

Data sheet

# Solenoid valves 2/2-way direct-operated type EV210A



EV210A covers a wide range of small, direct-operated 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 °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.

**Solenoid valves, type EV210A**

**Brass valve body, NC**



Conne- ction ISO228/1	Seal mate- rial	Orifice size	k <sub>V</sub> - value [m³/h]	Media	Coil voltage	Differential pressure min. to max. [bar]				Media temperature, min. to max. [°C]	Code number		
						Suitable coil type							
						AB	AC	AM	AK				
G 1/8	EPDM	1.2	0.04	Water	a.c.	0 – 30	0 – 30	0 – 30	–	-30 – 120	032H8000		
					d.c.	0 – 17.5	0 – 24	0 – 24	0 – 24				
	FKM	1.2	0.04	Oil	a.c.	0 – 28	0 – 30	0 – 30	–	-10 – 100	032H8001		
					d.c.	0 – 16	0 – 24	0 – 24	0 – 24				
				Air	a.c.	0 – 30	0 – 30	0 – 30	–			0 – 24	0 – 24
					d.c.	0 – 19	0 – 24	0 – 24	0 – 24				
	EPDM	1.5	0.08	Water	a.c.	0 – 18	0 – 26	0 – 28	–	-30 – 120	032H8002		
					d.c.	0 – 9.5	0 – 17.5	0 – 22.5	0 – 17.5				
	FKM	1.5	0.08	Oil	a.c.	0 – 15	0 – 24	0 – 26	–	-10 – 100	032H8003		
					d.c.	0 – 8	0 – 16	0 – 19	0 – 17.5				
				Air	a.c.	0 – 22	0 – 30	0 – 30	–			0 – 24	0 – 19
					d.c.	0 – 10.5	0 – 18.5	0 – 24	0 – 19				
	EPDM	2.0	0.11	Water	a.c.	0 – 11	0 – 18	0 – 23	–	-30 – 120	032H8004		
					d.c.	0 – 5.5	0 – 10.5	0 – 18.5	0 – 9				
	FKM	2.0	0.11	Oil	a.c.	0 – 9	0 – 16	0 – 22	–	-10 – 100	032H8005		
					d.c.	0 – 5	0 – 9.5	0 – 17	0 – 9				
				Air	a.c.	0 – 14	0 – 22	0 – 30	–			0 – 24	0 – 9
					d.c.	0 – 6	0 – 11	0 – 24	0 – 9				
	EPDM	2.5	0.17	Water	a.c.	0 – 6	0 – 11	0 – 17	–	-30 – 120	032H8006		
					d.c.	0 – 3	0 – 5.5	0 – 13	0 – 5				
	FKM	2.5	0.17	Oil	a.c.	0 – 5	0 – 9	0 – 16	–	-10 – 100	032H8007		
					d.c.	0 – 2.5	0 – 5	0 – 12	0 – 5				
				Air	a.c.	0 – 8	0 – 12	0 – 20	–			0 – 14.5	0 – 5
					d.c.	0 – 3	0 – 6	0 – 14.5	0 – 5				
EPDM	3.0	0.22	Water	a.c.	0 – 4	0 – 7	0 – 13	–	-30 – 120	032H8008			
				d.c.	0 – 1.5	0 – 3.5	0 – 9	0 – 3					
FKM	3.0	0.22	Oil	a.c.	0 – 3	0 – 6	0 – 12	–	-10 – 100	032H8009			
				d.c.	0 – 1.5	0 – 3	0 – 8	0 – 3					
			Air	a.c.	0 – 5	0 – 8	0 – 14	–			0 – 9	0 – 3	
				d.c.	0 – 2	0 – 3.5	0 – 9	0 – 3					
G 1/4	EPDM	2.5	0.17	Water	a.c.	0 – 6	0 – 11	0 – 17	–	-30 – 120	032H8014		
					d.c.	0 – 3	0 – 5.5	0 – 13	0 – 5				
	FKM	2.5	0.17	Oil	a.c.	0 – 5	0 – 9	0 – 16	–	-10 – 100	032H8015		
					d.c.	0 – 2.5	0 – 5	0 – 12	0 – 5				
				Air	a.c.	0 – 8	0 – 12	0 – 20	–			0 – 14.5	0 – 5
					d.c.	0 – 3	0 – 6	0 – 14.5	0 – 5				
	EPDM	3.0	0.22	Water	a.c.	0 – 4	0 – 7	0 – 13	0 – 3	-30 – 120	032H8016		
					d.c.	0 – 1.5	0 – 3.5	0 – 9	–				
	FKM	3.0	0.22	Oil	a.c.	0 – 3	0 – 6	0 – 12	0 – 3	-10 – 100	032H8017		
					d.c.	0 – 1.5	0 – 3	0 – 8	–				
				Air	a.c.	0 – 5	0 – 8	0 – 14	0 – 3			0 – 9	–
					d.c.	0 – 2	0 – 3.5	0 – 9	–				
	EPDM	3.5	0.26	Water	a.c.	0 – 2.8	0 – 5	0 – 11	–	-30 – 120	032H8018		
					d.c.	0 – 1.2	0 – 2.5	0 – 6	0 – 1.5				
	FKM	3.5	0.26	Oil	a.c.	0 – 2	0 – 4	0 – 10	–	-10 – 100	032H8019		
					d.c.	0 – 0.8	0 – 2.5	0 – 5.5	0 – 1.5				
				Air	a.c.	0 – 3.5	0 – 5.5	0 – 11	–			0 – 6	0 – 1.5
					d.c.	0 – 1.2	0 – 2.5	0 – 6	0 – 1.5				

## Solenoid valves, type EV210A

### Brass valve body, NO



Connection ISO228/1	Seal material	Orifice size	$k_v$ - value [m³/h]	Media	Coil voltage	Differential pressure min. to max. [bar]	Media temperature, min. to max. [°C]	Code number
						Suitable coil type, AM		
G 1/8	FKM	1.5	0.06	Water	a.c.	0 – 30	-10 – 100	<b>032H8049</b>
					d.c.	0 – 16		
				Oil	a.c.	0 – 24		
					d.c.	0 – 13		
				Air	a.c.	0 – 30		
					d.c.	0 – 16		
		2.0	0.12	Water	a.c.	0 – 14		<b>032H8051</b>
					d.c.	0 – 10		
				Oil	a.c.	0 – 11		
					d.c.	0 – 8		
				Air	a.c.	0 – 14		
					d.c.	0 – 10		
		2.5	0.15	Water	a.c.	0 – 10		<b>032H8053</b>
					d.c.	0 – 6		
				Oil	a.c.	0 – 8		
					d.c.	0 – 4.5		
				Air	a.c.	0 – 10		
					d.c.	0 – 6		
		3.0	0.18	Water	a.c.	0 – 6		<b>032H8055</b>
					d.c.	0 – 4		
				Oil	a.c.	0 – 5		
					d.c.	0 – 3		
				Air	a.c.	0 – 6		
					d.c.	0 – 4		
		3.5	0.20	Water	a.c.	0 – 4		<b>032H8057</b>
					d.c.	0 – 3		
				Oil	a.c.	0 – 4		
					d.c.	0 – 2		
				Air	a.c.	0 – 4		
					d.c.	0 – 3		

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

Time to open and close	7 – 10 ms (depending on pressure, coil and viscosity)		
Installation	Optional, but vertical solenoid system 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		
Materials	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
	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	

Solenoid valves, type EV210A

Stainless steel valve body, NC



Conne- ction ISO228/1	Seal mate- rial	Orifice size	k <sub>v</sub> - value [m³/h]	Media	Coil- voltage	Differential pressure min. to max. [bar]				Media temperature, min. to max. [°C]	Code number
						Suitable coil type					
						AB	AC	AM	AK		
G 1/8	FKM	1.2	0.04	Water	a.c.	0 – 30	0 – 30	0 – 30	–	-10 – 100	032H8025
					d.c.	0 – 17.5	0 – 24	0 – 24	0 – 24		
				Oil	a.c.	0 – 28	0 – 30	0 – 30	–		
					d.c.	0 – 16	0 – 24	0 – 24	0 – 24		
				Air	a.c.	0 – 30	0 – 30	0 – 30	–		
					d.c.	0 – 19	0 – 24	0 – 24	0 – 24		
		1.5	0.08	Water	a.c.	0 – 18	0 – 26	0 – 28	–		032H8027
					d.c.	0 – 9.5	0 – 17.5	0 – 22.5	0 – 17.5		
				Oil	a.c.	0 – 15	0 – 24	0 – 26	–		
					d.c.	0 – 8	0 – 16	0 – 19	0 – 17.5		
				Air	a.c.	0 – 22	0 – 30	0 – 30	–		
					d.c.	0 – 10.5	0 – 18.5	0 – 24	0 – 19		
		2.0	0.11	Water	a.c.	0 – 11	0 – 18	0 – 23	–		032H8029
					d.c.	0 – 5.5	0 – 10.5	0 – 18.5	0 – 9		
				Oil	a.c.	0 – 9	0 – 16	0 – 22	–		
					d.c.	0 – 5	0 – 9.5	0 – 17	0 – 9		
				Air	a.c.	0 – 14	0 – 22	0 – 30	–		
					d.c.	0 – 6	0 – 11	0 – 24	0 – 9		
		2.5	0.17	Water	a.c.	0 – 6	0 – 11	0 – 17	–		032H8031
					d.c.	0 – 5.5	0 – 13	0 – 5	0 – 1.5		
				Oil	a.c.	0 – 5	0 – 9	0 – 16	–		
					d.c.	0 – 2.5	0 – 5	0 – 12	0 – 5		
				Air	a.c.	0 – 8	0 – 12	0 – 20	–		
					d.c.	0 – 3	0 – 6	0 – 14.5	0 – 5		
		3.0	0.22	Water	a.c.	0 – 4	0 – 7	0 – 13	–		032H8033
					d.c.	0 – 1.5	0 – 3.5	0 – 9	0 – 3		
				Oil	a.c.	0 – 3	0 – 6	0 – 12	–		
					d.c.	0 – 1.5	0 – 3	0 – 8	0 – 3		
				Air	a.c.	0 – 5	0 – 8	0 – 14	–		
					d.c.	0 – 2	0 – 3.5	0 – 9	0 – 3		
G 1/4	FKM	2.5	0.17	Water	a.c.	0 – 6	0 – 11	0 – 17	–		032H8039
					d.c.	0 – 3	0 – 5.5	0 – 13	0 – 5		
				Oil	a.c.	0 – 5	0 – 5	0 – 16	–		
					d.c.	0 – 2.5	0 – 5	0 – 12	0 – 5		
				Air	a.c.	0 – 8	0 – 12	0 – 20	–		
					d.c.	0 – 3	0 – 6	0 – 14.5	0 – 5		
		3.0	0.22	Water	a.c.	0 – 4	0 – 7	0 – 13	–		032H8041
					d.c.	0 – 1.5	0 – 3.5	0 – 9	0 – 3		
				Oil	a.c.	0 – 3	0 – 6	0 – 12	–		
					d.c.	0 – 1.5	0 – 3	0 – 8	0 – 3		
				Air	a.c.	0 – 5	0 – 8	0 – 14	–		
					d.c.	0 – 2	0 – 3.5	0 – 9	0 – 3		
		3.5	0.26	Water	a.c.	0 – 2.8	0 – 5	0 – 11	–		032H8043
					d.c.	0 – 1.2	0 – 2.5	0 – 6	0 – 1.5		
				Oil	a.c.	0 – 2	0 – 4	0 – 10	–		
					d.c.	0 – 0.8	0 – 2.5	0 – 5.5	0 – 1.5		
				Air	a.c.	0 – 3.5	0 – 5.5	0 – 11	–		
					d.c.	0 – 1.2	0 – 2.5	0 – 6	0 – 1.5		

## Solenoid valves, type EV210A

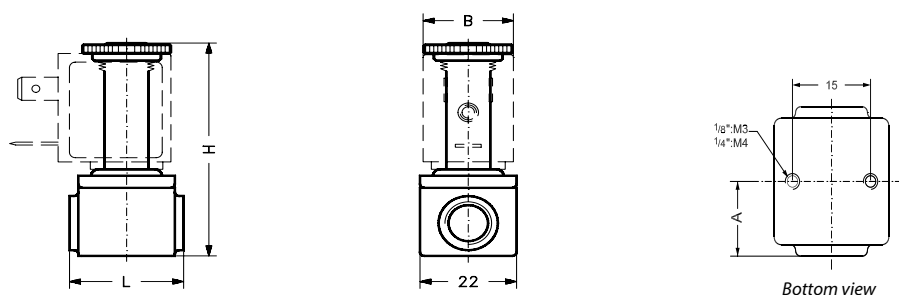
### Technical data, stainless steel valve body

Time to open and close	7 – 10 ms (depending on pressure, coil and viscosity)		
Installation	Optional, but vertical solenoid system 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		
Materials	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
	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	

## Solenoid valves, type EV210A

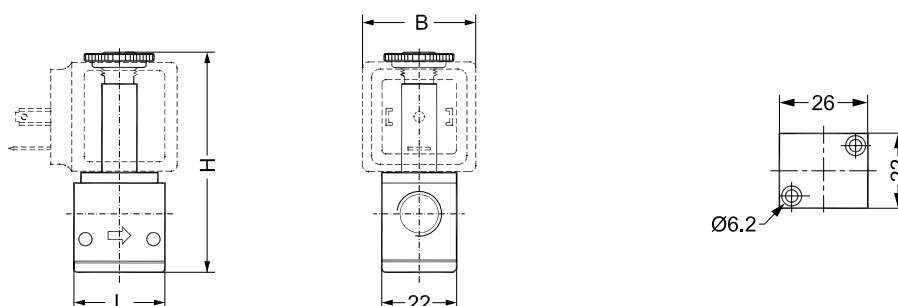
### Dimensions and weight, brass NC

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



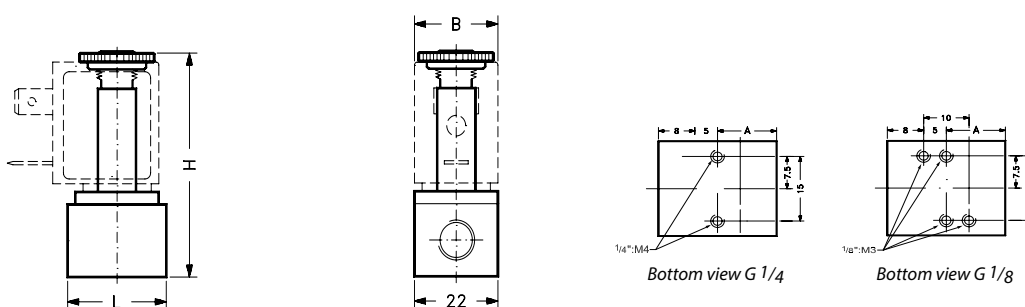
### Dimensions and weight, brass NO

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







### Dimensions and weight, stainless steel

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



## Solenoid valves, type EV210A

### Below coils can be used with EV210A

Coil	Type	Power consumption	Enclosure	Features
	AB	4.5 W a.c. 5 W d.c.	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580
	AC	7.0 W a.c. 10 W d.c.	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580
	AM	7.5 W a.c. 9.5 W d.c.	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580
	AK	3.0 W d.c.	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580

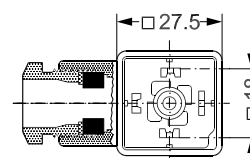
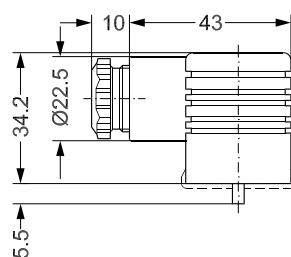
For further information and for ordering, see separate data sheet for coils.

## Solenoid valves, type EV210A

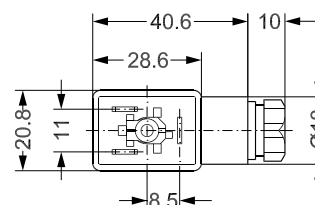
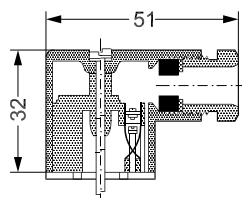
### Accessories:

#### Cable plug

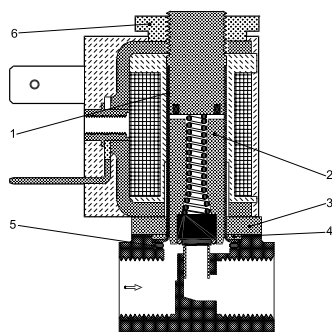
Application	Code number
GDM 2011 (grey) cable plug according to DIN 43650-A PG11	<b>042N0156</b>



Application	Code number
GM 209 (black) cable plug according to DIN 46650-B PG9	<b>042N0139</b>



### Spare part kit for EV210A NC



Seal material	Code number
EPDM	<b>042U0067</b>
FKM	<b>042U0068</b>



#### 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):

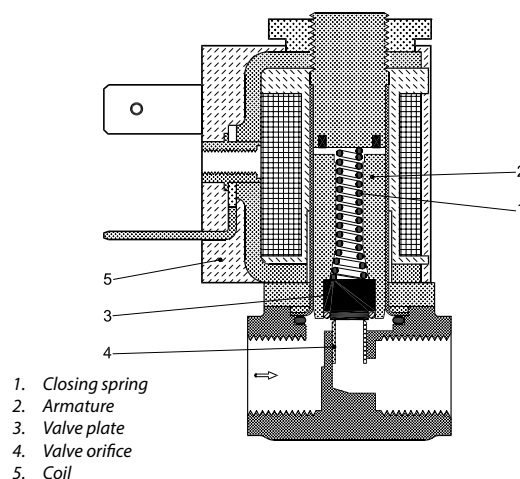
When the voltage is disconnected, the armature (2) with the valve plate (3) is pressed down against the valve orifice (4) by the closing spring (1) and the medium's pressure.

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.



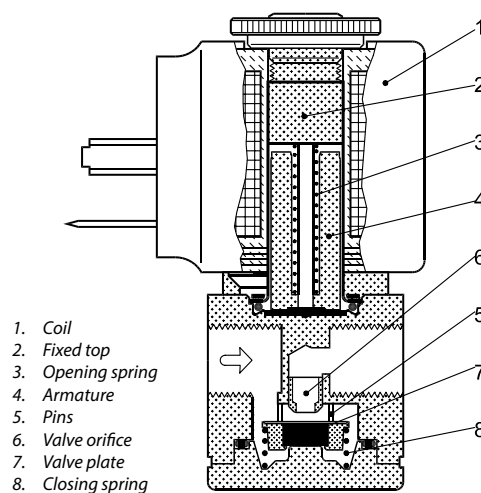
## Function NO

### 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.



## Solenoid valves, type EV210A

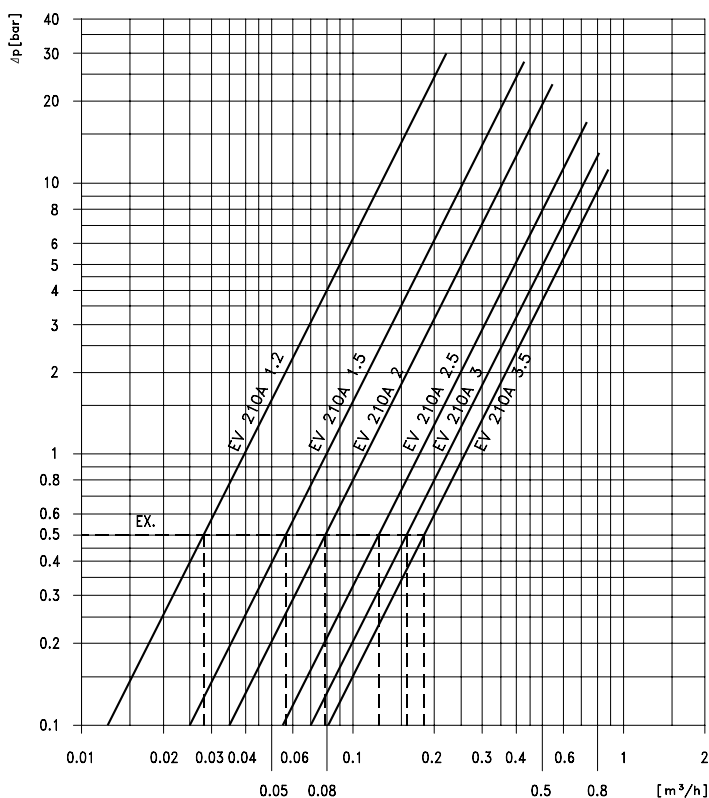
### Capacity diagrams:

#### 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. 0.11 m<sup>3</sup>/h

