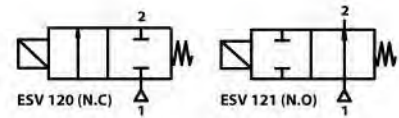


**TECHNICAL SPECIFICATIONS, DESCRIPTIONS and GENERAL FEATURES**

- **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 120 Series) and Normally Open (N.O, Open when de-energised) (ESV 121 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 120 Series) , 0-10 Bar (ESV 121 Series)
- **Fluid Temperature:** -10°C to max. 80°C
- **Ambient Temperature:** -20°C to max. 70°C
- **Opening Time:** 25 ms
- **Closing Time:** 25 ms
- **Max Viscosity:** 38 cSt or mm<sup>2</sup>/s
- **Maximum Allowable Pressure or Design Pressure:** 10 bar (ESV 120 Series), 15 Bar (ESV 121 Series)
- Don't require differential pressure, internal exhaust system (for ESV 121 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
- According 97/23/EC Pressure Equipment Directive (PED), 2006/95/EEC Low Voltage Directive (LVD) and 2004/108/EC Electromagnetic Compatibility Directive (EMC)
- Flow rate (Q) can be usually calculated as a function of pressure, density and flow coefficient



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 <sup>3</sup> /h	Bar	Bar	Bar	Bar	°C	°C	kg		
ESV 120.02.050	N.C	3/8"	5	9.5	0.57	0	0	7	7	-10	80	NBR	0.47	Fig.1
ESV 120.02.060	N.C	3/8"	6	11.5	0.69	0	0	6	6	-10	80	NBR	0.47	Fig.1
ESV 120.02.070	N.C	3/8"	7	12.5	0.75	0	0	5	5	-10	80	NBR	0.47	Fig.1
ESV 120.02.080	N.C	3/8"	8	14	0.84	0	0	3	3	-10	80	NBR	0.47	Fig.1
ESV 120.02.090	N.C	3/8"	9	19	1.14	0	0	2	2	-10	80	NBR	0.47	Fig.1
ESV 120.02.100	N.C	3/8"	10	20	1.20	0	0	1	1	-10	80	NBR	0.47	Fig.1
ESV 120.03.050	N.C	1/2"	5	9.5	0.57	0	0	7	7	-10	80	NBR	0.44	Fig.1
ESV 120.03.060	N.C	1/2"	6	11.5	0.69	0	0	6	6	-10	80	NBR	0.44	Fig.1
ESV 120.03.070	N.C	1/2"	7	12.5	0.75	0	0	5	5	-10	80	NBR	0.44	Fig.1
ESV 120.03.080	N.C	1/2"	8	14	0.84	0	0	3	3	-10	80	NBR	0.44	Fig.1
ESV 120.03.090	N.C	1/2"	9	19	1.14	0	0	2	2	-10	80	NBR	0.44	Fig.1
ESV 120.03.100	N.C	1/2"	10	20	1.20	0	0	1	1	-10	80	NBR	0.44	Fig.1
ESV 121.02.025	N.O	3/8"	2.5	3.3	0.19	0	0	10	10	-10	80	NBR	0.5	Fig.1
ESV 121.03.025	N.O	1/2"	2.5	3.3	0.19	0	0	10	10	-10	80	NBR	0.47	Fig.1



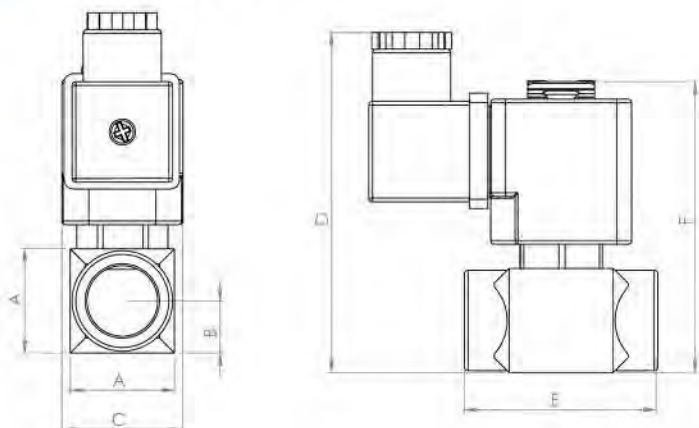
## OPTIONS

- 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 FPM (VITON) [-10°C to 160°C], EPDM [-10°C to 140°C]
- On request; various body surface coating, nickel plated body, different body materials, internal parts stainless steel (for ESV 121), 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

## 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

## 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

## 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, 110V, 230V
- **Voltage Tolerances:** For AC (-) or DC (=) % -10 ; %+10
- **Frequency:** 50 Hz
- **Coil Duty Cycle:** %100 ED, Continuously Rated
- Design according to DIN VDE 0580

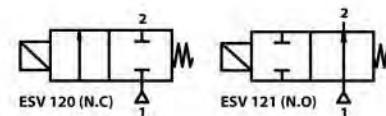
## MATERIALS

- **Body:** Brass
- **Plunger Seal:** NBR
- **Enclosing Tube:** Stainless Steel (AISI 430FR and AISI 304) for ESV 120 Series, Stainless Steel (AISI 430FR and AISI 304) and Brass for ESV 121 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



**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 120 Series) and Normally Open (N.O, Open when de-energised) (ESV 121 Series)
- **Principle of Operation:** Direct Operated
- **Way Number:** 2/2 (Ports / Positions)
- **Connection and Port Sizes:** G3/4" and G1"
- **Connection Type:** Thread (Female), G (BSPP / ISO 228-1)
- **Pressure Range:** -0 -7 Bar (ESV 120 Series) , 0-10 Bar (ESV 121 Series)
- **Fluid Temperature:** -10°C to max. 80°C
- **Ambient Temperature:** -20°C to max. 70°C
- **Opening Time:** 25 ms
- **Closing Time:** 25 ms
- **Max Viscosity:** 38 cSt or mm<sup>2</sup>/s
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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 <sup>3</sup> /h	Bar	Bar	Bar	Bar	°C	°C	kg	
ESV 120.04.050	N.C	3/4"	5	9.5	0.57	0	0	7	7	-10	80	0.7	Fig.1
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ESV 120.04.100	N.C	3/4"	10	20	1.20	0	0	1	1	-10	80	0.7	Fig.1
ESV 120.05.050	N.C	1"	5	9.5	0.57	0	0	7	7	-10	80	0.65	Fig.1
ESV 120.05.060	N.C	1"	6	11.5	0.69	0	0	6	6	-10	80	0.65	Fig.1
ESV 120.05.070	N.C	1"	7	12.5	0.75	0	0	5	5	-10	80	0.65	Fig.1
ESV 120.05.080	N.C	1"	8	14	0.84	0	0	3	3	-10	80	0.65	Fig.1
ESV 120.05.090	N.C	1"	9	19	1.14	0	0	2	2	-10	80	0.65	Fig.1
ESV 120.05.100	N.C	1"	10	20	1.20	0	0	1	1	-10	80	0.65	Fig.1
ESV 121.04.025	N.O	3/4"	2.5	3.3	0.19	0	0	10	10	-10	80	0.73	Fig.1
ESV 121.05.025	N.O	1"	2.5	3.3	0.19	0	0	10	10	-10	80	0.68	Fig.1



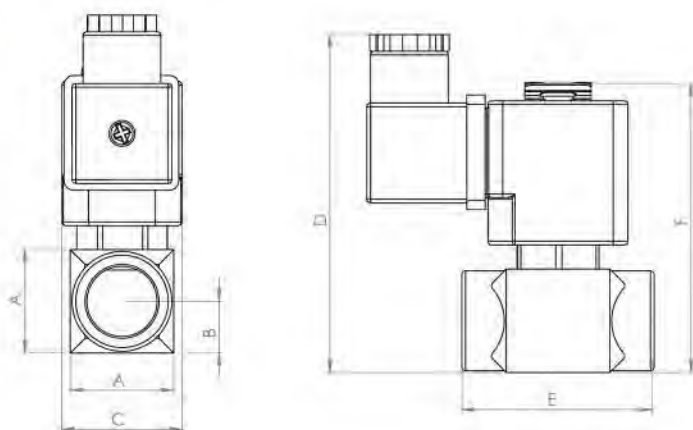
## OPTIONS

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- On request; diaphragm or sealing or o-rings can be FPM (VITON) (-10°C to 160°C), EPDM (-10°C to 140°C)
- On request; various body surface coating, nickel plated body, different body materials, internal parts stainless steel (for ESV121), 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
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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

## DIMENSIONS (mm)



Size	A	B	C	D	E	F
3/4"	32	16	32.5	95.5	52	82
1"	40	20	32.5	103.5	60	90

## 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

## MATERIALS

- **Body:** Brass
- **Plunger Seal:** NBR
- **Enclosing Tube:** Stainless Steel (AISI 430FR and AISI 304) for ESV 120 Series , Stainless Steel (AISI 430FR and AISI 304) and Brass for ESV 121 Series
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- **Internal Metal Parts:** Stainless Steel and Brass