

Direct-acting, G1/4, G3/8, G1/2



## Advantages/Benefits

- ▶ Normally closed
- ▶ Body materials:  
Brass, stainless steel
- ▶ Metal seal between coil  
and body
- ▶ Push-over coil
- ▶ Temperature range up to  
180 °C

## Design/Function

Type 255 is a 2/2-way normally-closed plunger-type solenoid valve.

In this position, the armature spring, assisted by the pressure of the medium presses the valve seal against the seat. When energized, the armature and seal are drawn into the coil - the valve opens.

The solenoid epoxy encapsulation efficiently dissipates the heat generated by the coil.

## Applications

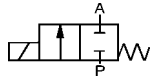
- Neutral gases and liquids
- High temperatures, such as hot water, steam, hot air, thermal oils
- Heating
- Sterilizing
- Impregnating

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Easy Fluid Control Systems

## Technical Data

### Circuit Function

A 2/2-way valve,  
normally closed



### Body Materials

Brass body, seat 1.4305  
Stainless steel body, seat 1.4410  
Valve internals 1.4105, 1.4571

### Specifications

| Orifice<br>DN | Kv-Value<br>Water<br>Liquids | Qn-Value<br>Air <sup>1)</sup><br>Gases | Pressure Range <sup>2)</sup> |   |       | DC<br>Liquids and Gases                                      |                    |                    | Weight<br>[kg] |
|---------------|------------------------------|--|------------------------------|---|-------|--|--------------------|--------------------|----------------|
|               |                              |  | AC<br>Liquids                | Gases<br>for Seal Material<br>NBR, EPDM<br>FPM, Steel |       | T <sub>amb</sub> 55 °C                                       | 55 °C              | 55 °C              |                |
| [mm]          | [m <sup>3</sup> /h]          | [l/min]                                | [bar]                        | [bar]   | [bar] | 90 °C <sup>4)</sup><br>FluidTemperature<br>to 90 °C<br>[bar] | to 140 °C<br>[bar] | to 180 °C<br>[bar] |                |
| 1             | 0,03                         | 33                                     | -                            | -   | 0-100 | 0-100 <sup>3)</sup>  | -                  | -                  | 0,6            |
| 2             | 0,12                         | 130                                    | 0- 35                        | 0- 60   | 0- 40 | 0 - 20   | 0 - 14             | 0 - 10             | 0,6            |
| 3             | 0,25                         | 270                                    | 0- 16                        | 0- 50   | 0- 25 | 0 - 10   | 0 - 6              | 0 - 4              | 0,6            |
| 4             | 0,50                         | 540                                    | 0- 10                        | 0- 30   | 0- 12 | 0 - 4  | 0 - 2              | 0 - 0,3            | 0,6            |
| 5             | 0,65                         | 700                                    | 0- 6                         | 0- 16   | 0- 7  | 0 - 2  | 0 - 0,5            | -                  | 0,6            |
| 6             | 0,80                         | 860                                    | 0- 4                         | 0- 10   | 0- 5  | 0- 1   | -                  | -                  | 0,6            |

<sup>1)</sup> Measured with 6 bar upstream pressure and a pressure drop of 1 bar across the valve at +20 °C, <sup>2)</sup> also suitable for vacuum, <sup>3)</sup> PTFE seal material only, <sup>4)</sup> pressure range of 180 °C (255-20S) and 250 °C (255-25S) for max. ambient and fluid temperature (see max. ambient temperature in ordering chart).

All pressures quoted are gauge pressures with respect to the prevailing atmospheric pressure.

### Operating Data (Valve)

#### Seal Materials/Fluids Handled/Temp.- Range

**NBR** Neutral fluids, e.g. compressed air, town gas, water, hydraulic oil, oils and fats without additives  
-10 to +90 °C

**EPDM** Oil- and fat-free fluids, e.g. hot water, alkaline washing and bleaching lyes  
-40 to +130 °C

**FPM** Hot air, oxygen, per-solutions, hot oils, oils with additives  
-10 to +130 °C <sup>1)</sup>

**PTFE** Water, steam, alcohol, oils, petrol, hydraulic substances, organic solvents  
-40 to +180 °C

**Steel** dt. -40 to +180 °C

<sup>1)</sup> Temperatures up to 250 °C on request.

For more detailed information, please refer to resistance chart (Leaflet-No. 1896 009).

Max. viscosity approx. 21 mm<sup>2</sup>/s

Response times opening AC 10-20 ms, DC 20-80 ms  
closing AC 20-30 ms, DC 20-30 ms

Times measured at an operating pressure of 6 bar with water. They depend upon pressure and viscosity of the handled fluid.

### Operating Data (Actuator)

Operating voltage 24, 110, 230, 240 V/50 Hz,  
24 V/=

Voltage tolerance ±10 %

Power consumption AC 35 to 40 VA (inrush)  
DC ca. 12 W (hold)

Duty cycle 100 % continuously rated

Cycling rate approx. 600 c.p.m.

Rating with cable plug and cable  
IP 65

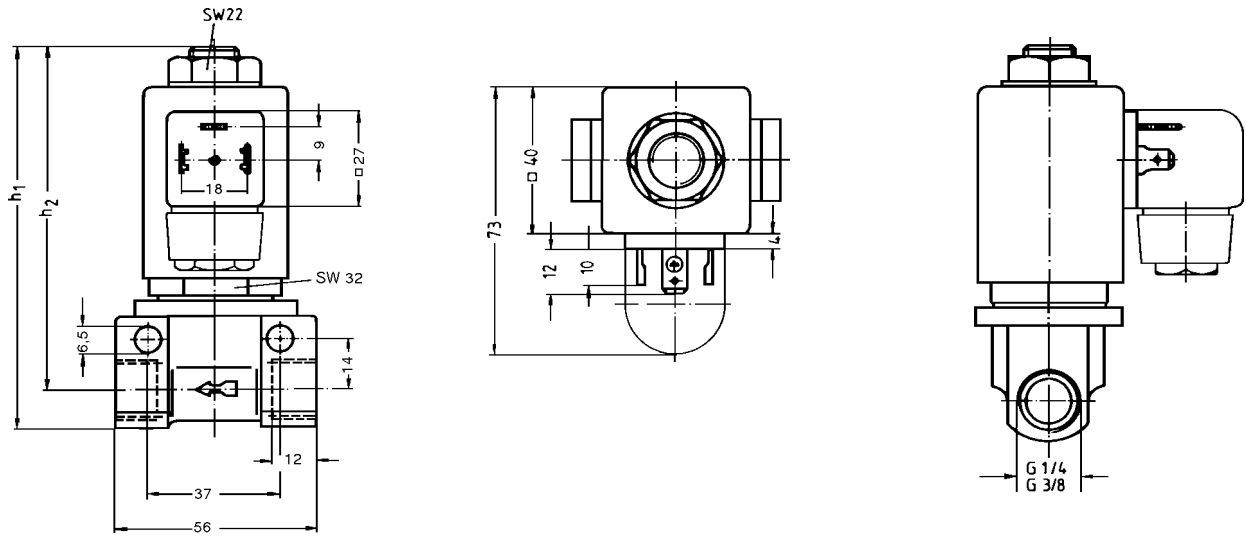
### Installation / Accessories

Installation as required, but preferably with solenoid system upright

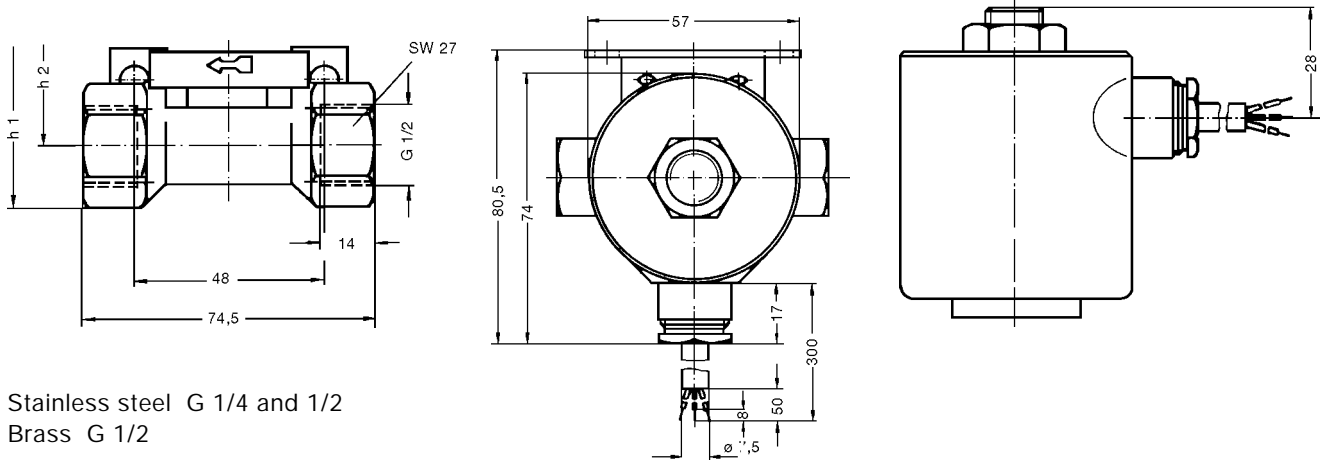
Electrical connection

- cable plug (supplied as standard) for 7 mm ø cable
- crimped silicone cable
- crimped single strands

Dimensions in mm



Brass G 1/4 and 3/8




Stainless steel G 1/4 and 1/2  
Brass G 1/2


| Body                    | Connection | h1    | h2    |
|-------------------------|------------|-------|-------|
| Brass                   | G 1/4      | 105   | 94    |
| Brass                   | G 3/8      | 105   | 94    |
| Stainless               | G 1/4      | 105   | 93    |
| Brass, stainless        | G 1/2      | 108,5 | 93    |
| Stainless <sup>1)</sup> | G 1/4      | 116   | 103,5 |

<sup>1)</sup> Only valid for Order-No. 017 968 Y<sup>5)</sup>

## Ordering Chart (Other Versions on Request)

| Circuit Function | Orifice DN [mm] | Flow Rate             |                               | Port Connection [ISO 228] | Pressure Range <sup>2)</sup>  [bar] | Body Material | Seal Material | Max. Ambient. temp. [°C] | Voltage/Frequency [V/Hz] | Order-No.               |       |      |        |           |           |
|------------------|-----------------|-----------------------|-------------------------------|---------------------------|--|---------------|---------------|--------------------------|--------------------------|-------------------------|-------|------|--------|-----------|-----------|
|                  |                 | Water Kv-Value [m³/h] | Air <sup>1)</sup> QNn [l/min] |                           |  |               |               |                          |                          |                         |       |      |        |           |           |
| A                | 01,0            | 0,03                  | 33                            | G 1/4                     | 0-100  | Brass         | PTFE          | 55                       | 024/=                    | 058 360 T               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 110/50                   | 019 544 Z               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  | Stainless     | PTFE          | 55                       | 024/50                   | 078 420 C               |       |      |        |           |           |
|                  | 02,0            | 0,12                  | 130                           | G 1/4                     | 0-60   | Brass         | FPM           | 55                       | 024/50                   | 020 033 R               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 024/=                    | 089 888 S               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 0-20                     | Brass                   | FPM   | 55   | 110/50 | 020 101 T |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 230/50                   | 077 680 G               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 240/50                   | 069 193 U               |       |      |        |           |           |
|                  | 03,0            | 0,25                  | 270                           | G 1/4                     | 0-10   | Brass         | PTFE          | 55                       | 024/=                    | 052 872 T               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 0-25                     | Brass                   | PTFE  | 55   | 110/50 | 058 888 A |           |
|                  |                 |                       |                               |                           |  |               |               |                          |                          |                         |       |      |        |           | 230/50    |
|                  |                 |                       |                               | G 1/2                     | 0-25   | Stainless     | PTFE          | 55                       | 024/50                   | 059 254 N               |       |      |        |           |           |
|                  |                 |                       |                               | G 1/4                     | 0-10   | Stainless     | PTFE          | 55                       | 024/=                    | 021 554 M               |       |      |        |           |           |
|                  | 04,0            | 0,50                  | 540                           | G 3/8                     | 0- 4   | Brass         | EPDM          | 55                       | 024/=                    | 050 018 G               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | G 1/2                    | 0- 4                    | Brass | PTFE | 55     | 024/=     | 089 404 V |
|                  |                 |                       |                               |                           |  |               |               |                          |                          | 0-12                    | Brass | PTFE | 55     | 110/50    | 089 403 U |
|                  |                 |                       |                               |                           |  |               |               |                          | 240/50                   | 089 405 W               |       |      |        |           |           |
|                  |                 |                       |                               | G 1/4                     | 0-12   | Brass         | PTFE          | 55                       | 024/50                   | 065 454 V               |       |      |        |           |           |
|                  |                 |                       |                               |                           | 0- 4   | Brass         | PTFE          | 55                       | 024/=                    | 058 796 D               |       |      |        |           |           |
|                  |                 |                       |                               |                           | 0-12   | Brass         | PTFE          | 55                       | 110/50                   | 023 897 G               |       |      |        |           |           |
|                  |                 |                       |                               |                           | 0-12   |               |               |                          | 230/50                   | 053 188 X               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 240/50                   | 066 396 U               |       |      |        |           |           |
|                  |                 |                       |                               | G 3/8                     | 0-12   | Brass         | PTFE          | 55                       | 024/50                   | 059 100 R               |       |      |        |           |           |
|                  |                 |                       |                               |                           | 0- 4   | Brass         | PTFE          | 55                       | 024/=                    | 065 438 V               |       |      |        |           |           |
|                  |                 |                       |                               |                           | 0-12   | Brass         | PTFE          | 55                       | 110/50                   | 046 886 L               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 230/50                   | 051 143 X               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               | 90                       | 230/50                   | 049 546 H               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               | 55                       | 240/50                   | 052 783 S               |       |      |        |           |           |
|                  |                 |                       |                               | G 1/4                     | 0-12   | Brass         | PTFE          | 55                       | 024/50                   | 079 104 D               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 230/50                   | 053 889 W               |       |      |        |           |           |
|                  |                 |                       |                               | G 1/2                     | 0- 4   | Stainless     | PTFE          | 55                       | 024/=                    | 065 684 U               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  | Stainless     | PTFE          | 180                      | 024/=                    | 020 734 U <sup>3)</sup> |       |      |        |           |           |
|                  |                 |                       |                               | G 1/4                     | 0- 4   | Stainless     | PTFE          | 55                       | 024/=                    | 021 251 V               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  | Stainless     | PTFE          | 180                      | 024/=                    | 017 968 Y <sup>3)</sup> |       |      |        |           |           |
|                  |                 |                       |                               |                           |  | Stainless     | STEEL         | 250                      | 024/=                    | 045 776 B <sup>4)</sup> |       |      |        |           |           |
|                  | 05,0            | 0,65                  | 700                           | G 3/8                     | 0-16   | Brass         | NBR           | 55                       | 240/50                   | 085 271 S               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | G 1/4                    | 0- 7                    | Brass | PTFE | 55     | 024/50    | 049 194 Z |
|                  |                 |                       |                               |                           |  |               |               |                          |                          | 0- 2                    | Brass | PTFE | 55     | 024/=     | 020 164 Z |
|                  |                 |                       |                               |                           | 0- 7   | Brass         | PTFE          | 55                       | 110/50                   | 049 830 A               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 230/50                   | 050 879 L               |       |      |        |           |           |
|                  |                 |                       |                               | G 3/8                     | 0- 7   | Brass         | PTFE          | 55                       | 024/50                   | 057 644 B               |       |      |        |           |           |
|                  |                 |                       |                               |                           | 0- 2   | Brass         | PTFE          | 55                       | 024/=                    | 020 664 E               |       |      |        |           |           |
|                  |                 |                       |                               |                           | 0- 7   | Brass         | PTFE          | 55                       | 110/50                   | 023 581 B               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 230/50                   | 050 880 A               |       |      |        |           |           |
|                  |                 |                       |                               |                           |  |               |               |                          | 240/50                   | 024 410 L               |       |      |        |           |           |
|                  |                 |                       |                               | G 1/4                     | 0-16   | Brass         | FPM           | 55                       | 230/50                   | 052 424 J               |       |      |        |           |           |

<sup>1)</sup> Measured with 6 bar upstream pressure and a pressure drop of 1 bar across the valve at +20 °C, <sup>2)</sup> also suitable for vacuum, <sup>3)</sup> Electrical connection: Crimped silicone cable (3 x 1mm<sup>2</sup>), <sup>4)</sup> Electrical connection: 3 crimped HT-single strands, <sup>5)</sup> Electrical connection: terminals.

 Limited pressure range for liquid fluids (see chart on page 2)

## Ordering Chart (Other Versions on Request)

| Circuit Function | Orifice<br>DN<br>[mm] | Flow Rate                   |                                    | Port Connection<br>[ISO 228] | Pressure Range <sup>2)</sup><br>△<br>[bar] | Body Material           | Seal Material | Max. Ambient. temp.<br>[°C] | Voltage/<br>Frequency<br>[V/Hz] | Order-No.               |
|------------------|-----------------------|-----------------------------|------------------------------------|------------------------------|--|-------------------------|---------------|-----------------------------|---------------------------------|-------------------------|
|                  |                       | Water<br>Kv-Value<br>[m³/h] | Air <sup>1)</sup><br>Qn<br>[l/min] |                              |  |                         |               |                             |                                 |                         |
| A                | 05,0                  | 0,65                        | 700                                | G 3/8                        | 0-16                                       | Brass                   | FPM           | 55                          | 024/50                          | 022 551 K               |
|                  |                       |                             |                                    | G 1/2                        | 0-16                                       | Stainless               | STEEL         | 55                          | 230/50                          | 062 838 T               |
|                  |                       |                             |                                    | G 1/4                        | 0- 2                                       | Stainless               | STEEL         | 250                         | 024/=                           | 022 483 G <sup>4)</sup> |
|                  | 06,0                  | 0,80                        | 860                                | G 3/8                        | 0-10                                       | Brass                   | EPDM          | 55                          | 024/50                          | 050 257 L               |
|                  |                       |                             |                                    |                              |  |                         |               |                             | 230/50                          | 048 509 L               |
|                  |                       |                             |                                    | G 1/2                        | 0- 1                                       | Stainless               | EPDM          | 55                          | 024/=                           | 048 371 Q               |
|                  |                       |                             |                                    | G 1/4                        | 0-10                                       | Stainless               | EPDM          | 55                          | 230/50                          | 050 276 P               |
|                  |                       |                             |                                    |                              | 0- 5                                       | Brass                   | PTFE          | 55                          | 230/50                          | 052 754 C               |
|                  |                       |                             |                                    | G 3/8                        | 0- 5                                       | Brass                   | PTFE          | 55                          | 024/50                          | 050 389 R               |
|                  |                       |                             |                                    |                              | 0- 1                                       | Brass                   | PTFE          | 55                          | 024/=                           | 053 764 F               |
|                  |                       |                             |                                    |                              | 0- 5                                       | Brass                   | PTFE          | 55                          | 110/50                          | 066 222 V               |
|                  |                       |                             |                                    |                              |  |                         |               |                             | 230/50                          | 051 324 U               |
|                  |                       |                             |                                    |                              |  |                         |               |                             | 240/50                          | 046 376 B               |
|                  |                       |                             |                                    | G 1/2                        | 0- 5                                       | Stainless               | PTFE          | 55                          | 230/50                          | 054 811 Q               |
|                  |                       |                             |                                    | G 1/4                        | 0- 5                                       | Stainless               | PTFE          | 55                          | 230/50                          | 021 708 G               |
|                  |                       |                             |                                    | G 3/8                        | 0-10                                       | Brass                   | STEEL         | 55                          | 024/50                          | 048 649 X               |
|                  |                       |                             |                                    |                              |  |                         |               |                             | 230/50                          | 058 628 L               |
|                  |                       |                             |                                    |                              |  |                         |               |                             | 240/50                          | 046 885 K               |
| G 1/4            | 0- 1                  | Stainless                   | STEEL                              | 250                          | 024/=                                      | 019 863 Z <sup>4)</sup> |               |                             |                                 |                         |

<sup>1)</sup> Measured with 6 bar upstream pressure and a pressure drop of 1 bar across the valve at +20 °C, <sup>2)</sup> also suitable for vacuum, <sup>3)</sup> Electrical connection: Crimped silicone cable (3 x 1mm<sup>2</sup>), <sup>4)</sup> Electrical connection: 3 crimped HT-single strands, <sup>5)</sup> Electrical connection: terminals.

△ Limited pressure range for liquid fluids (see chart on page 2)

