

Data sheet

# Servo-operated 2/2-way solenoid valves for high pressure air

## Type EV224B



EV224B for compressed air, is a high pressure indirect servo-operated 2/2-way solenoid valve with working pressure up to 40 bar, medium temperature up to 60 °C and available in NC and NO versions.

Built-in pilot filter as standard, replaceable equalizing orifice, enclosures up to IP67 (depending on coil) ensure a reliable and satisfactory function.

### Features

- For compressed air and compressed air with mineral oil
- Differential pressure: Up to 40 bar
- Ambient temperature: Up to 60 °C
- Media temperature from -10 – 60 °C
- Coil enclosure: Up to IP67
- Thread connection: From G ½ – G 1
- Built in filter for protection of pilot system
- NC and NO versions


**Brass valve body, NC**

Connection ISO 228/1	Seal mate- rial	Orifice size	K <sub>v</sub> - value [m <sup>3</sup> /h]	Differential pressure, min. to max. [bar]			Max. ope- rating pressure [bar]	Max. test pressure [bar]	Min. burst pressure acc. EN 12516 [bar]	Media temperature min. to max. [°C]	Code no.
				BE / BB	BE / BB	BG					
				18 W DC	10 W AC	12 W AC 20 W DC					
G ½	NBR	15	4	0.3 – 40	0.3 – 40	0.3 – 40	40	60	159	-10 – 60	032U8360
G ¾	NBR	20	8	0.3 – 35	0.3 – 35	0.3 – 35	35	53	142	-10 – 60	032U8362
G 1	NBR	25	11	0.3 – 33	0.3 – 33	0.3 – 33	33	50	134	-10 – 60	032U8364

Used with synthetic oils, and with media temperature between 40 – 60 °C, life time can be reduced.


**Brass valve body, NO**

Connection ISO 228/1	Seal mate- rial	Orifi- ce size	K <sub>v</sub> - value [m <sup>3</sup> /h]	Differential pressure, min. to max. [bar]			Max. operating pressure [bar]	Max. test pressu- re [bar]	Min. burst pressure acc. EN 12516 [bar]	Media temperature min. to max. [°C]	Code no.
				BE / BB	BE / BB	BG					
				18 [W DC]	10 [W AC]	12 [W AC], 20 [W DC]					
G ½	NBR	15	4	0.3 – 40	0.3 – 40	0.3 – 40	40	60	159	-10 – 60	032U8361
G ¾	NBR	20	8	0.3 – 35	0.3 – 35	0.3 – 35	35	53	142	-10 – 60	032U8363
G 1	NBR	25	11	0.3 – 33	0.3 – 33	0.3 – 33	33	50	134	-10 – 60	032U8365

Used with synthetic oils, and with media temperature between 40-60 °C, life time can be reduced.

**Technical data**

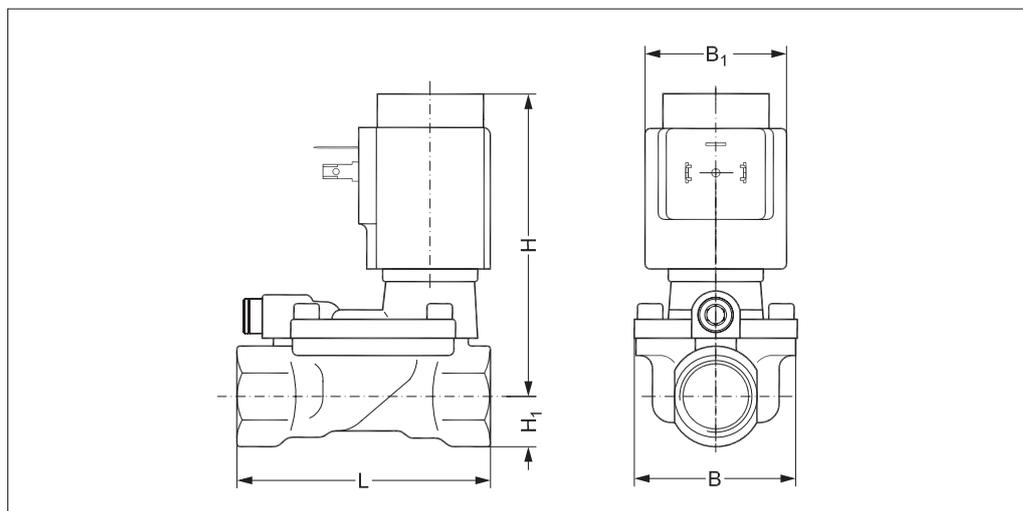
<b>Type</b>	EV224B		
<b>Installation</b>	Vertical solenoid system is recommended.		
<b>Ambient temperature</b>	Coil type: BB	10 W AC / 18 W DC	Up to 60 °C
	Coil type: BE	10 W AC / 18 W DC	Up to 60 °C
	Coil type: BG	12 W AC / 20 W DC	Up to 60 °C
<b>Viscosity</b>	Max. 50 cSt		
<b>Materials</b>	Valve body:	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
	Diaphragm valve cone:	Stainless steel	W.no. 1.4404 / AISI 316L
	Springs:	Stainless steel	W.no. 1.4310 / AISI 301
	O-rings:	NBR	–
	Valve plate:	NC: NBR / NO: PTFE	–
Diaphragm:	NBR	–	

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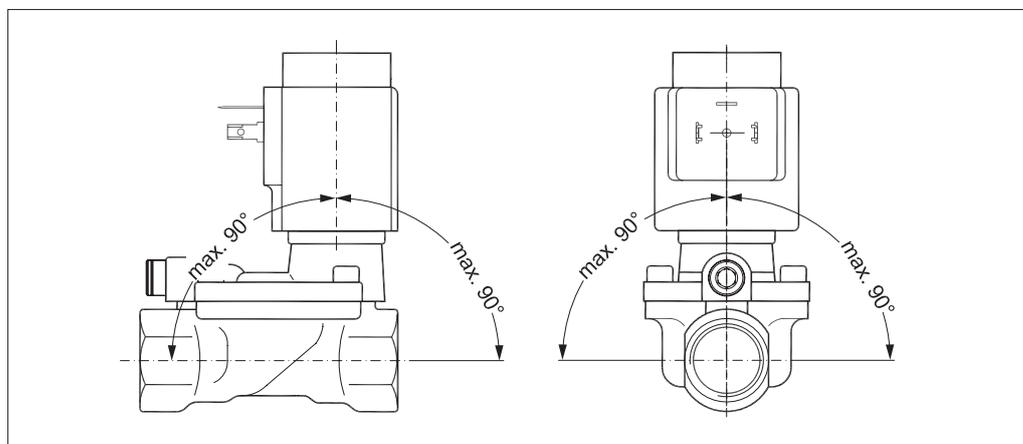
Dimensions and weight,  
NC and NO

Type	L [mm]	B [mm]	B <sub>1</sub> [mm] Coil type		H [mm]	H <sub>1</sub> [mm]	Weight without coil [kg]
			BB / BE	BG			
EV224B 15	80	52	46	68	99	15	0.8
EV224B 20	90	58	46	68	103	18	1.0
EV224B 25	109	70	46	68	113	22	1.4

Dimensions



Mounting angle



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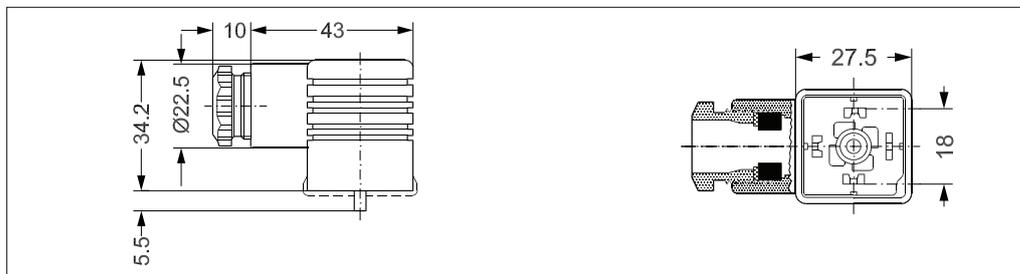
**Below coils can be used with EV224B**

Coil	Type	Power consumption	Enclosure	Features
	BB, clip on	AC: 11 – 16 W DC: 13 – 16 W	IP00 with spade connector	IP20 with protective cap, IP65 with cable plug
	BE, clip on	AC: 11 – 17 W DC: 13 – 15 W	IP67	With terminal box
	BG, clip-on	AC: 11 – 16 W DC: 16 – 20 W	IP67	With terminal box

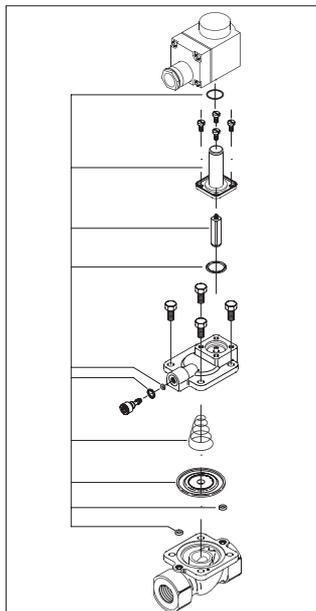
**Accessories:  
cable plug**



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



**Spare parts kit, NC**



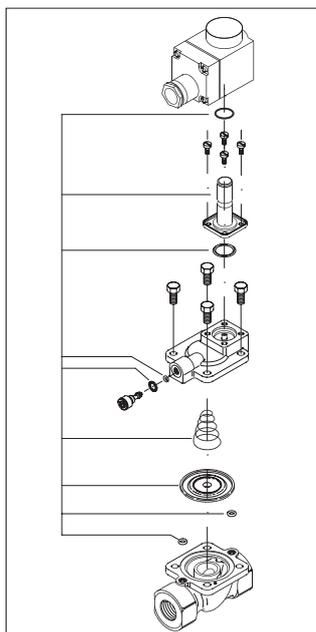
Type	Seal material	Code no.
EV224B 15	NBR	032U6156
EV224B 20	NBR	032U6158
EV224B 25	NBR	032U6160

**The kit contains:**

- O-ring for coil
- Armature tube assembly
- Armature with valve plate and spring
- O-ring for the armature tube
- 2 O-rings for the equalizing orifice
- Closing spring
- Diaphragm
- 2 O-rings for the pilot system



**Spare parts kit, NO**



Type	Seal material	Code no.
EV224B 15	NBR	032U6157
EV224B 20	NBR	032U6159
EV224B 25	NBR	032U6161

**The kit contains:**

- O-ring for coil
- Armature unit assembly
- O-ring for the armature unit
- 2 O-rings for the equalizing orifice
- Closing spring
- Diaphragm
- 2 O-rings for the pilot system



**Spare parts kit for synthetic oil, NC/NO**

Type	Seal material	Code no.
EV224B 15	FKM	032U8118
EV224B 20	FKM	032U8119

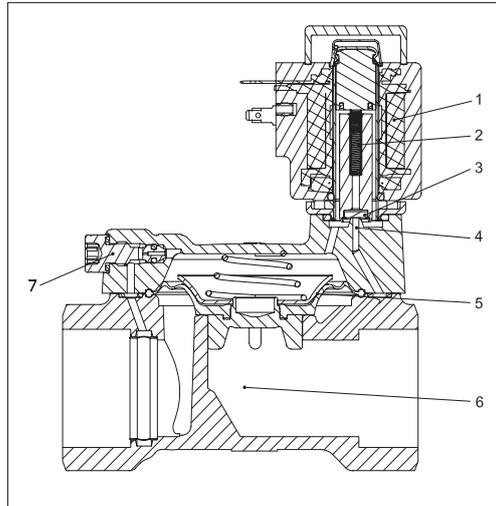
**The kit contains:**

- Closing spring
- Diaphragm
- 2 O-rings for the pilot system



**Function, NC**

- 1. Coil
- 2. Armature spring
- 3. Valve plate
- 4. Pilot orifice
- 5. Diaphragm
- 6. Main orifice
- 7. Equalizing orifice



**Coil voltage disconnected (closed):**

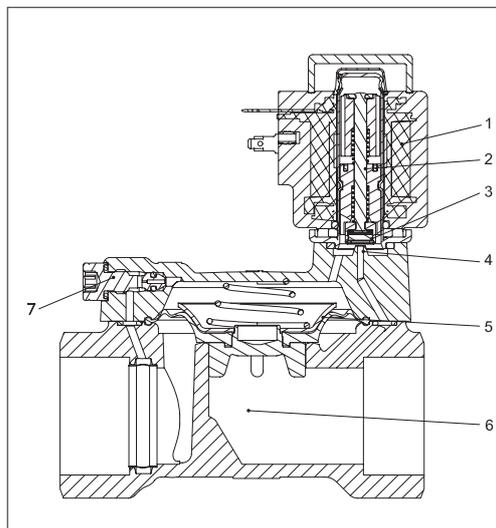
When the voltage is disconnected, the valve plate (3) is pressed down against the pilot orifice (4) by the armature spring (2). The pressure across the diaphragm (5) is built up via the equalizing orifice (7). The diaphragm closes the main orifice (6) as soon as the pressure across the diaphragm is equivalent 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 equalizing 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.

**Function, NO**

- 1. Coil
- 2. Armature spring
- 3. Valve plate
- 4. Pilot orifice
- 5. Diaphragm
- 6. Main orifice
- 7. Equalizing orifice



**Coil voltage disconnected (open):**

When the voltage to the coil (2) is disconnected, the pilot orifice (4) is open. As the pilot orifice is larger than the equalizing orifice (7), the pressure across the diaphragm (5) drops and therefore it is lifted clear of the main orifice (6). The valve will be open for as long as the minimum differential pressure across the valve is maintained, and for as long as the voltage to the coil is disconnected.

**Coil voltage connected (closed):**

When voltage is applied to the coil, the valve plate (3) is pressed down against the pilot orifice (4). The pressure across the diaphragm (5) is built up via the equalizing 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 there is voltage to the coil.