

# Series A directly operated solenoid valves

2/2-way - Normally Closed (NC) and Normally Open (NO)  
3/2-way - Normally Closed (NC) and Normally Open (NO)

- » Ports: M5, G1/8, R1/8, cartridge Ø4
- » Bistable version also available (with magnetic memory)



Series A solenoid valves are of the directly operated type and can be used with dry or lubricated air. They are available in the 2/2 and 3/2-way versions with normally closed (NC) or normally open (NO) operation. As shown in the following tables, they are supplied in different versions according to the type of body, threaded ports and orifice. They can thus satisfy various operating and installation requirements.

The solenoid can be easily and quickly replaced without interfering with the pressurised part of the valve. On the same mechanical part different types of solenoids can be interchanged. The choice of solenoids determines the performance of the solenoid valve in terms of consumption and pressure.

## GENERAL DATA

### TECHNICAL FEATURES

Function	2/2 NC - 2/2 NO - 3/2 NC - 3/2 NO
Operation	direct acting poppet type
Pneumatic connections	M5, G1/8, R1/8 threads - Ø4 fittings - CNOMO and manifold interface- Ø6 barb fittings
Orifice diameter	1.2 ... 2.5 mm
Flow coefficient kv (l/min)	0.62 ... 2.0
Operating pressure	-0.9 ... 15 bar
Operating temperature	0 ÷ 60 °C (-20 °C with dry air)
Media	filtered air, class 5.4.4 according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time	ON <15 ms - OFF <25 ms
Manual override	see tables
Installation	in any position

### MATERIALS IN CONTACT WITH THE MEDIUM

Body	nickel-plated brass - burnished brass - PA6 - PBT
Seals	HNBR, FKM
Internal parts	stainless steel

### ELECTRICAL FEATURES

Voltage	12 ... 110 V DC - 24 ... 380 V AC 50/60 Hz
Voltage tolerance	±10% (DC) / -15% ÷ +10% (AC)
Power consumption	3 ... 5 W (DC) / 3.5 ... 7 VA (AC)
Duty cycle	ED 100%
Insulation class	F (155°C)
Electrical connection	DIN EN 175 301-803-A - DIN EN 175 301-803-B
Protection class	IP65 with connector

Special versions available on demand

## CODING EXAMPLE

<b>A</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>-</b>	<b>0</b>	<b>C</b>	<b>2</b>	<b>-</b>	<b>U7</b>	<b>7</b>
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<b>A</b>	SERIES
<b>3</b>	<p><b>BODY DESIGN</b></p> <p>1 = 360° rotatable interface body (24x24 mm)  2 = fixed interface body (24x24 mm)  3 = threaded body  4 = threaded body with quick exhaust  5 = ISO interface body  6 = 360° rotatable interface body (16x16 mm)  7 = 360° rotatable interface body (21 mm)  8 = barb fittings connections body  A = single manifold  B = 2-part manifold  C = 3-part manifold  D = 4-part manifold  E = 5-part manifold  F = 6-part manifold  G = 7-part manifold  H = 8-part manifold  K = 9-part manifold  L = 10-part manifold  M = 11-part manifold  N = 12-part manifold  P = 13-part manifold  R = 14-part manifold  S = 15-part manifold</p>
<b>3</b>	<p><b>NUMBER OF PORTS</b></p> <p>2 = 2 ways  3 = 3 ways</p>
<b>1</b>	<p><b>FUNCTION</b></p> <p>1 = NC - normally closed  2 = NO - normally open  3 = NO IN-LINE* - normally open</p>
<b>0</b>	<p><b>PORTS</b></p> <p>0 = M5  1 = G1/8  3 = M5-R1/8  4 = M5-R1/8 with manual override  A = O-Rings rotatable interface  B = O-Rings fixed interface  C = G1/8-fittings Ø4 mm  F = Ø6 mm barb fittings</p>
<b>C</b>	<p><b>ORIFICE DIAMETER</b></p> <p>C = Ø 1.2 - 1.4 - 1.5 mm  D = Ø 2.0 mm  E = Ø 2.5 mm</p>
<b>2</b>	<p><b>BODY MATERIAL</b></p> <p>2 = nickel-plated brass - burnished brass - aluminium  3 = PA6 - PBT technopolimers</p>
<b>U7</b>	<p><b>SOLENOIDS - OVERMOLDING MATERIAL / SIZE</b></p> <p>U7 = PET / 22 mm - solenoids available in standard version and in ATEX version for Zones 2-22  G7 = PA66 / 22 mm  G9 = PA66 / 22 mm - solenoid for bistable function (not available for 2/2 NO function)  A8 = PPS / 30 mm  H8 = PA6 V0 / 30 mm - solenoids ATEX version for Zones 1-21</p>
<b>7</b>	<p><b>VOLTAGE - POWER CONSUMPTION</b></p> <p>See following page for U7 / G7 solenoids and dedicated section 2.35</p>

\* 3/2 NO IN-LINE version: port position 1 - 2 - 3 are identical to port positions of 3/2 NC versions

**PRESSURE RANGES AND SOLENOIDS - VALVES BODY MATCHING TABLE**

For vacuum applications:

2/2-way function connect the suction source to port 2

3/2-way function connect the suction source to port 1

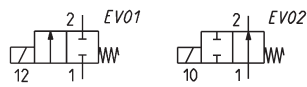
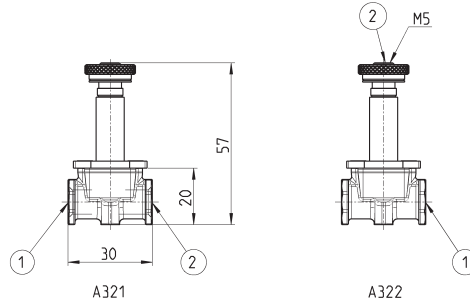
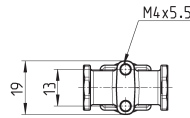
Mod.	Min ÷ max working pressure (bar) allowed with solenoids DC >3 W	Min ÷ max working pressure (bar) allowed with solenoids DC >4 W	Min ÷ max working pressure (bar) allowed with solenoids AC >3.5 VA
<b>Function 2/2 NC</b>			
A321-0C2-*	-0.9 ÷ 8	-0.9 ÷ 15	-0.9 ÷ 15
A321-1C2-*	-0.9 ÷ 8	-0.9 ÷ 15	-0.9 ÷ 15
A321-1D2-*	-0.9 ÷ 4	-0.9 ÷ 9	-0.9 ÷ 9
A321-1E2-*	-0.9 ÷ 1	-0.9 ÷ 6	-0.9 ÷ 6
A821-FE3-*	-0.9 ÷ 1	-0.9 ÷ 6	-0.9 ÷ 6
-	-	-	-
<b>Function 2/2 NO</b>			
A322-0C2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
A322-1C2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
-	-	-	-
<b>Function 3/2 NC</b>			
A131-AC2-*	-	-	-
A231-BC2-*	-	-	-
A331-0C2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
A331-1C2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
A331-1D2-*	-	-0.9 ÷ 6	-0.9 ÷ 6
A331-1E2-*	-	-0.9 ÷ 4	-0.9 ÷ 4
A331-3C2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
A331-4C2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
A431-1C2-*	2 ÷ 10	2 ÷ 10	2 ÷ 10
A531-BC2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
A631-AC2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
A731-AC2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
A831-FE3-*	-	-0.9 ÷ 4	-0.9 ÷ 4
AA31-0C2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
AA31-0C3-*	2 ÷ 8	-0.9 ÷ 8	-0.9 ÷ 8
AA31-CC2-*	2 ÷ 10	-0.9 ÷ 10	-0.9 ÷ 10
AA31-CC3-*	2 ÷ 8	-0.9 ÷ 8	-0.9 ÷ 8
-	-	-	-
<b>Function 3/2 NO</b>			
A332-0C2-*	-0.9 ÷ 7	-0.9 ÷ 7	-0.9 ÷ 7
A332-1C2-*	-0.9 ÷ 7	-0.9 ÷ 7	-0.9 ÷ 7
AA32-0C2-*	-0.9 ÷ 7	-0.9 ÷ 7	-0.9 ÷ 7
AA32-0C3-*	-0.9 ÷ 7	-0.9 ÷ 7	-0.9 ÷ 7
AA32-CC2-*	-0.9 ÷ 7	-0.9 ÷ 7	-0.9 ÷ 7
AA32-CC3-*	-0.9 ÷ 7	-0.9 ÷ 7	-0.9 ÷ 7
-	-	-	-
<b>Function 3/2 NO IN-LINE</b>			
A333-0C2-*	-0.9 ÷ 6	-	-0.9 ÷ 9
A333-1C2-*	-0.9 ÷ 6	-	-0.9 ÷ 9
AA33-0C2-*	-0.9 ÷ 6	-	-0.9 ÷ 9
AA33-0C3-*	-0.9 ÷ 6	-	-0.9 ÷ 8
AA33-CC2-*	-0.9 ÷ 6	-	-0.9 ÷ 9
AA33-CC3-*	-0.9 ÷ 6	-	-0.9 ÷ 8
-	-	-	-
<b>Solenoids for functions 2/2 NC - 2/2 NO - 3/2 NC - 3/2 NO</b>			
12 V DC - 3.1 W	G7H - U7H - U7HEX	-	-
24 V DC - 3.1 W	G77 - U77 - U77EX	-	-
48 V DC - 3.1 W	G79 - U79 - U79EX	-	-
110 V DC - 3.2 W	G710 - U710 - U710EX	-	-
6 V DC - 5.1 W	-	U71 - U71EX	-
12 V DC - 5 W	-	G72 - U72 - U72EX	-
24 V DC - 5 W	-	G73 - U73 - U73EX	-
48 V DC - 5.3 W	-	U74 - U74EX	-
72 V DC - 4.8 W	-	G7K - U7K - U7KEX	-
110 V DC - 4.2 W	-	G76 - U76 - U76EX	-
48 V 50/60 Hz - 3.8 VA	-	-	G77 - U77 - U77EX
110 V 50/60 Hz - 3.8 VA	-	-	G7K - U7K - U7KEX
125 V 50/60 Hz - 5.5 VA	-	-	G7K - U7K - U7KEX
230 V 50/60 Hz - 3.5 VA	-	-	G7J - U7J - U7JEX
240 V 50/60 Hz - 4 VA	-	-	G7J - U7J - U7JEX
-	-	-	-
<b>Solenoids for 3/2 NO IN LINE functions</b>			
-	-	-	-

**Series A solenoid valve - 2/2-way - Mod. A32**



Available in the 2/2-way version NC (normally closed), NO (normally open).  
In the 2/2-way NO version the M5 threaded output port 2 is located on the upper side of the coil.

\* choose the most suitable solenoid.



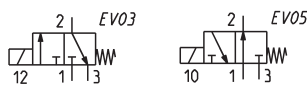
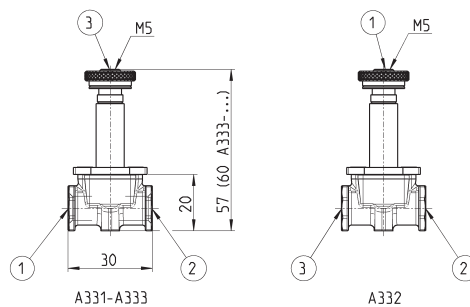
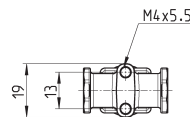
Mod.	Function	Ports	Orifice Ø (mm)	kv (l/min)	Body material	Manual override	Symbol
A321-0C2-*	2/2 NC	M5	1.5	0.77	nickel plated brass	no	EV01
A321-1C2-*	2/2 NC	G1/8	1.5	0.85	nickel plated brass	no	EV01
A321-1D2-*	2/2 NC	G1/8	2.0	1.55	nickel plated brass	no	EV01
A321-1E2-*	2/2 NC	G1/8	2.5	2.00	nickel plated brass	no	EV01
A322-0C2-*	2/2 NO	M5	1.8	1.08	nickel plated brass	no	EV02
A322-1C2-*	2/2 NO	G1/8	1.8	1.24	nickel plated brass	no	EV02

**Series A solenoid valve - 3/2-way - Mod. A33**



The 3/2-way NC and NO IN-LINE versions have inlet, outlet and exhaust ports in the same position.  
In the 3/2-way NO version, the M5 threaded inlet port 1, is located on the upper side of the coil.

\* choose the most suitable solenoid.



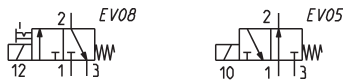
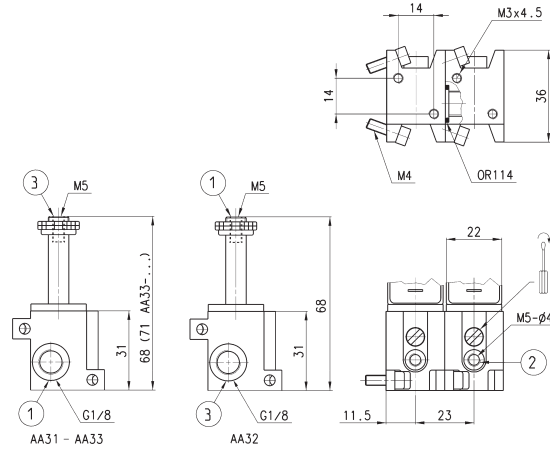
Mod.	Function	Ports	Orifice Ø (mm)	kv (l/min)	Body material	Manual override	Symbol
A331-0C2-*	3/2 NC	M5	1.5	0.77	nickel plated brass	no	EV03
A331-1C2-*	3/2 NC	G1/8	1.5	0.93	nickel plated brass	no	EV03
A331-1D2-*	3/2 NC	G1/8	2.0	1.45	nickel plated brass	no	EV03
A331-1E2-*	3/2 NC	G1/8	2.5	1.90	nickel plated brass	no	EV03
A332-0C2-*	3/2 NO	M5	1.5	0.85	nickel plated brass	no	EV05
A332-1C2-*	3/2 NO	M5-G1/8	1.5	0.85	nickel plated brass	no	EV05
A333-0C2-*	3/2 NO IN-LINE	M5	1.5	0.93	nickel plated brass	no	EV05

**Series A solenoid valve - 3/2-way - Mod. AA3 - modular brass body**



3/2-way NC and NO IN-LINE versions with G1/8 common inlet port located on the valve body.  
3/2-way NO versions with M5 single inlets located on the upper side of the coil.

\* choose the most suitable solenoid.



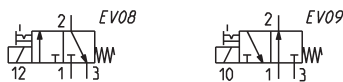
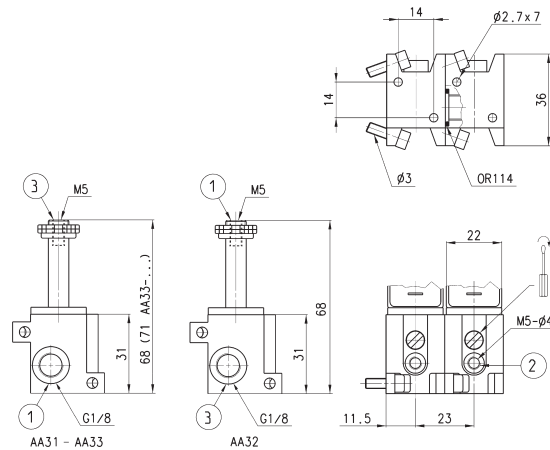
Mod.	Function	Ports	Orifice Ø (mm)	kv (l/min)	Body material	Manual override	Symbol
AA31-0C2-*	3/2 NC	G1/8-M5	1.5	0.85	nickel plated brass	bistable	EV08
AA31-CC2-*	3/2 NC	G1/8-Ø4	1.5	0.85	nickel plated brass	bistable	EV08
AA32-0C2-*	3/2 NO	M5-M5	1.4	0.75	nickel plated brass	bistable	EV05
AA32-CC2-*	3/2 NO	M5-Ø4	1.4	0.75	nickel plated brass	bistable	EV05
AA33-0C2-*	3/2 NO IN-LINE	G1/8-M5	1.5	1.00	nickel plated brass	no	EV05
AA33-CC2-*	3/2 NO IN-LINE	G1/8-Ø4	1.5	1.00	nickel plated brass	no	EV05

**Series A solenoid valve - 3/2-way - Mod. AA3 - modular technopolymer body**



3/2-way NC and NO IN-LINE versions with G1/8 common inlet port located on the valve body.  
3/2-way NO versions with M5 single inlets located on the upper side of the coil.

\* choose the most suitable solenoid.



Mod.	Function	Ports	Orifice Ø (mm)	kv (l/min)	Body material	Manual override	Symbol
AA31-0C3-*	3/2 NC	G1/8-M5	1.5	0.85	PA6	bistable	EV08
AA31-CC3-*	3/2 NC	G1/8-Ø4	1.5	0.85	PA6	bistable	EV08
AA32-0C3-*	3/2 NO	M5-M5	1.4	0.75	PA6	bistable	EV05
AA32-CC3-*	3/2 NO	M5-Ø4	1.4	0.75	PA6	bistable	EV05
AA33-0C3-*	3/2 NO IN-LINE	G1/8-M5	1.5	1.00	PA6	no	EV05
AA33-CC3-*	3/2 NO IN-LINE	G1/8-Ø4	1.5	1.00	PA6	no	EV05





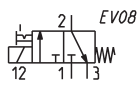
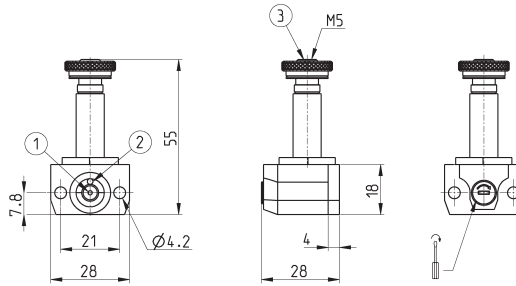
**Series A solenoid valve - 3/2-way NC - Mod. A73 - rotatable interface**

**New**



\* choose the most suitable solenoid.

Ideal for direct installation on manifold by means of 2 screws. Seal ensured by 2 concentric O-Rings that allow 360° body orientation. Equipped with a bistable manual override.



Mod.	Function	Interface	Orifice Ø (mm)	kv (l/min)	Body material	Manual override	Symbol
A731-AC2-*	3/2 NC	OR rotatable	1.2	0.62	PA6	bistable	EV08

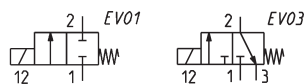
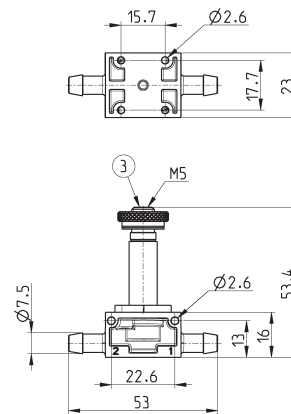
**Series A solenoid valve - 2/2 e 3/2-way NC - Mod. A82 e A83 - barb fittings**

**New**



\* Choose the most suitable solenoid.  
 \*\* The performances shown in the table refer to the use with inlet from "2" and outlet from "1".

Solenoid valve with technopolymer body and integrated barb fittings for quick connections.



Mod.	Function	Ports	Orifice Ø (mm)	kv (l/min)	Body material	Manual override	Symbol
A821-FE3-*	2/2 NC	barb fittings Ø6	2.5	2.0	PBT	no	EV01
A831-FE3-*	3/2 NC **	barb fittings Ø6	2.5	1.8	PBT	no	EV03

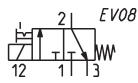
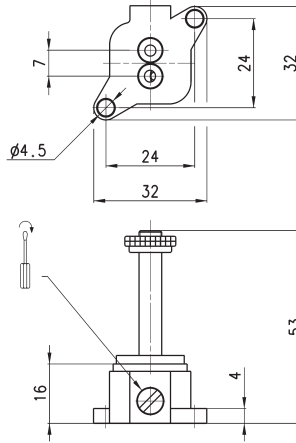


**Series A solenoid valve - 3/2-way - Mod. A231 - fixed interface**



Equipped with a bistable manual override. Ideal for direct installation on manifold by means of 2 screws.

\* choose the most suitable solenoid.



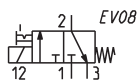
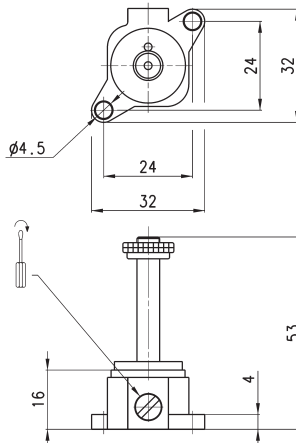
Mod.	Function	Interface	Orifice	Ø (mm)	kv (l/min)	Body	material	Manual override	Symbol
A231-BC2-*	3/2 NC	OR fixed	1.5	1.1	1.1	nickel plated brass	bistable	EV08	EV08

**Series A solenoid valve - 3/2-way - Mod. A231 - rotatable interface**



Equipped with a bistable manual override. Ideal for direct installation on manifold by means of 2 screws. Seal ensured by 2 concentric O-Rings that allow 360° body orientation.

\* choose the most suitable solenoid.



Mod.	Function	Interface	Orifice Ø (mm)	kv (l/min)	Body material	Manual override	Symbol
A131-AC2-*	3/2 NC	OR rotatable	1.5	1.1	nickel plated brass	bistable	EV08