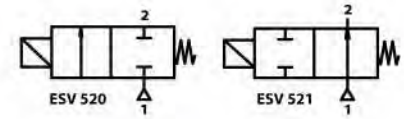


TECHNICAL SPECIFICATIONS, DESCRIPTIONS and GENERAL FEATURES

- **Fluids:** Valves are suitable for water, low viscosity oils etc... non-aggressive liquids and Air, Inert Gas etc... gaseous but is not suitable for hazardous fluids
- **Switching Function:** Normally Closed (N.C, Closed when de-energised) (ESV 520 Series) and Normally Open (N.O, Open when de-energised) (ESV 521 Series)
- **Principle of Operation:** Direct Operated
- **Way Number:** 2/2 (Ports / Positions)
- **Connection and Port Sizes:** G3/8" and G1/2"
- **Connection Type:** Thread (Female), G (BSPP / ISO 228-1)
- **Pressure Range:** 0 -7 Bar (ESV 520 Series) , 0-10 Bar (ESV 521 Series)
- **Fluid Temperature:** -10°C to max. 160°C
- **Ambient Temperature:** -20°C to max. 70°C
- **Opening Time:** 25 ms
- **Closing Time:** 25 ms
- **Max Viscosity:** 38 cSt or mm²/s
- **Maximum Allowable Pressure or Design Pressure:** 10 bar (ESV 520 Series), 15 Bar (ESV 521 Series)
- Don't require differential pressure, internal exhaust system (for ESV 521 Series)
- Valve has sealing o-rings
- Suitable AC and DC voltage, high voltage tolerance
- Coil interchangeable without dismantling the valve (don't matter AC or DC)
- Low flow loss, low power loss
- Various flow rate options, wide range of pressure ratings, wide range of orifice options
- Mounting position, optional any position but preferably solenoid coil vertical on top
- The fluid passing through the valve must be filtered
- Flow rate (Q) can be usually calculated as a function of pressure, density and flow coefficient
- According 97/23/EC Pressure Equipment Directive (PED), 2006/95/EEC Low Voltage Directive (LVD) and 2004/108/EC Electromagnetic Compatibility Directive (EMC)



| | | | |
|-------------------|-------------------------------------|--------------------------|---------------|
| Low Pressure Loss | Don't Require Differential Pressure | Coil Rotatable 360° | Large Orifice |
| Low Weight | Patented Enclosing Tube Design | Fast Opening and Closing | Long Life |



| Model No | Position | Connection and Port Size | Orifice Size | Flow Factor / Coefficient Kv | Operating Pressure Differential | | | | Fluid Temperature | | Seal | Approximate Weight | Reference Figure |
|----------------|----------|--------------------------|--------------|------------------------------|---------------------------------|---------------|---------------|---------------|-------------------|---------|------|--------------------|------------------|
| | | | | | Min. (For AC) | Min. (For DC) | Max. (For AC) | Max. (For DC) | Min. °C | Max. °C | | | |
| ESV | | G | mm | L/m | m ³ /h | Bar | Bar | Bar | Bar | °C | °C | kg | |
| ESV 520.02.050 | N.C | 3/8" | 5 | 9.5 | 0.57 | 0 | 0 | 7 | 7 | -10 | 160 | 0.47 | Fig.1 |
| ESV 520.02.060 | N.C | 3/8" | 6 | 11.5 | 0.69 | 0 | 0 | 6 | 6 | -10 | 160 | 0.47 | Fig.1 |
| ESV 520.02.070 | N.C | 3/8" | 7 | 12.5 | 0.75 | 0 | 0 | 5 | 5 | -10 | 160 | 0.47 | Fig.1 |
| ESV 520.02.080 | N.C | 3/8" | 8 | 14 | 0.84 | 0 | 0 | 3 | 3 | -10 | 160 | 0.47 | Fig.1 |
| ESV 520.02.090 | N.C | 3/8" | 9 | 19 | 1.14 | 0 | 0 | 2 | 2 | -10 | 160 | 0.47 | Fig.1 |
| ESV 520.02.100 | N.C | 3/8" | 10 | 20 | 1.20 | 0 | 0 | 1 | 1 | -10 | 160 | 0.47 | Fig.1 |
| ESV 520.03.050 | N.C | 1/2" | 5 | 9.5 | 0.57 | 0 | 0 | 7 | 7 | -10 | 160 | 0.44 | Fig.1 |
| ESV 520.03.060 | N.C | 1/2" | 6 | 11.5 | 0.69 | 0 | 0 | 6 | 6 | -10 | 160 | 0.44 | Fig.1 |
| ESV 520.03.070 | N.C | 1/2" | 7 | 12.5 | 0.75 | 0 | 0 | 5 | 5 | -10 | 160 | 0.44 | Fig.1 |
| ESV 520.03.080 | N.C | 1/2" | 8 | 14 | 0.84 | 0 | 0 | 3 | 3 | -10 | 160 | 0.44 | Fig.1 |
| ESV 520.03.090 | N.C | 1/2" | 9 | 19 | 1.14 | 0 | 0 | 2 | 2 | -10 | 160 | 0.44 | Fig.1 |
| ESV 520.03.100 | N.C | 1/2" | 10 | 20 | 1.20 | 0 | 0 | 1 | 1 | -10 | 160 | 0.44 | Fig.1 |
| ESV 521.02.018 | N.O | 3/8" | 1.8 | 1.7 | 0.10 | 0 | 0 | 12 | 12 | -10 | 160 | 0.5 | Fig.1 |
| ESV 521.02.025 | N.O | 3/8" | 2.5 | 3.3 | 0.19 | 0 | 0 | 10 | 10 | -10 | 160 | 0.5 | Fig.1 |
| ESV 521.02.030 | N.O | 3/8" | 3 | 4.5 | 0.27 | 0 | 0 | 6 | 6 | -10 | 160 | 0.5 | Fig.1 |
| ESV 521.03.018 | N.O | 1/2" | 1.8 | 1.7 | 0.10 | 0 | 0 | 12 | 12 | -10 | 160 | 0.47 | Fig.1 |
| ESV 521.03.025 | N.O | 1/2" | 2.5 | 3.3 | 0.19 | 0 | 0 | 10 | 10 | -10 | 160 | 0.47 | Fig.1 |
| ESV 521.03.030 | N.O | 1/2" | 3 | 4.5 | 0.27 | 0 | 0 | 6 | 6 | -10 | 160 | 0.47 | Fig.1 |

OPTIONS

- Custom options can be performed for customer's special requests
- On request; NPT (ANSI 1.20.3), R (BSPT / ISO 7-1), W (BSW / Whitworth), M (Metric) etc...
- On request; diaphragm or sealing or o-rings can be NBR (-10°C to 80°C)
- On request; various body surface coating, nickel plated body, different body materials, internal parts stainless steel (for ESV 521), manual override, seat can be stainless steel, filter, other pipe connections, 2 or 4 mounting sub-base holes at the bottom of the body
- On request; other special supply voltages, frequencies (60 Hz), other power, coil insulation class : F (155°C), coil duty latching model
- On request; with electronic timer , Explosion-Proof coil for use in zones 1/21-2/22 [Eex em II T4/T5], coil encapsulation material can be fiber glass reinforced (V0 or V1)
- On request; connector with LED or without connector, connector with visual indication and peak voltage suppression, connector with cable length of 2m, Spade plug (Cable Ø 8-10 mm), connector non-flammable
- On request other versions

ELECTRICAL CHARACTERISTICS

- **Protection Degree:** IP 65 (EN 60529) (with connector)
- **Plug Connection:** DIN 46340-3 poles connectors (DIN 43650)
- **Connector Specification:** ISO 4400 / EN 175301-803 , Form A, Spade plug (Cable Ø 6-8 mm)
- **Electrical Safety:** IEC 335, EN 60335-1, EN 60204-1
- **Coil Insulation Class:** H (180°C)
- **Coil Impregnation:** Polyester Fiber-Resin Glass
- **Coil Encapsulation Material:** Fiber Glass Reinforced (V2)
- **Supply Voltages:** For AC(-) 12V , 24V , 48V , 110V , 230V
For DC (=) 12V , 24V , 48V , 110 V , 230 V
- **Voltage Tolerances:** For AC (-) or DC (=) % -10 ; %+10
- **Frequency:** 50 Hz
- **Coil Duty Cycle:** %100 ED, Continuously Rated
- Design according to DIN VDE 0580

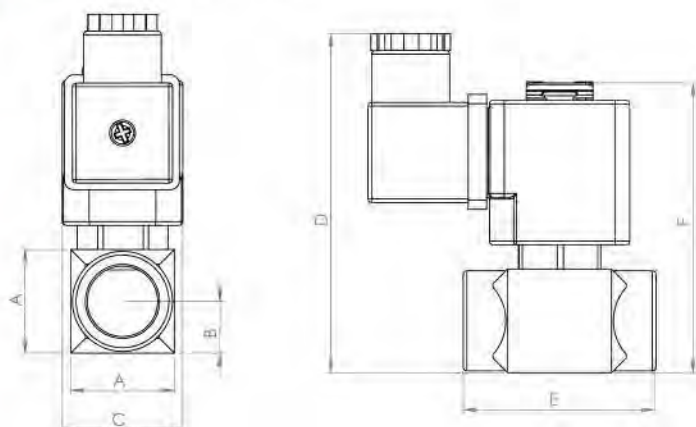
POWER CONSUMPTION

| Power Consumption | | | | | | | |
|--------------------------|---------|-------------|--------------|---------------------|---------|----------|---------|
| Alternating Current (AC) | | | | Direct Current (DC) | | | |
| Model No | Voltage | Inrush (VA) | Holding (VA) | Model No | Voltage | Cold (W) | Hot (W) |
| ECO 10.AC.012 | 12V | 30 | 18 | ECO 10.DC.012 | 12V | 16 | 12 |
| ECO 10.AC.024 | 24V | 30 | 18 | ECO 10.DC.024 | 24V | 16 | 12 |
| ECO 10.AC.048 | 48V | 30 | 18 | ECO 10.DC.048 | 48V | 16 | 12 |
| ECO 10.AC.110 | 110V | 30 | 18 | ECO 10.DC.110 | 110V | 16 | 12 |
| ECO 10.AC.230 | 230V | 30 | 18 | ECO 10.DC.230 | 230V | 16 | 12 |

MATERIALS

- **Body:** Brass
- **Plunger Seal:** VITON
- **Enclosing Tube:** Stainless Steel (AISI 430FR and AISI 304) for ESV 520 Series , Stainless Steel (AISI 430FR and AISI 304) and Brass for ESV 521 Series
- **Plunger:** Stainless Steel (AISI 430FR)
- **Springs:** Stainless Steel (AISI 302)
- **Shading Ring:** Copper
- **Seat:** Brass
- **O-rings:** NBR
- **Internal Metal Parts:** Stainless Steel and Brass

DIMENSIONS (mm)



| Size | A | B | C | D | E | F |
|------|----|----|------|------|------|------|
| 3/8" | 28 | 14 | 32.5 | 91.5 | 51.5 | 78.2 |
| 1/2" | 28 | 14 | 32.5 | 91.5 | 51.5 | 78.2 |