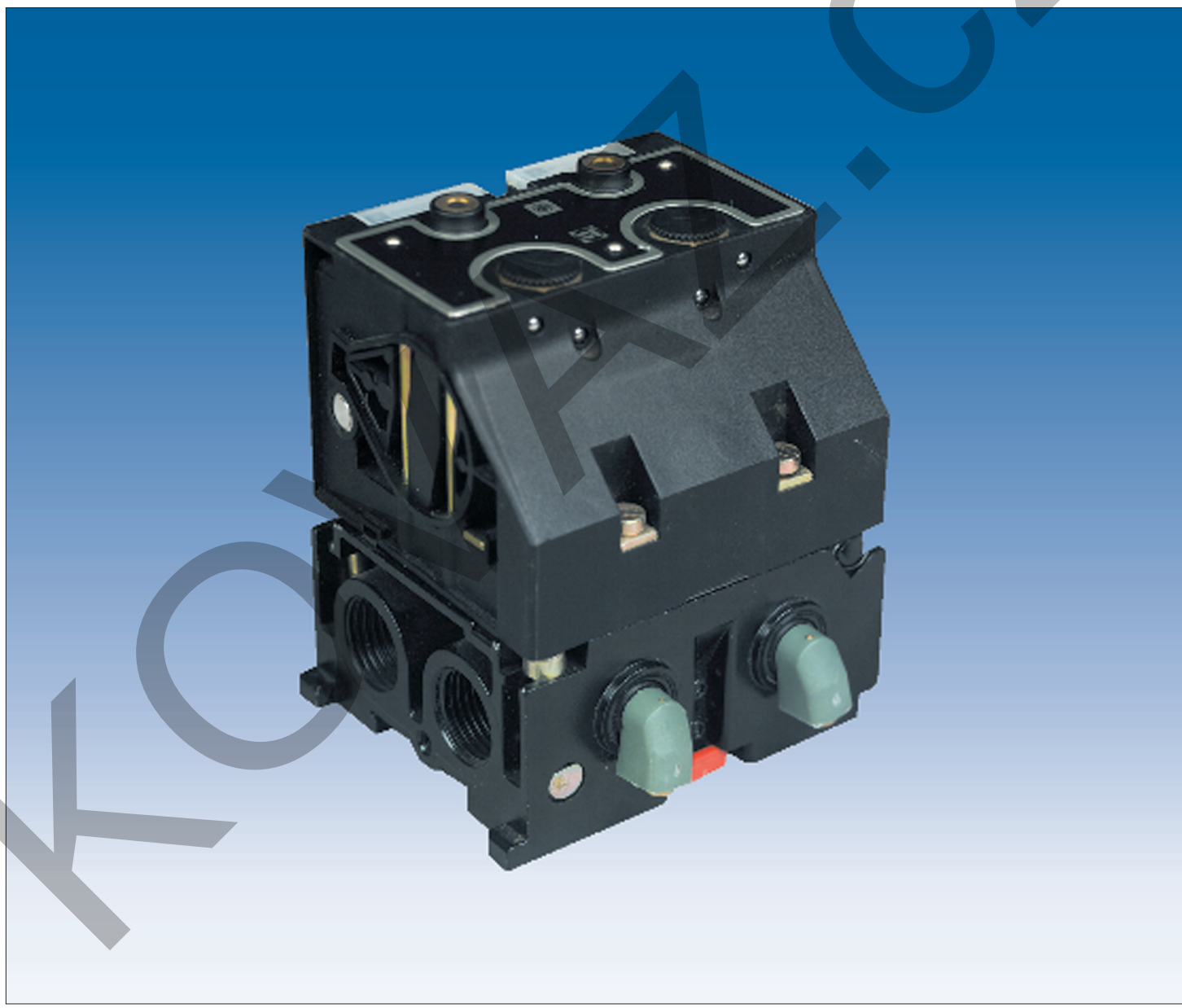
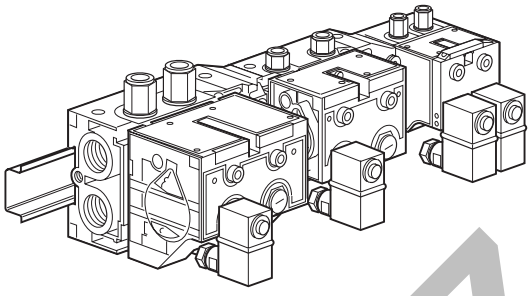
Parker
Pneumatic

PVD Everdure Ceramic Valves



- Ceramic slide plate; extremely long life
- Built in manual override
- Transfer modules to combine all sizes
- Selectable air pilot control
- Clip-on DIN rail



Specification

Material

Valve body	Polyamide 6,6 glass fibre impreg-
nated	
Seals	Polyurethane

Operating information

Supply pressure;
Pneumatically operated: 0-10 bar
Electrically operated, bistable: 3-10 bar
Electrically operated, monostable: 4-10 bar
(0 to 10 bar with pilots fed by PX)

Working temperature: -15 °C to +60 °C

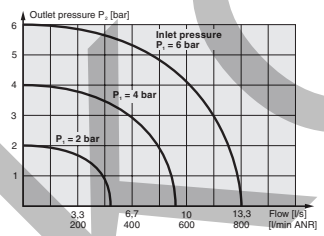
Size		**1/8"**	**1/4"**
Flow: l/mn	Qmax=	800	2000
(acc. to ISO 6358)	Cv=	0,49	1,05
(Valve flow including manifold)			

Operating information

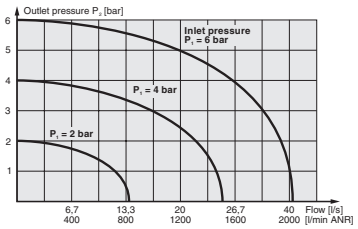
Flow characteristics

Flow capacities in accordance with ISO6358
All pressures = effective pressure
The curves in the diagrams below are typical only

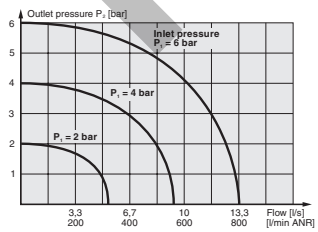
Size 1/8"



Size 1/4"

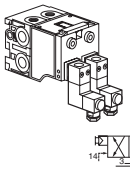
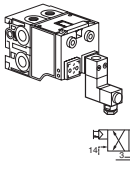


Dump valves size 1/4"



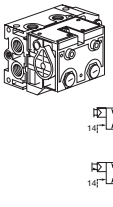
Size 1/8"

Pneumatically or electrically actuated with auxiliary manual control *

Symbol		Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	1P 3	G1/8	Air	Air	1,8/1,8	15/15	0,250	**PVD-B142128**
	4 2		Air	Spring	4,2/1,2	20/25	0,245	**PVD-B141128**
	14 12	Push-in swivel	Electric** 22x30	Electric**	4,2/1,2	20/20	0,260	**PVD-B142428**
	px	Ø4 mm M5	Electric** 22x30	Spring	4,2/1,2	25/35	0,250	**PVD-B141428**
			Electric*** 15x15	Electric 15x15	4,2/1,2	20/20	0,260	**PVD-B142628**
			Electric*** 15x15	Spring	4,2/1,2	30/50	0,260	**PVD-B141628**

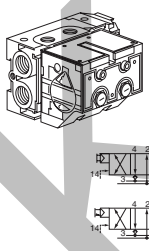
Size 1/4"

Pneumatically or electrically actuated with auxiliary manual control *

Symbol		Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	1P 2 3	G1/4	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	18/18 24/24	0,725	**PVD-C342229**
	4 12 14	Push-in swivel	Air/ Electric**	Spring	4,3/1,5 4,3/1,5	30/50 40/50	0,710	**PVD-C341229**
	px	Ø4 mm M5						

Size 3/8" - 1/2"

Pneumatically or electrically actuated with auxiliary manual control *

Symbol		Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	1P 3 4	G1/2 G3/8	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	1,240	**PVD-E242223**
	2 12 14	Push-in swivel	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/50 80/100	1,210	**PVD-E241223**
	px	Ø 4 mm M5						

Complete valve will be obsolete in June 2009

* Bistable valves incorporate spring return manual control.
Monostable valves incorporate indexable manual control

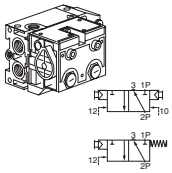
** For electrical operation, use PVA-F10 Series solenoid actuator

*** For electrical operation use 5 x 5 mm solenoid type P2E

Note! The valve subbase has straight through air supply and exhaust galleries therefore any unused ports should be plugged using standard threaded blanking plugs

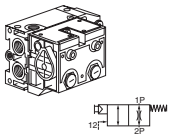
Dump valves 3/2 - size 1/4"

Pneumatically or electrically actuated with manual control

Symbol		Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	1P 2P 3	G1/4 G3/8	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	0,695	**PVS-C332229**
	10 12	Push-in swivel Ø4 mm	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	0,680	**PVS-C331229**

Soft start valves 2/2 - size 1/4"

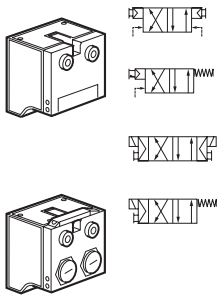
Pneumatically or electrically actuated with manual control
Supplied complete with interchangeable bypass nozzles Ø0,6 - 0,9 - 1,2 mm

Symbol		Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	1P 2P 10 12	G1/4 Push-in swivel Ø 4 mm	Air/ Electric**	Spring	4,3/1,5 4,3/1,5	30/50 40/50	0,680	**PVP-C321229**

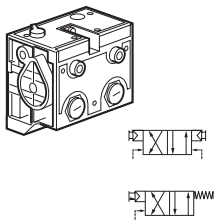
** For electrical operation, use PVA-F10 Series solenoid actuator

Note! The valve subbase has straight through air supply and exhaust galleries therefore any unused ports should be plugged using standard threaded blanking plugs

Power valves 4/2, size 1/8"

Symbol	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	Air	Air	1,8/1,8	15/15	0,160	**PVD-B1421**
	Air	Spring	4,2/1,2	20/15	0,150	**PVD-B1411**
	Electric**	Electric**	4,2/1,2	20/20	0,170	**PVD-B1424**
	Electric**	Spring	4,2/1,2	25/35	0,160	**PVD-B1414**
	Electric***	Electric	4,2/1,2	20/20	0,170	**PVD-B1426**
	Electric***	Spring	4,2/1,2	30/50	0,160	**PVD-B1416**

Power valves 4/2, sizes 1/4" and 3/8"-1/2"

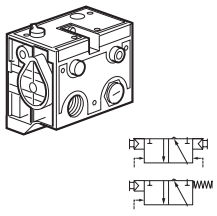
Symbol	Size	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	1/4"	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	18/18 24/24	0,295	**PVD-C3422**
	1/4"	Air/ Electric**	Spring	4,3/1,5 4,3/1,5	30/50 40/50	0,280	**PVD-C3412**
	1/2"	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	1,050	**PVD-E2422**
	1/2"	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 50/100	1,000	**PVD-E2412**

Complete valve will be obsolete in June 2009

Complete valve will be obsolete in June 2009

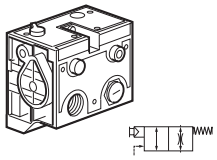
** For electrical operation, use PVA-F10 Series solenoid actuator
*** For electrical operation use 15 x 15 mm solenoid

Dump valves 3/2 - sizes 1/4" and 1/2"

Symbol	Size	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	1/4"	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	0,295	**PVS-C3322**
	1/4"	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	0,280	**PVS-C3312**
	1/2"	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	1,000	**PVS-E2312**

Complete valve will be obsolete in June 2009

Soft Start valves 2/2 - sizes 1/4" and 1/2"

Symbol	Size	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code
	1/4"	Air/ Electric**	Spring	4,3/1,5 4,3/1,5	30/50 40/50	0,280	**PVP-C3212**
	1/2"	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	1,000	**PVP-E2212**

Complete valve will be obsolete in June 2009

Complete valve will be obsolete in June 2009

** For electrical operation, use PVA-F10 Series solenoid actuator
*** For electrical operation use mini Series solenoid actuator

Subases for 4/2 valves

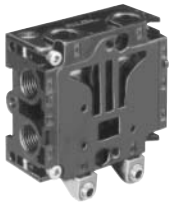
Size	Weight Kg	Order code
G1/8	0.09	**PVU-B1428**
G1/4	0.5	**PVU-C3429**

PVD sub bases

(Revised Sept. 2004)

for power valves 4/2
for master supply valves 3/2
for slow start valves 2/2

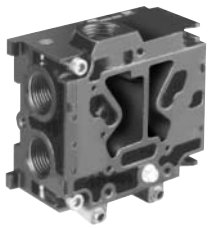
PVUB14287



PVUC34297

Sub bases for 4 way power valves

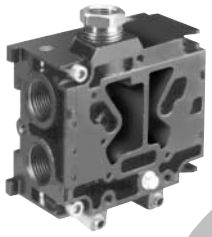
Connection		Pilot Connection	Catalog Number BSP	Catalog Number NPT
1P 3 4 2	1/8" threaded	instant swivel 5/32" OD tubing	**PVUB1428**	**PVUB14287**
1P 3 4 2	1/4" threaded	instant swivel 5/32" OD tubing	**PVUC3429**	**PVUC34297**
1P 3 4 2	1/2" 3/8" threaded	instant swivel 5/32" OD tubing	**PVUE1423**	**PVUE14237**



PVUC33297

Sub bases for master supply valves

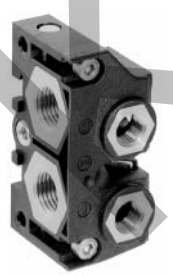
Connection		Pilot Connection	Catalog Number BSP	Catalog Number NPT
1P 3 4 2	1/4" threaded	instant swivel 5/32" OD tubing	**PVUC3329**	**PVUC33297**



PVUE12227

Sub bases for slow start valves

Connection		Pilot Connection	Catalog Number BSP	Catalog Number NPT
1P 3 4 2	1/4" threaded	instant swivel 5/32" OD tubing	**PVUC3229**	**PVUC32297**
1P 3 4 2	1/2" threaded	instant swivel 5/32" OD tubing	**PVUE1222**	**PVUE12227**



PVUCB187

Valve adaptor modules

Description	Connectors		Catalog Number
Sub base union 1/4" - 1/8"	1P 2	Threaded 1/4" NPT	**PVUCB187**
	1a 2a	Threaded 1/8" NPT	
Sub base union 1/2" - 1/4"	1P 2	Threaded 1/2" NPT	**PVUEC197**
	1a 2a	Threaded 1/4" NPT	

Utilization

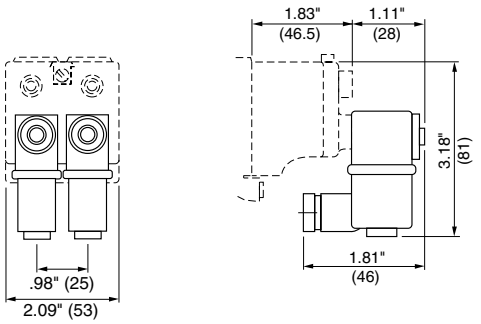
The valve adaptor module allows the combination of different size power valves within the same stack. This module also provides the means to add additional supply and exhaust ports, if required. Some applications may require the isolation of multiple supply pressures. The adaptor allows the isolation of upstream pressure, while introducing the secondary downstream supply. The valve adaptor can be used to provide a large number of arrangements.

Power valves 4/2, 3/2 and 2/2

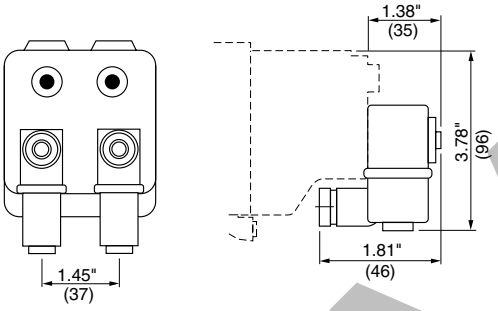
with sub bases -- dimensions

Electrical solenoid actuators

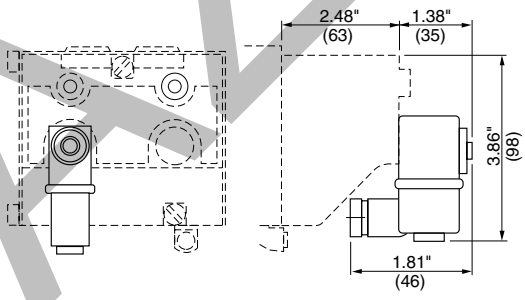
For power valves size 1/8"
PVAF10••



For power valves size 1/4"
PVAF10••

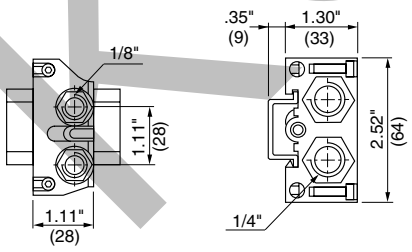


For power valves size 3/8" and 1/2"
PVAF10••

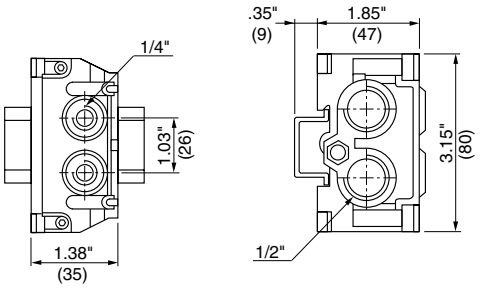


Valve adaptor modules

For combination sizes 1/4"-1/8"
PVU-CB18•



For combination sizes 1/2"-1/4"
PVU-EC19•



5W / 6 VA solenoid actuators for power valves size 1/8”, 1/4”, 3/8” - 12”

Without manual override

Without cable connector (22 x 30 mm)

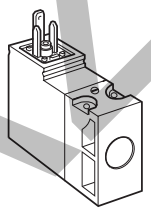
Voltage	Order code
12 VDC	**PVA-F192J**
24 VDC	**PVA-F192B**
48 VDC	**PVA-F192E**
24 V 50/60Hz	**PVA-F191B**
48 V 50/60Hz	**PVA-F191E**
115 V 50Hz, 120 V 60Hz	**PVA-F191F**
230 V 50Hz, 240 V 60Hz	**PVA-F191M**

With unwired cable connector (22 x 30 mm)

Voltage	Order code
24 VDC	**PVA-F102B**
48 VDC	**PVA-F102E**
24 V 50/60Hz	**PVA-F101B**
48 V 50/60Hz	**PVA-F101E**
115 V 50Hz, 120 V 60Hz	**PVA-F101F**
230 V 50Hz, 240 V 60Hz	**PVA-F101M**
255 V 50Hz	**PVA-F101U**

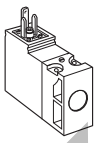
15mm Solenoid Operators

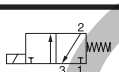
Electrical connection EN175301-803 C/ISO15217 (Ex DIN 43650C)



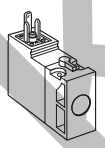
Solenoids 15 mm NC, standard

(Note! Mounting screws included in basic valve)



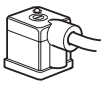


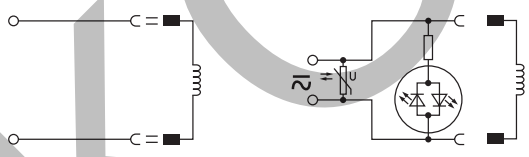
Voltage	Weight Kg	Order code Without manual override	Weight Kg	Order code Override, blue, non locking flush	Weight Kg	Order code Override, yellow, locking flush
12 VDC	0,038	**P2E-KV32B0**	0,038	**P2E-KV32B1**	0,038	**P2E-KV32B2**
24 VDC	0,038	**P2E-KV32C0**	0,038	**P2E-KV32C1**	0,038	**P2E-KV32C2**
48 VDC	0,038	**P2E-KV32D0**	0,038	**P2E-KV32D1**	0,038	**P2E-KV32D2**
24 VAC 50Hz	0,038	**P2E-KV31C0**	0,038	**P2E-KV31C1**	0,038	**P2E-KV31C2**
48 VAC 50/60Hz	0,038	**P2E-KV34D0**	0,038	**P2E-KV34D1**	0,038	**P2E-KV34D2**
115 VAC 50Hz/ 120 VAC 60Hz	0,038	**P2E-KV31F0**	0,038	**P2E-KV31F1**	0,038	**P2E-KV31F2**
230 VAC 50Hz/ 240 VAC 60Hz	0,038	**P2E-KV31J0**	0,038	**P2E-KV31J1**	0,038	**P2E-KV31J2**



Voltage	Weight Kg	Order code Override extended, blue, non locking flush	Weight Kg	Order code Override extended, yellow, locking flush
24 VDC	0,038	**P2E-KV32C3**	0,038	**P2E-KV32C4**
24 VAC 50Hz	0,038	**P2E-KV31C3**	0,038	**P2E-KV31C4**

Solenoid Connectors / Cable Plugs EN175301-803

	Description	Order code 15mm Form C/ISO15217	Order code 22mm Industrial Form B
With large headed screw suitable for mounting in inaccessible or recess position 	Standard IP65	P8C-C	
	24V DC LED and protection IP65	P8C-C26C	
	110V AC LED and protection IP65	P8C-C21E	
With standard screw 	Standard IP65 without flying lead	P8C-D	3EV10V10
	With LED and protection 24V AC/DC	P8C-D26C	3EV10V20-24
	With LED and protection 110V AC	P8C-D21E	3EV10V20-110
	With LED and protection 230V AC		3EV10V20-230
With cable 	Standard with 2m cable IP65	P8L-C2	
	Standard with 5m cable IP65	P8L-C5	
	24V AC/DC, 2m cable LED and protection IP65	P8L-C226C	
	24V AC/DC, 5m cable LED and protection IP65	P8L-C526C	3EV10V20-24L5
	24V AC/DC, 10m cable LED and protection IP65	P8L-CA26C	
	110V AC/DC, 2m cable LED and protection IP65	P8L-C221E	
	110V AC/DC, 5m cable LED and protection IP65	P8L-C521E	3EV10V20-110L5
	230V AC, 5m cable LED and protection IP65		3EV10V20-230L5



P8C-C	P8C-D26C	P8L-C226C
P8C-D	P8C-D21E	P8L-C526C
P8L-C2	P8C-C26C	P8L-CA26C
P8L-C5	P8C-C21E	P8L-C221E
3EV10V10		P8L-C521E
	3EV10V20-24	3EV10V20-24L5
	3EV10V20-110	3EV10V20-110L5
	3EV10V20-230	3EV10V20-230L5

Spare parts
O-ring seals and gaskets for power valves 4/2 - Size 1/8"

Description	Base component	Weight Kg	Order code
1 pack of 10 gaskets for mounting between subbase and power valves	PVU-B14•• PVD-B••••	0,020	**PPR-V02**
1 pack of 30 O-ring seals for mounting between subbases : - 10 O-rings for px port - 20 O-rings for ports 1 and 3	PVU-B14••	0,014	**PPR-V07**
1 pack of 20 gaskets for mounting between power valves and solenoid actuators	PVD-B14•6•• PVA-H2••••	0,004	**PPR-V20**

O-ring seals and gaskets for power valves 4/2, 3/2 and 2/2 - Size 1/4"

Description	Base component	Weight Kg	Order code
1 pack of 10 gaskets for mounting between subbase and power valves 4/2	PVU-C34•• and PVD-C34••	0,026	**PPR-V28**
1 pack of 30 O-ring seals for mounting between subbases : - 10 O-rings for px port - 20 O-rings for ports 1 and 3	PVU-C14••/PVU-C34•• PVU-C23••/PVU-C33•• PVU-C22••/PVU-C32••	0,014	**PPR-V08**
1 pack of 10 gaskets for mounting between subbase and power valves 3/2 or 4/2	PVU-C33••/C32•• and PVS-C33••/PVP-C32••	0,026	**PPR-V29**

O-ring seals and gaskets for power valves 4/2, 3/2 and 2/2 - Size 3/8"

Description	Base component	Weight Kg	Order code
1 pack of 10 gaskets for mounting between subbase and power valves 4/2	PVU-E•••• and PVD-E••••	0,050	**PPR-V04**
1 pack of 30 O-ring seals for mounting between subbases : - 10 O-ring seals for px port - 20 O-ring seals for ports 1 and 3	PVU-E•••• PVU-E•••• PVU-E••••	0,030	**PPR-V09**
1 pack of 10 joints for mounting between subbase and power valves 3/2 or 2/2	PVU-E••••/E•••• and PVS-E•••	0,048	**PPR-V06**

Blanking plugs for 5W solenoid actuators - type PVA-F1••••

Description	Base component	Valve size	Weight Kg	Order code
1 pack of 20 blanking plugs for PVA-F1••• type solenoid PVD-• series actuators	PVD-C34•• PVS-C33•• PVP-C32•• PVD-E24•• PVS-E23•• PVP-E22••	1/4" and 3/8"	0,026	**PPR-V27**

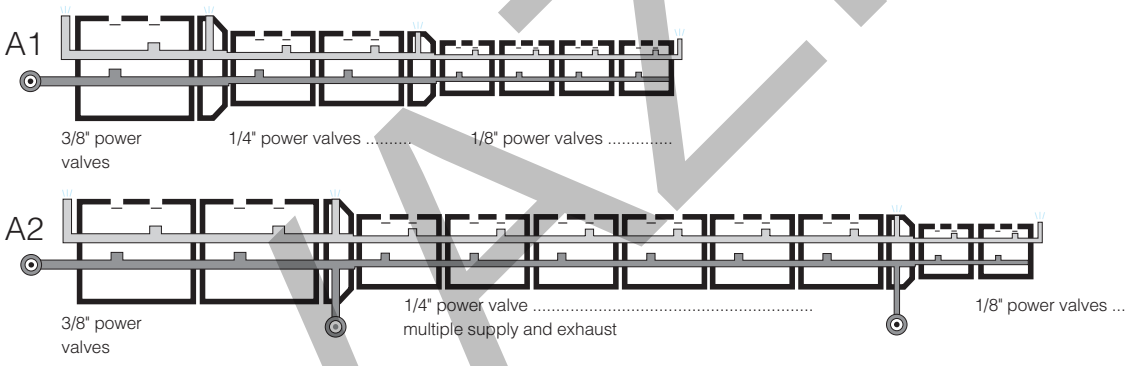
“Transfer/take-off” modules

	Application	Description		Connection	Weight Kg	Order code
	Enables the combination of different size valves	Subbase adaptor plate 1/4" - 1/8"	1P 2	G1/4	0,110	**PVU-CB18**
			1a 2a	G1/8		

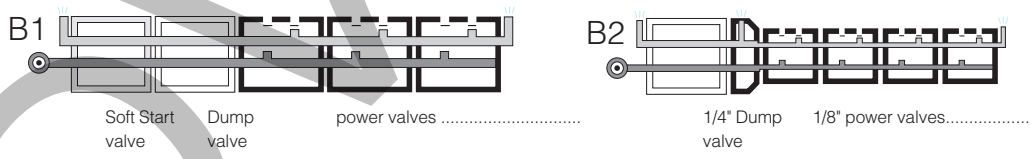
Applications

The “transfer/take-off” module enables different size valves to be combined in a single manifold, see A1.
The module can also be used for additional air supply inlets and exhaust outlets to increase flow, see A2.
Soft Start and Dump valves can be incorporated into a manifold of the same size valves, see B1, alternatively, to ensure adequate flow, a larger size than the power valves can be used, see B2.

Combination of different size power valves



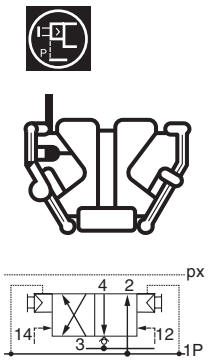
Dump and Soft Start valves combined with power valves



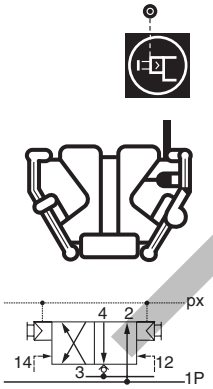
Pilot supply selection

Principle of pilot supply selection

The valves are mounted onto stackable subbases with the internal or external pilot supply being selected by reversing the seal between the valve and subbase.
With Pneumatic pilot versions of the valve, the supply would be required only for the manual override control.
With electrically operated valves, the supply would by required for the manual override control as well as the solenoid pilot actuators.
The drawings below show the two positions of the seal on a standard 4/2 valve, in one position the internal supply is fed from the main air supply Port 1, in the other position the external supply is fed from additional port "px" which is also common through the stacked subbases.



Pilot supply from the main supply port 1 P



Pilot supply from the auxiliary common px

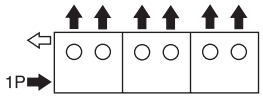
The position of the seal is indicated by a "tag" protruding from the valve, subbase interface and when viewed from the top of the valve will correspond to appropriate diagram. This enables identification of the seal position without dismantling the valve.

Main applications with 4/2 valves

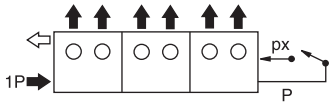
Solenoid operated valves
- Use of the "px" port enables external pilot supply to the solenoids and manual controls, therefore, vacuum or low pressure can be passed through the valve via Port 1
  Pneumatic pilot operated valves
- With the seal set to position "1p" (factory set position), the manual controls will only operate with air supply to Port 1.
- With the seal set to position "px" the manual controls will only operate with air supply to Port "px"

Applications of 4/2 power valve combinations

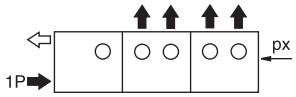
1. Internal pilot supplied from Port 1.
   With the seal in position to give internal pilot supply from Port 1, the solenoids and manual controls will only switch the valve when an air supply is available at Port 1, minimum of 3 bar for bistable and 4 bar for monostable



2. External pilot supply from Port "px" but linked to Port 1.
   With the seal in the other position, external pilot supply will be fed from the "px" Port.
   In this example "px" is linked to the main air supply in Port 1, this will enable isolating of the solenoids and manual controls by removing the "px" supply either manually or by an automatic interlock signal within the control system.



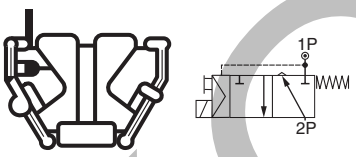
3. External pilot supply from Port "px" but independent of Port 1.
   The external pilot supply from "px" will directly feed the solenoids and manual controls, therefore, vacuum or low pressure can be passed through the valve via Port 1.
   This example also enable the valves to be set to the required position before main air supply is applied to Port 1.



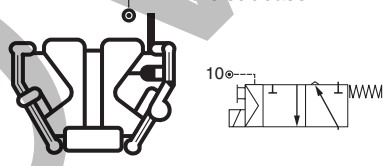
Pilot supply selection for Dump valves

When using the 3/2 Dump valve, the "px" Port is not used.
The pilot supply would normally be supplied from Port 1 with the seal corresponding to the "P" position.
If the supply pressure is less than 4 bar, then with solenoid operation or manual control, an external pilot supply greater than 4 bar must be supplied to Port 10 with the seal being reversed as shown below.


Supply from common 1P



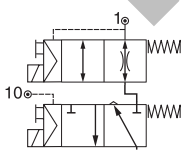

Supply by piloting connector (10) on the subbase



Pilot supply selection for Soft Start and Dump valve combinations

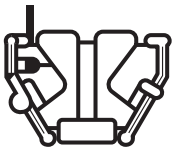
With the Soft Start valve mounted on the inlet side of the Dump valve, the pilot supply for the Soft Start is supplied from Port 1.
However, if the Dump valve is solenoid operated, then it should have an external pilot supply through Port 10 to enable consistant switching while pressure is built up through the Soft Start valve, see diagram below for seal positions.

PVP-PVS

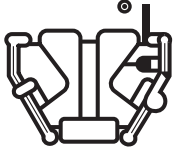


Position of the subbase seals

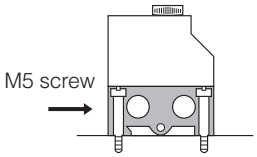

PVP




PVS

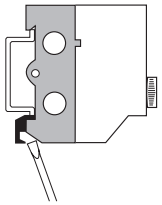


Installation

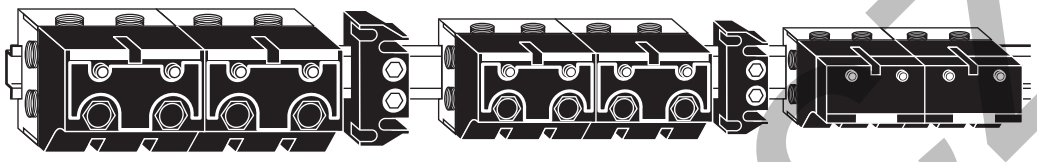


The valves can be used either individually or as part of a manifold, in both cases, they can be surface mounted with screws or by clip-on fixing to a DIN rail.
The units can be installed in a cabinet or directly onto suitable surface. Where a machine includes several cylinders in close proximity, then the ideal option would be to manifold mount the valves and install close to the cylinders.
To assemble a manifold, firstly join the subbases together using the built in swivel screws, then mount the valves on to the subbases.

Screw fixing



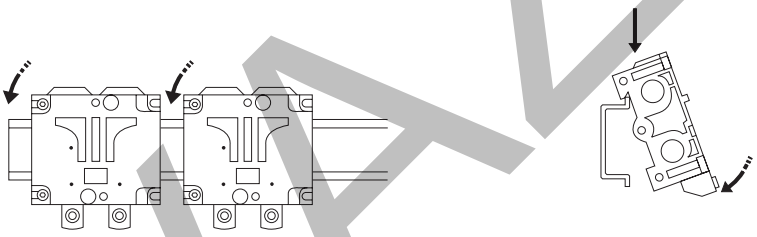
Mounting on DIN rail



Combination of three different sizes of power valves in the same manifold

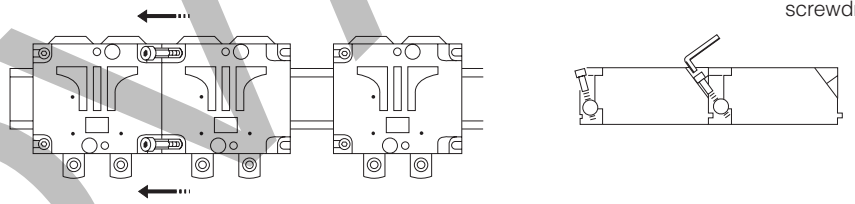
Mounting

Clip the subbases onto DIN rail

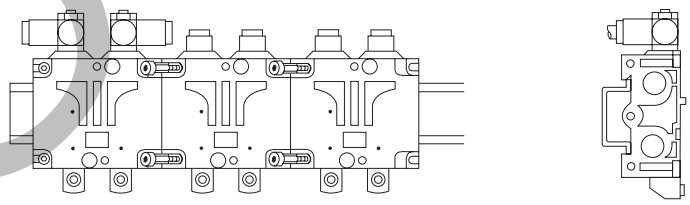


Join the subbases together by swivelling and tightening the screws

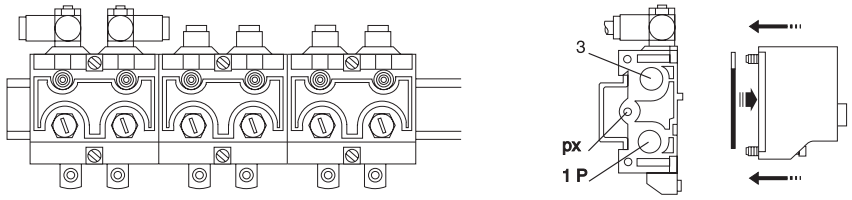
Allen key or screwdriver



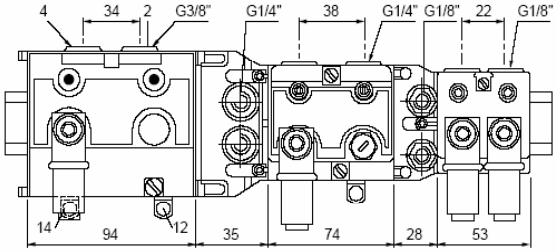
Install the pneumatic fittings



Mount the power valves after positioning the subbase seal for selection of the supply to the solenoid actuator and/or the auxiliary manual controls
- either by external pressure "px"
- or by main supply pressure (1)

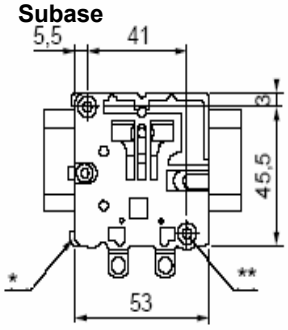


4/2 size 3/8-1/2, ¼ , 1/8,

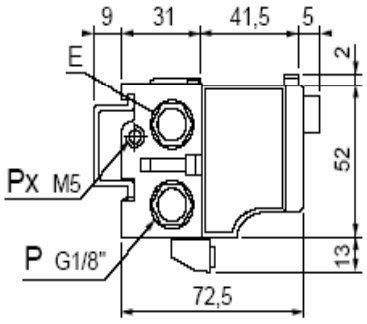


4 – 2 Outputs to actuator
12 -14 Pilots ports

4/2 size 1/8
PVD-B14….
Subase



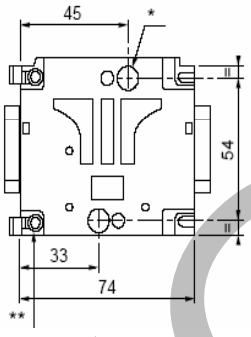
Complete valve



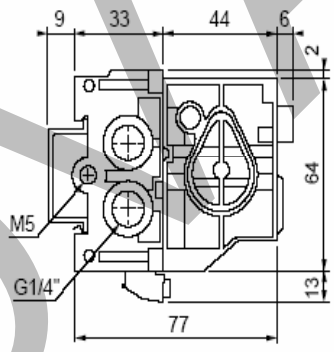
E: Exhaust
Px : Auxilliary pressure
P : Pressure

•* 2 fixing holes D4.5MM FOR M4 screws
•** M5 screw drivers

4/2 valve, 3/2 shut of , 2/2 soft start size 1/4
PVD-C14…. , PVS-C33…, PVP-C32…
Subbase

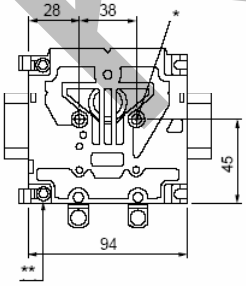


Complete valve

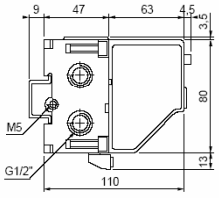


•* 2 fixing holes D4.5MM FOR M4 screws
•** M5 screw drivers

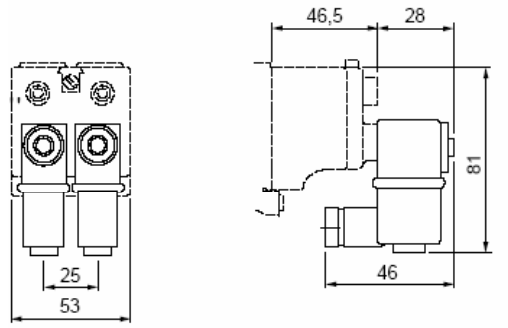
4/2 valve size 3/8 and ½
PVD-E24…
Subbase



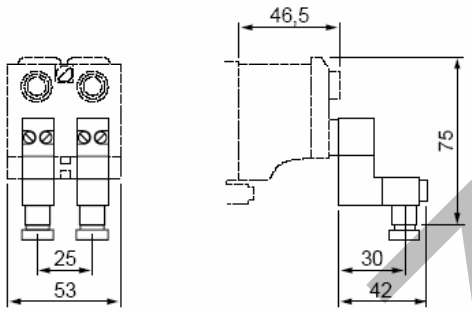
Complete valve



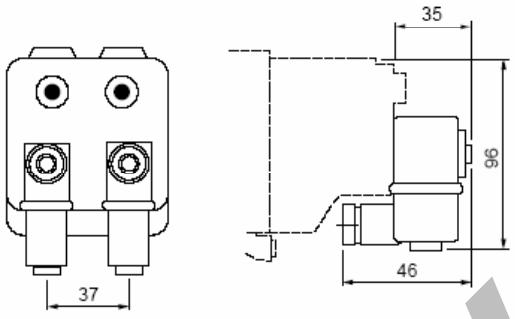
For solenoid valves 1/8
PVA-F10..



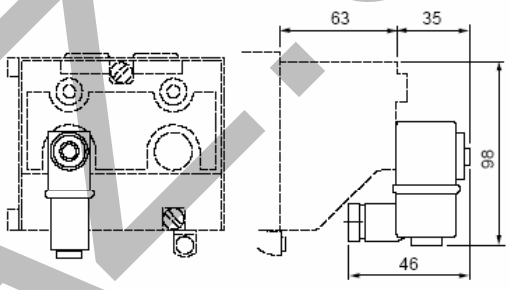
P2E



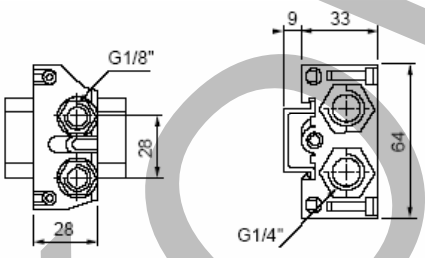
For solenoid valves ¼
PVA-F10..



For solenoid valves 3/8 – 1/2
PVA-F10..



Transfer plate ¼
PVU-CB18



Transfer plate ½-¼
PVU-EC19