svs-automation.com

SOLENOID VALVES

# Product catalogue

Version: 10/2021

- 2/2 way solenoid valves
- 3/2 way solenoid valves
- Accessories

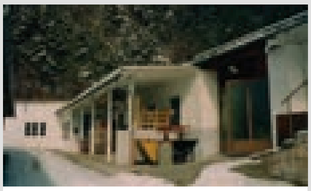
# Family business in second generation

We are a Tyrolean family business in the second generation specialized in pneumatic special solutions. Otto Staudacher founded the company in 1992. Today, his sons Michael, Franz and Hansjörg work together on the successful future of the company.

In the beginning, there was our founder Otto Staudacher's unconditional passion for technology. After two decades as an extremely successful distributor of technical components, he fulfilled his heart's desire in 1992: by founding SFS-Fluidsysteme, he developed special pneumatic solutions for the first time. The three-man operation of yesteryear has since developed into an internationally active family business with around 50 employees. Only one thing has remained the same: the passion with which we reliably find special solutions for the problems and needs of our customers.


Michael, Franz and Hansjörg Staudacher

## Milestones of our success



**1992**

Foundation in Zirl-Dirschenbach

**1999**

Sales expanded with the establishment of SFS-Fluidsysteme GmbH in Esslingen

**2007**

Extension in Polling

**2009**

World economic crisis – emerge strengthened

**2011**

Spin-off of solenoid valve division

**2015**

First appearance as an exhibitor at the Hannover Messe fair

**2016**

A proven specialist for special solutions

**2021**

Family business in second generation

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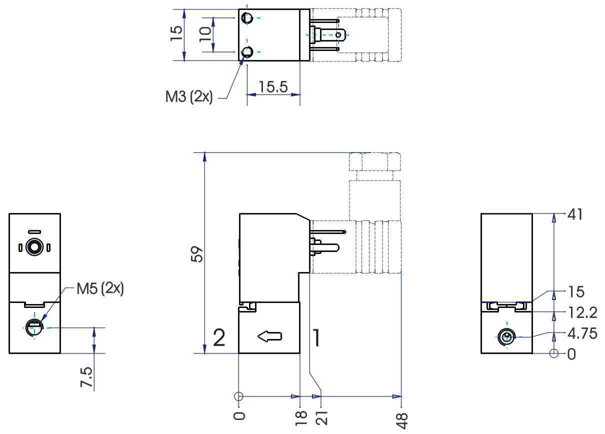
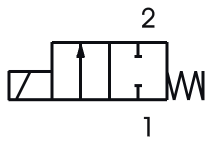
# 2/2 way solenoid valve normally closed

type 12A, brass body
direct operated, DN 1,0 – 2,0 mm, M5




| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, normally closed NC, coil may be positioned at 0° and 180° |
| operator | solenoid |
| ports | M5 |
| ambient temperature | -20 °C to +50 °C |
| fluid temperature | -10 °C to +80 °C (NBR) or +120 °C (FPM) or +130°C (EPDM) |
| viscosity | max. 21mm²/s (cst) or 3° E |
| material | body and guide tube: brass<br>inner parts: stainless steel<br>sealing: see type selection |
| mounting | 2 fixing holes for screws M2.5 or threads M3 |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector according to DIN EN 175301-803 (DIN 43650), type C |
| electri cal data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage | 12V DC, 110V AC |
| acceptable voltage tolerance | +/-10% |
| power consumption | for AC 2,8 VA inrush power, 3,3 VA rated power,<br>for DC 2,65 W (cold) 2,3 W (at operating temperature) |
| coil type | temperature class F (155°C), winding class H (180°C) |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydrau lic | |
| flow medium | all liquids and gases, which don’t attack the used material |
| max. body housing pressure | PN 40 (bar) |
| response time | 8 – 15 ms |
| operating frequency | max. 1800 / min |
| weight | approx. 60 g. |

# 2/2 way solenoid valve normally closed

type 12A, brass body

direct operated, DN 1,0 – 2,0 mm, M5

| type 12A, normally closed, alternating current (~, AC) | | | | |
|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | max. differential pressure (bar) | kv-value ($m^3/h$) | |
| 12A – 0.10 – AB1CA | 1,0 | 0 – 25 | 0,032 | Valves are suitable for vacuum. |
| 12A – 0.12 – AB1CA | 1,2 | 0 – 16 | 0,043 | |
| 12A – 0.15 – AB1CA | 1,5 | 0 – 10 | 0,055 | |
| 12A – 0.18 – AB1CA | 1,8 | 0 – 5 | 0,072 | |
| 12A – 0.20 – AB1CA | 2,0 | 0 – 4 | 0,080 | |

| type 12A, normally closed, direct current (=, DC) | | | | |
|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | max. differential pressure** (bar) | kv-value ($m^3/h$) | |
| 12A – 0.10 – XB1CA | 1,0 | 0 – 13 | 0,032 | Valves are suitable for vacuum. |
| 12A – 0.12 – XB1CA | 1,2 | 0 – 10 | 0,043 | |
| 12A – 0.15 – XB1CA | 1,5 | 0 – 5 | 0,055 | |
| 12A – 0.18 – XB1CA | 1,8 | 0 – 2,5 | 0,072 | |
| 12A – 0.20 – XB1CA | 2,0 | 0 – 2 | 0,080 | |

* Type designation (order-nr.) must be completed with sealing material and supply voltage. (see order code)

** At DC voltage all pressure specifications apply to a fluid temperature up to 40 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,3% / °C.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | B | max. 80°C | neutral gases and liquids |
| EPDM | E | max. 130°C | hot water, steam, not for oil and grease |
| FPM | V | max. 120° C | hot water, oil, petrol, oxygen |

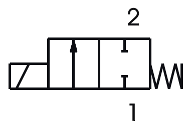
| standard voltage | Code |
|---|---|
| 24V = (DC) | 02400 |
| 24V ~ (AC, 50Hz) | 02450 |
| 230V ~ (AC, 50Hz) | 23050 |

| ORDER CODE | 12 A - 0 V 15 - A B1CA 02450<br>type: 12 · function: A · ports: 0 · seal material: V · nominal size seat: 15 · short circuit ring: A · coil type: B1CA · supply voltage: 02450 |
|---|---|
| type | type 12 |
| function | A = normally closed |
| ports | 0 = M5 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| nominal size seat | 10 = 1,0 mm, 12 = 1,2 mm, 15 = 1,5 mm, 20 = 2,0 mm |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | connection according to DIN EN 175301-803 (DIN 43650), type C, others see coil data sheet |
| supply voltage | always 5-digit, see code of standard voltage |

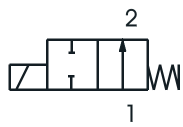
# 2/2 way solenoid valve normally closed or normally open

type 15, brass body
direct operated, DN 1,2 – 4,0 mm, G1/8

normally closed NC




Normally open NO




| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable |
| operator | solenoid, or optional by manual override |
| ports | G1/8 |
| ambient temperature | -20°C to +50°C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 37 mm²/s (cst) or 5° E |
| material | body and tube: brass<br>inner parts : stainless steel<br>sealing: see type selection |
| mounting | 2 threads M4 or fixing holes diameter 3,2mm |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| electri cal data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C) |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydrau lic | |
| flow medium | all liquids and gases, which don't attack the used material |
| max. body housing pressure | PN 40 (bar) |
| response time | 12 – 20ms |
| weight | see dimension drawing |
| special equipment on request | stainless steel AISI303 in place of brass, coil type with cable, bright nickel-plated or chemical nickel-plated, explosionproof coil, coils for temperature class H (180°C), other sealing materials, manual override |

# 2/2 way solenoid valve normally closed or normally open

type 15, brass body

direct operated, DN 1,2 – 4,0 mm, G1/8

| type 15A, normally closed | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | maximum differential pressure in bar ** | | | | | | kv-value ($m^3$/h) |
| | | coil C1DA | | coil C2DA | | coil C3AA | | |
| | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 15A–1.12–AC… | 1,2 | 30 | 20 | 30 | 25 | 30 | 30 | 0,045 |
| 15A–1.15–AC… | 1,5 | 20 | 10 | 25 | 16 | 30 | 25 | 0,082 |
| 15A–1.20–AC… | 2,0 | 10 | 2 | 16 | 8 | 25 | 15 | 0,133 |
| 15A–1.25–AC… | 2,5 | 5 | 0,6 | 10 | 3,5 | 14 | 8 | 0,195 |
| 15A–1.30–AC… | 3,0 | 3,5 | - | 6 | 1,5 | 9 | 3 | 0,250 |
| 15A–1.35–AC… | 3,5 | | | | | | | |
| 15A–1.40–AC… | 4,0 | 1 | - | 2 | 0,3 | 3,5 | 1,2 | 0,340 |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage. (see order code)

** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,5% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E).
Higher viscosities cause extended response time and need a special specification of the valve.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | B | max. 80 °C | neutral gases and liquids |
| EPDM | E | max. 130 °C | hot water, steam, not for oil and grease |
| FPM | V | max. 130 °C | oil, petrol, oxygen |

| standard voltage | Code |
|---|---|
| 24V = DC | 02400 |
| 24V ~ (50Hz) | 02450 |
| 230V ~ (50Hz) | 23050 |

| coil power consumption at 20 °C, protection class, interface | | | | | |
|---|---|---|---|---|---|
| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
| C1DA | 9 | 5 | 3,0 | IP65 / IP00 | Connector (DIN 43650) type B industrial standard |
| C2DA | 13 | 10 | 6,5 | IP65 / IP00 | Connector (DIN 43650) type B industrial standard |
| C3AA | 17 | 13 | 6,3 | IP65 / IP00 | Connector DIN EN 175301 – 803 (DIN 43650), type A |

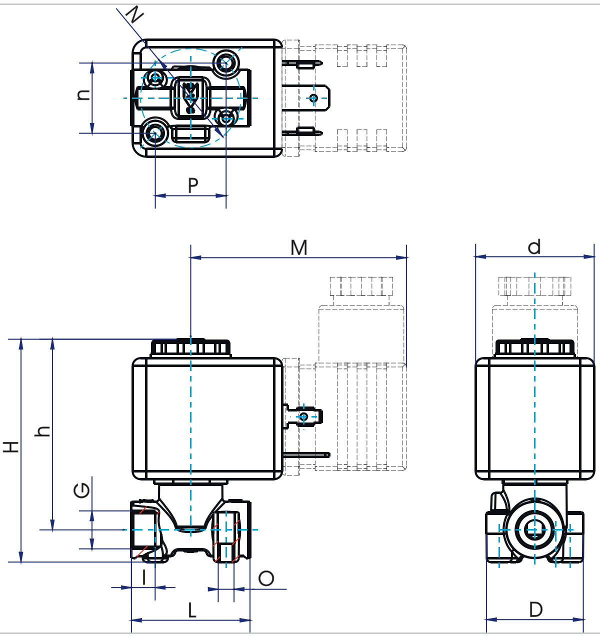
| order code | 15 B - 1 B 20 F Z - A C2DA 23050 |
|---|---|
| | type, function, ports, seal material, nominal size seat, throw off spring, stroke compensation spring, short circuit, coil type, supply voltage |
| type | type 15 |
| function | A = normally closed, B = normally open |
| ports | 1 = G1/8 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| nominal size seat | 12 = 1,2 mm, 15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5mm, 30 = 3,0 mm, 35 = 3,5 mm, 40 = 4,0 mm |
| throw off spring | F = only normally open |
| Stroke compensation spring | Z = only normally open |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed or normally open

type 15, brass body
direct operated, DN 1,2 – 4,0 mm, G1/8

| type 15B, normally open | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | maximum differential pressure in bar ** | | | | | | kv-value (m³/h) |
| | | coil C1DA | | coil C2DA | | coil C3AA | | |
| | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 15B-1.12BZ-AC1DA | 1,2 | 11 | 11 | | | | | 0,045 |
| 15B-1.15BZ-AC1DA | 1,5 | 5 | 5 | | | | | 0,082 |
| 15B-1.20BZ-AC1DA | 2,0 | 3,5 | 3,5 | | | | | 0,133 |
| 15B-1.25BZ-AC1DA | 2,5 | 2,5 | 2,0 | | | | | 0,195 |
| 15B-1.30DZ-AC1DA | 3,0 | 2,0 | - | | | | | 0,250 |
| 15B-1.35DZ-AC1DA | 3,5 | | | | | | | |
| 15B-1.40DZ-AC1DA | 4,0 | 1,8 | - | | | | | 0,340 |
| 15B-1.12FZ-AC2DA | 1,2 | | | 16 | 16 | | | 0,045 |
| 15B-1.15FZ-AC2DA | 1,5 | | | 10 | 10 | | | 0,082 |
| 15B-1.20FZ-AC2DA | 2,0 | | | 5,5 | 5,5 | | | 0,133 |
| 15B-1.25FZ-AC2DA | 2,5 | | | 3,5 | 3,5 | | | 0,195 |
| 15B-1.30FZ-AC2DA | 3,0 | | | 4,0 | - | | | 0,250 |
| 15B-1.35FZ-AC2DA | 3,5 | | | | | | | |
| 15B-1.40FZ-AC2DA | 4,0 | | | 2,5 | - | | | 0,340 |
| 15B-1.12EZ-AC3AA | 1,2 | | | | | 22 | 22 | 0,045 |
| 15B-1.15EZ-AC3AA | 1,5 | | | | | 13 | 13 | 0,082 |
| 15B-1.20EZ-AC3AA | 2,0 | | | | | 8 | 8 | 0,133 |
| 15B-1.25EZ-AC3AA | 2,5 | | | | | 5 | 5 | 0,195 |
| 15B-1.30EZ-AC3AA | 3,0 | | | | | 5 | - | 0,250 |
| 15B-1.35EZ-AC3AA | 3,5 | | | | | | | |
| 15B-1.40EZ-AC3AA | 4,0 | | | | | 3 | - | 0,340 |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E).
Higher viscosities cause extended response time and need a special specification of the valve.

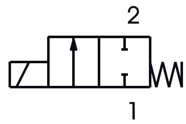



<table>
<tr><td colspan="16">dimension table for type 15 in mm, weight approx. in g</td></tr>
<tr><td rowspan="2">with coil</td><td rowspan="2">G</td><td rowspan="2">d</td><td rowspan="2">D</td><td colspan="2">type 15 A-</td><td colspan="2">type 15 B-</td><td rowspan="2">l</td><td rowspan="2">L</td><td rowspan="2">M</td><td rowspan="2">N</td><td rowspan="2">n</td><td rowspan="2">O</td><td rowspan="2">P</td><td colspan="2">weight (g)</td></tr>
<tr><td>h</td><td>H</td><td>h</td><td>H</td><td>15A-</td><td>15B-</td></tr>
<tr><td>C1DA</td><td rowspan="3">G 1/8</td><td rowspan="2">22</td><td rowspan="3">24.5</td><td rowspan="3">49</td><td rowspan="3">57</td><td rowspan="3">51</td><td rowspan="3">59</td><td rowspan="3">6</td><td rowspan="3">30</td><td rowspan="3">51</td><td rowspan="3">25.4</td><td rowspan="3">18</td><td rowspan="3">M4</td><td rowspan="3">18</td><td>110</td><td>110</td></tr>
<tr><td>C2DA</td><td>110</td><td>110</td></tr>
<tr><td>C3AA</td><td>30</td><td>165</td><td>165</td></tr>
</table>

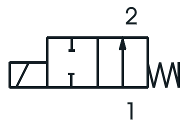
# 2/2 way solenoid valve normally closed or normally open

type 20, brass body
direct operated, DN 1,5 – 10,0 mm, G1/8 – G1/2

normally closed NC




normally open NO




| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable |
| operator | solenoid, |
| ports | G1/8 – G1/2 |
| ambient temperature | -20°C to +50°C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 37 mm²/s (cst) or 5° E |
| material | body brass, inner parts brass and stainless steel, sealing - see type selection |
| mounting | installation into fixed piping systems or by use of 2 threads on the bottom side |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| electri cal data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C), coil E3 temperature class H |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumati c – hydrauli c | |
| fluid | all liquids and gases, which don’t attack the used material |
| max. body housing pressure | PN 64 (bar) up to DN 4mm, PN 25 (bar) from DN 5 – 10mm |
| response time | depending on operating pressure and fluid |
| special equipment on request | stainless steel AISI303 in place of brass, coil type with cable, bright nickel-plated or chemical nickel-plated, coils for temperature class H (180°C), higher differential pressure, PTFE seal, manual override |

# 2/2 way solenoid valve normally closed or normally open

type 20, brass body

direct operated, DN 1,5 – 10,0 mm, G1/8 – G1/2

| type 20A, normally closed | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| type * (order-nr. ) | NW DN (mm) | ports | maximum differential pressure in bar ** | | | | | | | kv-value (m³/h) |
| | | | coil E1AA | | coil E2AA | coil E3AE | | coil F1AA | | |
| | | | ~ (50Hz) | = (DC) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 20A-1.15-A… | 1,5 | G1/8 | 40 | 40 | | | | | | 0,08 |
| 20A-2.15-A… | | G1/4 | | | | | | | | |
| 20A-1.20-A… | 2,0 | G1/8 | 35 | 35 | | | | | | 0,13 |
| 20A-2.20-A… | | G1/4 | | | | | | | | |
| 20A-1.25-A… | 2,5 | G1/8 | 20 | 20 | 30 | 30 | 35 | | | 0,19 |
| 20A-2.25-A… | | G1/4 | | | | | | | | |
| 20A-1.30-A… | 3,0 | G1/8 | 10 | 10 | 25 | 23 | 28 | | | 0,25 |
| 20A-2.30-A… | | G1/4 | | | | | | | | |
| 20A-1.35-A… | 3,5 | G1/8 | 10 | 8 | 20 | 20 | 25 | | | 0,30 |
| 20A-2.35-A… | | G1/4 | | | | | | | | |
| 20A-1.40-A… | 4,0 | G1/8 | 6 | 4 | 14 | 17 | 22 | | | 0,37 |
| 20A-2.40-A… | | G1/4 | | | | | | | | |
| 20A-2.50-A… | 5,0 | G1/4 | 3,5 | 1 | 4 | 10 | 6 | 11 | 12 | 0,55 |
| 20A-3.50-A… | | G3/8 | | | | | | | | |
| 20A-4.50-A… | | G1/2 | | | | | | | | |
| 20A-2.60-A… | 6,0 | G1/4 | 0,9 | 0,5 | 1,9 | 3,5 | 2,5 | 7,5 | 5 | 0,67 |
| 20A-3.60-A… | | G3/8 | | | | | | | | |
| 20A-4.60-A… | | G1/2 | | | | | | | | |
| 20A-3.80-A… | 8,0 | G3/8 | 0,5 | 0,1 | 0,6 | 2 | 1 | 2,5 | 1,8 | 1,25 |
| 20A-4.80-A… | 8,0 | G1/2 | 0,5 | 0,1 | 0,6 | 2 | 1 | 2,5 | 1,8 | 1,25 |
| 20A-3.100-A… | 10,0 | G3/8 | 0,4 | 0,05 | 0,3 | 1,2 | 0,5 | 1,7 | 0,9 | 1,95 |
| 20A-4.100-A… | 10,0 | G1/2 | 0,4 | 0,05 | 0,3 | 1,2 | 0,5 | 1,7 | 0,9 | 2,00 |

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)

** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | B | max. 80°C | neutral gases and liquids |
| EPDM | E | max. 120°C | hot water, steam, not for oil and grease |
| FPM | V | max. 130°C | oil, petrol, oxygen |

| standard voltage | Code |
|---|---|
| 24V = DC | 02400 |
| 24V ~ (50Hz) | 02450 |
| 230V ~ (50Hz) | 23050 |

| coil power consumption at 20 °C, protection class, interface | | | | | |
|---|---|---|---|---|---|
| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
| E1AA | 32 | 14 | 12 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| E2AA | - | - | 17 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| E3AE | 70 | 32 | 27 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| F1AA | 70 | 35 | 27 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |

# 2/2 way solenoid valve normally closed or normally open

type 20, brass body

direct operated, DN 1,5 – 10,0 mm, G1/8 – G1/2

| | |
|---|---|
| order code | 20 B - 2 E 30 C Z - A E1AA 23050<br>type – 20; function – B; ports – 2; seal material – E; nominal size seat – 30; throw off spring – C; stroke compensatioin spring – Z; short circuit ring – A; coil type – E1AA; supply voltage – 23050 |
| type | type 20 |
| function | A = normally closed, B = normally open |
| ports | 1 = G 1/8, 2 = G1/4, 3 = G3/8, 4 = G1/2 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| nominal size seat | nominal size x 10 = specification for order code |
| throw off spring | C,D,F = only normally open |
| stroke compensation spring | Z = only normally open |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

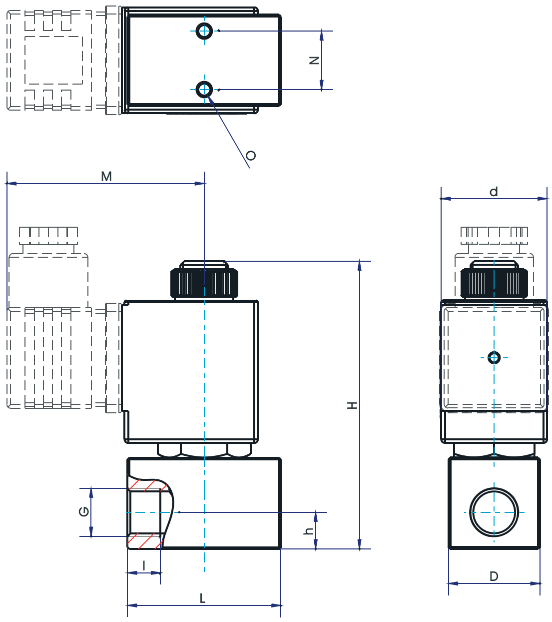
type 20B, normally open

| type * (order.-nr. ) | NW DN (mm) | connection | maximum differential pressure in bar ** coil E1AA ~ (50Hz) and = (DC) | coil E3AE ~ (50Hz) | coil E3AE =(DC) | coil F1AA ~ (50Hz) and = (DC) | kv-value ($m^3/h$) |
|---|---|---|---|---|---|---|---|
| 20B-1.15CZ-AE… | 1,5 | G1/8 | 35 | | | | 0,08 |
| 20B-2.15CZ-AE… | | G1/4 | | | | | |
| 20B-1.20CZ-AE… | 2,0 | G1/8 | 22 | | | | 0,13 |
| 20B-2.20CZ-AE… | | G1/4 | | | | | |
| 20B-1.25CZ-AE… | 2,5 | G1/8 | 13 | | | | 0,19 |
| 20B-2.25CZ-AE… | | G1/4 | | | | | |
| 20B-1.30CZ-AE… | 3,0 | G1/8 | 10,5 | | | | 0,25 |
| 20B-2.30CZ-AE… | | G1/4 | | | | | |
| 20B-1.35CZ-AE… | 3,5 | G1/8 | 6,5 | | | | 0,30 |
| 20B-2.35CZ-AE… | | G1/4 | | | | | |
| 20B-1.40CZ-AE… | 4,0 | G1/8 | 5,5 | | | | 0,37 |
| 20B-2.40CZ-AE… | | G1/4 | | | | | |
| 20B-2.50FZ-A… | 5,0 | G1/4 | | 5 | | 9 | 0,54 |
| 20B-3.50FZ-A… | | G3/8 | | | | | |
| 20B-4.50FZ-A… | | G1/2 | | | | | |
| 20B-2.60FZ-A… | 6,0 | G1/4 | | 6 | | 6 | 0,64 |
| 20B-3.60FZ-A… | | G3/8 | | | | | |
| 20B-4.60FZ-A… | | G1/2 | | | | | |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** Higher differential pressure on request.

# 2/2 way solenoid valve normally closed or normally open

type 20, brass body
direct operated, DN 1,5 – 10,0 mm, G1/8 – G1/2



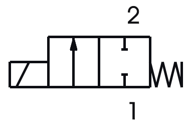

Dimensi on table for type 20 in mm, wei ght approx. in g

| G | coil | N | O | M | H | | d | h | l | L | D | weight (approx. g) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | type 20A- | type 20B- | | | | | | type 20A- | type 20B- |
| 1/8 | E1 | 16 | M4 | 55.1 | 79 | 86 | 30 | 10 | 7.5 | 42 | 25 | 370 | 390 |
| | E2 | | | 57 | | | 35 | | | | | 436 | 456 |
| | E3 | | | 56 | | | 36 | | | | | 456 | 476 |
| | F1 | | | 57 | 90 | 93 | 38 | | | | | 526 | 516 |
| G 1/4 | E1 | | | 55.1 | 79 | 86 | 30 | | 9 | | | 360 | 380 |
| | E2 | | | 57 | | | 35 | | | | | 426 | 446 |
| | E3 | | | 56 | | | 36 | | | | | 446 | 466 |
| | F1 | | | 57 | 90 | 93 | 38 | | | | | 516 | 506 |
| G 3/8 | E1 | | | 55.1 | 79 | 86 | 30 | 12 | 10 | 46 | | 380 | 400 |
| | E2 | | | 57 | | | 35 | | | | | 446 | 466 |
| | E3 | | | 56 | | | 36 | | | | | 466 | 486 |
| | F1 | | | 57 | 90 | 93 | 38 | | | | | 536 | 526 |
| G 1/2 | E1 | | | 55.1 | 79 | 86 | 30 | | 12 | 54 | | 390 | 410 |
| | E2 | | | 57 | | | 35 | | | | | 456 | 476 |
| | E3 | | | 56 | | | 36 | | | | | 476 | 496 |
| | F1 | | | 57 | 90 | 93 | 38 | | | | | 546 | 536 |

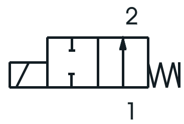
# 2/2 way solenoid valve normally closed or normally open

type 21, brass body
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

normally closed NC




normally open NO




| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable, stainless steel nozzle with wider contact face for lower surface pressure |
| operator | solenoid |
| ports | G1/8 – G1/4 |
| ambient temperature | -20°C to +50°C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 37 mm²/s (cst) or 5° E |
| material | body brass, inner parts brass and stainless steel, sealing - see type selection |
| mounting | installation into fixed piping systems or by use of 2 threads on the bottom side |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| electrical data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-207V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C), coil E3 temperature class H |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydraulic | |
| flow medium | all liquids and gases, which don't attack the used material |
| max. body housing pressure | PN 100 (bar) |
| response time | depending on operating pressure and fluid |
| special equipment on request | stainless steel AISI303 in place of brass, coil type with cable, bright nickel-plated or chemical nickel-plated, coils for temperature class H (180°C), higher operating pressure, explosionproof coil, manual override |

# 2/2 way solenoid valve normally closed or normally open

type 21, brass body

direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

| type 21A, normally closed | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| type * (order-nr. ) | NW DN (mm) | ports | maximum differential pressure in bar ** | | | | | | | | |
| | | | coil E1AA | | coil E2AA | | coil E3AE | | coil F1AA | | kv-value (m³/h) |
| | | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 21A-1.15-A… | 1,5 | G1/8 | 50 | 70 | 80 | 100 | 100 | 100 | | | 0,08 |
| 21A-2.15-A… | | G1/4 | | | | | | | | | |
| 21A-1.20-A… | 2,0 | G1/8 | 30 | 30 | 55 | 70 | 80 | 90 | | | 0,13 |
| 21A-2.20-A… | | G1/4 | | | | | | | | | |
| 21A-1.25-A… | 2,5 | G1/8 | 20 | 20 | 30 | 35 | 50 | 60 | 60 | 80 | 0,19 |
| 21A-2.25-A… | | G1/4 | | | | | | | | | |
| 21A-1.30-A… | 3,0 | G1/8 | 10 | 10 | 18 | 25 | 35 | 35 | 50 | 60 | 0,25 |
| 21A-2.30-A… | | G1/4 | | | | | | | | | |
| 21A-1.35-A… | 3,5 | G1/8 | | | 14 | 16 | 20 | 25 | 28 | 36 | 0,30 |
| 21A-2.35-A… | | G1/4 | | | | | | | | | |
| 21A-1.40-A… | 4,0 | G1/8 | | | 12 | 12 | 16 | 16 | 20 | 25 | 0,37 |
| 21A-2.40-A… | | G1/4 | | | | | | | | | |

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)

** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E).
Higher viscosities cause extended response time and need a special specification of the valve.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | C | max. 80°C | neutral gases and liquids |
| EPDM | F | max. 120°C | hot water, steam, not for oil and grease |
| PTFE*** | T | max. 150°C | acids and alkaline solution, steam |
| FPM | W | max. 130°C | oil, petrol, oxygen, acids and bases |

| standard voltage | Code |
|---|---|
| 24V = DC | 02400 |
| 24V ~ (50Hz) | 02450 |
| 230V ~ (50Hz) | 23050 |

*** Please keep in mind valves with PTFE seat seal have a leakage up to 1,35cm³/min, especially for low pressures. If the pressure raises the leakage is sinking.

| coil power c onsumpti on at 20 °C, prot ecti on cl ass , inte rface | | | | | |
|---|---|---|---|---|---|
| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power*** = (DC) (W) | protection class with/without connector | interface |
| E1AA* | 32 | 14 | 12 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| E2AA* | 42 | 17 | 17 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| E3AE* | 70 | 32 | 27 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| F1AA* | 70 | 35 | 27 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |

*…For fluid temperatures higher than 120°C, a temperature class H coil is required.

# 2/2 way solenoid valve normally closed or normally open

type 21, brass body

direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

| | |
|---|---|
| order code | 21 B - 2 F 30 F Z - A E1AA 23050<br>type – 21<br>function – B<br>ports – 2<br>seal material – F<br>nominal size seat – 30<br>throw off spring – F<br>stroke compensatioin spring – Z<br>short circuit ring – A<br>coil type – E1AA<br>supply voltage – 23050 |
| type | type 20 |
| function | A = normally closed, B = normally open |
| ports | 1 = G 1/8, 2 = G1/4 |
| seal material | C = NBR (Perbunan), F = EPDM, W = FPM, T=PTFE |
| nominal size seat | nominal size x 10 = specification for order code |
| throw off spring | C,D,F = only normally open |
| stroke compensation spring | Z = only normally open |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

type 21B, normally open

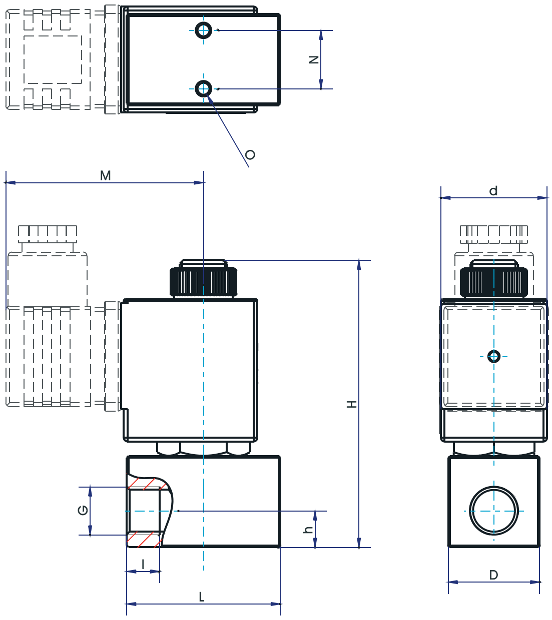
| type *<br>(order.-nr. ) | NW<br>DN<br>(mm) | connection | maximum differential pressure in bar ** | kv-value<br>(m³/h) |
|---|---|---|---|---|
| 21B-1.15FZ-AE3AE… | 1,5 | G1/8 | 80 | 0,08 |
| 21B-2.15FZ-AE3AE… | | G1/4 | | |
| 21B-1.20FZ-AE3AE… | 2,0 | G1/8 | 45 | 0,13 |
| 21B-2.20FZ-AE3AE… | | G1/4 | | |
| 21B-1.25FZ-.E3AE… | 2,5 | G1/8 | 30 | 0,19 |
| 21B-2.25FZ-.E3AE… | | G1/4 | | |
| 21B-1.30FZ-AE3AE… | 3,0 | G1/8 | 25 | 0,25 |
| 21B-2.30FZ-AE3AE… | | G1/4 | | |
| 21B-1.35FZ-.E3AE… | 3,5 | G1/8 | 18 | 0,30 |
| 21B-2.35FZ-.E3AE… | | G1/4 | | |
| 21B-1.40FZ-AE3AE… | 4,0 | G1/8 | 15 | 0,37 |
| 21B-2.40FZ-AE3AE… | | G1/4 | | |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

** Higher differential pressure on request.

# 2/2 way solenoid valve normally closed or normally open

type 21, brass body
direct operated, DN 1,5 – 4,0 mm, G1/8 – G1/4

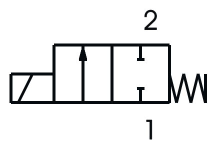



Dimension table for type 21 in mm, weight approx. in g

| G | coil | N | O | M | H type 21A- | H type 21B- | d | h | l | L | D | weight (approx. g) type 21A- | weight (approx. g) type 21B- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G 1/8 | E1 | 16 | M4 | 55.1 | 79 | 86 | 30 | 10 | 7.5 | 42 | 25 | 370 | 390 |
| | E2 | | | 57 | | | 35 | | | | | 436 | 456 |
| | E3 | | | 56 | | | 36 | | | | | 456 | 476 |
| | EX | | | 54 | | | | | | | | 710 | 730 |
| | F1 | | | 57 | 90 | 93 | 38 | | | | | 526 | 516 |
| G 1/4 | E1 | | | 55.1 | 79 | 86 | 30 | | 9 | | | 360 | 380 |
| | E2 | | | 57 | | | 35 | | | | | 426 | 446 |
| | E3 | | | 56 | | | 36 | | | | | 446 | 466 |
| | EX | | | 54 | | | | | | | | 700 | 720 |
| | F1 | | | 57 | 90 | 93 | 38 | | | | | 516 | 506 |

# 2/2 way solenoid valve normally closed

type 27, brass body
direct operated, DN 16-25mm, G3/8 – G1




| SPECIFICATION | |
|---|---|
| **general** | |
| type of construction | 2/2-poppet valve, normally closed NC, coil 360° rotatable |
| operator | solenoid |
| ports | G3/8 – G1 |
| ambient temperature | -20 °C to +50 °C |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 37 mm²/s (cst) or 5° E |
| material | body: brass<br>inner parts: stainless steel<br>sealing: see type selection |
| mounting | installation into fixed piping systems |
| installation | only with vertical fixed solenoid coil |
| unit of supply | without connector  according to DIN EN 175301-803A (DIN 43650A) |
| **electrical data** | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C) |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| **pneumatic – hydraulic** | |
| flow medium | all liquids and gases, which don't attack the used material |
| max. body housing pressure | PN 16 (bar) |
| response time | depending on operating pressure and fluid |
| operating frequency | max. 120 / min |
| special equipment on request | coil type with cable, manual override, bright nickel-plated or chemical nickel-plated |

# 2/2 way solenoid valve normally closed

type 27, brass body

direct operated, DN 16-25mm, G3/8 – G1

**type 27A, normally closed**

| type * (order-nr.) | NW DN (mm) | ports | maximum differential pressure in mbar ** | | | | | | kv-value ($m^3/h$) |
|---|---|---|---|---|---|---|---|---|---|
| | | | coil **E3AE** | | coil **F1AA** | | coil **G1AA** | | |
| | | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 27A – 3. – A…. | 16 | G3/8 | 320 | 250 | 500 | 340 | 1100 | 900 | 2,95 |
| 27A – 4. – A…. | 16 | G1/2 | 320 | 250 | 500 | 340 | 1100 | 900 | 3,05 |
| 27A – 5. – A…. | 20 | G3/4 | 170 | 100 | 280 | 170 | 650 | 480 | 4,7 |
| 27A – 6. – A…. | 25 | G1 | 100 | 60 | 200 | 90 | 300 | 170 | 7,4 |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,5% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

| sealing material | **Code** | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | **B** | max. 80°C | neutral gases and liquids |
| EPDM | **E** | max. 130°C | hot water, steam, not for oil and grease |
| FPM | **V** | max. 130°C | oil, petrol, oxygen |

| standard voltage | **Code** |
|---|---|
| 24V = DC | **02400** |
| 24V ~ (50Hz) | **02450** |
| 230V ~ (50Hz) | **23050** |

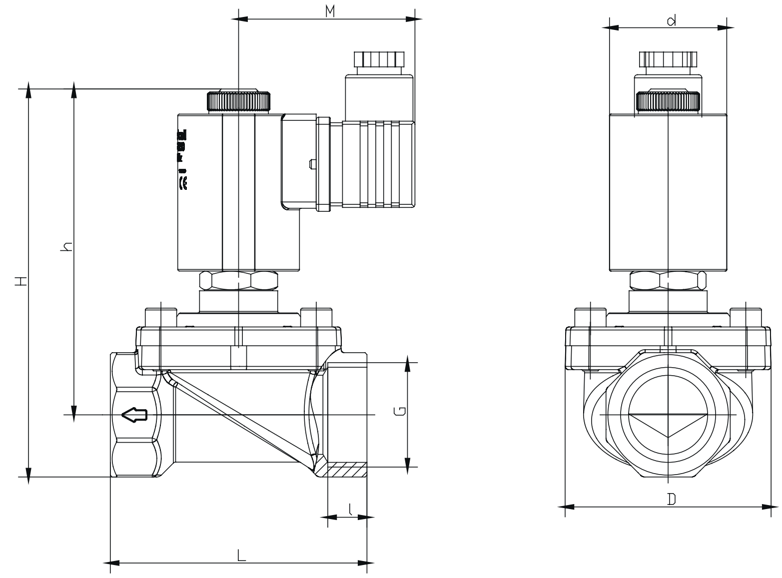
**coil power consumption at 20 °C, protection class, interface**

| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
|---|---|---|---|---|---|
| E3AE | 70 | 32 | 27 | IP65 / IP00 | DIN EN 175301-803A (DIN 43650A) |
| F1AA | 70 | 35 | 27 | | |
| G1AA | 80 | 40 | 32 | | |

| **ORDER CODE** | 27 A - 6 B - A E3AE 02400<br>type: 27<br>function: A<br>ports: 6<br>seal material: B<br>short circuit ring: A<br>coil type: E3AE<br>supply voltage: 02400 |
|---|---|
| type | type 27 |
| function | A = normally closed |
| ports | 3 = G3/8, 4 = G1/2, 5 = G3/4, 6 = G1 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| short circuit ring | A = copper short circuit ring X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed

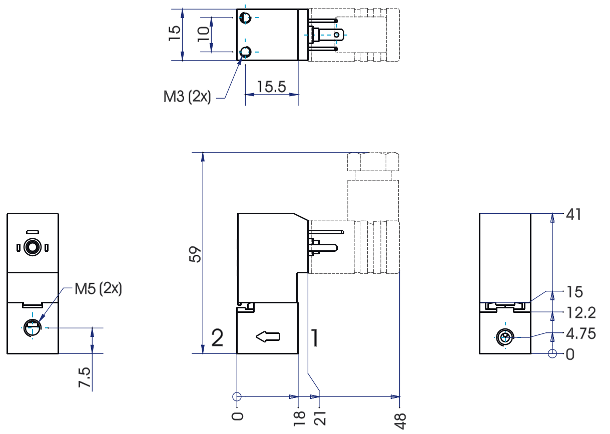
type 27, brass body
direct operated, DN 16-25mm, G3/8 – G1

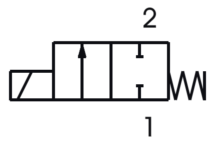



| dimension table for type 27A in mm, weight approx. in kg | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| type | G | d | | | D | h | | | H | I | L | M | | | weight (approx. kg) | | |
| | | E3 | F1 | G1 | | E3 | F1 | G1 | | | | E3 | F1 | G1 | E3 | F1 | G1 |
| 27A-3.-A | G3/8 | 36 | 39 | 46 | 45 | 87 | 97 | 120 | 13.5 | 12 | 60 | 54 | 55 | 61 | 0,53 | 0,54 | 0,71 |
| 27A-4.-A | G1/2 | | | | | | | | | | | | | | 0,51 | 0,52 | 0,69 |
| 27A-5.-A | G3/4 | | | | 50 | 91 | 101 | 124 | 16 | 11 | 62 | | | | 0,55 | 0,57 | 0,74 |
| 27A-6.-A | G1 | | | | 65 | 95 | 105 | 128 | 20 | | 82 | | | | 0,87 | 0,88 | 1,05 |

# 2/2 way solenoid valve normally closed

type 31A, stainless steel body (AISI 303),
direct operated, DN 1,2 – 2,0 mm, M5




| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, normally closed NC, coil may be positioned at 0° and 180° |
| operator | solenoid |
| ports | M5 |
| ambient temperature | -20 °C to +50 °C |
| fluid temperature | -10 °C to +80 °C (NBR) or +120 °C (FPM) or +130°C (EPDM) |
| viscosity | max. 21mm²/s (cst) or 3° E |
| material | body and guide tube: 1.4305 (AISI303)<br>inner parts: stainless steel 1.4105IL (AISI430 FR)<br>sealing: see type selection |
| mounting | 2 fixing holes for screws M2.5 or threads M3 |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector according to DIN EN 175301-803 (DIN 43650), type C |
| electri cal data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage | 12V DC, 110V AC |
| acceptable voltage tolerance | +/- 10% |
| power consumption | for AC 2,8 VA inrush power, 3,3 VA rated power,<br>for DC 2,65 W (cold) 2,3 W (at operating temperature) |
| coil type | temperature class F (155°C), winding class H (180°C) |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydrau lic | |
| flow medium | all liquids and gases, which don’t attack the used material |
| max. body housing pressure | PN 40 (bar) |
| response time | 8 – 15 ms |
| operating frequency | max. 1800 / min |
| weight | approx. 58 g |

# 2/2 way solenoid valve normally closed

type 31A, stainless steel body (AISI 303),
direct operated, DN 1,2 – 2,0 mm, M5

---

| type 31A, normally closed, alternating current (~, AC) ** | | | | |
|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | max. differential pressure (bar) | kv-value (m³/h) | |
| 31A – 0.12 – AB1CA ….. | 1,2 | 0 – 16 | 0,043 | Valves are suitable for vacuum. |
| 31A – 0.15 – AB1CA ….. | 1,5 | 0 – 10 | 0,055 | |
| 31A – 0.20 – AB1CA ….. | 2,0 | 0 – 4 | 0,080 | |

| type 31A, normally closed, direct current (=, DC) *** | | | | |
|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | max. differential pressure** (bar) | kv-value (m³/h) | |
| 31A – 0.12 – XB1CA ….. | 1,2 | 0 – 10 | 0,043 | Valves are suitable for vacuum. |
| 31A – 0.15 – XB1CA ….. | 1,5 | 0 – 5 | 0,055 | |
| 31A – 0.20 – XB1CA ….. | 2,0 | 0 – 2 | 0,080 | |

* Type designation (order-nr.) must be completed with sealing material and supply voltage. (see order code)
** Please note, a short circuit ring made of copper is built in the AC (alternate current) type.
*** At DC voltage all pressure specifications apply to a fluid temperature up to 40 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,3% / °C.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | B | max. 80°C | neutral gases and liquids |
| EPDM | E | max. 130°C | hot water, steam, not for oil and grease |
| FPM | V | max. 120° C | hot water, oil, petrol, oxygen |

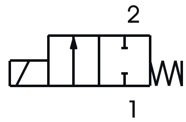
| standard voltage | Code |
|---|---|
| 24V = (DC) | 02400 |
| 24V ~ (AC, 50Hz) | 02450 |
| 230V ~ (AC, 50Hz) | 23050 |

| order code | 31 A - 0 V 15 - A B1CA 02450<br>type: 31<br>function: A<br>ports: 0<br>seal material: V<br>nominal size seat: 15<br>short circuit ring: A<br>coil type: B1CA<br>supply voltage: 02450 |
|---|---|
| type | type 31 |
| function | A = normally closed |
| ports | 0 = M5 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| nominal size seat | 12 = 1,2mm, 15 = 1,5mm, 20 = 2,0mm |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | connection according to DIN EN 175301-803 (DIN 43650), type C, others see coil data sheet |
| supply voltage | always 5-digit, see code of standard voltage |

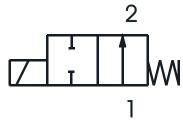
# 2/2 way solenoid valve normally closed or normally open

type 32, stainless steel body (AIS03)
direct operated, DN 1,5 – 3,0mm, G1/8

normally closed NC




normally open NO




| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable |
| operator | solenoid |
| ports | G1/8 |
| ambient temperature | -20°C to +50°C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 37 mm²/s (cst) or 5° E |
| material | Body and tube: stainless steel 1.4305 (AISI 303)<br>Inner parts : stainless steel 1.4105IL (AISI 430 FR)<br>sealing: see type selection |
| mounting | 2 threads M3 |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| electri cal data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C) |
| acceptable voltage tolerance | +/- 10% |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydrau lic | |
| flow medium | all liquids and gases, which don’t attack the used material |
| max. body housing pressure | PN 40 (bar) |
| response time | 12 – 20ms |
| special equipment on request | coil type with cable, explosionproof coil, manual override<br>coils for temperature class H (180°C), other sealing materials |

# 2/2 way solenoid valve normally closed or normally open

type 32, stainless steel body (AIS03)
direct operated, DN 1,5 – 3,0mm, G1/8

| type 32A, normally closed | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | maximum differential pressure in bar ** | | | | | | kv-value (m³/h) |
| | | coil C1DA | | coil C2DA | | coil C3AA | | |
| | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 32A – 1.15–.C… | 1,5 | 20 | 10 | 25 | 16 | 30 | 25 | 0,082 |
| 32A – 1.20–.C… | 2,0 | 10 | 2 | 16 | 8 | 25 | 15 | 0,133 |
| 32A – 1.25–.C… | 2,5 | 5 | 0,6 | 10 | 3,5 | 14 | 8 | 0,195 |
| 32A – 1.30–.C… | 3,0 | 3,5 | - | 6 | 1,5 | 9 | 3 | 0,250 |
| 32A – 1.35–.C… | 3,5 | | | | | | | |
| 32A – 1.40–.C… | 4,0 | 1 | - | 2 | 0,3 | 3,5 | 1,2 | 0,340 |

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,5% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | B | max. 80 °C | neutral gases and liquids |
| EPDM | E | max. 130 °C | hot water, steam, not for oil and grease |
| FPM | V | max. 130 °C | oil, petrol, oxygen, acids and bases |

| standard voltage | Code |
|---|---|
| 24V = DC | 02400 |
| 24V ~ (50Hz) | 02450 |
| 230V ~ (50Hz) | 23050 |

| coil power consumption at 20 °C, protection class, interface | | | | | |
|---|---|---|---|---|---|
| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
| C1DA | 9 | 5 | 3,0 | IP65 / IP00 | Connector (DIN 43650) type B industrial standard |
| C2DA | 13 | 10 | 6,5 | IP65 / IP00 | Connector (DIN 43650) type B industrial standard |
| C3AA | 17 | 13 | 6,3 | IP65 / IP00 | Connector DIN EN 175301 – 803 (DIN 43650), type A |

ORDER CODE

32 B - 1 V 20 G Z - A C3AA 23050

32 = type
B = function
1 = ports
V = seal material
20 = nominal size seat
G = throw off spring
Z = stroke compensation spring
A = short circuit ring
C3AA = coil type
23050 = supply voltage

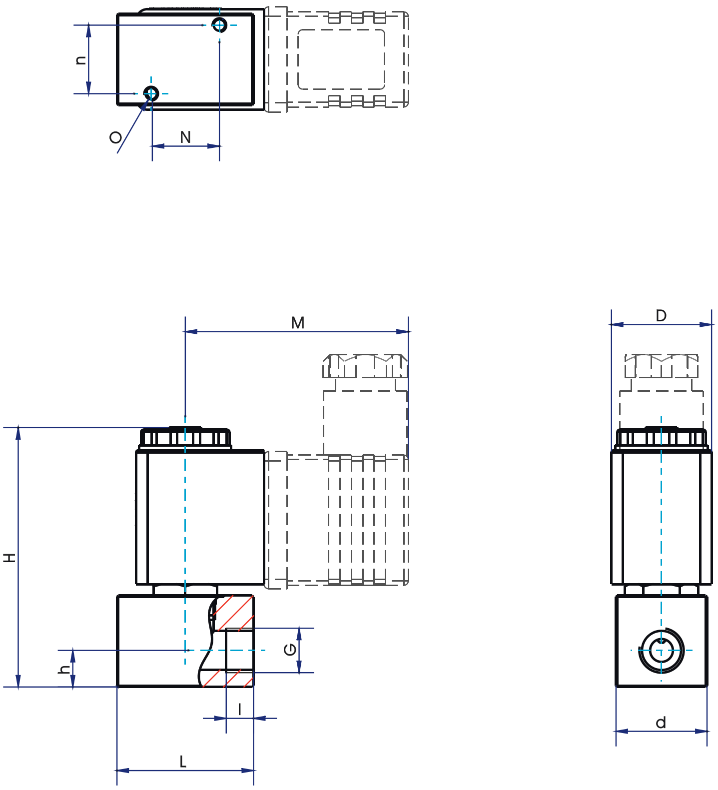
| | |
|---|---|
| type | type 32 |
| function | A = normally closed, B = normally open |
| ports | 1 = G1/8 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| nominal size seat | 15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5 mm, 30 = 3,0 mm |
| throw off spring | only normally open – see specific type (B, F, G) |
| stroke compensation spring | Z = only normally open |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed or normally open

type 32, stainless steel body (AIS03)
direct operated, DN 1,5 – 3,0mm, G1/8

| type 32B, normally open | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | maximum differential pressure in bar ** | | | | | | kv-value (m³/h) |
| | | coil C1DA | | coil C2DA | | coil C3AA | | |
| | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 32B-1.15BZ-.C1DA | 1,5 | 5 | 5 | | | | | 0,082 |
| 32B-1.20BZ-.C1DA | 2,0 | 3,5 | 3,5 | | | | | 0,133 |
| 32B-1.25BZ-.C1DA | 2,5 | 2,0 | 2,0 | | | | | 0,195 |
| 32B-1.30BZ-.C1DA | 3,0 | 2,5 | - | | 1,5 | | | 0,250 |
| 32B-1.15FZ-.C2DA | 1,5 | | | 10 | 10 | | | 0,082 |
| 32B-1.20FZ-.C2DA | 2,0 | | | 5,5 | 5,5 | | | 0,133 |
| 32B-1.25FZ-.C2DA | 2,5 | | | 3,5 | 3,5 | | | 0,195 |
| 32B-1.30FZ-.C2DA | 3,0 | | | 4,0 | - | | | 0,250 |
| 32B-1.15GZ-.C3AA | 1,5 | | | | | 13 | 13 | 0,082 |
| 32B-1.20GZ-.C3AA | 2,0 | | | | | 8 | 8 | 0,133 |
| 32B-1.25GZ-.C3AA | 2,5 | | | | | 5 | 5 | 0,195 |
| 32B-1.30GZ-.C3AA | 3,0 | | | | | 5 | - | 0,250 |

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E).
Higher viscosities cause extended response time and need a special specification of the valve.

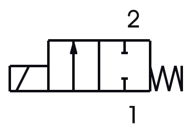



<table>
<tr><th colspan="15">Dimension table for type 32 in mm, weight approx. in g</th></tr>
<tr><th rowspan="2">with coil</th><th rowspan="2">N</th><th rowspan="2">n</th><th rowspan="2">O</th><th rowspan="2">M</th><th colspan="2">H</th><th rowspan="2">h</th><th rowspan="2">G</th><th rowspan="2">l</th><th rowspan="2">L</th><th rowspan="2">D</th><th rowspan="2">d</th><th colspan="2">weight (g)</th></tr>
<tr><th>type 32A</th><th>type 32B</th><th>type 32A</th><th>type 32B</th></tr>
<tr><td>C1DA</td><td rowspan="3">15</td><td rowspan="3">15</td><td rowspan="3">M3</td><td rowspan="2">49</td><td rowspan="3">57</td><td rowspan="3">58.5</td><td rowspan="3">8</td><td rowspan="3">G 1/8</td><td rowspan="3">6</td><td rowspan="3">30</td><td rowspan="2">22</td><td rowspan="3">20</td><td>142</td><td>142</td></tr>
<tr><td>C2DA</td><td>142</td><td>142</td></tr>
<tr><td>C3AA</td><td>53.5</td><td>30</td><td>197</td><td>197</td></tr>
</table>

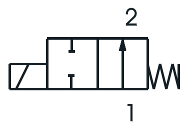
# 2/2 way solenoid valve normally closed or normally open

type 34, stainless steel body AISI303
direct operated, DN 1,5 – 10 mm, G1/4 – G3/8

normally closed NC




normally open NO




| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable |
| operator | solenoid |
| ports | G1/4 – G3/8 |
| ambient temperature | -20°C to +50°C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 37 mm²/s (cst) or 5° E |
| material | Body and tube: 1.4305 (AISI 303)<br>Inner parts: stainless steel 1.4105IL (AISI 430 FR)<br>Sealing: see type selection |
| mounting | installation into fixed piping systems or by use of 2 threads on the bottom side |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| electrical data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C), coil E3 temperature class H |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydraulic | |
| flow medium | all liquids and gases, which don’t attack the used material |
| max. body housing pressure | PN 100 (bar) up to DN 4mm, PN 25 (bar) from DN 5 – 10mm |
| response time | depending on operating pressure and fluid |
| special equipment on request | coil type with cable, coils for temperature class H (180°C), higher differential pressure,<br>PTFE seal, manual override, with reducer from G1/4 to G1/8 |

# 2/2 way solenoid valve normally closed or normally open

type 34, stainless steel body AISI303

direct operated, DN 1,5 – 10 mm, G1/4 – G3/8

type 34A, normally closed

| type * (order-nr. ) | NW DN (mm) | ports | maximum differential pressure in bar ** | | | | | | | kv-value (m³/h) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | coil E1AA | | coil E2AA | coil E3AE | | coil F1AA | | |
| | | | ~ (50Hz) | = (DC) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 34A-2.15-….. | 1,5 | G 1/4 | 40 | 40 | | | | | | 0,08 |
| 34A-2.20-….. | 2,0 | G 1/4 | 35 | 35 | | | | | | 0,13 |
| 34A-2.25-….. | 2,5 | G 1/4 | 20 | 20 | 30 | 30 | 35 | | | 0,19 |
| 34A-2.30-….. | 3,0 | G 1/4 | 8 | 12 | 25 | 23 | 28 | | | 0,25 |
| 34A-2.35-….. | 3,5 | G 1/4 | 10 | 8 | 20 | 20 | 25 | | | 0,30 |
| 34A-2.40-….. | 4,0 | G 1/4 | 6 | 4 | 14 | 17 | 22 | | | 0,37 |
| 34A-2.50-….. | 5,0 | G 1/4 | 3,5 | 1 | 4 | 10 | 6 | 11 | 12 | 0,55 |
| 34A-2.60-….. | 6,0 | G 1/4 | 0,9 | 0,5 | 1,9 | 3,5 | 2,5 | 7,5 | 5 | 0,67 |
| 34A-3.80-….. | 8,0 | G 3/8 | 0,5 | 0,1 | 0,6 | 2 | 1 | 2,5 | 1,8 | 1,65 |
| 34A-3.100-….. | 10 | G 3/8 | 0,4 | 0,05 | 0,3 | 1,2 | 0,5 | 1,7 | 0,9 | 1,95 |

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)

** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | B | max. 80°C | neutral gases and liquids |
| EPDM | E | max. 120°C | hot water, steam, not for oil and grease |
| FPM | V | max. 130°C | oil, petrol, oxygen, acids and bases |

| standard voltage | Code |
|---|---|
| 24V = DC | 02400 |
| 24V ~ (50Hz) | 02450 |
| 230V ~ (50Hz) | 23050 |

coil power consumption at 20 °C, protection class, interface

| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
|---|---|---|---|---|---|
| E1AA | 32 | 14 | 12 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| E2AA | - | - | 17 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| E3AE | 70 | 32 | 27 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| F1AA | 70 | 35 | 27 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |

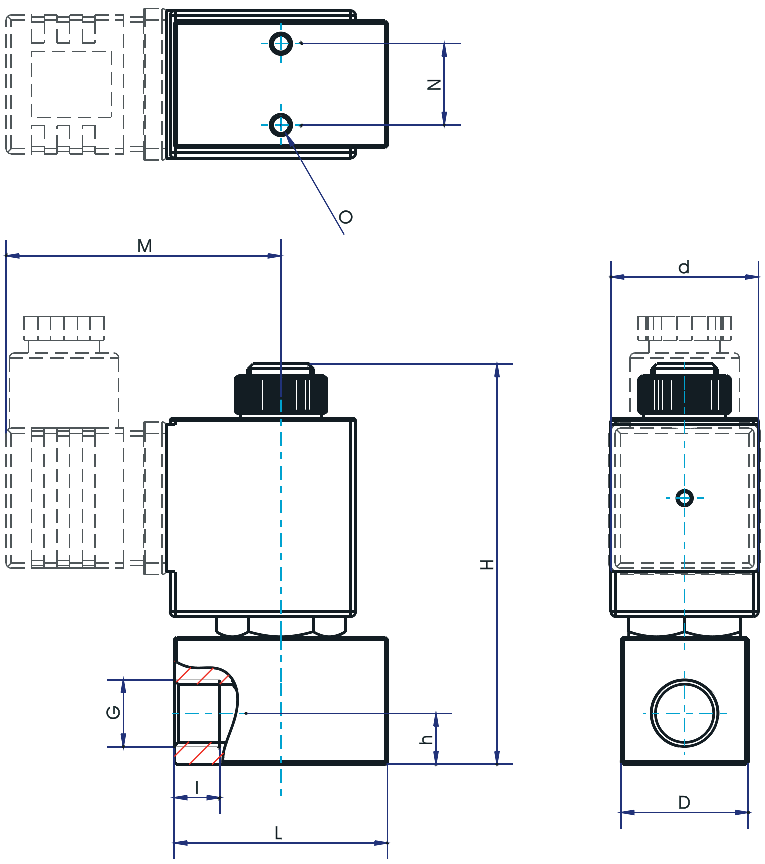
| ORDER CODE | 34 B - 2 V 60 F Z - A E1AA 02400<br>type, function, ports, seal material, nominal size seat, throw off spring, stroke compensation spring, short circuit ring, coil type, supply voltage |
|---|---|
| type | type 34 |
| function | A = normally closed, B = normally open |
| ports | 2 = G 1/4, 3 = G 3/8 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| nominal size seat | 15 = 1,5 mm, 20 = 2,0 mm, 30 = 3,0 mm, 40 = 4,0 mm, 80 = 8,0 mm, 100 = 10,0 mm |
| throw off spring | only normally open – see specific type |
| stroke compensation spring | Z = only normally open |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring, B = solid silver<br>C = copper gold-plated, D = copper chemical nickel-plated |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed or normally open

type 34, stainless steel body AISI303
direct operated, DN 1,5 – 10 mm, G1/4 – G3/8

| type 34B, normally open | | | | | | | |
|---|---|---|---|---|---|---|---|
| type * (order-nr. ) | NW DN (mm) | ports | maximum differential pressure in bar ** | | | | kv-value ($m^3$/h) |
| | | | coil E1AA | coil E3AE | | coil F1AA | |
| | | | ~ (50Hz) and = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) and = (DC) | |
| 34B-2.15CZ-.E… | 1,5 | G1/4 | 35 | | | | 0,08 |
| 34B-2.20CZ-.E… | 2,0 | | 22 | | | | 0,13 |
| 34B-2.25CZ-.E… | 2,5 | | 13 | | | | 0,19 |
| 34B-2.30CZ-.E… | 3,0 | | 10,5 | | | | 0,25 |
| 34B-2.35CZ-.E… | 3,5 | | 6,5 | | | | 0,30 |
| 34B-2.40CZ-.E… | 4,0 | | 5,5 | | | | 0,37 |
| 34B-2.50FZ-..... | 5,0 | | | 9 | | 9 | 0,55 |
| 34B-2.60FZ-..... | 6,0 | | | 6 | | 6 | 0,67 |

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** Higher differential pressures on request.

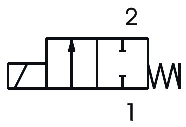



| Dimensi on table for type 34 in mm, wei ght approx. in g | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G | coil | N | O | H | | M | d | h | l | L | D | Weight (g) | |
| | | | | 34A- | 34B- | | | | | | | 34A- | 34B- |
| G 1/4 | E1 | 16 | M4 | 79 | 85.5 | 55 | 30 | 10 | 9 | 42 | 25 | 333 | 353 |
| | E2 | | | | | 57 | 35 | | | | | 399 | 419 |
| | E3 | | | | | 56 | 36 | | | | | 419 | 439 |
| | F1 | | | 90 | 98 | 57 | 38 | | | | | 489 | 479 |
| G 3/8 | E1 | | | 79 | 85.5 | 55 | 30 | 12 | 10 | 45 | 32 | 325 | 345 |
| | E2 | | | | | 57 | 35 | | | | | 391 | 411 |
| | E3 | | | | | 56 | 36 | | | | | 411 | 431 |
| | F1 | | | 90 | 98 | 57 | 38 | | | | | 481 | 471 |

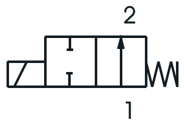
# 2/2 way solenoid valve normally closed or normally open

type 35, stainless steel body AISI303
direct operated, DN 1,5 – 4 mm, G1/4

normally closed NC




normally open NO




| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, normally closed NC or normally open NO, coil 360° rotatable, stainless steel nozzle with wider contact face for lower surface pressure |
| operator | solenoid |
| ports | G1/4 |
| ambient temperature | -20°C to +50°C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 37 mm²/s (cst) or 5° E |
| material | Body and tube: 1.4305 (AISI 303=<br>Inner parts: stainless steel 1.4105IL (AISI 430 FR)<br>Sealing: see type selection |
| mounting | installation into fixed piping systems or by use of 2 threads on the bottom side |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| electri cal data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C), coil E3 temperature class H |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydrau lic | |
| flow medium | all liquids and gases, which don't attack the used material |
| max. body housing pressure | PN 100 (bar) up to DN 4mm |
| response time | depending on operating pressure and fluid |
| special equipment on request | coil type with cable, coils for temperature class H (180°C), higher differential pressure, manual override |

# 2/2 way solenoid valve normally closed or normally open

type 35, stainless steel body AISI303
direct operated, DN 1,5 – 4 mm, G1/4

| type 35A, normally closed | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | maximum differential pressure in bar ** | | | | | | | | |
| type * (order-nr. ) | NW DN (mm) | ports | coil E1AA | | coil E2AA | | coil E3AE | | coil F1AA | | kv-value (m³/h) |
| | | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 35A-2.15-A… | 1,5 | G 1/4 | 50 | 70 | 80 | 100 | 100 | 100 | | | 0,08 |
| 35A-2.20-A… | 2,0 | | 30 | 30 | 55 | 70 | 80 | 90 | | | 0,13 |
| 35A-2.25-A… | 2,5 | | 20 | 20 | 30 | 35 | 50 | 60 | 60 | 80 | 0,19 |
| 35A-2.30-A… | 3,0 | | 10 | 10 | 18 | 25 | 35 | 35 | 50 | 60 | 0,25 |
| 35A-2.35-A… | 3,5 | | | | 14 | 16 | 20 | 25 | 28 | 36 | 0,30 |
| 35A-2.40-A… | 4,0 | | | | 12 | 12 | 16 | 16 | 20 | 25 | 0,37 |

* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)

** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | C | max. 80°C | neutral gases and liquids |
| EPDM | F | max. 120°C | hot water, steam, not for oil and grease |
| PTFE*** | T | max. 150°C | acids and alkaline solution, steam |
| FPM | W | max. 130°C | oil, petrol, oxygen, acids and bases |

| standard voltage | Code |
|---|---|
| 24V = DC | 02400 |
| 24V ~ (50Hz) | 02450 |
| 230V ~ (50Hz) | 23050 |

*** Please keep in mind valves with PTFE seat seal have a leakage up to 1,35cm³/min, especially for low pressures. If the pressure raises the leakage is sinking.

| coil power consumption at 20 °C, protection class, interface | | | | | |
|---|---|---|---|---|---|
| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
| E1AA* | 32 | 14 | 12 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| E2AA* | 42 | 19 | 17 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| E3AE* | 70 | 32 | 27 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |
| F1AA* | 70 | 35 | 27 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |

*…For fluid temperatures higher than 120°C, a temperature class H coil is required.

ORDER CODE

35 B - 2 W 40 F Z - A E1AA 02400

type, function, ports, seal material, nominal size seat, throw off spring, stroke compensation spring, short circuit ring, coil type, supply voltage

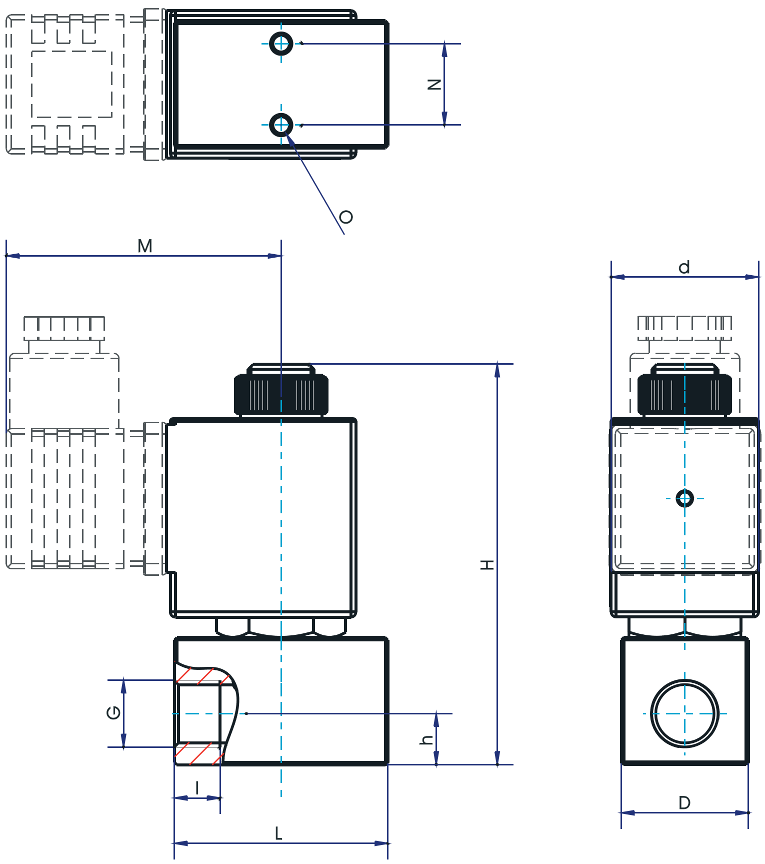
| | |
|---|---|
| type | type 35 |
| function | A = normally closed, B = normally open |
| ports | 2 = G 1/4, 3 = G 3/8 |
| seal material | C = NBR (Perbunan), F = EPDM, W = FPM, T=PTFE |
| nominal size seat | 15 = 1,5 mm, 20 = 2,0 mm, 25 = 2,5 mm, 30 = 3,0 mm, 35 = 3,5 mm, 40 = 4,0 mm |
| throw off spring | only normally open – see specific type |
| stroke compensation spring | Z = only normally open |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed or normally open

type 35, stainless steel body AISI303
direct operated, DN 1,5 – 4 mm, G1/4

| type 35B, normally open | | | | |
|---|---|---|---|---|
| type *<br>(order-nr. ) | NW<br>DN<br>(mm) | ports | maximum differential pressure in bar ** | kv-value (m³/h) |
| 35B-2.15CZ-.E3AE … | 1,5 | G1/4 | 85 | 0,08 |
| 35B-2.20CZ-.E3AE … | 2,0 | | 45 | 0,13 |
| 35B-2.25CZ-.E3AE … | 2,5 | | 30 | 0,19 |
| 35B-2.30CZ-.E3AE … | 3,0 | | 25 | 0,25 |
| 35B-2.35DZ-.E3AE … | 3,5 | | 18 | 0,30 |
| 35B-2.40DZ-.E3AE … | 4,0 | | 15 | 0,37 |

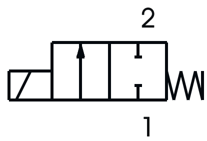
* Type designation (order-nr.) must be completed with sealing material, short circuit ring, coil and supply voltage. (see order code)
** Higher differential pressures on request.




| Dimension table for type 35 in mm, weight approx. in g | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G | coil | N | O | H | | M | d | h | l | L | D | Weight (g) | |
| | | | | 35A- | 35B- | | | | | | | 35A- | 35B- |
| G 1/4 | E1 | 16 | M4 | 79 | 85.5 | 55 | 30 | 10 | 9 | 42 | 25 | 333 | 353 |
| | E2 | | | | | 57 | 35 | | | | | 399 | 419 |
| | E3 | | | | | 56 | 36 | | | | | 419 | 439 |
| | F1 | | | 90 | 98 | 57 | 38 | 12 | 10 | 45 | 32 | 489 | 479 |

# 2/2 way solenoid valve normally closed

type 37, stainless steel body AISI 304
direct operated, DN 16-25mm, G1/2 – G1




| SPECIFICATION | |
|---|---|
| **general** | |
| type of construction | 2/2-poppet valve, normally closed NC, coil 360° rotatable |
| operator | solenoid |
| ports | G1/2 – G1 |
| ambient temperature | -20 °C to +50 °C |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 37 mm²/s (cst) or 5° E |
| material | Body and tube: stainless steel 1.4301 (AISI 304), 1.4305 (AISI 303) and 1.4105IL (AISI 430 FR)<br>inner parts: stainless steel 1.4105IL (AISI 430 FR)<br>sealing: see type selection |
| mounting | installation into fixed piping systems |
| installation | only with vertical fixed solenoid coil |
| unit of supply | without connector  according to DIN EN 175301-803A (DIN 43650A) |
| **electrical data** | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C) |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| **pneumatic – hydraulic** | |
| flow medium | all liquids and gases, which don't attack the used material |
| max. body housing pressure | PN 16 (bar) |
| response time | depending on operating pressure and fluid |
| special equipment on request | coil type with cable, manual override |

# 2/2 way solenoid valve normally closed

type 37, stainless steel body AISI 304
direct operated, DN 16-25mm, G1/2 – G1

**type 37A, normally closed**

| type * (order-nr.) | NW DN (mm) | ports | maximum differential pressure in mbar ** | | | | | | kv-value (m³/h) |
|---|---|---|---|---|---|---|---|---|---|
| | | | coil **E3AE** | | coil **F1AA** | | coil **G1AA** | | |
| | | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 37A – 3. – A.… | 16 | G3/8 | 320 | 250 | 500 | 340 | 1100 | 900 | 2,95 |
| 37A – 4. – A.… | | G1/2 | | | | | | | 3,05 |
| 37A – 5. – A.… | 20 | G3/4 | 170 | 100 | 280 | 170 | 650 | 480 | 4,70 |
| 37A – 6. – A.… | 25 | G1 | 100 | 60 | 200 | 90 | 300 | 170 | 7,40 |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,5% / °C. All specifications refer to fluids with a maximum viscosity of 37 cst. (5°E). Higher viscosities cause extended response time and need a special specification of the valve.

| sealing material | **Code** | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | **B** | max. 80°C | neutral gases and liquids |
| EPDM | **E** | max. 130°C | hot water, steam, not for oil and grease |
| FPM | **V** | max. 130°C | oil, petrol, oxygen |

| standard voltage | **Code** |
|---|---|
| 24V = DC | **02400** |
| 24V ~ (50Hz) | **02450** |
| 230V ~ (50Hz) | **23050** |

**coil power consumption at 20 °C, protection class, interface**

| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
|---|---|---|---|---|---|
| E3AE | 70 | 32 | 27 | IP65 / IP00 | DIN EN 175301-803A (DIN 43650 A) |
| F1AA | 70 | 35 | 27 | | |
| G1AA | 80 | 40 | 32 | | |

**ORDER CODE**

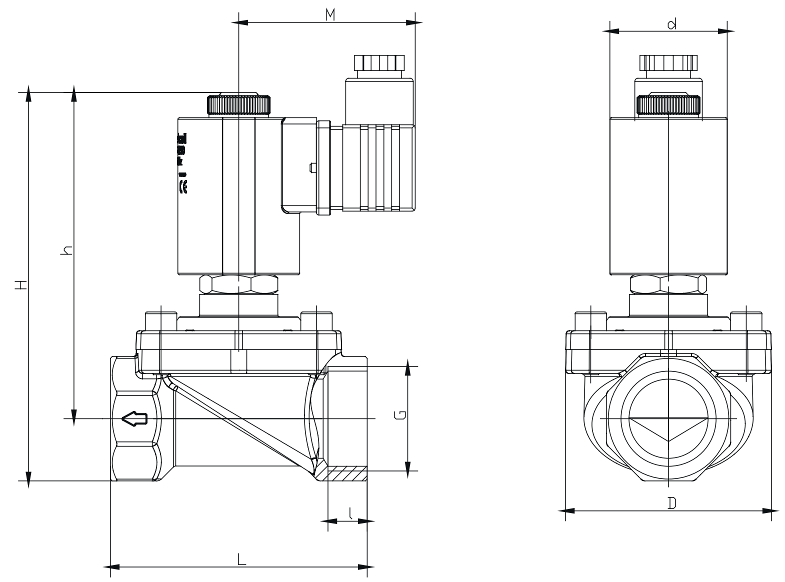
37 A - 6 B - X E3AE 02400

type – 37
function – A
ports – 6
seal material – B
short circuit ring – X
coil type – E3AE
supply voltage – 02400

| | |
|---|---|
| type | type 37 |
| function | A = normally closed |
| ports | 4 = G1/2, 5 = G3/4, 6 = G1 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed

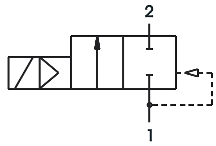
type 37, stainless steel body AISI 304
direct operated, DN 16-25mm, G1/2 – G1




<table>
<tr><th colspan="21">dimension table for type 37A in mm, weight approx. kg</th></tr>
<tr><th rowspan="2">type</th><th rowspan="2">G</th><th colspan="3">d</th><th rowspan="2">D</th><th colspan="3">h</th><th rowspan="2">H</th><th rowspan="2">l</th><th rowspan="2">L</th><th colspan="3">M</th><th colspan="3">weight (approx. kg)</th></tr>
<tr><th>E3</th><th>F1</th><th>G1</th><th>E3</th><th>F1</th><th>G1</th><th>E3</th><th>F1</th><th>G1</th><th>E3</th><th>F1</th><th>G1</th></tr>
<tr><td>37A-3.-A</td><td>G3/8</td><td rowspan="4">36</td><td rowspan="4">39</td><td rowspan="4">46</td><td rowspan="2">45</td><td rowspan="2">87</td><td rowspan="2">97</td><td rowspan="2">120</td><td rowspan="2">13,5</td><td rowspan="2">12</td><td rowspan="2">60</td><td rowspan="4">54</td><td rowspan="4">55</td><td rowspan="4">61</td><td>0,50</td><td>0,52</td><td>0,71</td></tr>
<tr><td>37A-4.-A</td><td>G1/2</td><td>0,48</td><td>0,50</td><td>0,69</td></tr>
<tr><td>37A-5.-A</td><td>G3/4</td><td>50</td><td>91</td><td>101</td><td>124</td><td>16</td><td rowspan="2">11</td><td>62</td><td>0,52</td><td>0,54</td><td>0,71</td></tr>
<tr><td>37A-6.-A</td><td>G1</td><td>65</td><td>95</td><td>105</td><td>128</td><td>20</td><td>82</td><td>0,81</td><td>0,82</td><td>0,99</td></tr>
</table>

# 2/2 way solenoid valve normally closed

type 50A
pilot operated, DN 10mm, G3/8“ – G1/2“, body brass




function A
(normally closed)

| SPECIFICATION | |
|---|---|
| general | |
| type of construction | 2/2-poppet valve, with diaphragm, normally closed NC, coil 360° rotatable |
| operator | solenoid |
| ports | G3/8, G1/2 |
| ambient temperature | -20 °C to +50 °C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 21mm²/s (cst) or 3°E |
| material | body: brass, tube at type 50A-..-AC2.. brass, at type 50A-..-AE1… stainless steel<br>inner parts: stainless steel, sealing: see type selection |
| mounting | 2 threads M4 on the bottom side |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| electrical data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C) |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydraulic | |
| flow medium | all liquids and gases, which don’t attack the used material |
| max. body housing pressure | PN 25 (bar) |
| response time | depending on operating pressure and fluid |
| special equipment on request | Stainless steel 1.4301 (AISI304) in place of brass, bright nickel-plated or chemical nickel-plated |

# 2/2 way solenoid valve normally closed

type 50A

pilot operated, DN 10mm, G3/8“ – G1/2“, body brass

| type 50A, normally closed | | | | | | | |
|---|---|---|---|---|---|---|---|
| type * (order-nr.) | NW DN (mm) | ports | maximum differential pressure in bar ** | | | | kv-value ($m^3$/h) |
| | | | coil C2DA | | coil E1AA | | |
| | | | ~ (50Hz) | = (DC) | ~ (50Hz) | = (DC) | |
| 50A - 3. - A…. | 10 | G3/8 | 0,02 – 6 | - | 0,02 – 12 | 0,02 – 10 | 1,7 |
| 50A - 4. - A…. | | G1/2 | | | | | 1,7 |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. Valves are suitable for vacuum.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | B | max. 80°C | neutral gases and liquids |
| EPDM | E | max. 130°C | hot water, steam, not for oil and grease |
| FPM | V | max. 130°C | oil, petrol, oxygen |

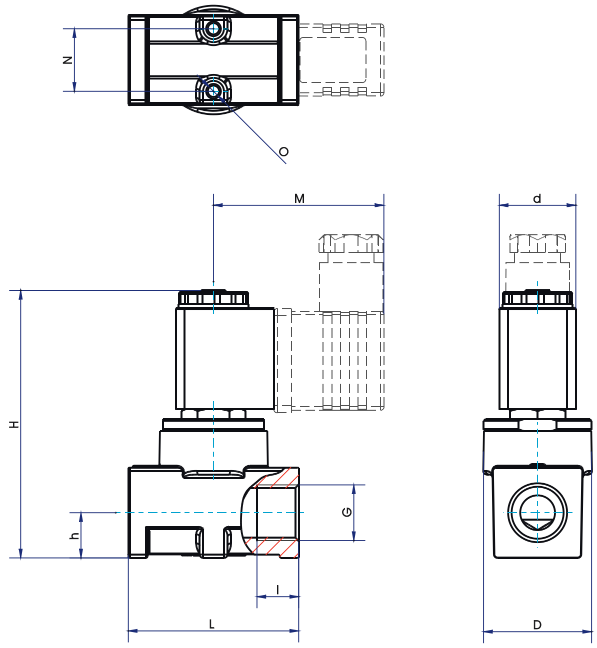
| standard voltage | Code |
|---|---|
| 24V = DC | 02400 |
| 24V ~ (50Hz) | 02450 |
| 230V ~ (50Hz) | 23050 |

| coil power consumption at 20 °C, protection class, interface | | | | | |
|---|---|---|---|---|---|
| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
| C2DA | 13 | 10 | - | IP65 / IP00 | Connector (DIN 43650) type B industrial standard |
| E1AA | 32 | 14 | 12 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |

| ORDER CODE | 50 A - 3 B - A E1AA 02400<br>type — 50<br>function — A<br>ports — 3<br>seal material — B<br>short circuit ring — A<br>coile type — E1AA<br>supply voltage — 02400 |
|---|---|
| type | type 50 |
| function | A = normally closed |
| ports | 3 = G3/8, 4 = G1/2 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| short circuit ring | A = copper short circuit ring X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed

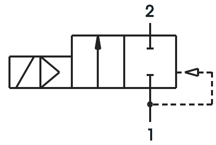
type 50A
pilot operated, DN 10mm, G3/8“ – G1/2“, body brass

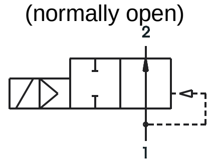



| Dimensi on tale for type 50A in mm, weight app rox. in kg | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| type | G | d | D | h | H | l | L | M | N | O | weight (kg) |
| 50A-3.-AC2DA | G3/8 | 22 | 32,5 | 13 | 76,5 | 12 | 49 | 50 | 18 | M4 | 0,28 |
| 50A-3.-AE1AA | | 30 | | 13 | 94 | | | 52 | | | 0,41 |
| 50A-4.-AC2DA | G1/2 | 22 | 32,5 | 13 | 76,5 | 12 | | 50 | | | 0,27 |
| 50A-4.-AE1AA | | 30 | | 13 | 94 | | | 52 | | | 0,40 |

# 2/2 way solenoid valve normally closed or normally open

type 51, body brass
pilot operated, DN 15-50mm, G3/8 – G2




| SPECIFICATION | |
|---|---|
| General | |
| type of construction | 2/2-poppet valve, with diaphragm, normally closed NC or normally open NO, coil 360° rotatable |
| operator | solenoid, manual override |
| ports | G3/8 – G2 |
| ambient temperature | -20 °C to +50 °C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 21mm²/s (cst) or 3°E |
| material | body brass, inner parts stainless steel and brass, sealing see type selection |
| mounting | installation into fixed piping system |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| electri cal data | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-200V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C) |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| pneumatic – hydrau lic | |
| flow medium | all liquids and gases, which don’t attack the used material |
| max. body housing pressure | G3/8 to G1 PN 20 (bar), above PN 16 (bar) |
| response time | depending on operating pressure and fluid |
| special equipment on request | stainless steel 1.4301 (AISI304) in place of brass, coil type with cable,<br>bright nickel-plated or chemical nickel-plated, coils for temperature class H (180°C) |

# 2/2 way solenoid valve normally closed or normally open

type 51, body brass
pilot operated, DN 15-50mm, G3/8 – G2

type 51A, normally closed

| type * (order-nr.) | NW DN (mm) | ports | maximum differential pressure in bar ** coil C2DA ~ (50Hz) | maximum differential pressure in bar ** coil C2DA = (DC) | kv-value (m³/h) |
|---|---|---|---|---|---|
| 51A – 3. – AC… | 15 | G3/8 | 0,5 – 16 | 0,5 – 12 | 3,0 |
| 51A – 4. – AC… | 15 | G1/2 | | | 3,4 |
| 51A – 5. – AC… | 19 | G3/4 | | | 4,8 |
| 51A – 6. – AC… | 25 | G1 | | | 8,5 |

| type * (order-nr.) | NW DN (mm) | ports | maximum differential pressure in bar ** coil E1AA ~ (50Hz) | maximum differential pressure in bar ** coil E1AA = (DC) | kv-value (m³/h) |
|---|---|---|---|---|---|
| 51A – 7. – AE… | 40 | G 1 1/4 | 0,5 – 12 | 0,5 – 12 | 15 |
| 51A – 8. – AE… | 40 | G 1 1/2 | | | 19,5 |
| 51A – 9. – AE… | 48 | G 2 | | | 30,5 |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

| sealing material | Code | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | B | max. 80°C | neutral gases and liquids |
| EPDM | E | max. 130°C | hot water, steam, not for oil and grease |
| FPM | V | max. 130°C | oil, petrol, oxygen |

| standard voltage | Code |
|---|---|
| 24V = DC | 02400 |
| 24V ~ (50Hz) | 02450 |
| 230V ~ (50Hz) | 23050 |

coil power consumption at 20 °C, protection class, interface

| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
|---|---|---|---|---|---|
| C2DA | 13 | 10 | 6,5 | IP65 / IP00 | Connector (DIN 43650) type B industrial standard |
| E1AA | 32 | 14 | 12 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |

ORDER CODE

51 A - 9 B - A E1AA 23050

type, function, ports, seal material, short circuit ring, coil type, supply voltage

| | |
|---|---|
| type | type 51 |
| function | A = normally closed, B = normally open |
| ports | 3 = G3/8, 4 = G1/2, 5 = G3/4, 6 = G1, 7 = G1 1/4, 8 = G1 1/2, 9 = G2 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring (on request) |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed or normally open

type 51, body brass
pilot operated, DN 15-50mm, G3/8 – G2

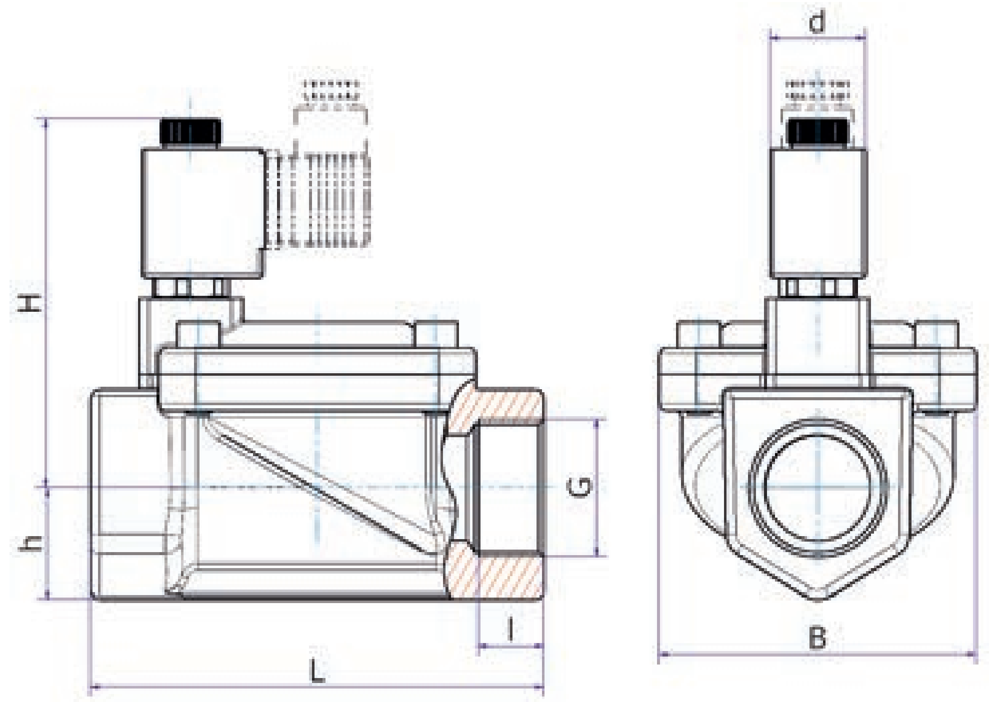
| type 51B, normally open | | | | | |
|---|---|---|---|---|---|
| type *<br>(order.-nr. ) | NW<br>DN<br>(mm) | ports | maximum differential pressure in bar **<br>coil C2DA | | kv-value<br>($m^3/h$) |
| | | | ~ (50Hz) | = (DC) | |
| 51B – 3. – AC… | 15 | G3/8 | 0,5 – 10 | 0,5 – 10 | 3,0 |
| 51B – 4. – AC… | 15 | G1/2 | | | 3,4 |
| 51B – 5. – AC… | 19 | G3/4 | | | 4,8 |
| 51B – 6. – AC… | 25 | G1 | | | 8,5 |

| type *<br>(order.-nr. ) | NW<br>DN<br>(mm) | ports | maximum differential pressure in bar **<br>coil E1AA | | kv-value<br>($m^3/h$) |
|---|---|---|---|---|---|
| | | | ~ (50Hz) | = (DC) | |
| 51B – 7. – AE… | 40 | G1 1/4 | 0,5 – 10 | 0,5 – 10 | 15 |
| 51B – 8. – AE… | 40 | G1 1/2 | | | 19,5 |
| 51B – 9. – AE… | 48 | G2 | | | 30,5 |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.

# 2/2 way solenoid valve normally closed or normally open

type 51, body brass
pilot operated, DN 15-50mm, G3/8 – G2




dimension table for type 51A (normally closed) in mm

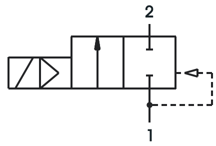
| type | B | d<br>C2, E1 | G | h | H<br>C2, E1 | l | L | weight *<br>(approx. kg.) |
|---|---|---|---|---|---|---|---|---|
| 51A – 3. – AC… | 48 | 22 | G 3/8 | 15 | 76 | 12 | 65 | 0,52 |
| 51A – 4. – AC… | | | G 1/2 | | | | | |
| 51A – 5. – AC… | 57,8 | | G 3/4 | 18 | 78,5 | | 74,5 | 0,72 |
| 51A – 6. – AC… | 69,8 | | G 1 | 22,1 | 89,6 | | 96 | 1,07 |
| 51A – 7. – AE… | 96 | 30 | G 1 1/4 | 34,1 | 112 | 17 | 137,5 | 1,63 |
| 51A – 8. – AE… | 96 | | G 1 1/2 | 34,1 | 112 | 19 | 137,5 | 2,22 |
| 51A – 9. – AE… | 119 | | G 2 | 34,5 | 124,5 | 22 | 168 | 4,14 |

dimension table for type 51B (normally open) in mm

| type | B | d<br>C2, E1 | G | h | H<br>C2, E1 | l | L | weight *<br>(approx. kg.) |
|---|---|---|---|---|---|---|---|---|
| 51B – 3. – AC… | 48 | 22 | G 3/8 | 15 | 77,5 | 12 | 65 | 0,53 |
| 51B – 4. – AC… | | | G 1/2 | | | | | |
| 51B – 5. – AC… | 57,8 | | G 3/4 | 18 | 80 | | 74,5 | 0,73 |
| 51B – 6. – AC… | 69,8 | | G 1 | 22,1 | 91,1 | | 96 | 1,08 |
| 51B – 7. – AE… | 96 | 30 | G 1 1/4 | 34,1 | 118 | 17 | 137,5 | 1,85 |
| 51B – 8. – AE… | 96 | | G 1 1/2 | 34,1 | 118 | 19 | 137,5 | 2,24 |
| 51B – 9. – AE… | 119 | | G 2 | 34,5 | 130,2 | 22 | 168 | 4,16 |

# 2/2 way solenoid valve normally closed

type 60A
pilot operated, DN 10mm, G3/8", body stainless-steel AISI304



function A
(normally closed)

| SPECIFICATION | |
|---|---|
| **general** | |
| type of construction | 2/2-poppet valve, with diaphragm, normally closed NC, coil 360° rotatable |
| operator | solenoid |
| ports | G3/8 |
| ambient temperature | -20 °C to +50 °C, higher allowed ambient temperatures on request |
| fluid temperature | dependent on sealing material and coil |
| viscosity | max. 21mm²/s (cst) or 3°E |
| material | body and tube: stainless-steel<br>inner parts: stainless steel, sealing: see type selection |
| mounting | 2 threads M4 on the bottom side |
| installation | in any position, preferable vertical fixed solenoid coil |
| unit of supply | without connector |
| **electrical data** | |
| voltage | DC voltage or AC voltage |
| standard voltage | 24V DC, 24V AC, 230V AC |
| special voltage on request | 6V-207V DC, 12V-240V, 50Hz or 60Hz |
| acceptable voltage tolerance | +/- 10% |
| power consumption | see specifications at solenoid coils |
| coil type | temperature class F (155°C), winding class H (180°C) |
| duty cycle | 100% ED (DB), continuous operation |
| protection class | IP65 according DIN EN 60529 (DIN 40050) with correctly mounted connector |
| **pneumatic – hydraulic** | |
| flow medium | all liquids and gases, which don't attack the used material |
| max. body housing pressure | PN 25 (bar) |
| response time | depending on operating pressure and fluid |

# 2/2 way solenoid valve normally closed

type 60A
pilot operated, DN 10mm, G3/8“, body stainless-steel AISI304

| type 60A, normally closed | | | | | |
|---|---|---|---|---|---|
| type * (order-nr.) | DN (mm) | ports | maximum differential pressure in bar ** coil **E1AA** | | kv-value (m³/h) |
| | | | ~ (50Hz) | = (DC) | |
| 60A - 3. - A…. | 10 | G3/8 | 0,02 – 12 | 0,02 – 10 | 1,7 |

* Type designation (order-nr.) must be completed with sealing material, coil and supply voltage.
** At DC voltage all pressure specifications apply to a fluid temperature up to 80 °C. At higher fluid temperatures, the maximum differential pressure will be reduced by 0,4% / °C. Valves are suitable for vacuum.

| sealing material | **Code** | fluid temperature | applicable for |
|---|---|---|---|
| NBR (Perbunan) | **B** | max. 80°C | neutral gases and liquids |
| EPDM | **E** | max. 130°C | hot water, steam, not for oil and grease |
| FPM | **V** | max. 130°C | oil, petrol, oxygen |

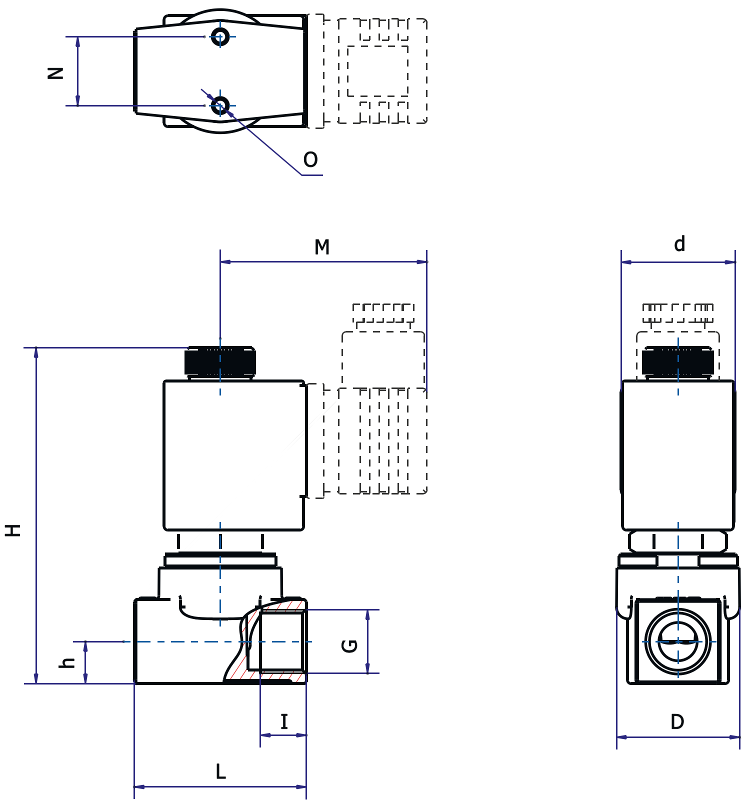
| standard voltage | **Code** |
|---|---|
| 24V = DC | **02400** |
| 24V ~ (50Hz) | **02450** |
| 230V ~ (50Hz) | **23050** |

| coil power consumption at 20 °C, protection class, interface | | | | | |
|---|---|---|---|---|---|
| coil type | inrush power ~ (50Hz) VA | rated power ~ (50Hz) VA | power = (DC) (W) | protection class with/without connector | interface |
| E1AA | 32 | 14 | 12 | IP65 / IP00 | Connector DIN EN 175301-803 (DIN 43650) type A |

| **ORDER CODE** | 60 A - 3 B - A E1AA 02400<br>60 = type, A = function, 3 = ports, B = seal material, A = short circuit ring, E1AA = coile type, 02400 = supply voltage |
|---|---|
| type | type 60 |
| function | A = normally closed |
| ports | 3 = G3/8 |
| seal material | B = NBR (Perbunan), E = EPDM, V = FPM |
| short circuit ring | A = copper short circuit ring, X = without short circuit ring |
| coil type | see specifications of the particular coil |
| supply voltage | always 5-digit, see code of standard voltage |

# 2/2 way solenoid valve normally closed

type 60A
pilot operated, DN 10mm, G3/8“, body stainless-steel AISI304




| Dimension tale for type 60A in mm, weight approx. in kg | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| type | G | d | D | h | H | I | L | M | N | O | weight (kg) |
| 60A-3.-AE1AA | G3/8 | 30 | 32,5 | 11 | 88 | 12 | 45 | 54 | 18 | M4 | 0,36 |