

De-energized
closedType EV220B
for neutral liquids and gases
DN 15 - 40 B and 50 G

G 1/2 - G 2

Features



- For robust industrial application
- For water, steam, oil, compressed air and similar neutral media
- Flow range for water: 2.2 to 160 m³/h
- Differential pressure: Up to 16 bar
- Viscosity: Up to 50 cSt
- Ambient temperature: Up to +80°C
- Media temperature from -30°C to +140°C
- Coil enclosure: Up to IP 67
- Thread connections: From G 1/2 to G 2
- Water hammer damped
- Built in filter for protection of pilot system
- Adjustable closing time available (see page 11)
- Also available with NPT thread. Please contact Danfoss.

Technical data

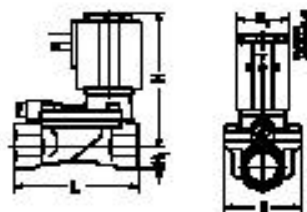
Main type	EV220B 15B	EV220B 20B	EV220B 25B	EV220B 32B	EV220B 40B	EV220B 50G
Installation	Optional, but vertical solenoid system is recommended (see DKACV.PT.600.A)					
Pressure range	EPDM/NBR: 0.3 - 16 bar		FKM: 0.3 - 10 bar			
Max. test pressure	25 bar					
Time to open ¹⁾	40 ms	40 ms	300 ms	1000 ms	1500 ms	5000 ms
Time to close ¹⁾	350 ms	1000 ms	1000 ms	2500 ms	4000 ms	10000 ms
Ambient temperature	Type: BA 9 W ac/15 W dc		Type: BB 10 W ac/18 W dc		Type: BE 10 W ac/18 W dc (IP67)	
	Type: BG 12 W ac/20 W dc		Type: BO 10 W ac/10 W dc		Type: BP 16 W dc	
	Up to +40°C		Up to +80°C		Up to +80°C	
	Up to +80°C		Up to +80°C		Up to +40°C	
	Up to +40°C		Up to +55°C			
Medium temperature	EPDM: -30 - +120°C and +140°C/M bar (low pressure steam)					
	FKM: 0 - +100°C and +60°C for water					
	NBR: -10 - +90°C					
Viscosity	max. 50 cSt					
Materials	Valve body: EV220B 50G: Gun metal, W.no. 2.1096.01					
	Others: Brass, W.no. 2.0402					
	Armature: Stainless steel, W.no. 1.4105 / AISI 430FR					
	Armature tube: Stainless steel, W.no. 1.4306 / AISI 304L					
	Armature stop: Stainless steel, W.no. 1.4105 / AISI 430FR					
	Springs: Stainless steel, W.no. 1.4310 / AISI 301					
	O-rings: EPDM or NBR					
	Valve plate: EPDM or NBR					
	Diaphragm: EPDM, FKM or NBR					

¹⁾ The times are indicative and apply to water. The exact times will depend on the pressure conditions. Closing times can be changed by replacement of the equalising orifice.

Coil options

				Danfoss also offers hum-free coils for noise sensitive applications and EEx m II T4 coils for use in explosion risk areas - please see coil data sheet DKACV.PD.600.A
Type: BA 9 W ac 15 W dc	Type: BB 10 W ac 18 W dc	Type: BE (IP67) 10 W ac 18 W dc	Type: BG 12 W ac 20 W dc	
See DKACV.PD.600.A				

Dimensions and weight



Type	L [mm]	B [mm]	B ₁ [mm] Coil type				H ₁ [mm]	H [mm]	Weight without coil [kg]
			BA	BP	BB/BE	BG/BO			
EV220B 15B	80.0	52.0	32	45	46	68	15.0	94.0	0.8
EV220B 20B	90.0	58.0	32	45	46	68	18.0	96.0	1.0
EV220B 25B	109.0	70.0	32	45	46	68	22.0	108.0	1.4
EV220B 32B	120.0	82.0	32	45	46	68	27.0	115.0	2.0
EV220B 40B	130.0	95.0	32	45	46	68	32.0	124.0	3.2
EV220B 50G	162.0	113.0	32	45	46	68	37.0	130.0	4.3

G 1/2 - G 2

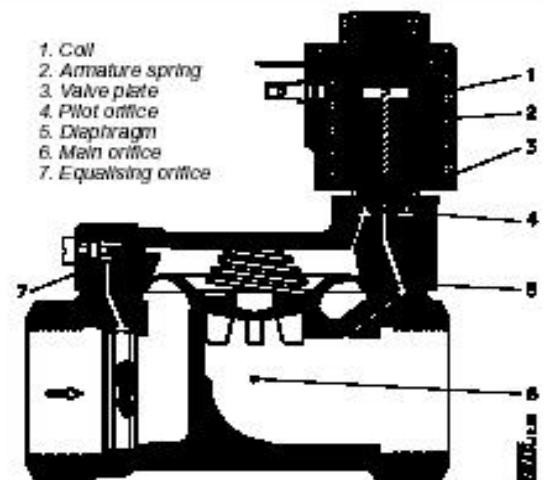
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Function

Coil voltage disconnected (closed):
When the voltage is disconnected, the valve plate (3) is pressed down against the pilot orifice (4) by the armature spring (2). The pressure across the diaphragm (5) is built up via the equalising orifice (7). The diaphragm closes the main orifice (6) as soon as the pressure across the diaphragm 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 (4) is opened. As the pilot orifice is larger than the equalising orifice (7), the pressure across the diaphragm (5) drops and therefore it is lifted clear of the main orifice (6). 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.



Ordering

Valve body

- 1) EPDM is suitable for water and steam (steam max. +140° C / 4 bar).
- 2) NBR is suitable for oil, water and air
- 3) FKM is suitable for oil and air. For water at max. +60 °C
- 4) Low pressure steam, 4 bar: Max. +140°C
BA ac/dc and BB/BE dc coils: Max. +100°C
BO and BP coils: Max. +90°C
- 5) For water: Max. +60°C
BO and BP coils: Max. +90°C
- 6) Permissible differential pressure
- 7) For higher differential pressure than stated, please contact Danfoss.
- 8) Approved by WRc

Connection ISO 228/1	Seal material	k _v value [m ³ /h]	Media temp. [°C]		Type designation		Code no. without coil		PDP ⁶⁾ - all coil types	
			Min.	Max.	Main type	Specification		WRc ⁸⁾	Min. [bar]	Max. ⁷⁾ [bar]
G 3/8	EPDM ¹⁾ NBR ²⁾ FKM ³⁾	4	-30 -10 0	+120 ⁴⁾ +90 +100 ⁵⁾	EV220B 15 B	G 12E NC000	032U7115	Yes	0.3	16
					EV220B 15 B	G 12N NC000	032U7170			16
					EV220B 15 B	G 12F NC000	032U7116			10
G 1/2	EPDM ¹⁾ NBR ²⁾ FKM ³⁾	8	-30 -10 0	+120 ⁴⁾ +90 +100 ⁵⁾	EV220B 20 B	G 34E NC000	032U7120	Yes	0.3	16
					EV220B 20 B	G 34N NC000	032U7171			16
					EV220B 20 B	G 34F NC000	032U7121			10
G	EPDM ¹⁾ NBR ²⁾ FKM ³⁾	11	-30 -10 0	+120 ⁴⁾ +90 +100 ⁵⁾	EV220B 25 B	G 1E NC000	032U7125	Yes	0.3	16
					EV220B 25 B	G 1N NC000	032U7172			16
					EV220B 25 B	G 1F NC000	032U7126			10
G 1 1/4	EPDM ¹⁾ NBR ²⁾ FKM ³⁾	18	-30 -10 0	+120 ⁴⁾ +90 +100 ⁵⁾	EV220B 32 B	G 114E NC000	032U7132	Yes	0.3	16
					EV220B 32 B	G 114N NC000	032U7173			16
					EV220B 32 B	G 114F NC000	032U7133			10
G 1 1/2	EPDM ¹⁾ NBR ²⁾ FKM ³⁾	24	-30 -10 0	+120 ⁴⁾ +90 +100 ⁵⁾	EV220B 40 B	G 112E NC000	032U7140	Yes	0.3	16
					EV220B 40 B	G 112N NC000	032U7174			16
					EV220B 40 B	G 112F NC000	032U7141			10
G 2	EPDM ¹⁾ NBR ²⁾ FKM ³⁾	40	-30 -10 0	+120 ⁴⁾ +90 +100 ⁵⁾	EV220B 50 G	G 2E NC000	032U7150	Yes	0.3	16
					EV220B 50 G	G 2N NC000	032U7175			16
					EV220B 50 G	G 2F NC000	032U7151			10

Coils

See separate data sheet for coils DKACV.PD.600 A