

Data sheet

Indirect servo-operated 2/2-way solenoid valves

Type EV220W 10 - EV220W 50



EV220W is a range of compact indirect servo-operated 2/2 way solenoid valves with connections from 3/8" to 2", especially designed for industrial use within a limited space.

This range has been designed specially for the maintenance, repair and operations markets, which demand an easy and reliable valve that is easy to setup and use.

Features and versions

- For water, oil, compressed air and similar neutral media
- DN 10 – 50
- Differential pressure: From 0.3 – 16 bar
- Media temperatures: From -10 – 80 °C
- Viscosity: Up to 50 cSt
- Ambient temperatures: From -40 – 50 °C
- Clip-on coil
- Enclosure: IP65
- NO version, standard for 3/8" – 2" valve sizes
- NC version, standard for 3/8" – 2" valve sizes
- Complete coil voltage: 230 V AC, 24V AC, 24 V DC

Data sheet | Indirect servo-operated 2/2-way solenoid valves, Type EV220W 10 - EV220W 50
Brass valve body, NC and AS clip on coil

| Connection ISO228/1 | Seal material | Orifice size | K _V - value [m ³ /h] | Differential pressure min. to max. [bar] | Coil voltage/power consumption AS coil | Code number |
|---------------------|------------------|--------------|--|--|--|-------------------|
| G 3/8 | NBR | 10 | 1.6 | 0.2 – 16 | 230V 50/60Hz 8W | 042U426132 |
| | | | | | 24V 50/60Hz 9.5W | 042U426119 |
| | | | | | 24V DC 6.5W | 042U426102 |
| G 1/2 | | 14 | 4 | 0.3 – 16 | 230V 50/60Hz 8W | 042U426432 |
| | | | | | 24V 50/60Hz 9.5W | 042U426419 |
| | | | | | 24V DC 6.5W | 042U426402 |
| G 3/4 | | 18 | 7 | 0.3 – 16 | 230V 50/60Hz 8W | 042U426532 |
| | | | | | 24V 50/60Hz 9.5W | 042U426519 |
| | | | | | 24V DC 6.5W | 042U426502 |
| G 1 | | 22 | 7 | 0.3 – 16 | 230V 50/60Hz 8W | 042U426632 |
| | 24V 50/60Hz 9.5W | | | | 042U426619 | |
| | 24V DC 6.5W | | | | 042U426602 | |
| G 1 1/4 | 32 | 15 | 0.3 – 16 | 230V 50/60Hz 8W | 042U426732 | |
| | | | | 24V 50/60Hz 9.5W | 042U426719 | |
| | | | | 24V DC 6.5W | 042U426702 | |
| G 1 1/2 | 40 | 18 | 0.3 – 16 | 230V 50/60Hz 8W | 042U426832 | |
| | | | | 24V 50/60Hz 9.5W | 042U426819 | |
| | | | | 24V DC 6.5W | 042U426802 | |
| G 2 | 50 | 32 | 0.3 – 16 | 230V 50/60Hz 8W | 042U426932 | |
| | | | | 24V 50/60Hz 9.5W | 042U426919 | |
| | | | | 24V DC 6.5W | 042U426902 | |

¹⁾ In water applications, exercise the valves at least once every 24 hours, meaning change the state of the valve. The valve exercise will minimize the risk of the valve sticking due to calcium carbonate, zinc or iron oxide build-up.

Brass valve body, NO and AS clip on coil

| Connection ISO228/1 | Seal material | Orifice size | K _V - value [m ³ /h] | Differential pressure min. to max. [bar] | Coil voltage/power consumption AS coil | Code number |
|---------------------|------------------|--------------|--|--|--|-------------------|
| G 3/8 | NBR | 10 | 1.6 | 0.2 – 16 | 230V 50/60Hz 8W | 042U436132 |
| | | | | | 24V 50/60Hz 9.5W | 042U436119 |
| | | | | | 24V DC 6.5W | 042U436102 |
| G 1/2 | | 14 | 4 | 0.3 – 16 | 230V 50/60Hz 8W | 042U436432 |
| | | | | | 24V 50/60Hz 9.5W | 042U436419 |
| | | | | | 24V DC 6.5W | 042U436402 |
| G 3/4 | | 18 | 7 | 0.3 – 16 | 230V 50/60Hz 8W | 042U436532 |
| | | | | | 24V 50/60Hz 9.5W | 042U436519 |
| | | | | | 24V DC 6.5W | 042U436502 |
| G 1 | | 22 | 7 | 0.3 – 16 | 230V 50/60Hz 8W | 042U436632 |
| | 24V 50/60Hz 9.5W | | | | 042U436619 | |
| | 24V DC 6.5W | | | | 042U436602 | |
| G 1 1/4 | 32 | 15 | 0.3 – 16 | 230V 50/60Hz 8W | 042U436732 | |
| | | | | 24V 50/60Hz 9.5W | 042U436719 | |
| | | | | 24V DC 6.5W | 042U436702 | |
| G 1 1/2 | 40 | 18 | 0.3 – 16 | 230V 50/60Hz 8W | 042U436832 | |
| | | | | 24V 50/60Hz 9.5W | 042U436819 | |
| | | | | 24V DC 6.5W | 042U436802 | |
| G 2 | 50 | 32 | 0.3 – 16 | 230V 50/60Hz 8W | 042U436932 | |
| | | | | 24V 50/60Hz 9.5W | 042U436919 | |
| | | | | 24V DC 6.5W | 042U436902 | |

¹⁾ In water applications, exercise the valves at least once every 24 hours, meaning change the state of the valve. The valve exercise will minimize the risk of the valve sticking due to calcium carbonate, zinc or iron oxide build-up.

Data sheet | Indirect servo-operated 2/2-way solenoid valves, Type EV220W 10 - EV220W 50
Technical data, NC and NO

| Type | EV220W 10 | EV220W 14 | EV220W 18 | EV220W 22 | EV220W 32 | EV220W 40 | EV220W 50 |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Time to open [ms] ¹⁾ | 50 | 100 | 200 | 200 | 2500 | 4000 | 5000 |
| Time to close [ms] ¹⁾ | 300 | 400 | 500 | 500 | 4000 | 6000 | 10000 |
| Capacity, K_v [m ³ /h] | 1.6 | 4 | 7 | 7 | 15 | 18 | 32 |
| Max.test pressure | 50 bar | 25 bar | | | | | |

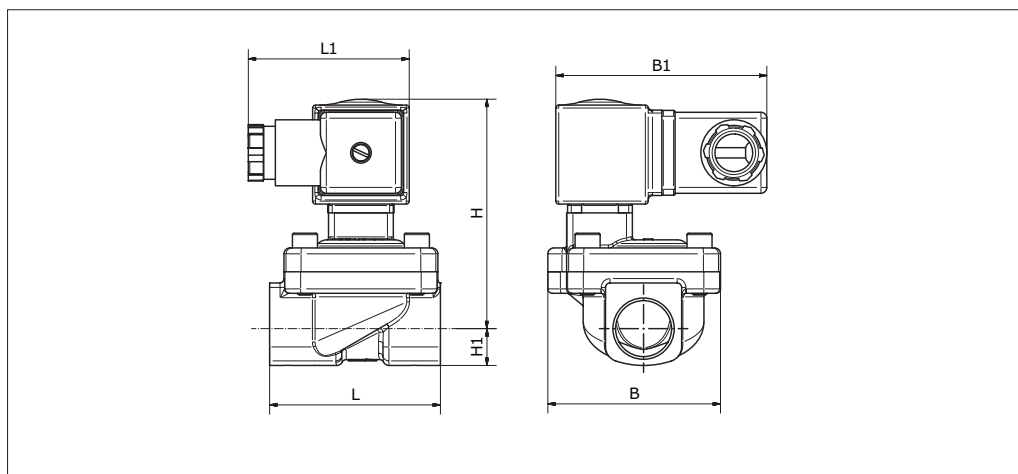
¹⁾ Times are indicative and apply to water. Exact times will depend on pressure conditions.

| | | | |
|----------------------------|---------------|-----------------|----------------------------|
| Ambient temperature | -40 – 50 °C | | |
| Medium temperature | -10 – 80 °C | | |
| Medium viscosity | Max. 50cSt | | |
| Materials | Valve body | Brass | W. no. 2.0401 |
| | Armature | Stainless steel | W. no. 1.4105 / AISI 430FR |
| | Armature stop | Stainless steel | W. no. 1.4105 / AISI 430FR |
| | Armature tube | Stainless steel | W. no. 1.4303 / AISI 305 |
| | Spring | Stainless steel | W. no. 14310 / AISI 301 |
| | O-ring | NBR | |
| | Valve plate | NBR | |
| Diaphragm | NBR | | |

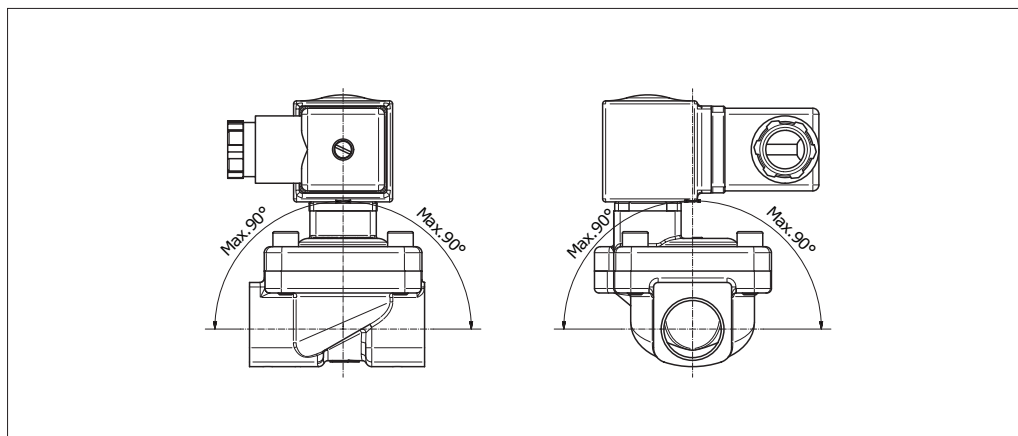
Dimensions and weight:

| Type | Weight with AS coil [kg] | L [mm] | L ₁ [mm] | B [mm] | B ₁ [mm] | H ₁ [mm] | H [mm] | |
|-----------|--------------------------|--------|---------------------|--------|---------------------|---------------------|--------|-----|
| | | | | | Coil AS | | NC | NO |
| EV220W 10 | 0.56 | 51 | 50 | 50 | 70 | 13 | 77 | 81 |
| EV220W 14 | 0.62 | 58 | 50 | 58 | 70 | 13 | 78 | 82 |
| EV220W 18 | 0.84 | 90 | 50 | 58 | 70 | 18 | 79 | 83 |
| EV220W 22 | 1.12 | 90 | 50 | 58 | 70 | 22 | 84 | 84 |
| EV220W 32 | 2.12 | 120 | 50 | 82 | 70 | 27 | 96 | 96 |
| EV220W 40 | 3.32 | 130 | 50 | 95 | 70 | 32 | 106 | 106 |
| EV220W 50 | 4.42 | 162 | 50 | 113 | 70 | 37 | 112 | 112 |

Dimensions



Mounting angle



Data sheet | Indirect servo-operated 2/2-way solenoid valves, Type EV220W 10 - EV220W 50
Coil type AS / AZ


| Type | Tambient [°C] | Supply voltage [V] | Voltage variation | Frequency [Hz] | Power consumption | | Approval | Code no. |
|---------|---------------|--------------------|-------------------|----------------|-------------------|------|----------|----------|
| | | | | | [W] | [VA] | | |
| AS024CS | -40 – 50 | 24 | -10%, +6% | 60 | 7.0 | 14 | C RU US | 042N7608 |
| | | 24 | -10%, +6% | 50 | 9.5 | 18 | | |
| AS230CS | -40 – 50 | 208 - 240 | ±6% | 60 | 7.0 | 14 | C RU US | 042N7601 |
| | | 230 | -10%, +6% | 50 | 8.0 | 16 | | |
| AZ012DS | -40 – 50 | 12 | -10%, +6% | DC | 6.0 | – | C RU US | 042N7616 |
| AZ024DS | -40 – 50 | 24 | -10%, +6% | DC | 6.5 | – | C RU US | 042N7617 |

Technical data

| | |
|-----------------------------|---|
| Design | In accordance with UL 429 |
| Insulation of coil windings | Class H according to IEC 85 |
| Connection | Spade connector in accordance with DIN 43650 form A |
| Enclosure, IEC 529 | IP00 with DIN spade connector, IP65 with cable plug |
| Plug type | Cable plug (042N0156) |

Coil type AU

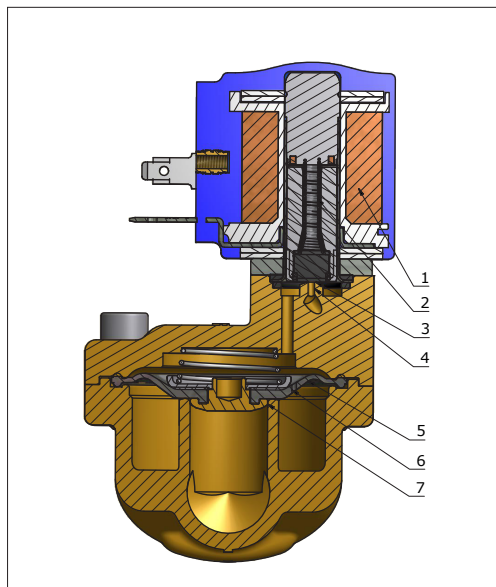

| Type | Tambient [°C] | Supply voltage [V] | Voltage variation | Frequency [Hz] | Power consumption | | Code no. |
|--------|---------------|--------------------|-------------------|----------------|-------------------|------|----------|
| | | | | | [W] | [VA] | |
| AU115C | -40 – 60 | 115 | -10%, +6% | 60 | 7.0 | 14 | 042N7662 |
| | | 115 | -10%, +6% | 50 | 5.0 | 10 | |

Technical data

| | |
|-----------------------------|-----------------------------|
| Design | In accordance with UL 429 |
| Insulation of coil windings | Class H according to IEC 85 |
| Connection | 1 m 3-core flying lead |
| Enclosure, IEC 529 | IP67 |
| Duty rating | Continuous |

Function, NC

- 1. Coil
- 2. Armature spring
- 3. Armature
- 4. Pilot orifice
- 5. Diaphragm
- 6. Equalizing orifice
- 7. Main orifice



Coil voltage disconnected

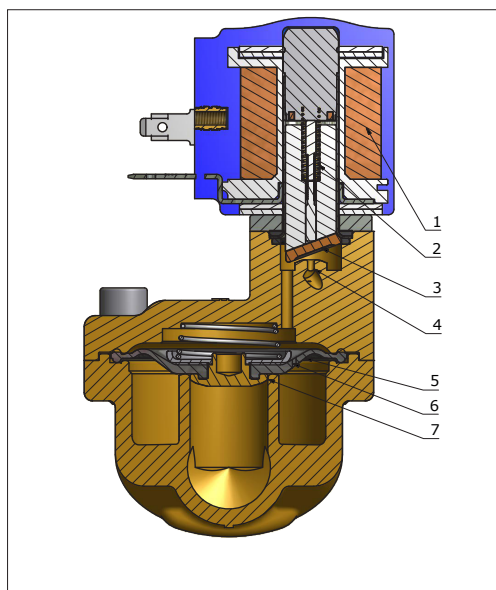
When voltage is disconnected, the armature spring (2) presses the armature (3) down against the pilot orifice (4). Pressure builds up over the diaphragm (5) via the equalizing orifice (6). The diaphragm closes the main orifice (7) as soon as the pressure over the diaphragm equals the inlet pressure. The valve stays closed for as long as voltage remains disconnected.

Coil voltage connected (open)

When voltage is applied to the coil (1), the pilot orifice (4) is opened. Since the pilot orifice is larger than the equalizing orifice (6), pressure over the diaphragm (5) falls and the diaphragm is lifted clear of the main orifice (7). The valve stays open for as long as the required minimum differential pressure is present and voltage is applied to the coil.

Function, NO

- 1. Coil
- 2. Armature spring
- 3. Armature
- 4. Pilot orifice
- 5. Diaphragm
- 6. Equalizing orifice
- 7. Main orifice



In principle the function involves the opposite valve positions to those above for applied and disconnected voltage respectively.

Capacity diagram

Example for water:
Capacity for EV220W at a differential pressure of 3 bar: Approx. 7 m³/h

