

Heavy duty poppet valves

2/2 & 3/2 - G³/₈" & G¹/₂"

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 G³/₈" and G¹/₂" port sizes. This means that each actuator is available in four configurations i.e. 3/8" ports 2/2 or 3/2 and G¹/₂" 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

Working pressure	0 - 10 bar
Working temperature	-10°C to +80°C
Solenoid version	-10°C to +50°C
Minimum pilot pressure	1.9 bar @ 6 bar supply
Response time (solenoid energised)	14 msec
Response time (solenoid de-energised)	75 msec

Flow capacities in accordance with ISO6358

	B102-B103	B202-B203
Flow;	C = 7,54	C = 10,75 NI/s x bar
	b = 0,29	b = 0,24
	Qn = 33 l/s	Qn = 43 l/s
	Qmax = 54 l/s	Qmax = 75 l/s
	Cv = 2,65	Cv = 3,20

Material specification

Body	Zinc die cast
Roller	Zinc plated steel
Mechanical arm	Zinc plated steel
Poppet	Stainless steel
Seals	Nitrile
Spring	Stainless steel
Bush	Aluminium
Piston	Aluminium

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/m³, which is what a standard compressor with a standard filter gives.

ISO 8573-1 quality classes

Quality class	Pollution particle size (µm)	max. concentration (mg/m ³)	Water max. press. dew point (°C)	Oil max. concentration (mg/m ³)
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

D

B

Valve family	
DB	HD poppet solenoid operated

1

2

2

Thread port	
1	3/8 BSP
2	1/2 BSP

Air supply to solenoid	
2	Internal

Function	
2	2/2 NC
3	3/2 NC

A

4

9

Overrides	
A	None
C	Flush - Locking
D	Extended - non locking

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

¹ 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

Valve family	
B	HD poppet manual & mechanical

1

0

Thread port	
1	3/8 BSP
2	1/2 BSP

2

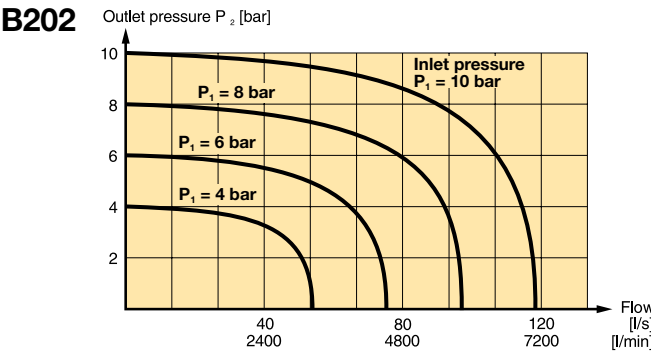
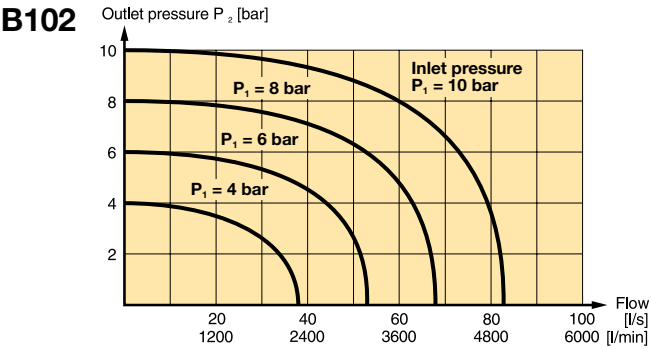
Function	
2	2/2 NC
3	3/2 NC

P

Operator	
C	Ball
L	Lever
P	Pilot pressure
R	Roller lever

Flow characteristics

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



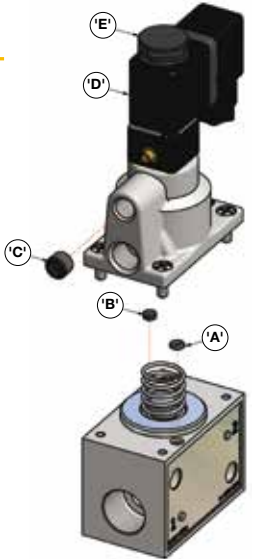
Electrical Information

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	DB122A49 DB122AXX
	3/2	G3/8	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	DB123A49 DB123AXX
	2/2	G1/2	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	DB222A49 DB222AXX
	3/2	G1/2	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	DB223A49 DB223AXX
	2/2	G3/8	Air pilot	Spring		0.61	B102P
	3/2	G3/8	Air pilot	Spring		0.61	B103P
	2/2	G1/2	Air pilot	Spring		0.61	B202P
	3/2	G1/2	Air pilot	Spring		0.61	B203P

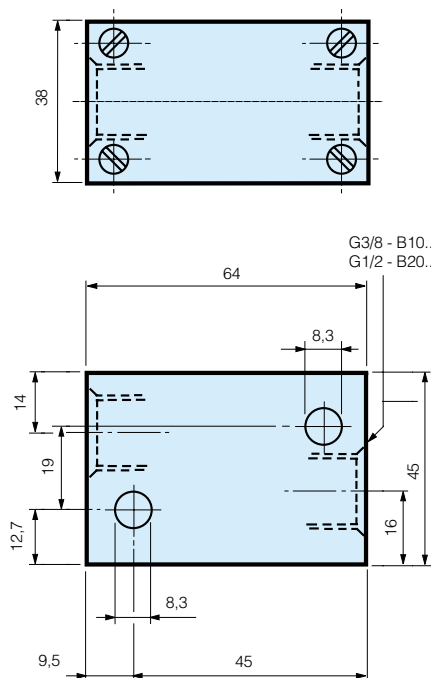
Order electrical connectors for solenoids separately.

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

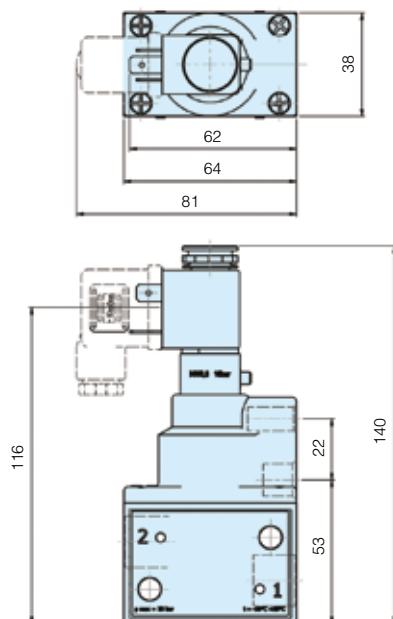
Symbol	Type	Connection	Actuator	Return	Operating force at 6 bar, N	Weight Kg	Order code
	2/2	G3/8	Lever	Lever	22	0.65	B102L
	3/2	G3/8	Lock down	Lever lever	22	0.65	B103L
	2/2	G1/2	Lock down	Lever lever	22	0.65	B202L
	3/2	G1/2	Lock down	Lever lever	22	0.65	B203L
	2/2	G3/8	Roller lever	Spring	36	0.642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

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

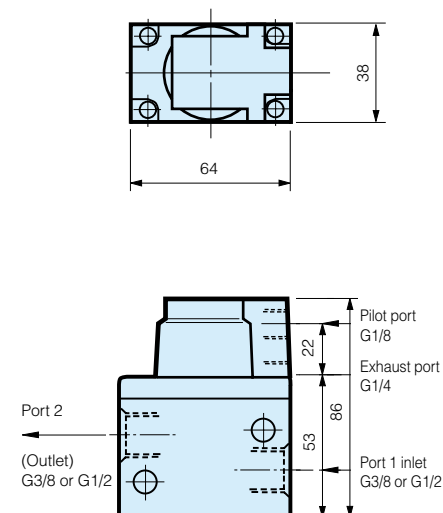
Basic body dimensions



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

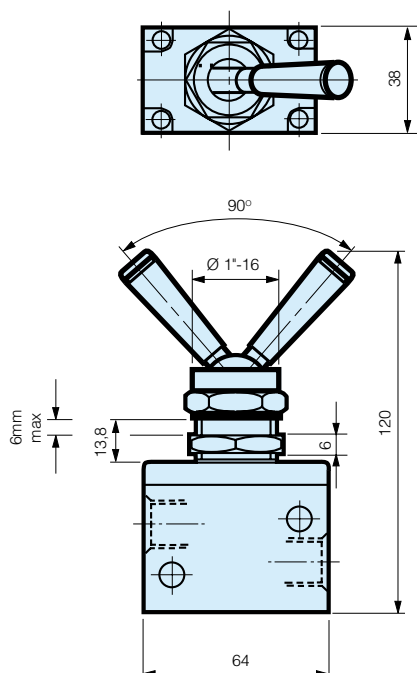


Air pilot operated spring return B102P, B103P, B202P, B203P



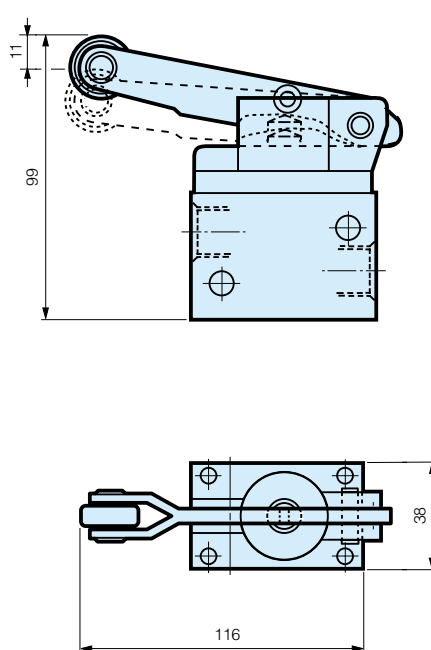
Lock down lever

B102L, B103L, B202L, B203L



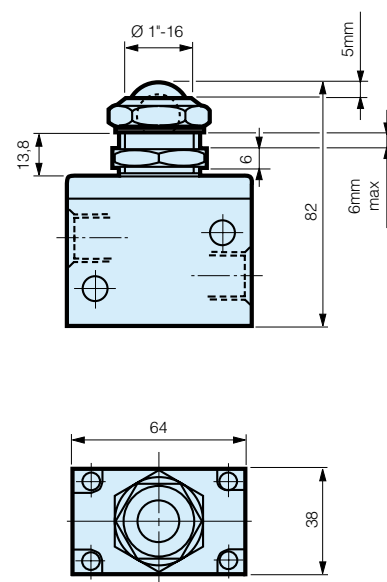
Roller lever operated spring return

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	P2FCB440	0.093
24V 50/60Hz	P2FCB442	0.093
12V DC	P2FCB445	0.093
12V DC Mobile	P2FCB447	0.093
24v DC Mobile	P2FCB448	0.093
24V DC	P2FCB449	0.093
48V DC	P2FCB451	0.093
110V/50Hz, 120V/60Hz	P2FCB453	0.093
230V/50Hz, 230V/60Hz	P2FCB457	0.093

Spare Solenoid Nuts

Valves with vented exhaust are fitted with diffuser plastic nut

Order Code
P2FND

Spare Solenoid Operators

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

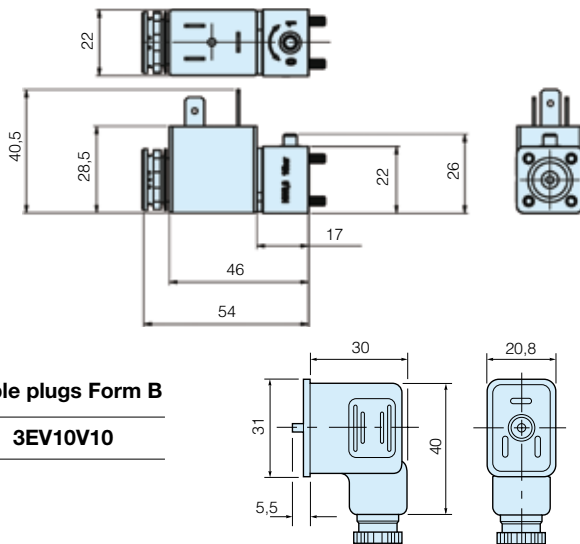
Order code (with locking bi-stable m/o)	Weight Kg
P2FP13N4C	0.05
Order code (with Non-locking monostable m/o)	Weight Kg
P2FP13N4D	0.05
Order code (with no m/o)	Weight Kg
P2FP13N4A	0.05

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...

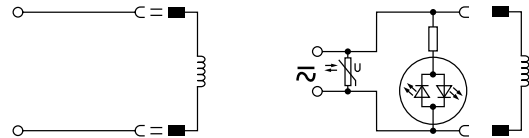


Cable plugs Form B

3EV10V10

Solenoid Connectors / Cable Plugs EN175301-803

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



3EV10V10

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

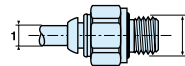
Accessories

Sintered bronze series silencers



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

Male straight connectors - Parallel thread



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