

**Heavy duty poppet valves  
2/2 & 3/2 - G<sup>3/8</sup>" & G<sup>1/2</sup>"**

These valves use the well proven poppet principle to give high flow rates with short valve travel, both the 2/2 and 3/2 valves in the range are available in G<sup>3/8</sup>" and G<sup>1/2</sup>" port sizes. This means that each actuator is available in four configurations i.e. 3/8" ports 2/2 or 3/2 and G<sup>1/2</sup>" ports 2/2 or 3/2. All valves are normally closed.

The bodies are of block form construction for ease of mounting. Springs are stainless steel; internal seals being of nitrile rubber.

The 2/2 body allows air in one direction only, 3/2 versions having the facility of exhausting air through the actuator unit. This exhaust vent is unthreaded on all valves except the pilot and solenoid types which allows the piping away of exhaust air.

All mechanisms are spring returned.



Operating information			Material specification	
Working pressure	0 - 10 bar		Body	Zinc die cast
Working temperature	-10°C to +80°C		Roller	Zinc plated steel
Solenoid version	-10°C to +50°C		Mechanical arm	Zinc plated steel
Minimum pilot pressure	1.9 bar @ 6 bar supply		Poppet	Stainless steel
Response time (solenoid energised)	14 msecs		Seals	Nitrile
Response time (solenoid de-energised)	75 msecs		Spring	Stainless steel
Flow capacities in accordance with ISO6358			Bush	Aluminium
			Piston	Aluminium
Flow;	<b>B102-B103</b> C = 7,54 b = 0,29 Qn = 33 l/s Qmax = 54 l/s Cv = 2,65	<b>B202-B203</b> C = 10,75 NI/s x bar b = 0,24 Qn = 43 l/s Qmax = 75 l/s Cv = 3,20		

**Working medium, air quality**

Working medium: Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

**Recommended air quality for valves**

For best possible service life and trouble free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5µm filter (standard filter) dew point +3°C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m<sup>3</sup>, which is what a standard compressor with a standard filter gives.

**ISO 8573-1 quality classes**

Quality class	Pollution		Water max. press. dew point (°C)	Oil max. concentration (mg/m <sup>3</sup> )
	particle size (µm)	max. concentration (mg/m <sup>3</sup> )		
1	0,1	0,1	-70	0,01
2	1	1	-40	0,1
3	5	5	-20	1,0
4	15	8	+3	5,0
5	40	10	+7	25
6	-	-	+10	-

Part number configurator for solenoid valves

<b>D</b>	<b>B</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>A</b>	<b>4</b>	<b>9</b>
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<b>DB</b>	<b>Valve family</b>
	HD poppet solenoid operated

<b>1</b>	<b>Thread port</b>
	3/8 BSP
<b>2</b>	1/2 BSP

<b>2</b>	<b>Air supply to solenoid</b>
	Internal

<b>2</b>	<b>Function</b>
	2/2 NC
<b>3</b>	3/2 NC

	<b>Overrides</b>	
<b>A</b>	None	
<b>C</b>	Flush - Locking	
<b>D</b>	Extended - non locking	

	<b>Voltage <sup>1</sup></b>		
		<b>AC</b>	<b>DC</b>
		<b>60Hz</b>	<b>50Hz</b>
<b>40</b>	12		
<b>42</b>	24	22	
<b>45</b>			12
<b>49</b>			24
<b>53</b>	120	110	
<b>57</b>	240	230	
<b>XX</b>	valve less solenoid/coil		

<sup>1</sup> Shaded part numbers are standard  
 Unshaded part numbers are available on request but will be subject to minimum order quantities  
 Otherwise order XX version and order coil separately.

Part number configurator for manual & mechanical operated poppet valves

<b>B</b>	<b>Valve family</b>
	HD poppet manual & mechanical

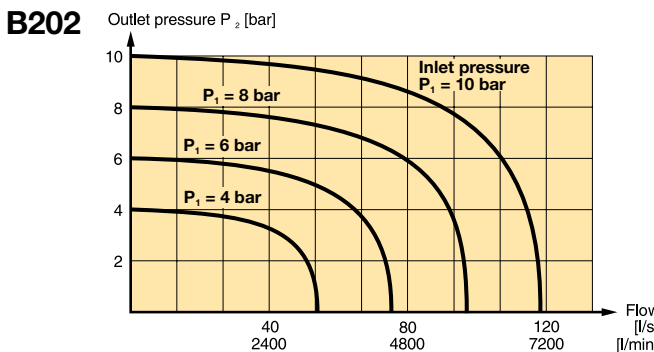
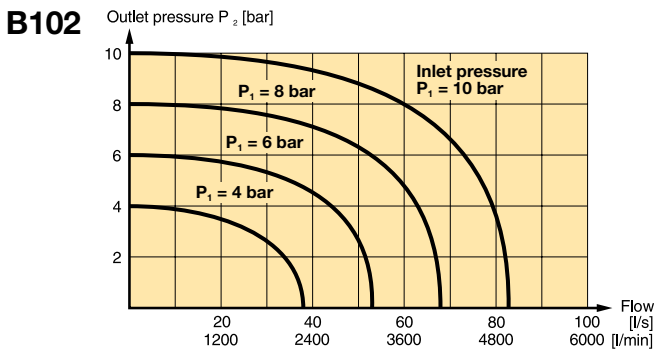
<b>1</b>	<b>Thread port</b>
	3/8 BSP
<b>2</b>	1/2 BSP

<b>2</b>	<b>Function</b>
	2/2 NC
<b>3</b>	3/2 NC

<b>P</b>	<b>Operator</b>
<b>C</b>	Ball
<b>L</b>	Lever
<b>P</b>	Pilot pressure
<b>R</b>	Roller lever

Flow characteristics

Flow capacities in accordance with ISO6358  
 Flow measured with valve on manifold  
 All pressures = effective pressure



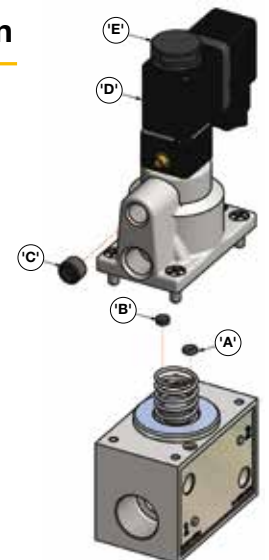
Electrical Information

Power consumption	Inrush	Hold
	AC VA	8.5VA
	DC	4.8 Watt
Rating	100% continuous	
Isolation class	F	
Protection class	IP 65 (P 54) DIN 40 050	
Connection	DIN 43 650 Form B	
Solenoid response	milliseconds at 7 bar	

External pilot supply option

Solenoid pilot operated valves have an internal pilot air supply, but provisions for external pilot supply is provided. To use with external supply interchange 'O'-ring (Item 'A') and Plug (Item 'B') to block off the internal pilot supply. Remove hexagon socket plug (Item 'C') from the external pilot supply port, connecting an air supply as desired.

Orientation of the solenoid coil (Item 'D') can be altered through 90° increments by loosening the diffuser nut (Item 'E').



## Main data for mechanically operated valves, Heavy duty poppet series (NC only)

Symbol	Type	Connection	Actuator	Return	Operating force at 6 bar, N	Weight Kg	Order code
	2/2	G3/8	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	<b>DB122A49</b> <b>DB122AXX</b>
	3/2	G3/8	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	<b>DB123A49</b> <b>DB123AXX</b>
	2/2	G1/2	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	<b>DB222A49</b> <b>DB222AXX</b>
	3/2	G1/2	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	<b>DB223A49</b> <b>DB223AXX</b>
	2/2	G3/8	Air pilot	Spring		0.61	<b>B102P</b>
	3/2	G3/8	Air pilot	Spring		0.61	<b>B103P</b>
	2/2	G1/2	Air pilot	Spring		0.61	<b>B202P</b>
	3/2	G1/2	Air pilot	Spring		0.61	<b>B203P</b>

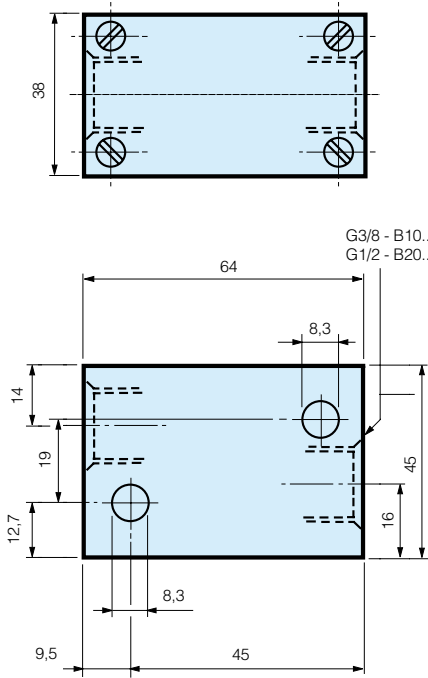
Order electrical connectors for solenoids separately.

## Main data for mechanically operated valves, Heavy duty poppet series (NC only)

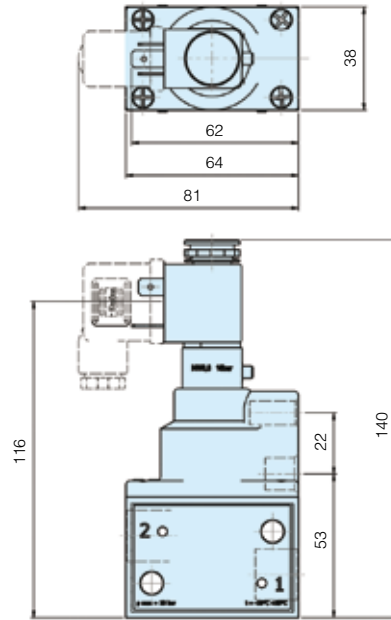
Symbol	Type	Connection	Actuator	Return	Operating force at 6 bar, N	Weight Kg	Order code
	2/2	G3/8	Lever	Lever	22	0.65	<b>B102L</b>
	3/2	G3/8	Lock down	Lever lever	22	0.65	<b>B103L</b>
	2/2	G1/2	Lock down	Lever lever	22	0.65	<b>B202L</b>
	3/2	G1/2	Lock down	Lever lever	22	0.65	<b>B203L</b>
	2/2	G3/8	Roller lever	Spring	36	0.642	<b>B102R</b>
	3/2	G3/8	Roller lever	Spring	36	0.630	<b>B103R</b>
	2/2	G1/2	Roller lever	Spring	36	0.614	<b>B202R</b>
	3/2	G1/2	Roller lever	Spring	36	0.604	<b>B203R</b>
	2/2	G3/8	Ball	Spring	220	0.542	<b>B102C</b>
	3/2	G3/8	Ball	Spring	220	0.532	<b>B103C</b>
	2/2	G1/2	Ball	Spring	220	0.530	<b>B202C</b>
	3/2	G1/2	Ball	Spring	220	0.520	<b>B203C</b>

**Mechanically operated valves - 2/2, 3/2 valves**

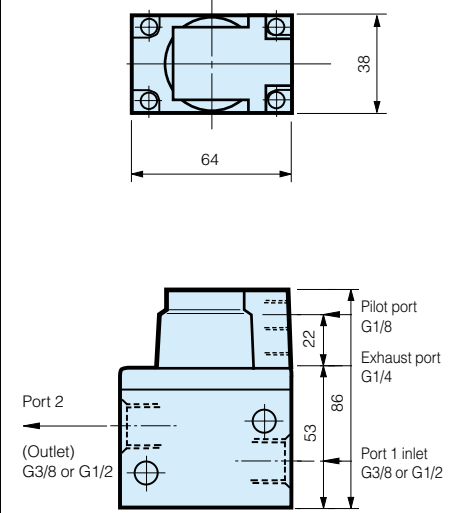
**Basic body dimensions**



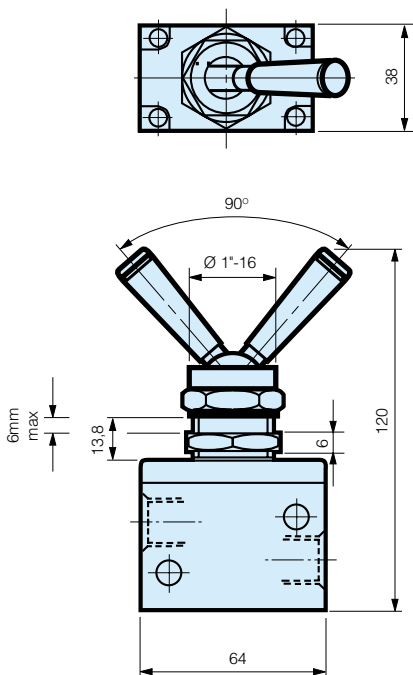
**Solenoid pilot operated spring return**  
 DB122, DB123, DB222, DB223



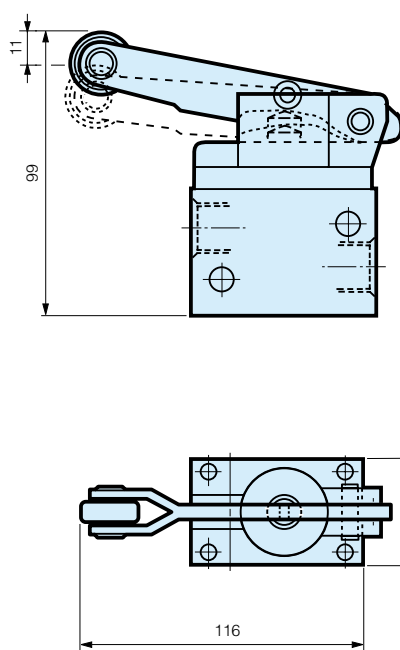
**Air pilot operated spring return**  
 B102P, B103P, B202P, B203P



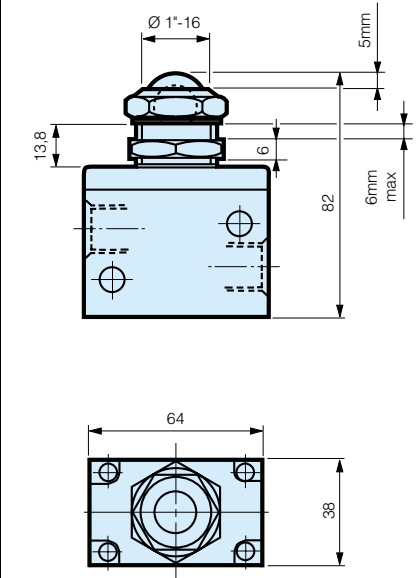
**Lock down lever**  
 B102L, B103L, B202L, B203L



**Roller lever operated spring return**  
 B102R, B103R, B202R, B203R



**Ball operated spring return**  
 B102C, B103C, B202C, B203C



All dimensions in mm unless otherwise stated

## 22mm solenoid operator part numbers and spares

### Solenoid coils for 22mm solenoid operators

Voltage	Order code Form B	Weight (Kg)
12V 60Hz	<b>P2FCB440</b>	0.093
24V 50/60Hz	<b>P2FCB442</b>	0.093
12V DC	<b>P2FCB445</b>	0.093
12V DC Mobile	<b>P2FCB447</b>	0.093
24v DC Mobile	<b>P2FCB448</b>	0.093
24V DC	<b>P2FCB449</b>	0.093
48V DC	<b>P2FCB451</b>	0.093
110V/50Hz, 120V/60Hz	<b>P2FCB453</b>	0.093
230V/50Hz, 230V/60Hz	<b>P2FCB457</b>	0.093

### Spare Solenoid Nuts

Valves with vented exhaust are fitted with diffuser plastic nut

Order Code
<b>P2FND</b>

### Spare Solenoid Operators

Solenoid pilot operator 22mm NC, Normal duty (Max Operating pressure 10bar, Temp -10°C to +50°C)

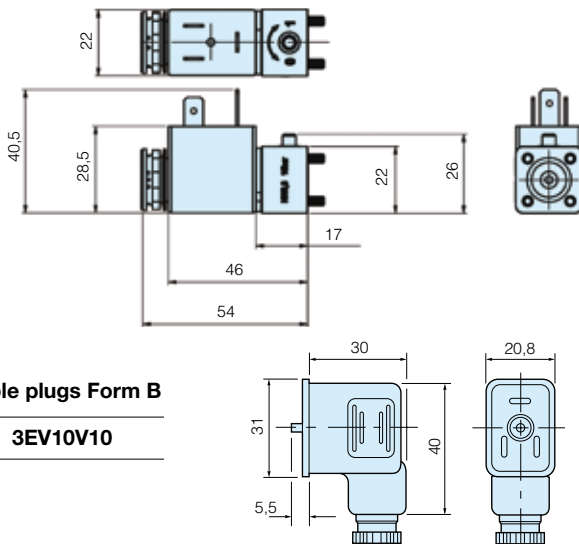
Order code (with locking bi-stable m/o)	Weight Kg
<b>P2FP13N4C</b>	0.05
Order code (with Non-locking monostable m/o)	Weight Kg
<b>P2FP13N4D</b>	0.05
Order code (with no m/o)	Weight Kg
<b>P2FP13N4A</b>	0.05

**Note.**

The operators are supplied with mounting screws and interface 'O' rings. **Coils and connectors must be ordered separately.**

### Cable Plug Dimensions (mm)



Solenoid operators P2E-•V...

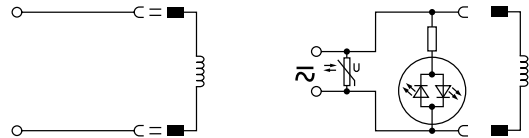


Cable plugs Form B

**3EV10V10**

### Solenoid Connectors / Cable Plugs EN175301-803

Description	Order code 22mm Industrial Form B	
With standard screw Standard IP65 without flying lead	<b>3EV10V10</b>	
	With LED and protection 24V AC/DC	<b>3EV10V20-24</b>
	With LED and protection 110V AC	<b>3EV10V20-110</b>
	With LED and protection 230V AC	<b>3EV10V20-230</b>
	24V AC/DC, 5m cable LED and protection IP65	<b>3EV10V20-24L5</b>
	110V AC/DC, 5m cable LED and protection IP65	<b>3EV10V20-110L5</b>
230V AC, 5m cable LED and protection IP65	<b>3EV10V20-230L5</b>	



**3EV10V10**

**3EV10V20-24 3EV10V20-24L5**  
**3EV10V20-110 3EV10V20-110L5**  
**3EV10V20-230 3EV10V20-230L5**

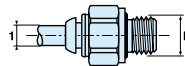
### Accessories

#### Sintered bronze series silencers



Port	Order code	Pack Qty
G1/4	<b>P6M-BAA2</b>	1

#### Male straight connectors - Parallel thread



Tube Ø1	Thread B	Order code	Box Qty
4	1/8	<b>F4PMB4-1/8</b>	20
6	1/8	<b>F4PMB6-1/8</b>	30
6	1/4	<b>F4PMB6-1/4</b>	30
8	1/8	<b>F4PB8-1/8</b>	40
8	1/4	<b>F4PB8-1/4</b>	30
8	3/8	<b>F4PB8-3/8</b>	20
10	1/4	<b>F4PB10-1/4</b>	20
10	3/8	<b>F4PB10-3/8</b>	20
10	1/2	<b>F4PB10-1/2</b>	10
12	1/4	<b>F4PB12-1/4</b>	10
12	3/8	<b>F4PB12-3/8</b>	10
12	1/2	<b>F4PB12-1/2</b>	10
14	3/8	<b>F4PB14-3/8</b>	10
14	1/2	<b>F4PB14-1/2</b>	10