

Technical brochure

Solenoid valves 2/2-ways servo-operated type EV225B



EV225B is a servo-operated 2/2-way solenoid valve for use in steam application.

The design is based on a PTFE diaphragm concept, ensuring high reliable function even in connection with contaminated steam.

Valve body in dezincification resistant brass and valve seats made in stainless steel for ensuring a long life even in connection with aggressive steam media.

Features

- 2/2-way
- Specifically designed for steam applications, 160°C or 185°C
- Servo-operated
- DN 6 - DN 25
- Ambient temperature: +40°C
- G 1/4" to G 1"
- DZR brass valve body
- NC (normally closed)

ISO 228/1 or UL listed version with NPT for North America (EVSIS/UL)

Versions:

- EV225B used with BQ coil
 - ac voltage up to 185°C,
 - dc voltage up to 140°C
- EV225B used with BN coil
 - dc voltage up to 160°C
- EV225B used with BB coil
 - ac voltage up to 160°C
 - dc voltage up to 140°C

Solenoid valves type EV225B

Ordering

NC valve body

Connection ISO 228/1	Seal material	K _v value (m ³ /h)	Media temperature		Type designation		Pressure range (bar)/coil type					Code no. without coil
			ac coil max (°C)	dc coil max (°C)	Main type	Specification	Min.	Max				
								BQ 10 W ac	BN 20 W dc	BB 10 W ac	BB 18 W dc	
G 1/4	PTFE	0.9	185	160	EV225B 6 BD	G14T NC000	0.2	10	5	5	3.6	032U3802
G 3/8	PTFE	2.2	185	160	EV225B 10 BD	G38T NC000	0.2	10	5	5	3.6	032U3803
G 1/2	PTFE	2.2	185	160	EV225B 10 BD	G12T NC000	0.2	10	5	5	3.6	032U3804
G 1/2	PTFE	3.0	185	160	EV225B 15 BD	G12T NC000	0.2	10	5	5	3.6	032U3805
G 3/4	PTFE	5.0	185	160	EV225B 20 BD	G34T NC000	0.2	10	5	5	3.6	032U3806
G 1	PTFE	6.0	185	160	EV225B 25 BD	G1T NC000	0.2	10	5	5	3.6	032U3807

NC valve body and BQ clip-on coil

Connection ISO 228/1	Seal material	K _v value (m ³ /h)	Media temperature ac coil max (°C)	Type designation		Pressure range (bar)		Complete code no. with coil and power connector			
				Main type	Specification	Min.	Max 10 W ac	24 V 50 Hz	110 V 60 Hz	230 V 50 Hz	220 V 60 Hz
G 1/2	PTFE	2.2	185	EV225B 10 BD	G12T NC000	0.2	10	032U380416	032U380420	032U380431	032U380429
G 1/2	PTFE	3.0	185	EV225B 15 BD	G12T NC000	0.2	10	032U380516	032U380520	032U380531	032U380529
G 3/4	PTFE	5.0	185	EV225B 20 BD	G34T NC000	0.2	10	032U380616	032U380620	032U380631	032U380629
G 1	PTFE	6.0	185	EV225B 25 BD	G1T NC000	0.2	10	032U380716	032U380720	032U380731	032U380729

NC valve body and BN clip-on coil

Connection ISO 228/1	Seal material	K _v value (m ³ /h)	Media temperature dc coil max (°C)	Type designation		Pressure range (bar)		Complete code no. with coil and power connector
				Main type	Specification	Min.	Max 20 W dc	24 V dc
G 1/2	PTFE	2.2	160	EV225B 10 BD	G12T NC000	0.2	5	032U380402
G 1/2	PTFE	3.0	160	EV225B 15 BD	G12T NC000	0.2	5	032U380502
G 3/4	PTFE	5.0	160	EV225B 20 BD	G34T NC000	0.2	5	032U380602
G 1	PTFE	6.0	160	EV225B 25 BD	G1T NC000	0.2	5	032U380702

Technical data

Main type	EV225B 6-25
Installation	Vertical solenoid system is recommended
Pressure range	Max. 10 bar
Max. test pressure	25 bar
Time to open ¹⁾	Max. 0.2 s
Time to close ¹⁾	Max. 0.2 s
Ambient temperature	Max. 40°C at a medium temperature of 185°C
Medium temperature	185°C with ac coil / 160°C with dc coil
Viscosity	max. 50 cSt

Materials

Valve body	Dezincification resistant brass
Armature/Armature stop	Stainless steel, W. no. 1.4105 / AISI 430FR
Armature tube	Stainless steel, W. no. 1.4306 / AISI 304L
Spring	Stainless steel, W. no. 1.4310 / AISI 301
Diaphragm	PTFE
Valve plate	PTFE
Valve seat	Stainless steel, W. no. 1.43105 / AISI 403
External gaskets	O-ring: AFLAS

1) The times are indicative. The exact times will depend on the pressure conditions.

Solenoid valves type EV225B

Ordering

Type BQ Steam coil to 185°C



Coil voltage	Type	Coil output W	Temperature °C	Differential pressure	Appendix	Code No.
24 V 50Hz	BQ	10	185	10	16	018F4517
110 V 60Hz	BQ	10	185	10	20	018F4519
230 V 50Hz	BQ	10	185	10	31	018F4511
220 V 60Hz	BQ	10	185	10	29	018F4520

Technical data type BQ

Voltage tolerances	230 V ac coils: +6%, -15% Other ac coils: +10%, -15%
Power consumption, inrush	ac coils: 44 VA
Insulation of coil windings	Class H according to IEC 85
Connection	GDM 2011 (grey) Cable plug according to DIN 43650-A PG11
Coil enclosure, IEC 529	IP 65
Ambient temperature	Max. 40°C
Duty rating	Continuous

Type BN dc Steam coils to 160°C



Coil voltage	Type	Coil output W	Temperature °C	Differential pressure	Appendix	Code No.
24 V dc	BN	20	160	15	02	018F6968

Technical data type BN

Voltage tolerances	±10%
Power consumption, inrush	20 W
Insulation of coil windings	Class H according to IEC 85
Connection	GDM 2011 (grey) Cable plug according to DIN 43650-A PG11
Coil enclosure, IEC 529	IP 65
Ambient temperature	Max. 40°C
Duty rating	Continuous

Type BB ac Steam coils to 160°C



Coil voltage	Type	Coil output W	Temperature °C	Differential pressure	Appendix	Code No.
24 V 50Hz	BB	10	160	5	16	018F7358
24 V 60Hz	BB	10	160	5	14	018F7365
115 V 50Hz	BB	10	160	5	22	018F7361
110 V 60Hz	BB	10	160	5	21	018F7360
230 V 50Hz	BB	10	160	5	31	018F7351
230 V 60Hz	BB	10	160	5	32	018F7363
240 V 50Hz	BB	10	160	5	33	018F7352
380 V 50Hz	BB	10	160	5	37	018F7353

Type BB dc Steam coils to 140°C

12 V dc	BB	18	140	3.6	01	018F7396
24 V dc	BB	18	140	3.6	02	018F7397

Technical data type BB

Voltage tolerances	230 V ac coils: +6%, -15% Other ac coils: +10%, -15% / dc: ±10%
Power consumption, inrush	ac coils: 44 VA / dc, 18 W
Insulation of coil windings	Class H according to IEC 85
Connection	GDM 2011 (grey) Cable plug according to DIN 43650-A PG11
Coil enclosure, IEC 529	IP 65
Ambient temperature	Max. 40°C
Duty rating	Continuous

Accessories: power connector



Type	Code No.
GDM 2011 (grey) Cable plug according to DIN 43650-A PG11	042N0156

Solenoid valves type EV225B

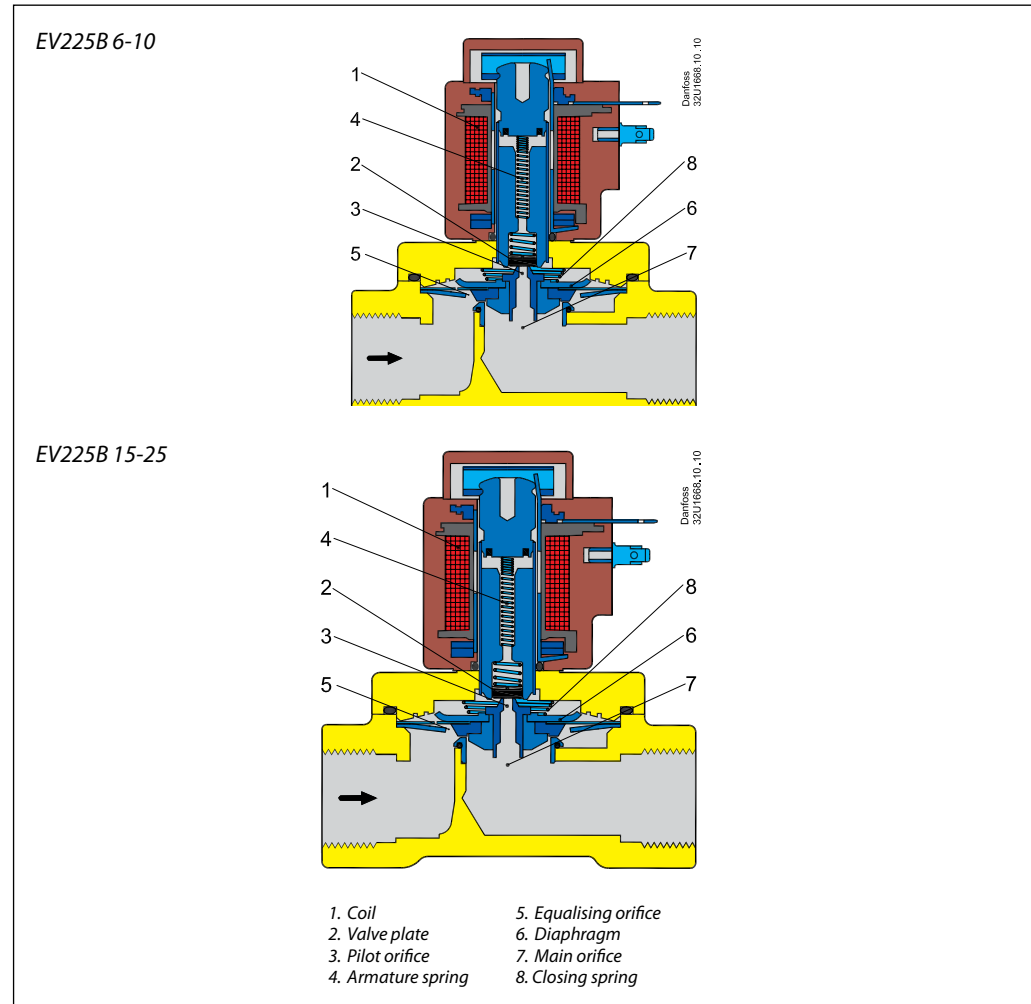
Function

Coil voltage disconnected (closed):

When the voltage is disconnected, the valve plate (2) is pressed down against the pilot orifice (3) by the armature spring (4). The pressure across the diaphragm (6) is built up via the equalizing orifice (5). The diaphragm/piston closes the main orifice (7) as soon as the pressure across the diaphragm/piston is equivalent to the inlet pressure. The valve will be closed for as long as the voltage to the coil is disconnected.

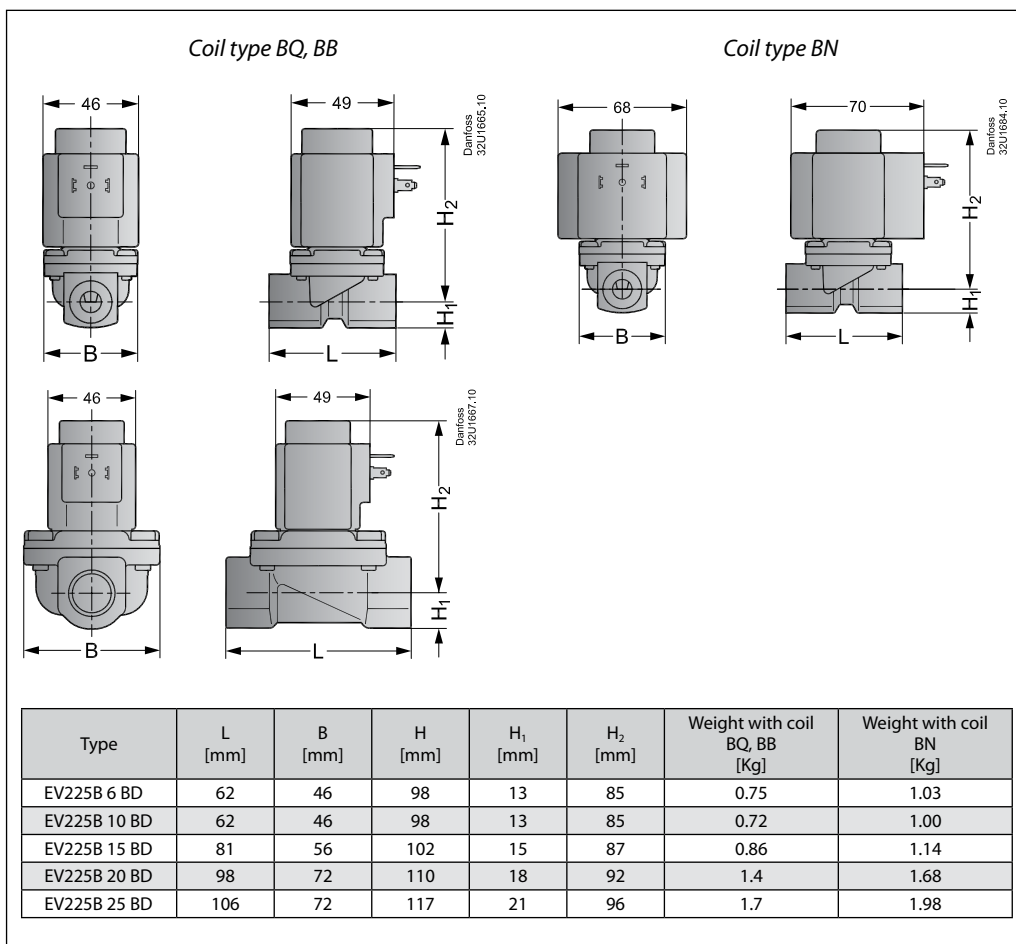
Coil voltage connected (open):

When voltage is applied to the coil (1), the pilot orifice (3) is opened. As the pilot orifice is larger than the equalising orifice (5), the pressure across the diaphragm (6) drops and therefore it is lifted clear of the main orifice (7). The valve is now open for unimpeded flow and will be open for as long as the minimum differential pressure across the valve is maintained, and for as long as there is voltage to the coil.

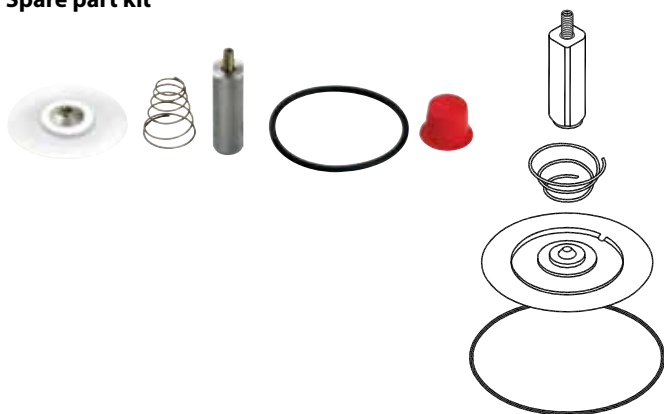


Solenoid valves type EV225B

Dimensions and weight



Spare part kit



Danfoss 32U1309.10

Spare parts kit for EV225B 6-25

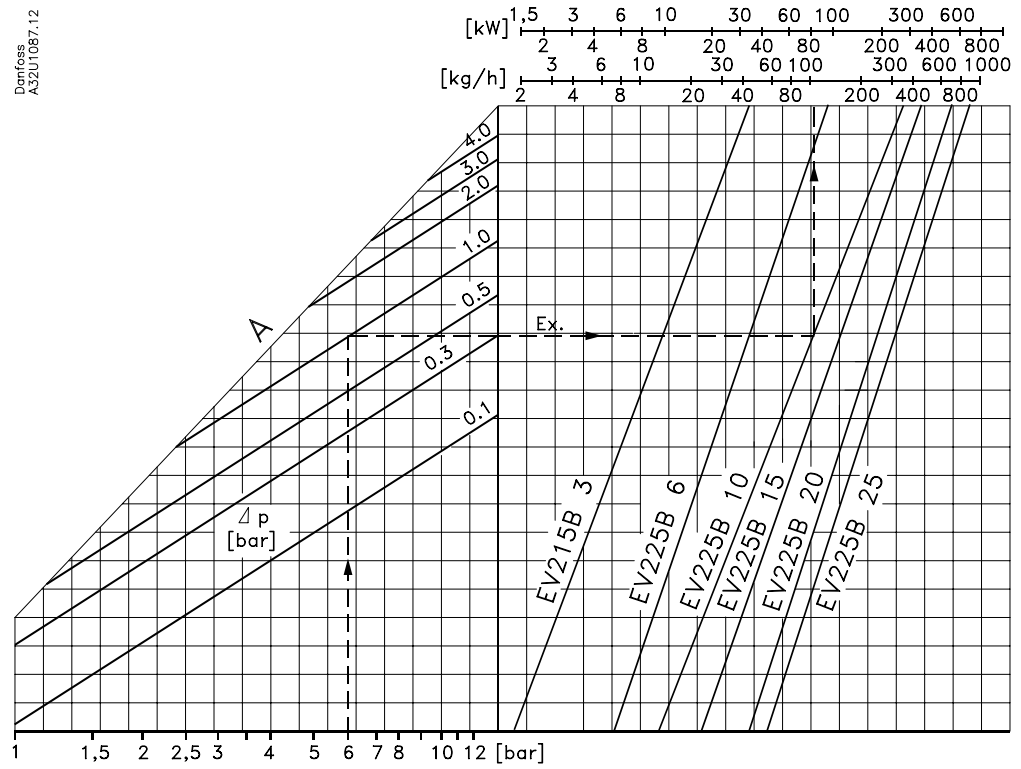
The spare parts kit comprises an armature with valve plate and spring, closing spring, diaphragm and O-ring,

Type	Code No.
EV225B 6-10	032U3171
EV225B 15	032U3172
EV225B 20-25	032U3173

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Steam capacity diagrams

Danfoss
A32U1087.12



Example

Capacity for EV225 10 BD; inlet pressure (p_1) of 6 bar absolute; differential pressure at 1 bar:
Approx. 100 kg/h / 80 kW

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Spare part coils for earlier steam valve versions with only screw to fasten coil to armature tube.

Type BR



Old coil Voltage	Type	Power consumption	Temperature °C	Differential pressure	Code No.
24 V 50 Hz	BR 024A	10	185	10	032K143682
24 V 60 Hz	BR 024B	10	185	10	032K143693
110 el. 115 V 50 Hz	BR 115A	10	185	10	032K143683
110 V 60 Hz	BR 110B	10	185	10	032K143691
230 V 50 Hz	BR 250A	10	185	10	032K143684
230 V 60 Hz	BR 230B	10	185	10	032K143694
240 V 50 Hz	BR 240A	10	185	10	032K143685
24 V dc	BR 024D	17	160	5	032K140902
220 V 60 Hz	BR 220B	10	185	10	032K143690

Technical data

Voltage tolerances	230 V ac coils: +6%, -15% Other ac coils: +10%, -15%
Power consumption, inrush	ac coils: 50 VA
Power consumption, holding	ac coils: 20 VA, 10 W ac
Insulation of coil windings	Class H according to IEC 85
Connection	Terminal box; Pg 13.5
Coil enclosure, IEC 529	IP 43
Ambient temperature	Max. 40°C
Duty rating	Continuous