

Diaphragm Valve, Plastic

Construction

The GEMÜ 693 motorized 2/2-way diaphragm valve has a low maintenance electric actuator with a toothed belt drive and a reversible synchronous motor. A manual override and an optical position indicator are standard.

Features

- Suitable for inert and corrosive* liquid and gaseous media
- Chemical resistance of actuator
- Valve body and diaphragm available in various materials and designs
- Insensitive to particulate media
- The valve stroke can be limited by means of adjustable limit switches
- Suitable for use as a control valve (with GEMÜ 1283)

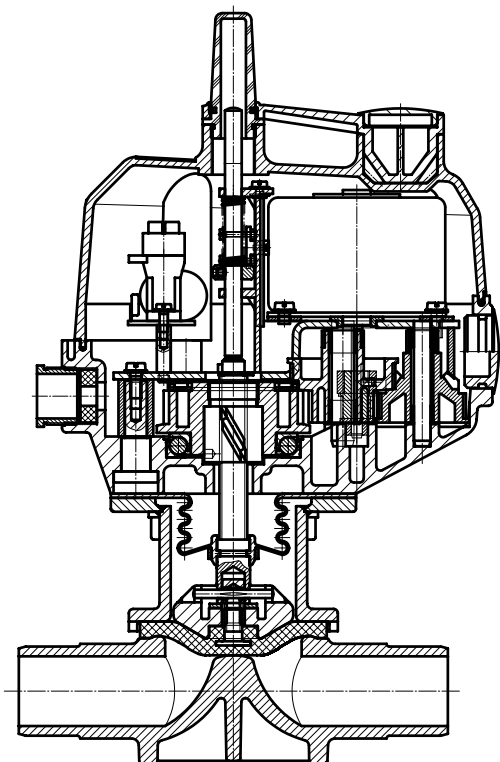
Advantages

- Hermetic separation between medium and actuator
- Optional flow direction, will seal in either flow direction up to full operating pressure
- Optional mounting position
- Consistent control system and reliable opening and closing action
- Direct 0/4 - 20 mA signal processing using the additional module GEMÜ 1283
- Electrical position feedback by means of a potentiometer available as an option

*see information on working medium on page 2



Sectional drawing



Technical data

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.

Working medium temperature

| | |
|----------------------|--------------|
| Valve body PVC-U | 10 to 60 °C |
| Valve body ABS | -20 to 60 °C |
| Valve body PP / PP-H | 5 to 80 °C |
| Valve body PVDF | -20 to 80 °C |

The permissible operating pressure depends on the working medium temperature.

Ambient temperature

| | |
|-----------------------|--------------|
| Valve body PVC-U | 10 to 50 °C |
| Valve body PP / PP-H | 5 to 50 °C |
| Valve body ABS / PVDF | -10 to 50 °C |

Optional position feedback

Actual value potentiometer (functional module AP) 10 kΩ

Permissible temperatures

Storage temperature -15 to +55 °C

Power consumption

10 VA

Rating

Continuously rated

Operating time

Standard version approx. 20 sec.

Protection class

IP 65 acc. to DIN 40050

Cable gland

2 x PG 13.5

Pressure / temperature correlation for plastic

| Temperature in °C (plastic body) | | -20 | -10 | ±0 | 5 | 10 | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 |
|----------------------------------|---------|---------------------------------------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| Valve body material | | Permissible operating pressure in bar | | | | | | | | | | | | |
| PVC-U | Code 1 | - | - | - | - | 10.0 | 10.0 | 10.0 | 8.0 | 6.0 | 3.5 | 1.5 | - | - |
| ABS | Code 4 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 8.0 | 6.0 | 4.0 | 2.0 | - | - |
| PP-H | Code 71 | - | - | - | 10.0 | 10.0 | 10.0 | 10.0 | 8.5 | 7.0 | 5.5 | 4.0 | 2.7 | 1.5 |
| PVDF | Code 20 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 9.0 | 8.0 | 7.1 | 6.3 | 5.4 | 4.7 |

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

| Diaphragm size | DN | Operating pressure | | Kv value [m ³ /h] |
|----------------|----|--------------------|-----------|---------------------------------|
| | | EPDM / FPM | PTFE | |
| 25 | 15 | 0 - 10 bar | 0 - 6 bar | 5.6 |
| | 20 | | | 8.2 |
| | 25 | | | 10.5 |
| 40 | 32 | 0 - 6 bar | 0 - 6 bar | 18.0 |
| | 40 | | | 25.0 |
| 50 | 50 | 0 - 6 bar | 0 - 4 bar | 46.0 |

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.

Kv values determined acc. to IEC 534 standard, inlet pressure 6 bar, Δp 1 bar, PVC-U valve body and soft elastomer diaphragm.

O-ring material for valve bodies with union ends

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

Other combinations on request

Order data

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

| Connection | Code |
|--|------|
| Spigots DIN for socket solvent cementing / welding | 0 |
| Flanges EN 1092 / PN10 / form B, length EN 558, series 1, ISO 5752, basic series 1 | 4 |
| Union ends with DIN insert (socket) | 7 |
| Spigots for IR butt welding | 20 |
| Spigots for IR butt welding, BCF | 28 |
| Spigots - inch | 30 |
| Union ends with inch insert - BS (socket) | 33 |
| Flanges ANSI CLASS 125/150 RF, length EN 558, series 1, ISO 5752, basic series 1 | 39 |
| Union ends with DIN insert (for IR butt welding) | 78 |
| For overview of available valve bodies for GEMÜ 693 see page 8 | |

| Diaphragm material | Code |
|---------------------------|------|
| NBR | 2 |
| FPM | 4 |
| EPDM | 14 |
| PTFE/EPDM, PTFE laminated | 52 |

| Voltage/Frequency | Code |
|---------------------|------|
| 24V 50/60 Hz ± 10% | C4 |
| 120V 50/60 Hz ± 10% | G4 |
| 230V 50/60 Hz ± 10% | L4 |

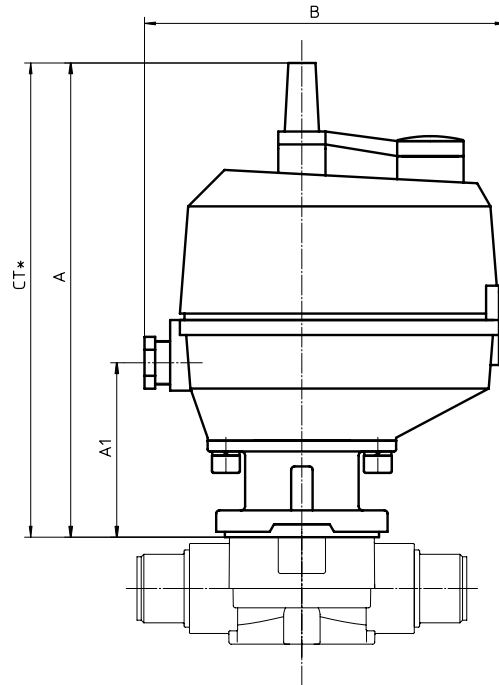
| Functional module | Code |
|--|------|
| OPEN / CLOSE control with additional end position feedback | AE |
| OPEN / CLOSE control with potentiometer output | AP |

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

| Order example | 693 | 15 | D | 0 | 1 | 14 | L4 | AE |
|----------------------------|-----|----|---|---|---|----|----|----|
| Type | 693 | | | | | | | |
| Nominal size | | 15 | | | | | | |
| Body configuration (code) | | | D | | | | | |
| Connection (code) | | | | 0 | | | | |
| Valve body material (code) | | | | | 1 | | | |
| Diaphragm material (code) | | | | | | 14 | | |
| Voltage/Frequency (code) | | | | | | | L4 | |
| Functional module (code) | | | | | | | | AE |

Actuator dimensions [mm]

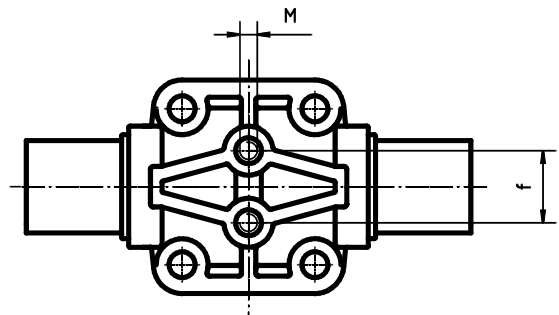
| Diaphragm size | DN | B | A | A1 | Weight [kg] |
|----------------|---------|-----------|-----|-----|-------------|
| 25 | 15 - 25 | 169 x 135 | 222 | 82 | 2.35 |
| 40 | 32 - 40 | 169 x 135 | 271 | 131 | 2.90 |
| 50 | 50 | 169 x 135 | 278 | 138 | 3.30 |



* CT = A + H1 (see body dimensions)

Valve body mounting dimensions [mm]

| Diaphragm size | M | f | Depth of thread |
|----------------|-----|------|-----------------|
| 25 | M 6 | 25.0 | 14 |
| | M 6 | 25.0 | 14 |
| | M 6 | 25.0 | 14 |
| 40 | M 8 | 44.5 | 17 |
| | M 8 | 44.5 | 17 |
| 50 | M 8 | 44.5 | 17 |



Body dimensions [mm]

Spigots - DIN, connection code 0

Valve body material: PVC-U (code 1), PP (code 5), PVDF (code 20), inliner PP-H (code 71)

| MG | DN | NPS | L | H | | H1 | | ød | c | | Weight [kg] |
|----|----|--------|-----|-----------------|----------------------|-----------------|----------------------|----|-----------------|----------------------|-------------|
| | | | | Material code 1 | Material code 20, 71 | Material code 1 | Material code 20, 71 | | Material code 1 | Material code 20, 71 | |
| 25 | 15 | 1/2" | 124 | 45 | 50 | 19 | 24 | 20 | 16 | 18 | 0.24 |
| | 20 | 3/4" | 144 | 45 | 50 | 19 | 24 | 25 | 19 | 19 | 0.24 |
| | 25 | 1" | 154 | 45 | 50 | 19 | 24 | 32 | 22 | 22 | 0.34 |
| 40 | 32 | 1 1/4" | 174 | 74 | 74 | 34 | 34 | 40 | 26 | 24 | 0.65 |
| | 40 | 1 1/2" | 194 | 74 | 74 | 34 | 34 | 50 | 31 | 26 | 0.70 |
| 50 | 50 | 2" | 224 | 78 | 82 | 38 | 42 | 63 | 39 | 29 | 1.10 |

For materials see overview on last page

MG = diaphragm size

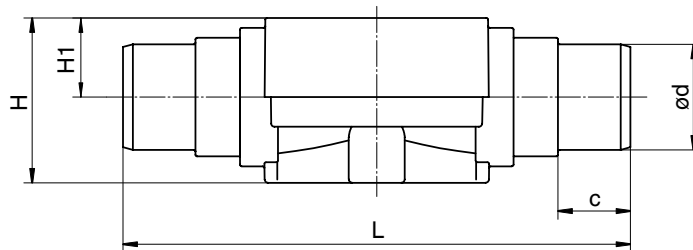
Spigots - inch, connection code 30

Valve body material: PVC-U (code 1), ABS (code 4)

| MG | DN | NPS | L | H | H1 | ød | c | Weight [kg] |
|----|----|--------|-----|----|----|------|----|-------------|
| 25 | 15 | 1/2" | 141 | 45 | 19 | 21.4 | 24 | 0.24 |
| | 20 | 3/4" | 145 | 45 | 19 | 26.7 | 27 | 0.24 |
| | 25 | 1" | 154 | 45 | 19 | 33.6 | 30 | 0.34 |
| 40 | 32 | 1 1/4" | 174 | 74 | 34 | 42.2 | 33 | 0.65 |
| | 40 | 1 1/2" | 194 | 74 | 34 | 48.3 | 39 | 0.70 |
| 50 | 50 | 2" | 224 | 75 | 35 | 60.3 | 40 | 1.10 |

For materials see overview on last page

MG = diaphragm size



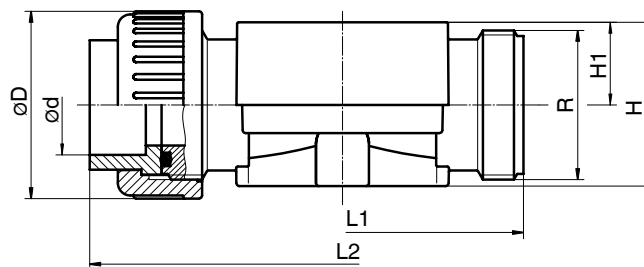
Body dimensions [mm]

Union ends with insert, connection code 7, 33
Valve body material: PVC-U (code 1), PVDF (code 20), inliner PP-H (code 71)

| MG | DN | NPS | R | øD | L1 | H | H1 | Connection code 7 | | | Connection code 33 | | Weight [kg] | |
|----|----|--------|---------|-----|-----|----|----|-------------------|------------------|------------------|--------------------|-----|-------------|------|
| | | | | | | | | L2 | | | ød | L2 | | ød |
| | | | | | | | | Material code 1 | Material code 20 | Material code 71 | | | | |
| 25 | 15 | 1/2" | G 1 | 43 | 108 | 50 | 24 | 146 | 146 | 143 | 20 | 146 | 21.4 | 0.32 |
| | 20 | 3/4" | G 1 1/4 | 53 | 108 | 50 | 24 | 152 | 150 | 146 | 25 | 152 | 26.7 | 0.38 |
| | 25 | 1" | G 1 1/2 | 60 | 116 | 50 | 24 | 166 | 162 | 158 | 32 | 166 | 33.6 | 0.42 |
| 40 | 32 | 1 1/4" | G 2 | 74 | 134 | 74 | 34 | 192 | 184 | 181 | 40 | 192 | 42.2 | 0.88 |
| | 40 | 1 1/2" | G 2 1/4 | 83 | 154 | 74 | 34 | 222 | 210 | 207 | 50 | 222 | 48.3 | 0.97 |
| 50 | 50 | 2" | G 2 3/4 | 103 | 182 | 82 | 42 | 264 | 246 | 243 | 63 | 264 | 60.3 | 1.60 |

For materials see overview on last page

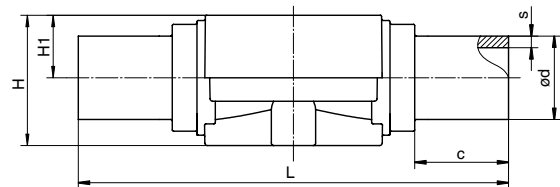
MG = diaphragm size



Spigots for IR butt welding, connection code 20
Valve body material: inliner PP-H (code 71)

| MG | DN | L | H | H1 | ød | s | c | Weight [kg] |
|----|----|-----|----|----|----|-----|----|-------------|
| 25 | 15 | 154 | 50 | 24 | 20 | 1.9 | 33 | 0.18 |
| | 20 | 154 | 50 | 24 | 25 | 2.3 | 33 | 0.18 |
| | 25 | 154 | 50 | 24 | 32 | 2.9 | 33 | 0.18 |
| 40 | 32 | 194 | 74 | 34 | 40 | 3.7 | 33 | 0.43 |
| | 40 | 194 | 74 | 34 | 50 | 4.6 | 33 | 0.64 |
| 50 | 50 | 224 | 82 | 42 | 63 | 5.8 | 33 | 0.69 |

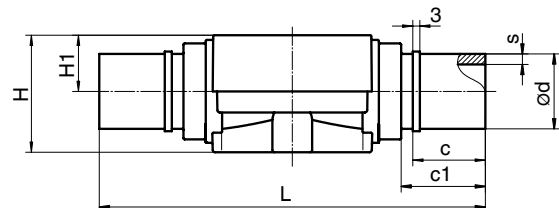
MG = diaphragm size



Spigots for IR butt welding, BCF, connection code 28
Valve body material: PVDF (code 20)

| MG | DN | L | H | H1 | ød | c | c1 | s | Weight [kg] |
|----|----|-----|----|----|----|----|----|-----|-------------|
| 25 | 15 | 154 | 50 | 24 | 20 | 31 | 37 | 1.9 | 0.24 |
| | 20 | 154 | 50 | 24 | 25 | 31 | 37 | 1.9 | 0.25 |
| | 25 | 154 | 50 | 24 | 32 | 31 | 37 | 2.4 | 0.26 |
| 40 | 32 | 194 | 74 | 34 | 40 | 40 | 46 | 2.4 | 0.65 |
| | 40 | 194 | 74 | 34 | 50 | 40 | 46 | 3.0 | 0.66 |
| 50 | 50 | 224 | 82 | 42 | 63 | 40 | 46 | 3.0 | 1.10 |

MG = diaphragm size



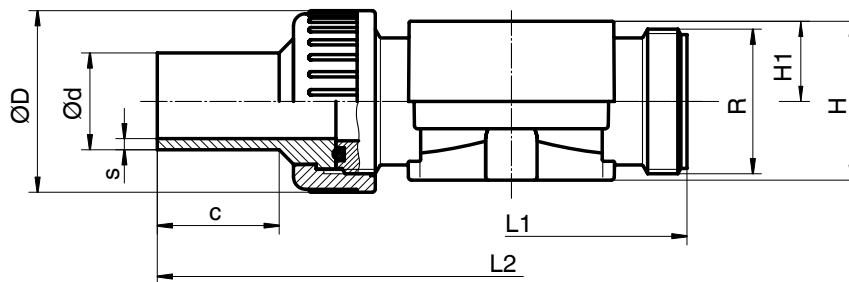
Body dimensions [mm]

Union ends with insert, connection code 78 Valve body material: PVDF (code 20), inliner PP-H (code 71)

| MG | DN | L1 | L2 | H | H1 | øD | ød | R | S | | c | Weight [kg] |
|----|----|-----|-----|----|----|-----|----|---------|------------------|------------------|----|-------------|
| | | | | | | | | | Material code 20 | Material code 71 | | |
| 25 | 15 | 108 | 214 | 50 | 24 | 43 | 20 | G 1 | 1.9 | 1.9 | 36 | 0.34 |
| | 20 | 108 | 220 | 50 | 24 | 53 | 25 | G 1 1/4 | 1.9 | 2.3 | 37 | 0.39 |
| | 25 | 116 | 234 | 50 | 24 | 60 | 32 | G 1 1/2 | 2.4 | 2.9 | 39 | 0.45 |
| 40 | 32 | 134 | 258 | 74 | 34 | 74 | 40 | G 2 | 2.4 | 3.7 | 39 | 0.88 |
| | 40 | 154 | 284 | 74 | 34 | 83 | 50 | G 2 1/4 | 3.0 | 4.6 | 43 | 1.10 |
| 50 | 50 | 182 | 318 | 82 | 42 | 103 | 63 | G 2 3/4 | 3.0 | 5.8 | 43 | 1.70 |

For materials see overview on last page

MG = diaphragm size



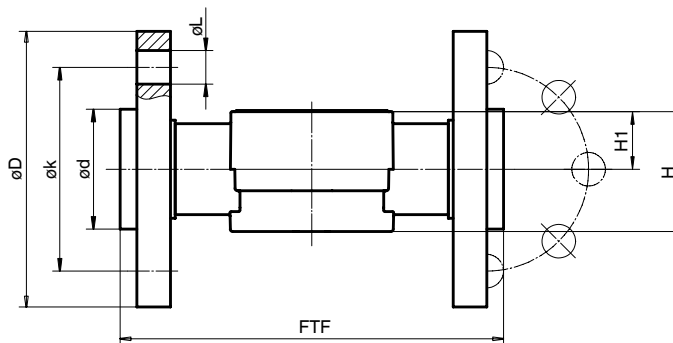
Flanges, connection code 4, 39 Valve body material: PVDF (code 20), inliner PP-H (code 71)

| MG | DN | FTF | H | H1 | Connection code 4 | | | | | Connection code 39 | | | | | Weight [kg] | | |
|---------------|----|------|---|---|-------------------|----|-----|-----|-----------------|--------------------|-----|----|-----|-----------------|-------------|---|------|
| | | | | | øD | øL | ød | øk | Number of bolts | øD | øL | ød | øk | Number of bolts | | | |
| Material code | | | | | | 71 | 20 | | | | 71 | 20 | | | | | |
| 25 | 15 | 150* | depending on material code see body dimensions page 5 connection code 0 | depending on material code see body dimensions page 5 connection code 0 | 95 | 14 | 45 | 45 | 65 | 4 | 95 | 16 | 45 | 45 | 60 | 4 | 0.73 |
| | 20 | 150 | | | 105 | 14 | 58 | 58 | 75 | 4 | 105 | 16 | 54 | 54 | 70 | 4 | 0.89 |
| | 25 | 160 | | | 115 | 14 | 68 | 68 | 85 | 4 | 115 | 16 | 63 | 63 | 79 | 4 | 1.30 |
| 40 | 32 | 180 | depending on material code see body dimensions page 5 connection code 0 | depending on material code see body dimensions page 5 connection code 0 | 140 | 18 | 78 | 78 | 100 | 4 | 140 | 16 | 73 | 73 | 89 | 4 | 2.10 |
| | 40 | 200 | | | 150 | 18 | 88 | 88 | 110 | 4 | 150 | 16 | 82 | 82 | 98 | 4 | 2.50 |
| 50 | 50 | 230 | | | 165 | 18 | 102 | 102 | 125 | 4 | 165 | 19 | 102 | 102 | 121 | 4 | 3.20 |

For materials see overview on last page

MG = diaphragm size

* Length is not according to EN 558 series 1



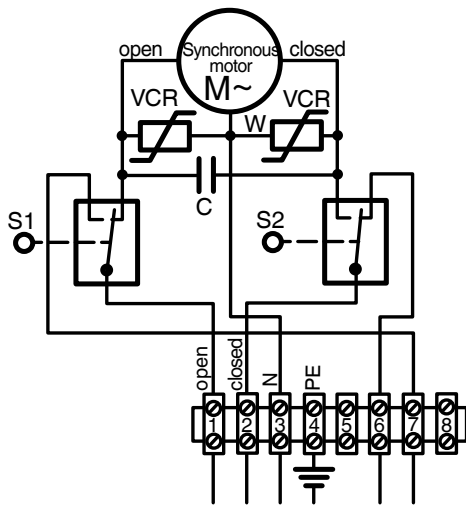
Overview of valve bodies for GEMÜ 693

| Connection code | | 0 | | | 4 | | 7 | | | 20 | 28 | 30 | | 33 | 39 | | 78 | | |
|-----------------|----|---|----|----|----|----|---|----|----|----|----|----|---|----|----|----|----|----|---|
| Material code | | 1 | 20 | 71 | 20 | 71 | 1 | 20 | 71 | 71 | 20 | 1 | 4 | 1 | 20 | 71 | 20 | 71 | |
| MG | DN | | | | | | | | | | | | | | | | | | |
| 25 | 15 | X | X | X | 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 | X | X | X |
| | 25 | X | X | X | 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 | X | X | X | X | X | X |
| | 40 | X | X | X | 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 | X | X | X | X |

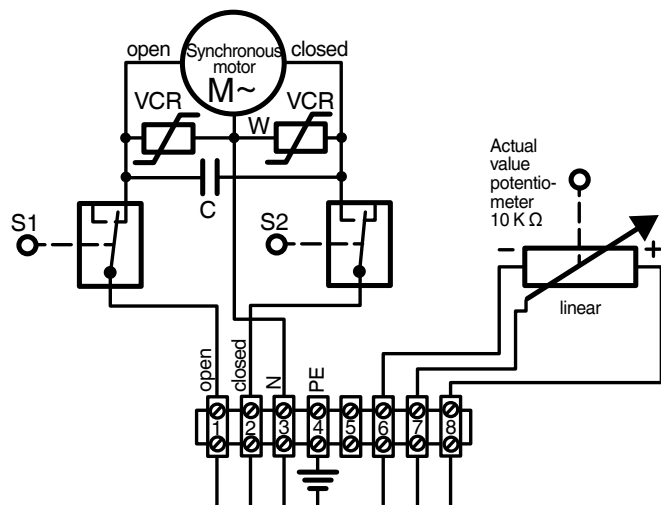
MG = diaphragm size

Connection diagram GEMÜ 693

Functional module AE



Functional module AP



For further plastic diaphragm valves, accessories and other products, please see our Product Range catalogue and Price List. Contact GEMÜ.

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