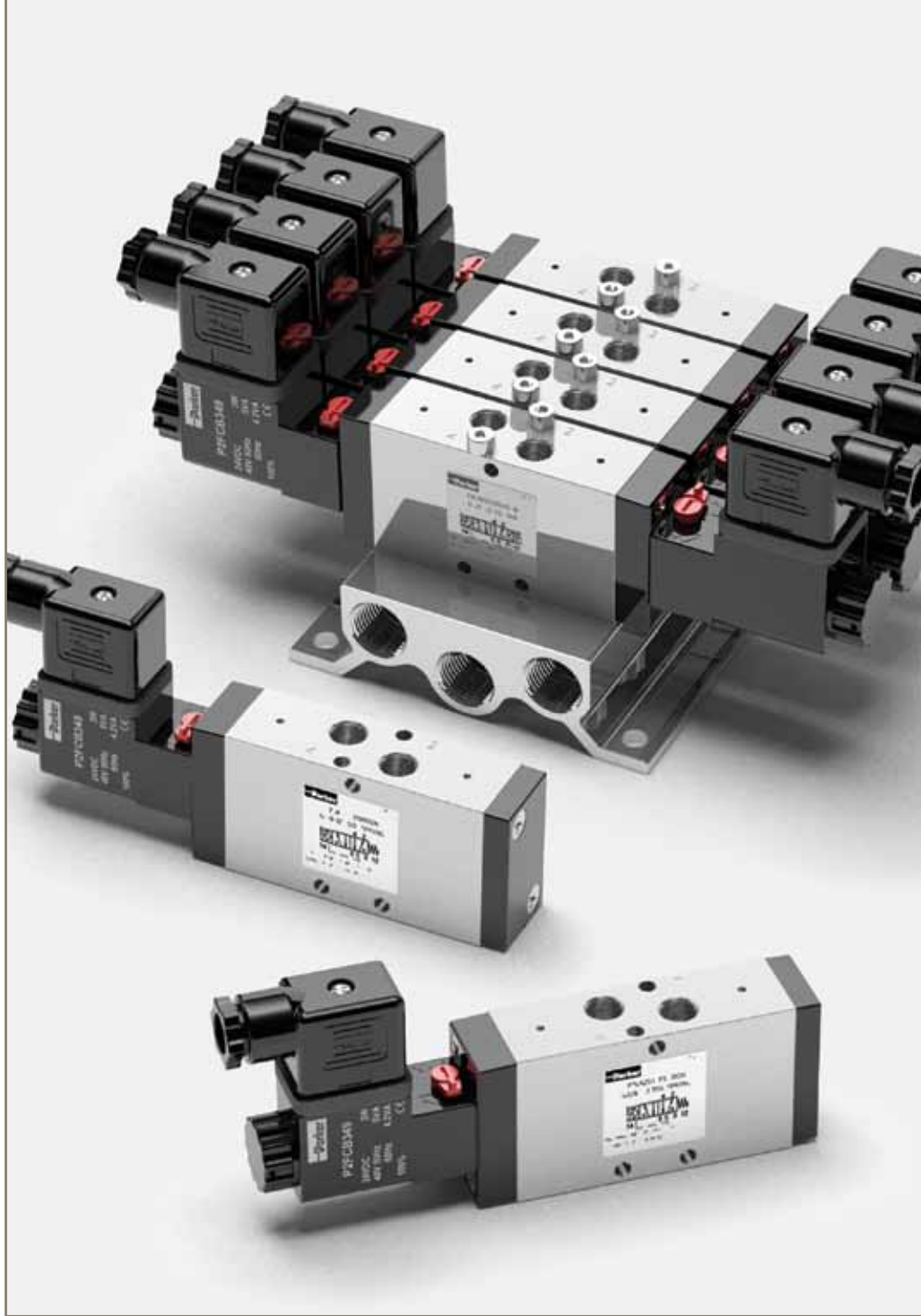




aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
**pneumatics**  
process control  
sealing & shielding



# Pneumatic Valves Viking Lite Series


G1/8 - G3/8 body ported

Catalogue PDE2658TC-ASIA November 2011




ENGINEERING YOUR SUCCESS.


Material Specification.....	3 - 6
Flow Characteristics.....	7
Main Data Electrically Actuated Directional Control Valves.....	8
Dimensions - P2LAZ / P2LBZ / P2LCZ.....	9 - 14
P2LA, Accessory Order Codes .....	16
P2LB, Accessory Order Codes .....	15 - 17
Manifold Dimensions.....	15 - 17
Solenoid Valves - 22mm.....	18
Solenoid Valves Technical Data - 22mm.....	19
Solenoid Connectors + Cable Plugs.....	19



**Important !**  
 Before carrying out any service work, ensure that the valve and manifold have been vented. Remove the primary supply air hose to ensure total disconnection of the air supply before dismantling valves or blank connection blocks.



**NB !**  
 All technical data in this catalogue is typical only. The air quality is decisive for the valve life: see ISO 8573.



**WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.  
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# Viking Lite ...

## robust, versatile high performance with long service life

The Viking Lite valve range is robust, versatile and combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

Designed to operate with pressures up to 10 bar in temperatures  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .

## Viking Lite range

**P2LAZ, G1/8 - Cv = 0,6**

**P2LBZ, G1/4 - Cv = 1,5**

**P2LCZ, G3/8 - Cv = 2,5**

### Wear compensating system

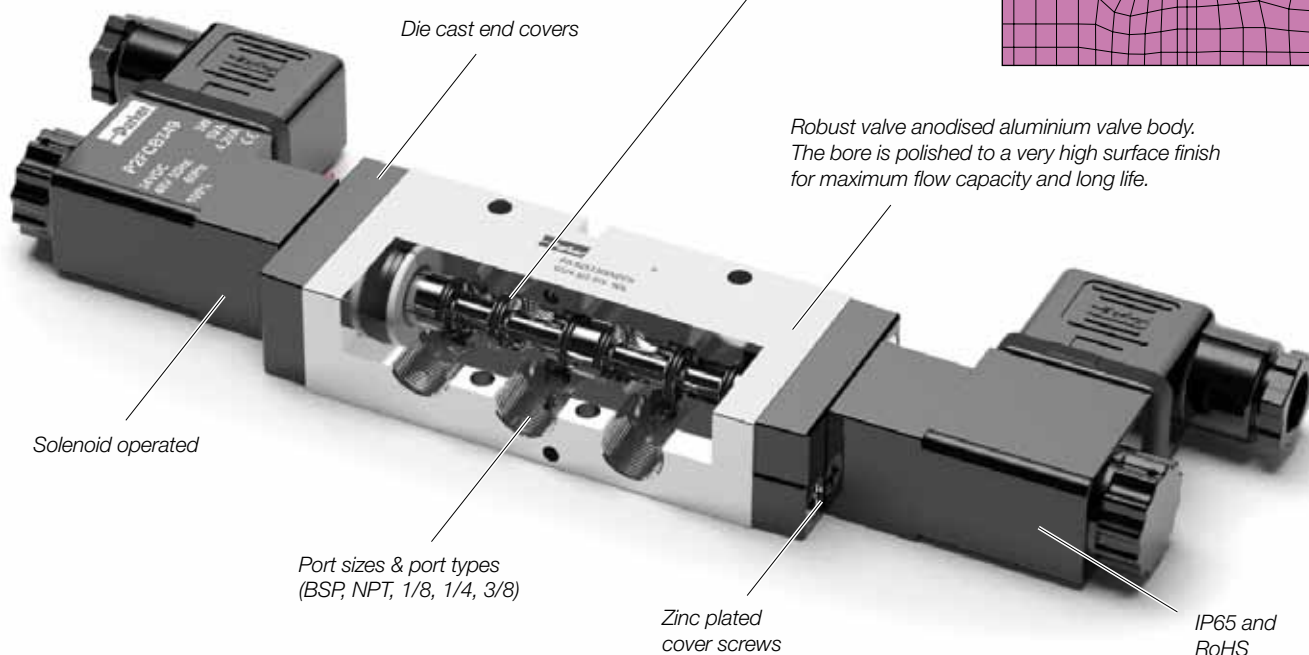
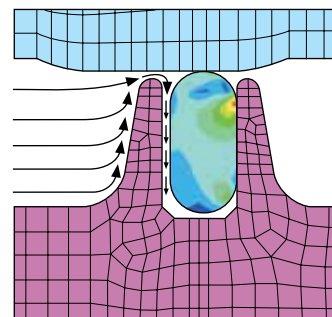
The Viking Lite valve range is robust, versatile and combines high performance with compact installation dimensions. The choice of G1/8, G1/4 or G3/8 port sizes provide large flow capacity, short change-over times. Low change-over pressure is also an important characteristic of this valve range.

Viking Lite valves are fitted with dynamic bi-directional spool seals suitable for pressures up to 10 bar, in ambient temperatures  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ . Under pressure radial expansion of the seal occurs to maintain sealing contact with the valve bore.

This sealing method reduces friction gives lower pilot pressures, providing fast response and less wear. Valves do not require lubrication in operation but they can also be installed in systems that are lubricated.



Wear Compensating System



# Viking Lite ...

rust and corrosion resistant,  
high reliability with flexible installation



#### **Rust and corrosion resistant designs.**

Viking Lite valves are made of anodized aluminium, for good corrosion resistance. The smooth design, with no dirt-collecting pockets, makes the valve suitable for most environments.

#### **High reliability**

Viking Lite valves easily comply with the requirements for the component reliability in accordance with EU Machinery Directive standards EN292-2 and EN983. The valves are designed for use with or without supplementary lubrication.

#### **Compact installation dimensions - flexible installation**

Compact dimensions direct body porting and integral mounting holes are all features of the Viking Lite range.

In addition to single valve installation, the Viking Lite valves may be installed on manifolds so that the valves have a common supply and manifolded exhausts.

#### **Manifold bar installation**

A manifold bar, with common ducts for ports 1, 3 and 5 gives simple, time saving and easily serviced installation. Manifold bars are available in several different sizes, with space for between 2 and 14 valves.

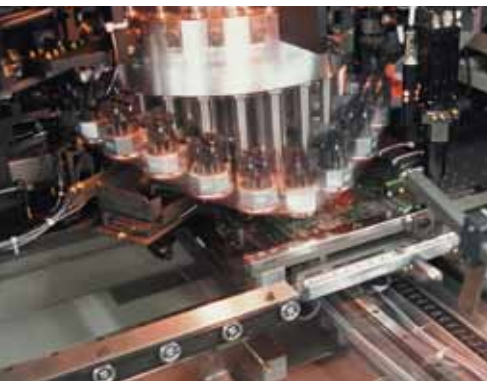
#### **Pressure bar installation**

A pressure bar for common primary air supply gives a simple, robust, time saving and easily serviced installation. When pressure bars are used, restrictor-silencers can be installed in the exhaust ports of each valve, for individual adjustment of cylinder/air motor speed. Pressure bars are available in a number of different sizes, with space ranging from 2 to 10 valves.

#### **Extreme applications**

For extreme applications, -40 degrees and up to 16 bar pressure use

**VikingXtreme valves :**  
see catalogue PDE2569TCUK



**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**

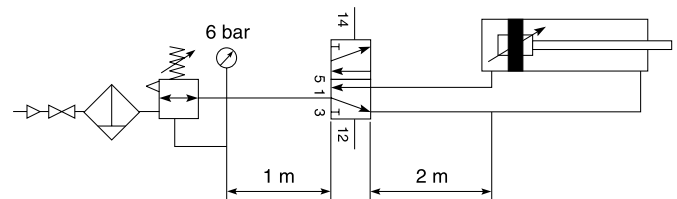
Quality class	Pollution		Water max. press. dew point (°C)	Oil max. concentration (mg/m <sup>3</sup> )
	particle size (µm)	max. concentration (mg/m <sup>3</sup> )		
1	0,1	0,1	-70	0,01
2	1	1	-40	0,1
3	5	5	-20	1,0
4	15	8	+3	5,0
5	40	10	+7	25
6	-	-	+10	-

**Typical cylinders speeds which can be achieved with Viking valves and different tube sizes.**

In the chart below you can find the suitable valves, tubes etc. for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than in the chart.

Following data is valid:

- Supply pressure : min 7,0 bar
- Regulator pressure setting : 6,0 bar
- Pipe length between air treatment unit and valve : max 1 m
- Pipe length between valve and cylinder : max 2 m



Cylinder bore	<20	20-32	40-50	63	80	100	125
Cylinder port	M5	G1/8	G1/4	G3/8	G3/8	G1/2	G1/2
Tubing Ext/Int	4/2.7	6/4	8/6	10/8	10/8	12/9	14/11
			6/4	8/6	12/9	14/11	
P2LAZ	G1/8	G1/8	G1/8	G1/8	G1/8		
P2LBZ	G1/4	G1/4	G1/4	G1/4	G1/4	G1/4	
P2LCZ			G3/8	G3/8	G3/8	G3/8	G3/8

Cylinder speed < 0,5 m/s	Cylinder speed < 1 m/s
Oversized	Cylinder speed > 1 m/s

## Material specification

### P2LAZ

#### Valve

Valve body	Anodised aluminium
End covers	Anodised aluminium
Spool	Aluminium
Piston	Acetal plastic/ Anodised aluminium
End cover sealings	Nitrile rubber
End cover screws	Zinc plated steel
Springs	Stainless steel
Mounting screws for solenoid	Stainless steel
Spool seals	Nitrile

#### Accessories

Manifold bar	Anodised aluminium
Pressure bar	Anodised aluminium

### P2LBZ

#### Valve

End cover sealings	Nitrile rubber
End cover screws	Zinc plated steel
Spool seals	Nitrile

#### Accessories

Manifold bar	Anodised aluminium
Pressure bar	Anodised aluminium

### P2LCZ

#### Valve

Valve body	Anodised aluminium
End covers	Anodised aluminium
Spool	Aluminium
Piston	Acetal plastic/ Anodised aluminium
End cover sealings	Nitrile rubber
End cover screws	Zinc plated steel
Springs	Stainless steel
Mounting screws for solenoid	Stainless steel
Spool seals	Nitrile

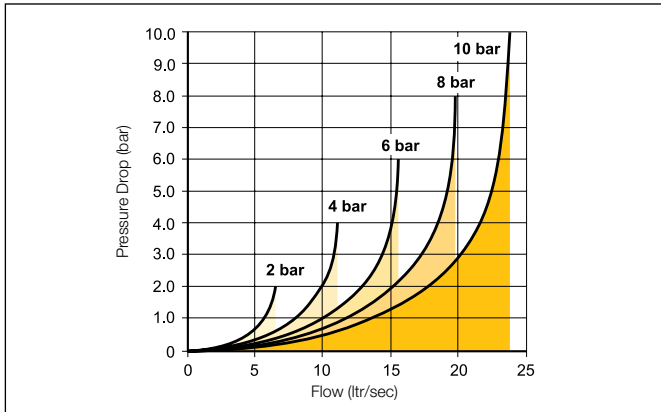
**Flow characteristics**

Flow capacities in accordance with ISO6358

All pressures = effective pressure

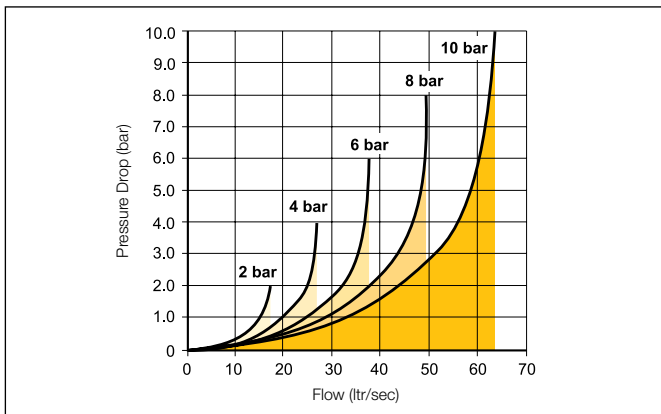
The curves in the diagram below are typical only

**Technical Data P2LAZ**



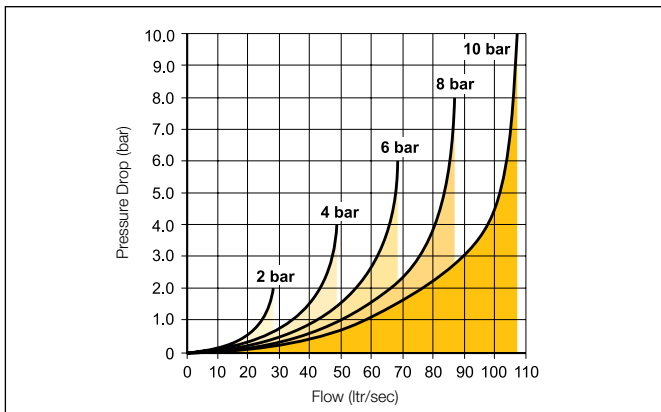
Port size	G1/8
Maximum Operating pressure	10 bar
Working temperature.	-10°C to + 50°C
Flow (acc. to ISO 6358)	c = 2,2 NI/s x bar b = 0,3 Qn = 10,1 l/s Qmax = 15,6 l/s Cv = 0,6

**Technical Data P2LBZ**



Port size	G1/4
Maximum Operating pressure	10 bar
Working temperature.	-10°C to + 50°C
Flow (acc. to ISO 6358)	c = 5,4 NI/s x bar b = 0,3 Qn = 24,6 l/s Qmax = 37,8 l/s Cv = 1,5

**Technical Data P2LCZ**

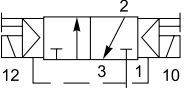
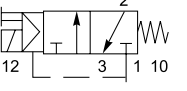


Port size	G3/8
Maximum Operating pressure	10 bar
Working temperature.	-10°C to + 50°C
Flow (acc. to ISO 6358)	c = 9,7 NI/s x bar b = 0,3 Qn = 41,5 l/s Qmax = 68,3 l/s Cv = 2,5

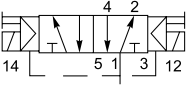
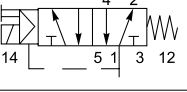
## Solenoid operated directional control valves

Internal supply to solenoid valve(s) via port 1.

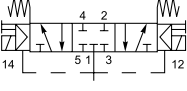
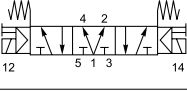
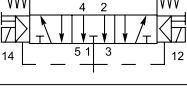
## 3/2 valves, internal air, standard temperature

Symbol	Size	Actuation	Return	Min Operating Pressure (bar)	Changeover time (ms) at 6 bar @20°C actua./return	Weight Kg	Order code Without coil	Order code With 24V DC (22mm coil)
	G1/8	Electric signal	Electric signal	1,5	10/10	0,18	<b>P2LAZ311EENDCN</b>	<b>P2LAZ311EENDCB49</b>
	G1/4			1,5	12/12	0,18	<b>P2LBZ312EENDCN</b>	<b>P2LBZ312EENDCB49</b>
	G3/8			1,5	17/17	0,36	<b>P2LCZ313EENDCN</b>	<b>P2LCZ313EENDCB49</b>
	G1/8	Electric signal	Spring	3,0	15/35	0,16	<b>P2LAZ311ESNDCN</b>	<b>P2LAZ311ESNDCB49</b>
	G1/4			3,0	18/45	0,16	<b>P2LBZ312ESNDCN</b>	<b>P2LBZ312ESNDCB49</b>
	G3/8			3,0	27/75	0,35	<b>P2LCZ313ESNDCN</b>	<b>P2LCZ313ESNDCB49</b>

## 5/2 valves, internal air, standard temperature

Symbol	Size	Actuation	Return	Min Operating Pressure (bar)	Changeover time (ms) at 6 bar @20°C actua./return	Weight Kg	Order code Without coil	Order code With 24V DC (22mm coil)
	G1/8	Electric signal	Electric signal	1,5	10/10	0,19	<b>P2LAZ511EENDCN</b>	<b>P2LAZ511EENDCB49</b>
	G1/4			1,5	12/12	0,21	<b>P2LBZ512EENDCN</b>	<b>P2LBZ512EENDCB49</b>
	G3/8			1,5	17/17	0,44	<b>P2LCZ513EENDCN</b>	<b>P2LCZ513EENDCB49</b>
	G1/8	Electric signal	Spring	3,0	15/35	0,17	<b>P2LAZ511ESNDCN</b>	<b>P2LAZ511ESNDCB49</b>
	G1/4			3,0	18/45	0,20	<b>P2LBZ512ESNDCN</b>	<b>P2LBZ512ESNDCB49</b>
	G3/8			3,0	27/75	0,43	<b>P2LCZ513ESNDCN</b>	<b>P2LCZ513ESNDCB49</b>

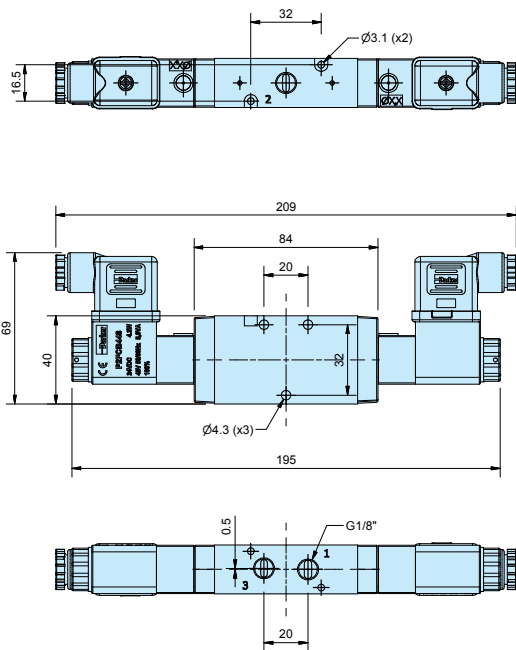
## 5/3 valves, internal air, standard temperature

Symbol	Size	Actuation	Return	Min Operating Pressure (bar)	Changeover time (ms) at 6 bar @20°C actua./return	Weight Kg	Order code Without coil	Order code With 24V DC (22mm coil)
	G1/8	Electric/Electric	Self centring	3,0	18/40	0,26	<b>P2LAZ611EENDCN</b>	<b>P2LAZ611EENDCB49</b>
	G1/4		Closed	3,0	22/55	0,28	<b>P2LBZ612EENDCN</b>	<b>P2LBZ612EENDCB49</b>
	G3/8		Centre	3,0	30/90	0,60	<b>P2LCZ613EENDCN</b>	<b>P2LCZ613EENDCB49</b>
	G1/8	Electric/Electric	Self centring	3,0	18/40	0,26	<b>P2LAZ711EENDCN</b>	<b>P2LAZ711EENDCB49</b>
	G1/4		Presurised	3,0	22/45	0,28	<b>P2LBZ712EENDCN</b>	<b>P2LBZ712EENDCB49</b>
	G3/8		Centre	3,0	30/90	0,60	<b>P2LCZ713EENDCN</b>	<b>P2LCZ713EENDCB49</b>
	G1/8	Electric/Electric	Self centring	3,0	18/40	0,26	<b>P2LAZ811EENDCN</b>	<b>P2LAZ811EENDCB49</b>
	G1/4		Vented	3,0	22/45	0,28	<b>P2LBZ812EENDCN</b>	<b>P2LBZ812EENDCB49</b>
	G3/8		Centre	3,0	30/90	0,60	<b>P2LCZ813EENDCN</b>	<b>P2LCZ813EENDCB49</b>

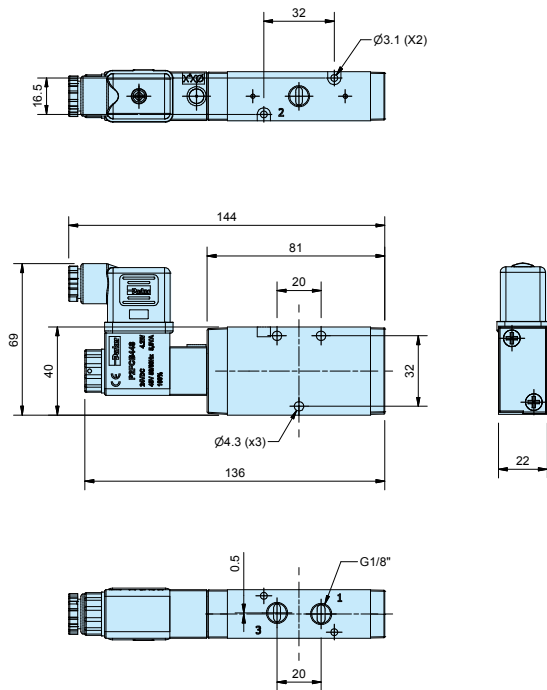


Dimensions

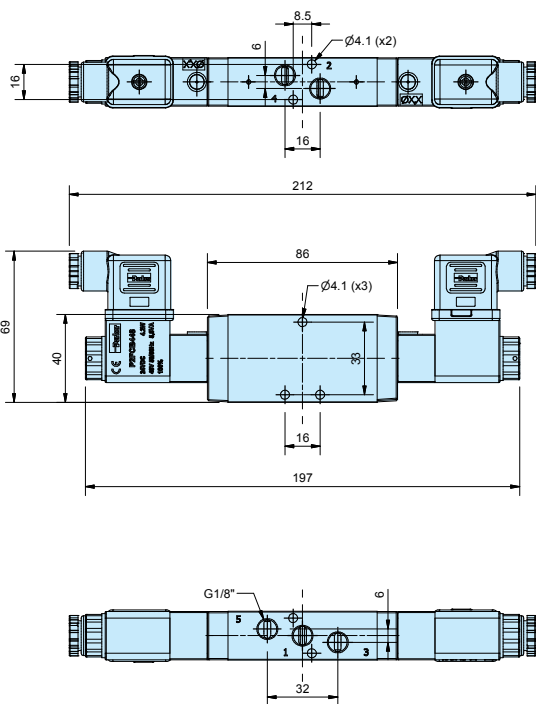
**P2LAZ 3/2**  
Solenoid / Solenoid



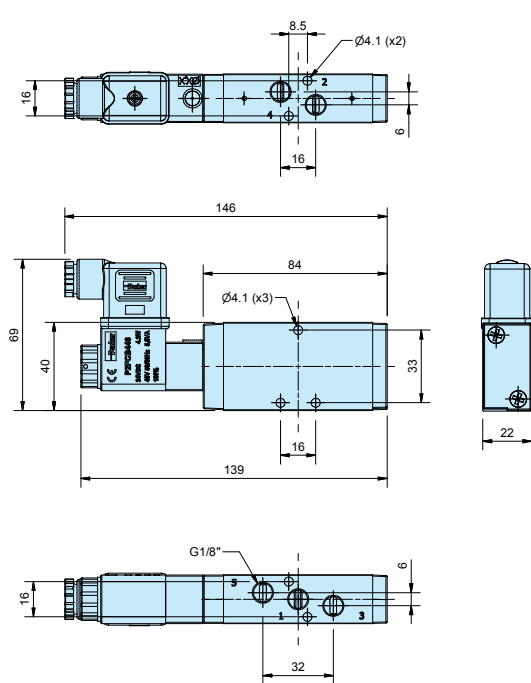
**P2LAZ 3/2**  
Solenoid / Spring



**P2LAZ 5/2**  
Solenoid / Solenoid



**P2LAZ 5/2**  
Solenoid / Spring



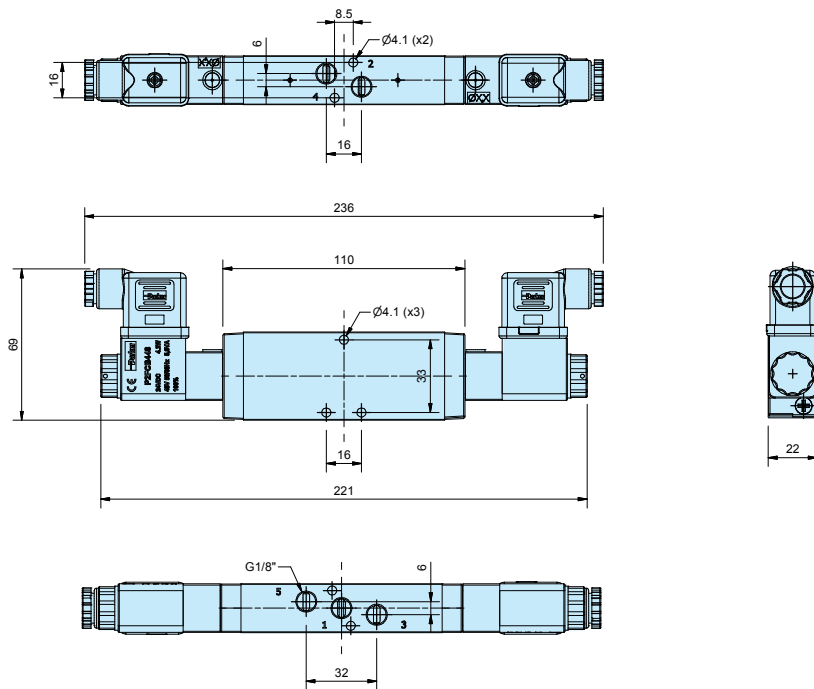
**Solenoid valves**

Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

**Dimensions**

**P2LAZ 5/3**

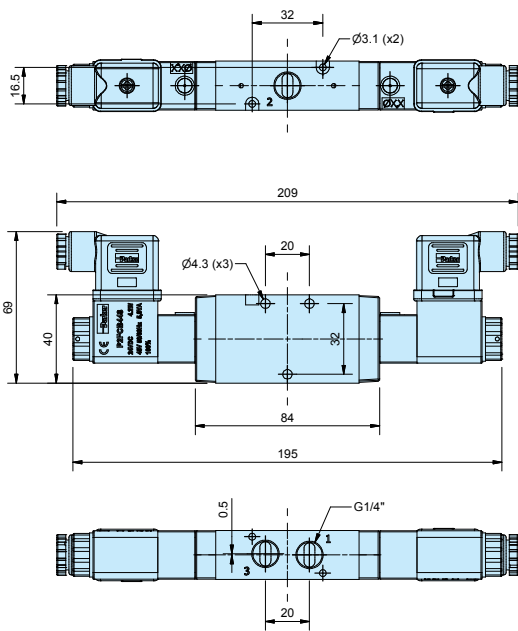
**Solenoid / Solenoid**



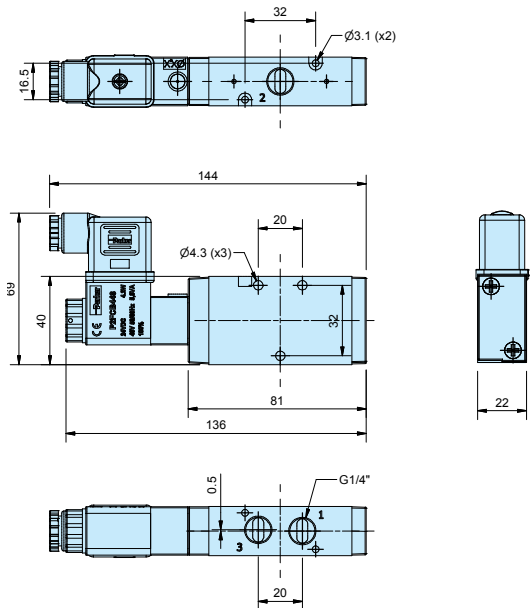
**Solenoid valves**  
 Solenoid valves and cable plugs must be ordered separately.  
 One pilot valve is required for each E (NDCN only) in the valve order code.

Dimensions

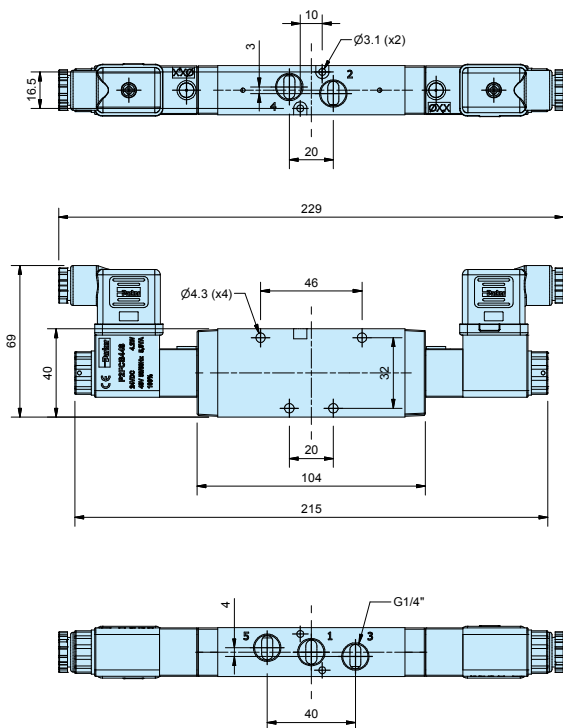
**P2LBZ 3/2**  
Solenoid / Solenoid



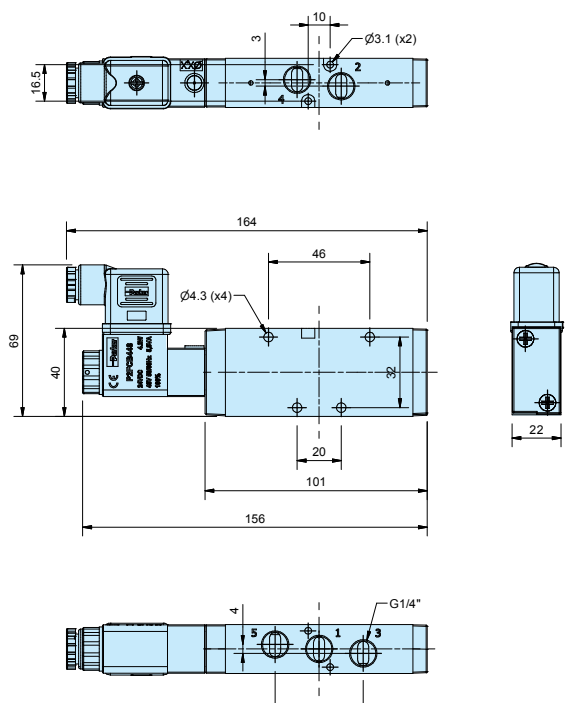
**P2LBZ 3/2**  
Solenoid / Spring



**P2LBZ 5/2**  
Solenoid / Solenoid



**P2LBZ 5/2**  
Solenoid / Spring



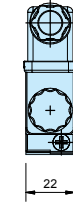
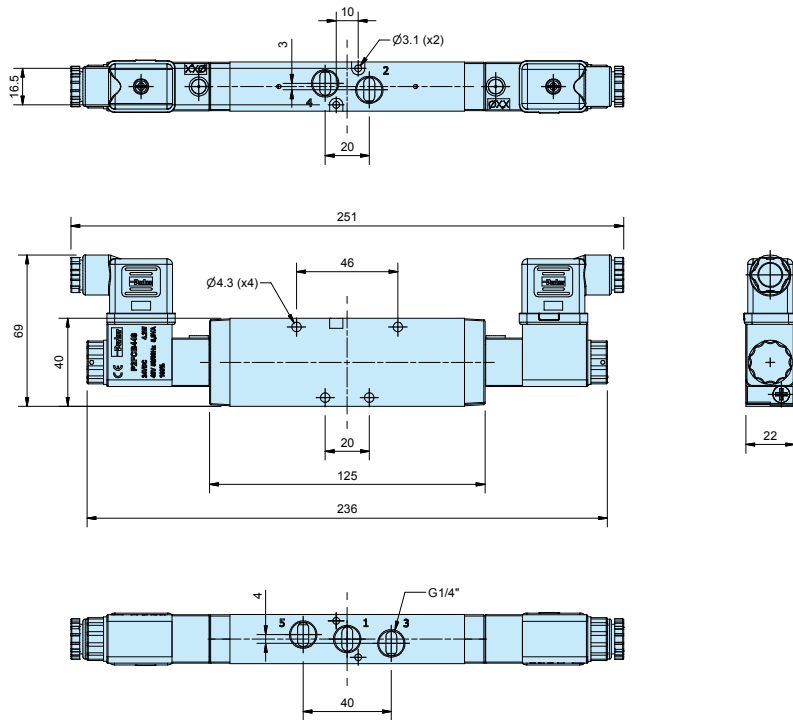
**Solenoid valves**

Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

## Dimensions

## P2LBZ 5/3

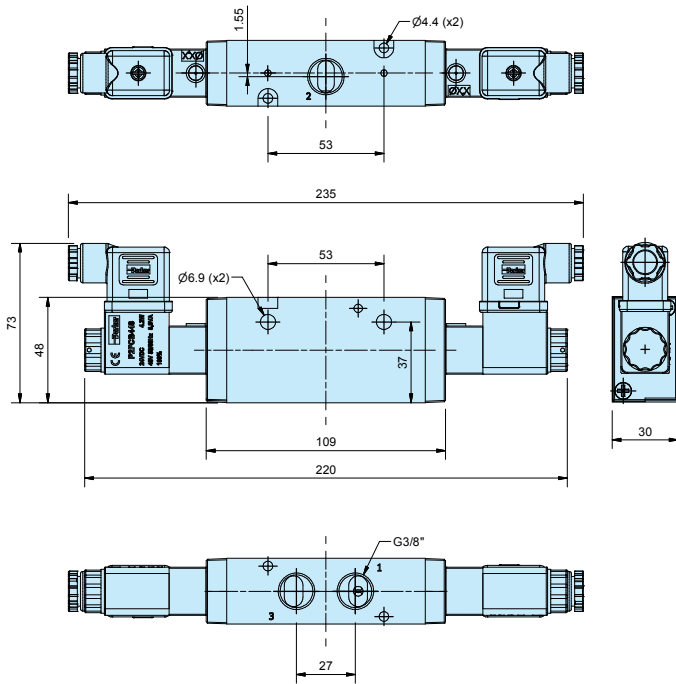
## Solenoid / Solenoid

**Solenoid valves**

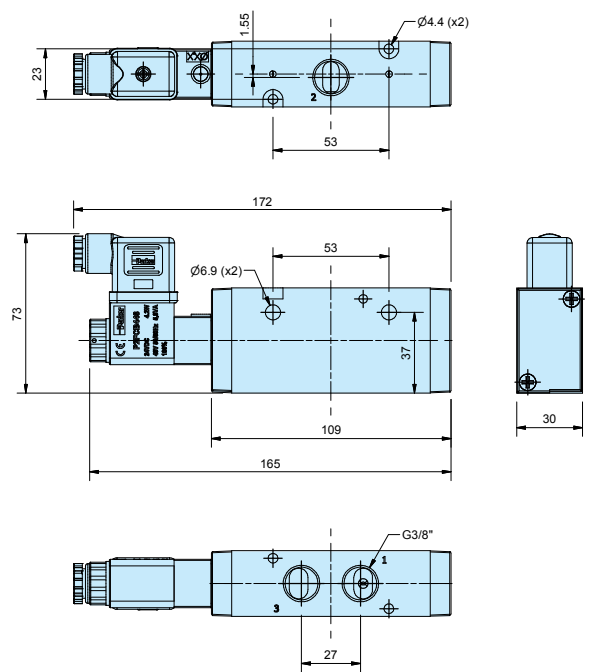
Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

Dimensions

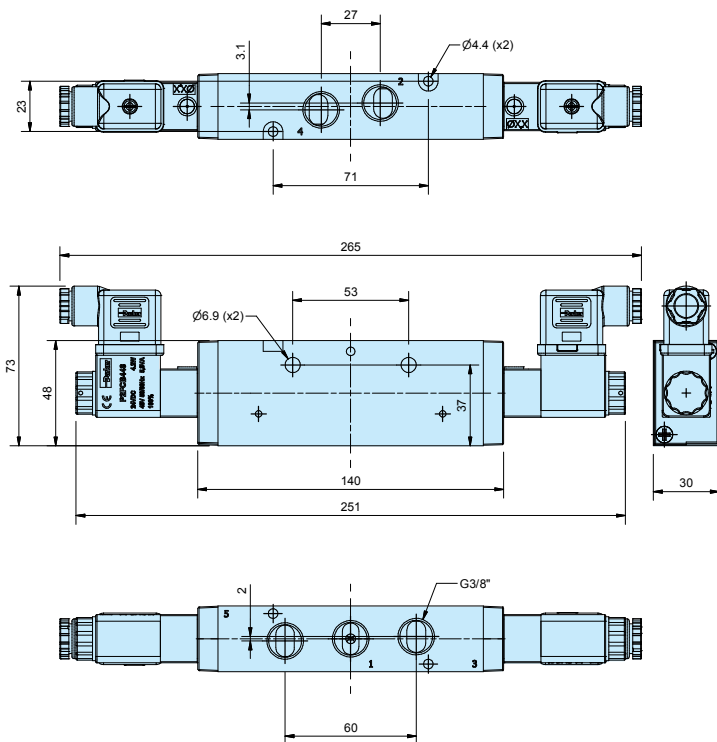
**P2LCZ 3/2**  
Solenoid / Solenoid



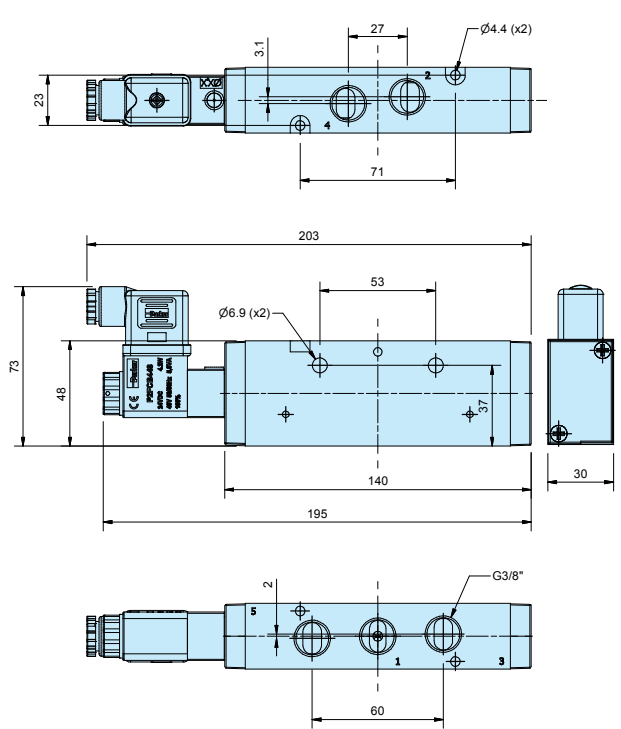
**P2LCZ 3/2**  
Solenoid / Spring



**P2LCZ 5/2**  
Solenoid / Solenoid



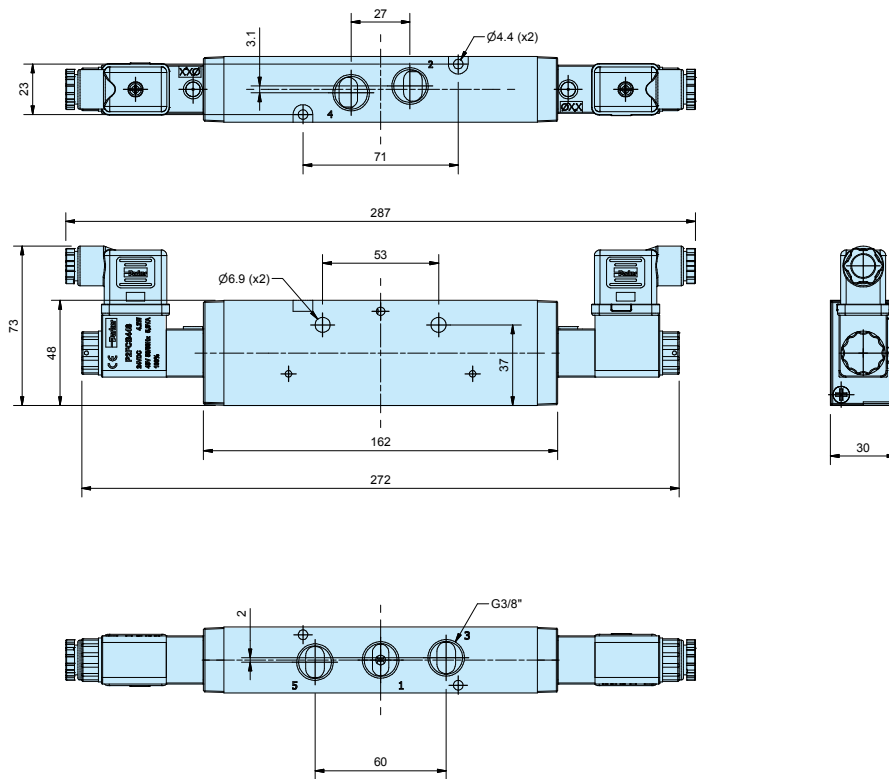
**P2LCZ 5/2**  
Solenoid / Spring

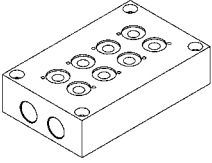
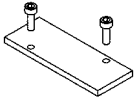


Dimensions

P2LCZ 5/3

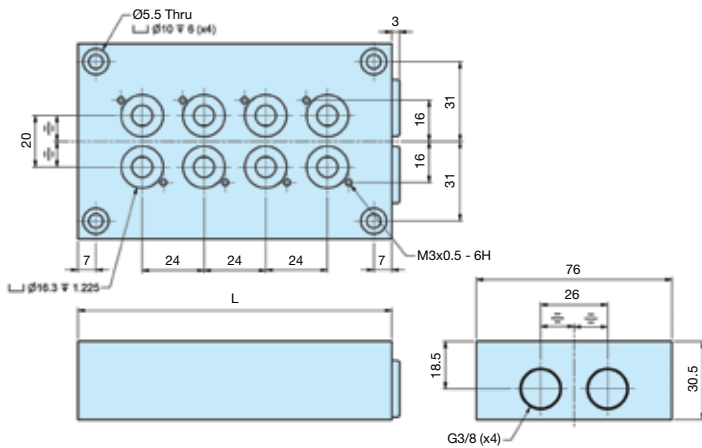
Solenoid / Solenoid



Accessories	Type P2LA / P2LB 3/2 valves	Weight kg	Order code
	<b>Manifold bar, P2LB</b> incl. fasteners and O-ring. G3/8 For 2 valves For 4 valves For 6 valves For 8 valves For 10 valves	0,38 0,64 0,89 1,15 1,40	<b>91213202SXZ</b> <b>91213204SXZ</b> <b>91213206SXZ</b> <b>91213208SXZ</b> <b>91213210SXZ</b>
		<b>Blanking plate</b> for Manifold bar	0,10 <b>912132BPSXZ</b>

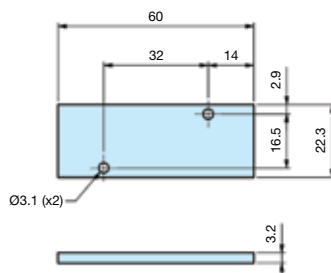
**Dimensions**

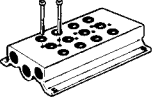

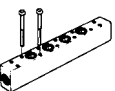
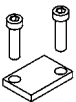



**Manifold bar**



No. of valves	L mm
2	74
4	122
6	170
8	218
10	266

**Blanking plate for manifold bar, P2LB**

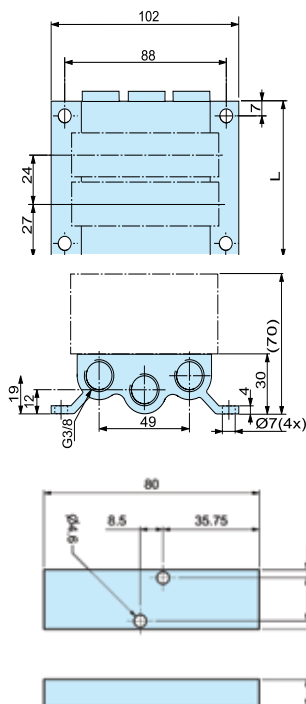


Accessories	Type P2LA 5/2 valves	Weight kg	Order code
	<b>Manifold bar, P2LA</b> including seals, mounting screws. G3/8 For 4 valves For 6 valves For 8 valves For 10 valves For 12 valves For 14 valves	0,48 0,63 0,80 0,98 1,10 1,23	9121658075 9121658076 9121658077 9121658078 9121658079 9121658099
	<b>Blanking plate, P2LA</b> for Manifold bar	0,05	9121658063
	<b>Pressure bar, P2LA</b> for common air supply incl. O-rings and mounting screws. G1/4 For 2 valves For 4 valves For 6 valves For 8 valves	0,13 0,20 0,26 0,33	9121658070 9121658071 9121658072 9121658073
	<b>Blanking plate, P2LA</b> for Pressure bar	0,05	9121658074
	<b>Assembly screws, P2LA</b> in stainless steel for valve	0,02	9121658043
	<b>Assembly screws, P2LA</b> in stainless steel for blanking plate	0,01	9121658044
	<b>O-ring kit, P2LA</b> O-rings between valve and manifold bar/Pressure bar	0,01	9121658046

**Dimensions**

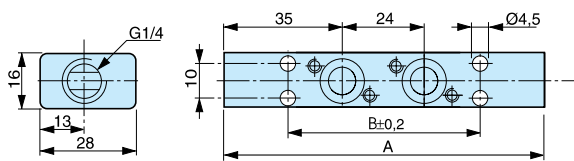
**Manifold bar, P2LA**

No. of valves	L mm
4	126
6	174
8	222
10	270
12	318
14	366

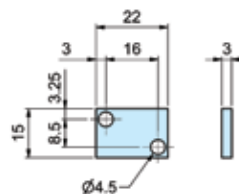


**Blanking plate for manifold bar, P2LA**

**Pressure bar, P2LA**

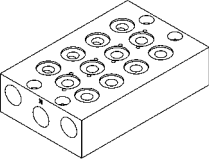
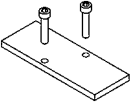
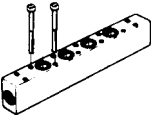
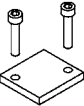


**Blanking plate for pressure bar, P2LA**



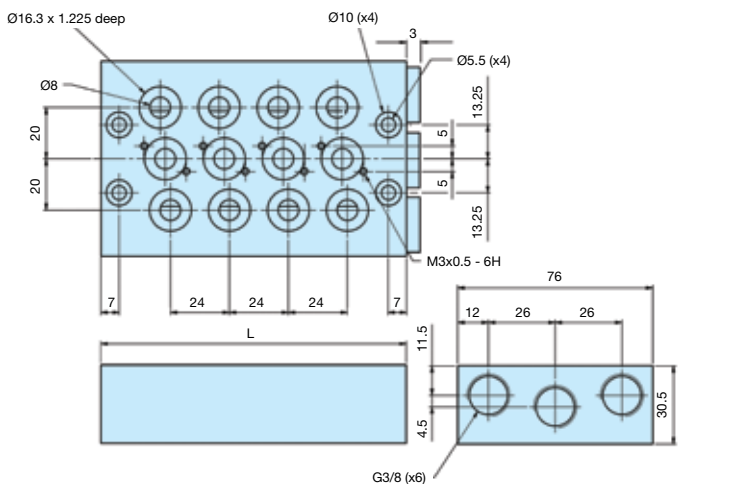
No. of valves	A mm	B mm
2	94	56
4	142	104
6	190	152
8	238	200



Accessories	Type P2LB 5/2 valves	Weight kg	Order code
	<b>Manifold bar, P2LB</b> incl. fasteners and O-ring. G3/8 For 2 valves For 4 valves For 6 valves For 8 valves For 10 valves	0,69 1,13 1,56 2,00 2,45	<b>9121594805X</b> <b>9121594806X</b> <b>9121594807X</b> <b>9121594808X</b> <b>9121594812X</b>
	<b>Blanking plate, P2LB</b> for Manifold bar	0,10	<b>9121594809X</b>
	<b>Pressure bar, P2LB</b> for common air supply incl. O-rings and mounting screws. G3/8 For 2 valves For 4 valves For 6 valves For 8 valves For 10 valves	0,38 0,53 0,68 0,83 0,99	<b>9127113301X</b> <b>9127113302X</b> <b>9127113303X</b> <b>9127113304X</b> <b>9127113305X</b>
	<b>Blanking plate P2LB</b> for Pressure bar. G1/4	0,02	<b>9127113306X</b>

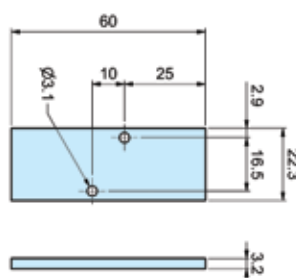
**Dimensions**

**Manifold bar, P2LB**

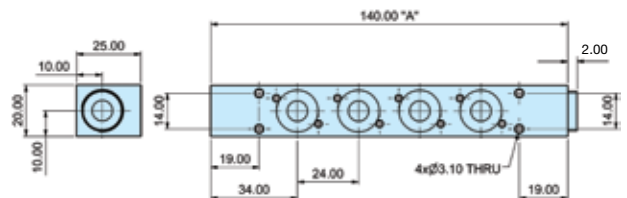


No. of valves	L mm
2	74
4	122
6	170
8	218
10	266

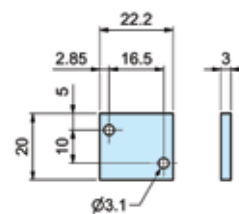
**Blanking plate for manifold bar, P2LB**



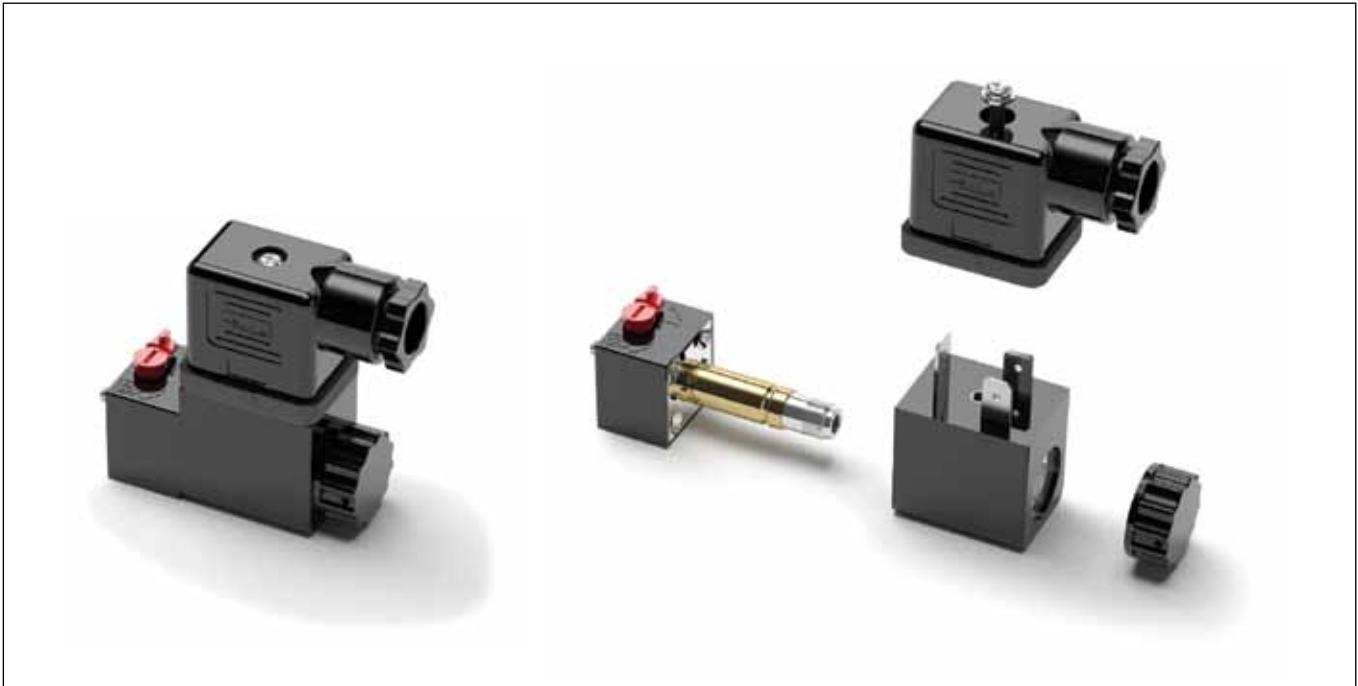
**Pressure bar, P2LB**



**Blanking plate for pressure bar, P2LB**



No. of valves	A mm
2	92
4	140
6	188
8	236
10	284



## 22mm Solenoid pilot options

The solenoid pilot operators are designed for piloting pneumatic control valves with compressed air or other inert gases.

The operator is available for Normal operating pressures up to 10 bar having an outlet orifice 1.2 mm and exhaust orifice 1.45 mm.

### Corrosion resistant design

The pilot operator body is manufactured in thermoplastic PA 6 material and the core tube brass/stainless steel. The plunger/core is made from stainless steel and the valve seats from FKM.

### Solenoid Pilot Exhaust

These operators all exhaust out of the top of the core tube which is tapped M5. The standard solenoid nut fitted to the core tube is the Diffuser nut which allows the exhaust to escape to atmosphere. This nut also minimises ingress of dirt into the valve through this port. The alternative plastic knurled nut can be specified (refer to part number system) if the exhaust air needs to be captured and piped away using the M5 tapped port.

### Coils

Coils are wound with enameled copper wire, having temperature index 180°C with class F insulation (155°C) and are encapsulated in Thermoplastic resin. When fitted with suitable connector and correct gasket they give protection to IP65.

### Manual Override options

The standard manual override is the bi-stable twist lock, extended plastic override.

**22mm solenoid operator part numbers and spares**

**Solenoid coils for 22mm solenoid operators**

Voltage	Weight (Kg)	Order code Form B
12V 60Hz	0.093	<b>P2FCB340</b>
24V 50/60Hz	0.093	<b>P2FCB342</b>
12V DC	0.093	<b>P2FCB345</b>
24V DC	0.093	<b>P2FCB349</b>
48V DC	0.093	<b>P2FCB351</b>
110V/50Hz, 120V/60Hz	0.093	<b>P2FCB353</b>
230V/50Hz, 230V/60Hz	0.093	<b>P2FCB357</b>
100V 50/60Hz	0.093	<b>P2FCB350</b>
200V 50/60Hz	0.093	<b>P2FCB355</b>

**Spare Solenoid Nuts**

**Valves requiring captured exhaust should be fitted with plastic knurled nut**

Order code



**P2FNP**

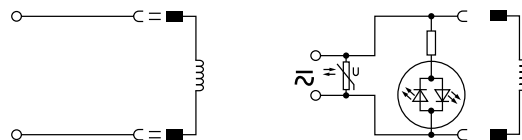
**Valves with vented exhaust are fitted with diffuser plastic nut**

Order Code

**P2FND**

**Solenoid Connectors / Cable Plugs EN175301-803**

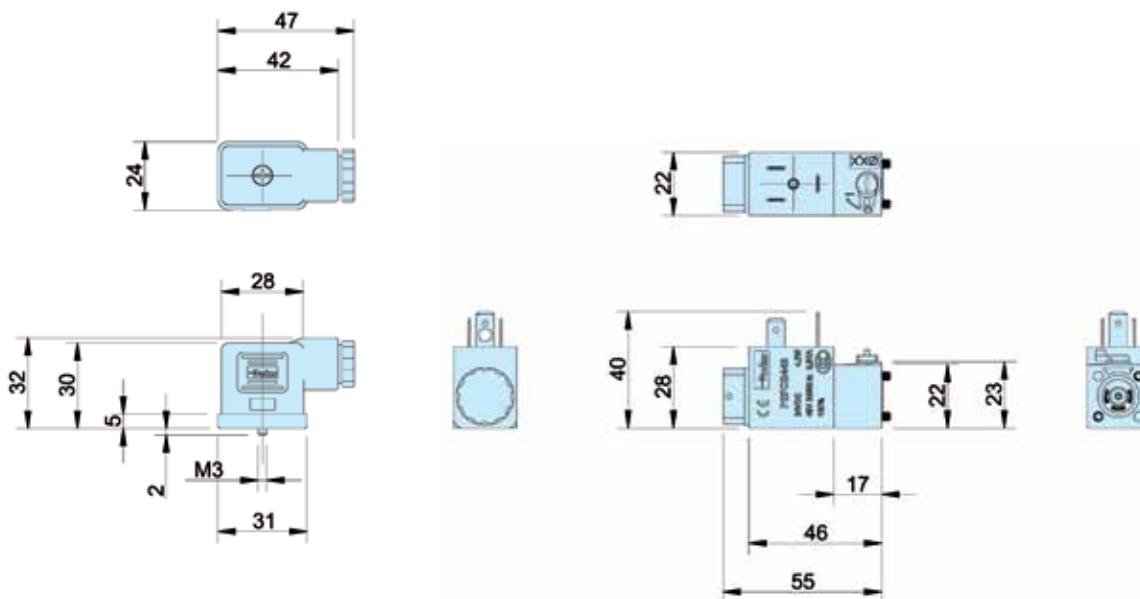
	Description	Order code
		22mm Industrial Form B
With standard screw	Standard IP65 without flying lead	<b>3EV10V10</b>
	With LED and protection 24V AC/DC	<b>3EV10V20-24</b>
	With LED and protection 110V AC	<b>3EV10V20-110</b>
	With LED and protection 230V AC	<b>3EV10V20-230</b>
With cable	24V AC/DC, 5m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

<b>3EV10V20-24</b>	<b>3EV10V20-24L5</b>
<b>3EV10V20-110</b>	<b>3EV10V20-110L5</b>
<b>3EV10V20-230</b>	<b>3EV10V20-230L5</b>

**Cable Plug Dimensions (mm)**



# Parker Worldwide

## Europe, Middle East, Africa

**AE – United Arab Emirates,**  
Dubai

Tel: +971 4 8127100  
parker.me@parker.com

**AT – Austria,** Wiener Neustadt

Tel: +43 (0)2622 23501-0  
parker.austria@parker.com

**AT – Eastern Europe,** Wiener  
Neustadt

Tel: +43 (0)2622 23501 900  
parker.easteurope@parker.com

**AZ – Azerbaijan,** Baku

Tel: +994 50 2233 458  
parker.azerbaijan@parker.com

**BE/LU – Belgium,** Nivelles

Tel: +32 (0)67 280 900  
parker.belgium@parker.com

**BY – Belarus,** Minsk

Tel: +375 17 209 9399  
parker.belarus@parker.com

**CH – Switzerland,** Etoy

Tel: +41 (0)21 821 87 00  
parker.switzerland@parker.com

**CZ – Czech Republic,** Klecany

Tel: +420 284 083 111  
parker.czechrepublic@parker.com

**DE – Germany,** Kaarst

Tel: +49 (0)2131 4016 0  
parker.germany@parker.com

**DK – Denmark,** Ballerup

Tel: +45 43 56 04 00  
parker.denmark@parker.com

**ES – Spain,** Madrid

Tel: +34 902 330 001  
parker.spain@parker.com

**FI – Finland,** Vantaa

Tel: +358 (0)20 753 2500  
parker.finland@parker.com

**FR – France,** Contamine s/Arve

Tel: +33 (0)4 50 25 80 25  
parker.france@parker.com

**GR – Greece,** Athens

Tel: +30 210 933 6450  
parker.greece@parker.com

**HU – Hungary,** Budapest

Tel: +36 1 220 4155  
parker.hungary@parker.com

**IE – Ireland,** Dublin

Tel: +353 (0)1 466 6370  
parker.ireland@parker.com

**IT – Italy,** Corsico (MI)

Tel: +39 02 45 19 21  
parker.italy@parker.com

**KZ – Kazakhstan,** Almaty

Tel: +7 7272 505 800  
parker.easteurope@parker.com

**NL – The Netherlands,** Oldenzaal

Tel: +31 (0)541 585 000  
parker.nl@parker.com

**NO – Norway,** Asker

Tel: +47 66 75 34 00  
parker.norway@parker.com

**PL – Poland,** Warsaw

Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**PT – Portugal,** Leca da Palmeira

Tel: +351 22 999 7360  
parker.portugal@parker.com

**RO – Romania,** Bucharest

Tel: +40 21 252 1382  
parker.romania@parker.com

**RU – Russia,** Moscow

Tel: +7 495 645-2156  
parker.russia@parker.com

**SE – Sweden,** Spånga

Tel: +46 (0)8 59 79 50 00  
parker.sweden@parker.com

**SK – Slovakia,** Banská Bystrica

Tel: +421 484 162 252  
parker.slovakia@parker.com

**SL – Slovenia,** Novo Mesto

Tel: +386 7 337 6650  
parker.slovenia@parker.com

**TR – Turkey,** Istanbul

Tel: +90 216 4997081  
parker.turkey@parker.com

**UA – Ukraine,** Kiev

Tel: +380 44 494 2731  
parker.ukraine@parker.com

**UK – United Kingdom,** Warwick

Tel: +44 (0)1926 317 878  
parker.uk@parker.com

**ZA – South Africa,** Kempton Park

Tel: +27 (0)11 961 0700  
parker.southafrica@parker.com

## North America

**CA – Canada,** Milton, Ontario

Tel: +1 905 693 3000

**US – USA,** Cleveland

Tel: +1 216 896 3000

## Asia Pacific

**AU – Australia,** Castle Hill

Tel: +61 (0)2-9634 7777

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