

Data sheet

Direct-operated 2/2-way solenoid valves

Type EV210B and EV210BW



EV210B and EV210BW covers a wide range of direct-operated 2/2-way solenoid valves for universal use.

EV210B and EV210BW are a very robust valves program with high performance and can be used in all kind of tough working conditions in demanding industrial applications such as control and closure.

Features and versions:

- For water, oil, compressed air and similar neutral media.
- Flow range: 0 – 8 m³/h
- Differential pressure: 0 – 30 bar
- Media temperature: -30 – 140 °C
- Ambient temperature: up to 80 °C
- Coil enclosure : up to IP67
- Tread connections: G 1/8 – G 1
- DN 1.5 – 25
- Viscosity: up to 50 cSt
- The valves can be used for vacuum
- EV210B brass version for water, oil, compressed air and similar neutral media
- EV210B stainless steel version for neutral and aggressive liquids and gasses
- EV210BW brass and Stainless steel versions, EPDM seal and WRAS approved for drinking water

Data sheet | Direct-operated 2/2-way solenoid valves, Type EV210B and EV210BW

**EV210B
Brass valve body, NC
Technical data**

Type	EV210B 1.5 - 2	EV210B 3-4.5	EV210B 6	EV210B 8 - 10	EV210B 15	EV210B 20	EV210B 25
Time to open [ms] ¹⁾	10	20	20	20	30	40	40
Time to close [ms] ¹⁾	20	20	20	30	50	50	70
Max test pressure [bar] EV210B	52.5	52.5	37.5	37.5	24	24	24

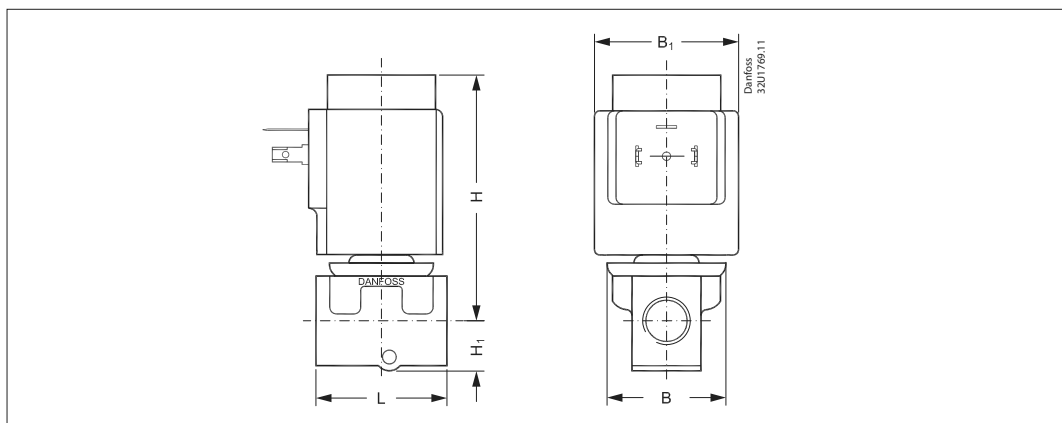
¹⁾ The times are indicative and apply to water. The exact times will depend on the pressure conditions.

Installation	Optional, but vertical solenoid system is recommended		
Tightness	Internally: better than 8.3 x 10 ⁻² mbar l / sec (5 ccm air per min.) Externally: better than 1 x 10 ⁻³ mbar l / sec (100% H ₂)		
Ambient temperature	Max. 80 °C (depending on coil type)		
Viscosity	Max. 50 cSt		
Materials	Valve body	Brass	W.no. 2.0402
	Armature	Stainless steel	W.no. 1.4105 / ASIS 430FR
	Armature tube	Stainless steel	W.no. 1.4306 / ASIS 304L
	Armature stop	Stainless steel	W.no. 1.4105 / ASIS 430FR
	Springs	Stainless steel	W.no. 1.4306 / ASIS 301
	Seal material: see specific data in table		

Dimensions and weight

Type	Weight gross valve body without coil [kg]	L [mm]	B [mm]	B ₁ [mm]			H ₁ [mm]	H [mm]
				Coil type BA / BD	Coil type BB / BE	Coil type BG		
EV210B 1.5 / EV210B 2B, NC	0.15	35	34	32	46	67	12	70
EV210B 3 / EV210B 4.5, NC	0.20	38	34	32	46	67	11	70
EV210B 6B, NC	0.22	46	34	32	46	67	16	73
EV210B 8 / EV210B 10B, NC	0.29	49	34	32	46	67	16	73
EV210B 15B, NC	0.45	58	53	32	46	67	13	93
EV210B 20B, NC	1.10	90	58	32	46	67	18	92
EV210B 25B, NC	1.10	90	58	32	46	67	23	96

Dimensions



EV210BW
brass valve body, NC


- WRAS
- In accordance with:
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8
 - Pressure Equipment Directive 2014/68/EU
 - RoHS Directive 2011/65/EU

Conn. ISO 228/1	Seal material	Orif. size	K _v value [m ³ /h]	Differential pressure min. to max. [bar]								Drinking Water Approval	Media temperature min. to max. [°C]	Code no.
				BA [AC]	BA [DC]	BD [AC]	BB [AC]	BB [DC]	BG [AC]	BG [DC]				
G 1/8	EPDM	1.5	0.08	0 – 16	0 – 16	0 – 16	0 – 16	0 – 16	0 – 16	0 – 16	0 – 16		-30 – 90 ¹⁾	132U2102
G 1/4	EPDM	3.0	0.30	0 – 15	0 – 9	0 – 16	0 – 16	0 – 13	0 – 16	0 – 16	0 – 16		-30 – 90 ¹⁾	132U3004
G 1/4	EPDM	4.5	0.55	0 – 8	0 – 3.5	0 – 12	0 – 10	0 – 4.5	0 – 13	0 – 9	0 – 9		-30 – 90 ¹⁾	132U4408
G 3/8	EPDM	3.0	0.30	0 – 15	0 – 9	0 – 16	0 – 16	0 – 13	0 – 16	0 – 16	0 – 16		-30 – 90 ¹⁾	132U3006
G 3/8	EPDM	4.5	0.55	0 – 8	0 – 3.5	0 – 12	0 – 10	0 – 4.5	0 – 13	0 – 9	0 – 9		-30 – 90 ¹⁾	132U4404

¹⁾ WRAS approved to 23 °C

Data sheet | Direct-operated 2/2-way solenoid valves, Type EV210B and EV210BW

EV210 BW
Brass valve body, NC
Technical data

Type	EV210BW 1.5	EV210BW 3-4.5
Time to open [ms] ¹⁾	10	20
Time to close [ms] ¹⁾	20	20

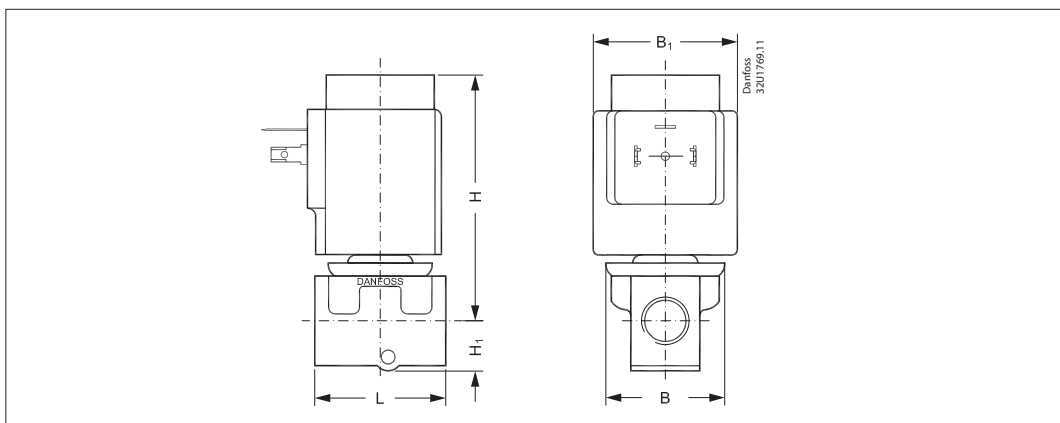
¹⁾ The times are indicative and apply to water. The exact times will depend on the pressure conditions.

Installation	Optional, but vertical solenoid system is recommended		
Max. test pressure	24 bar		
Max working pressure	16 bar		
Tightness	Internally: better than 8.3 x 10 ⁻² mbar l / sec (5 ccm air per min.) Externally: better than 1 x 10 ⁻³ mbar l / sec (100% H ₂)		
Ambient temperature	Max. 80 °C (depending on coil type)		
Viscosity	Max. 50 cSt		
Materials	Valve body	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
	Seal material:	EPDM	

Dimensions and weight

Type	Weight gross valve body without coil [kg]	L [mm]	B [mm]	B ₁ [mm]			H ₁ [mm]	H [mm]
				Coil type BA / BD	Coil type BB / BE	Coil type BG		
EV210BW 1.5	0.15	35	34	32	46	67	12	70
EV210BW 3 – 4.5	0.20	38	34	32	46	67	11	70

Dimensions



Data sheet | Direct-operated 2/2-way solenoid valves, Type EV210B and EV210BW

EV210B Brass valve body, NO Technical data

Type	EV210B 1.5 – EV210B 4.5
Time to open [ms] ¹⁾	20
Time to close [ms] ¹⁾	20

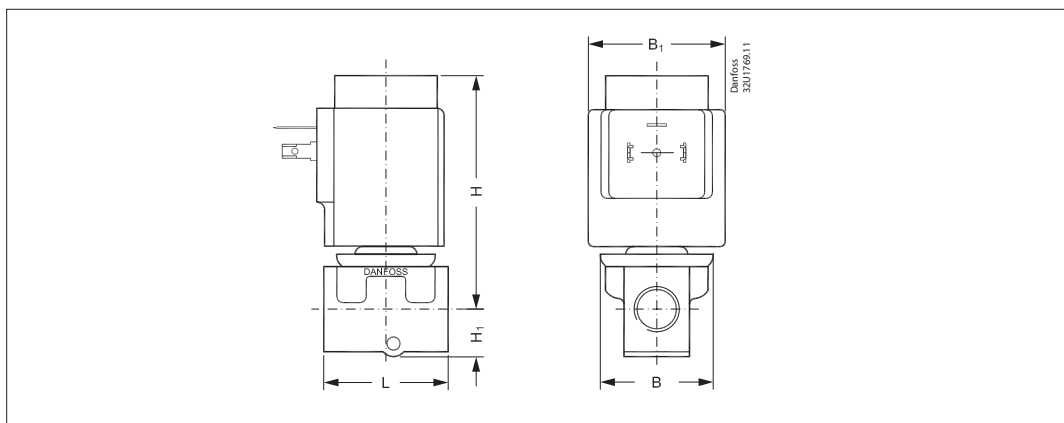
¹⁾ The times are indicative and apply to water. The exact times will depend on the pressure conditions.

Installation	Optional, but vertical solenoid system is recommended		
Max. test pressure	52,5 bar		
Tightness	Internally: better than 8.3×10^{-2} mbar l / sec (5 ccm air per min)		
	Externally: better than 1×10^{-3} mbar l / sec (100% H ₂)		
Ambient temperature	Max. 80 °C (depending on the coil type, see data for the coil selected)		
Viscosity	Max. 50 cSt		
Materials	Valve body	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
	Seal material	See specific valve data	

Dimensions and weight

Type	Weight gross valve body without coil [kg]	L [mm]	B [mm]	B ₁ [mm]			H ₁ [mm]	H [mm]
				Coil type BA / BD	Coil type BB / BE	Coil type BG		
EV210B 1.5 / EV210B 2B, NO	0.15	35	34	32	46	67	12	70
EV210B 3 / EV210B 4.5, NO	0.20	38	34	32	46	67	11	70

Dimensions



Data sheet | Direct-operated 2/2-way solenoid valves, Type EV210B and EV210BW

EV210B Stainless steel body, NC Technical data

Type	EV210B 2	EV210BW 3 – 4.5
Time to open [ms] ¹⁾	10	20
Time to close [ms] ¹⁾	20	20

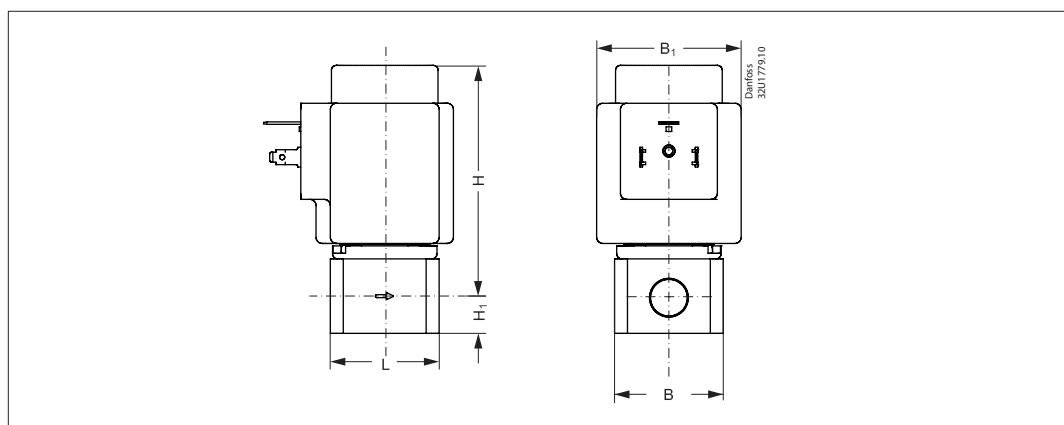
¹⁾ The times are indicative and apply to water. The exact times will depend on the pressure conditions.

Installation	Optional, but vertical solenoid system is recommended		
Max. test pressure	45 bar		
Max working pressure	30 bar		
Tightness	Internally: Better than 8.3 x 10 ⁻² mbar l / sec (5 ccm air per min) Externally: Better than 1 x 10 ⁻³ mbar l / sec (100% H ₂)		
Ambient temperature	Max. 80 °C		
Viscosity	Max. 50 cSt		
Materials	Valve body	Stainless steel	W.no. 1.4404 / AISI 316L
	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
	Seal material	EPDM	

Dimensions and weight

Type	Weight gross valve body without coil [kg]	L [mm]	B [mm]	B ₁ [mm]			H ₁ [mm]	H [mm]
				Coil type BA / BD	Coil type BB / BE	Coil type BG		
EV210B 2 / 3 / 4.5	0.25	35	35	32	46	67	11.5	75

Dimensions



EV210BW
stainless steel body, NC


- WRAS
- In accordance with:
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8
 - Pressure Equipment Directive 2014/68/EU
 - RoHS Directive 2011/65/EU

Conn. ISO 228/1	Seal material	Orif. size	K _v value [m ³ /h]	Permissible differential pressure [bar]								Drinking Water Approval	Media temperature min. to max. [°C]	Code no.
				BA 9 [W AC]	BA 15 [W DC]	BD 15 [W AC]	BB 10 [W AC]	BB 18 [W DC]	BG 12 [W AC]	BG 20 [W DC]				
G ¼	EPDM	1.5	0.08	0 – 16	0 – 16	0 – 16	0 – 16	0 – 16	0 – 16	0 – 16	0 – 16		-30 – 90 ¹⁾	132U2154
	EPDM	3	0.30	0 – 15	0 – 9	0 – 16	0 – 16	0 – 13	0 – 16	0 – 16		-30 – 90 ¹⁾	132U3054	
	EPDM	4.5	0.55	0 – 8	0 – 3.5	0 – 12	0 – 10	0 – 4.5	0 – 13	0 – 9		-30 – 90 ¹⁾	132U4452	

¹⁾ WRAS approved to 23°C

Data sheet | Direct-operated 2/2-way solenoid valves, Type EV210B and EV210BW

EV210BW Stainless steel body, NC Technical data

Type	EV210BW 1.5	EV210BW 2 - 4.5
Time to open [ms] ¹⁾	10	20
Time to close [ms] ¹⁾	20	20

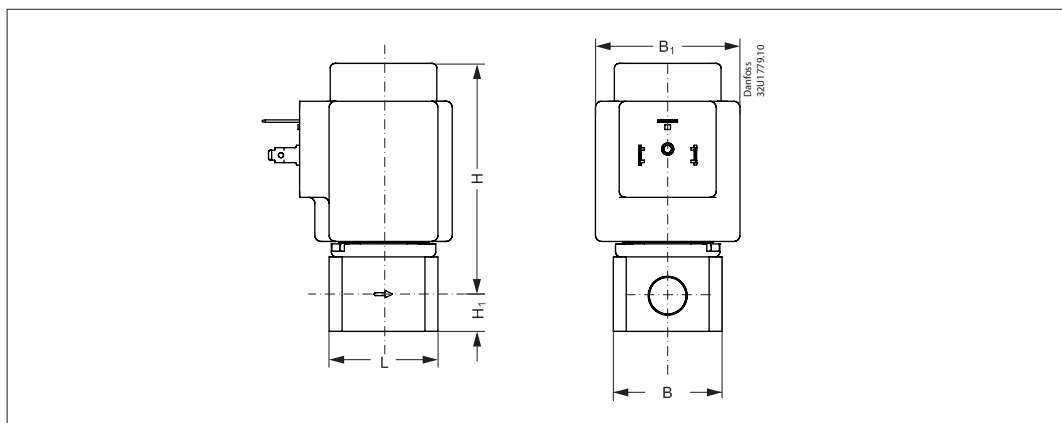
¹⁾ The times are indicative and apply to water. The exact times will depend on the pressure conditions.

Installation	Optional, but vertical solenoid system is recommended		
Max. test pressure	24 bar		
Max working pressure	16 bar		
Tightness	Internally: Better than 8.3 x 10 ⁻² mbar l / sec (5 ccm air per min) Externally: Better than 1 x 10 ⁻³ mbar l / sec (100% H ₂)		
Ambient temperature	Max. 80 °C		
Viscosity	Max. 50 cSt		
Materials	Valve body	Stainless steel	W.no. 1.4404 / AISI 316L
	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
	Seal material	EPDM	

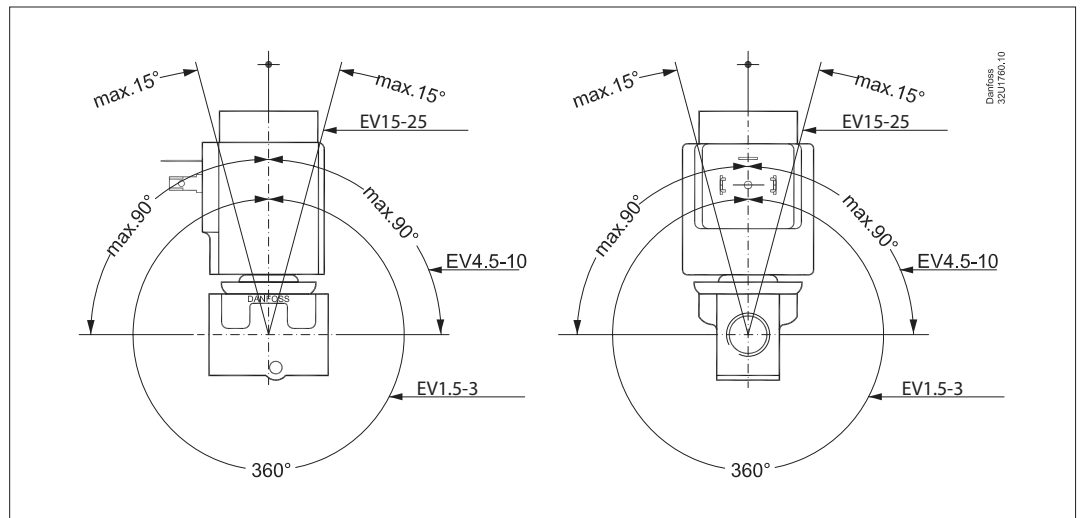
Dimensions and weight

Type	Weight gross valve body without coil [kg]	L [mm]	B [mm]	B ₁ [mm]			H ₁ [mm]	H [mm]
				Coil type BA / BD	Coil type BB / BE	Coil type BG		
EV210BW 1.5 / 3 / 4.5	0.25	35	35	32	46	67	11.5	75

Dimensions



Mounting angle



Below coils can be used for EV210B

Coil	Type	Power consumption	Enclosure	Features
	BA / BD, screw on	9 W AC 15 W DC	IP00 with spade connector	IP20 with protective cap, IP65 with cable plug
	BB, clip on	10 W AC 18 W DC	IP00 with spade connector	IP20 with protective cap, IP65 with cable plug
	BE, clip on	10 W AC 18 W DC	IP67	With terminal box
	BG, clip on	12 W AC 20 W DC	IP67	With terminal box

Data sheet | Direct-operated 2/2-way solenoid valves, Type EV210B and EV210BW

Accessories:
Cable plug



Application	Code no.
GDM 2011 (grey) cable plug according to DIN 43650-A PG11	042N0156

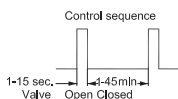
Universal electronic multi-timer, type ETM



Application	Voltage	To use with coil	Ambient temperature	Code no.
	[V AC]		[°C]	
External adjustable timing from 1 to 45 minutes with 1 to 15 seconds drain open. With manual override (test button). Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	BA, BD, BB	-10 – 50	042N0185

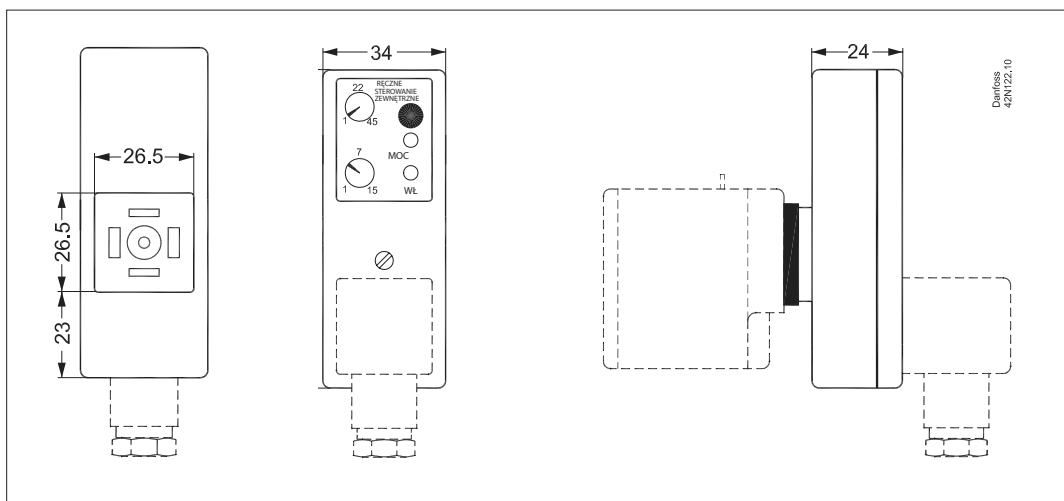
- Outside adjustments
- Light weight and small size
- External adjustable timing from 1 minute to 45 minutes with 1 to 15 seconds drain open
- One solid state timer fits all coil voltages from 24 – 240 V AC
- Light diodes for indication
- All in one unit
- Manual override (test button)

Technical data



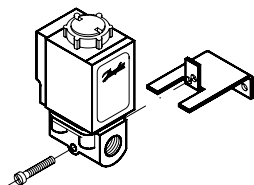
Type	ET 20 M
Voltage	24 – 240 V AC / 50/60 Hz
Power rating	Max. 20 Watt
Enclosure	IP00, IP65 with power connector (cable plug)
Electrical connection	DIN connector (DIN 43650-A)
Ambient operating temperature range	-10 – 50 °C
Function	Start with pulse
Interval timer	1 – 45 min.
“On” timer	1 – 15 sec.
Weight	0.084 kg

Dimensions



Data sheet | Direct-operated 2/2-way solenoid valves, Type EV210B and EV210BW

Mounting bracket



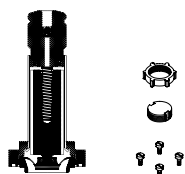
Description	Code no.
Brackets	032U1040

For EV210B/BW 1.5 – 4.5B in connection with synthetic tubes, pipes and similar.

Isolating diaphragm kit for EV210B 1.5 – 4.5 NC

Seal material	Media temperature	Code no.
	[C°]	
EPDM	-20 - 50	042U1009
FKM	0 - 50	042U1010

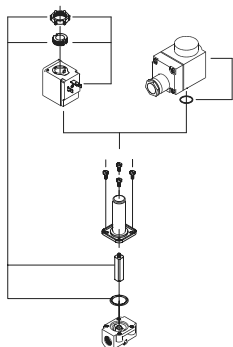
Avoids build-up of contaminates that can block movement of the armature. Permits use of more aggressive media that would normally attack the armature. Gel filled; guarantees operation after long periods of inactivity. The kit is suitable for orifice sizes up to DN 4.5 mm.



The kit consist of:

- Assembled isolating unit
- O-ring
- 4 screws
- Locking button
- Nut for coil

Spare parts kit, NC



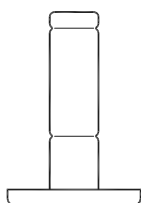
Valve type	Seal material	Code no.
EV210B 1.5, 2, 3, 4.5	FKM	032U2003
	FKM	032U2011
EV210B 6, 8, 10	EPDM	032U2006
	FKM	032U2012
EV210B 15	EPDM	032U2013
	FKM	032U2014
EV210B 20	EPDM	032U2017
	FKM	032U2018
EV210B 25	EPDM	032U2019

The spare parts kit consists of:

- Locking button
- Nut for the coil
- Armature with valve plate and spring
- O-ring



Spare parts kit, NO



Valve type	Seal material	Code no.
EV210B 1.5, 2, 3, 4.5	FKM	032U2004
	EPDM	032U2005

The spare parts kit consists of:

- Armature tube
- 2 O-rings



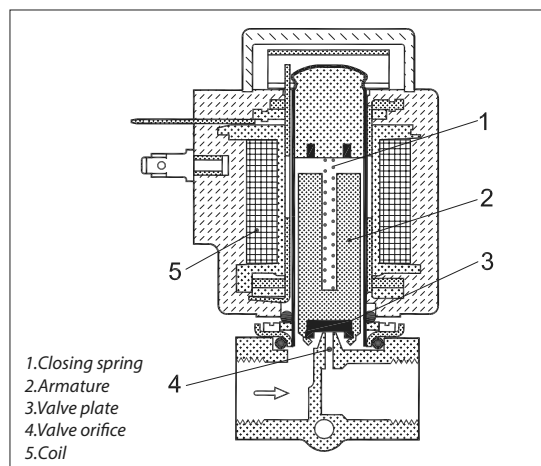
Function NC

Coil voltage disconnected (closed):

When the voltage to the coil (5) is disconnected, the armature (2) with the valve plate (3) is pressed down against the valve orifice (4) by the closing spring (1) and the medium's 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(5), the armature (2) with the valve plate (3) is lifted clear of the valve orifice (4). The valve is now open for unimpeded flow and will be open for as long as there is voltage to the coil.



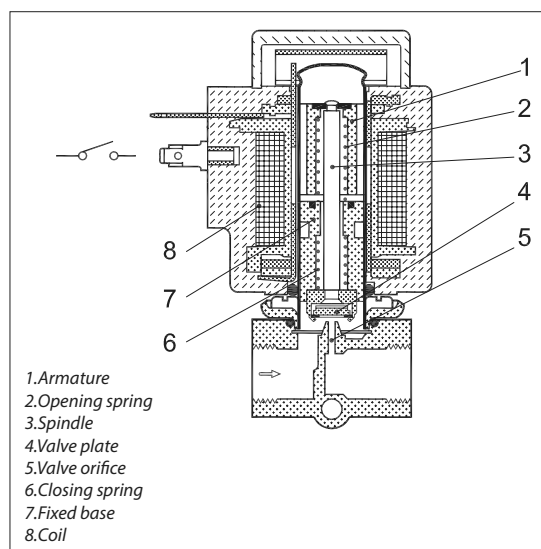
Function NO

Coil voltage connected (open):

When the voltage to the coil(8) is disconnected, the valve orifice (5) is open, the opening spring (2) lifting the spindle (3) with the valve plate (4) clear of the orifice. The valve will be open for as long as the supply voltage to the coil is disconnected.

Coil voltage disconnected (closed):

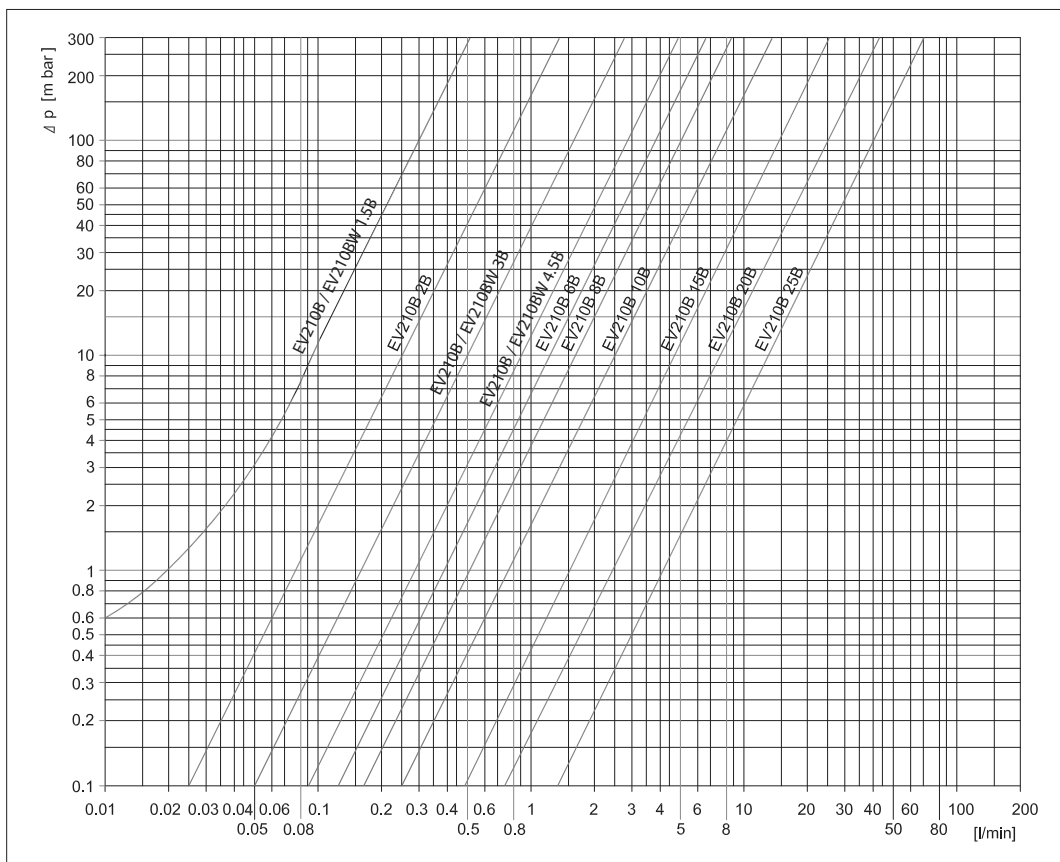
When voltage is applied to the coil (8), the magnetic field draws the valve's armature (1) down to touch the fixed base(7). The spindle (3) with the valve plate (4) is now pressed down against the valve orifice (5) by the closing spring (6). The valve will be closed for as long as there is voltage to the coil.



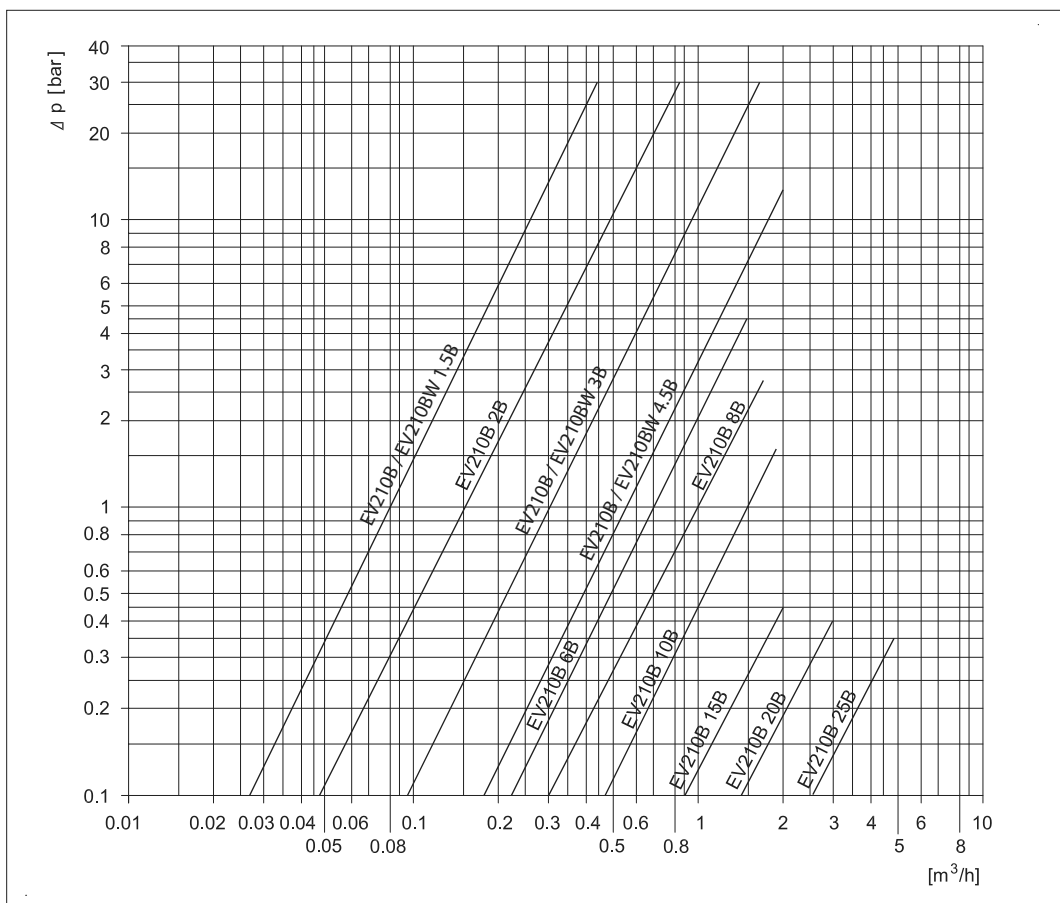
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Capacity diagrams:

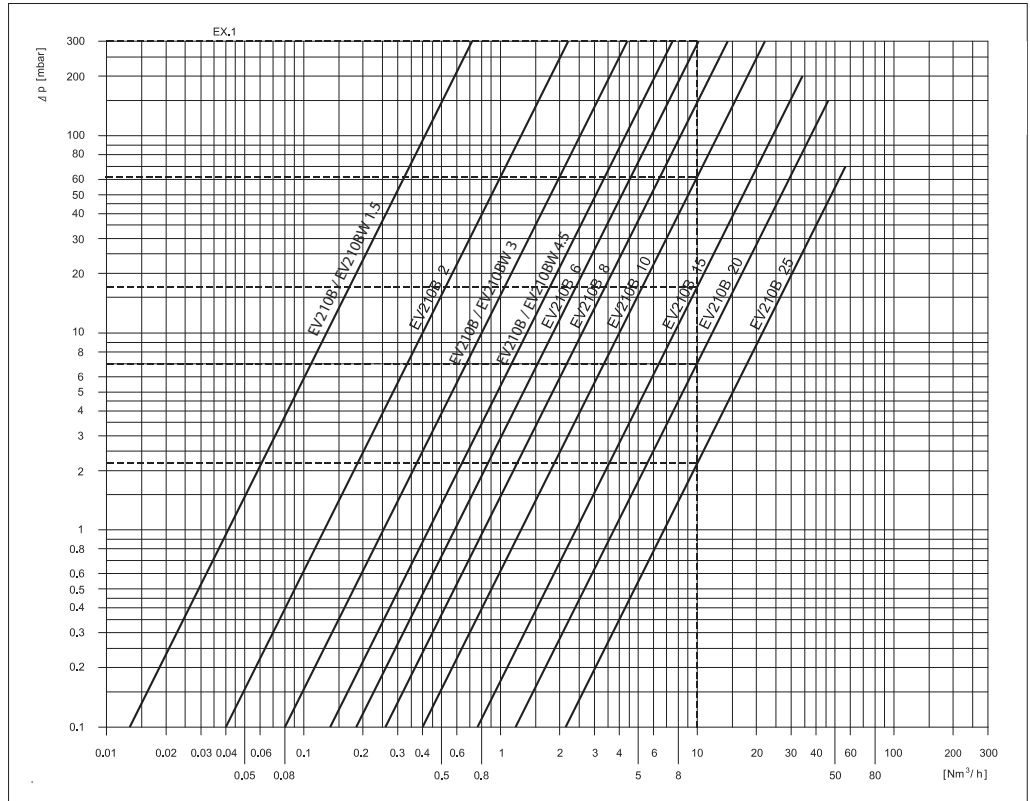
Example, water at low pressure:
Capacity for EV210B 1.5B at
differential pressure of 10 mbar.
Approx. 0.08 l / min



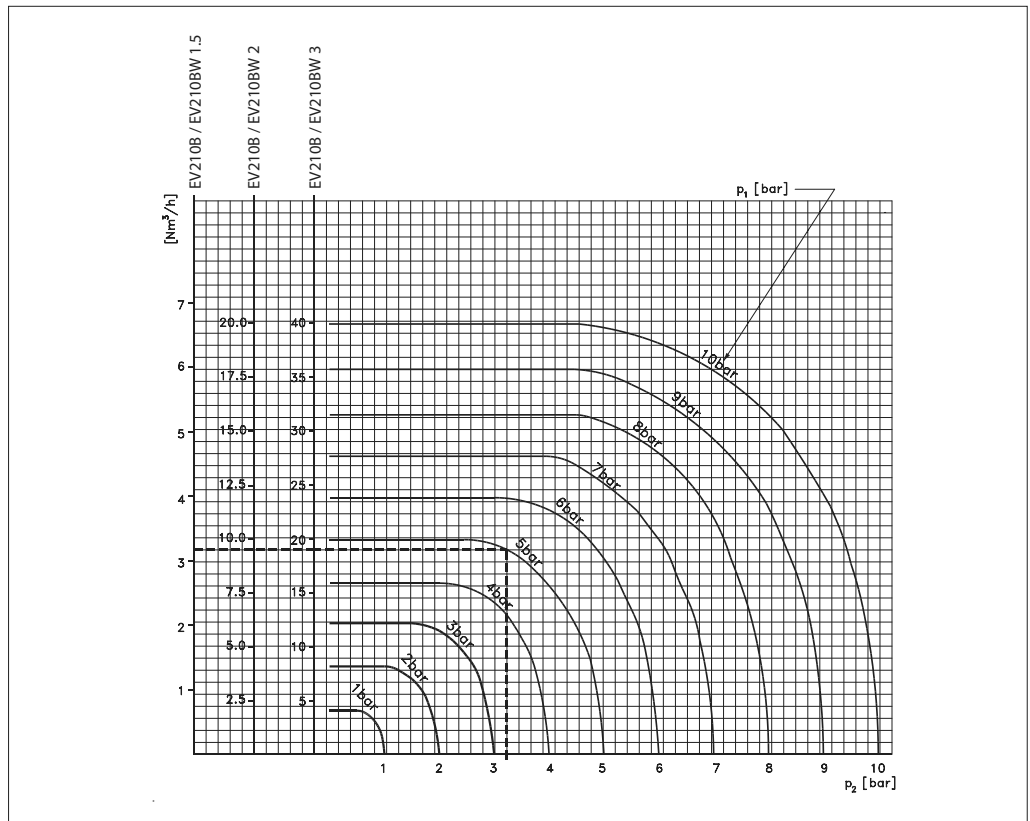
Example, water at higher
pressure:
Capacity for EV210B 3B at
differential pressure of 0.5 bar.
Approx. 0.21 m³ / h



Example, air at lower pressure:
Capacity for EV210B 15B at differential
pressure of 17 mbar. Approx. 10 Nm³/h



Example, air at higher pressure :
Capacity for EV210B 2B at inlet pressure
(p1) of 5 bar and outlet pressure (p2) of
3.25 bar. Approx. 9 Nm³/h



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