





Servo-assisted 2/2 way diaphragm valve

- Servo-assisted diaphragm valve with diameter of up to DN50
- Hard-coupled diaphragm opens without differential pressure
- Vibration-proof, block screwed coil system
- Damped design for quiet closing
- Energy-saving power reduction in all DC versions



Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

| | | |
|---|---|---|
|  | Type 2518 Cable Plug DIN EN 175301-803 - Form A | ▶ |
|  | Type 1087 Timer | ▶ |

Type description

The 0290 valve is a servo-assisted solenoid valve of the S.EV series. The valve opens without differential pressure. The opening process is supported by the fixed coupling of the diaphragm to the plunger. In the process, the integrated 'soft-kick' function opens in a manner that is gentle on the material. Various diaphragm material combinations are available depending on the application. The range of housings is rounded off by stainless steel and cast iron versions. The solenoid coils are encapsulated with a chemically resistant epoxy. 'Kick and drop' electronics are moulded into all DC versions for reduced electrical power consumption. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65 and when in combination with a stainless steel or plastic housing then NEMA 4X.



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1. General technical data

| Product characteristics | |
|---|--|
| Nominal size | |
| Standard version | DN12 ... DN50 mm |
| With approval according to DIN EN 161 | DN12 ... DN25 mm |
| Materials | |
| Body | Brass, stainless steel 1.4581 |
| Coil | Epoxide |
| Inner valve parts | Brass, stainless steel |
| Seal | NBR, FKM, EPDM |
| Switching times [ms] | |
| Opening | Measurement at the valve outlet 6 bar and 20 °C Pressure build-up 0 ... 90 % |
| Closing | Pressure reduction 100 ... 10 % |
| Pressure data [bar] | Overpressure with respect to atmospheric pressure |
| Thermal insulation class coil | H |
| Electrical data | |
| Electrical connection | Cable plug for cable Ø 7 mm, according to DIN EN 175 301 - 803 Form A (included in delivery) |
| Nominal operating mode | Continuous operation 100 % duty cycle |
| Voltage tolerance | ± 10 % |
| Protection class | IP65 with cable plug |
| Performance data | |
| Flow | Measurement at +20 °C, 1 bar pressure at the valve inlet and free outlet |
| Media data | |
| Media | |
| NBR | Neutral media, compressed air, water, hydraulic oil |
| FKM | Per solutions, hot oils |
| EPDM | Oil and grease-free media, e.g. hot water |
| NBR with approval according to DIN EN 161 | Fuel gases of the 1st, 2nd and 3rd gas family |
| Media temperature^{1.)} | |
| NBR | -10 °C to +80 °C |
| FKM | 0 °C to +120 °C |
| EPDM | -30 °C to +120 °C |
| NBR with approval according to DIN EN 161 | 0 °C to +80 °C |
| Environment and installation | |
| Ambient temperature | |
| Standard version | Max. +55 °C |
| With approval according to DIN EN 161 | 0 °C to +55 °C |
| Installation position | Any, preferably actuator face up |

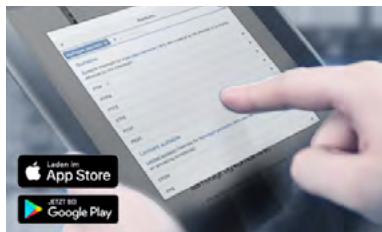
1.) Max. medium temperature for variants with high-performance electronics (encryption .../UC) is 90 °C.

2. Circuit functions

| Circuit function | Description |
|------------------|--|
| | Type: A, Solenoid valve 2/2 way Servo-assisted Normally closed |

3. Materials

3.1. Chemical Resistance Chart – Bürkert resistApp

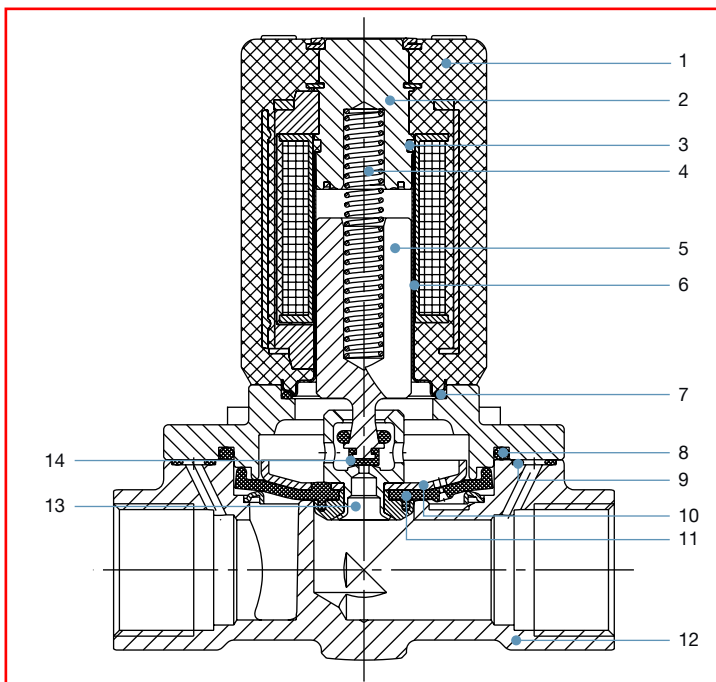


Bürkert resistApp – Chemical Resistance Chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

[Start Chemical Resistance Check](#)

3.2. Material specifications



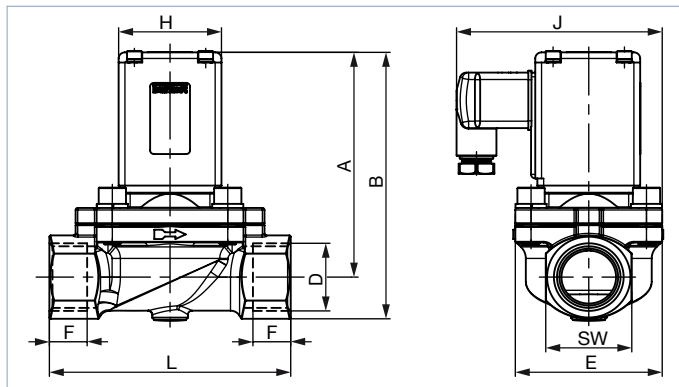
| No. | Element | Material |
|-----|--------------------------------|---|
| 1 | Coil | Epoxide |
| 2 | Stopper | 1.4105 or 1.4113 |
| 3 | Shading ring (AC variant only) | Brass variant: Copper Stainless steel variant: Silver |
| 4 | Spring | 1.4310 |
| 5 | Magnetic core | 1.4105 |
| 6 | Core guide tube | 1.4303 |
| 7 | O-ring | (see order table) |
| 8 | O-ring | (see order table) |
| 9 | O-ring | (see order table) |
| 10 | Diaphragm plate | Brass variant: CuZn37 Stainless steel variant: 1.4401 |
| 11 | Diaphragm | (see order table) |
| 12 | Body | Brass or stainless steel 1.4581 |
| 13 | Pilot valve seat and nipple | Brass variant: CuZn39Pb3 Stainless steel variant: 1.4401 |
| 14 | Seat seal | (see order table) |

4. Dimensions

4.1. Threaded version

Note:

- Dimensions in mm
- The dimensions D1 and F1 apply to G-threads
- The dimensions D2 and F2 apply to NPT-threads

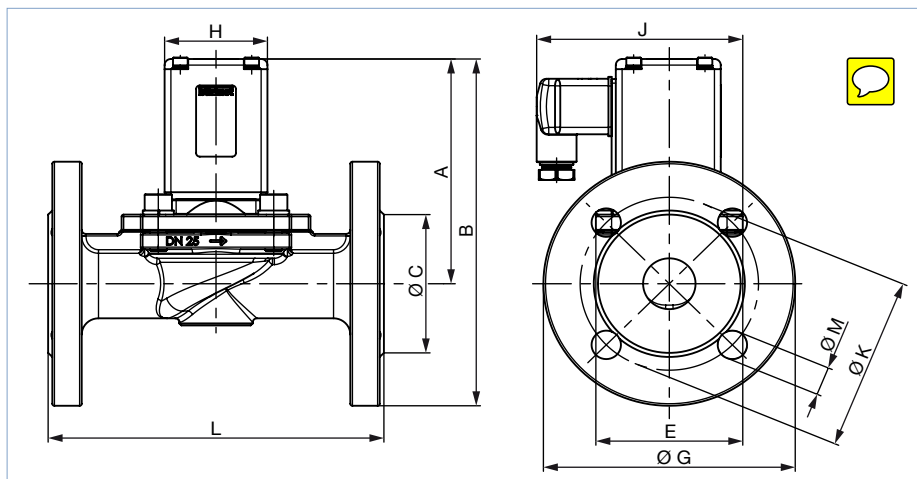


| DN | A | B | G | | NPT | | E | L | SW | J | H |
|----|-------|-------|---------|----|-----------|------|-----|------|----|-----|----|
| | | | D1 | F1 | D2 | F2 | | | | | |
| 12 | 80 | 94 | G 1/2 | 14 | NPT 1/2 | 13,7 | 40 | 74,5 | 27 | 81 | 40 |
| 20 | 106 | 122 | G 3/4 | 16 | NPT 3/4 | 14 | 60 | 100 | 32 | 93 | 49 |
| 25 | 110,5 | 131 | G 1 | 18 | NPT 1 | 16,8 | 70 | 115 | 41 | 98 | 49 |
| 32 | 120 | 145 | G 1 1/4 | 20 | NPT 1 1/4 | 17,3 | 85 | 126 | 50 | 106 | 49 |
| 40 | 124 | 154 | G 1 1/2 | 22 | NPT 1 1/2 | 17,3 | 85 | 126 | 60 | 106 | 49 |
| 50 | 176 | 211 | G 2 | 24 | NPT 2 | 17,6 | 115 | 164 | 70 | 133 | 72 |
| 65 | 176 | 218,5 | G 2 1/2 | 27 | NPT 2 1/2 | 23,6 | 115 | 179 | 85 | 133 | 72 |

4.2. Flange version according to DIN EN 1092-1

Note:

Angaben in mm



| DN | A | B | C | E | Ø G | L | M | K | J | H |
|----|-------|-------|-----|-----|-----|-----|----|-----|-----|----|
| 25 | 110,5 | 170,5 | 68 | 70 | 120 | 160 | 14 | 85 | 98 | 49 |
| 32 | 120 | 190 | 78 | 85 | 140 | 180 | 18 | 100 | 106 | 49 |
| 40 | 126 | 201 | 88 | 85 | 150 | 200 | 18 | 110 | 106 | 49 |
| 50 | 176 | 258,5 | 102 | 115 | 165 | 230 | 18 | 125 | 133 | 72 |

5. Performance specifications

5.1. Power consumption

Standard version

| Nominal size [mm] | K _v value water P→A [m ³ /h] | Port connection A/B and P | Pressure range [bar] | Electrical power consumption | | | | Switching times | | Weight [kg] |
|----------------------|--|------------------------------|-------------------------|------------------------------|-----------|------------------------|-----------|-----------------|-----------------|----------------|
| | | | | Inrush AC [VA] | UC [W] | Operation AC [VA/W] | UC [W] | Opening [ms] | Closing [ms] | |
| 12 | 1.8 | G ½ | 0 ... 16 | 100 | 80 | 25/10 | 6 | 100 to 250 | 700 to 2000 | 1.0 |
| 20 | 6.5 | G ¾ | 0 ... 16 | 120 | 100 | 32/16 | 9 | | | 1.4 |
| 25 | 10.0 | G 1 | 0 ... 16 | 120 | 100 | 32/16 | 9 | 300 to 1000 | 700 to 4000 | 1.8 |
| 32 | 16.0 | G 1¼ | 0 ... 12 | 120 | 100 | 32/16 | 9 | | | 2.7 |
| 40 | 16.0 | G 1½ | 0 ... 12 | 120 | 100 | 32/16 | 9 | | | 3.1 |
| 50 | 38.0 | G 2 | 0 ... 12 | - | 30 | - | 30 | | | 6.5 |

Gas valve according to DIN EN 161 (variable code PO17)

| Nominal size [mm] | K _v value water P→A [m ³ /h] | Port connection A/B and P | Pressure range [bar] | Electrical power consumption | | | | Switching times | | Weight [kg] |
|----------------------|--|------------------------------|-------------------------|------------------------------|-----------|------------------------|-----------|-----------------|-----------------|----------------|
| | | | | Inrush AC [VA] | UC [W] | Operation AC [VA/W] | UC [W] | Opening [ms] | Closing [ms] | |
| 12 | 1.8 | G ½ | 0 ... 5 | 100 to 120 | 80 | 25/10 | 6 | 120 to 150 | 130 to 250 | 1.0 |
| 20 | 6.5 | G ¾ | 0 ... 5 | | 100 | 32/16 | 9 | | | 1.4 |
| 25 | 10.0 | G 1 | 0 ... 5 | | 100 | 32/16 | 9 | 1.8 | | |

6. Ordering information

6.1. Bürkert eShop – Easy ordering and quick delivery



Bürkert eShop – Easy ordering and fast delivery

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6.2. Bürkert product filter



Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

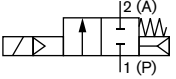
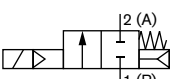
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6.3. Ordering chart

Brass body

Note:

All valves with cable plug.

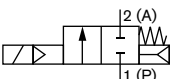
| Circuit function | Port connection | Orifice | K _v value water [m ³ /h] | Pressure range [bar] | Diaphragm material | Article no. per voltage/frequency [V/Hz] | | | |
|---|-----------------|---------|--|----------------------|--------------------|--|--------------------------|-----------------------|-----------------------|
| | | | | | | 024/50 | 024/UC/DC ^{1.)} | 230/50 | 110/50 |
| A, Solenoid valve 2/2 way Servo-assisted Normally closed  | G ½ | 12 | 1.8 | 0 ... 16 | NBR | 043816 | 050294 | 044373 | 049500 |
| | | | | | FKM | 048707 | 049229 | 042886 | 059240 |
| | | | | | EPDM | 045931 | 049050 | 044816 | 049055 |
| | G ¾ | 20 | 6.5 | 0 ... 16 | NBR | 058766 | 049518 | 045292 | 057127 |
| | | | | | FKM | 053910 | 053674 | 049745 | 067973 |
| | | | | | EPDM | 065033 | 058427 | 045290 | 069138 |
| | G 1 | 25 | 10.0 | 0 ... 16 | NBR | 048171 | 053675 | 045293 | 053869 |
| | | | | | FKM | 066270 | 066981 | 058627 | 067974 |
| | | | | | EPDM | 054245 | 057155 | 045291 | 064887 |
| A, Solenoid valve 2/2 way Servo-assisted Normally closed  | G 1¼ | 32 | 16.0 | 0 ... 12 | NBR | 085290 | 085291 | 052513 | 085292 |
| | | | | | FKM | 120631 | 017457 | 087203 | 137478 |
| | | | | | EPDM | 087204 | 072962 | 085259 | 073763 |
| | G 1½ | 40 | 16.0 | 0 ... 12 | NBR | 085294 | 085295 | 085297 | 085296 |
| | | | | | FKM | 228118 | 089619 | 087663 | - |
| | | | | | EPDM | 073290 | 079629 | 087732 | - |
| | G 2 | 50 | 38.0 | 0 ... 12 | NBR | - | 085299 ^{3.)} | 085301 ^{2.)} | 085300 ^{2.)} |
| | | | | | EPDM | - | 120104 ^{3.)} | 077494 ^{2.)} | 121308 ^{2.)} |
| | | | | | FKM | - | 120952 ^{3.)} | 088551 ^{2.)} | - |

1.) The coil for UC (universal current) has internal high-performance electronics. Please check that adequate performance is available (see "1. General technical data" on page 3).

2.) The valve is supplied with a cable plug with integrated rectifier.

3.) DC only

Stainless steel body

| Circuit function | Port connection | Orifice | K _v value water [m ³ /h] | Pressure range [bar] | Diaphragm material | Article no. per voltage/frequency [V/Hz] | | | |
|---|-----------------|---------|--|----------------------|--------------------|--|--------------------------|--------|--------|
| | | | | | | 024/50 | 024/UC/DC ^{1.)} | 230/50 | 110/50 |
| A, Solenoid valve 2/2 way Servo-assisted Normally closed  | G ½ | 12 | 1.8 | 0 ... 16 | NBR | 043659 | 053595 | 043654 | 052358 |
| | | | | | FKM | 048708 | 049987 | 042888 | 058407 |
| | | | | | EPDM | 045765 | 048606 | 043553 | 049053 |
| | G ¾ | 20 | 6.5 | 0 ... 16 | NBR | 068338 | 018754 | 065121 | - |
| | | | | | FKM | 065362 | 066381 | 064701 | 066594 |
| | | | | | EPDM | 066460 | 059910 | 065025 | 025870 |
| | G 1 | 25 | 10.0 | 0 ... 16 | NBR | 068510 | 061974 | 065414 | 067696 |
| | | | | | FKM | 018121 | 065542 | 066125 | 069477 |
| | | | | | EPDM | 059890 | 018348 | 059901 | 054044 |

Gas valve according to DIN EN 161 (variable code PO17)

Note:

All valves with cable plug.

| Circuit function | Port connection | Orifice | K _v value water [m³/h] | Pressure range [bar] | Diaphragm material | Article no. per voltage/frequency [V/Hz] | | |
|--|-----------------|---------|-----------------------------------|----------------------|--------------------|--|--------|--------|
| | | | | | | 024/UC | 230/50 | 230/UC |
| A, Solenoid valve 2/2 way Servo-assisted Normally closed | G ½ | 12 | 1.8 | 0...5 | NBR | 280855 | 266512 | 281001 |
| | G ¾ | 20 | 6.5 | | | 280877 | 266513 | 280878 |
| | G 1 | 25 | 10.0 | | | 280879 | 266515 | 280880 |

| Other versions on request | |
|---|--|
| Approval UL, UR, CSA | Voltage 042/50, 110/50, 240/60 |
| Process connection Flange connection according to DIN EN 1092 - 1 (DN25 ... DN50) | |

6.4. Ordering chart accessories

Cable plug Type 2518, form A acc. to DIN EN 175301 - 803

Note:











For other versions see data sheet **Type 2518** ▶.

| Cable plug | Dimensions | Version | Voltage | Article no. |
|------------|------------|----------------------------------|-----------------|-------------|
| | | Without circuitry (AC/DC) | 0...250 V AC/DC | 314802 |
| | | With LED (AC/DC) | 12...24 V AC/DC | 314812 |
| | | With LED and varistor (AC/DC) | 12...24 V AC/DC | 314820 |
| | | With rectifier, LED and varistor | 12...24 V AC/DC | 314816 |

DTS 1000024859 EN Version: Q Status: RL (released | freigegeben | validé) printed: 29.08.2019

Timer Type 1087, form A acc. to DIN EN 175301 - 803
Note:

 For more information on the timer, see data sheet **Type 1087** ▶.

| Timer | Approval | Product code | Voltage range | Article no. |
|---|----------|-----------------------|-------------------|--|
| Analogue version  | – | 1087-A-BCH-UC-28 | 10...30 V AC/DC | 348828  |
| | – | 1087-A-BDK-UC-28 | 24...240 V AC/DC | 348829  |
| | cURus | 1087-A-BCH-UC-28*PU01 | 10...30 V AC/DC | 348906  |
| | cURus | 1087-A-BDK-UC-28*PU01 | 24...240 V AC/DC | 348907  |
| Digital version  | – | 1087-A-BFW-UC-29 | 10...48 V AC/DC | 348830  |
| | – | 1087-A-BDX-UC-29 | 110...240 V AC/DC | 348831  |
| | cURus | 1087-A-BFW-UC-29*PU01 | 10...48 V AC/DC | 348908  |
| | cURus | 1087-A-BDX-UC-29*PU01 | 110...240 V AC/DC | 348909  |

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