

DIRECT ACTING SOLENOID VALVES

SERIES A

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)
Fluid	Filtered air, class [5:4:4] according to ISO 8573-1:2010 (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

DIRECT ACTING SOLENOID VALVES
SERIES A - CODING EXAMPLES
Coding Example

A	3	3	1	-	0	C	2	-	U7	7
A	SERIES									
3	BODY DESIGN 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									
3	NUMBER OF PORTS 2 = 2 ways 3 = 3 ways									
1	FUNCTION 1 = NC - Normally Closed 2 = NO - Normally Open 3 = NO IN-LINE* - Normally Open									
0	PORTS 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									
C	ORIFICE DIAMETER C = Ø1,2 - 1,4 - 1,5 mm D = Ø2,0 mm E = Ø2,5 mm									
2	BODY MATERIAL 2 = Nickel-plated brass - burnished brass - aluminium 3 = PA6 - PBT technopolimers									
U7	SOLENOIDS - OVERMOLDING MATERIAL / SIZE 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									
7	VOLTAGE - POWER CONSUMPTION									

VALVES AND SOLENOID VALVES

6

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.

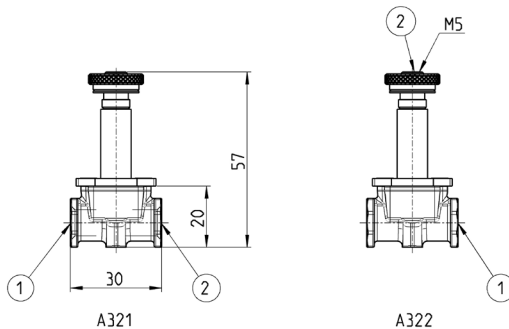
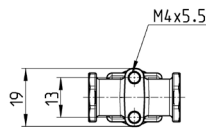
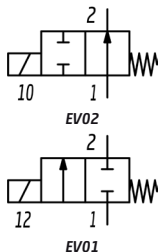
Nota: for AC voltages, the indicated pressure ranges refer to 50 Hz frequency. Please contact our technical dept. for use with with 60Hz frequency.

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
Function 2/2 NC	-	-	-
A321-0C2- ^{3s}	-0,9 ÷ 8	-0,9 ÷ 15	-0,9 ÷ 15
A321-1C2- ^{3s}	-0,9 ÷ 8	-0,9 ÷ 15	-0,9 ÷ 15
A321-1D2- ^{3s}	-0,9 ÷ 4	0,9 ÷ 9	-0,9 ÷ 9
A321-1E2- ^{3s}	-0,9 ÷ 1	-0,9 ÷ 6	-0,9 ÷ 6
A821-FE3- ^{3s}	-0,9 ÷ 1	-0,9 ÷ 6	-0,9 ÷ 6
-	-	-	-
Function 2/2 NO	-	-	-
A322-0C2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
A322-1C2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
-	-	-	-
Function 3/2 NC	-	-	-
A131-AC2- ^{3s}	-	-	-
A231-BC2- ^{3s}	-	-	-
A331-0C2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
A331-1C2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
A331-1D2- ^{3s}	-	-0,9 ÷ 6	-0,9 ÷ 6
A331-1E2- ^{3s}	-	-0,9 ÷ 4	-0,9 ÷ 4
A331-3C2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
A331-4C2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
A431-1C2- ^{3s}	2 ÷ 10	2 ÷ 10	2 ÷ 10
A531-BC2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
A631-AC2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
A731-AC2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
A831-FE3- ^{3s}	-	-0,9 ÷ 4	-0,9 ÷ 4
AA31-0C2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
AA31-0C3- ^{3s}	2 ÷ 8	-0,9 ÷ 8	-0,9 ÷ 8
AA31-CC2- ^{3s}	2 ÷ 10	-0,9 ÷ 10	-0,9 ÷ 10
AA31-CC3- ^{3s}	2 ÷ 8	-0,9 ÷ 8	-0,9 ÷ 8
-	-	-	-
Function 3/2 NO	-	-	-
A332-0C2- ^{3s}	-0,9 ÷ 7	-0,9 ÷ 7	-0,9 ÷ 7
A332-1C2- ^{3s}	-0,9 ÷ 7	-0,9 ÷ 7	-0,9 ÷ 7
AA32-0C2- ^{3s}	-0,9 ÷ 7	-0,9 ÷ 7	-0,9 ÷ 7
AA32-0C3- ^{3s}	-0,9 ÷ 7	-0,9 ÷ 7	-0,9 ÷ 7
AA32-CC2- ^{3s}	-0,9 ÷ 7	-0,9 ÷ 7	-0,9 ÷ 7
AA32-CC3- ^{3s}	-0,9 ÷ 7	-0,9 ÷ 7	-0,9 ÷ 7
-	-	-	-
Function 3/2 NO	-	-	-
A333-0C2- ^{3s}	-0,9 ÷ 6	-	-0,9 ÷ 9
A333-1C2- ^{3s}	-0,9 ÷ 6	-	-0,9 ÷ 9
AA33-0C2- ^{3s}	-0,9 ÷ 6	-	-0,9 ÷ 9
AA33-0C3- ^{3s}	-0,9 ÷ 6	-	-0,9 ÷ 8
AA33-CC2- ^{3s}	-0,9 ÷ 6	-	-0,9 ÷ 9
AA33-CC3- ^{3s}	-0,9 ÷ 6	-	-0,9 ÷ 8
-	-	-	-
Solenoids for functions 2/2 NC - 2/2 NO - 3/2 NC - 3/2 NO	-	-	-
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
-	-	-	-
Solenoids for 3/2 NO IN LINE functions	-	-	-
12 VDC - 3,1 W	G7H1 - U7H1	-	-
24 VDC - 3,1 W	U771 - U771EX	-	-
72 V DC - 5,6 W	-	G7K1 - U7K1 - U7K1EX	-
48 V 50/60 Hz - 3,8 VA	-	-	G771 - U771 - U771EX
110 V 50/60 Hz - 5,8 VA	-	-	G7K1 - U7K1 - U7K1EX
125 V 50/60 Hz - 8,3 VA	-	-	G7K1 - U7K1 - U7K1EX

For AC voltages, the indicated pressure ranges refer to 50 Hz frequency. Please contact our technical dept. for use with with 60Hz frequency.

DIRECT ACTING SOLENOID VALVES
SERIES A - DIMENSIONS
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.

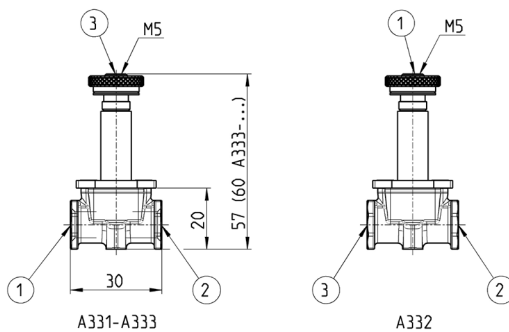
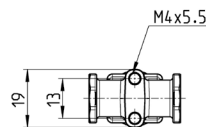
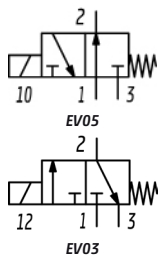


Mod.	Function	Ports	Orifice Ø (mm)	Kv (l/min)	Body material	Manual override	Symbol
A321-0C2-*	2/2 NC	M5	1,5	0,77	Nickel plated brass	No	EV01
A321-1C2-*	2/2 NC	G1/8	1,5	0,85	Nickel plated brass	No	EV01
A321-1D2-*	2/2 NC	G1/8	2,0	1,55	Nickel plated brass	No	EV01
A321-1E2-*	2/2 NC	G1/8	2,5	2,00	Nickel plated 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

* Choose the most suitable solenoid

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.

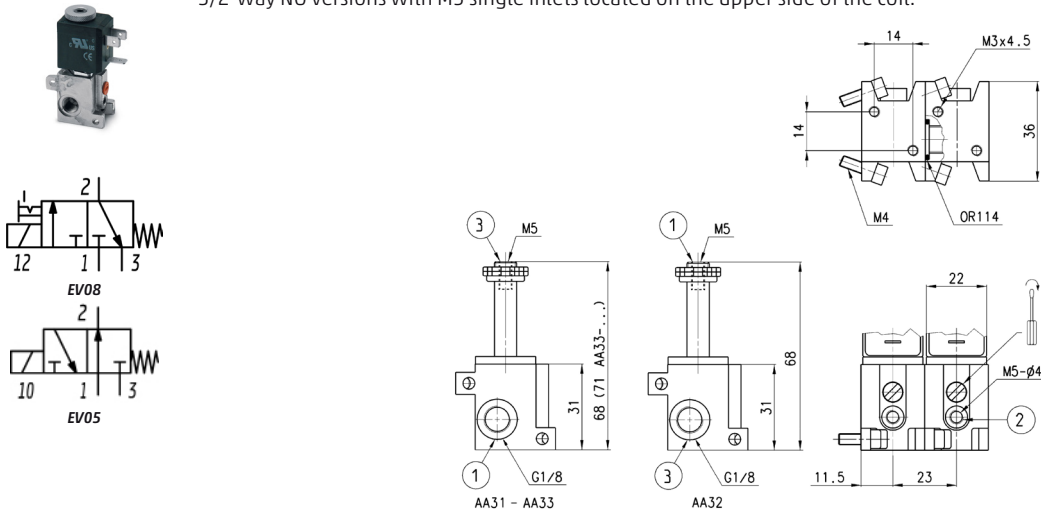


Mod.	Function	Ports	Orifice Ø (mm)	Kv (l/min)	Body material	Manual override	Symbol
A331-0C2-*	3/2 NC	M5	1,5	0,77	Nickel plated brass	No	EV03
A331-1C2-*	3/2 NC	G1/8	1,5	0,93	Nickel plated brass	No	EV03
A331-1D2-*	3/2 NC	G1/8	2,0	1,45	Nickel plated brass	No	EV03
A331-1E2-*	3/2 NC	G1/8	2,5	1,90	Nickel plated 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
A333-1C2-*	3/2 NO IN-LINE	G1/8	1,5	0,93	Nickel plated brass	No	EV05

* Choose the most suitable solenoid

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.

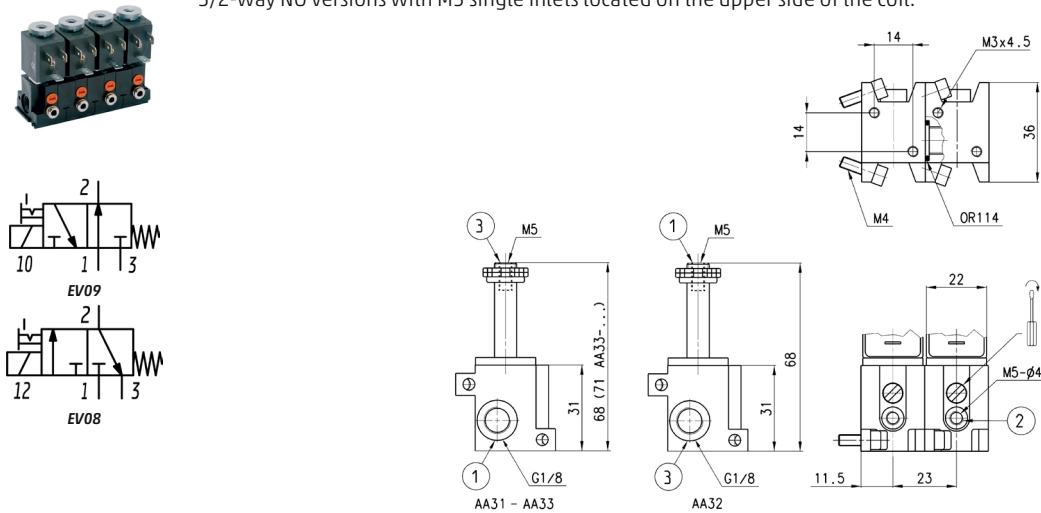


Mod.	Function	Ports	Orifice \varnothing (mm)	Kv (l/min)	Body material	Manual override	Symbol
AA31-OC2-*	3/2 NC	G1/8-M5	1,5	0,85	Nickel plated brass	Bistable	EV08
AA31-CC2-*	3/2 NC	G1/8- \varnothing 4	1,5	0,85	Nickel plated brass	Bistable	EV08
AA32-OC2-*	3/2 NO	M5-M5	1,4	0,75	Nickel plated brass	Bistable	EV05
AA32-CC2-*	3/2 NO	M5- \varnothing 4	1,4	0,75	Nickel plated brass	Bistable	EV05
AA33-OC2-*	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- \varnothing 4	1,5	1,00	Nickel plated brass	No	EV05

* Choose the most suitable solenoid

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.

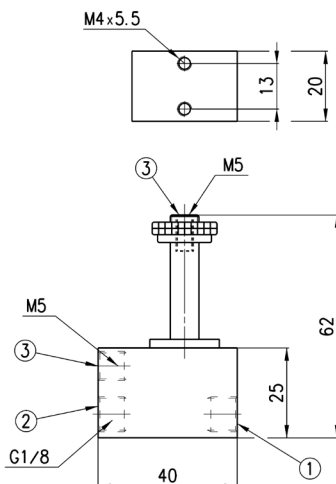
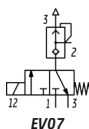


Mod.	Function	Ports	Orifice \varnothing (mm)	Kv (l/min)	Body material	Manual override	Symbol
AA31-OC3-*	3/2 NC	G1/8-M5	1,5	0,85	PA6	Bistable	EV08
AA31-CC3-*	3/2 NC	G1/8- \varnothing 4	1,5	0,85	PA6	Bistable	EV08
AA32-OC3-*	3/2 NO	M5-M5	1,4	0,75	PA6	Bistable	EV05
AA32-CC3-*	3/2 NO	M5- \varnothing 4	1,4	0,75	PA6	Bistable	EV05
AA33-OC3-*	3/2 NO IN-LINE	G1/8-M5	1,5	1,00	PA6	No	EV05
AA33-CC3-*	3/2 NO IN-LINE	G1/8- \varnothing 4	1,5	1,00	PA6	No	EV05

* Choose the most suitable solenoid

DIRECT ACTING SOLENOID VALVES
SERIES A - DIMENSIONS
Solenoid valve - 3/2-way NC - Mod. A43 - quick exhaust

The 3/2-way NC solenoid valve, with G1/8 ports, incorporates a rapid exhaust valve. It is particularly suitable for operating small single-acting cylinders.

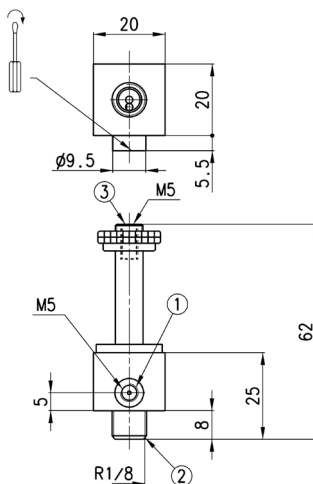
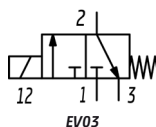


Mod.	Function	Ports	Orifice \varnothing (mm)	Kv (L/min)	Body material	Manual override	Symbol
A431-1C2-*	3/2 NC	G1/8	1,5	0,77	Aluminium	No	EV07

* Choose the most suitable solenoid

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

They are particularly suitable for the actuation of small single-acting cylinders and the operation of pneumatic valves with very low operating pressures.



Mod.	Function	Ports	Orifice \varnothing (mm)	Kv (L/min)	Body material	Manual override	Symbol
A331-3C2-*	3/2 NC	M5-R1/8	1,5	0,85	Nickel plated brass	No	EV03
A331-4C2-*	3/2 NC	M5-R1/8	1,5	0,85	Nickel plated brass	Yes	EV08

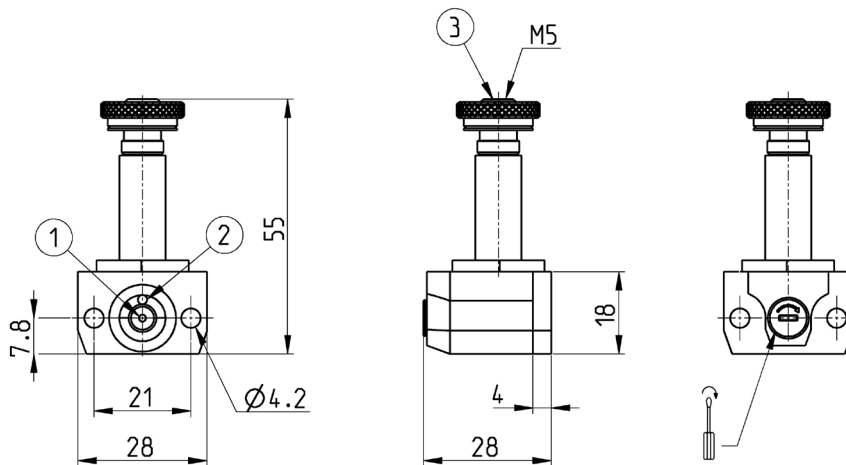
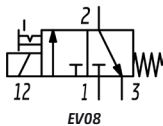
M5 thread inlet
R1/8 thread outlet

The valve can be screwed directly onto the component to be operated

* Choose the most suitable solenoid

DIRECT ACTING SOLENOID VALVES
SERIES A - DIMENSIONS
Series A solenoid valve - 3/2-way NC - Mod. A73 - rotatable interface

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. 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.



VALVES AND SOLENOID VALVES

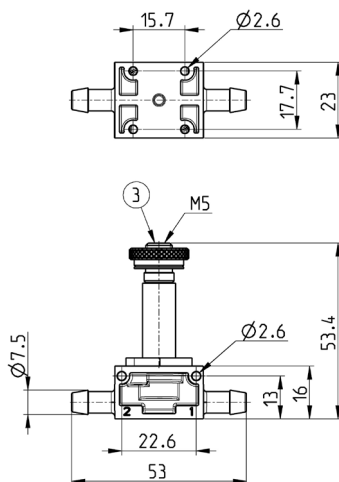
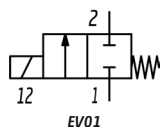
6

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

* Choose the most suitable solenoid

Solenoid valve - 2/2 e 3/2-way NC - Mod. A82 e A83 - barb fittings

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



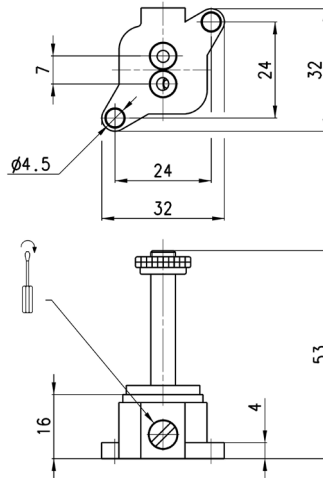
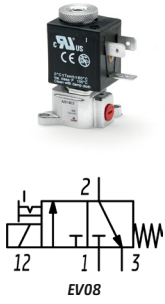
Mod.	Function	Ports	Orifice Ø (mm)	Kv (l/min)	Body material	Manual override	Symbol
A821-FE3-*	2/2 NC	Barb fittings Ø6	2,5	2,0	PBT	No	EV01
A831-FE3-*	3/2 NC **	Barb fittings Ø6	2,5	1,8	PBT	No	EV03

* Choose the most suitable solenoid

** The performances shown in the table refer to the use with inlet from "2" and outlet from "1"

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.

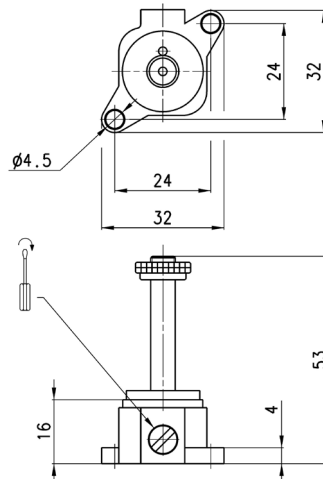
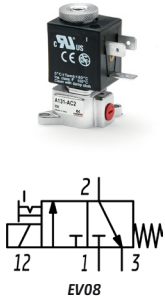


Mod.	Function	Interface	Orifice \varnothing (mm)	Kv (l/min)	Body material	Manual override	Symbol
A231-BC2-*	3/2 NC	OR fixed	1,5	1,1	Nichel plated brass	Bistable	EV08

* Choose the most suitable solenoid

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.

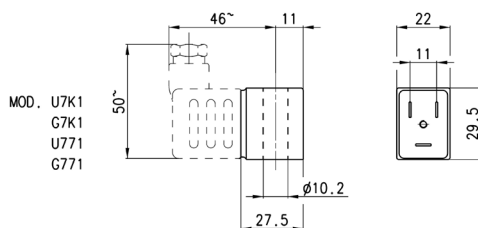
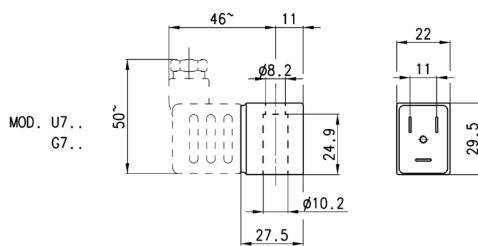


Mod.	Function	Interface	Orifice \varnothing (mm)	Kv (l/min)	Body material	Manual override	Symbol
A131-AC2-*	3/2 NC	OR rotatable	1,5	1,1	Nichel plated brass	Bistable	EV08

* Choose the most suitable solenoid

DIRECT ACTING SOLENOID VALVES
SERIES A - ACCESSORIES
Solenoids Mod. U7... / U7*EX and Mod. G7...


Electrical connection: bipolar plus earth
 Norm: DIN EN 175 301-803-B
 Solenoid material: U7* = PET; G7* = PA
 To order the ATEX version of Mod. U7 (not available for Mod. U7F, U7K1 with voltage 125V 50/60Hz) it is necessary to add EX at the end of the code.
 Mod. U7*EX marked:
 II 3G Ex nA IIC T4 Gc X IP65
 II 3D Ex tc IIIC 130°C Dc X



VALVES AND SOLENOID VALVES

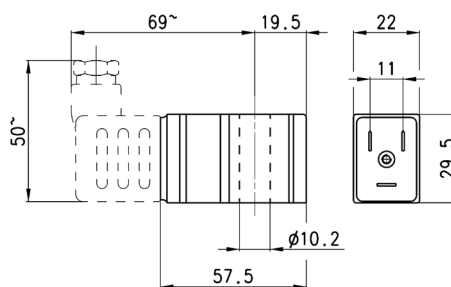
6

Mod.	Sol. volt. (1)	Pow. abs. (1)	Sol. volt. (2)	Pow. abs. (2)	Sol. volt. (3)	Pow. abs. (3)
U7H	12 V DC	3,1 W	24V - 50/60 Hz	3,5 VA		
G7H	12 V DC	3,1 W	24V - 50/60Hz	3,5 VA		
U7K	110V - 50/60Hz	3,8 VA	125V - 50/60Hz	5,5 VA	72 V DC	4,8 W
U7K1	110V - 50/60Hz	5,8 VA	125V - 50/60Hz	8,3 VA	72 V DC	5,6 W
G7K	110V - 50/60Hz	3,8 VA	125V - 50/60Hz	5,5 VA	72 V DC	4,8 W
G7K1	110V - 50/60Hz	5,8 VA	125V - 50/60Hz	8,3 VA	72 V DC	5,6 W
U7J	230V - 50/60Hz	3,5 VA	240V - 50/60Hz	4 VA		
G7J	230V - 50/60Hz	3,5 VA	240V - 50/60Hz	4 VA		
U79	48 V DC	3,1 W				
G79	48 V DC	3,1 W				
U710	110 V DC	3,2 W				
G710	110 V DC	3,2 W				
U77	24 V DC	3,1 W	48V - 50/60Hz	3,8 VA		
U771	24 V DC	3,1 W	48V - 50/60Hz	3,8 VA		
G77	24 V DC	3,1 W	48V - 50/60Hz	3,8 VA		
G771	24 V DC	3,1 W	48V - 50/60Hz	3,8 VA		
U7F	380V - 50/60Hz	7 VA				
U72	12 V DC	5 W				
G72	12 V DC	5 W				
U73	24 V DC	5 W				
G73	24 V DC	5 W				

Sol. volt. = Solenoid voltage
 Pow. abs. = Power absorption
 Mod. U7K1, G7K1, U771 and G771 are to be used only with sol. valves series A, NO in line

Solenoids Mod. G93 (with latching)


Electrical connection: bipolar plus earth
 Norm: DIN EN 175 301-803-B
 Voltage tolerance: ±10%
 Pulsed operation

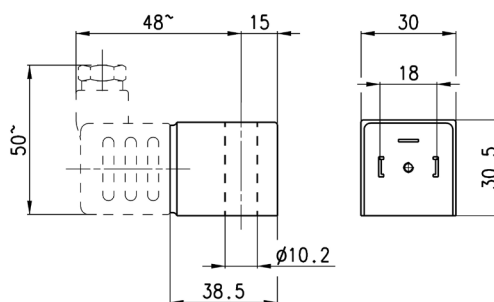


Mod.	Voltage	Minimum inpulse latch/release	Consumption latch/release
G92	12 V DC	18 ms - 10 ms	200 mA - 160 mA
G93	24 V DC	18 ms - 10 ms	100 mA - 80 mA

Solenoids Mod. A8...



Electrical connection: bipolar plus earth
 Norm: DIN EN 175 301-803-A



Mod.	Solenoid voltage	Power absorption
A8B	24V - 50/60Hz	5VA
A8D	110V - 50/60Hz	5VA
A8E	220V - 50/60Hz	5VA
A83	24V DC	4W

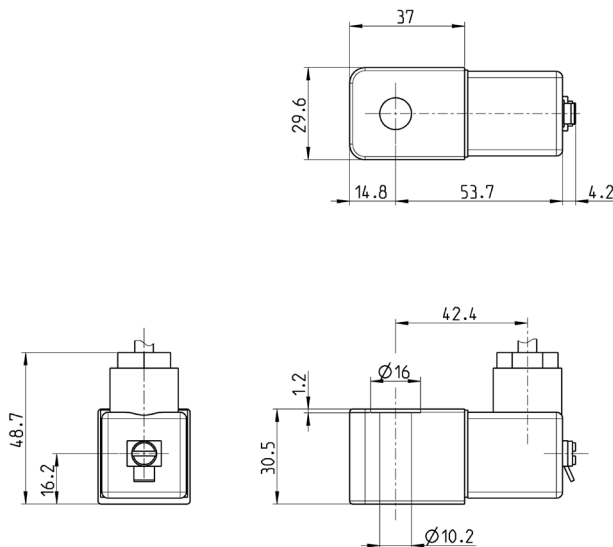
Solenoid Mod. H8.. for potentially explosive ambients



Certification in compliance with
 EN 60079-0 EN 60079-18

ATEX:
 II 2G Ex mb IIC T4 Gb
 II 2D Ex mb IIIC T135°C Db
 I M2 Ex mb I Mb
 INERIS 06ATEX0002X

IECEx:
 Ex mb IIC T4 Gb
 Ex mb IIIC T135°C Db
 Ex mb I Mb
 IECEx INE 15.0053X For Series NA use plate
 mod. NA54-PC.



Mod.	Solenoid voltage	Power absorption
H83I	24 V - DC	5,3 W
H8BI	24 V - 50/60 Hz	5,3 W
H8CI	48 V - 50/60 Hz	5,3 W
H8DI	110 V - 50/60 Hz	5,3 W
H8EI	230 V - 50/60 Hz	5,3 W

Temperature class/Max surface temperature: T4/135°C
 Environment temperature: -20°C + 40°C
 Connection: tripolar cable 3 m (other lengths on request)
 Incapsulating material: self-extinguishing PA