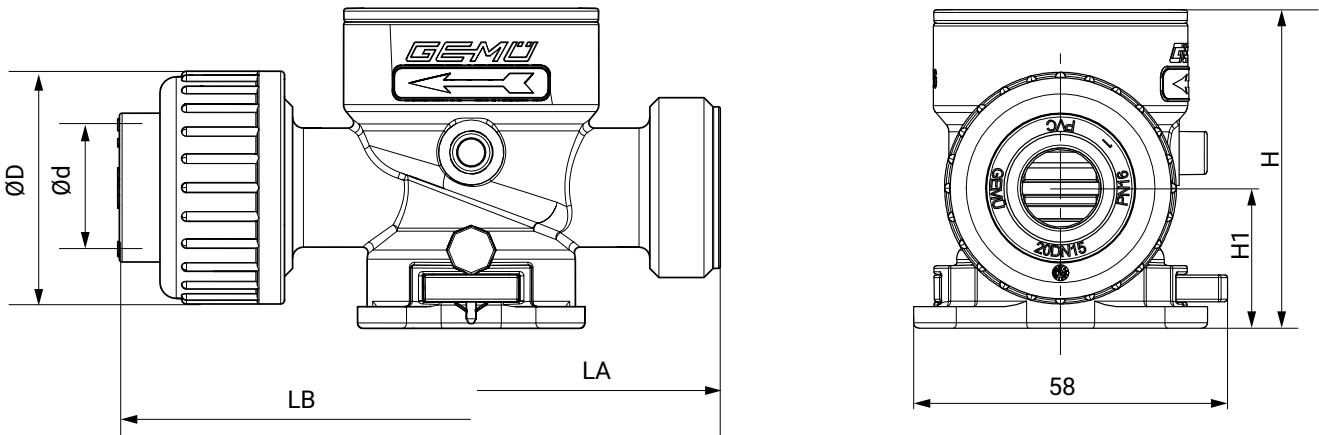


| DN | L1 | Ød | H | H1 |
|----|------|------|------|------|
| 8 | 65.0 | 12.2 | 56.6 | 26.0 |
| 10 | 76.0 | 16.2 | 56.6 | 26.0 |
| 15 | 76.0 | 20.2 | 56.6 | 26.0 |

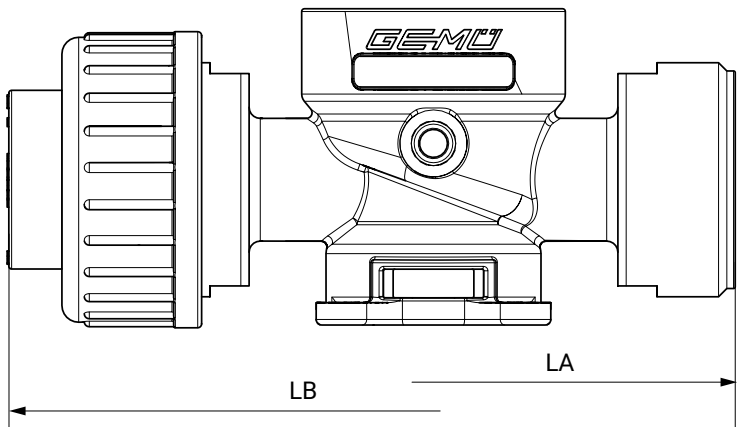
Dimensions in mm

Union end (code 7)

Without nominal size adapter



With nominal size adapter

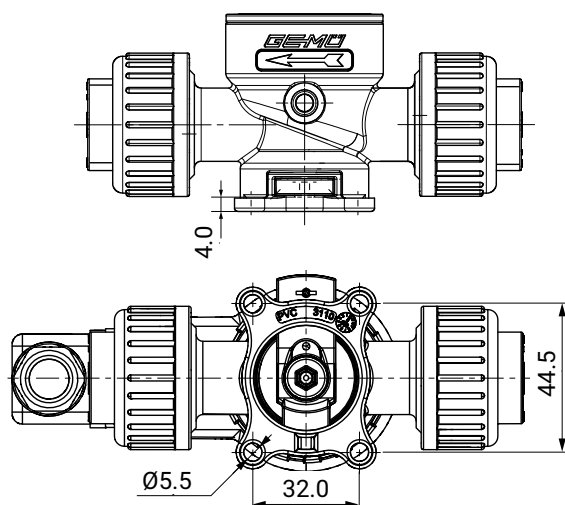


| DN | LA | LB | | | Ød | ØD | H | H1 |
|---------------|-------|-----------------|-------|-------|------|--------|------|------|
| | | Insert material | | | | | | |
| | | PVC-U | PP-H | PVDF | | | | |
| 10 | 92.0 | 130.0 | 136.0 | 136.0 | 16.0 | 43.0 | 56.6 | 26.0 |
| 15 | 92.0 | 130.0 | 127.0 | 130.0 | 20.0 | 43.0 | 56.6 | 26.0 |
| 20* | 108.0 | 152.0 | 146.0 | 150.0 | 25.0 | G1 1/4 | 56.6 | 26.0 |
| 15* (Code 3T) | 108.0 | 152.0 | - | - | 22.0 | 53.0 | 56.6 | 26.0 |
| 20* (Code 3T) | 108.0 | 152.0 | - | - | 26.0 | 53.0 | 56.6 | 26.0 |

* Nominal size adapter of DN 15 to DN 20 is enclosed

Dimensions in mm

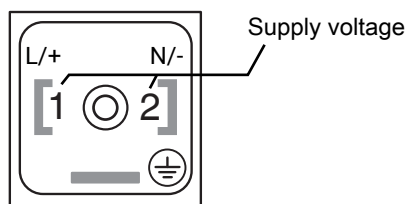
Mounting dimensions



Dimensions in mm

Electrical connection

Connection diagram for plug



Accessories



GEMÜ 2026 (item number 88668465)

Plug

GEMÜ 2026 are plugs with lights, with or without interference suppression. Various versions available. The DC voltage version with a bridge rectifier has a plug with reverse battery protection. An NBR gasket and a M3x35 central screw are included in the scope of delivery.



GEMÜ 1235

Electrical position indicator

The GEMÜ 1235 electrical position indicator is suitable for installation on pneumatically operated linear actuators and, with specific mounting parts, likewise suitable for pneumatically operated quarter turn actuators as well as further selected actuator versions. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Intelligent microprocessor-controlled functions facilitate commissioning and support during operation. The current position of the valve is displayed via high-visibility LEDs and fed back via electrical signals.

For control function - Normally open (NO) (code 2)

| Design | LED | Item number |
|---------|----------|-------------|
| 24 V | Standard | 99119633 |
| 24 V | Inversed | 99119634 |
| IO-Link | Standard | 99119632 |
| IO-Link | Inversed | 99082115 |

For control function - Normally closed (NC) (code 1)

| Design | LED | Item number |
|---------|----------|-------------|
| 24 V | Standard | 99142451 |
| 24 V | Inversed | 99142452 |
| IO-Link | Inversed | 99142449 |
| IO-Link | Standard | 99142450 |

A mounting kit (item number 88686770) is required for the mounting of the GEMÜ 1235 electrical position indicator.

GEMÜ M75A**Adapter set for GEMÜ M75 solenoid valve**

The GEMÜ M75A adapter set is available in three designs and enables the GEMÜ 205 and 225 solenoid valves to be replaced with the GEMÜ M75 solenoid valve. Using the nominal size adapter, the GEMÜ M75 can be installed in piping with nominal size DN 20. The DN 10 and 15 length adapters extend the installation length of the GEMÜ M75 so that the GEMÜ 205 and 225 solenoid valves can be replaced.



GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Fritz-Müller-Straße 6-8, 74653 Ingelfingen-Criesbach, Germany
Phone +49 (0) 7940 1230 · info@gemue.de
www.gemu-group.com