Data sheet



Solenoid valve

EV222B

Servo operated with isolated diaphragm for dirty and aggressive fluids

Description

EV222B is an indirect servo-operated solenoid valve programme for use in connection with contaminated or aggressive media.
Valve body in stainless steel, isolating diaphragm protecting the solenoid system against impurities, build in pilot filter, replaceable equalizing orifice, enclosures up to IP67 ensure a reliable and satisfaction function.

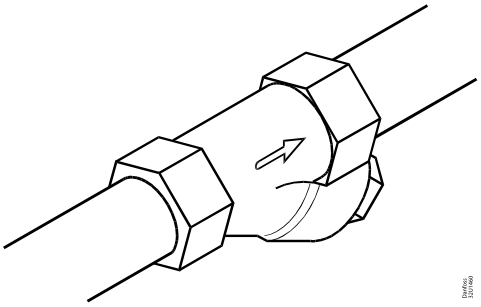
Features & benefits

- Clip on coil
- Viscosity: Up to 50 cSt
- Ambient temperature: Up to 60 °C
- Coil enclosure: Up to IP67
- Isolating diaphragm
- Water hammer damped built in filter for protection of pilot system

Applications

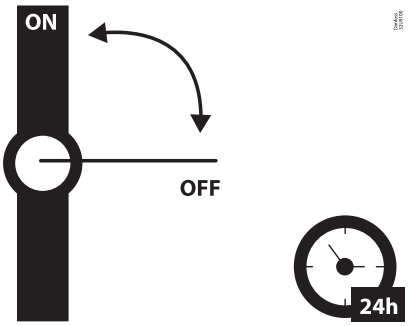
It is recommended to use a filter in front of the valve. Recommended filter 50 mesh (297 microns).

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: 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.

Ordering

Product code numbers

Connection standard	Connection type	Connection size [in]	Orifice size [mm]	Kv value [m^3/h]	Seal Material	Function	Code number
ISO 228-1	G	1/2	15.00	4.000	FKM	NC	032U8526
ISO 228-1	G	3/4	20.00	8.000	FKM	NC	032U8527
ISO 228-1	G	1	25.00	11.000	FKM	NC	032U8528
ISO 228-1	G	1 1/4	32.00	18.000	FKM	NC	032U8529
ISO 228-1	G	1 1/2	40.00	24.000	FKM	NC	032U8530
ISO 228-1	G	2	50.00	40.000	FKM	NC	032U8531

Accessories code numbers

Coil

Table: Coils can be used with EV222B

Coil	Type	Power consumption	Enclosure	Features
	BB, clip on	10 W AC 18 W DC	IP00 with spade connector	IP20 with protective cap, IP67 with cable plug
	BE, clip on	10 W AC 18 W DC	IP67	With terminal box
	BG, clip-on	12 W AC 20 W DC	IP67	With terminal box

Cable plug

Figure: Cable plug



Table: Cable plug

Cable plug size	Description	Code no.
DIN 18	Cable plug IP67	042N1256

Universal electronic multi-timer, Type ET 20M
Figure: Type ET 20 M



Table: Type ET 20 M

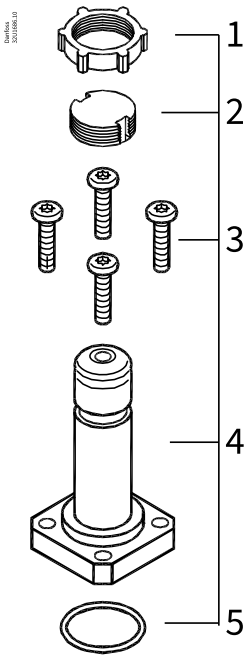
Type	Voltage [V]	Suitable for coil types	Code no.
BA024A	240-0240	AL, AM, AS, AZ, BA, BD, BB	042N0185

Spare parts code numbers

Spare part kits
Isolating diaphragm kit

The isolating diaphragm design ensures that no fluid enters the armature area, which gives the following advantages: The valve is resistant to aggressive fluids, impurities in the fluid and to calcareous and scale deposits.

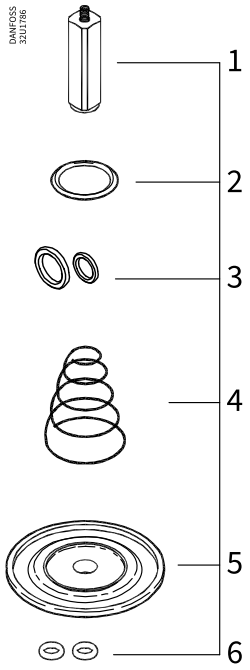
Table: Isolating diaphragm kit

Type	Sealing	
	EPDM[1]	FKM[2]
EV222B 15 – 50	042U1009	042U1010
		
	1. Locking button 2. Locking nut 3. 4 x screws 4. Assembled isolating unit 5. O-ring	

[1] Media temperature -20 – 50 °C

[2] Media temperature 0 – 50 °C

Table: Diaphragm spare parts kit, NC

Type	Actuator kit, NC, DZR/SS
	Sealing
	FKM
EV222B 15	032U6326
EV222B 20	032U6327
EV222B 25	032U6328
EV222B 32	032U6329
EV222B 40	032U6330
EV222B 50	032U6331
	
	1. Armature with valve plate and spring 2. O-ring for the armature tube 3. 2x O-rings for the equalizing orifice 4. Closing spring 5. Diaphragm 6. 2 x O-rings for the pilot system

NOTE: For complete spare parts kit, the isolating diaphragm kit must be ordered separately

Overview

Product portfolio

Table: Portfolio overview

Features	EV222B
	
Body material	Stainless steel
DN	15 – 50 mm
Connection	G½" – G2"
Sealing material	FKM
Function	NC
K_v	4 – 40 m^3/h
Differential pressure range	0.3 – 10 bar
Temperature range	0 – 50 °C

Functions

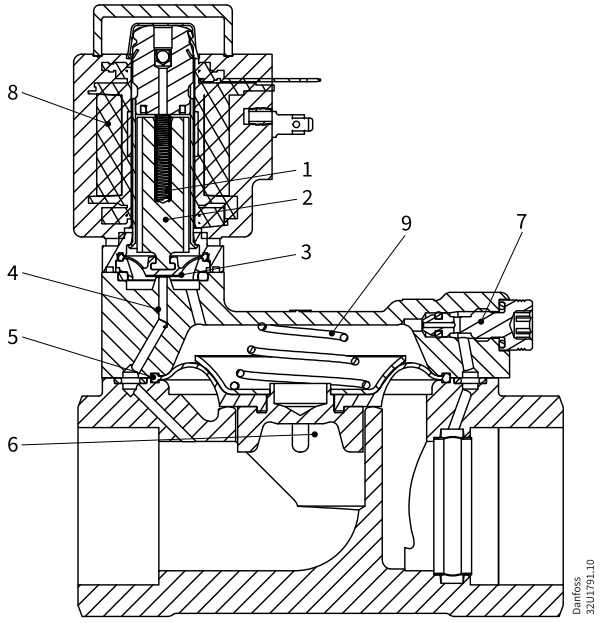
2.1 Function, NC

2/2-way servo-operated When voltage is applied to the coil (8), the armature (2), with the isolating diaphragm (3), is lifted clear of the pilot orifice (4) and the diaphragm (5), is lifted by the fluid pressure - the main orifice (6) opens.

When voltage is disconnected the isolating diaphragm (3), is pressed down against the pilot orifice (4), by the armature spring (1) and pressure is built up above the diaphragm (5), via the equalizing orifice (7). The main orifice is closed by the fluid pressure and the spring (9).The isolating diaphragm keeps the medium away from the actuator.

The space above the isolating diaphragm is filled up with silicone oil.

Figure: Function, NC



1.	Armature spring
2.	Armature
3.	Isolating diaphragm
4.	Pilot orifice
5.	Diaphragm
6.	Main orifice
7.	Equalizing orifice
8.	Coil
9.	Spring

Product details

General data

Table: Technical data

Media	FKM	Contaminated or aggressive media
Media temperature	FKM	0 – 50 °C
Ambient temperature	Up to 60 °C	
K_v value	DN15	4 m^3/h
	DN20	8 m^3/h
	DN25	11 m^3/h
	DN32	18 m^3/h
	DN40	24 m^3/h
	DN50	40 m^3/h
Min. Opening differential pressure	0.3 bar	
Max. Opening differential pressure	10 bar	
Max. working pressure	10 bar	
Max. test pressure	15 bar	
Viscosity	Max. 50 cSt	

Table: Time to open/close

Main type	EV222B 15	EV222B 20	EV222B 25	EV222B 32	EV222B 40	EV222B 50
Time to open [ms] (1)	40	40	300	1000	1500	5000
Time to close [ms] (1)	350	1000	1000	2500	4000	10000

(1) The times are indicative and apply to water. The exact times will depend on the pressure conditions. Closing times can be changed by replacement of the equalizing office.

Materials

Table: Materials Component

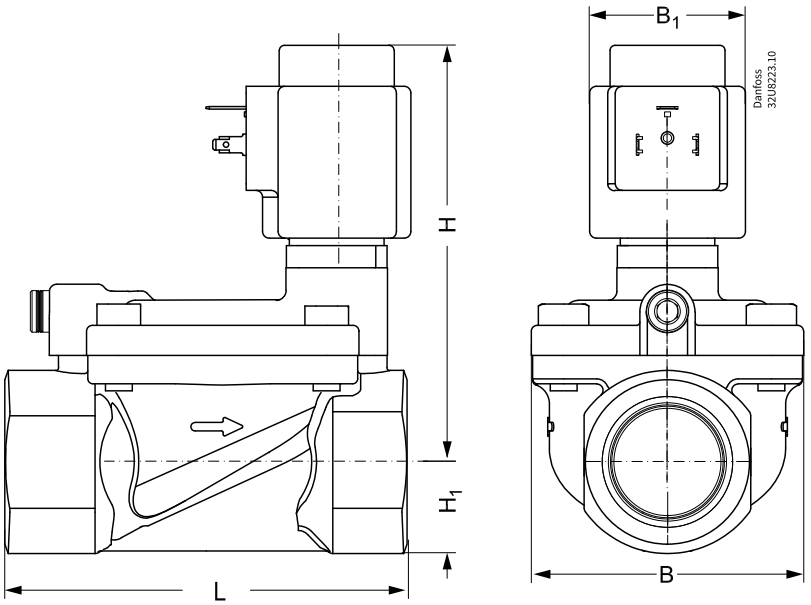
Components	Materials	Specifications
Valve body/cover	Stainless steel	W.no. 1.4581 / AISI 318
Flange for isolating diaphragm	Stainless steel	W.no. 1.4581 / AISI 318
Diaphragm plate	Stainless steel	W.no. 1.4581 / AISI 318
Isolating diaphragm	FKM	
Main diaphragm	FKM	
Closing spring	Stainless steel	W.no. 1.4310 / AISI 301
O-rings	FKM	
Fluid above isolating	Silicone oil	

Dimensions

Table: Dimension and weight

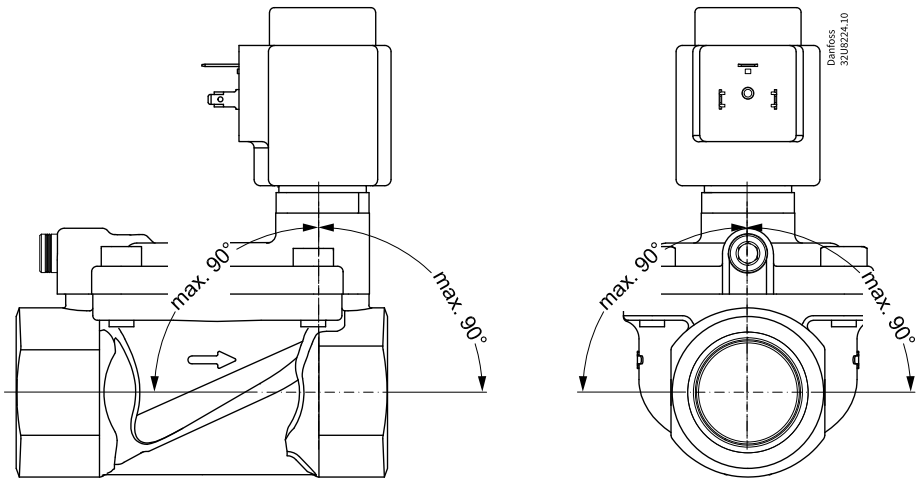
Type	L	B	B_1 Coil type [mm]		H	H_1	Weight without coil
	[mm]		BB / BE	BG	[mm]		[kg]
EV222B 15	80	52	46	68	104	15	0.8
EV222B 20	90	58	46	68	108	18	1.0
EV222B 25	109	70	46	68	118	22	1.4
EV222B 32	120	82	46	68	125	27	2.0
EV222B 40	130	95	46	68	134	32	3.2
EV222B 50	162	113	46	68	140	37	4.3

Figure: Dimension



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
Manufacturer's Declaration	Danfoss MD 033F0232.AA	Danfoss	PED, Pressure
Export Control Declaration	Solenoid valves - Stainless steel	Danfoss	
Export Control Declaration	Solenoid valves – Polymer, Bronze, Brass, Cast iron	Danfoss	
EU Declaration	Danfoss EU 033F0683.05	Danfoss	LVD, EU RoHS
Pressure Safety Certificate	LLC CDC EURO-TYSK UA.TR.089.1015.02-22	LLC CDC EURO TYSK - Ukraine	PED, Pressure
EU Declaration	Danfoss EU 033F0682.AA	Danfoss	PED, LVD, Pressure, EU RoHS
UK Declaration	Danfoss UK 033F1143.AB	Danfoss	EMC, PED, Pressure, UK RoHS
Manufacturer's Declaration	Danfoss MD 033F1140.01	Danfoss	EU RoHS

Contact details

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