

Solenoid valve

EV310A

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

Description

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.

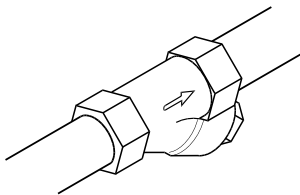
Features & benefits

- 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

Applications

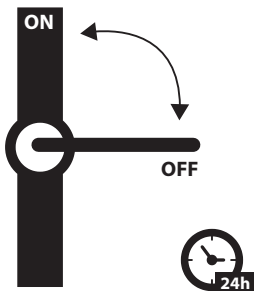
It is recommended to use a filter in front of the valve. Recommended filter 50 mesh (297 microns).

Figure: 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: 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

Ordering

Product code numbers

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

Connection ISO 228/1	Orifice	k _v value	Function		
	[mm]	[m ³ /h]	NC	NC MAN	NO
G 1/8	1.2	0.04	032H8085		032H8125
	1.5	0.07	032H8087	032H8143	032H8127
G 1/4	1.2	0.04	032H8095		
	1.5	0.07	032H8097	032H8153	
	2	0.08	032H8099		

Accessories code numbers

Table: 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

Figure: Cable plug



Cable plug size	Description	Code no.
DIN 18	Cable plug IP65	042N1278

Figure: Cable plug




Application	Code no.
GM 209 (Black) cable plug according to DIN 43650-B PG9	042N0139

Overview

Product portfolio

Table: 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	G $\frac{1}{8}$ " – $\frac{1}{4}$ "	G $\frac{1}{8}$ "	G $\frac{1}{8}$ " – $\frac{1}{4}$ "
Sealing material	FKM	FKM	FKM
K_v [m³/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

Functions

Operation

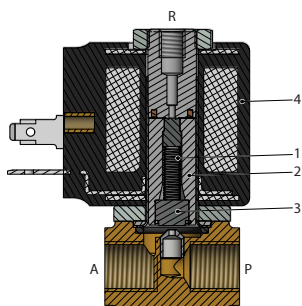
Function NC / NC MAN

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

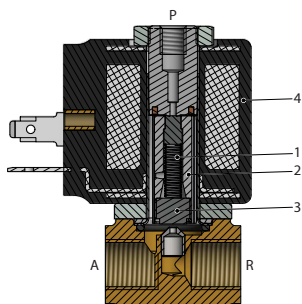
Function NO

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
P	Pressure gate
A	Working gate
R	Relief gate

Product details

General data

Table: Technical data

Media	FKM	For water, oil, compressed air and similar neutral media
Media temperature	FKM	-10 – 100 °C
Ambient temperature	Up to 50 °C	
k_v value	DN1.2	0.04 m ³ /h
	DN1.5	0.07 m ³ /h
	DN2	0.08 m ³ /h
Min. Opening differential pressure	0 bar	
Max. Opening differential pressure	Up to 20 bar	
Max. working pressure	Up to 20 bar (Equal to max. differential pressure)	
Max. test pressure	50 bars	
Viscosity	Max. 20 cSt	

Table: 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: 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

Pressure and temperature data

Table: Differential pressure range

Connection ISO228/1	Orifice size	Differential pressure, min. to max								
		NC/NC MAN			NO					
	[mm]	AC/AM			AB AC	AB/AK DC	AC AC	AC DC	AM AC	AM DC
		Water	Oil	Air	[bar]					
G $\frac{1}{8}$	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
G $\frac{1}{4}$	1.2	0-18	0-9	0-20						
	1.5	0-10	0-5	0-12						
	2	0-6.5	0-4	0-8						

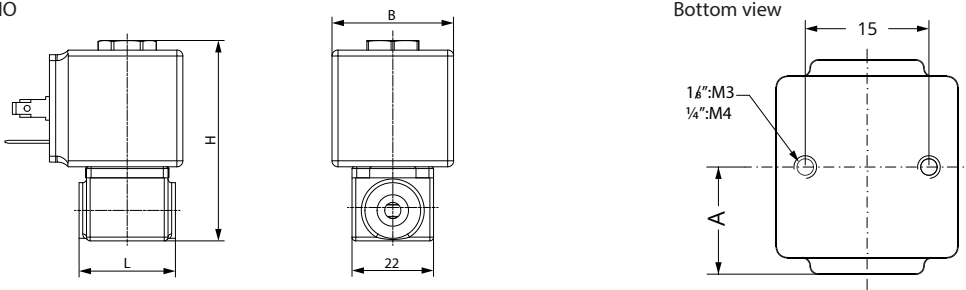
Dimensions

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

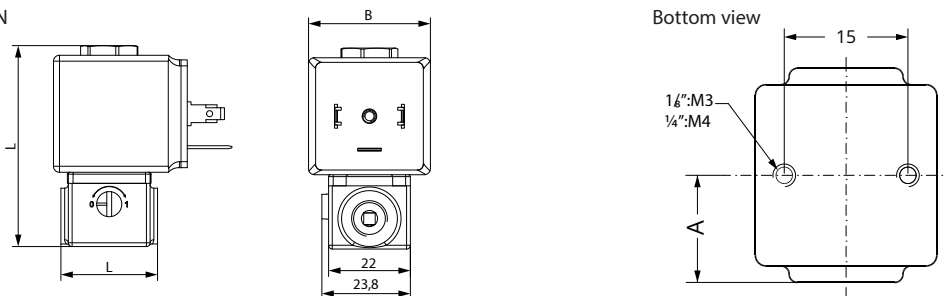
Thread ISO 228/1	L	B [mm] Coil type		H	A	Weight without coil [kg]
	[mm]	AB / AC	AM / AK	[mm]	[mm]	
G $\frac{1}{8}$	26	22	33	54	13	0.085
G $\frac{1}{4}$	35	22	33	59	17.5	0.110

Figure: Dimensions

NC/NO

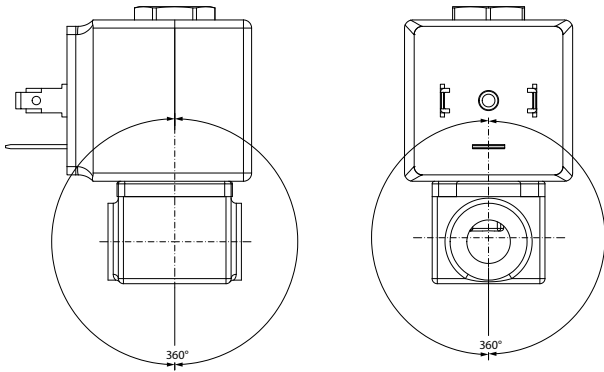


NC MAN



Installation Mounting

Figure: Mounting angle



Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
Export Control Declaration	Solenoid valves – Polymer, Bronze, Brass, Cast iron	Danfoss	
UA Declaration	Danfoss UA 8481	Danfoss	UA RoHS
Mechanical Safety Certificate	UL MH7648	UL - Underwriters Laboratories inc.	
Manufacturer's Declaration	Danfoss MD.033F4006 AC	Danfoss	China RoHS
EU Declaration	Danfoss EU 033F0683.06	Danfoss	LVD, PED, EU RoHS
Pressure Safety Certificate	LLC CDC EURO-TYSK UA.TR.089.1015.02-22	LLC CDC EURO TYSK - Ukraine	Pressure, PED
Manufacturer's Declaration	Danfoss MD 033F0232.AA	Danfoss	Pressure, PED

Contact details

Online support

Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.



The Danfoss Design center

Discover the Design Center, our advanced digital platform that streamlines product selection. With integrated tools and enhanced type pages, it's simpler than ever to access product information and documentation, and to select the right products. Check the availability of Danfoss products at partner locations and enjoy seamless transitions from selection to purchase with our basket-to-basket functionality. Whether you're buying from our distributors or directly from the Product Store, the Design Center simplifies your experience. Learn more at: designcenter.danfoss.com.



The Danfoss product store

The Danfoss Product Store is a one-stop shop available 24/7 for our customers, no matter where you are in the world or what area of industry you work in. Browse our catalog, check product details and documentation, view your prices and product availability, and quickly finalize your purchase. Start browsing at: store.danfoss.com.



Danfoss Partner Portal/Product Data tool

Designed to support you with easy access to product data extracts, essential resources, tools, and information. The Partner Portal provides a centralized hub for product documentation, training materials, marketing assets, and technical support, ensuring you have everything you need to succeed and grow your business with Danfoss. The Partner Portal is available 24/7 at: partner.danfoss.com and is ready to support your business.



Find technical documentation

Find technical documentation you need to get your project up running. Get direct access to our official collection of data sheets, certificates and declarations, manuals and guides, 3D models and drawings, case stories, brochures, and much more. Start searching now at: documentation.danfoss.com.



Danfoss Learning

Danfoss Learning is a free online learning platform. It features courses and materials specifically designed to help engineers, installers, service technicians, and wholesalers better understand the products, applications industry topics, and trends that will help you do your job better. Find your local Danfoss website here: learning.danfoss.com.



Get local information and support

Local Danfoss websites are the main sources for help and information about our company and products. Find product availability, get the latest regional news, or connect with a nearby expert - all in your own language. Find your local Danfoss website here: danfoss.com.

Danfoss A/S

Climate Solutions . danfoss.com . +45 7488 2222

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues description, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the products. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.
