

# 2-way solenoid valves for neutral liquids and gases

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**Introduction**

The Danfoss range of general purpose solenoid valves is a series of modern 2-way valves for use with neutral liquids and gases.

These products are based on more than 50 years of experience in the design, production and application of high quality solenoid valves.

The Danfoss range of solenoid valves is stocking and user friendly, as valve bodies and coils are being supplied separately in most cases.

Many combinations are therefore possible with relatively few code numbers, allowing flexibility through reduction in warehouse costs, installation advantages and optimum delivery conditions.

If there is need for servicing, spare parts sets for all valve types are available from a world wide network of Danfoss distributors.

**Valve Types**

*Direct acting valves*, type EV210B, with no minimum differential pressure requirement. For smaller flow volumes.

*Pilot operated valves*, type EV220B which require a minimum differential pressure for correct operation. For medium to large flow volumes.

*Direct lift, pilot operated valves*, type EV250B, designed for application in closed circuits with low, undefined pressure. For example central

heating systems. The valves have no minimum differential pressure requirement.

*Direct and servo operated valves* for steam, type EV215B, EV225B.

*Modulating solenoid valves* providing proportional flow regulation as the degree of opening is proportional to the coil current, type EV260B.

**Materials in NC and NO valves**

	EVI (EV210B)	EVSI 6 - 22 (EV220B 6-22) EV250B 10-22	EVSI 6 - 22 (EV220B 6-22) EV250B 10-22	EVSI 15 - 50 (EV220B 15-50)	EVSI 15 - 50 (EV220B 15-50)	EVSIM 6 - 20 (EV260B 6-20)	EVSI 3, EVSI 6 - 25 (EV215B 3, EV225B 6-25)
For media <sup>1)</sup>	OLW	W	OLW	OLW	WD	OLW	WD
Armature and magnet	17 % stainless chrome steel						
Armature tube and spring	18 % stainless steel, AISI 304						
Valve body	Brass MS 58 / Stainless steel <sup>2)</sup> / DZR Brass <sup>2)</sup>						
O-ring	FKM	EPDM	FKM	FKM	EPDM	CR	AFLAS
Valve plate	FKM	EPDM	FKM	FKM	EPDM	FKM	PTFE
Diaphragm	-	EPDM	FKM	FKM	EPDM	PTFE	PTFE

1) Media codes:

O = Oil  
L = Inert Gas  
W = Water  
D = steam

2) EV220B in Stainless steel - AISI 316 / DZR Brass = Dezincification Resistant Brass

**Ordering**

Valve body and coil to be ordered separately (except recognized valves).

**Approvals**

- CSA certified no. 52727
- file no. MH7648
- file no. MH7648 (types EV210B 1.5 - 3 and EV220B 6-50)

**Media resistance**

Please contact Danfoss

Features



**EVI NC/NO (EV210B) UL-listed \***

- High Performance and robust design
- For neutral liquids (max. 50 cSt / 250 SSU) and gasses
- Ambient temperature: Up to 120°F (50°C)
- Brass valve body
- Media temperature: 14°F (-10°C) to 194°F (+90°C)
- Test pressure: Max. 725 psi (50 bar)
- Seal material: FKM
- Available as UL Recognized

\* **UL-listed as EVI**

**Ordering EVI NC/NO (EV210B), UL listed**

In the ordering table below, a code number and type designation are stated for each valve. Please use this information when ordering.

Coils must be ordered separately, please see page 9.

Example: EVI 3 (EV210B 3) - 032U6505.

*Normally Closed ( Closed when de-energized)*

Conne- ction NPT [inch]	Orifice Size [inch]	Flow value		Opening diff. pressure				Max.Wrk.Pressure		Media <sup>1)</sup>	Type	Code no. without coil
		C <sub>v</sub> [USgal/min]	k <sub>v</sub> [m <sup>3</sup> /h]	Min		Max.		psi	bar			
				psi	bar	psi	bar					
1/8	1/16	0.1	0.08	0	0	290	20	507.5	35	OLW	EVI 1.5 (EV210B 1.5)	<b>032U6501</b>
1/4	1/16	0.1	0.08	0	0	290	20	507.5	35	OLW	EVI 1.5 (EV210B 1.5)	<b>032U6502</b>
1/8	1/12	0.18	0.15	0	0	290	20	507.5	35	OLW	EVI 2 (EV210B 2)	<b>032U6503</b>
1/4	1/8	0.35	0.3	0	0	290	20	507.5	35	OLW	EVI 3 (EV210B 3)	<b>032U6505</b>
3/8	1/8	0.35	0.3	0	0	290	20	507.5	35	OLW	EVI 3 (EV210B 3)	<b>032U6506</b>
3/8	1/4	0.82	0.7	0	0	17	1.2	362.5	25	OLW	EVI 6 (EV210B 6)	<b>032U6565</b>
1/2	3/8	1.80	1.5	0	0	11	0.8	362.5	25	OLW	EVI 10 (EV210B 10)	<b>032U6567</b>

*Normally Open ( Open when de-energized)*

1/8	1/16	0.1	0.08	0	0	290	20	507.5	35	OLW	EVI 1.5 NO (EV210B 1.5 NO)	<b>032U6509</b>
1/4	1/8	0.35	0.3	0	0	87	6	507.5	35	OLW	EVI 3 NO (EV210B 3 NO)	<b>032U6511</b>

1) O = Oil; L = Inert Gas (incl. Air); W = Water

Features



**EVSI 6 - 22 NC/NO (EV220B 6 - 22), UL listed\***

- For neutral liquids (max. 50 cSt / 250 SSU) and gases
- Ambient temperature: Up to 120°F (50°C)
- Brass valve body
- Available as UL Recognized

- Gasket materials: FKM for Oil/Inert Gas (O/L), EPDM for Water (W)

- Media temperature: 14°F (-10°C) to 194°F (+90°C)

- Test pressure:  
EVSI 6-10 (EV220B 6 - 10) : Max. 725 psi (50 bar)  
EVSI 12 - 22 (EV220B 12 - 22): Max. 232 psi (16 bar)

\* **UL listed as EVSI**

**Ordering EVSI 6 - 22, NC/NO (EV220B 6 - 22), UL listed**

In the ordering table below, a code number and type designation are stated for each valve. Please use this information when ordering.

Coils must be ordered separately, please see page 9.

Example: EVSI 10 (EV220B 10) - 032U6519.

*Normally Closed ( Closed when de-energized)*

Con- nection NPT [inch]	Orifice Size [inch]	Flow value		Opening diff. pressure				Max.Wrk.Pres- sure		Media <sup>1)</sup>	Type	Code no. without coil
		C <sub>v</sub> [USgal/min]	k <sub>v</sub> [m <sup>3</sup> /h]	Min		Max.		psi	bar			
				psi	bar	psi	bar					
¼	¼	0.8	0.7	1.45	0.1	145	10	362.5	25	OL	EVSI 6 (EV220B 6)	<b>032U6515</b>
¼	¼	0.8	0.7	1.45	0.1	145	10	362.5	25	W	EVSI 6 (EV220B 6)	<b>032U6513</b>
⅜	¼	0.8	0.7	1.45	0.1	145	10	362.5	25	OL	EVSI 6 (EV220B 6)	<b>032U6516</b>
⅜	¼	0.8	0.7	1.45	0.1	145	10	362.5	25	W	EVSI 6 (EV220B 6)	<b>032U6514</b>
⅜	⅜	1.7	1.5	1.45	0.1	145	10	362.5	25	OL	EVSI 10 (EV220B 10)	<b>032U6519</b>
⅜	⅜	1.7	1.5	1.45	0.1	145	10	362.5	25	W	EVSI 10 (EV220B 10)	<b>032U6517</b>
½	⅜	1.7	1.5	1.45	0.1	145	10	362.5	25	OL	EVSI 10 (EV220B 10)	<b>032U6520</b>
½	⅜	1.7	1.5	1.45	0.1	145	10	362.5	25	W	EVSI 10 (EV220B 10)	<b>032U6518</b>
½	½	2.9	2.5	4.35	0.3	145	10	145	10	OL	EVSI 12 (EV220B 12)	<b>032U6522</b>
½	½	2.9	2.5	4.35	0.3	145	10	145	10	W	EVSI 12 (EV220B 12)	<b>032U6521</b>
¾	¾	7.0	6	4.35	0.3	145	10	145	10	OL	EVSI 18 (EV220B 18)	<b>032U6524</b>
¾	¾	7.0	6	4.35	0.3	145	10	145	10	W	EVSI 18 (EV220B 18)	<b>032U6523</b>
1	¾	7.0	6	4.35	0.3	145	10	145	10	OL	EVSI 22 (EV220B 22)	<b>032U6526</b>
1	¾	7.0	6	4.35	0.3	145	10	145	10	W	EVSI 22 (EV220B 22)	<b>032U6525</b>

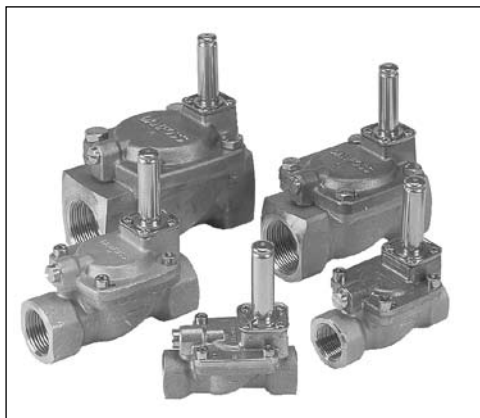
*Normally Open ( Open when de-energized)*

⅜	¼	0.8	0.7	1.45	0.1	145	10	362.5	25	W	EVSI 6 NO (EV220B 6 NO)	<b>032U6528</b>
⅜	¼	0.8	0.7	1.45	0.1	145	10	362.5	25	OL	EVSI 6 NO (EV220B 6 NO)	<b>032U6529</b>
½	⅜	0.8	0.7	1.45	0.1	145	10	362.5	25	OLW <sup>2)</sup>	EVSI 10 NO (EV220B 10 NO)	<b>032U6530</b>

1) O = Oil; L = Inert Gas (incl. Air); W = Water

2) Water: Max. temperature +140°F (+60°C)

Features



**EVSI 15 - 50 NC/NO (EV220B 15 - 50), UL listed\***

- Soft Closing (anti water hammer)
- For neutral liquids (max. 50 cSt / 250 SSU) and gases
- Ambient temperature: Up to 120°F (50°C)
- Brass valve body
- Stainless Steel version
- Gasket materials: FKM for Oil/Inert Gas (O/L), EPDM for Water (W) and Steam (D)
- Media temperature:  
For Oil (O) and Inert Gas (L): FKM  
32 °F ( 0°C) to 212°F (+100°C)  
For Water (W) and Steam (D): EPDM  
-22 °F (-30°C) to 248°F (+120°C)
- Available as UL Recognized
- Test pressure: Max. 290 psi (20 bar)

\* **UL listed as EVSI**

**Ordering EVSI 15 -50, NC/NO (EV220B 15 - 50), UL listed**

In the ordering table below, a code number and type designation are stated for each valve. Please use this information when ordering.

Coils must be ordered separately, please see page 9.

Example: EVSI 20 (EV220B 20) - 032U6533.

**Ordering - EPDM<sup>1)</sup> versions, UL listed**

Type	Connection NPT [inch]	Orifice Size [inch]	Flow value		Opening diff. pressure				Max. Wrk. press.		Code no. NC without coil	Code no. NO without coil	Code no. NC without coil
			C <sub>v</sub>	k <sub>v</sub>	Min.		Max.		psi	bar			
			[US gal/min]	[m <sup>3</sup> /h]	psi	bar	psi	bar			Brass	Brass	Stainless Steel
EVSI 15 (EV220B 15)	½	9/16	4.7	4	4.35	0.3	145	10	232	16	<b>032U6532</b>	<b>032U6544</b>	<b>032U8550</b>
EVSI 20 (EV220B 20)	¾	¾	9.4	8	4.35	0.3	145	10	232	16	<b>032U6533</b>	<b>032U6545</b>	<b>032U8551</b>
EVSI 25 (EV220B 25)	1	1	12.3	11	4.35	0.3	145	10	181	12.5	<b>032U6534</b>	<b>032U6546</b>	<b>032U8552</b>
EVSI 32 (EV220B 32)	1¼	1¼	21	18	4.35	0.3	145	10	181	12.5	<b>032U6535</b>	<b>032U6547</b>	<b>032U8553</b>
EVSI 40 (EV220B 40)	1½	1½	28	24	4.35	0.3	145	10	181	12.5	<b>032U6536</b>	<b>032U6548</b>	<b>032U8554</b>
EVSI 50 (EV220B 50)	2	2	46.8	40	4.35	0.3	145	10	181	12.5	<b>032U6537</b>	<b>032U6549</b>	<b>032U8555</b>

**Ordering - FKM<sup>2)</sup> versions, UL listed**

Type	Connection NPT [inch]	Orifice Size [inch]	Flow value		Opening diff. pressure				Max. Wrk. press.		Code no. NC without coil	Code no. NO without coil	Code no. NC without coil
			C <sub>v</sub>	k <sub>v</sub>	Min.		Max.		psi	bar			
			[US gal/min]	[m <sup>3</sup> /h]	psi	bar	psi	bar			Brass	Brass	Stainless Steel
EVSI 15 (EV220B 15)	½	9/16	4.7	4	4	0.3	145	10	232	16	<b>032U6538</b>	<b>032U6550</b>	<b>032U8556</b>
EVSI 20 (EV220B 20)	¾	¾	9.4	8	4	0.3	145	10	232	16	<b>032U6539</b>	<b>032U6551</b>	<b>032U8557</b>
EVSI 25 (EV220B 25)	1	1	12.3	11	4	0.3	145	10	181	12.5	<b>032U6540</b>	<b>032U6552</b>	<b>032U8558</b>
EVSI 32 (EV220B 32)	1¼	1¼	21	18	4	0.3	145	10	181	12.5	<b>032U6541</b>	<b>032U6553</b>	<b>032U8559</b>
EVSI 40 (EV220B 40)	1½	1½	28	24	4	0.3	145	10	181	12.5	<b>032U6542</b>	<b>032U6554</b>	<b>032U8560</b>
EVSI 50 (EV220B 50)	2	2	46.8	40	4	0.3	145	10	181	12.5	<b>032U6543</b>	<b>032U6555</b>	<b>032U8561</b>

1)EPDM is suitable for Water and Steam (Steam max.+284°F / 58 psi (+140°C / 4 bar)

2)FKM is suitable for Oil and Inert Gas (incl. Air), for Water at max. +140°F (+60°C)

Features



**EV250B NC, 10-22 UL listed**

- Hung diaphragm type
- For neutral liquids (max. 50 cSt / 250 SSU) and gases
- Ambient temperature: Up to 120°F (50°C)
- DZR Brass valve body
- Gasket materials: VITON for Oil / Inert Gas (O/L), EPDM for Water (W)
- Media temperature:  
For Oil (O) and Inert Gas: FKM  
32°F (0°C) to 212°F (+100°C)  
For Water (W) : EPDM  
-22°F (-30°C) to 248°F (+120°C)
- Test pressure: Max. 290 psi (20 bar)

**Ordering EV250B 10 -22, NC, UL listed**

In the ordering table below, a code number and type designation are stated for each valve. Please use this information when ordering.

Coils must be ordered separately, please see page 9.

Example: EV250B 18 - 032U5264.

Ordering

Type	Connection NPT [inch]	Orifice Size [inch]	Flow value		Opening diff. pressure				Max. Wrk.press.		Code no. without coil	Code no. without coil
			C <sub>v</sub> [US gal/min]	k <sub>v</sub> [m <sup>3</sup> /h]	Min.		Max.		psi	bar		
					psi	bar	psi	bar			EPDM <sup>1)</sup>	FKM <sup>2)</sup>
EV250B 10BD	3/8	3/8	2.9	2.5	0	0	145	10	145	10	<b>032U5260</b>	<b>032U5261</b>
EV250B 12BD	1/2	1/2	4.7	4	0	0	145	10	145	10	<b>032U5262</b>	<b>032U5263</b>
EV250B 18BD	3/4	3/4	7.0	6	0	0	145	10	145	10	<b>032U5264</b>	<b>032U5265</b>
EV250B 22BD	1	1	8.2	7	0	0	145	10	145	10	<b>032U5266</b>	<b>032U5267</b>

1)EPDM is suitable for Water.

2)FKM is suitable for Oil and Inert Gas (incl. Air), for Water at max. +140°F (+60°C)

Features



**EVSIS 3, EVSIS 6-25 (EV215B 3, EV225B 6 - 25)\***

- Direct and servo operated solenoid valves for steam
- Normally closed (NC) when the coil is deenergized
- Σ - listed, file MH7648
- Resistant to impurities in the medium
- Ambient temperature: Up to 104°F (40°C)
- Low-friction design
- All standard voltages
- Media temperature: Max. 364°F (184°C)
- Thread connections: NPT ¼ to NPT 1

\* **UL listed**

**Ordering EVSIS 3, EVSIS 6 -25(EV215B-3, EV225B 6-25) UL listed**

In the ordering table below, a code number and type designation are stated for each of the valves and coils. Please use this information when ordering.

Example: EVSIS 15 (EV225B 15) - 032U3692  
Coil junction box, 120 V AC - 018F7682.

**Only the below mentioned coils can be used for the EVSIS 3 (EV215B 3) - EVSIS 6 - 25 (EV225B 6 - 25) valves!**

Connection NPT [inch]	Orifice Size [inch]	Flow value		Opening diff. pressure				Max.Wrk.Pres- sure		Media <sup>1)</sup>	Type	Code no. without coil
		C <sub>v</sub> [USgal/min]	k <sub>v</sub> [m <sup>3</sup> /h]	Min		Max.		psi	bar			
				psi	bar	psi	bar					
¼	¼	0.35	0.3	0	0	145	10	232	16	D	EVSIS 3 (EV215B 3)	<b>032U3688</b>
¼	¼	1.05	0.9	2.9	0.2	145	10	232	16	D	EVSIS 6 (EV225B 6)	<b>032U3689</b>
⅜	⅜	2.6	2.2	2.9	0.2	145	10	232	16	D	EVSIS 10 (EV225B 10)	<b>032U3690</b>
½	⅜	2.6	2.2	2.9	0.2	145	10	232	16	D	EVSIS 10 (EV225B 10)	<b>032U3691</b>
½	9/16	3.5	3.0	2.9	0.2	145	10	232	16	D	EVSIS 15 (EV225B 15)	<b>032U3692</b>
¾	¾	5.9	5.0	2.9	0.2	145	10	232	16	D	EVSIS 20 (EV225B 20)	<b>032U3693</b>
1	1	7.0	6.0	2.9	0.2	145	10	232	16	D	EVSIS 25.(EV225B 25)	<b>032U3694</b>

1)D= Steam (max.+364°F (+184°C)

Coils

Technical data

Voltage tolerance	+10 / -15%
Power consumption, cut in	AC: 49 VA
Power consumption, holding	AC: 28 VA, 14 W AC
Insulation of coil windings	Class H according to IEC 85
Connection	Junction box: 2 leads and screw terminal for ground Conduit hub: 14 in. leads
Enclosure, IEC 529	Junction box: Nema 2 (IP 12 - 32) Conduit hub: Nema 4 (IP 54)
Ambient temperature	-40°F to +122°F (-40°C to +50°C)
Duty rating	Continuous

Ordering

Coil voltage	Code no.	
	Junction box	½ in. Conduit hub
24 V AC, 60Hz	<b>018F7688</b>	<b>018F7698</b>
110 - 120 V AC, 60Hz	<b>018F7687</b>	<b>018F7697</b>
208 / 240 V AC, 60Hz	<b>018F7686</b>	<b>018F7696</b>

Features



**EVSIM 6 - 20 (EV260B 6 - 20)**

- For stepless flow regulation in industrial plant
- For water, oil and similar neutral liquids (max. 50 cSt / 250 SSU)
- Short reaction time
- Closes on power failure (fail-safe function)
- Brass valve body
- Ambient temperature: -13°F (-25°C) to 120°F (50°C)
- Pressure range: 7 to 145 psi (0.5 to 10 bar)
- Media temperature: 14 °F (-10°C) to 176°F (+80°C)
- Flow range for water: 3.5 to 22 USgal/min.
- 24 V DC supply voltage
- Standard 4-20 mA or 0,5-10 V dc pilot signal

**Ordering EVSIM 6 - 20 (EV260B 6 - 20)**

In the ordering table below, a code number and type designation are stated for each of the valves and coils. Please use this information when ordering.

Example:  
EVSIM 6 (EV260B 6) with NPT connection - 032U8062  
Coil without signal converter, 24 V AC - 018Z6987

Con- nection NPT [inch]	Orifice Size [inch]	Flow value		Opening diff. pressure				Max.Wrk.Pres- sure		Media <sup>1)</sup>	Type	Code no. without coil
		C <sub>v</sub> [USgal/min]	k <sub>v</sub> [m <sup>3</sup> /h]	Min		Max.		psi	bar			
				psi	bar	psi	bar					
¼	¼	0.94	0.8	7	0.5	145	10	145	10	OLW	EVSIM 6 (EV260B 6)	<b>032U8062</b>
¾	¼	0.94	0.8	7	0.5	145	10	145	10	OLW	EVSIM 6 (EV260B 6)	<b>032U8063</b>
¾	¾	1.52	1.3	7	0.5	145	10	145	10	OLW	EVSIM 10 (EV210B 10)	<b>032U8064</b>
½	¾	1.52	1.3	7	0.5	145	10	145	10	OLW	EVSIM 10 (EV210B 10)	<b>032U8065</b>
½	9/16	2.5	2.1	7	0.5	145	10	145	10	OLW	EVSIM 15 (EV260B 15)	<b>032U8066</b>
¾	¾	6.0	5.0	7	0.5	145	10	145	10	OLW	EVSIM 20 (EV260B 20)	<b>032U8067</b>

1)O = Oil ; L = Inert Gas (incl. Air) ; W = Water

Coil

Technical data

Output	Max. 20 W
Ambient temperature	-13°F to +104°F (-25°C to +50°C)
Resistance	23.5Ω at an ambient temperature of 68°F (20°C)
Insulation of coil windings	Class H according to IEC 85 0,5 - 10 V pilot signal: 400kΩ, 4 - 20mA pilot signal: 250kΩ

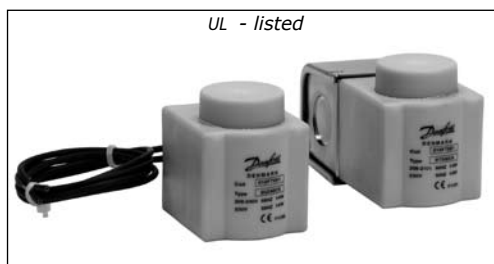
Ordering

Description	Supply voltage	Connection	Pilot signal	Code no.
Without signal converter	24 V DC <sup>1)</sup>	Terminal box Pg 13.5	300 - 600mA	<b>018Z6987</b>
With signal converter	21 to 30 V DC	2 m 3-core cable, Pg 13.5	0,5 - 10 V	<b>018Z0290</b>
			4 - 20mA	<b>018Z0291</b>

1)Or AC ± 10% full-wave rectified



Features



**BT and BU coils**

- For high temperatures - class H insulated wire
- Encapsulated coils with long life time
- Wide range of coils
  - for a.c. and d.c. applications
  - from 24 V to 240 V a.c.
  - Junction box and Conduit Box
- Ambient temperature: -40°F to +122°F (-40°C to +50°C)

Ordering

Voltage V a.c.	Frequency Hz	Power consumption		Code Number	
		Inrush VA	Holding VA	Junction box NEMA 2	Conduit boss NEMA 4
24	50 / 60	49	28	<b>018F7683</b>	<b>018F7693</b>
110	50 / 60	49	28	<b>018F7682</b>	<b>018F7692</b>
120	60	49	28		
208 / 240	60	49	28	<b>018F7681</b>	<b>018F7691</b>
230	50	49	28		
Direct current d.c.					
120		20 W		<b>018F7689</b>	<b>018F7699</b>

Technical data

Design	In accordance with UL 429
Power supply	Alternating current (a.c.) and direct current (d.c.)
Permissible voltage variation	Alternating current (a.c.) : +10% to -15%
Power consumption	Alternating current (a.c.) : Inrush: 49 VA; Holding: 28 VA, 14 W Direct current (d.c.) : 20 W
Insulation of coil wire	Class H according to IEC 85
Connection	Junction box or Conduit boss
Enclosure, IEC 529	Junction box NEMA 2 ~ IP 12-32 Conduit boss NEMA 4 ~ IP 54
Ambient temperature	-40 to +122°F ( -40 to +50°C)

Spare parts

*Spare parts for EVI (EV210B 1.5 - 10) (NC only)*  
Spare part sets contain armature with valve plate, spring and O-ring.

Type	Seal material	Media <sup>1)</sup>	Code no.
EV210B 1.5 - 2 - 3	EPDM	W	<b>032U6000</b>
	FKM	OL	<b>032U2003</b>
EV210B 6 - 10	EPDM	W	<b>032U2006</b>
	FKM	OL	<b>032U2011</b>

*Spare parts set for EV250B 10, 12, 18, 22(NC only)*  
Spare part sets contain service element, consisting of armature with spring valve plate and diaphragm.

Type	Seal material	Media <sup>1)</sup>	Code no.
EV250B 10 - 12	EPDM	W	<b>032U5270</b>
	FKM	OL	<b>032U5271</b>
EV250B 18 - 22	EPDM	W	<b>032U5272</b>
	FKM	OL	<b>032U5273</b>

*Spare parts for EVSI 6 - 22 (EV220B 6 - 22) (NC only)*  
Spare part sets contain armature with valve plate, spring and diaphragm. For EVSI 6 and 10, the spare parts set also contain an O-ring.

Type	Seal material	Media <sup>1)</sup>	Code no.
EV220B 6	EPDM	W	<b>032U1062</b>
	FKM	OL	<b>032U1063</b>
EV220B 10	EPDM	W	<b>032U1065</b>
	FKM	OL	<b>032U1066</b>
EV220B 12	EPDM	W	<b>032U1068</b>
	FKM	OL	<b>032U1067</b>
EV220B 18 - 22	EPDM	W	<b>032U1070</b>
	FKM	OL	<b>032U1069</b>

*Spare parts set for EVSI 15 - 50 (EV220B 15 - 50) (NC only)*  
Spare part sets contain O-ring for armature tube, spring and diaphragm, two O-rings for the pilot system, O-ring and gasket for equalizing orifice.

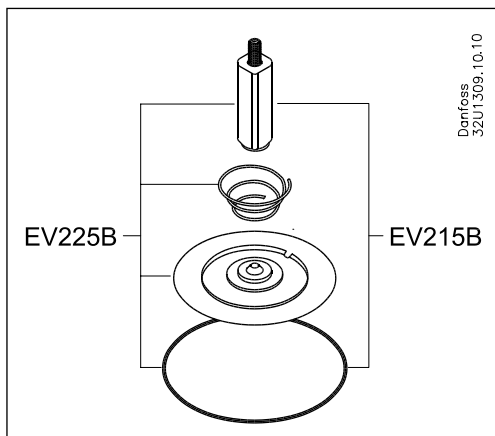
Type	Seal material	Media <sup>1)</sup>	Code no.
EV220B 15	EPDM	WD	<b>032U1071</b>
	FKM	OL	<b>032U1072</b>
EV220B 20	EPDM	WD	<b>032U1073</b>
	FKM	OL	<b>032U1074</b>
EV220B 25	EPDM	WD	<b>032U1075</b>
	FKM	OL	<b>032U1076</b>
EV220B 32	EPDM	WD	<b>032U1077</b>
	FKM	OL	<b>032U1078</b>
EV220B 40	EPDM	WD	<b>032U1079</b>
	FKM	OL	<b>032U1080</b>
EV220B 50	EPDM	WD	<b>032U1081</b>
	FKM	OL	<b>032U1082</b>

*Spare parts for Normally Open Units (NO)*  
Spare part set contain armature tube with armature fitted, and O-ring.

Type	Seal material	Media <sup>1)</sup>	Code no.
EV210B 1.5 - 3 NO	EPDM	W	<b>032U2005</b>
	FKM	OL	<b>032U2004</b>
EV220B 6 NO	EPDM	W	<b>032U0165</b>
	FKM	OL	<b>032U0166</b>
EV220B 10 NO	FKM	OL (W) <sup>2)</sup>	<b>032U0167</b>
EV220B 15 - 50 NO	EPDM	WD	<b>032U0296</b>
	FKM	OL	<b>032U0295</b>

1) O = Oil; L = Inert Gas (incl. Air); W = Water ; D = Steam  
2) Water: Max. temperature +140°F (+60°C)

Spare parts



Spare part set for EVSIS 3 (EV215B 3), EVSIS 6 - 25 (EV225B 6 - 25)

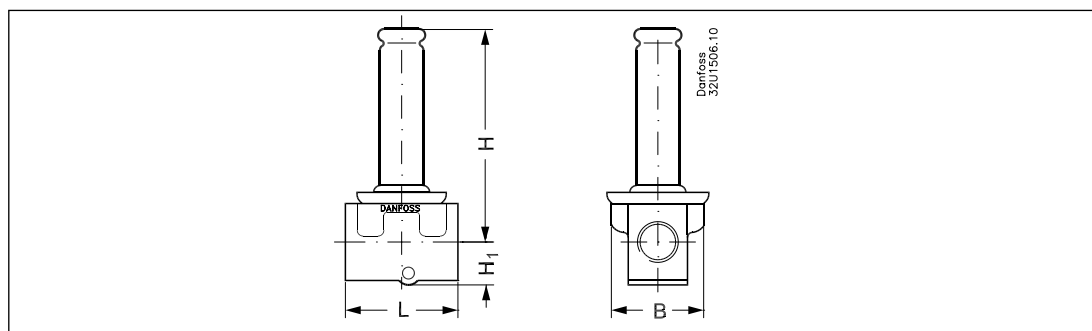
Type	Code no.
EV215B 3	<b>032U3174</b>
EV225B 6 and 10	<b>032U3175</b>
EV225B 15	<b>032U3176</b>
EV225B 20	<b>032U3177</b>
EV225B 25	<b>032U3178</b>

Spare part set for EVSIS 3 (EV215B 3).  
 The spare part set includes armature with valve plate, spring, O-ring and upper part of valve for use with new 018F - coils.  
 (not shown on drawing)

Spare part set for EVSIS 6 - 25 (EV225B 6-25).  
 The spare part set includes armature with valve plate, spring, diaphragm, O-ring and upper part of valve for use with new 018F - coils.  
 (not shown on drawing)

**Types EVI (EV210B),  
EVSI (EV220B)  
Dimensions and weight**

Valves without coil

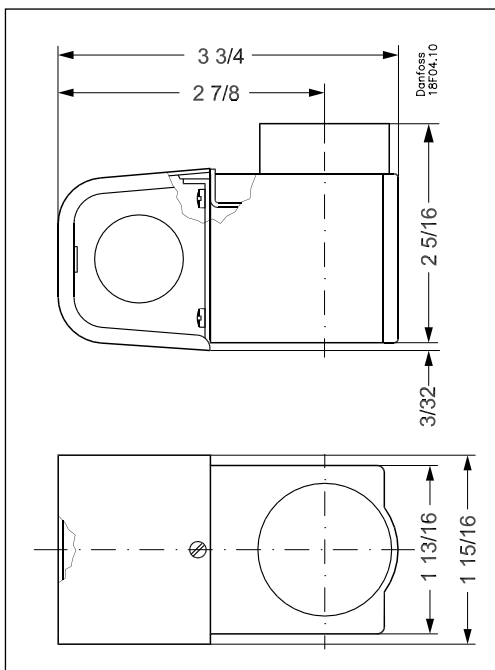


Type	L		B		H <sub>1</sub>		H <sup>1)</sup>		Weight without coil	
	in	mm	in	mm	in	mm	in	mm	Lbs	kg
EVI 1.5 - 2 (EV210B 1.5 - 2)	1 3/8 <sup>2)</sup>	35 <sup>2)</sup>	1 5/16	34	1/2	12	2 3/4	70	0.33	0.15
EVI 3 (EV210B 3)	1 5/8	41	1 5/16	34	1/2	13	2 3/4	71	0.44	0.2
EVI 6 (EV210B 6)	1 25/32	45.5	1 3/4	43.5	1/2	13	15/16	74	0.5	0.22
EVI 10 (EV210B 10)	2 9/32	58	1 7/8	48	1/2	13	3	77	0.64	0.29
EVSI 6 (EV220B 6)	1 25/32	45.5	1 3/4	43.5	1/2	13	2 15/16	74	0.5	0.22
EVSI 10 (EV220B 10)	2 9/32	58	1 7/8	48	1/2	13	3	77	0.64	0.29
EVSI 12 (EV220B 12)	2 7/16	62	2	50	1/2	13	3	77	0.78	0.35
EVSI 15 (EV220B 15)	3 3/12	80	2 1/16	52	9/16	15	3 11/16	94	1.8	0.8
EVSI 18 (EV220B 18)	3 17/32	90	2 3/16	56	11/16	18	3 1/4	83	1.4	0.65
EVSI 20 (EV220B 20)	3 11/16	94	2 1/4	58	11/16	18	3 7/8	98	2.2	1.0
EVSI 22 (EV220B 22)	3 17/32	90	2 1/2	64	7/8	23	3 5/8	92	2.1	0.95
EVSI 25 (EV220B 25)	4 9/16	116	2 3/4	70	7/8	22	4 1/4	108	3.1	1.4
EVSI 32 (EV220B 32)	4 13/16	122	3 1/4	82	11/16	27	4 1/2	115	4.4	2.0
EVSI 40 (EV220B 40)	5 3/16	132	3 3/4	95	1 1/4	32	4 7/8	124	7.1	3.2
EVSI 50 (EV220B 50)	6 3/8	162	4 7/16	113	1 7/16	37	5 1/8	130	9.6	4.3

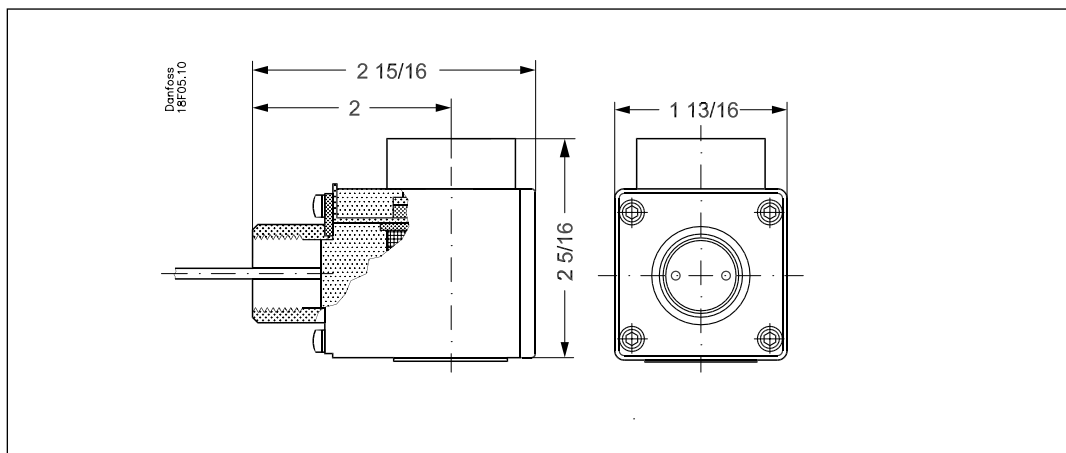
1)For de-energized open valves (NO) + 3/16 in (5 mm). The dimension is the same with coil fitted.  
2)For EV210B 1.5 1/4" (032U6502) 1 1/2 in (39 mm).

**BT and BU Coils**  
**Dimensions and weight**

*BT coils*

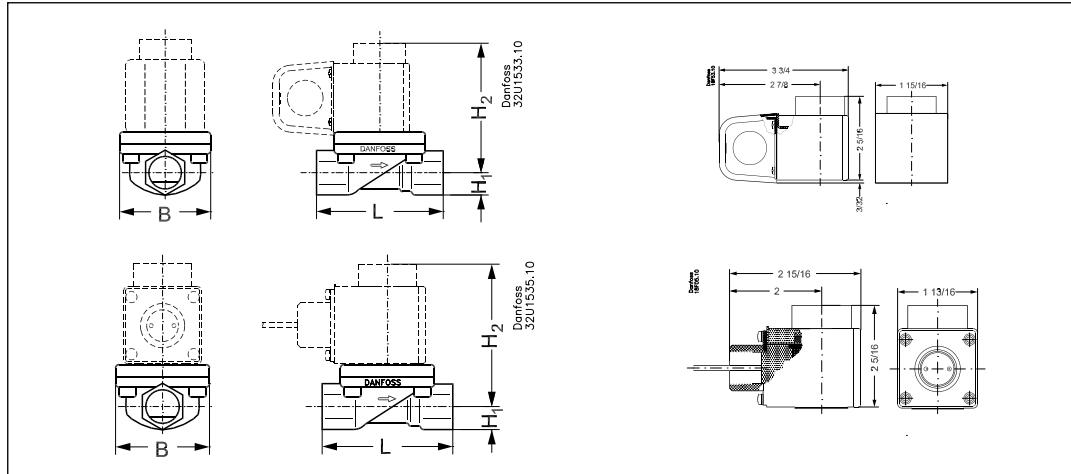


*BU coils*



Type	Weight	
	Lbs	kg
BT Junction	0.88	0.4
BU Conduit	0.79	0.36

**Types EVSIS 3, EVSIS 6-25  
(EV215B 3, EV225B 6 - 25)  
Dimensions and weight**

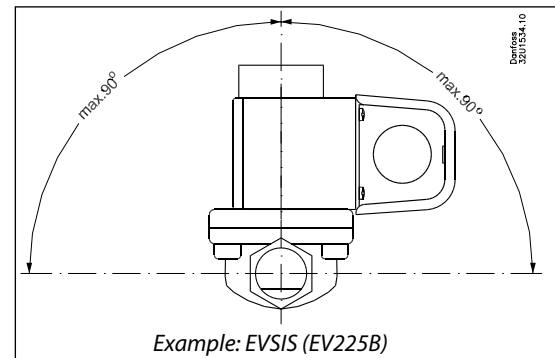


Type	L		B		H <sub>1</sub>		H <sub>2</sub>		Weight with coil	
	in	mm	in	mm	in	mm	in	mm	Lbs	kg
EVSIS 3 (EV215B 3)	1 ½	38.0	1 11/32	34.0	7/16	11.5	3.37	85.5	0.25	0.56
EVSIS 6 (EV225B 6)	2 7/16	62.0	1 13/16	46.0	½	13.0	3.78	96.0	0.35	0.78
EVSIS 10 (EV225B 10)	2 7/16	62.0	1 13/16	46.0	½	13.0	3.78	96.0	0.37	0.82
EVSIS 15 (EV225B 15)	3 3/16	81.0	2 7/32	56.0	19/32	15.0	3.84	97.5	0.44	0.96
EVSIS 20 (EV225B 20)	3 27/32	98.0	2 27/32	72.0	23/32	18.0	4.09	104.0	0.64	1.40
EVSIS 25 (EV225B 25)	4 3/16	106.0	2 27/32	72.0	27/32	21.0	4.41	112.0	0.82	1.80

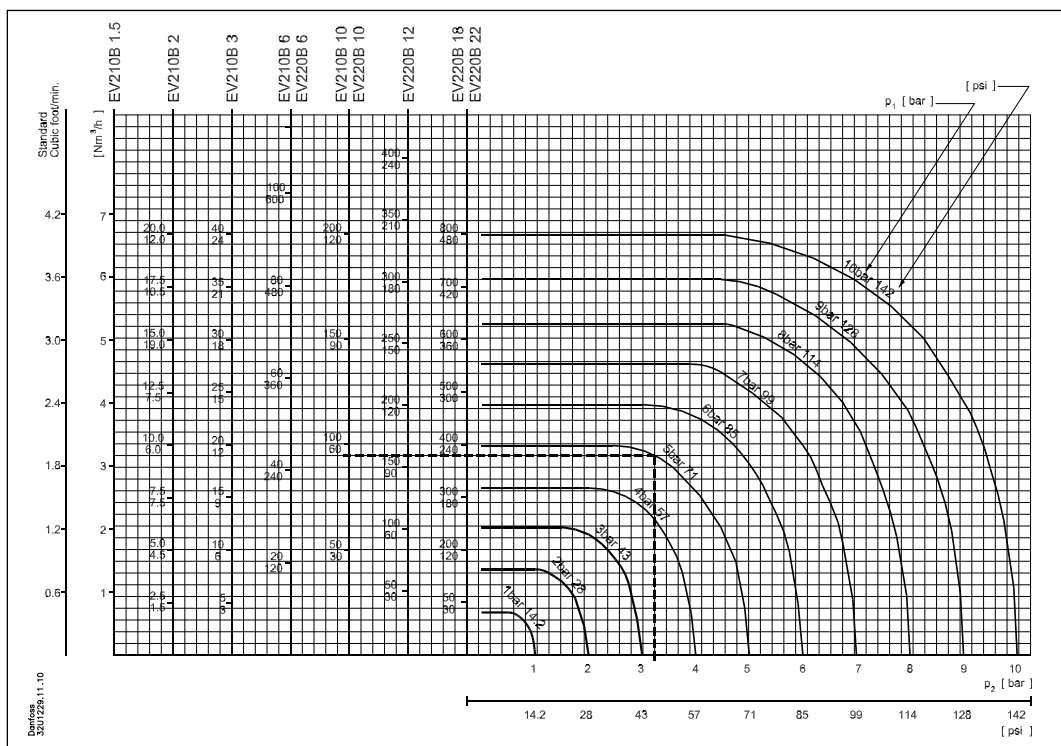
**Installation**

The following general conditions apply to the installation of solenoid valves:

1. The aim should be to install the solenoid valve with coil upward. This reduces the risk of deposits forming in the amature tube.
2. Before installation, piping must be flushed clean.
3. To avoid operational failure from impurities, a filter should always be installed ahead of the solenoid valve. A Danfoss type FV filter is recommended for water filtration.



**Air at higher pressure**  
**Capacity diagrams**  
**EV210B 1.5 - 10 and**  
**EV220B 6 - 22**  
**(EVI and EVSI)**



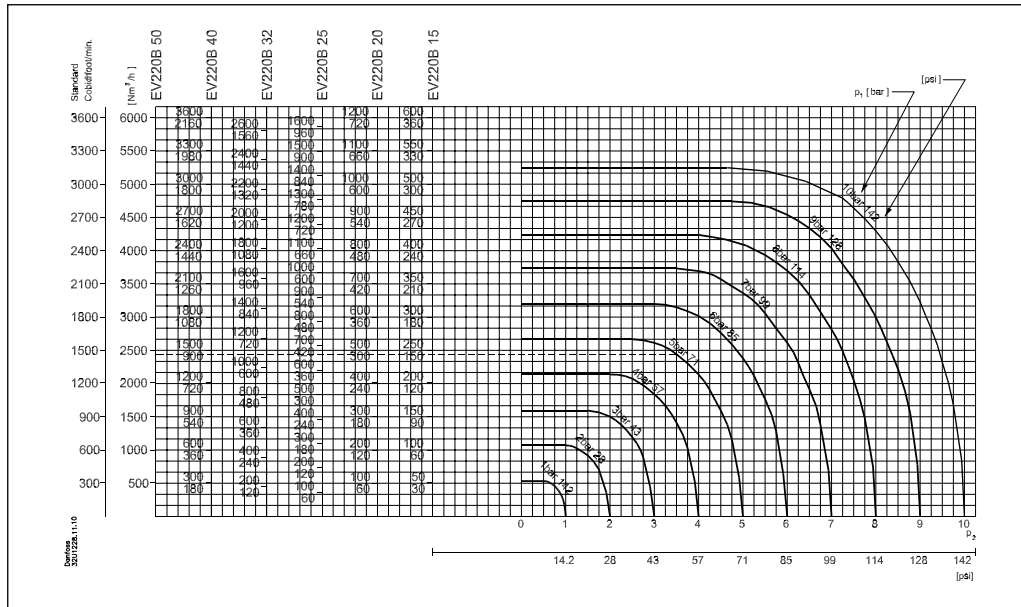
**Example**

Required capacity: 100 Nm<sup>3</sup>/h or 60 SCFM  
 Inlet pressure: 5 bar (71 psi)  
 Outlet pressure: 3.15 bar (45 psi)

The required capacity can be obtained with an EV220B 10 (actual capacity = 95 Nm<sup>3</sup>/h or 57 SCFM).

Take a vertical line from 3.15 bar (45 psi) until it intersects an inlet pressure of 5 bar (71 psi). From this point take a horizontal line until it intersects the capacity curves.

**Air at higher pressure**  
**Capacity diagrams**  
**EV220B 15 - 50 (EVSI 15 - 50)**



**Example**

What capacity is obtainable from EV220B 15 - 50 with an inlet pressure of 5 bar (71 psi) and an outlet pressure of 3.6 bar (51 psi)?

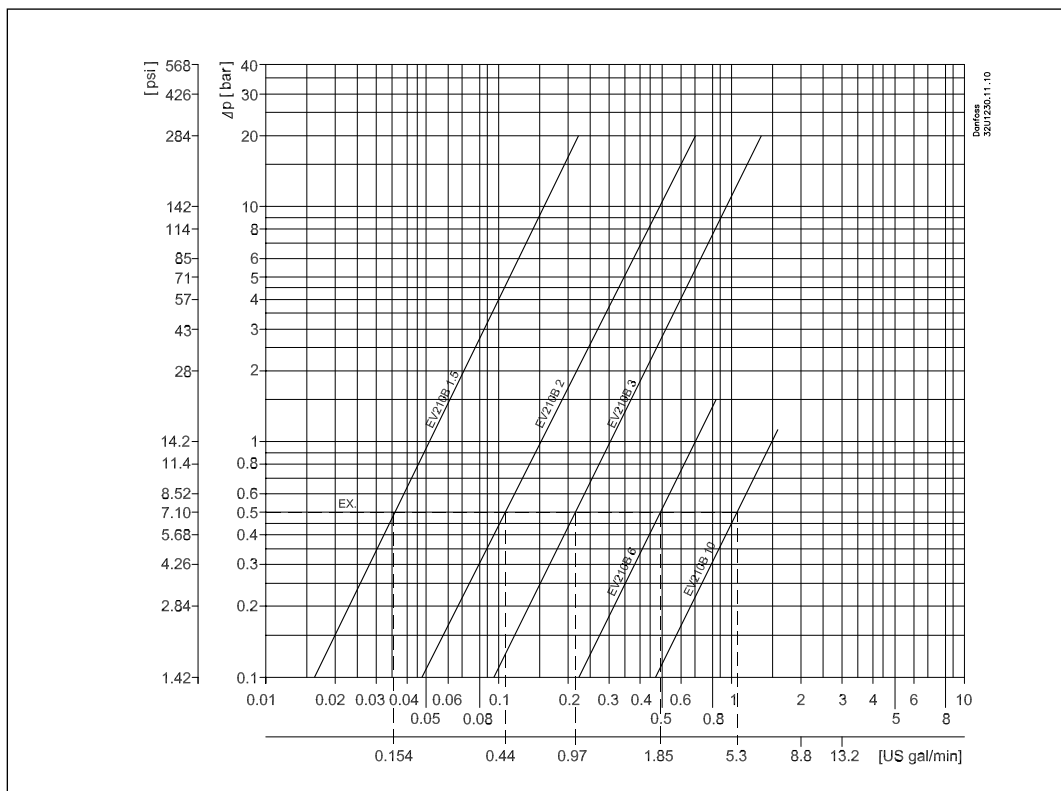
Take a vertical line from the outlet pressure of 3.6 bar (51 psi) until it intersects the curve for an inlet pressure of 5 bar (71 psi). From this point take a horizontal line to the valve capacities.

The following capacities are given:

- EV220B 15 = 240 Nm<sup>3</sup>/h or 144 SCFM
- EV220B 20 = 485 Nm<sup>3</sup>/h or 291 SCFM
- EV220B 25 = 670 Nm<sup>3</sup>/h or 450 SCFM
- EV220B 32 = 1100 Nm<sup>3</sup>/h or 660 SCFM
- EV220B 40 = 1400 Nm<sup>3</sup>/h or 840 SCFM
- EV220B 50 = 2450 Nm<sup>3</sup>/h or 1470 SCFM



**Water at higher pressure**  
**Capacity diagrams**  
**EV210B 1.5 - 10 (EVI)**

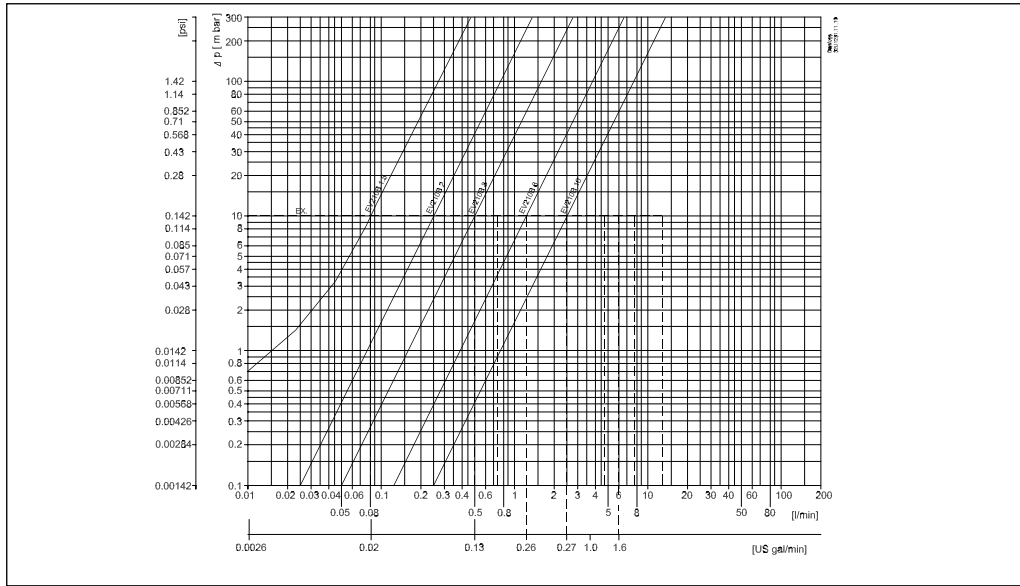


**Example**

Differential pressure: 0.5 bar (7.1 psi)

Type	m <sup>3</sup> /h	GMP
EV210B 1.5	0.035	0.154
EV210B 2	0.10	0.44
EV210B 2	0.22	0.97
EV210B 6	0.42	1.85
EV210B 10	1.2	5.3

**Water at low pressure  
Capacity diagrams  
EV210B 1.5 - 10 (EVI)**

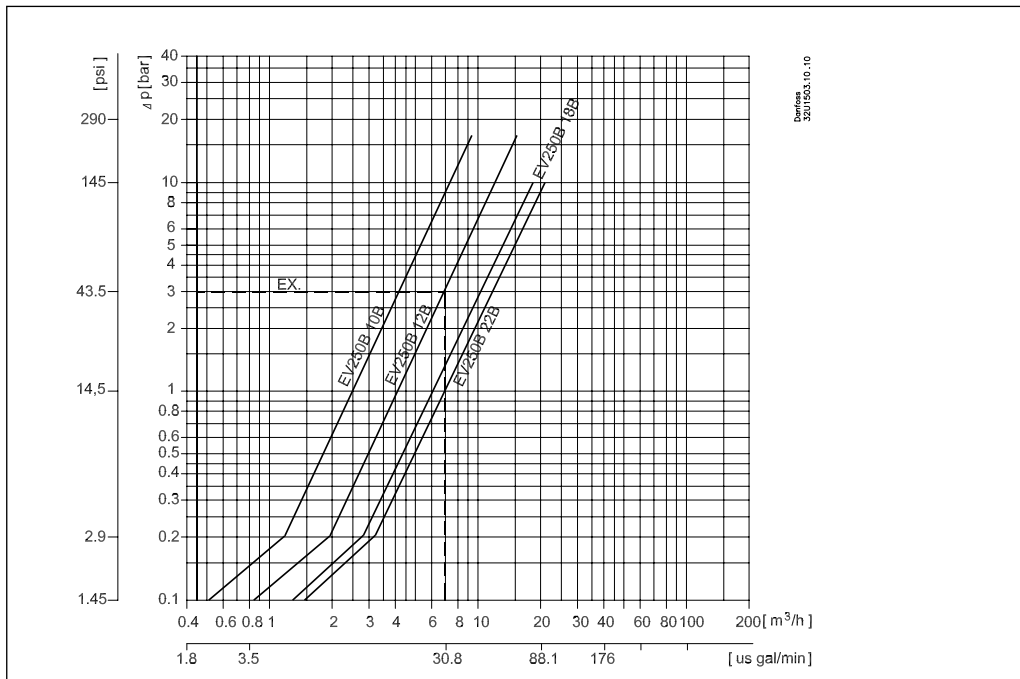


**Example**

Differential pressure: 10 mbar or 0.142 psi

Type	l/min.	GPM
EV210B 1.5	0.08	0.02
EV210B 2	0.25	0.07
EV210B 3	0.5	0.13
EV210B 6	1.0	0.26
EV210B 10	2.7	0.7

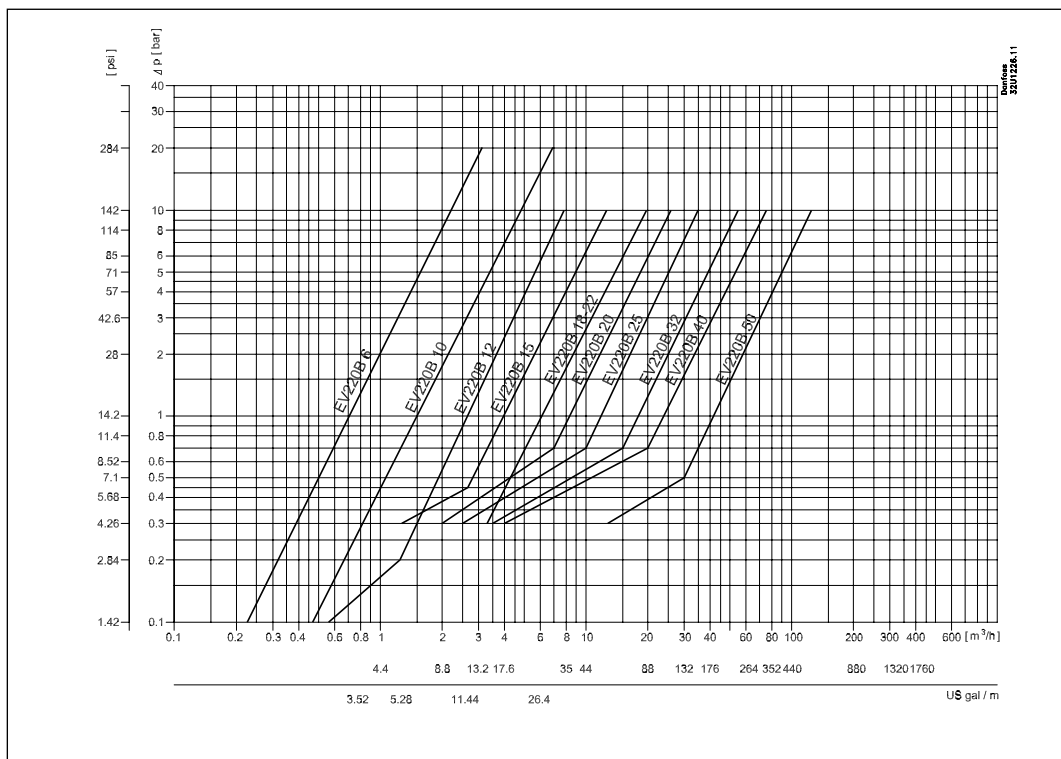
**Water at higher pressure  
Capacity diagrams  
EV250B 10 - 22**



**Example**

Capacity diagram for solenoid valve EV250B 12  
@ differential pressure of 3 bar (43.5 psi).  
Approx. 7 m³/h (30.8 GPM)

**Water at higher pressure**  
**Capacity diagrams**  
**EV220B 6 - 50 (EVS1 6 - 50)**

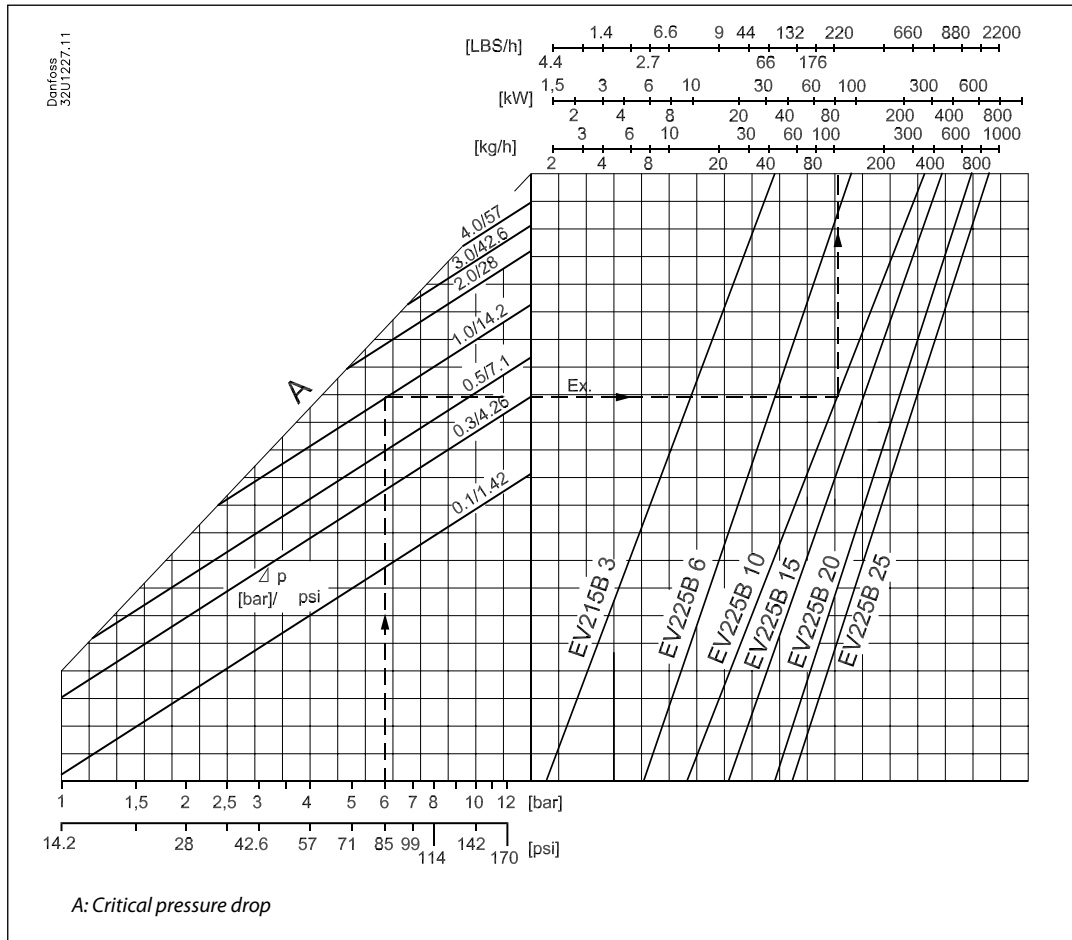


**Example**

Flow rates at diff. pressure: 3 bar (42.6 psi)

Type	m <sup>3</sup> /h	GPM
EV220B 6	1.2	5.28
EV220B 10	2.6	11.44
EV220B 12	4.4	19.37
EV220B 15	8.4	37.0
EV220B 18 - 22	10.2	44.9
EV220B 20	13	57.2
EV220B 25	19	83.7
EV220B 32	33	145.3
EV220B 40	42	184.9
EV220B 50	70	308.2

**Steam**  
**Capacity diagrams**  
**EV215B, 225B 3 - 25 UL listed**  
**(EVSIS 3, EVSIS 6 - 25)**



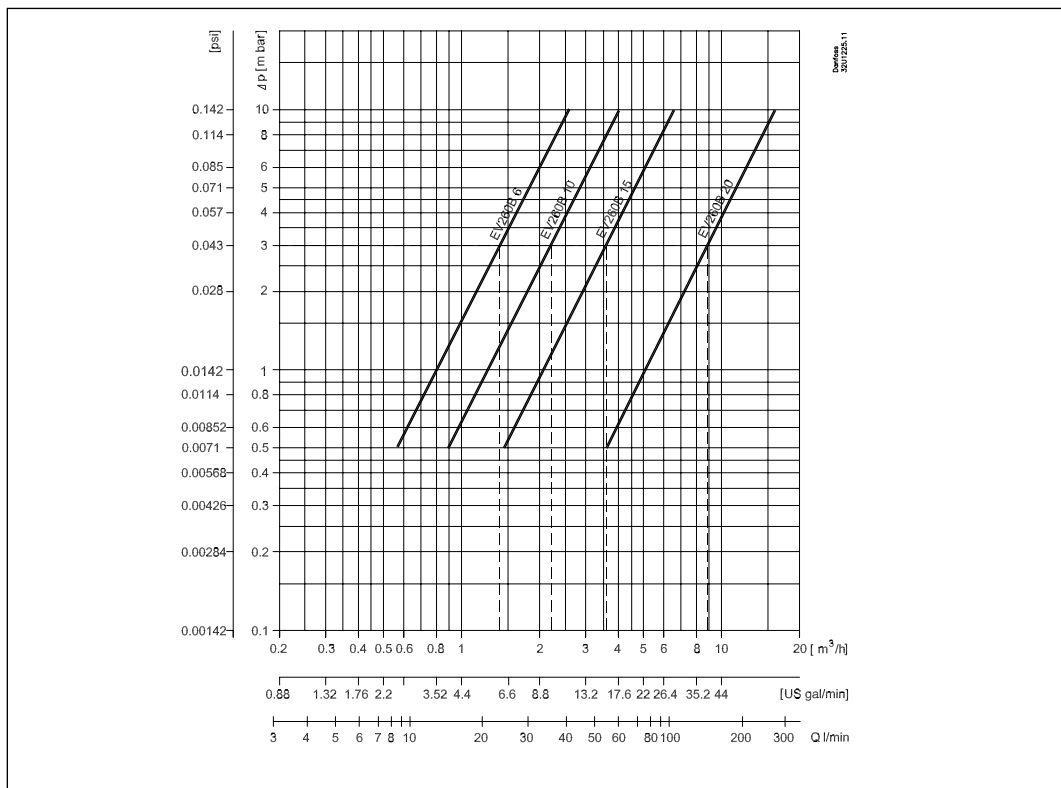
**Example**

Inlet pressure: 6 bar (85 psi)  
 Differential pressure: 1 bar (14.2 psi)

Take a vertical line from the inlet pressure (6 bar) until it intersects the differential pressure curve (1 bar). From this point take a horizontal line until it intersects the capacity curves. Now take a vertical line to read the capacity scales.

The capacity of EVSIS 10 (EV225B 10) is approx. 220 LBS/h (100 kg/h.)

**Water at fully open valve**  
**Capacity diagrams**  
**EV260B 6 - 20 (EVSIM)**



**Example**

What capacity is obtainable from EV260B 6 - 20 at a differential pressure of 3 mbar (0.042 psi) ?

The following capacities are given:

Type	m <sup>3</sup> /h	GMP
EV260B 6	1.4	6.2
EV260B 10	2.2	9.7
EV260B 15	3.6	15.9
EV260B 20	8.7	38.3

**EV210B and EV220B  
(EVI and EVSI)  
General information**

In general, solenoid valves should never be installed so that the pressure on the outlet side can become greater than the pressure on the inlet side.

As a guide the table gives values that indicate when the different types will begin to open if back pressure occurs.

Type	Max. psi	Max. bar
EV210B 1.5	89.2	6.0
EV210B 2	28.4	2.0
EV210B 3	21.3	1.5
EV210B 6	4.3	0.3
EV210B 10	1.4	0.1
EV220B 6	4.3	0.3
EV220B 10	0.3	0.02
EV220B 12	1.4	0.1
EV220B 18	0.14	0.01
EV220B 22	0.14	0.01
EV220B 15	1.4	0.1
EV220B 20	0.7	0.05
EV220B 25	1.4	0.1
EV220B 32	0.7	0.05
EV220B 40	1.14	0.08
EV220B 50	0.7	0.05

**Valve opening / closing times**

With larger valves, very short closing times can cause water hammer.

EV220B 15-50 pilot operated valves incorporate water hammer dampening. The table gives opening and closing times for the different types. Operating conditions, specifically pressure, can cause deviations from these values.

Type	Opening sec.	Closing sec.
EV210B 1.5	0.01	0.02
EV210B 2	0.01	0.02
EV210B 3	0.02	0.02
EV210B 6	0.02	0.02
EV210B 10	0.02	0.03
EV220B 6	0.04	0.25
EV220B 10	0.05	0.30
EV220B 12	0.06	0.30
EV220B 18	0.20	0.50
EV220B 22	0.20	0.50
EV220B 15	0.04	0.35
EV220B 20	0.04	1.00
EV220B 25	0.30	1.00
EV220B 32	1.00	2.50
EV220B 40	1.50	4.00
EV220B 50	5.00	10.00

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