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.

Brass valve body, NC

Connection ISO228/1	Seal material	Orifice size	k_V - value [m³/h]	Media	Coil voltage	Differential pressure min. to max. [bar] Suitable coil type AB	AC	AM	AK	Media temperature, min. to max. [°C]	Code number
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	–		
					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	–		
					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	–		
					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	–		
					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	–		
					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	–		
					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		
					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	–		
					d.c.	0 – 1.2	0 – 2.5	0 – 6	0 – 1.5		

Brass valve body, NO

Connection ISO228/1	Seal material	Orifice size	k_V - value [m^3/h]	Media	Coil voltage	Differential pressure min. to max. [bar] Suitable coil type, AM	Media temperature, min. to max. [°C]	Code number
G 1/8	FKM	1.5	0.06	Water	a.c.	0 – 30	-10 – 100	**032H8049**
					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		**032H8051**
					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		**032H8053**
					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		**032H8055**
					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		**032H8057**
					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 x 10^{-2} mbar l/sec (5 ccm air per min) Externally: Better than 1 x 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	

Stainless steel valve body, NC

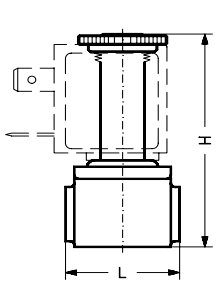
Connection ISO228/1	Seal material	Orifice size	k_V - value [m^3/h]	Media	Coil-voltage	Differential pressure min. to max. [bar] Suitable coil type AB	AC	AM	AK	Media temperature, min. to max. [°C]	Code number
G 1/8	FKM	1.2	0.04	Water	a.c.	0 – 30	0 – 30	0 – 30	–	-10 – 100	032H8025
					d.c.	0 – 17.5	0 – 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		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		

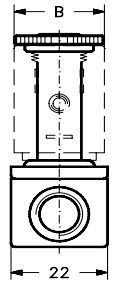
Technical data, stainless steel valve body

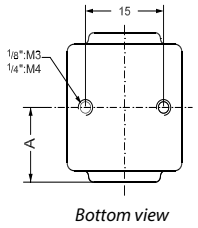
Time to open and close	7 – 10 ms (depending on pressure, coil and viscosity)		
Installation	Optional, but vertical solenoid system is recommended		
Max. test pressure	50 bar		
Tightness	Internally: Better than 8.3 x 10^{-2} mbar l/sec (5 ccm air per min) Externally: Better than 1 x 10^{-3} mbar l/sec (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	

Dimensions and weight, brass NC

Type	Connection ISO 228/1	Weight gross Valve body without coil [kg]	L [mm]	B [mm] Coil type AB/AC	B [mm] 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



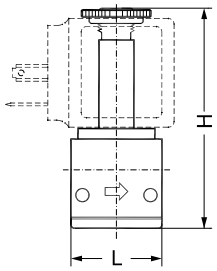


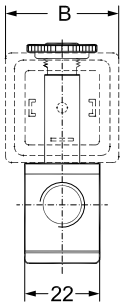


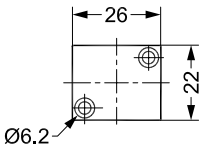
Bottom view

Dimensions and weight, brass NO

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

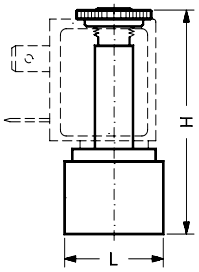


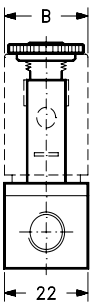


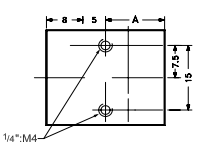


Dimensions and weight, stainless steel

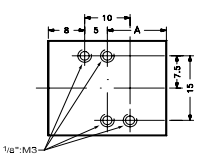
Type	Connection ISO 228/1	Weight gross Valve body without coil [kg]	L [mm]	B [mm] Coil type AB/AC	B [mm] Coil type AM/AK	H [mm]	A [mm]
EV210A	G 1/8	0.085	26	22	33	54	13
EV210A 6	G 1/4	0.110	35	22	33	59	17.5







Bottom view G 1/4



Bottom view G 1/8

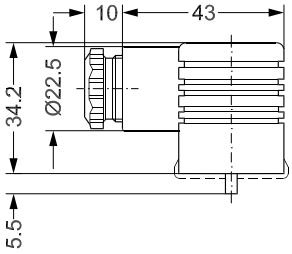
Below coils can be used with EV210A

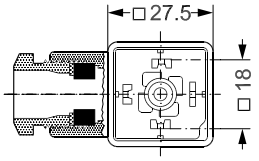
Coil	Type	Power consumption	Enclosure	Features
	AB	4.5 W a.c. 5 W d.c.	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580
	AC	7.0 W a.c. 10 W d.c.	IP00 with spade connector, IP65 with cable plug	In accordance with VDE 0580
	AM	7.5 W a.c. 9.5 W d.c.	IP00 with spade connector,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

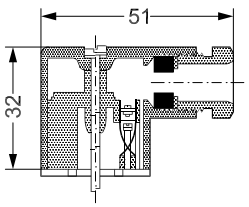
Accessories:
Cable plug

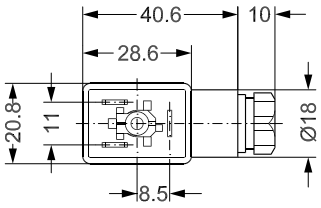
Application	Code number
GDM 2011 (grey) cable plug according to DIN 43650-A PG11	**042N0156**



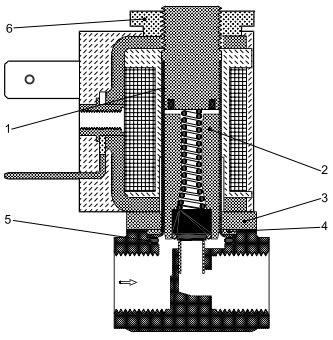


Application	Code number
GM 209 (black) cable plug according to DIN 46650-B PG9	**042N0139**





Spare part kit for EV210A NC



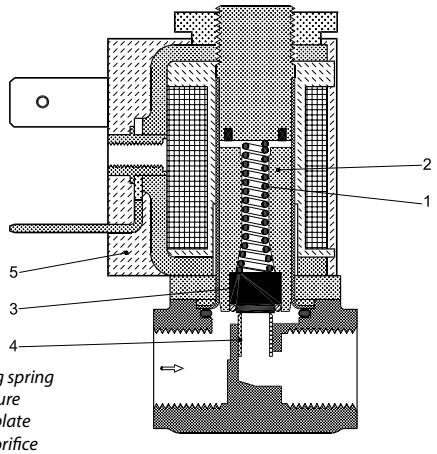
Seal material	Code number
EPDM	**042U0067**
FKM	**042U0068**

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.

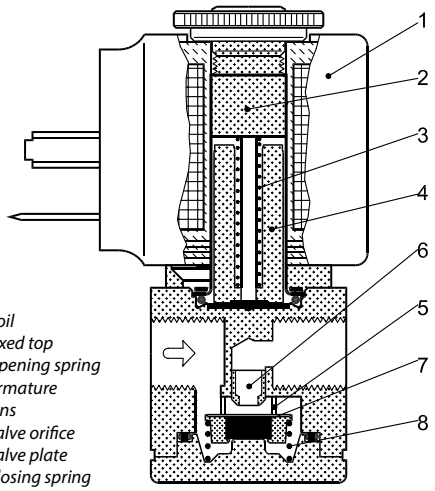


1. *Closing spring*
2. *Armature*
3. *Valve plate*
4. *Valve orifice*
5. *Coil*

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.

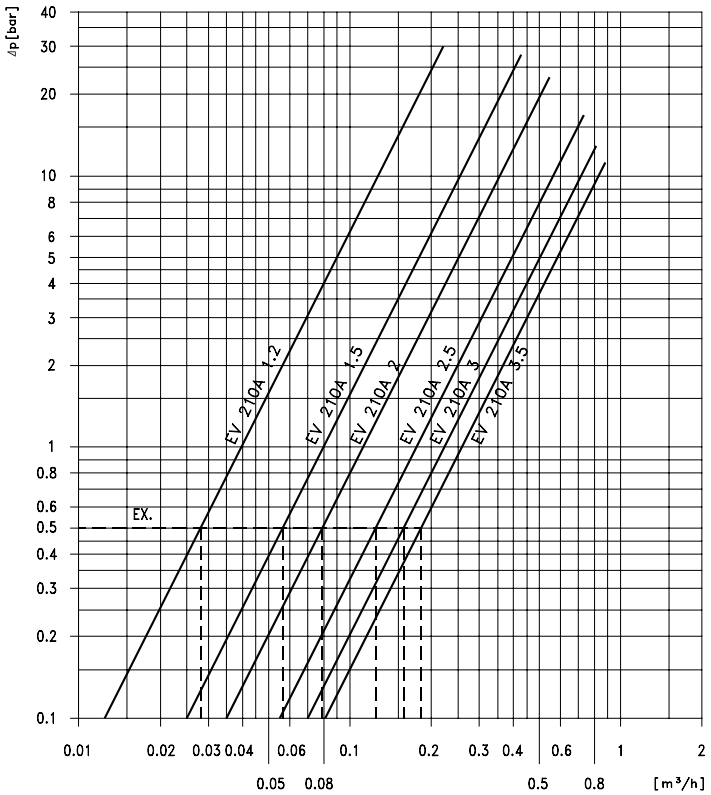


1. *Coil*
2. *Fixed top*
3. *Opening spring*
4. *Armature*
5. *Pins*
6. *Valve orifice*
7. *Valve plate*
8. *Closing spring*

Capacity diagrams:

EV210A NC

Example, water at higher pressure:
Capacity for EV210A 2.5B at differential pressure of 0.5 bar.
Approx. 0.12 m³/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