ENGINEERING TOMORROW

Data Sheet

Solenoid valves Type **EV212B**

Direct operated with isolated diaphragm for dirt and aggressive fluids

The isolating diaphragm design ensures that no fluid enters the armature area which means valves can be used for

- aggressive fluids
- fluid with impurities
- fluid with risk of lime stone build up

Applications

- Marine ballast water treatment systems (sample intake)
- Dosing systems
  - Washing and cleaning systems (Alkaline)
  - Filling
- Pump cooling fx. Vacuum systems
- Systems with particles (Dirt) and aggressive media

Features

- Stainless steel body
- Clip on coil
- Viscosity: up to 50 cSt
- Ambient temperature: up to 50 °C
- Coil enclosure: up to IP67

1 Portfolio overview

Features	EV212B
	
Body material	Stainless steel
DN [mm]	2-4.5
Connection	G1/8" - G3/8"
Sealing material	FKM
Function	NC
K_v [m^3/h]	0.15-0.55
Differential pressure range [bar]	0-12
Temperature range [°C]	0-50

2 Functions

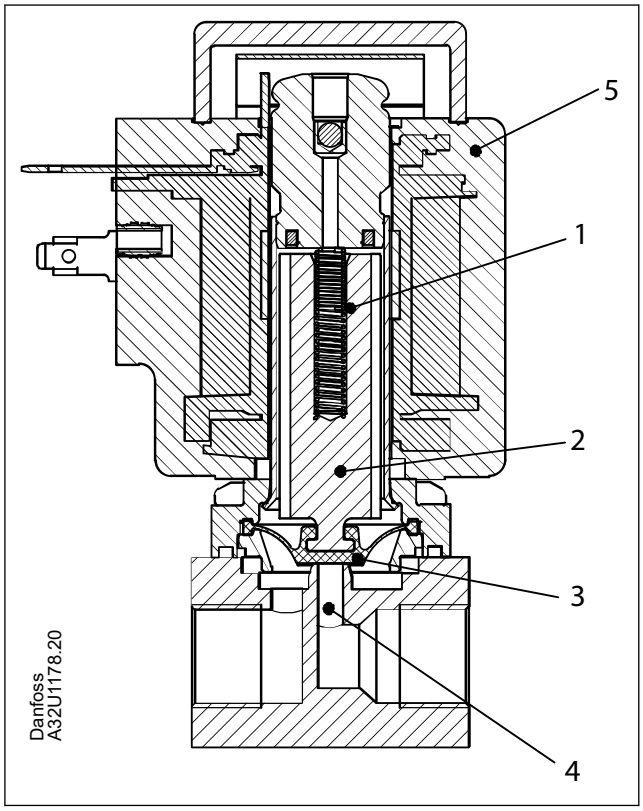
2.1 Function

Function NC
When voltage is applied to the coil (5), the armature (2) with the isolating diaphragm (3) is lifted clear of the valve orifice (4) and opens for flow through the valve. The valve is open as long as there is voltage to the coil.

When voltage is disconnected, the isolating diaphragm (3) is pressed down against the orifice by the spring (1). The valve will be closed for as long as the voltage to the coil is disconnected. The isolating diaphragm keeps the medium away from the actuator.

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

Figure 1: Function NC

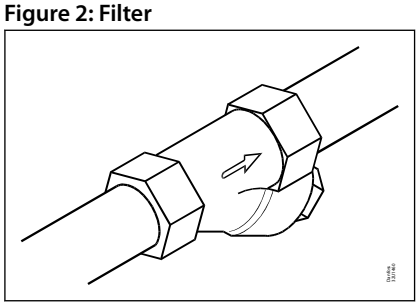


1.	Closing spring
2.	Armature
3.	Isolating diaphragm
4.	Orifice
5.	Coil

3 Application

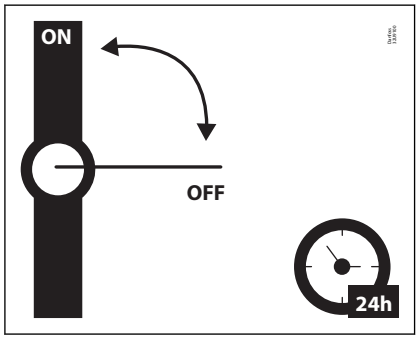
It is recommended to use a filter in front of the valve. Recommended filter 50 mesh (297 microns).

Figure 2: 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 3: 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 1: Technical data

Media	FKM	Contaminated or aggressive media
Media temperature [°C]	FKM	0-50°C
Ambient temperature [°C]	BB/BY DC	Up 50°C
	BB/BY AC	Up 70°C
	EEC	Up 55°C
K_v value [m³/h]	DN2	0.15 m³/h
	DN3	0.3 m³/h
	DN4	0.38 m³/h
	DN4.5	0.55 m³/h
Min. Opening differential pressure [bar]	0 bar	
Max. Opening differential pressure [bar]	Up to 12 bar	
Max. working pressure [bar]	Up to 12 bar (Equal to max. differential pressure)	
Max. test pressure [bar]	18 bar	
Viscosity [cSt]	Max. 50 cSt	

Differential pressure range

Table 2: Differential pressure range

Connection ISO228/1	230 V 50 Hz / 24 V 50 Hz BB230AS / BB024AS 018F7351 / 018F7358	220-230 V BB230CS, 018F7363		208-230 V AC 50/60 Hz EEC BE240CS, 018F6783	12 / 24 VDC BB 018F7396 / 50 Hz 60 Hz 018F7397
		50 Hz	60 Hz		
	[Bar]	[Bar]	[Bar]	[Bar]	[Bar]
G1/8	12	12	10	12	12
G1/4	12	12	10	12	12
G1/8	12	12	10	12	12
G1/4	12	12	10	12	12
G3/8	7.5	7.5	7.5	12	12
G1/4	6	6	6	10	10
G3/8	6	6	6	10	10

Materials

Table 3: Materials

Components	Materials	Specifications
Valve body/cover	Stainless steel	W.no. 1.4404 / AISI 316L (1)
Flange for isolating diaphragm	Stainless steel	W.no. 1.4404 / AISI 316L(1)
Isolating diaphragm	FKM	
O-rings	FKM	
Fluid above isolating	Silicone oil	

(1) W. No. according to DIN 17440

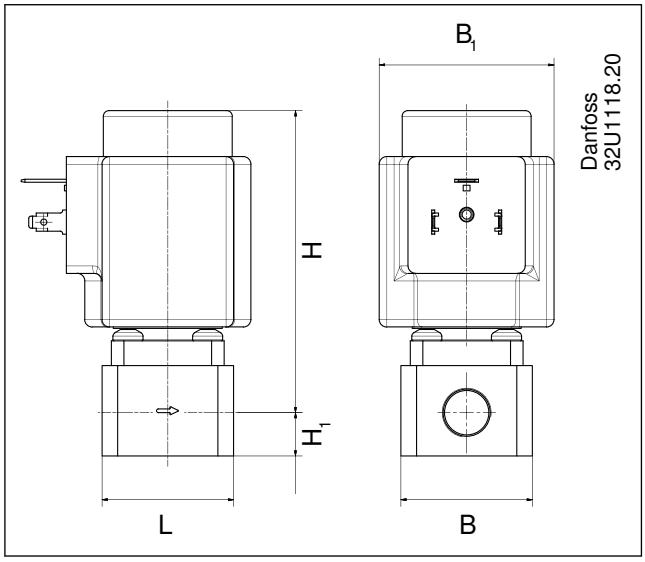
4.2 Dimensions and weight

Table 4: Dimensions and weight

Type	L	B	B_1 Coil type BB/BY/BE	H_1	H
	[mm]	[mm]	[mm]	[mm]	[mm]
EV212B 2SS G1/8	35	35	46	11, 5	85
EV212B 2SS G1/4	35	35	46	11, 5	85
EV212B 3SS G1/8	35	35	46	11, 5	85
EV212B 3SS G1/4	35	35	46	11, 5	85

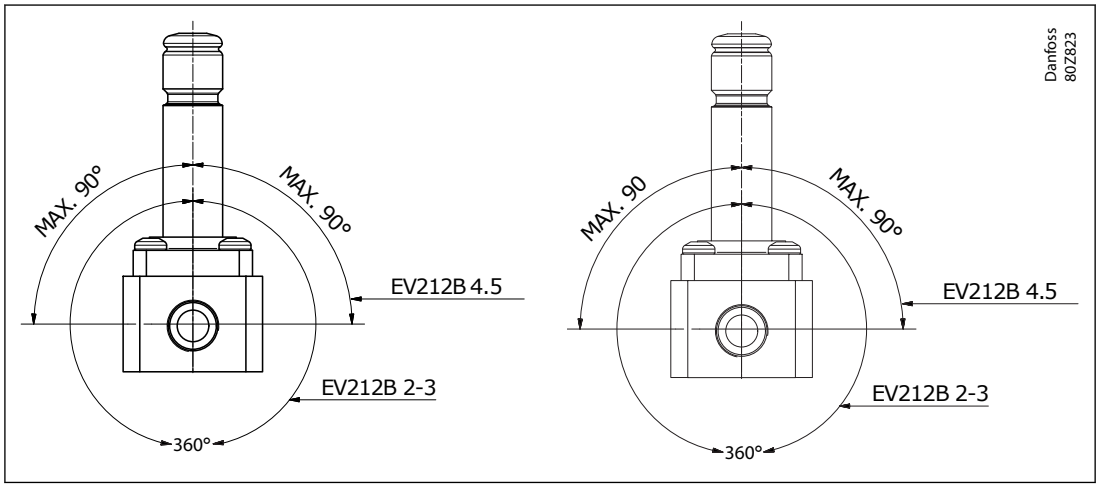
Type	L	B	B_1	H_1	H
			Coil type BB/BY/BE		
	[mm]	[mm]	[mm]	[mm]	[mm]
EV212B 4SS G3/8	38	38	46	13	87
EV212B 4.5SS G1/4	35	35	46	11,5	85
EV212B 4.5SS G3/8	38	38	46	13	87

Figure 4: Dimensions



4.3 Mounting

Figure 5: Mounting angle



5 Ordering

5.1 Parts program

Table 5: Stainless steel, valve body NC

ISO228/1 connection	Orifice	K_v value	Function
	[mm]	[m³/h]	NC
G1/8	2	0.15	032U3576
G1/4	2	0.15	032U3578
G1/8	3	0.3	032U3581
G1/4	3	0.3	032U3751
G3/8	4	0.38	032U3754
G1/4	4.5	0.55	032U3590
G3/8	4.5	0.55	032U3762

5.2 Accessories

Coil

Figure 6: Coil

Table 6: High performance coils

Type	Tambient	Supply voltage	Voltage variation	Frequency	Control	Power consumption		Code no.
	[°C]	[V]		[Hz]		[W]	[VA]	
BB024AS	-40 – 80	24	-15%, +10%	50	NO, NC	11	19	018F7358
BB230AS	-40 – 80	220 - 230	-15%, +10%	50	NO, NC	11	19	018F7351
BB012DS	-40 – 50	12	±10%	DC	NC, NO, UN (Latching)	13		018F7396
BB024DS	-40 – 50	24	±10%	DC	NC, NO, UN (Latching)	16		018F7397

Figure 7: EEC Electronic coil controller

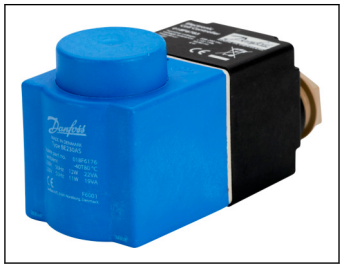


Table 7: High performance coils

Type	Tambient	Supply voltage	Voltage variation	Frequency	Control	Power consumption	Code no.
	[°C]	[V]		[Hz]		[W]	
BE240CS	-25 – 55	208 – 240	+10%	60	NO, NC	4	018F6783
		208 – 240	+10%	50	NO, NC	4	

Cable plug

Figure 8: Cable plug

Table 8: Cable plug

Type, Form A	Code no.
GDM 2011 (grey) cable plug according to DIN 43650-A PG11	042N0156

Universal electronic multi-timer Type ET 20 M

Figure 9: Type ET 20 M

Table 9: Universal electronic multi-timer Type ET 20 M

Type	Voltage [V]	Suitable for coil types	Code no.
BA024A	24 - 240	AL, AM, AS, AZ, BA, BD, BB	042N0185

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