

Datasheet

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



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, 160 °C or 185 °C
- Flow range: 0.9 6.0 m³/h
- Differential pressure: 0.2 10 bar
- Media temperature from 0 185 °C
- Ambient temperature: up to 40 °C
- Coil enclosure: up to IP65
- Thread connections: from G 1/4 to G 1
- DN 6 25

- DZR brass NC (normally closed)
- EV225B used with BQ coil: AC voltage up to 185 °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
- Connection: ISO 228/1

Approvals

All valves are UL/UR approved:





DZR brass valve body, NC



Connection ISO228/1	Seal material	Orifice size	K _v - value	Differential pressure min. to max. [bar]				tempe min. t	edia erature o max. C]	Code no.
		[mm]	[m³/h]	Coil type BQ AC	Coil type BN DC	Coil type BB AC	Coil type BB DC	AC coil	DC coil	
G 1/4		6	0.9							032U3802
G 3/8		10	2.2							032U3803
G 1/2	PFTF	10	2.2	0.2 - 10	0.2 - 5	0.2 - 5	02.26	0 – 185	0 1 6 0	032U3804
G 1/2	PFIE	15	3.0	0.2 - 10	0.2 - 5	0.2 – 5	0.2 – 3.6	0 - 185	0 – 160	032U3805
G 3/4		20	5.0							032U3806
G 1		25	6.0							032U3807

DZR brass valve body, NC and BQ clip-on coil



Connection	Seal	Orifice	K _v - value	Differential pressure min. to max. [bar]	Media temperature	valve body	Code no., with coil and pow	er connector
ISO228/1	material	[mm]	[m ³ /h]	Coil type BQ AC	min. to max. [°C]	Coil type BQ024CS 24 V 60 Hz 24 V 50 Hz	Coil type BQ120BS 110-120 V 60 Hz	Coil type BQ024 CS 208-240 V 60 Hz 230 V 50 Hz
G 1/2		10	2.2			032U380416	032U380420	032U380431
G 1/2	PFTF	15	3.0	0.2 – 10	0 – 185	032U380516	032U380520	032U380531
G 3/4	PFIC	20	5.0	0.2 - 10	0 - 165	032U380616	032U380620	032U380631
G 1		25	6.0			032U380716	032U380720	032U380731

DZR brass valve body, NC and BN clip-on coil



Connection ISO228/1	Seal material	Orifice size [mm]	K _v - value [m³/h]	Coil voltage [V DC]	Differential pressure min. to max. [bar]	Media temperature min. to max. [°C]	Code no.
G 1/2		10	2.2				032U380402
G 1/2	PFTF	15	3.0	24	0.2 5	0 100	032U380502
G 3/4	PFIE	20	5.0	24	0.2 – 5	0 – 160	032U380602
G 1]	25	6.0				032U380702



Technical data, NC

Main type	EV225B 6 – EV225B 25			
Time to open [ms] 1)	Max. 0.2 s			
Time to close [ms] 1) Max. 0.2 s				
IN The store are indicative. The event size and ill denote does the processing and distance				

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

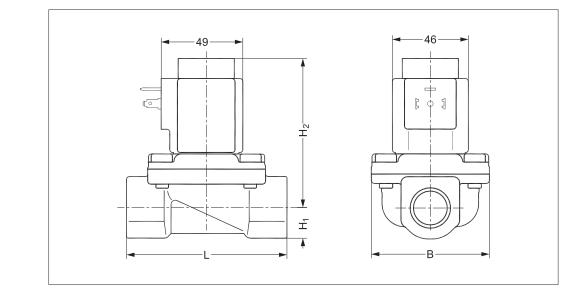
Installation	Vertical solenoid system is recommended					
Max. working pressure (MWP)	10 bar					
Max. test pressure	25 bar (UL 429: 24.1 bar)					
Ambient temperature	Max. 40 °C at a medium tem	perature of 185 °C				
Viscosity	Max. 50 cSt					
	Valve body	Dezincification resistant brass				
	Armature / armature stop	Stainless steel	W. no. 1.4105 / AISI 430FR			
	Spring	Stainless steel	W. no. 1.4306 / AISI 304L			
Materials	Armature tube	Stainless steel W. no. 1.4310 / AISI 301				
Materials	Diaphragm	PFTE				
	Valve plate	PFTE				
	Valve seat	Stainless steel				
	External gaskets	O-ring: AFLAS				



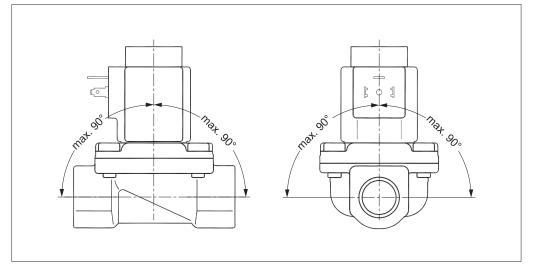
Dimensions and weight

Туре	L [mm]	B [mm]	H [mm]	H ₁ [mm]	H₂ [mm]	Weight gross valve body with coil BQ, BB [kg]	Weight gross valve body with coil BN [kg]
EV225B 6 BD	62	46	98	13	85	0.75	1.03
EV225B 10 BD	62	46	98	13	85	0.72	1.00
EV225B 15 BD	81	56	102	15	87	0.86	1.14
EV225B 20 BD	98	72	110	18	92	1.4	1.68
EV225B 25 BD	106	72	117	21	96	1.7	1.98

Dimensions



Mounting angle





BB012DS

BB024DS

-40 - 50

-40 - 50

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24

Coil type BQ AC Steam coil to 185 °C



Туре	T ambient	Supply voltage	Voltage	Frequency			Approval	Code no.
	[C]	[V]	variation	[EZ]	[W]	[VA]		
PODDACE	40 40	24	-15%, 10%	50	10	17		018F4517
BQ024C3	-40 - 40	24	-15%, 10%	60	9.0	16	C The US	016F4517
BQ120BS	-40 - 40	110/120	-15%, 6%	60	13.5	19	c FL us	018F4519
PODAOCE	40 40	230	-15%, 6%	50	10	17		01954511
BQ240CS	-40 – 40	208 / 240	-6%, 6%	60	9.5	16	C THE US	018F4511
	BQ024CS	Type [°C] BQ024CS -40 - 40 BQ120BS -40 - 40	Type I ambient [°C] voltage [V] BQ024CS -40 - 40 24 BQ120BS -40 - 40 110 / 120 BQ240CS -40 - 40 230	Type I ambient [°C] voltage [V] voltage variation BQ024CS -40 - 40 24 -15%, 10% BQ120BS -40 - 40 110 / 120 -15%, 6% BQ240CS -40 - 40 230 -15%, 6%	Type I ambent [°C] voltage [V] voltage variation requery [Hz] BQ024CS -40 – 40 24 -15%, 10% 50 BQ120BS -40 – 40 110 / 120 -15%, 6% 60 BQ240CS -40 – 40 230 -15%, 6% 50	Type T ambient [°C] Suppy voltage [V] Voltage variation Frequency [[HZ] consul [[W] BQ024CS $-40 - 40$ 24 $-15\%, 10\%$ 50 10 BQ120BS $-40 - 40$ 24 $-15\%, 10\%$ 60 9.0 BQ24QCS $-40 - 40$ $110/120$ $-15\%, 6\%$ 60 13.5 BQ240CS $-40 - 40$ 230 $-15\%, 6\%$ 50 10	Type I ambent [°C] voltage [V] voltage variation requery [HZ] consumption BQ024CS $-40 - 40$ 24 $-15\%, 10\%$ 50 10 17 BQ120BS $-40 - 40$ 24 $-15\%, 10\%$ 60 9.0 16 BQ120BS $-40 - 40$ 110 / 120 $-15\%, 6\%$ 60 13.5 19 BQ240CS $-40 - 40$ 230 $-15\%, 6\%$ 50 10 17	Type T ambient [°C] Suppry voltage [V] Voltage variation Frequency [HZ] consumption Approval BQ024CS -40-40 24 -15%,10% 50 10 17 C 10 30 C 10 17 C 10 30 C 10

Coil type BN DC Steam coils to 160 °C



Туре	T ambient [°C]	Supply voltage	Voltage variation	Frequency		wer mption	Approval	Code no.
	[C]	[V]	variation	[Hz]	[W]	[VA]		
BN024DS	-40 - 50	24	±10%	DC	20	-	c FN ° us	018F6968

Coil type BB AC Steam coils to 160 °C



T	T ambient	Supply voltage	M. In	Frequency	Power co	nsumption	Calara
Туре	[°C]	[V]	Voltage variation	[Hz]	[W]	[VA]	Code no.
BB024AS	-40 - 80	24	-15%, 10%	50	11	19	018F7358
BB115AS	-40 - 50	115	-15%, 10%	50	11	19	018F7361
BB230AS	-40 - 80	220 / 230	-15%, 10%	50	11	19	018F7351
BB240AS	-40 - 80	240	-15%, 10%	50	11	19	018F7352
BB440CS	-40 - 80	400	±10%	50	14	24	018F7353
BB440CS	-40 - 80	440	±10%	60	15	24	018F7353
BB024BS	-40 - 80	24	-15%, 10%	60	14	23	018F7365
BB110CS	-40 - 50	110	±10%	50	15	28	018F7360
DDIIUCS	-40 - 50	110	±10%	60	13	22	010F7300
PPagocs	-40 – 50	220 / 230	±10%	60	13	24	018F7363
BB230CS -4	-40 - 50	220 / 230	±10%	50	16	31	018F7303

DC

DC

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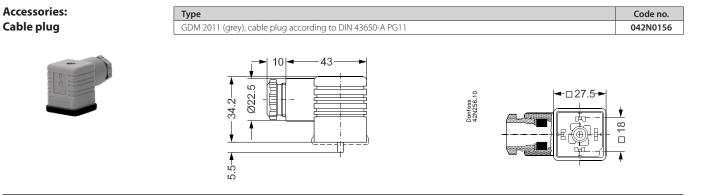
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Type BB DC Steam coils to 140 °C

Technical data	Type BQ, BN, BB
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. 40 °C
Duty rating	Continuous

±10%

±10%



018F7396

018F7397



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Spare parts kit for EV225B 6 – EV225B 25



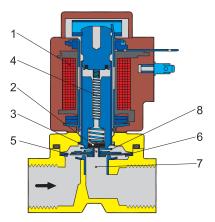
Туре	Code no.
EV225B 6 – EV225B 10	032U3171
EV225B 15	032U3172
EV225B 20 – EV225B 25	032U3173

The spare parts kit comprises:

An armature with valve plate and spring Closing spring Diaphragm O-ring

Function NC

EV225B 6 - EV225B 10



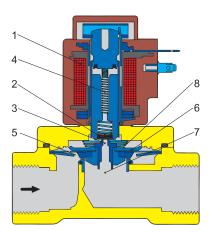
Coil voltage disconnected (closed):

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 equalizing 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.

EV225B 15 - EV225B 25



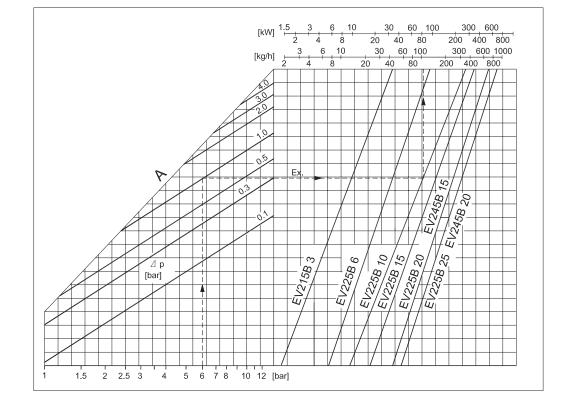
1. Coil

- 2. Valve plate
- 3. Pilot orifice
- Armature spring
 Equalizing orifice
- 6. Diaphragm
- 7. Main orifice
- 8. Closing spring



Steam capacity diagrams

Example Capacity for EV225 10 BD; inlet pressure (p₁) of 6 bar absolute; differential pressure at 1 bar: approx. 100 kg/h / 80 kW



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