ENGINEERING
TOMORROW

Data Sheet

Solenoid valve
Type **EV310A**

Direct-operated 3/2-way solenoid valves for use in industrial applications



EV310A covers a wide range of small competitive, direct-operated 3/2-way solenoid valves for use within industrial applications, for example as pilot valve.

Features

- For water, oil, compressed air and similar neutral media
- Screw on coil
- Ambient temperature: Up to 50 °C
- Coil enclosure: Up to IP65
- Viscosity: Up to 20 cSt

1 Portfolio overview

Table 1: Portfolio overview

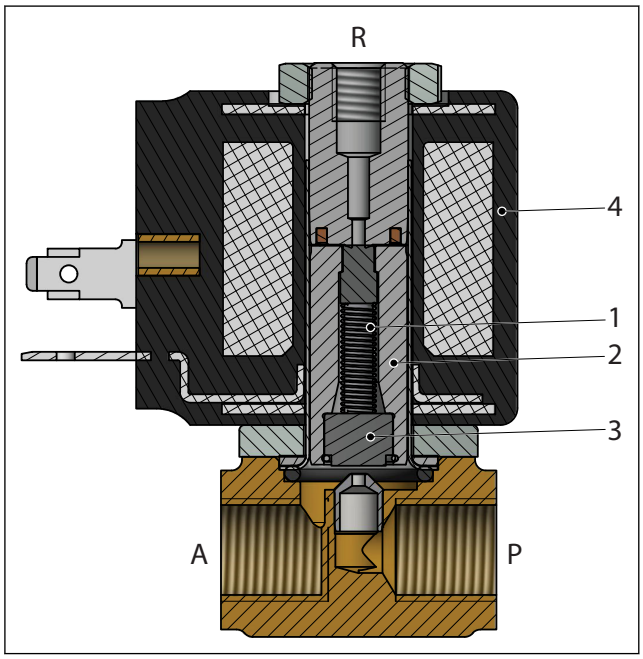
Features	EV310A NC	EV310A NO	EV310A NC MAN
			
Body material	Brass	Brass	Brass
DN [mm]	1.2-2	1.2-1.5	1.5
Connection	G1/8"-1/4"	G1/8"	G1/8"-1/4"
Sealing material	FKM	FKM	FKM
Kv [m^3/h]	0.04-0.08	0.04-0.07	0.07
Differential pressure range [bar]	0-20	0-13	0-12
Temperature range [°C]	-10 - 100	-10 - 100	-10 - 100
Manual override (MAN)	No	No	Yes

2 Functions

2.1 Function, NC / NC MAN

Coil voltage disconnected (closed):
When the voltage to the coil (4) is disconnected, the armature (2) with the valve plates (3) is pressed down by the closing spring (1) and closes the connection between P and A. At the same time, the connection between gates A and R is opened. The connection between P and A will be closed for as long as the voltage to the coil is disconnected.

Coil voltage connected (open):
When voltage is applied, the armature (2) with the valve plates (3) is lifted and closes the connection between A and R. At the same time, the connection between P and A is opened. The connection between P and A will be open for as long as there is voltage to the coil.



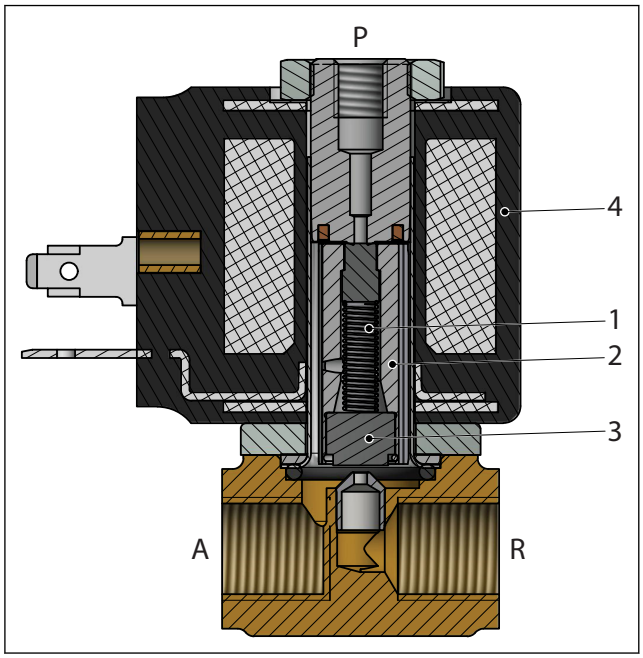
1	Opening spring
2	Armature
3	Valve plate
4	Coil
P	Pressure gate
A	Working gate
R	Relief gate

2.2 Function, NO

Coil voltage disconnected (open):
When the voltage is disconnected, the armature (2) with the valve plates (3) is pressed down by the opening spring (1) and closes the connection between A and R. At the same time, the connection between P and A is open. The connection between P and A will be open for as long as the voltage to the coil is disconnected.

Coil voltage connected (closed):
When voltage is applied to the coil (4), the armature (2) with the valve plates (3) is lifted and closes the connection between P and A. At the same time, the connection between gates A and R is opened.

The connection between P and A will be closed for as long as there is voltage to the coil.

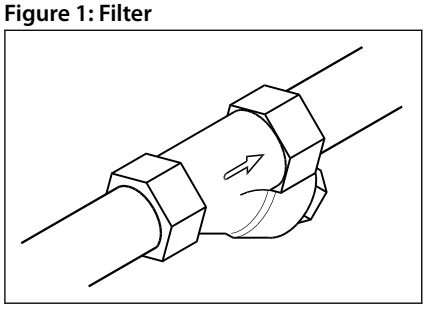


1	Opening spring
2	Armature
3	Valve plate
4	Coil
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A	Working gate
R	Relief gate

3 Applications

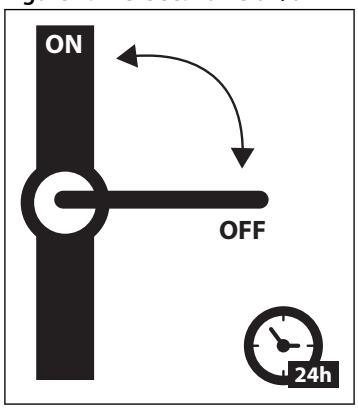
It is recommended to use a filter in front of the valve. Recommended filter 50 mesh (297 microns).

Figure 1: Filter



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.

Figure 2: Exercise: Valve on/off



To minimize scaling, and corrosion attack it is recommended that the water passing the valve have the following values:

- Hardness 6 - 18 °dH to avoid scaling (chalk / lime stone build up)
- Conductivity 50 – 800 µS/cm to avoid brass dezincification and corrosion
- Above 25 °C media temperature avoid stagnant water inside the valve to avoid dezincification and corrosion attack

4 Product specification

4.1 Technical data

Table 2: Technical data

Media	FKM	For water, oil, compressed air and similar neutral media
Media temperature [°C]	FKM	-10 - 100 °C
Ambient temperature [°C]	Up to 50 °C	
Kv value [m³/h]	DN1.2	0.04 m³/h
	DN1.5	0.07 m³/h
	DN2	0.08 m³/h
Min. Opening differential pressure [bar]	0 bar	
Max. Opening differential pressure [bar]	Up to 20 bar	
Max. working pressure [bar]	Up to 20 bar (Equal to max. differential pressure)	
Max. test pressure [bar]	50 bar	
Viscosity [cSt]	Max. 20 cSt	

Differential pressure range

Table 3: Differential pressure range

Connection ISO228/1	Orifice size	Differential pressure, min. to max								
		NC/NC MAN			NO					
		AC/AM			AB AC	AB/AK DC	AC AC	AC DC	AM AC	AM DC
	[mm]	Water	Oil	Air	[bar]					
		[bar]								
G⅛	1.2	0-18	0-9	0-20	0-6	0-4	0-9	0-7	0-13	0-9
	1.5	0-10	0-5	0-12	0-3	0-2	0-5	0-3.5	0-7	0-5
G¼	1.2	0-18	0-9	0-20						
	1.5	0-10	0-5	0-12						
	2	0-6.5	0-4	0-8						

Time to open/close

Table 4: Time to open/close

Main type	EV310A NC/NO/NC MAN
Time to open [ms](1)	7 – 10
Time to close [ms](1)	7 – 10

(1) The times are indicative.

Materials

Table 5: Materials

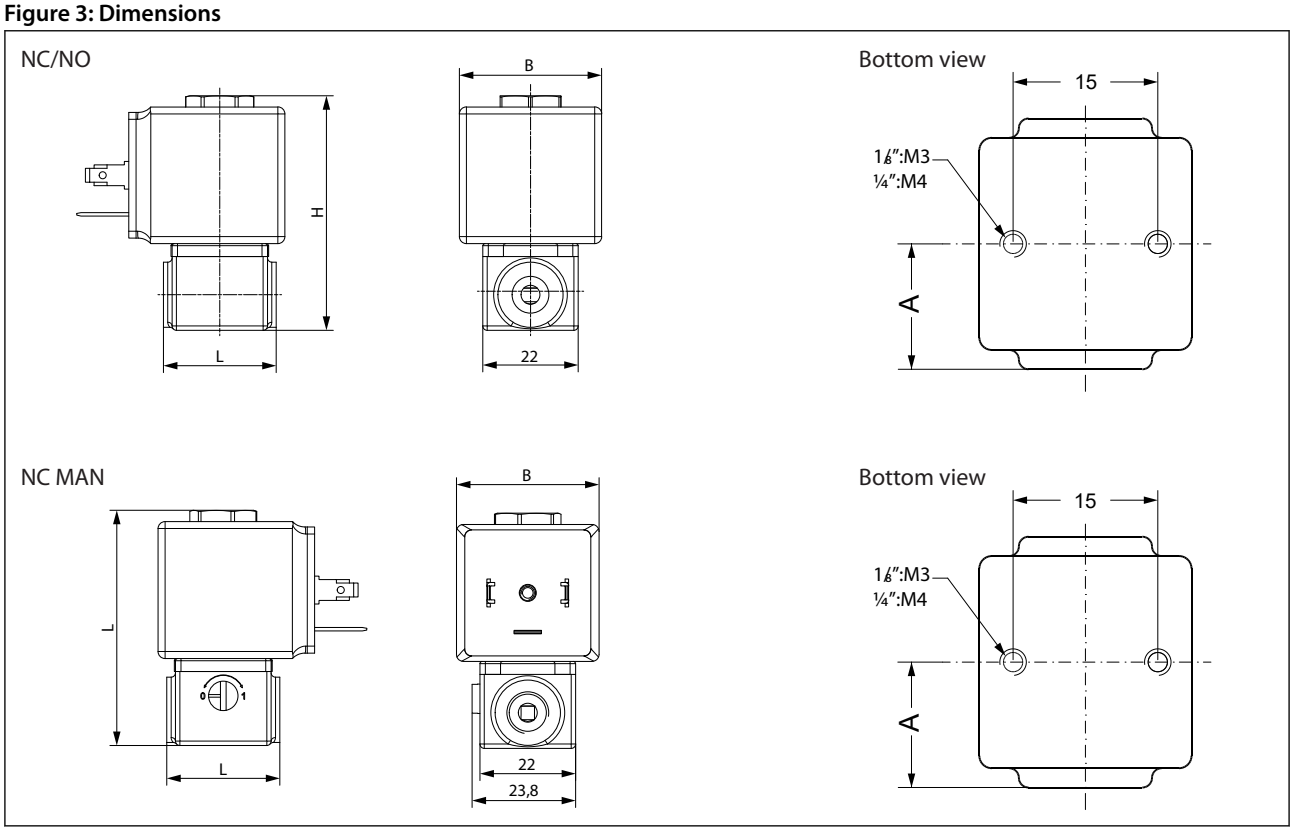
Components	Materials	Specifications
Valve body	Brass	W.no. 2.0401
Armature orifice	Stainless steel	W.no. 1.4305 / AISI 303
Armature	Stainless steel	W.no. 1.4016 / AISI 430
Armature tube	Stainless steel	W.no. 1.4303 / AISI 305
Armature stop	Stainless steel	W.no. 1.4016 / AISI 430
Spring	Stainless steel	W.no. 1.4310 / AISI 301
O-ring/Valve plate	FKM	-
Manual override	Polymer	Polysulfon black

4.2 Dimensions and Weights

Table 6: Dimensions and weight, NC, NO and NC MAN

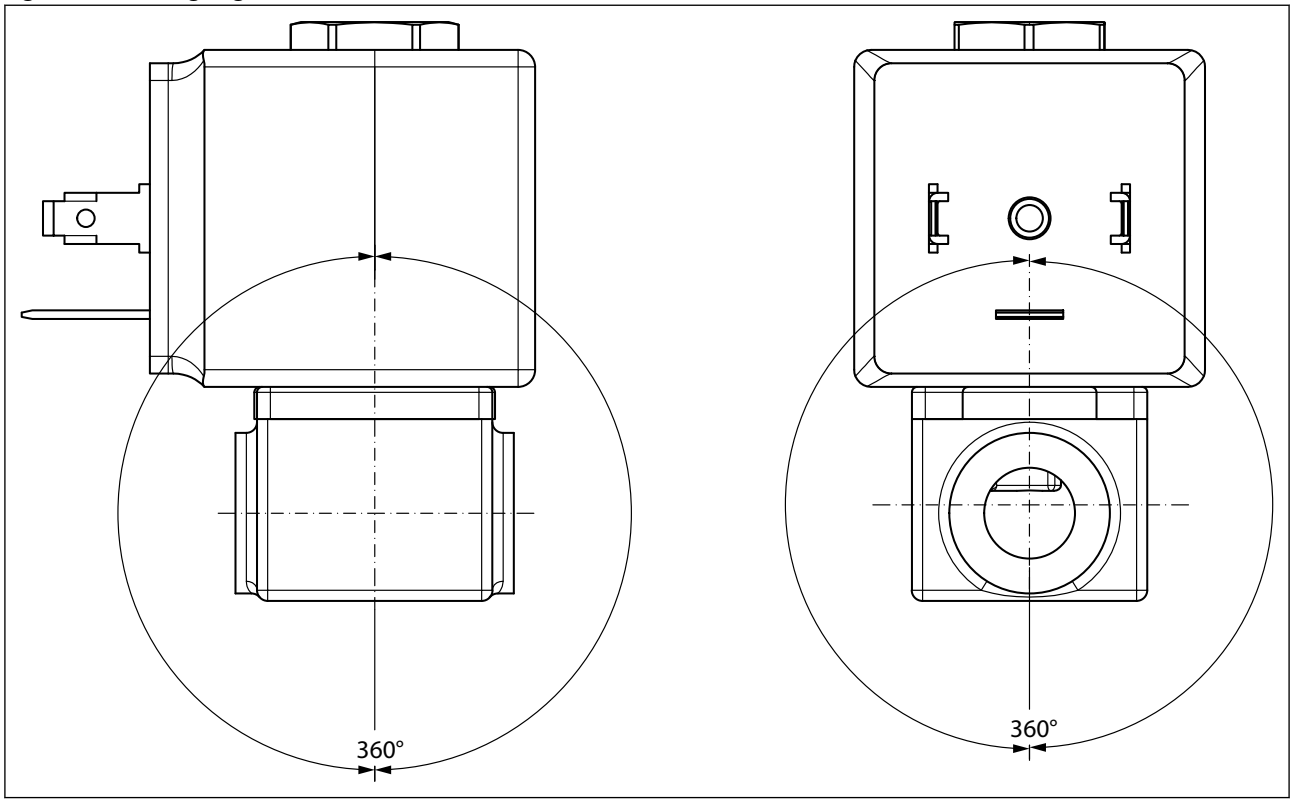
Thread ISO 228/1	L [mm]	B [mm] Coil type		H [mm]	A [mm]	Weight without coil [kg]
		AB / AC	AM / AK			
G ⅛	26	22	33	54	13	0.085
G ¼	35	22	33	59	17.5	0.110

Figure 3: Dimensions



4.3 Mounting

Figure 4: Mounting angle



5 Ordering

5.1 Parts program

Table 7: Brass, valve body NC, NC MAN, NO

Connection ISO 228/1	Orifice	Kv value	Function		
	[mm]	[m³/h]	NC	NC MAN	NO
G ⅛	1.2	0.04	032H8085		032H8125
	1.5	0.07	032H8087	032H8143	032H8127
G ¼	1.2	0.04	032H8095		
	1.5	0.07	032H8097	032H8153	
	2	0.08	032H8099		

5.2 Accessories

Coils

Table 8: Below coils can be used with EV310A

Coil	Type	Power consumption	Enclosure	Features
	AM	7.5 W AC 9.5 W DC	IP00 with spade connector, IP65 with cable plug	Cable plug
	AC	7 W AC 10 W DC	IP00 with spade connector, IP65 with cable plug	Industrial plug
	AB	4.5 W AC 5 W DC	IP00 with spade connector, IP65 with cable plug	Industrial plug
	AK	3 W DC	IP00 with spade connector, IP65 with cable plug	Cable plug

Cable plug

Figure 5: Cable plug



Application	Code number
GDM 2011 (grey) cable plug according to DIN 43650-A PG11	042N0156

Figure 6: Cable plug



Application	Code number
GM 209 (Black) cable plug according to DIN 43650-B PG9	042N0139

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