ENGINEERING TOMORROW



Data sheet

# **Direct-operated 2/2-way compact solenoid valves**Type EV210A



EV210A covers a wide range of small, directoperated 2/2-way solenoid valves for use in industrial machinery.

The compact design together with the broad range of coils means that EV210A covers a broad variety of industrial applications.

#### **Features and versions**

- For water, steam, oil, compressed air, aggressive liquids and gases
- Differential pressure: 0 30 bar
- Media temperature from -30 120 °C
- Ambient temperature: Up to 50  $^{\circ}\text{C}$
- · Coil enclosure: Up to IP65
- Thread connections: G  $^1/_8$  and G  $^1/_4$
- DN 1.2 3.5
- Viscosity: Up to 20 cSt

- EV210A NC and NO versions in brass for neutral media
- EV210A NC stainless steel version for neutral and aggressive liquids and gases.



#### Brass valve body, NC



						Differential pressure min. to max. [bar]			Media		
Connection	Seal	Orifice	K <sub>v</sub> - value		Coil		Suitable	coil type		temperature, min. to max.	Code
ISO228/1	rial	size	[m³/h]	Media	voltage	AB	AC	AM	AK	[°C]	number
					AC	0 - 30	0 - 30	0 - 30	_		
	EPDM	1.2	0.04	Water	DC	0 - 17.5	0 - 24	0 - 24	0 - 24	-30 – 120	032H8000
					AC	0 - 28	0 - 30	0 - 30	-		
				Oil	DC	0 - 16	0 - 24	0 - 24	0 - 24		
	FKM	1.2	0.04		AC	0 - 30	0 - 30	0 - 30	-	-10 – 100	032H8001
				Air	DC	0 – 19	0 - 24	0 - 24	0 - 24		
					AC	0 - 15	0 - 24	0 - 26	-		
				Oil	DC	0 - 8	0 - 16	0 - 19	0 - 17.5		
	FKM	1.5	0.08		AC	0 - 22	0 - 30	0 - 30	-	-10 - 100	032H8003
				Air	DC	0 - 10.5	0 - 18.5	0 - 24	0 - 19		
					AC	0 - 11	0 - 18	0 - 23	_		
	EPDM	2.0	0.11	Water	DC	0 - 5.5	0 - 10.5	0 - 18.5	0 - 9	-30 – 120	032H8004
					AC	0 - 9	0 - 16	0 - 22	_		
				Oil	DC	0 - 5	0 - 9.5	0 - 17	0 - 9		
G 1/8	FKM	2.0	0.11		AC	0 - 14	0 - 22	0 - 30	_	-10 - 100	032H8005
				Air	DC	0 - 6	0 - 11	0 - 24	0 - 9		
					AC	0 - 6	0 - 11	0 - 17	-		
	EPDM	2.5	0.17	Water	DC	0 - 3	0 - 5.5	0 - 13	0 - 5	-30 – 120	032H8006
					AC	0 - 5	0 - 9	0 - 16	-		
				Oil	DC	0 - 2.5	0 - 5	0 - 12	0 - 5		
	FKM	FKM 2.5 0.17	0.17		AC	0 - 8	0 - 12	0 - 20	-	-10 - 100	032H8007
				Air	DC	0 - 3	0 - 6	0 - 14.5	0 - 5		
					AC	0 - 4	0 - 7	0 - 13	-		
	EPDM	3.0	0.22	Water	DC	0 - 1.5	0 - 3.5	0 - 9	0 - 3	-30 – 120	032H8008
					AC	0 - 3	0 - 6	0 - 12	-		
				Oil	DC	0 - 1.5	0 - 3	0 - 8	0 - 3		
	FKM	3.0	0.22		AC	0 - 5	0 - 8	0 - 14	-	-10 - 100	032H8009
				Air	DC	0 - 2	0 - 3.5	0 - 9	0 - 3		
					AC	0 - 6	0 - 11	0 - 17	-		
	EPDM	2.5	0.17	Water	DC	0 - 3	0 - 5.5	0 - 13	0 - 5	-30 – 120	032H8014
					AC	0 - 5	0 - 9	0 - 16	-		
				Oil	DC	0 - 2.5	0 - 5	0 - 12	0 - 5		
	FKM	2.5	0.17		AC	0 - 8	0 - 12	0 - 20	-	-10 - 100	032H8015
				Air	DC	0 - 3	0 - 6	0 - 14.5	0 - 5		
					AC	0 - 4	0 - 7	0 - 13	0 - 3		
	EPDM	3.0	0.22	Water	DC	0 - 1.5	0 - 3.5	0 - 9	_	-30 – 120	032H8016
					AC	0 - 3	0 - 6	0 - 12	0 - 3		
G 1/4				Oil	DC	0 - 1.5	0 - 3	0 - 12	_		
	FKM	3.0	0.22		AC	0 - 5	0 - 8	0 - 14	0 - 3	-10 - 100	032H8017
				Air	DC	0 - 2	0 - 3.5	0 - 14	-		
	EPDM	3.5	0.26	Water	AC DC	0 - 2.8	0 - 5	0 - 11	0 - 1.5	-30 – 120	032H8018
				Oil	AC	0 - 2	0 - 4	0 - 10	- 15		
	FKM	3.5	0.26		DC	0 - 0.8	0 - 2.5	0 - 5.5	0 - 1.5	-10 - 100	032H8019
				Air	AC	0 - 3.5	0 - 5.5	0 - 11	- 15		
					DC	0 – 1.2	0 – 2.5	0 - 6	0 - 1.5		



#### Brass valve body, NO



						Differential pressure min. to max. [bar]	Media temperature,	
Connection ISO228/1	Seal material	Orifice size	K <sub>v</sub> - value [m³/h]	Media	Coil voltage	Suitable coil type, AM	min. to max. [°C]	Code number
				\A/=+==	AC	0 - 30		
				Water	DC	0 - 16		
		1.5	0.06	Oil	AC	0 - 24		032H8049
		1.5	0.00	Oii	DC	0 - 13		032118049
				Air	AC	0 - 30		
				All	DC	0 - 16		
				Water	AC	0 - 14		
				water	DC	0 - 10		
		2.0	0.12	Oil	AC	0 - 11		032H8051
		2.0	0.12	Oii	DC	0 - 8		032118031
				A:-	AC	0 - 14		
				Air	DC	0 - 10		
		2.5	0.15	Water	AC	0 - 10		
					DC	0 - 6		
G 1/8	FKM			Oil	AC	0 - 8	-10 – 100	032H8053
G 78	FNIVI			Oii	DC	0 - 4.5	-10 - 100	032118053
				Air	AC	0 - 10		
				All	DC	0 - 6		
				Water	AC	0 - 6		
				vvater	DC	0 - 4		
		3.0	0.18	Oil	AC	0 - 5		032H8055
		3.0	0.16	Oii	DC	0 - 3		U32H8U33
				Air	AC	0 - 6		
				All	DC	0 - 4		
				Water	AC	0 - 4		
				vvater	DC	0 - 3		
		3.5	0.20	Oil	AC	0 - 4		032H8057
		3.5	0.20	Oil	DC	0 - 2		U32H8U5/
				Air	AC	0 - 4		
				Air	DC	0 - 3		

### Technical data, brass valve body, NC and NO

Time to open and close	7 – 10 ms (depending on pressur	7 – 10 ms (depending on pressure, coil and viscosity)				
Installation	Optional, but vertical solenoid sy	stem is recommended				
Max. test pressure	50 bar					
Tightness	Internally: Better than 8.3 x 10 <sup>-2</sup> mbar l/sec (5 ccm air per min)  Externally: Better than 1 x 10 <sup>-3</sup> mbar l/sec (100% He)					
Ambient temperature	Max 50 °C					
Viscosity	Max. 20 cSt					
	Valve body:	Brass	W.no. 2.0401			
	Armature:	Stainless steel	W. no. 1.4016 / AISI 430			
	Armature tube:	Stainless steel	W. no. 1.4303 / AISI 305			
Materials	Armature stop:	Stainless steel	W. no. 1.4016 / AISI 430			
	Spring	Stainless steel	W. no. 1.4310 / AISI 301			
	Valve orifice	Stainless steel	W. no. 1.4305 / AISI 303			
	O-rings / valve plate	EPDM or FKM				



### Stainless steel valve body, NC



								al pressure nax. [bar]		Media									
Connection	Seal mate-	Orifice	K <sub>v</sub> - value		Coil		Suitable	coil type		temperature, min. to max.	Code								
ISO228/1	rial	size	[m³/h]	Media	voltage	AB	AC	AM	AK	[°C]	number								
				147 -	AC	0 - 30	0 - 30	0 - 30	-										
				Water	DC	0 – 17.5	0 - 24	0 - 24	0 - 24										
		4.0	0.04	0:1	AC	0 – 28	0 - 30	0 - 30	-										
		1.2	0.04	Oil	DC	0 – 16	0 - 24	0 - 24	0 - 24		032H8025								
				Air	AC	0 - 30	0 - 30	0 - 30	-										
				Air	DC	0 – 19	0 - 24	0 - 24	0 - 24										
				Water	AC	0 – 18	0 – 26	0 – 28	-										
				vvater	DC	0 – 9.5	0 – 17.5	0 – 22.5	0 – 17.5										
		1.5	0.08	Oil	AC	0 – 15	0 – 24	0 – 26	-		032H8027								
		1.5	0.00	Oii	DC	0 - 8	0 – 16	0 – 19	0 – 17.5		032110027								
				Air	AC	0 – 22	0 - 30	0 - 30	-										
G 1/8				All	DC	0 – 10.5	0 – 18.5	0 – 24	0 – 19										
G /8				Water	AC	0 – 11	0 – 18	0 – 23	-										
				vvater	DC	0 – 5.5	0 – 10.5	0 – 18.5	0 – 9										
		2.0	0.11	Oil	AC	0 – 9	0 – 16	0 – 22	-		032H8029								
		2.0	0.11	Oii	DC	0 – 5	0 – 9.5	0 – 17	0 – 9	032H	032110029								
				Air	AC	0 – 14	0 – 22	0 – 30	-										
				All	DC	0 – 6	0 - 11	0 – 24	0 – 9										
		KM 3.0	0.22			Water	AC	0 – 4	0 – 7	0 – 13	-								
					DC	0 – 1.5	0 – 3.5	0 – 9	0 – 3										
	FKM				AC	0 – 3	0 – 6	0 – 12	-	-10 - 100	032H8033								
	I INIVI	5.0	0.22	Oil	DC	0 – 1.5	0 – 3	0 – 8	0 – 3	-10 - 100	032110033								
				Air	AC	0 – 5	0 - 8	0 - 14	-										
				All	DC	0 – 2	0 – 3.5	0 – 9	0 – 3										
												Water	AC	0 – 6	0 - 11	0 – 17	-		
				vvatci	DC	0 – 3	0 - 5.5	0 – 13	0 – 5										
		2.5	0.17	Oil	AC	0 – 5	0 – 5	0 – 16	-		032H8039								
		2.5	0.17	Oil	DC	0 - 2.5	0 – 5	0 – 12	0 – 5		032110037								
				Air	AC	0 - 8	0 – 12	0 – 20	-										
				7.11	DC	0 – 3	0 - 6	0 – 14.5	0 – 5										
				Water	AC	0 - 4	0 - 7	0 - 13	-										
				Water	DC	0 – 1.5	0 – 3.5	0 – 9	0 – 3										
G 1/4		3.0	0.22	Oil	AC	0 – 3	0 – 6	0 - 12	-		032H8041								
3 / 1		3.0	0.22	0	DC	0 – 1.5	0 – 3	0 - 8	0 – 3										
				Air	AC	0 – 5	0 - 8	0 - 14	-										
					DC	0 – 2	0 - 3.5	0 – 9	0 – 3										
				Water	AC	0 - 2.8	0 - 5	0 - 11	-										
					DC	0 - 1.2	0 - 2.5	0 – 6	0 – 1.5										
		3.5	0.26	Oil	AC	0 – 2	0 - 4	0 - 10	-		032H8043								
		3.5	0.26	Oil	DC	0 - 0.8	0 – 2.5	0 - 5.5	0 – 1.5		222,100 13								
				Air	AC	0 - 3.5	0 - 5.5	0 - 11	-										
				7	DC	0 - 1.2	0 – 2.5	0 – 6	0 – 1.5										





### Technical data, stainless steel valve body

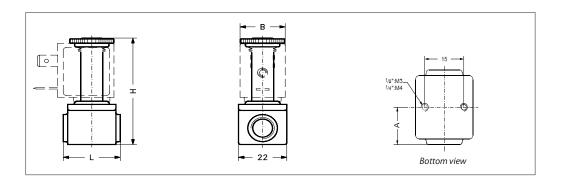
Time to open and close	7 – 10 ms (depending on pressure, coil and viscosity)				
Installation	Optional, but vertical solenoid s	ystem is recommended			
Max. test pressure	50 bar				
Tightness	Internally: Better than $8.3 \times 10^2$ mbar l/sec (5 ccm air per min) Externally: Better than $1 \times 10^3$ mbar l/sec (100% He)				
Ambient temperature	Max 50 °C				
Viscosity	Max. 20 cSt				
	Valve body:	Stainless steel	W.no. 1.4305 / AISI 303		
	Armature:	Stainless steel	W. no. 1.4016 / AISI 430		
	Armature tube:	Stainless steel	W. no. 1.4303 / AISI 305		
Materials	Armature stop:	Stainless steel	W. no. 1.4016 / AISI 430		
	Spring	Stainless steel	W. no. 1.4310 / AISI 301		
	Valve orifice	Stainless steel	W. no. 1.4305 / AISI 303		
	O-rings / valve plate	FKM			

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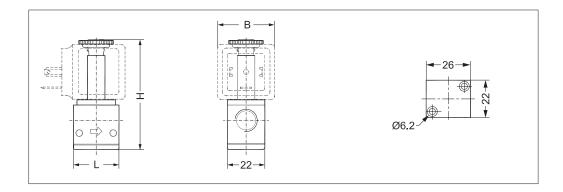
### Dimensions and weight, brass NC

		Weight gross		В [і	mm]		
Туре	Connection ISO 228/1	Valve body without coil [kg]	L [mm]	Coil type AB / AC	Coil type AM / AK	H [mm]	A [mm]
EV210A	G 1/8	0.085	26	22	33	54	13
EV210A	G 1/4	0.110	35	22	33	59	17.5



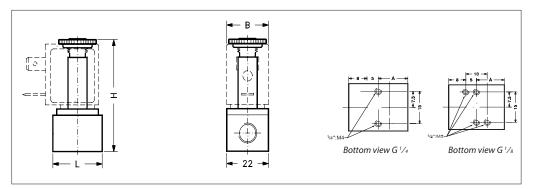
## Dimensions and weight, brass NO

		Weight gross		B [mm]	
Туре	Connection ISO 228/1	Valve body without coil [kg]	L [mm]	Coil type AM	H [mm]
EV210A	G 1/8	0.125	26	33	63



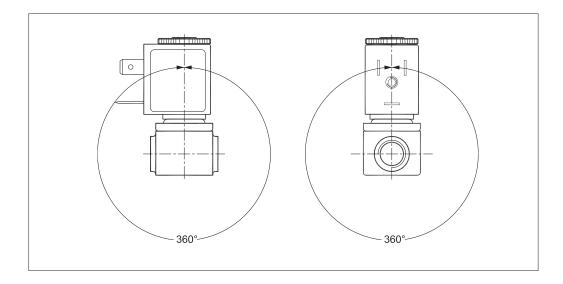
### Dimensions and weight, stainless steel

		Weight gross		B [n	nm]		
Туре	Connection ISO 228/1	Valve body without coil [kg]	L [mm]	Coil type AB / AC	Coil type AM / AK	H [mm]	A [mm]
EV210A	G 1/8	0.085	26	22	33	54	13
EV210A 6	G 1/4	0.110	35	22	33	59	17.5





#### Mounting angle



#### Below coils can be used with EV210A

Coil	Туре	Power consumption	Enclosure	Features
DENMARK DENMARK Odi DENMARC Type ADDRE 24V SOROHZ 4,9W  (E N0759	АВ	4.5 W AC 5 W DC	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580
DENUARI DENUARI DENUARI DENUARI DENUARI TYPE ACOME TYPE ACOME TYPE ACOME TYPE ACOME TYPE NOTE	AC	7.0 W AC 10 W DC	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580
Sold of the sold o	AM	7.5 W AC 9.5 W DC	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580
	AK	3.0 W DC	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580

For further information and for ordering, see separate data sheet for coils.

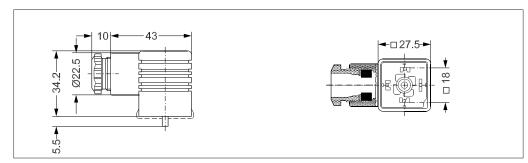
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#### Accessories: Cable plug

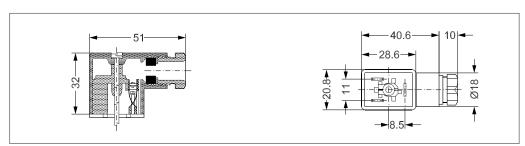




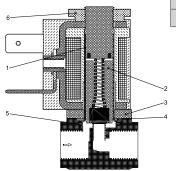








#### Spare part kit for EV210A NC



Seal material	Code number
EPDM	042U0067
FKM	042U0068



#### The spare parts set contains:

Armature tube

Armature with valve plate and spring

Flange

Disk

2 O-rings

Nut

2 screws for connecting tube to valve body



#### **Function NC**

#### Coil voltage disconnected (closed):

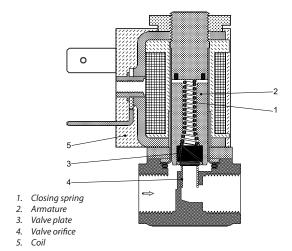
When the voltage is disconnected, the armature (2) with the valve plate (3) is pressed down against the valve orifice (4) by the closing spring (1) and the medium's pressure.

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.



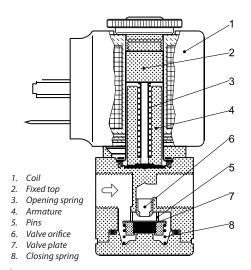
#### **Function NO**

#### Coil voltage disconnected (open):

When the voltage to the coil is disconnected, the valve orifice (6) is open, the opening spring (3) pressing the valve plate (7) clear of the orifice (6) via the armature (4) and the pins (5). The valve will be open for as long as the supply voltage is disconnected.

#### Coil voltage connected (closed):

When voltage is applied to the coil, the armature (4) is drawn up to touch the fixed top (2). The valve plate (7) is pressed against the valve orifice (6) by the closing spring (8). The valve will be closed for as long as there is voltage to the coil.

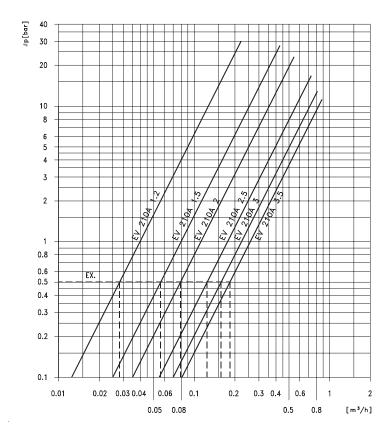




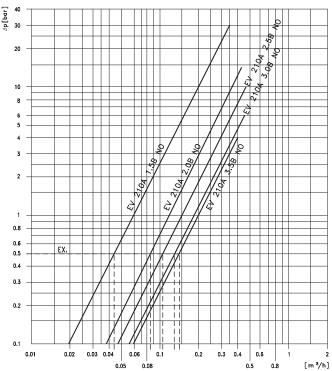
#### **Capacity diagrams:**

EV210A NC

Example, water at higher pressure: Capacity for EV210A 2.5B at differential pressure of 0.5 bar. Approx. 0.12 m<sup>3</sup>/h



EV210A NO
Example, water at higher pressure:
Capacity for EV210A 2.5B NO at differential pressure of 0.5 bar. Approx. 0.11s m³/h



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