Datasheet

Servo-operated 2/2-way solenoid valves for steam Type EV225B, NPT

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

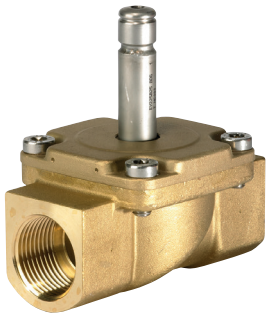
The design is based on a PTFE diaphragm concept, ensuring highly reliable function when used in connection with contaminated steam.

Each valve body is made of dezincification resistant brass and the valve seats are made of stainless steel.
This ensures a long life even in when used with highly aggressive steam.

Features and versions:

- Specifically designed for steam applications up to 365 °F
- Flow range: 1.05 – 7.0 USgal/min
- Differential pressure: 2.9 – 145 psi
- Media temperature from 32 – 365 °F
- Ambient temperature: up to 104 °F
- Coil enclosure: up to IP65
- Thread connections: from NPT 1/4 – 1
- DZR brass NC (normally closed)
- UL listed version with NPT for North America (EVSIS/UL)

DZR brass valve body, NC



Connection NPT	Seal material	Orifice size [inch]	Orifice size [mm]	C_V - value [USgal/min]	k_V - value [m^3/h]	Differential pressure min. to max. [psi] 3)	Differential pressure min. to max. [bar] 3)	Media temperature min. to max. [°F]	Code number
NPT 1/4	PFTE	1/4	6	1.05	0.9	2.9 – 145	0.2 – 10	32 – 365	**032U3689**
NPT 3/8		3/8	10	2.6	2.2				**032U3690**
NPT 1/2		3/8	10	2.6	2.2				**032U3691**
NPT 1/2		9/16	15	3.5	3.0				**032U3692**
NPT 3/4		3/4	20	5.9	5.0				**032U3693**
NPT 1		1	25	7.0	6.0				**032U3694**

Technical data, NC

Main type	EV225B 6–25
Time to open [ms] 1)	Max. 0.2 s
Time to close [ms] 1)	Max. 0.2 s

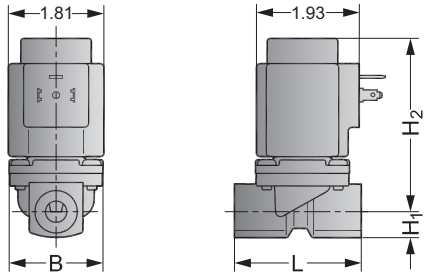
1) The times are indicative. The exact times will depend on the pressure conditions.

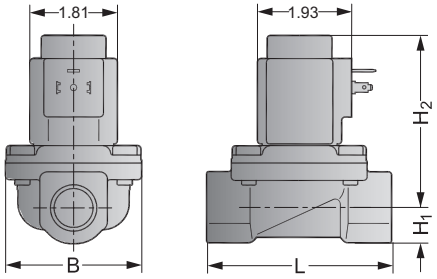
Installation	Vertical solenoid system is recommended		
Max. test pressure	362 psi / 25 bar		
Ambient temperature	Max. 104 °F at a medium temperature of 365 °F		
Viscosity	Max. 50 cSt		
Materials	Valve body	Dezincification resistant brass	
	Armature / armature stop	Stainless steel	W. no. 1.4105 / AISI 430FR
	Spring	Stainless steel	W. no. 1.4306 / AISI 304L
	Armature tube	Stainless steel	W. no. 1.4310 / AISI 301
	Diaphragm	PFTE	–
	Valve plate	PFTE	–
	Valve seat	Stainless steel	–
	External gaskets	O-ring: AFLAS	–

Dimensions and weight:

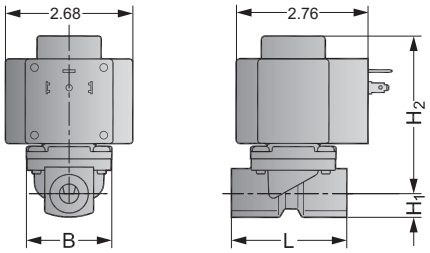
Type	Weight gross valve body with coil BU, By [Lbs]	Weight gross valve body with coil BN [Lbs]	L [inch]	B [inch]	H [inch]	H_1 [inch]	H_2 [inch]
EV225B 6	1.65	2.27	2.44	1.81	0.86	0.51	3.34
EV225B 10	1.59	2.20	2.44	1.81	0.86	0.51	3.34
EV225B 15	1.90	2.51	3.19	2.20	4.02	0.59	3.43
EV225B 20	3.09	3.70	3.86	2.83	4.33	0.71	3.62
EV225B 25	3.75	4.37	4.17	2.83	4.61	0.83	3.78

Coil type BU, BY

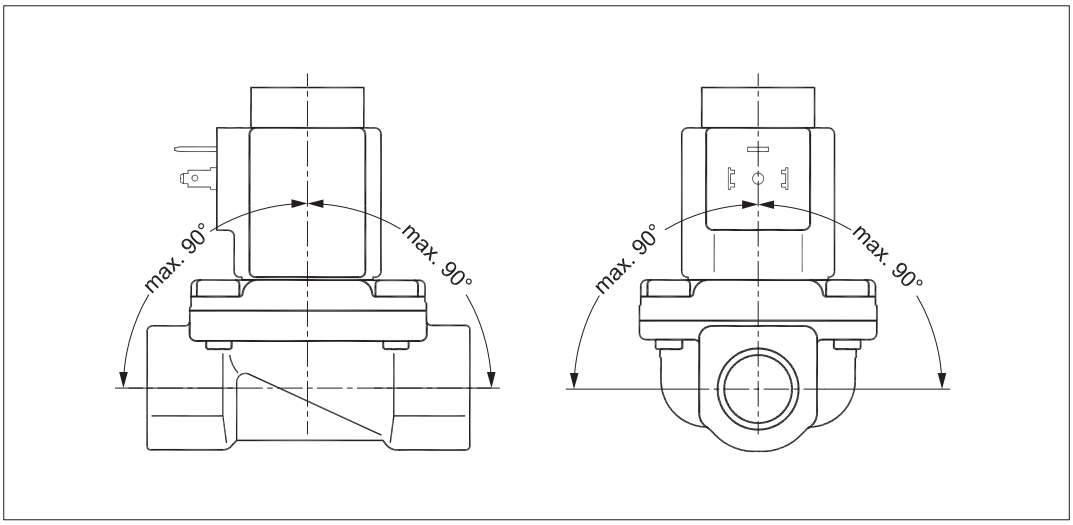




Coil type BN



Mounting angle



Coil type BT a.c.
Steam coils to 365 °F

Coil voltage	Voltage tolerances	Power consumption, cut in [VA]	Coil output [W]	Max media temperature [°F]	Code number
24 V 50Hz	+10%, -15%	49	11	365	**018F7688**
110 V 50/60Hz	+10%, -15%	49	13	365	**018F7687**
120 V 60Hz	+10%, -15%	49	14	365	**018F7687**
208 – 240 V 60Hz	+10%, -15%	49	14	365	**018F7686**
230 V 50 Hz	+10%, -15%	49	14	365	**018F7686**

Coil type BU d.c.
Steam coils to 365 °F

Coil voltage	Voltage tolerances	Power consumption, cut in [VA]	Coil output [W]	Max media temperature [°F]	Code number
24 V 50Hz	+10%, -15%	49	11	365	**018F7698**
110 V 50/60Hz	+10%, -15%	49	13	365	**018F7697**
120 V 60Hz	+10%, -15%	49	14	365	**018F7697**
208 – 240 V 60Hz	+10%, -15%	49	14	365	**018F7696**
230 V 50 Hz	+10%, -15%	49	14	365	**018F7696**

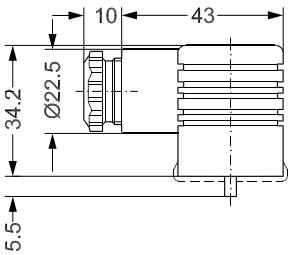
Coil type BY a.c.
Steam coils to 365 °F

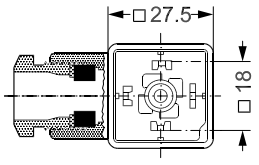
Coil voltage	Voltage tolerances	Power consumption, cut in [VA]	Coil output [W]	Max media temperature [°F]	Code number
24 V 50Hz	+10%, -15%	49	11	365	**018F7655**
110 V 50/60Hz	+10%, -15%	49	13	365	**018F7663**
120 V 60Hz	+10%, -15%	49	14	365	**018F7663**
208 – 240 V 60Hz	+10%, -15%	49	14	365	**018F7658**
230 V 50 Hz	+10%, -15%	49	14	365	**018F7658**

Technical data	Type BT, BU, BY
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	IP65
Ambient temperature	Max. 104 °F
Duty rating	Continuous

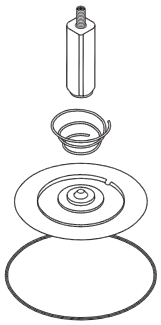
Accessories:
Cable plug

Type	Code number
GDM 2011 (grey), cable plug according to DIN 43650-A PG11	**042N0156**





Spare parts kit for EV225B 6–20

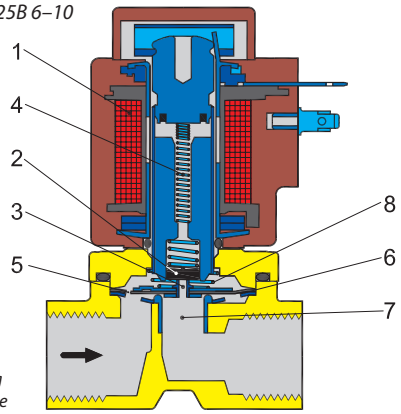


Type	Code number
EV225B 6–10	**032U3171**
EV225B 15	**032U3172**
EV225B 20–25	**032U3173**

The spare parts kit comprises:
An armature with valve plate and spring
Closing spring
Diaphragm
O-ring

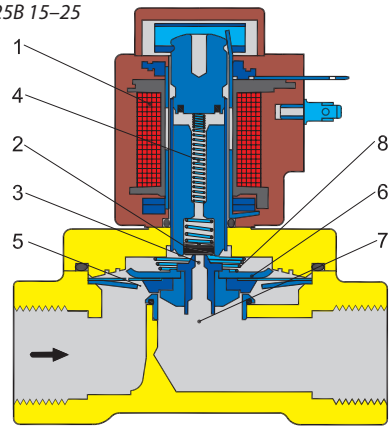
Function NC

EV225B 6–10



1. *Coil*
2. *Valve plate*
3. *Pilot orifice*
4. *Armature spring*
5. *Equalising orifice*
6. *Diaphragm*
7. *Main orifice*
8. *Closing spring*

EV225B 15–25



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.

Steam capacity diagrams

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