

Warning, Offer of Sale

 **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.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated on the separate page of this document entitled "Offer of Sale".

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<ul style="list-style-type: none"> • Valve Selector Chart (By Flow) • Fieldbus Solutions Guide • Fluid Power Graphic Symbols • Technical Information • 5-Year Warranty 	www.parker.com/pneu/xm	A
<ul style="list-style-type: none"> • Direct Acting Solenoid • 3-Way & 4-Way • Inline • IEM Bar Manifold • Subbase Valve Manifolds • .15 Cv 		B
<ul style="list-style-type: none"> • Compact & Simplified Design • Subbase or Manifold Option • 3-Way • NO & NC on Same Manifold • Wide Range of Voltage • .033 to .05 Cv 	www.parker.com/pneu/15mm	Direct Acting
<ul style="list-style-type: none"> • Stand Alone Valves • Valve Island • Collective Wiring or Fieldbus Configuration • 3-Way & 4-Way • Modular & Flexible Design • Multiple Pressure Option • Compact & Low Weight • .18 to .80 Cv 		
<ul style="list-style-type: none"> • Compact Composite Design • Modular with a Wide Range of Voltages • 3-Way & 4-Way • Fieldbus Available • .6 to 1.2 Cv 	www.parker.com/pneu/pvl	Stacking
<ul style="list-style-type: none"> • Inline valve. Optional aluminum bar manifolds • 3 valve sizes: 1/8, 1/4 & 3/8. CV: 0.6 to 2.5 • Pressures up to 145 PSIG & temperatures between 14°F to 122°F • Bi-directional WCS spool 		
<ul style="list-style-type: none"> • Extreme Temperature & Pressure Ranges • ATEX Options • 4-Way • Wide Range of Voltages for Mobile Industries • Unique Overmoulded Spool Technology • .7 to 2.7 Cv 	www.parker.com/pneu/vikingx	Inline
<ul style="list-style-type: none"> • Wide Range of Sizes & Flows • Multiple Options • IEM Bar Manifold • 3-Way & 4-Way • Wear Compensating Dynamic Sealing System • .75 to 7.0 Cv 		
<ul style="list-style-type: none"> • 10mm 3-Way • 15mm & 20mm 4-Way • Low Power Consumption • Subbase & Inline Body • Individual & Collective Wiring Solutions • .01 to .47 Cv 	www.parker.com/pneu/adex	
<ul style="list-style-type: none"> • Robust Poppet Design • Fast Response & High Flow • 2-Way & 3-Way • High Maximum Pressure Option • 3.6 to 29.9 Cv 		
<ul style="list-style-type: none"> • Compact Valves with High Flow • Innovative Back to Back Mounting Style with 4 Valves in a 42mm Width • Plug-in Design with Collective Wiring on Fieldbus or 25 Pin Cable • .35 Cv 	www.parker.com/pneu/isysmicro	E
<ul style="list-style-type: none"> • ISO Valve Platform, 18mm, 26mm, Size 1, Size 2, & Size 3 Plug-in • Collective Wiring on Fieldbus or 25-Pin or M23 Cable • Non Plug-in Valves with 3-Pin Din or Mini Connectors • .55 to 6.0 Cv 		www.parker.com/pneu/isys
<ul style="list-style-type: none"> • Isys Micro Fieldbus • Moduflex Fieldbus • Isysnet Fieldbus • Turck Fieldbus 	www.parker.com/pneu/isysnet	
<ul style="list-style-type: none"> • ISO Valve Platform, 18mm, 26mm, Size 1, Size 2, & Size 3 • Non Plug-in Valves with 3-Pin Din or Mini Connectors • .55 to 4.15 Cv 		www.parker.com/pneu/isomax
<ul style="list-style-type: none"> • Robust Spool Design • Fast Response & High Flow • Plug-in & Direct Pipe Design • 4-Way • Hazardous Duty Option • 1.9 to 12.0 Cv 	www.parker.com/pneu	
<ul style="list-style-type: none"> • Robust Poppet & Spool Designs • 3-Way & 4-Way • Manual & Mechanical • Plunger, Roller, One-Way Tripper, Button, Hand Lever, Toggle, Treadle • 1/8" & 1/4" NPT • .17 to .83 Cv 		www.parker.com/pneu/directair
<ul style="list-style-type: none"> • Heavy Duty Design • 4-Way • Lever, Pedal Operated • 1/4" & 3/8" NPT • 1.3 to 2.8 Cv 	www.parker.com/pneu/42ser	
<ul style="list-style-type: none"> • Heavy Duty Lever Operated • 4-Way • 1/8 to 1/2" NPT • .7 to 2.7 Cv 		www.parker.com/pneu/vikingx
<ul style="list-style-type: none"> • Heavy Duty Design • Bronze Body • 3-Way & 4-Way, Air Pilot Manual & Mechanical Valves • 1/4" to 1" NPTF Ports • 2.4 to 12.4 Cv 	www.parker.com/pneu	
<ul style="list-style-type: none"> • Compliant with OSHA Standard 29 CFR 1910 • Lockout / Soft Start • 3.7 to 14.0 Cv 		www.parker.com/pneu/lockout
<ul style="list-style-type: none"> • Manual Valves • Lever & Button Operators • 1/8" thru 1/2" Ports • Wide Range of Sizes & Flows • .5 to 1.25 Cv 	www.parker.com/pneu/ssv	
<ul style="list-style-type: none"> • Variety of Control Panel Options - Push Buttons - Indicators - Foot Pedals • Large Selection of Options • Two-Hand Control Conformance with EN 574 		www.parker.com/pneu/cpp
<ul style="list-style-type: none"> • Large Variety of Limit & Pressure Switches • Limit Switches for Standard & Heavy Duty Service • Blocking Valves for Air, Gas & Liquid Service • Threshold Sensors for Monitoring Cylinder Exhaust 	www.parker.com/pneu/limsen	
<ul style="list-style-type: none"> • Flow Controls • Check Valves • Needle Valves • Muffler & Silencers • Relief Valves • Quick Exhaust Valves • Ball Valves • Fittings • Tubing & Hose • Quick Couplings 		www.parker.com/pneu/accessories
<ul style="list-style-type: none"> • Model Number to Page Number Index • Safety Guide • Offer of Sale 		





Moduflex Valve System

*Instant Control For All
Pneumatic Actuators*

*Modular Valve Islands or
Stand-Alone Valves*

Section C

www.parker.com/pneu/moduflex



Moduflex

PVL



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BOLD ITEMS ARE MOST POPULAR.



Module Series Selection and Assembly Procedures

Moduflex system provides a complete choice of either stand-alone valves, short-build valve islands, or large valve island configurations. Electrical control connections may be individual or island integrated. Peripheral modules add complementary functions — flow control, pressure regulation, P.O. check valves and vacuum generators can be added directly to the valve or used as a stand alone product.

Moduflex gives machine builders maximum flexibility to assemble each automation system step by step using basic modules.

Valve islands can be easily assembled using the following procedure.

1. Assemble the required valve island with the basic modules.
2. Mount the valve island on the machine together with any stand-alone valves and peripheral modules.
3. Select and install the required clip-on pneumatic and electrical connectors.

“S” Series Stand Alone Valves

For isolated cylinders on a machine, it is preferable to locate the valve close by. Therefore a stand-alone module is ideal. Response time and air consumption are then reduced to a minimum. Peripheral modules can be installed directly into the valve.



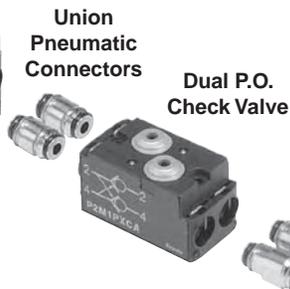
“S” Series Size 1
Single Solenoid



“S” Series Size 1
Single Air Pilot



Straight or
Elbow
Pneumatic
Connectors



Union
Pneumatic
Connectors

Dual P.O.
Check Valve

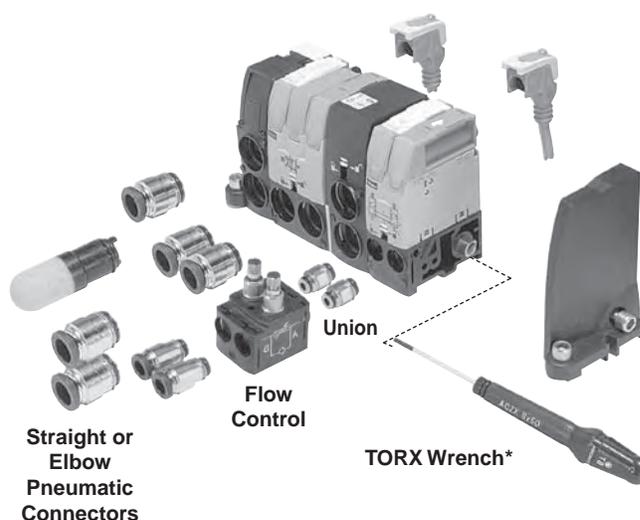
“T” Series Valve Island Modules with Individual Connectors

For small groups of cylinders requiring short localized valve islands, it is convenient to use individual electrical connector islands.



“T” Series Island Modules

“T” Series modules are easily assembled to form a complete manifold. All electrical connectors are individual and pneumatic connectors are of the push-in tube type. Modules with different functions and flow passages may be combined in the same island manifold, giving total flexibility to adapt to all machine requirements.



Straight or
Elbow
Pneumatic
Connectors

Flow
Control

Union

TORX Wrench*

* Maximum torque rating 10.6 in. lbs. (1.2 Nm).

C

Moduflex

PVL

“V” Series Valve Island Modules with Integrated Connections

When the number of valves is larger, modular islands are easily assembled using the integrated electrical connection series. These islands are then connected to the control PLC, with a multi-connector cable or with a field bus connection.

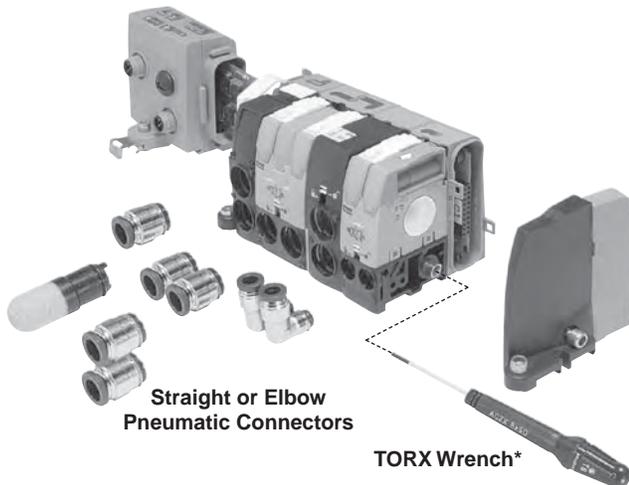


“V” Series with 20-Pin Connector



“V” Series with Field Bus Connection

“V” Series modules are easily assembled to form a complete manifold. All pneumatic connectors are of the push-in tube type. When the valve island has been installed, it is a simple operation to separate the field bus module from the valve island using the quick release lever. Modules with different functions and flow passages may be combined in the same island manifold, giving total flexibility to adapt to all machine requirements.



Straight or Elbow Pneumatic Connectors

TORX Wrench*

* Maximum torque rating 10.6 in. lbs. (1.2 Nm).

“P” Series Peripheral Modules

Peripheral Modules are available and can be mounted directly to valves or used as a stand alone product. These modules answer the complementary needs of the cylinders, flow controls, pressure regulation or positioning.



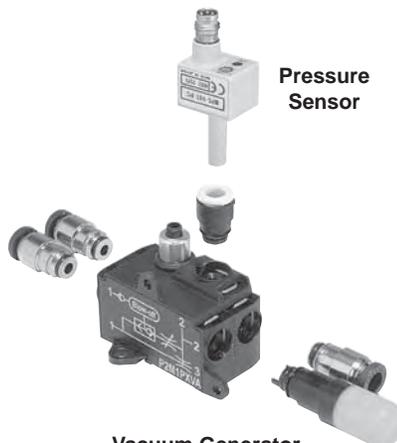
Flow Control



Pressure Regulator



Dual P.O. Check Valve



Pressure Sensor

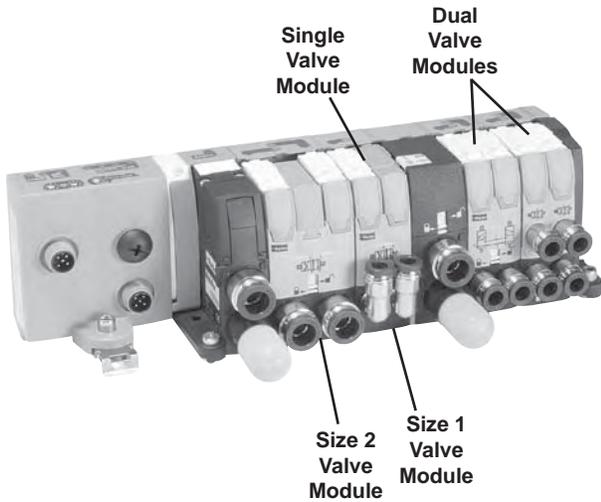
Vacuum Generator



Moduflex

PVL

Valve Function



Moduflex Valve Islands offer the greatest flexibility for your design requirements.

Valve Modules are available as 4-Way or 3-Way valves and can be ordered as single or dual valves. A Single Valve Module has one valve in one valve body. A Dual Valve Module will have 2 valves in one valve body. Each Valve in the Dual Valve Body is controlled by a solenoid or air pilot and can be operated independently from the other valve in the same body. There are no dimensional difference between a single and a dual valve. Flow Rates are reduced on the dual valves.

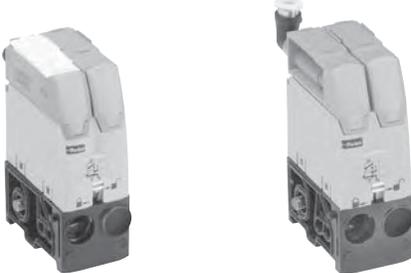
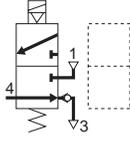
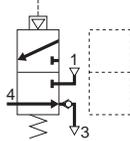
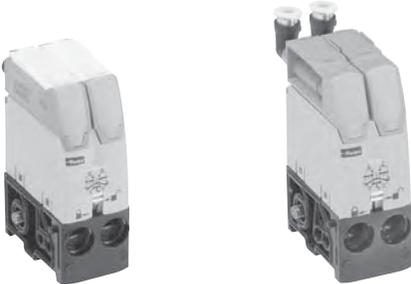
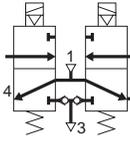
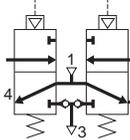
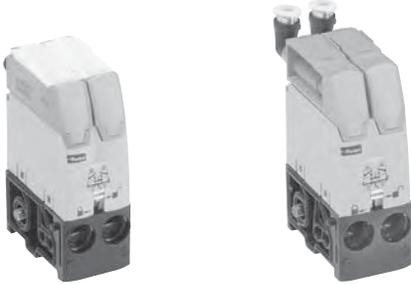
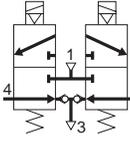
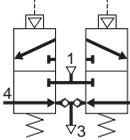
Single valve modules offer Ceramic Slide Valve Technology while dual valve modules offer WCS – Wear Compensation System Technology. Both offer low friction shift forces, fast response and less spool wear.

Valve Modules are available in two different valve body sizes. Size 1 and Size 2 Valve Modules can be combined in both “T” and “V” Series Valve Islands without transition kits.

4/2, 4-Way, 2-Position Valves

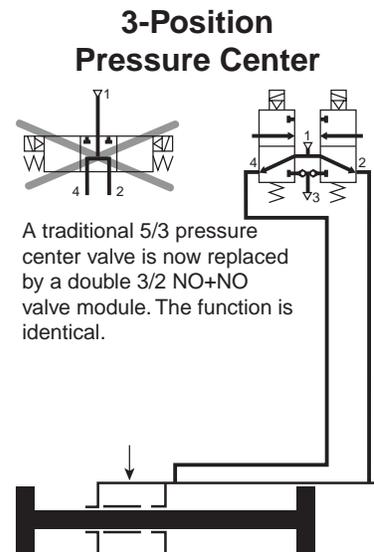
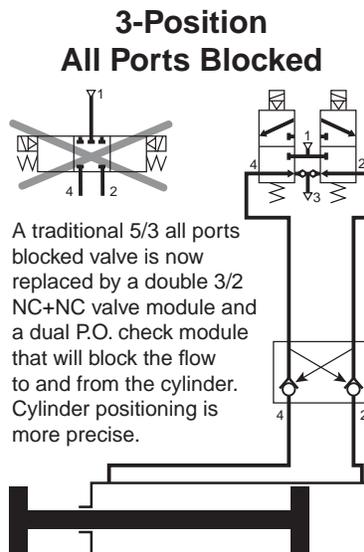
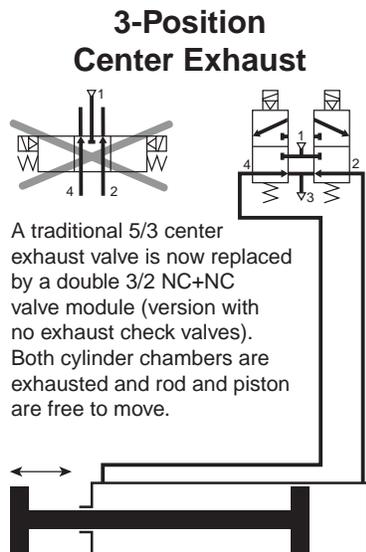
Single Valves	ANSI Symbol	Description	Size 1 Body	Size 2 Body
		Single Solenoid, Spring Return Valve	Cv = .32	Cv = .80
		Single Air Pilot, Spring Return Valve		
		Double Solenoid Valve	Cv = .32	Cv = .80
		Double Air Pilot Valve		
Dual Valves	ANSI Symbol	Description	Size 1 Body	Size 2 Body
		(2) Single Solenoid, Spring Return Valve with Exhaust Check. Double Solenoid Valve Body	Cv = .18	N/A
		(2) Single Air Pilot, Spring Return Valve with Exhaust Check. Double Air Pilot Valve Body		

3/2, 3-Way, 2-Position Valves

Single Valves	ANSI Symbol	Description	Size 1 Body	Size 2 Body
		Single Solenoid, NC, Spring Return Valve with Exhaust Check.	Cv = .22	Cv = .44
		Single Air Pilot, NC, Spring Return Valve with Exhaust Check.		
Dual Valves	ANSI Symbol	Description	Size 1 Body	Size 2 Body
		(2) Single Solenoid, NO, Spring Return Valve with Exhaust Check. Double Solenoid Valve Body	Cv = .22	Cv = .44
		(2) Single Air Pilot, NO, Spring Return Valve with Exhaust Check. Double Air Pilot Valve Body		
		(2) Single Solenoid, NC, Spring Return Valve with Exhaust Check. Double Solenoid Valve Body	Cv = .22	Cv = .44
		(2) Single Air Pilot, NC, Spring Return Valve with Exhaust Check. Double Air Pilot Valve Body		



Dual 3/2 Valves Replace All 3-Position Valves for a Better Performance



“S” Series Individual Subbase Valves Size 1
(Valve & Base without Pneumatic Connectors)



Single Solenoid



Double Solenoid



Single Air Pilot



Double Air Pilot

Size 1 Electro-Pneumatic Individual Subbase Valves, 24VDC

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Solenoid (Monostable)	2.54 oz	P2M1S4ES2C
	Double Solenoid (Bistable)	3.07 oz	P2M1S4EE2C

Size 1 Air Pilot Individual Subbase Valves

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Air Pilot (Monostable)	2.54 oz	P2M1S4PS
	Double Air Pilot (Bistable)	3.07 oz	P2M1S4PP

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Solenoid NC + NC with Exhaust Check	3.00 oz	P2M1SDEE2C
	Double Solenoid NO + NO with Exhaust Check	3.00 oz	P2M1SCEE2C
	Double Solenoid NC + NO with Exhaust Check	3.00 oz	P2M1SEEE2C
	Single Solenoid NC with Exhaust Check	2.82 oz	P2M1S3ES2C
	Center Exhaust = dual 3/2 NC + NC without Exhaust Check	3.00 oz	P2M1SGEE2C

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Air Pilot NC + NC with Exhaust Check	2.82 oz	P2M1SDPP
	Double Air Pilot NO + NO with Exhaust Check	2.82 oz	P2M1SCPP
	Single Air Pilot NC	2.68 oz	P2M1S3PS

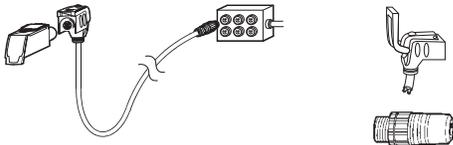
Note: Includes 5/32" (4mm) Air Pilot Connectors.

Note: Bold Options Standard

M8 Female Individual Connectors with Flying Lead Cable (For Solenoid Pilots)



With LED Voltage Surge Protection and Flying Lead Cable IP67 Protected		Weight (oz)	Order Code
	2 m Cable	2.19	P8LS08L226C
	5 m Cable	5.47	P8LS08L526C
9 m Cable	9.88	P8LS08L926C	
Thread Connector, IP67 Protected	M8 Cable Quick Connect		P8CS0803J
	M12 Cable Quick Connect		P8CS1204J



“S” Series Size 1 Pneumatic Connectors



		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	5/32" = 4mm OD	0.18	CMD04-1	0.07	FMD04-1
	6mm OD	0.18	CMD06-1	0.11	FMD06-1
	1/4" OD	0.18	CMD07-1B	0.11	FMD07-1B
Muffler for Exhaust Port	—	—	—	0.11	MMDVA1
Plug	—	—	—	0.18	PMDYY1
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.21	HMDXX1

Note: 85 Durometer minimum for pneumatic connectors.

“S” Series Individual Subbase Valves Size 2
(Valve & Base without Pneumatic Connectors)



Single Solenoid



Double Solenoid



Single Air Pilot



Double Air Pilot

Size 2 Electro-Pneumatic Individual Subbase Valves, 24VDC

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Solenoid (Monostable)	2.75 oz	P2M2S4ES2C
	Double Solenoid (Bistable)	3.28 oz	P2M2S4EE2C

Size 2 Air Pilot Individual Subbase Valves

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Air Pilot (Monostable)	2.75 oz	P2M2S4PS
	Double Air Pilot (Bistable)	3.28 oz	P2M2S4PP

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Solenoid NC + NC with Exhaust Check	3.53 oz	P2M2SDEE2C
	Double Solenoid NO + NO with Exhaust Check	3.53 oz	P2M2SCEE2C
	Double Solenoid NC + NO with Exhaust Check	3.53 oz	P2M2SEEE2C
	Single Solenoid NC with Exhaust Check	3.35 oz	P2M2S3ES2C
	Center Exhaust = dual 3/2 NC + NC without Exhaust Check	3.53 oz	P2M2SGEE2C

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Air Pilot NC + NC with Exhaust Check	3.53 oz	P2M2SDPP
	Double Air Pilot NO + NO with Exhaust Check	3.53 oz	P2M2SCPP
	Single Air Pilot NC with Exhaust Check	3.35 oz	P2M2S3PS

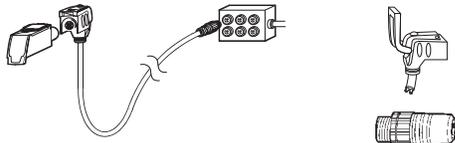
Note: Includes 5/32" (4mm) Air Pilot Connectors.

Note: Bold Options Standard

M8 Female Individual Connectors with Flying Lead Cable (For Solenoid Pilots)



With LED Voltage Surge Protection and Flying Lead Cable IP67 Protected		Weight (oz)	Order Code
	2 m Cable	2.19	P8LS08L226C
	5 m Cable	5.47	P8LS08L526C
9 m Cable	9.88	P8LS08L926C	
Thread Connector, IP67 Protected	M8 Cable Quick Connect		P8CS0803J
	M12 Cable Quick Connect		P8CS1204J



“S” Series Size 2 Pneumatic Connectors



PMDYY2



MMDVA2



HMDXX2



FMD09-2B



CMD09-2B

		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	6mm OD	0.18	CMD06-2	0.11	FMD06-2
	1/4" OD	0.18	CMD07-2B	0.11	FMD07-2B
	8mm OD	0.21	CMD08-2	0.14	FMD08-2
	3/8" OD	0.21	CMD09-2B	0.14	FMD09-2B
	10mm OD	0.25	CMD10-2	0.18	FMD10-2
	12mm OD	0.28	CMD12-2	0.21	FMD12-2
	1/2" OD	—	—	0.21	FMD13-2B
Muffler for Exhaust Port	—	—	—	0.11	MMDVA2
Plug	—	—	—	0.18	PMDYY2
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.28	HMDXX2

Note: 85 Durometer minimum for pneumatic connectors.

“S” Series Individual Subbase Valve
(Complete with Pneumatic and Electrical Connectors)

BOLD OPTIONS ARE MOST POPULAR.

P2M 1 S 4ES 2C 00 A F4

Basic Series	
Moduflex	P2M

Size	
Size 1	1
Size 2	2

Valve Series	
Individual Subbase	S

Valve Type / Function	
3-Way / 2-Position	
Single Solenoid, NC Spring Return	3ES
Single Air Pilot, NC Spring Return	3PS
4-Way / 2-Position	
Single Solenoid, Spring Return	4ES
Single Air Pilot, Spring Return	4PS
Double Solenoid	4EE
Double Air Pilot	4PP
Dual 3-Way, 2-Position, Spring Return	
Solenoid, NC / NC + PO Check (4/3 APB)	BEE*
Air Pilot, NC / NC + PO Check (4/3 APB)	BPP*
Solenoid, NO / NO (4/3 Pressure Ctr.)	CEE
Air Pilot NO / NO (4/3 Pressure Ctr.)	CPP
Solenoid, NC / NC with Exhaust Check	DEE
Air Pilot, NC / NC with Exhaust Check	DPP
Solenoid, NO / NC with Exhaust Check	EEE
Solenoid, NC / NC without Check (4/3 Exh. Ctr.)	GEE

* Valve includes peripheral P. O. Check Valve and union fittings.

Operator Voltage	
24VDC	2C
Remote Pilot - 5/32" (4mm) Tube	00

Ports (All Ports)	
C0*	10mm Elbow Fitting
C2*	12mm Elbow Fitting
C4	5/32" (4mm) Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8*	8mm Elbow Fitting
C9*	3/8" Elbow Fitting
F0*	10mm Straight Fitting
F2*	12mm Straight Fitting
F3*	1/2" Straight Fitting
F4	5/32" (4mm) Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8*	8mm Straight Fitting
F9*	3/8" Straight Fitting

* Only Available with Size 2 Valves.

Fitting Configuration	
A*	Straight Fittings
B*	Elbow Fittings
C**	Straight Fitting & Muffler
D**	Elbow Fitting & Muffler

* Ports 1 & 3 fittings sizes are same as Ports 2 & 4 (See example at left.)

† Fitting in Port 1, Muffler in Port 3.

LED / Cable	
00	No Cable, No LED, No Surge Suppression
V2	2 Meter Cable with LED and Surge Suppression
V5	5 Meter Cable with LED and Surge Suppression
V9	9 Meter Cable with LED and Surge Suppression

EXAMPLE for Fitting Configuration: Size 1

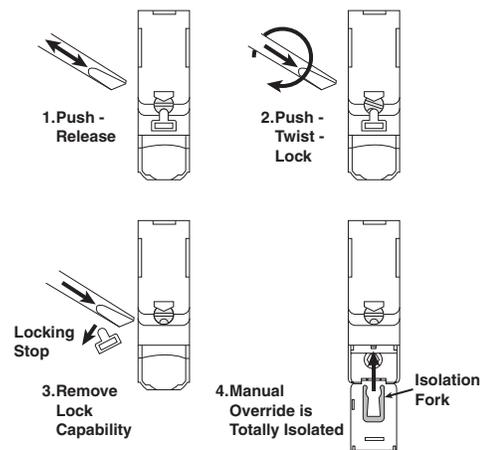
- CF7** Ports 1 & 3
 1/4" Straight Fitting & Muffler
 Ports 2 & 4
 1/4" Straight Fittings
- Size 2**
- AC0** Ports 1 & 3
 10mm Elbow Fittings
 Ports 2 & 4
 10mm Elbow Fittings

With Only One Universal Solenoid Pilot for all Configurations

24VDC is now a global standard for all machines.

The Moduflex 24VDC unique solenoid pilot is supplied with the multi-function manual override that can be adapted to all requirements, as explained by the drawings.

Multi-Function Adaptable Manual Override





“S” Series Single Solenoid

Example:

Size 1, 4-Way Single Solenoid valve with 1/4" Straight Connectors in Ports 1, 2 and 4. Exhaust Muffler in Port 3. Valve to include 2m cable with LED and surge suppression.

How to Order Complete Valve Assembly

Line Item	Quantity	Part Number	Description
1	1	P2M1S4ES2CV2CF7	Size 1, Individual Subbase Valve, 4 Way, Single Solenoid, 2m Cable with LED / Surge Suppression, Exhaust Muffler with 1/4" OD Straight Port Fittings

Notes:

1. Cables supplied loose with valve.
2. For LED and Surge Suppressor, cable must be supplied with valve.

How to Order Components

Line Item	Quantity	Part Number	Description
1	1	P2M1S4ES2C	Size 1, Individual Subbase Valve, Single Solenoid, 4 Way
2	1	P8LS08L226C	2m Cable with LED / Surge Suppression
3	3	FMD07-1B	Size 1, 1/4" OD Tube Push In Connector
4	1	MMDVA1	Size 1, Muffler for Exhaust Port

“T” Series Manifold Valves with Individual Connectors Size 1



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Single Solenoid



Double Solenoid



Single Air Pilot



Double Air Pilot

Size 1 Electro-Pneumatic Manifold Valves, 24VDC

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Solenoid (Monostable)	2.40 oz	P2M1T4ES2C
	Double Solenoid (Bistable)	2.72 oz	P2M1T4EE2C

4-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Solenoid Spring with Exhaust Check	2.72 oz	P2M1TJEE2C

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Solenoid NC + NC with Exhaust Check	2.82 oz	P2M1TDEE2C
	Double Solenoid NO + NO with Exhaust Check	2.82 oz	P2M1TCEE2C
	Double Solenoid NC + NO with Exhaust Check	2.82 oz	P2M1TEEE2C
	Single Solenoid NC with Exhaust Check	2.68 oz	P2M1T3ES2C
	Center Exhaust = dual 3/2 NC + NC without Exhaust Check	2.84 oz	P2M1TGEE2C

Size 1 Air Pilot Manifold Valves

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Air Pilot (Monostable)	2.40 oz	P2M1T4PS
	Double Air Pilot (Bistable)	2.72 oz	P2M1T4PP

4-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Air Pilot Spring with Exhaust Check	2.72 oz	P2M1TJPP

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Air Pilot NC + NC with Exhaust Check	2.82 oz	P2M1TDPP
	Double Air Pilot NO + NO with Exhaust Check	2.82 oz	P2M1TCPP
	Single Air Pilot NC with Exhaust Check	2.68 oz	P2M1T3PS

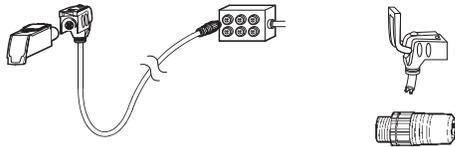
Note: Includes 5/32" (4mm) Air Pilot Connectors.

Note: Bold Options Standard

M8 Female Individual Connectors with Flying Lead Cable (For Solenoid Pilots)



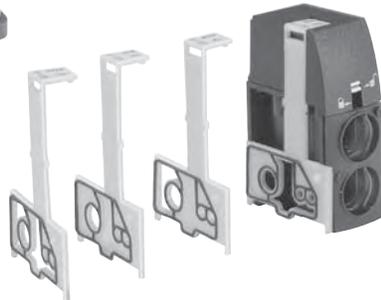
With LED Voltage Surge Protection and Flying Lead Cable IP67 Protected		Weight (oz)	Order Code
	2 m Cable	2.19	P8LS08L226C
	5 m Cable	5.47	P8LS08L526C
9 m Cable	9.88	P8LS08L926C	
Thread Connector, IP67 Protected	M8 Cable Quick Connect		P8CS0803J
	M12 Cable Quick Connect		P8CS1204J



P2M1K0TASD



P2M2HXT01



P2M2BXT0A

Manifold Options

Module	Weight (oz)	Order Code
Pneumatic Head and Tail Set	2.26	P2M2HXT01*
Pneumatic Head and Tail Set with TORX Screwdriver	2.50	P2M2HXT0T*
TORX Screwdriver Only	.24	P2M1K0TASD
Intermediate Supply Module (With a set of 4 Configuration Plates)	1.48	P2M2BXT0A*

* Use Fittings for Size 2 Modules Only.

"T" Series Size 1 Pneumatic Connectors



		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	5/32" = 4mm OD	0.18	CMD04-1	0.07	FMD04-1
	6mm OD	0.18	CMD06-1	0.11	FMD06-1
	1/4" OD	0.18	CMD07-1B	0.11	FMD07-1B
Muffler for Exhaust Port	—	—	—	0.11	MMDVA1
Plug	—	—	—	0.18	PMDYY1
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.21	HMDXX1

Note: 85 Durometer minimum for pneumatic connectors.

“T” Series Manifold Valves with Individual Connectors Size 2

C

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Single Solenoid



Double Solenoid



Single Air Pilot



Double Air Pilot

Size 2 Electro-Pneumatic Manifold Valves, 24VDC

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Solenoid (Monostable)	2.61 oz	P2M2T4ES2C
	Double Solenoid (Bistable)	2.93 oz	P2M2T4EE2C

Size 2 Air Pilot Manifold Valves

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Air Pilot (Monostable)	2.61 oz	P2M2T4PS
	Double Air Pilot (Bistable)	2.93 oz	P2M2T4PP

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Solenoid NC + NC with Exhaust Check	3.32 oz	P2M2TDEE2C
	Double Solenoid NO + NO with Exhaust Check	3.32 oz	P2M2TCEE2C
	Double Solenoid NC + NO with Exhaust Check	3.32 oz	P2M2TEEE2C
	Single Solenoid NC with Exhaust Check	3.17 oz	P2M2T3ES2C
	Center Exhaust = dual 3/2 NC + NC without Exhaust Check	3.32 oz	P2M2TGEE2C

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Air Pilot NC + NC with Exhaust Check	3.32 oz	P2M2TDPP
	Double Air Pilot NO + NO with Exhaust Check	3.32 oz	P2M2TCPP
	Single Air Pilot NC with Exhaust Check	2.61 oz	P2M2T3PS

Note: Includes 5/32" (4mm) Air Pilot Connectors.

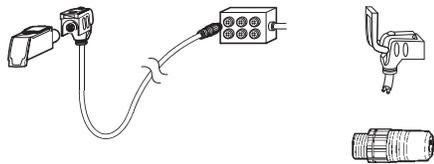
Note: Bold Options Standard



M8 Female Individual Connectors with Flying Lead Cable (For Solenoid Pilots)



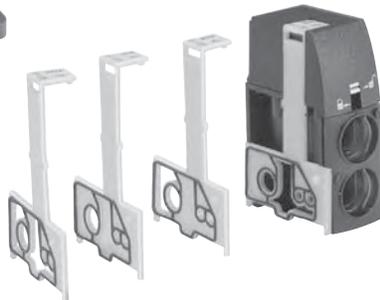
		Weight (oz)	Order Code
With LED Voltage Surge Protection and Flying Lead Cable IP67 Protected	2 m Cable	2.19	P8LS08L226C
	5 m Cable	5.47	P8LS08L526C
	9 m Cable	9.88	P8LS08L926C
Thread Connector, IP67 Protected	M8 Cable Quick Connect		P8CS0803J
	M12 Cable Quick Connect		P8CS1204J



P2M1K0TASD



P2M2HXT01



P2M2BXT0A

Manifold Options

Module	Weight (oz)	Order Code
Pneumatic Head and Tail Set	2.26	P2M2HXT01*
Pneumatic Head and Tail Set with TORX Screwdriver	2.50	P2M2HXT0T*
TORX Screwdriver Only	.24	P2M1K0TASD
Intermediate Supply Module (With a set of 4 Configuration Plates)	1.48	P2M2BXT0A*

* Use Fittings for Size 2 Modules Only.

"T" Series Size 2 Pneumatic Connectors



		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	6mm OD	0.18	CMD06-2	0.11	FMD06-2
	1/4" OD	0.18	CMD07-2B	0.11	FMD07-2B
	8mm OD	0.21	CMD08-2	0.14	FMD08-2
	3/8" OD	0.21	CMD09-2B	0.14	FMD09-2B
	10mm OD	0.25	CMD10-2	0.18	FMD10-2
	12mm OD	0.28	CMD12-2	0.21	FMD12-2
	1/2" OD	—	—	0.21	FMD13-2B
Muffler for Exhaust Port	—	—	—	0.11	MMDVA2
Plug	—	—	—	0.18	PMDYY2
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.28	HMDXX2

Note: 85 Durometer minimum for pneumatic connectors.

"T" Series Manifold Valve with Individual Connectors
(Complete with Pneumatic and Electrical Connectors)

BOLD OPTIONS ARE MOST POPULAR.

P2M 1 T 4ES 2C 00 0 F4

Basic Series	
Valvetronic Modules	P2M

Size	
Size 1	1
Size 2	2

Valve Series	
Individual Wire	T

Valve Type / Function	
3-Way / 2-Position	
Single Solenoid, NC Spring Return	3ES
Single Air Pilot, NC Spring Return	3PS
4-Way / 2-Position	
Single Solenoid, Spring Return	4ES
Single Air Pilot, Spring Return	4PS
Double Solenoid	4EE
Double Air Pilot	4PP
Dual 3-Way, 2-Position, Spring Return	
Solenoid, NC / NC + PO Check (4/3 APB)	BEE*
Air Pilot, NC / NC + PO Check (4/3 APB)	BPP*
Solenoid, NO / NO (4/3 Pressure Ctr.)	CEE
Air Pilot NO / NO (4/3 Pressure Ctr.)	CPP
Solenoid, NC / NC with Exhaust Check	DEE
Air Pilot, NC / NC with Exhaust Check	DPP
Solenoid, NO / NC with Exhaust Check	EEE
Solenoid, NC / NC without Check (4/3 Exh. Ctr.)	GEE
Dual 4-Way, 2-Position, Spring Return	
Solenoid	JEE**
Air Pilot	JPP**

* Valve includes peripheral P. O. Check Valve and union fittings.
 ** Size 1 Only.

Ports 2 & 4	
C0*	10mm Elbow Fitting
C2*	12mm Elbow Fitting
C4	5/32" (4mm) Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8*	8mm Elbow Fitting
C9*	3/8" Elbow Fitting
F0*	10mm Straight Fitting
F2*	12mm Straight Fitting
F3*	1/2" Straight Fitting
F4	5/32" (4mm) Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8*	8mm Straight Fitting
F9*	3/8" Straight Fitting

* Only Available with Size 2 Valves.

Ports 1 & 3	
0	None

LED / Cable	
00	No Cable, No LED, No Surge Suppression
V2	2 Meter Cable with LED and Surge Suppression
V5	5 Meter Cable with LED and Surge Suppression
V9	9 Meter Cable with LED and Surge Suppression

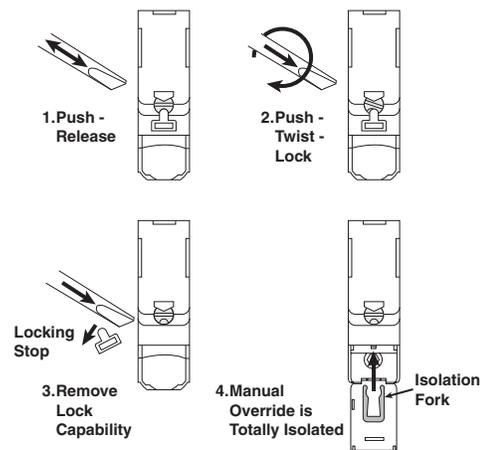
Operator Voltage	
2C	24VDC
00	Remote Pilot - 5/32" (4mm) Tube

With Only One Universal Solenoid Pilot for all Configurations

24VDC is now a global standard for all machines.

The Moduflex 24VDC unique solenoid pilot is supplied with the multi-function manual override that can be adapted to all requirements, as explained by the drawings.

Multi-Function Adaptable Manual Override





"T" Series Single Solenoid

Example:

Size 1, 4-Way Single Solenoid valve with 1/4" Straight Connectors in Ports 2 and 4. Valve to include 2m cable with LED and surge suppression.

How to Order Complete Valve Assembly

Line Item	Quantity	Part Number	Description
1	1	P2M1T4ES2CV20F7	Size 1, T Series Manifold Valves, 4 Way, Single Solenoid, 2m Cable with LED / Surge Suppression, 1/4" OD Straight Port Fittings

Notes:

1. Cables supplied loose with valve.
2. For LED and Surge Suppressor, cable must be supplied with valve.
3. To assemble into a manifold, Pneumatic Head and Tail Set must be ordered separately.

How to Order Components

Line Item	Quantity	Part Number	Description
1	1	P2M1T4ES2C	Size 1, T Series Manifold Valves, Single Solenoid, 4 Way
2	1	P8LS08L226C	2m Cable with LED / Surge Suppression
3	2	FMD07-1B	Size 1, 1/4" OD Tube Push In Connector



“V” Series Manifold Valves with Collective Wiring Size 1



Single Solenoid



Double Solenoid

Size 1 Electro-Pneumatic Manifold Valves, 24VDC

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Solenoid (Monostable)	3.32 oz	P2M1V4ES2CV
	Double Solenoid (Bistable)	3.63 oz	P2M1V4EE2CV

4-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Solenoid Spring with Exhaust Check	3.63 oz	P2M1VJEE2CV

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Solenoid NC + NC with Exhaust Check	3.74 oz	P2M1VDEE2CV
	Double Solenoid NO + NO with Exhaust Check	3.74 oz	P2M1VCEE2CV
	Double Solenoid NC + NO with Exhaust Check	3.74 oz	P2M1VEEE2CV
	Single Solenoid NC with Exhaust Check	3.60 oz	P2M1V3ES2CV
	Center Exhaust = dual 3/2 NC + NC without Exhaust Check	3.74 oz	P2M1VGEE2CV

“V” Series Size 1 Pneumatic Connectors



		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	5/32" = 4mm OD	0.18	CMD04-1	0.07	FMD04-1
	6mm OD	0.18	CMD06-1	0.11	FMD06-1
	1/4" OD	0.18	CMD07-1B	0.11	FMD07-1B
Muffler for Exhaust Port	—	—	—	0.11	MMDVA1
Plug	—	—	—	0.18	PMDYY1
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.21	HMDXX1

Note: 85 Durometer minimum for pneumatic connectors.

Note: Bold Options Standard



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P2M2HEV0A



P2M2HEV0D



Electrical 20-Pin Multi-Connector with Flying Lead Cable

Cable Length	Weight (oz)	IP	Order Code
2 m	10.97	65	P8LMH20M2A
5 m	27.41	65	P8LMH20M5A
9 m	49.38	65	P8LMH20M9A

Electrical Connector

Module	Weight (oz)	Order Code
20-Pin, Multi-Connector Electrical Head Module	1.34	P2M2HEV0A
25-Pin, D-Sub, Electrical Head Module	1.34	P2M2HEV0D



P2M1K0TASD



P2M2HXT01



P2M2BXV0A



Electrical 25-Pin D-Sub Cable

Length (meters)	Weight (oz)	IP	Order Code
3	14.3	20	P8LMH25M3A
3	14.3	65	SCD253W
9	55.8	20	SCD259D
9	55.8	65	SCD259WE

Manifold Options

Module	Weight (oz)	Order Code
Pneumatic Head and Tail Set	2.26	P2M2HXT01*
Pneumatic Head and Tail Set with TORX Screwdriver	2.50	P2M2HXT0T*
TORX Screwdriver Only	.24	P2M1K0TASD
Intermediate Supply Module (With a set of 4 Configuration Plates)	1.48	P2M2BXV0A*

* Use Fittings for Size 2 Modules Only.

“V” Series Manifold Valves with Collective Wiring Size 2



Single Solenoid



Double Solenoid

Size 2 Electro-Pneumatic Manifold Valves, 24VDC

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Solenoid (Monostable)	3.53 oz	P2M2V4ES2CV
	Double Solenoid (Bistable)	3.88 oz	P2M2V4EE2CV

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Solenoid NC + NC with Exhaust Check	4.06 oz	P2M2VDEE2CV
	Double Solenoid NO + NO with Exhaust Check	4.06 oz	P2M2VCEE2CV
	Double Solenoid NC + NO with Exhaust Check	4.06 oz	P2M2VEEE2CV
	Single Solenoid NC with Exhaust Check	3.88 oz	P2M2V3ES2CV
	Center Exhaust = dual 3/2 NC + NC without Exhaust Check	4.06 oz	P2M2VGEE2CV

“V” Series Size 2 Pneumatic Connectors



PMDYY2



MMDVA2



HMDXX2



FMD09-2B



CMD09-2B

		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	6mm OD	0.18	CMD06-2	0.11	FMD06-2
	1/4" OD	0.18	CMD07-2B	0.11	FMD07-2B
	8mm OD	0.21	CMD08-2	0.14	FMD08-2
	3/8" OD	0.21	CMD09-2B	0.14	FMD09-2B
	10mm OD	0.25	CMD10-2	0.18	FMD10-2
	12mm OD	0.28	CMD12-2	0.21	FMD12-2
	1/2" OD	—	—	0.21	FMD13-2B
Muffler for Exhaust Port	—	—	—	0.11	MMDVA2
Plug	—	—	—	0.18	PMDYY2
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.28	HMDXX2

Note: 85 Durometer minimum for pneumatic connectors.

Note: Bold Options Standard



P2M2HEV0A



P2M2HEV0D



Electrical Connector

Module	Weight (oz)	Order Code
20-Pin, Multi-Connector Electrical Head Module	1.34	P2M2HEV0A
25-Pin, D-Sub, Electrical Head Module	1.34	P2M2HEV0D

Electrical 20-Pin Multi-Connector with Flying Lead Cable

Cable Length	Weight (oz)	IP	Order Code
2 m	10.97	65	P8LMH20M2A
5 m	27.41	65	P8LMH20M5A
9 m	49.38	65	P8LMH20M9A



P2M1K0TASD



P2M2HXT01



P2M2BXV0A



Electrical 25-Pin D-Sub Cable

Length (meters)	Weight (oz)	IP	Order Code
3	14.3	20	P8LMH25M3A
3	14.3	65	SCD253W
9	55.8	20	SCD259D
9	55.8	65	SCD259WE

Manifold Options

Module	Weight (oz)	Order Code
Pneumatic Head and Tail Set	2.26	P2M2HXT01*
Pneumatic Head and Tail Set with TORX Screwdriver	2.50	P2M2HXT0T*
TORX Screwdriver Only	.24	P2M1K0TASD
Intermediate Supply Module (With a set of 4 Configuration Plates)	1.48	P2M2BXV0A*

* Use Fittings for Size 2 Modules Only.



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“V” Series Manifold Valve with Collective Wiring
(Complete with Pneumatic Connectors)

BOLD OPTIONS ARE MOST POPULAR.



P2M 1 V 4ES 2C V0 0 F4

Basic Series	
Valvetronic Modules	P2M

Size	
Size 1	1
Size 2	2

Valve Series	
Collective Wiring	V

Valve Type / Function	
3-Way / 2-Position	
Single Solenoid, NC Spring Return	3ES
4-Way / 2-Position	
Single Solenoid, Spring Return	4ES
Double Solenoid	4EE
Dual 3-Way, 2-Position, Spring Return	
Solenoid, NC / NC + PO Check (4/3 APB)	BEE*
Solenoid, NO / NO (4/3 Pressure Ctr.)	CEE
Solenoid, NC / NC with Exhaust Check	DEE
Solenoid, NO / NC with Exhaust Check	EEE
Solenoid, NC / NC without Check (4/3 Exh. Ctr.)	GEE
Dual 4-Way, 2-Position, Spring Return	
Solenoid	JEE**

* Valve includes peripheral P. O. Check Valve and union fittings.
 ** Size 1 Only.

Ports 2 & 4	
C0*	10mm Elbow Fitting
C2*	12mm Elbow Fitting
C4	5/32" (4mm) Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8*	8mm Elbow Fitting
C9*	3/8" Elbow Fitting
F0*	10mm Straight Fitting
F2*	12mm Straight Fitting
F3*	1/2" Straight Fitting
F4	5/32" (4mm) Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8*	8mm Straight Fitting
F9*	3/8" Straight Fitting

* Only Available with Size 2 Valves.

Ports 1 & 3	
0	None

LED / Cable	
V0	No Cable with LED and Surge Suppression

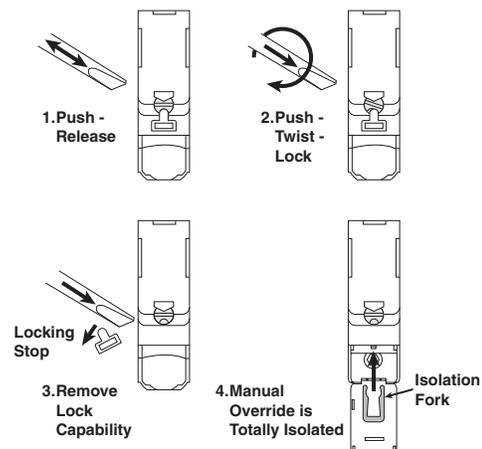
Operator Voltage	
2C	24VDC

With Only One Universal Solenoid Pilot for all Configurations

24VDC is now a global standard for all machines.

The Moduflex 24VDC unique solenoid pilot is supplied with the multi-function manual override that can be adapted to all requirements, as explained by the drawings.

Multi-Function Adaptable Manual Override





“V” Series Single Solenoid

Example:

Size 1, 4-Way Single Solenoid valve with 1/4" Straight Connectors in Ports 2 and 4. Valve to include LED and surge suppression.

How to Order Complete Valve Assembly

Line Item	Quantity	Part Number	Description
1	1	P2M2V4ES2CV00F7	Size 1, V Series Manifold Valves, 4 Way, Single Solenoid, LED / Surge Suppression, 1/4" OD Straight Port Fittings

Notes:

1. LED and Surge Suppressor included with valve.
2. To assemble into a manifold, Pneumatic Head and Tail Set and Electrical Connector must be ordered separately.

How to Order Components

Line Item	Quantity	Part Number	Description
1	1	P2M1V4ES2CV	Size 1, V Series Manifold Valves, Single Solenoid, 4 Way
2	2	FMD07-1B	Size 1, 1/4" OD Tube Push In Connector



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“V” Series 25-Pin, D-Sub Addressing

Valve Island Head 25-Pin, Multi-Connector

On the island head module, the multi-connector integrates the HE10 connector standard in its 25-Pin version.

Its plug-in function is secured in position with a guillotine lock with easy access from the front of the island.

The 25-Pin, D-Sub multi-connector is rated for IP40.

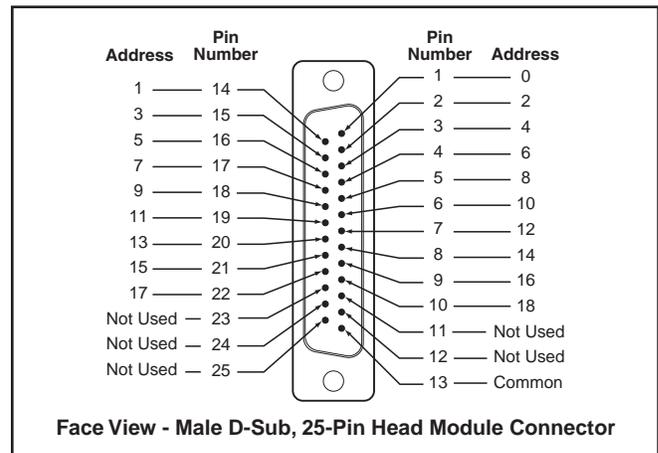
25-Pin, Multi-Connector Addressing

When assembling a **V Series** island, modules are automatically connected to the head module through the modular principle of the integrated electrical connections.

Each wire color code corresponds a solenoid pilot position in the island.

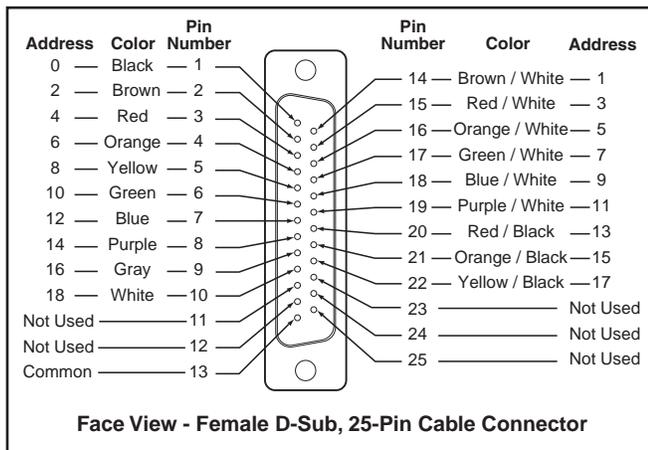


P8LMH25M3A - Cable



Electrical 25-Pin D-Sub Cable

Length (meters)	Weight (oz)	IP	Order Code
3	14.3	20	P8LMH25M3A
3	14.3	65	SCD253W
9	55.8	20	SCD259D
9	55.8	65	SCD259WE



Electrical Specifications

Rated Voltage	24VDC
Maximum Addresses	19
Maximum Energized Simultaneously	19
Electrical Connection	25-Pin, D-Sub DIN41652, MIL-C-24308, NFC93425 Type HE5
Polarity	Insensitive: PNP and NPN compatible
Dust and Water Protection	IP40 / IP65

“V” Series 20-Pin, Multi-Connector and Addressing



Valve Island Head 20-Pin, Multi-Connector

On the island head module, the multi-connector integrates the HE10 connector standard in its 20-Pin version.

Its plug-in function is secured in position with a guillotine lock with easy access from the front of the island.

Just like the whole island, the multi-connector follows the IP65 protection standard.

Cable Specification:

8.6 mm dia., UL, 20 wires, 0.22mm², AWG 24

Minimum Static Radius: 6.5 mm (.255")

Available with 6.56 ft. (2 m), 16.4 ft. (5 m) and 29.5 ft. (9 m) lengths.

20-Pin, Multi-Connector Addressing

When assembling a **V Series** island, modules are automatically connected to the head module through the modular principle of the integrated electrical connections.

The color code addressing given below conforms to the DIN 47100 standard.

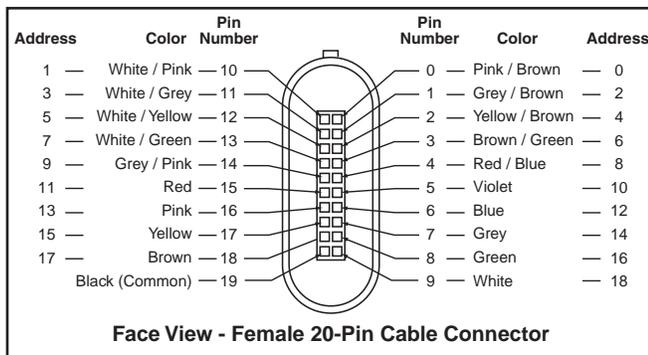
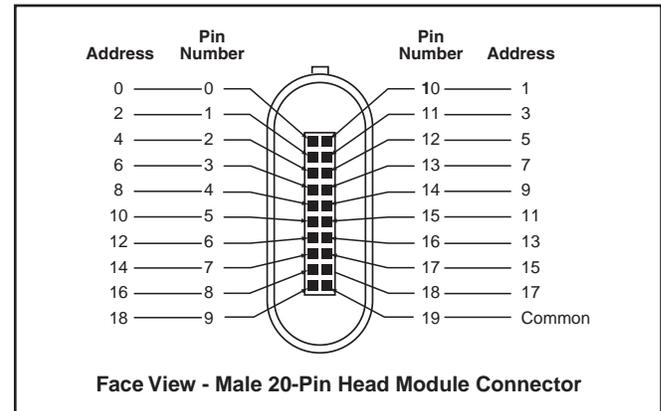
Each wire color corresponds a solenoid pilot position in the island.



P8LMH20M2A - Cable

Electrical 20-Pin Multi-Connector with Flying Lead Cable

Cable Length	Weight (oz)	IP	Order Code
2 m	10.97	65	P8LMH20M2A
5 m	27.41	65	P8LMH20M5A
9 m	49.38	65	P8LMH20M9A



Electrical Specifications

Rated Voltage	24VDC
Maximum Addresses	19
Maximum Energized Simultaneously	19
Electrical Connection	Type HE10
Polarity	Insensitive: PNP and NPN compatible
Dust and Water Protection	IP65

The Moduflex Fieldbus System

Moduflex communication modules directly attach to the Moduflex head set. It offers a compact and low cost fieldbus solution.

Moduflex Features

- Small, compact product design
- Broad protocol offering, including DeviceNet, Profibus, AS-i, CANopen, and Interbus
- Channel-level diagnostics (LED and Electronic)
- Inputs available with AS-i modules
- Horizontal and vertical mounting without derating
- 5g vibration
- Quick-disconnects for I/O and network connectivity
- Built-in panel grounding
- CE certification

C

Moduflex

PVL



“V” Series Fieldbus Connections
Valve Island Electrical Head Modules for
Bus Connections and Control



CANopen



INTERBUS-S

Device Bus Electrical Head Modules

Electrical Module for 16 Outputs Max.
(V Series islands may have up to 16 solenoids)



P2M2HBVP11600

Bus Protocol	Weight (oz)	Order Code
Profibus DP	8.82	P2M2HBVP21600
DeviceNet	8.82	P2M2HBVD21600
CANopen	8.82	P2M2HBVC21600
InterBus-S	10.58	P2M2HBVS11600

Fieldbus Accessories

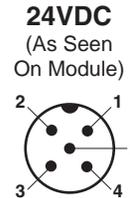
	Bus Protocol	Connector Type	Weight (oz)	Order Code
Power Supply Female Straight Field Wireable Connector	Profibus DP / InterBus-S / DeviceNet / CANopen	M12 type A	0.88	P8CS1205AA
Line Termination Resistor	Profibus DP	M12 type B	0.88	P8BPA00MB
	DeviceNet / CANopen	M12 type A	0.88	P8BPA00MA

Note: Use standard cables and connectors for bus communications from your electrical supplier.

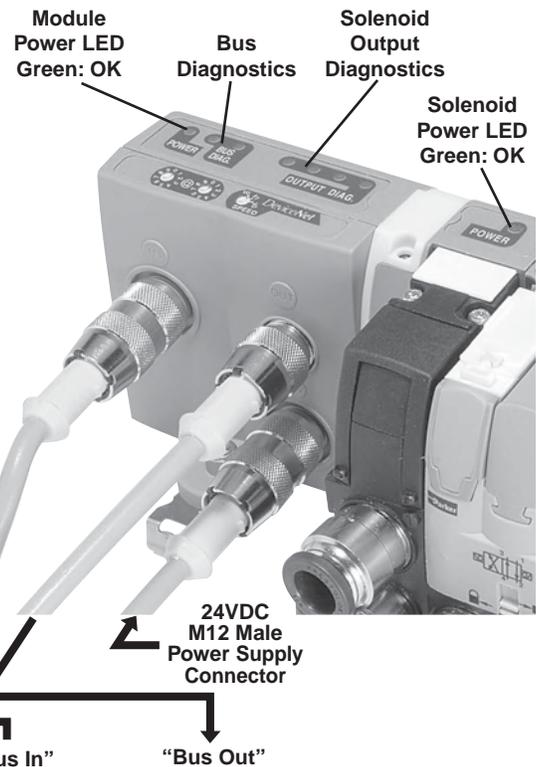
M12 (Male) Power Supply Connector

- 1 - 24VDC Module (Not Connected for DeviceNet and CANopen)
- 2 - Not Connected
- 3 - 0VDC Module and Solenoid
- 4 - 24VDC Solenoid
- 5 - Protected Earth (PE)

Profibus DP / DeviceNet / CANopen / InterBus-S



M12 Male Type A



Connection

All bus modules have an M12 male connector for power supply.

Connector on Moduflex Modules are labeled. Bus Connectors are labeled “Bus In” and “Bus Out” while, Power Supply Connections are labeled “24VDC”. Connect Fieldbus to “Bus In” and “Bus Out” and Power Supply to “24VDC”.

Diagnostic

The two “power” indicators shown on the illustrations provide visual indication of the module and solenoid supply status.

Note: Output power to the solenoids can be wired to allow the user to turn the outputs off while allowing communications to remain on. This can be done by placing the user’s Emergency Stop switch or other hard-wired control contact between Pin 1 and Pin 4. If this feature is not required, Pin 1 and Pin 4 should be wired together.

“V” Series Valvetronic™
Device Bus Module: Connections, Addressing, Diagnostic



Bus Cable Connections

Profibus DP standard male and female type B M12 connectors.

Use of prefabricated cables available from your local electrical supplier is recommended.

Line termination P8BPA00MB, is necessary on the “bus out” connector of the last station.

This module incorporates an Autobaud detect feature, eliminating the need to set switches.

Addressing

Use the GSD file on web site.

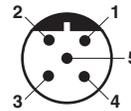
The rotary switches enable configuration of the decimal address.

- www.parker.com/pneu/moduflex

Diagnostic

Diagnostic according to the module dialog shown on the illustration.

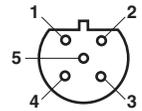
Bus In
 (As Seen On Module)



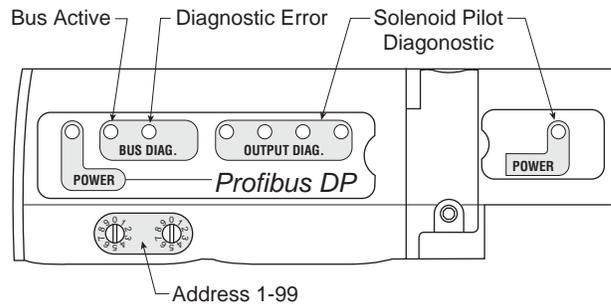
M12 Male Type B

Pin Out	
1	- + 5V
2	- Line A
3	- 0V
4	- Line B
5	- Shield

Bus Out
 (As Seen On Module)



M12 Female Type B



Bus Cable Connections

DeviceNet standard male and female type A M12 connectors.

Use of prefabricated cables available from your local electrical supplier is recommended.

Line termination P8BPA00MA, is necessary on the “bus out” connector of the last station.

Addressing

Use the EDS file on web site.

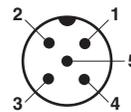
The rotary switches enable configuration of the node address (MAC ID) and the baud rate.

- www.parker.com/pneu/moduflex

Diagnostic

Diagnostic according to the module dialog shown on the illustration.

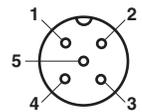
Bus In
 (As Seen On Module)



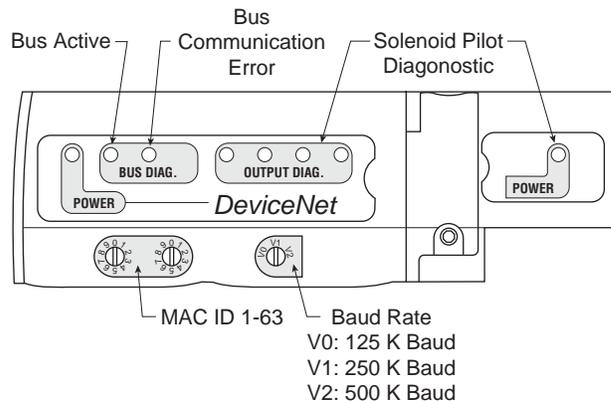
M12 Male Type A

Pin Out	
1	- Drain
2	- 24VDC
3	- 0VDC
4	- CAN-H
5	- CAN-L

Bus Out
 (As Seen On Module)



M12 Female Type A



CANopen

Bus Cable Connections

CANopen standard male and female type A M12 connectors.

Use of prefabricated cables available from your local electrical supplier is recommended.

Line termination P8BPA00MA, is necessary on the "bus out" connector of the last station.

Addressing

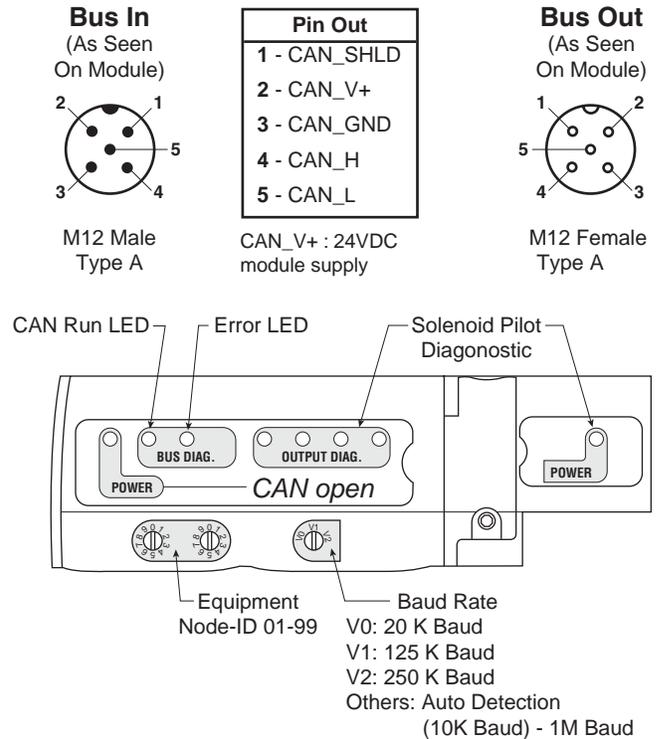
Use the EDS file on web site.

The rotary switches enable configuration of the decimal address.

- www.parker.com/pneu/moduflex

Diagnostic

Diagnostic according to the module dialog shown on the illustration.



INTERBUS-S

Bus Cable Connections

The M23 connectors conform to "Interbus remote bus".

Use of prefabricated cables available from your usual electrical supplier is recommended.

This module operates at 500 kbps.

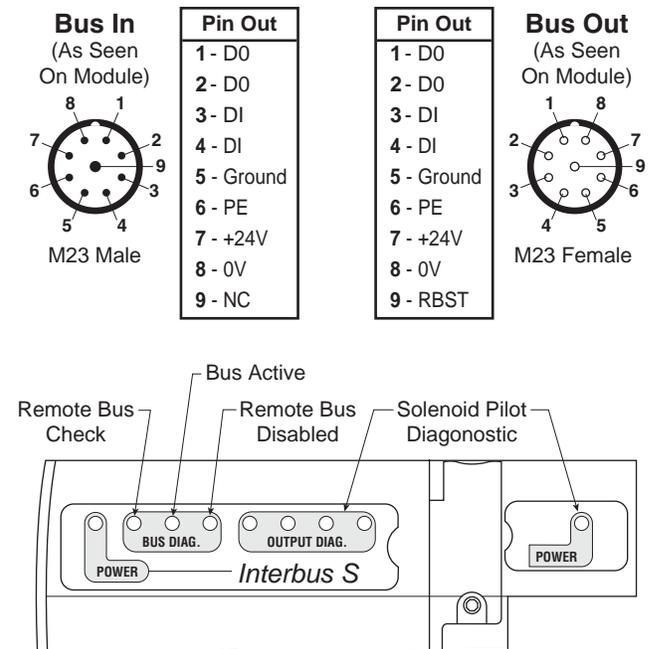
Addressing

InterBus-S is self addressing; therefore, it does not need any software or hardware configuration.

Diagnostic

Diagnostic according to the module dialog shown on the illustration.

This diagnostic conforms to the InterBus-S standard.



Note: For more details, please consult "Interbus remote bus" documentation.

“V” Series Bus Connections

Valve Island Electrical Head Modules for Bus Connections and Control



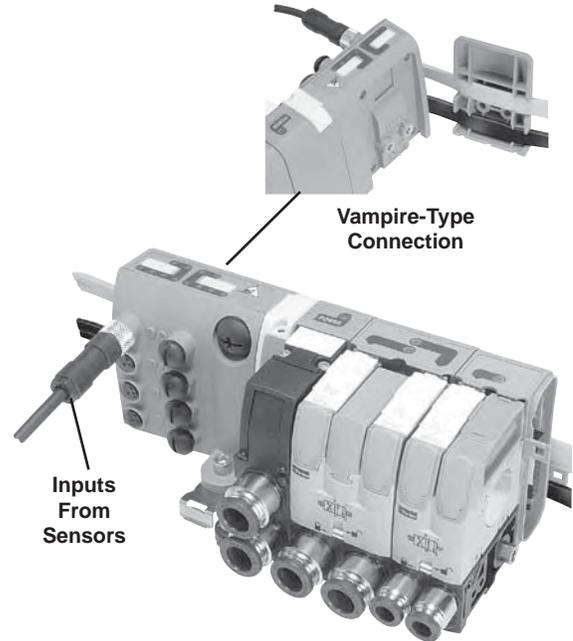
P2M2HBVA10808A



P2M2HBVA10808B



P2M2HBVA10800



Vampire-Type Connection

Inputs From Sensors

Standard AS-i Protocol (up to 31 nodes) Electrical Head Modules

Electrical Module for 8 Solenoids Max.
 (V Series islands may have up to 8 solenoids)
 (2 nodes per module, 4 inputs, 4 solenoids per node)

Input / Output Capability	Weight (oz)	Order Code
0 inputs and 8 solenoid outputs	5.29	P2M2HBVA10800
8 (PNP) inputs on eight (M8) connectors and 8 solenoid outputs	7.05	P2M2HBVA10808A
8 (PNP) inputs on four (M12) connectors and 8 solenoid outputs	7.05	P2M2HBVA10808B

AS-i Version 2.1 Protocol (up to 62 nodes) Electrical Head Modules

Electrical Module for 6 Solenoids Max.
 (V Series islands may have up to 6 solenoids)
 (2 nodes per module, 4 inputs, 3 solenoids per node)

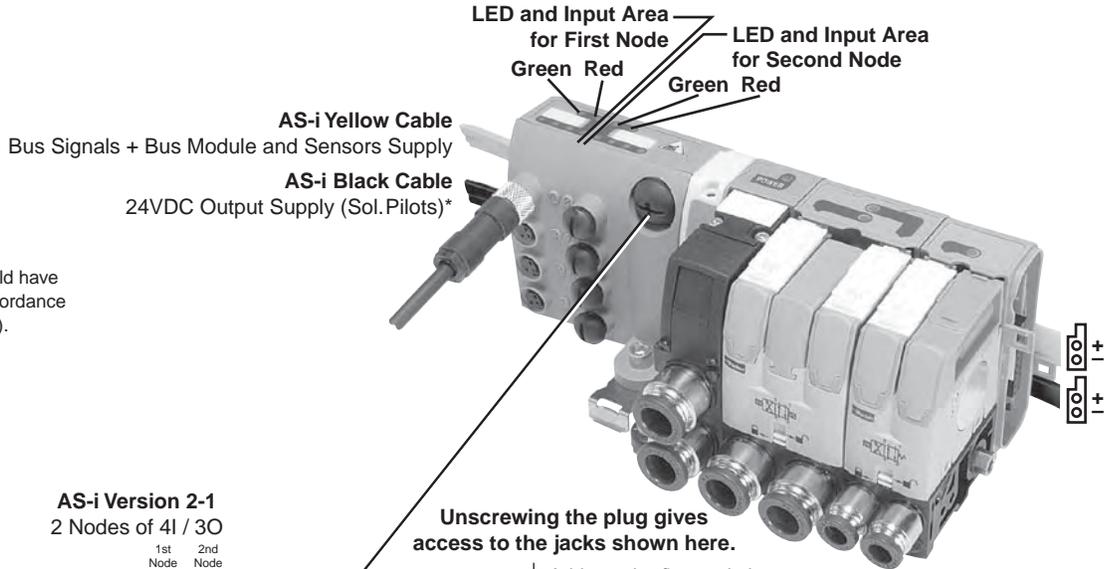
Input / Output Capability	Weight (oz)	Order Code
0 inputs and 6 solenoid outputs	5.29	P2M2HBVA20600
8 (PNP) inputs on eight (M8) connectors and 6 solenoid outputs	7.05	P2M2HBVA20608A
8 (PNP) inputs on four (M12) connectors and 6 solenoid outputs	7.05	P2M2HBVA20608B

AS-i Bus Accessories

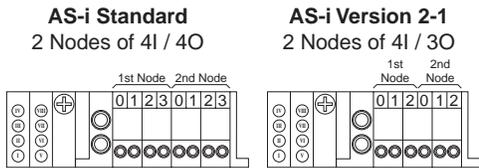
M12 Cable with Jack for Addressing

Length	Weight (oz)	Order Code
1 m	3.53	P8LS12JACK

“V” Series AS-i Bus Module



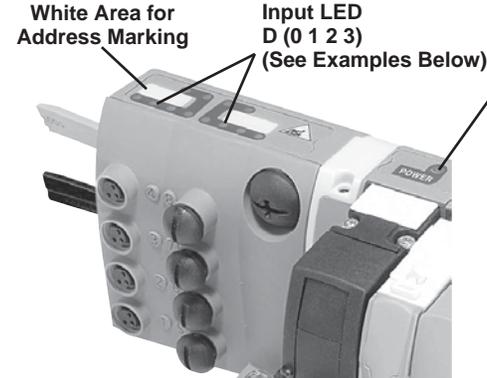
* The external supply should have protective isolation in accordance with IEC 364-4-41 (PELV).



Unscrewing the plug gives access to the jacks shown here.

Second Node Addressing
First Node Addressing

Profile: S - 7 . F . E . V2.0
 S - 7 . A . E . V2.1



Bus Diagnostic

“Power” LED State	Off	Green	Red
Power Supply	Sol. Pilot Supply	Normal Operation	Solenoid Overload

First Node LEDs State		Second Node LEDs State		System Condition
Green LED	Red LED	Green LED	Red LED	
*	○	*	○	Normal Operation
○	○	○	○	No Module + Sensor Supply
○	*	○	*	Input Overload
○	*	○	*	No AS-i Communication
*	*	○	*	Address First Node = 0
*	○	*	*	Address Second Node = 0

* ON ○ OFF * BLINK

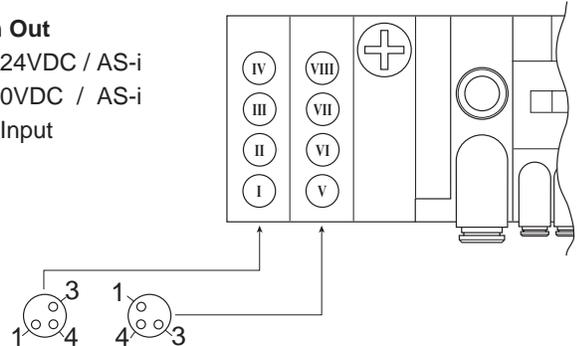
Input Wiring

Physical Input (I, II, III, IV) = D (0 1 2 3) First Node,
 Physical Input (V, VI, VII, VIII) = D (0 1 2 3) Second Node.

Examples: Physical Input III = Logical Input 6.2,
 Physical Input V = Logical Input 7.0.

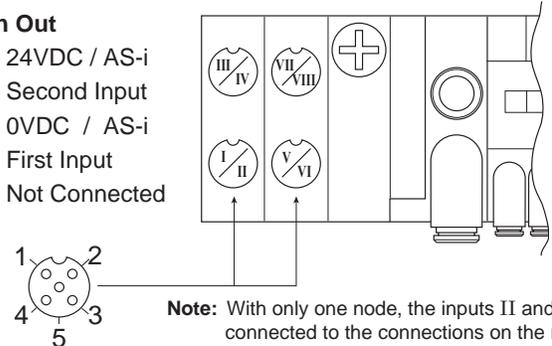
M8 Female Connectors

Pin Out
 1 - 24VDC / AS-i
 3 - 0VDC / AS-i
 4 - Input



M12 Female Connectors

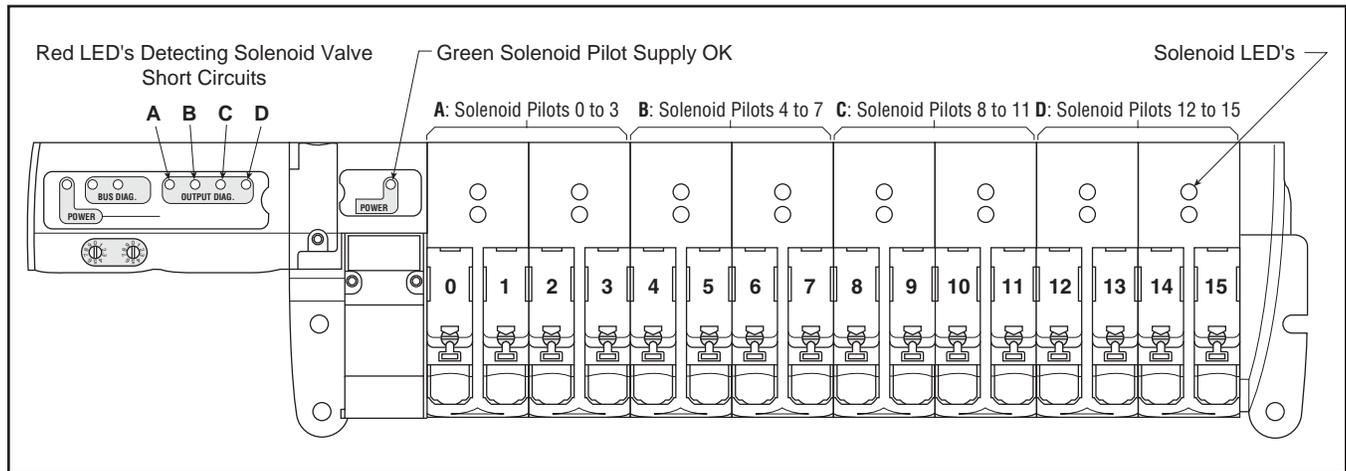
Pin Out
 1 - 24VDC / AS-i
 2 - Second Input
 3 - 0VDC / AS-i
 4 - First Input
 5 - Not Connected



Note: With only one node, the inputs II and IV are connected to the connections on the right.



Solenoid Pilot Diagnostic Common to All Device Bus Modules



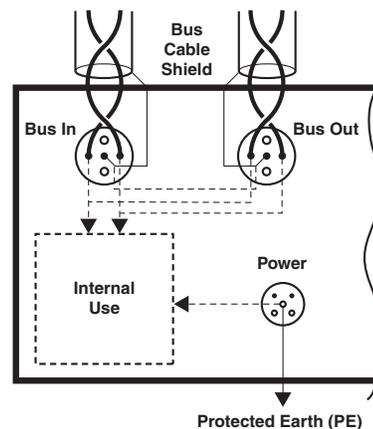
Inside the bus module, solenoid valve control is protected against short-circuits with the following visual indication provided:

- The red LEDs with code, shown above, detect solenoid valve short-circuits.
- Supply is OK when the solenoid pilot power supply indicator is green.

Bus Cable Protection Shield Connections for Profibus DP, DeviceNet and CANopen

To provide protection against electro-magnetic interferences, the bus cables are shielded. The module "bus in" and "bus out" connectors each includes a pin for connecting the cable shield (see next pages). It is safer to connect the shield to the protected earth (PE) at both ends of the bus. Within the bus module, provision is made to enable shield continuity by connection between the two shield pins.

The protected earth have to be connected locally on each module for CE accordance.



Serial Bus Specifications

All Buses	EMC / CE Mark	According to EN 61 000-6-2	EN 50081-2
------------------	---------------	----------------------------	------------

AS-i Bus	AS-i Line	According to EN 50295		
	Solenoid Pilot Voltage	24VDC		
	Module Consumption	max. 70 mA (2 nodes)		
	Max. Supply for All Inputs	240 mA (including internal input consumption)		
	Internal Input Consump.	9 mA for each active input		
	Inputs	According to IEC 1131-2 class 2		
	Certification	These products have been developed according to the association complete specification (v.2.11) and to the slave profiles S-7.F.E or S-B.F.E		

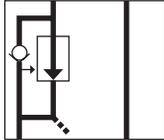
Device Bus	Bus Line	According to each bus specification		
	Module Voltage	20 to 30VDC		
	Solenoid Pilot Voltage	24VDC		
	Module Consumption	Profibus DP max. 1.5W	DeviceNet / CANopen max. 1.5W	InterBus-S max. 2W
	Outputs	Overload protection		
	Certification	<u>DeviceNet</u> : Compliant to Composite Test Revision 17, Test Suite: M002		
		<u>Profibus-DP</u> : Compliant to Test Specifications for Profibus DP Slaves, Version 2.0, February 2000, based on EN 50170-2 at Siemens AG in Furth.		
<u>InterBus-S</u> : This product has passed the relevant tests in accordance with the Interbus conformance requirements Certified No. 385.				

I/O Tables Common to All Device Bus Modules

Input Data Table								
Byte	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
0	Discrete Input 0 (Diagnostic LED 0-3)	Discrete Input 1 (Diagnostic LED 4-7)	Discrete Input 2 (Diagnostic LED 8-11)	Discrete Input 3 (Diagnostic LED 12-15)	—	—	—	—
Output Data Table								
Byte	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
0	Discrete Output 0	Discrete Output 1	Discrete Output 2	Discrete Output 3	Discrete Output 4	Discrete Output 5	Discrete Output 6	Discrete Output 7
1	Discrete Output 8	Discrete Output 9	Discrete Output 10	Discrete Output 11	Discrete Output 12	Discrete Output 13	Discrete Output 14	Discrete Output 15

Size 1 Pressure Regulator

The thrust developed by a cylinder often requires adjustment by controlling pressure to the front or back of the piston. The pressure regulation module enables manual adjustment of pressure with visual indication provided by the pressure gauge.



P2M1PXSN



PMDYY1

HMDXX1

FMD04-1

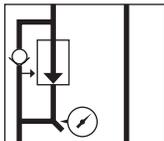
CMD04-1

FMD07-1B

CMD07-1B

Pressure Regulator without Gauge Size 1

Pressure Range	Size 1
0 to 30 PSI	P2M1PXST Weight 4.06 oz
0 to 60 PSI	P2M1PXSL Weight 4.06 oz
0 to 120 PSI	P2M1PXSN Weight 4.06 oz



P2M1PXSG



P2M1K0GN

Pressure Regulator with Gauge Size 1

Pressure Range	Size 1	Replacement Gauge
0 to 30 PSI	P2M1PXSR Weight 5.12 oz	P2M1K0GT Weight 1.06 oz
0 to 60 PSI	P2M1PXSM Weight 5.12 oz	P2M1K0GL Weight 1.06 oz
0 to 120 PSI	P2M1PXSG Weight 5.12 oz	P2M1K0GN Weight 1.06 oz

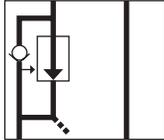
Pneumatic Connectors for Size 1 Regulators

		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	5/32" = 4mm OD	0.18	CMD04-1	0.07	FMD04-1
	6mm OD	0.18	CMD06-1	0.11	FMD06-1
	1/4" OD	0.18	CMD07-1B	0.11	FMD07-1B
Plug	—	—	—	0.18	PMDYY1
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.21	HMDXX1

Note: 85 Durometer minimum for pneumatic connectors.

Size 2 Pressure Regulator

The thrust developed by a cylinder often requires adjustment by controlling pressure to the front or back of the piston. The pressure regulation module enables manual adjustment of pressure with visual indication provided by the pressure gauge.



P2M2PXSN



PMDYY2



HMDXX2



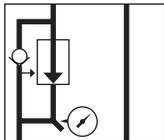
FMD09-2B



CMD09-2B

Pressure Regulator without Gauge Size 2

Pressure Range	Size 2
0 to 30 PSI	P2M2PXST Weight 6.00 oz
0 to 60 PSI	P2M2PXSL Weight 6.00 oz
0 to 120 PSI	P2M2PXSN Weight 6.00 oz



P2M2PXS



P2M1K0GN

Pressure Regulator with Gauge Size 2

Pressure Range	Size 2	Replacement Gauge
0 to 30 PSI	P2M2PXS Weight 4.94 oz	P2M1K0GT Weight 1.06 oz
0 to 60 PSI	P2M2PXSM Weight 4.94 oz	P2M1K0GL Weight 1.06 oz
0 to 120 PSI	P2M2PXSG Weight 4.94 oz	P2M1K0GN Weight 1.06 oz

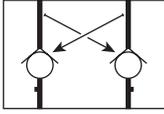
Pneumatic Connectors for Size 2 Regulators

		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	6mm OD	0.18	CMD06-2	0.11	FMD06-2
	1/4" OD	0.18	CMD07-2B	0.11	FMD07-2B
	8mm OD	0.21	CMD08-2	0.14	FMD08-2
	3/8" OD	0.21	CMD09-2B	0.14	FMD09-2B
	10mm OD	0.25	CMD10-2	0.18	FMD10-2
	12mm OD	0.28	CMD12-2	0.21	FMD12-2
1/2" OD	—	—	0.21	FMD13-2B	
Plug	—	—	—	0.18	PMDYY2
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.28	HMDXX2

Note: 85 Durometer minimum for pneumatic connectors.

Dual P.O. Check Valve

Combined with a double 3/2 NC + NC valve, this module will block both flows and stop cylinder movement as soon as the valve's outputs are both exhausted. Better than a 3-Position valve, it provides more precise positioning when fitted close to the cylinder. Standard with manual release buttons.

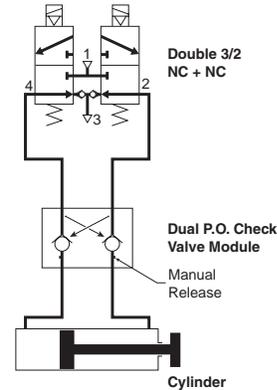


P2M1PXCA

Application

At the outputs of a double 3/2 NC + NC valve, the dual P.O. check valve module achieves efficient and stable cylinder positioning. As soon as both lines are exhausted by the main control valve, the two internally piloted check valves close tight. The cylinder is then stabilized.

The manual pressure releases may then eventually be used for an adequate machine positioning.



Dual P.O. Check Valve Size 1

Description	Size 1
Dual Pilot Operated	P2M1PXCA Weight .88 oz

Dual P.O. Check Valve Size 2

Description	Size 2
Dual Pilot Operated	P2M2PXCA Weight .88 oz



Pneumatic Connectors for Size 1 Dual P.O. Check Valves

		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	5/32" = 4mm OD	0.18	CMD04-1	0.07	FMD04-1
	6mm OD	0.18	CMD06-1	0.11	FMD06-1
	1/4" OD	0.18	CMD07-1B	0.11	FMD07-1B
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.21	HMDXX1

Pneumatic Connectors for Size 2 Dual P.O. Check Valves

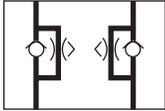
		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	6mm OD	0.18	CMD06-2	0.11	FMD06-2
	1/4" OD	0.18	CMD07-2B	0.11	FMD07-2B
	8mm OD	0.21	CMD08-2	0.14	FMD08-2
	3/8" OD	0.21	CMD09-2B	0.14	FMD09-2B
	10mm OD	0.25	CMD10-2	0.18	FMD10-2
	12mm OD	0.28	CMD12-2	0.21	FMD12-2
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.28	HMDXX2

Note: 85 Durometer minimum for pneumatic connectors.

Note: 85 Durometer minimum for pneumatic connectors.

Dual Flow Control

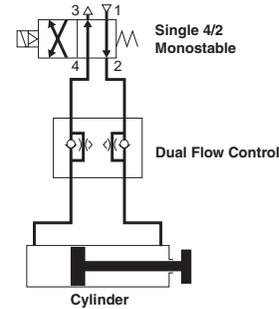
By controlling the exhaust flows of a double-acting cylinder, this module can adjust both speeds — extend and retract. It may be plugged into the valve module output ports or mounted close to the cylinder in its in-line version.



P2M1PXFA

Application

On a double-acting cylinder, extend and retract speeds are adjusted separately by control of air flow exhaust. The control becomes more precise when the flow adjustment is close to the cylinder. The examples show different solutions which are dependent upon the valve-to-cylinder distance and accessibility to the cylinder



Dual Flow Control Size 1

Description	Size 1
Dual Flow Control Module	P2M1PXFA Weight 1.06 oz

Dual Flow Control Size 2

Description	Size 2
Dual Flow Control Module	P2M2PXFA Weight 1.59 oz



HMDXX1

FMD04-1

CMD04-1

FMD07-1B

CMD07-1B

Pneumatic Connectors for Size 1 Dual P.O. Check Valves

		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	5/32" = 4mm OD	0.18	CMD04-1	0.07	FMD04-1
	6mm OD	0.18	CMD06-1	0.11	FMD06-1
	1/4" OD	0.18	CMD07-1B	0.11	FMD07-1B
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.21	HMDXX1

Note: 85 Durometer minimum for pneumatic connectors.



HMDXX2

FMD09-2B

CMD09-2B

Pneumatic Connectors for Size 2 Dual P.O. Check Valves

		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	6mm OD	0.18	CMD06-2	0.11	FMD06-2
	1/4" OD	0.18	CMD07-2B	0.11	FMD07-2B
	8mm OD	0.21	CMD08-2	0.14	FMD08-2
	3/8" OD	0.21	CMD09-2B	0.14	FMD09-2B
	10mm OD	0.25	CMD10-2	0.18	FMD10-2
	12mm OD	0.28	CMD12-2	0.21	FMD12-2
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.21	FMD13-2B
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.28	HMDXX2

Note: 85 Durometer minimum for pneumatic connectors.

“P” Series Peripheral Modules Model Number Index

(Complete with Pneumatic Connectors)

BOLD OPTIONS ARE MOST POPULAR.



Basic Series	
Electro-Pneumatic Valve Modules	P2M

Size	
Size 1	1
Size 2	2

Style / Function	
Peripheral	PX

Accessory Type	
Dual Pilot Operated Check	C
Dual Flow Control	F
Single Pressure Regulator	S

Accessory Option	
Flow Control or Pilot Operated Check	A*
0 - 120 PSI - Gauge	G
0 - 60 PSI - No Gauge	L
0 - 60 PSI - Gauge	M
0 - 120 PSI - No Gauge	N
0 - 30 PSI - Gauge	R
0 - 30 PSI - No Gauge	T

* Must be used with Accessory Type "C" or "F".

Ports 2 & 4 (S, T & V Series)	
C0*	10mm Elbow Fitting
C2*	12mm Elbow Fitting
C4	5/32" (4mm) Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8*	8mm Elbow Fitting
C9*	3/8" Elbow Fitting
F0*	10mm Straight Fitting
F2*	12mm Straight Fitting
F3*	1/2" Straight Fitting
F4	5/32" (4mm) Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8*	8mm Straight Fitting
F9*	3/8" Straight Fitting
JJ	Double Male Union
PP	Clip-In Plug

* Only Available with Size 2 Valves.

Ports 1 & 3 (Supply / Exhaust)	
C0*	10mm Elbow Fitting
C2*	12mm Elbow Fitting
C4	5/32" (4mm) Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8*	8mm Elbow Fitting
C9*	3/8" Elbow Fitting
F0*	10mm Straight Fitting
F2*	12mm Straight Fitting
F3*	1/2" Straight Fitting
F4	5/32" (4mm) Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8*	8mm Straight Fitting
F9*	3/8" Straight Fitting
JJ	Double Male Union

* Only Available with Size 2 Valves.





Regulator with Gauge

Example:

Size 1, Regulator with gauge, 1/4" OD straight fittings.

How to Order Complete Peripheral Module

Line Item	Quantity	Part Number	Description
1	1	P2M1PXSGF7F7	Size 1, Regulator with 0-160 PSI Gauge, 1/4" OD Straight Port Fittings in port 1, 2, 3, 4

How to Order Components

Line Item	Quantity	Part Number	Description
1	1	P2M1PXSG	Size 1, Regulator with 0-160 PSI Gauge
2	4	FMD07-1B	Size 1-1/4" OD Tube Push-In Connector



Flow Control with Fittings

Example:

Size 1, Dual Flow Control, 1/4" OD Straight Fittings.

How to Order Complete Peripheral Module

Line Item	Quantity	Part Number	Description
1	1	P2M1PXFAF7F7	Size 1, Dual Flow Control, 1/4" OD Straight Port Fittings in Port 1, 2, 3, 4

How to Order Components

Line Item	Quantity	Part Number	Description
1	1	P2M1PXFA	Size 1, Dual Flow Control
2	4	FMD07-1B	Size 1-1/4" OD Tube Push-In Connector

Vacuum Generators



C

Moduflex

PVL

Depending on the application requirements, this vacuum generator may be controlled by single or by a dual 3/2 Moduflex valve. The Vacuum Generator has an integrated blow-off chamber that helps destroy the degree of vacuum. Blow-off can be increased with the addition of a control air input to the blow-off port on the vacuum module. A Ø6 mm port is available for an optional plug-in vacuum sensor for delivering a vacuum feedback signal.

Vacuum Generator Size 1

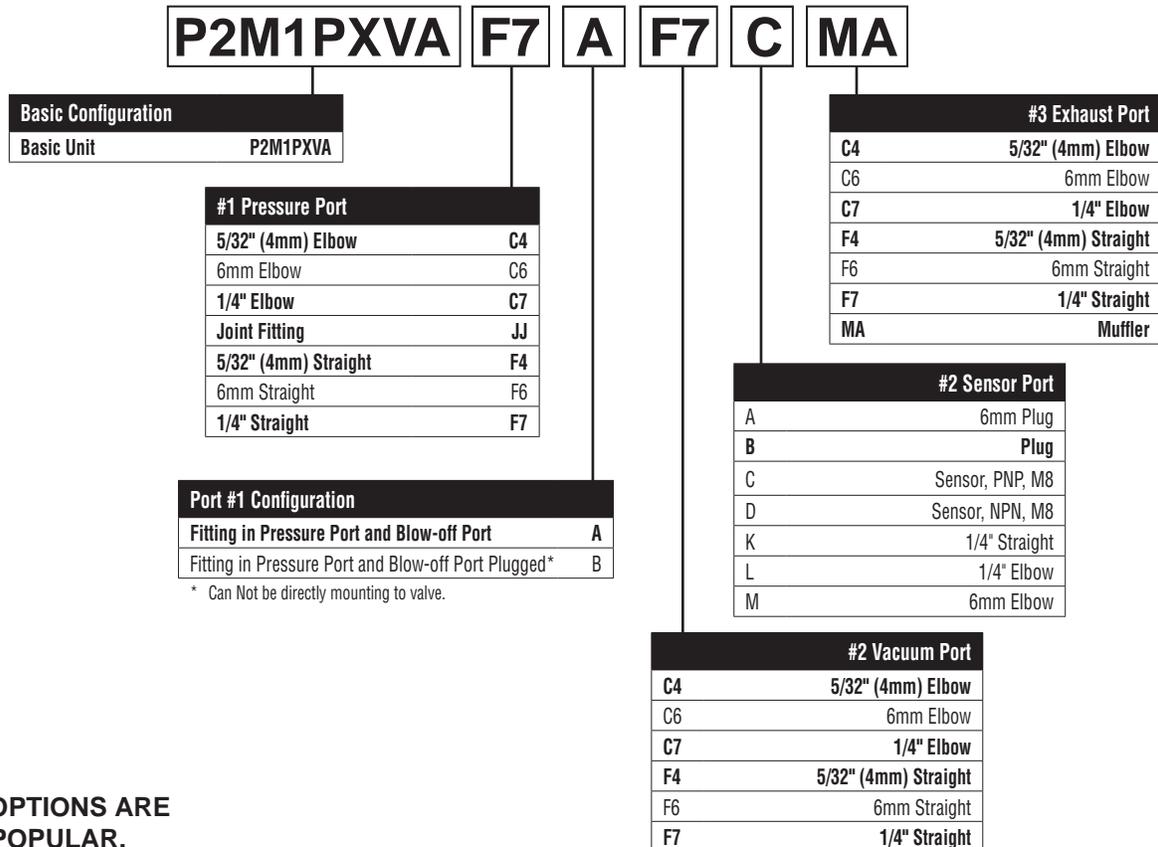
Description	Size 1
Vacuum Generator	P2M1PXVA Weight .88 oz

Pneumatic Connectors for Size 1 Vacuum Generators

		Elbow Version		Straight Version	
		Weight (oz)	Order Code	Weight (oz)	Order Code
Tube Push-in Connector	5/32" = 4mm OD	0.18	CMD04-1	0.07	FMD04-1
	6mm OD	0.18	CMD06-1	0.11	FMD06-1
	1/4" OD	0.18	CMD07-1B	0.11	FMD07-1B
Muffler for Exhaust Port	—	—	—	0.11	MMDVA1
Double Male Union (For Peripheral Valve Modules)	—	—	—	0.21	HMDXX1

Note: 85 Durometer minimum for pneumatic connectors.

Vacuum Generator Model Number Index



BOLD OPTIONS ARE MOST POPULAR.

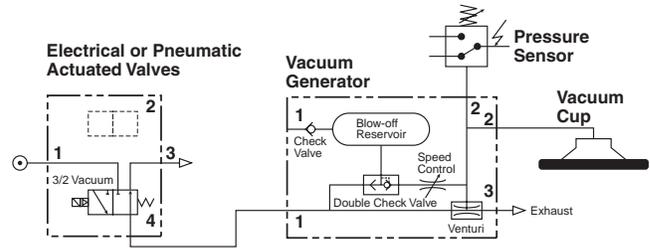


Vacuum Generator Applications



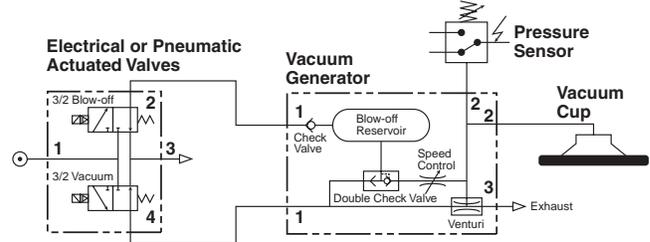
Single 3/2 NC Air Control Valve

The 3/2 valve delivers the air supply to generate vacuum through the venturi. It also pressurizes the integrated blow-off chamber. When the 3/2 valve cuts-off the air supply, this chamber is automatically exhausted into the vacuum channel in order to speed-up the part release. In this type of application, it is preferred to have the vacuum generator mounted away from the control valve.



Dual 3/2 3/2 Valve Control

One 3/2 valve controls air supply for vacuum. The other 3/2 valve will generate an additional blow-off that may prove necessary to obtain quick part release from large vacuum pads. The effect of the blow-off can be controlled with an adjustable screw. In this type of circuit, the Vacuum Generator can be mounted directly to the valve by using Double Male Unions or as a stand alone item away from the control valve.



MPS-6 Sensor Ordering Numbers

Pressure Range	Port Size	Output Circuit	Electrical Connector	Part Number
0 to -30 inHg	6mm Tube Stud	PNP Sourcing	4 Pin, M8	MPS-V6T-PC*
		NPN Sinking		MPS-V6T-NC*

* If ordering the sensor separate from the vacuum module, install a 6mm straight fitting in #2 sensor port for direct mounting.

Sensor Cable Part Numbers

Item	Connector	Contacts	Length	Cover
CB-M8-4P-2M	M8 Female	4	2m	PVC
CB-M8-4P-5M	M8 Female	4	5m	PUR

Vacuum Flow (SCFM)

Nozzle Diameter	inHg										
	0	3	6	9	12	15	18	21	24	27	30
P2M1PXVA	0.84	0.76	0.67	0.55	0.42	0.30	0.18	0.06	—	—	—

Evacuation Time

Series / Nozzle Diameter	Air Supply Pressure	Air Consumption	Evacuation Time in sec / ft ³ * to reach different Vacuum Levels (inHg)								
	PSI	SCFM	3	6	9	12	15	18	21	24	27
P2M1PXVA	70	1.60	5.6	14.2	22.0	42.4	62.3	85.0	116	198	—

* 1 ft³ = 28.31 liters



Intermediate Supply Module Model Number Index

BOLD OPTIONS ARE MOST POPULAR.

P2M2BX V 0 4 F9 MM

Intermediate Supply Module	
Basic Unit	P2M2BX

Valve Type	
Individually Wired	T
Collective Wiring	V

Wiring Style	
No Cable	0

Plate Configuration	
#1 & #3 Blocked	1
#1 Open & #3 Blocked	2
#1 Blocked & #3 Open	3
#1 & #3 Open	4

Exhaust Port Type (#3 Exhaust)*	
C0	10mm Elbow Fitting
C2	12mm Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8	8mm Elbow Fitting
C9	3/8" Elbow Fitting
F0	10mm Straight Fitting
F2	12mm Straight Fitting
F3	1/2" Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8	8mm Straight Fitting
F9	3/8" Straight Fitting
MM	Clip-In Muffler
PP	Clip-In Plug

* Elbow Fittings Face Up.

Inlet Port Type (#1 Pressure)*	
C0	10mm Elbow Fitting
C2	12mm Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8	8mm Elbow Fitting
C9	3/8" Elbow Fitting
F0	10mm Straight Fitting
F2	12mm Straight Fitting
F3	1/2" Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8	8mm Straight Fitting
F9	3/8" Straight Fitting
MM	Clip-In Muffler
PP	Clip-In Plug

* Elbow Fittings Face Up.

Plate Configuration



#1 & #3 Blocked

#1 Port connected to valves on the right only. Left is blocked.
#3 Port connected to valves on the right only. Left is blocked.



#1 Open, #3 Blocked

#1 Port connected to valves on the right and the left.
#3 Port connected to valves on the right only. Left is blocked.



#1 Blocked, #3 Open

#1 Port connected to valves on the right only. Left is blocked.
#3 Port connected to valves on the right and the left.



#1 & #3 Open

#1 Port connected to valves on the right and the left.
#3 Port connected to valves on the right and the left.

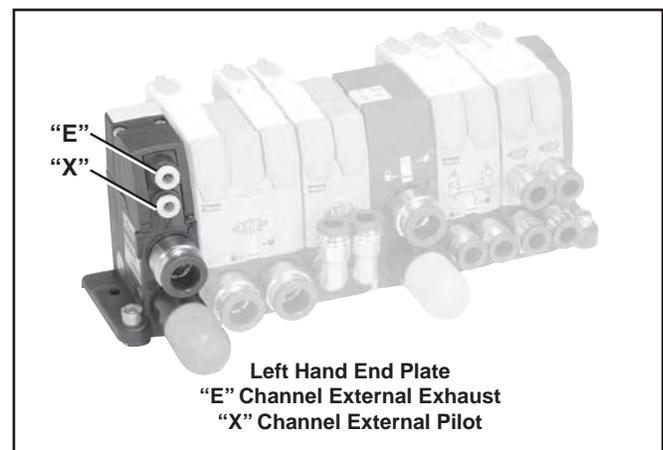
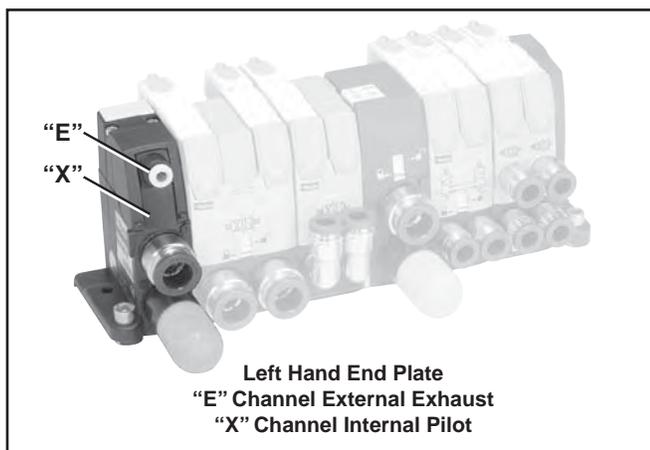
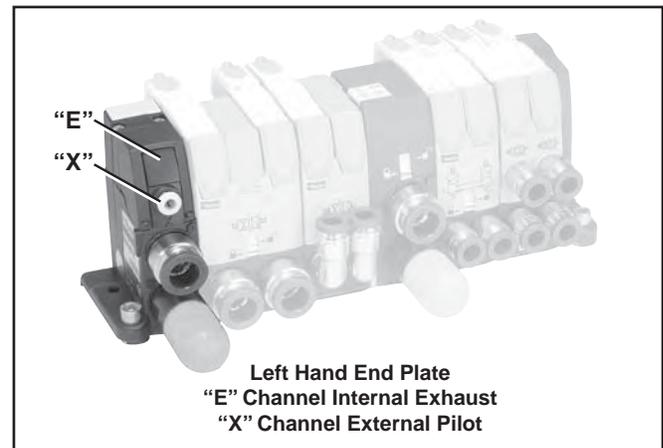
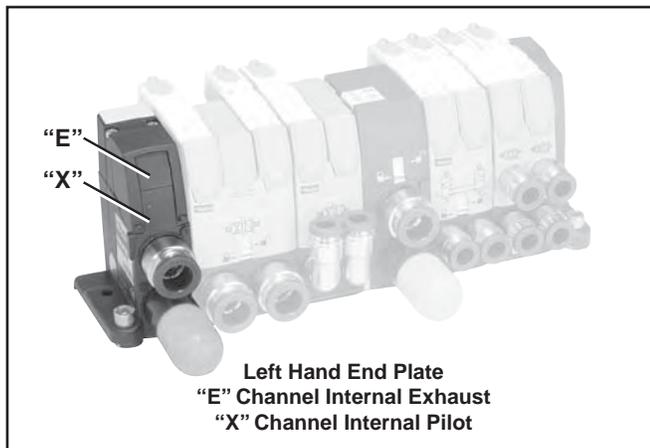
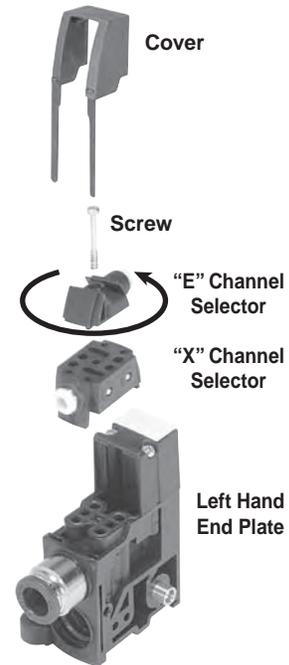
Internal and External Pilot Supply Options

All T and V Series valve bases incorporate an auxiliary channel "X" to supply pressure to the solenoid pilots. The "X" galley is pressurized from the left hand end plate. Depending on the configuration of the left hand end plate, this pressure is either supplied from the #1 port in the left hand end plate or supplied externally through a 4mm OD tube fitting in the left hand end plate. This fitting is supplied in all left hand end plates and can be converted in the field.

Internal and External Solenoid Pilot Exhaust Options

All T and V Series valve bases incorporate an auxiliary channel "E" which is used to exhaust the solenoid pilot pressure from each solenoid valve. The "E" galley is connected to the left hand end plate. Depending on the configuration of the left hand end plate, this exhaust is either connected to the #3 exhaust port or is connected to a 4mm OD Tube fitting in the left hand end plate. This fitting is supplied in all left hand end plates and can be converted in the field.

To configure the left hand end plate, with pressure off, remove head cover to expose the selector section. Loosen selector section and rotate "X" or "E" channel selector to desired position. Tighten selector section and assemble head cover.



Moduflex Add-A-Fold Assembly Model Number Index

(Complete with Pneumatic and Electrical Connectors)

BOLD OPTIONS ARE MOST POPULAR.

P2MA V 0 1 C9 C9 ##

Moduflex Island Assembly
Add-A-Fold P2MA*

* Includes pneumatic H & T end plate kit.

Style	
Individually Wired	T
Collective Wiring	V*

* Includes 20-Pin multi-connector or 25-Pin, D-Sub electrical head module.

Wiring / Bus Protocol	
No Cable (20-Pin or Multi-Connector T Series)	0
2 Meter Cable (20-Pin)	2
5 Meter Cable (20-Pin)	5
9 Meter Cable (20-Pin)	9
Bus	B*
No Cable (25-Pin, D-Sub)	D
3 Meter Cable (25-Pin, D-Sub)	F

* Order Bus module as a separate line item.

† Default to option "0" for T Series.

Pilot Source	
Internal Supply / Internal Exhaust	1
Internal Supply / External Exhaust	2
External Supply / Internal Exhaust	3
External Supply / External Exhaust	4

Number of Stations†	
01 - 19*	V-Type
01 - 30	T-Type

* Max. Number of Addresses for V type is 19. Single Solenoid Valves equal one address. Double Solenoid Valves equal two addresses. Maximum address may depend upon choice of bus protocol.

† Intermediate Modules are considered Stations, but do not count against maximum number of addresses for manifold.

Exhaust Port Type (#3 Exhaust)*	
C0	10mm Elbow Fitting
C2	12mm Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8	8mm Elbow Fitting
C9	3/8" Elbow Fitting
F0	10mm Straight Fitting
F2	12mm Straight Fitting
F3	1/2" Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8	8mm Straight Fitting
F9	3/8" Straight Fitting
MM	Clip-In Muffler
PP	Clip-In Plug

* Elbow Fittings Face Up.

Inlet Port Type (#1 Pressure)*	
C0	10mm Elbow Fitting
C2	12mm Elbow Fitting
C6	6mm Elbow Fitting
C7	1/4" Elbow Fitting
C8	8mm Elbow Fitting
C9	3/8" Elbow Fitting
F0	10mm Straight Fitting
F2	12mm Straight Fitting
F3	1/2" Straight Fitting
F6	6mm Straight Fitting
F7	1/4" Straight Fitting
F8	8mm Straight Fitting
F9	3/8" Straight Fitting
MM	Clip-In Muffler
PP	Clip-In Plug

* Elbow Fittings Face Up.



"V" Series with 20-Pin Connector



"V" Series with Field Bus Connection

C

Moduflex

PVL

Example:

Application requires V Series valves with 20-Pin, D-Sub and 2 Meter cable. Manifold to include (1) Size 2, 4/2 Double Solenoid Valve - 3/8" OD fitting, (1) Size 1, 4/2 Single Solenoid Valve - 1/4" OD Elbow Fitting, Intermediate Module - 3/8" OD Fitting with Exhaust Muffler, Port 1 and 3 Blocked, (1) Size 1, Dual 3/2 NC Valve and (1) Size 1, 4-Way Double Solenoid Valve both with 1/4" OD Straight Fittings. Includes 3/8 OD Inlet Fitting and Exhaust Muffler.

How to Order Complete Manifold Assembly

Line Item	Quantity	Part Number	Description
1	1	P2MAV21F9MM05	Moduflex Island Assembly, Pneumatic Head and Tail Module Set, Internal Pilot Supply, Internal Pilot Exhaust, 3/8" Straight Fitting Port 1, Port 3 Muffler.
2	1	P2M2V4EE2CV00F9	Size 2, Double Solenoid, 4/2, 3/8" Straight Pneumatic Connectors.
3	1	P2M1V4ES2CV00C7	Size 1, Single Solenoid, 1/4" Elbow Pneumatic Connectors.
4	1	P2M2BXV0A1F9MM	Intermediate Module 3/8" Straight Fitting with Exhaust Muffler
5	1	P2M1VDEE2CV00C7	Size 1, Dual 3/2 NC + NC, 1/4" Elbow Pneumatic Connectors.
6	2	P2M1VJEE2CV00F7	Size 1, Dual 4/2, 1/4" Straight Pneumatic Connectors.

How to Order Components

Line Item	Quantity	Part Number	Description
1	1	P2M2HXT01	Pneumatic Head and Tail Module Set
2	1	P2M2HEV0A	20-Pin, Multi-Connector Electrical Head Module
3	1	P8LMH20M2A	2 Meter, 20-Pin Cable
4	1	P2M2V4EE2CV	Size 2, V Series Island Valve Module, Double Solenoid, 4-Way
5	1	P2M1V4ES2CV	Size 1, V Series Island Valve Module, Single Solenoid, 4-Way
6	1	P2M2BXV0A	Intermediate Module
7	1	P2M1VGEE2CV	Size 1, V Series Island Valve Module, Dual 3/2 NC + NC
8	2	P2M1VJEE2CV	Size 1, V Series Island Valve Module, Dual 4/2
9	2	CMD07-1B	Size 1, 1/4" OD Tube Elbow Push-in Connector
10	6	FMD07-1B	Size 1, 1/4" OD Tube Straight Push-in Connector
11	4	FMD09-2B	Size 2, 3/8" OD Tube Straight Push-in Connector
12	2	MMDVA2	Clip-on Muffler

Example:

Application requires V Series valves with DeviceNet Communications Module. Manifold to include (1) Size 2, 4/2 Double Solenoid Valve - 3/8" OD fitting, (1) Size 1, 4/2 Single Solenoid Valve - 1/4" OD Elbow Fitting, Intermediate Module - 3/8" OD fitting with Exhaust Muffler, Port 1 and 3 Blocked, (1) Size 1, Dual 3/2 NC Valve and (1) Size 1, 4-Way Double Solenoid Valve both with 1/4" OD Straight Fittings. Include 3/8 OD Inlet Fitting and Exhaust Muffler.

How to Order Complete Manifold Assembly

Line Item	Quantity	Part Number	Description
1	1	P2MAVB1F9MM05	Moduflex Island Assembly, Pneumatic Head and Tail Module Set, Internal Pilot Supply, Internal Pilot Exhaust, 3/8" Straight Fitting Port 1, Port 3 Muffler.
2	1	P2M2HBVD11600	DeviceNet Module
3	1	P2M2V4EE2CV00F9	Size 2, Double Solenoid, 4/2, 3/8" Straight Pneumatic Connectors.
4	1	P2M1V4ES2CV00C7	Size 1, Single Solenoid, 1/4" Elbow Pneumatic Connectors.
5	1	P2M2BXV0A1F9MM	Intermediate Module 3/8" Straight Fitting with Exhaust Muffler
6	1	P2M1VDEE2CV00C7	Size 1, Dual 3/2 NC + NC, 1/4" Elbow Pneumatic Connectors.
7	2	P2M1VJEE2CV00F7	Size 1, Dual 4/2, 1/4" Straight Pneumatic Connectors.

How to Order Components

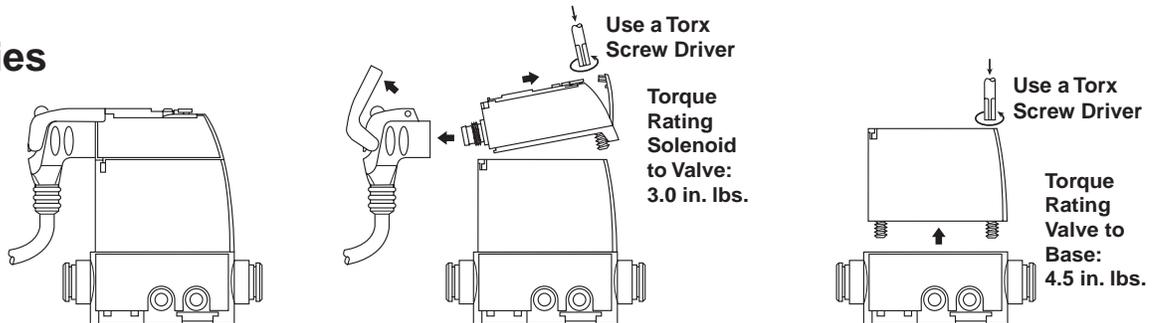
Line Item	Quantity	Part Number	Description
1	1	P2M2HXT01	Pneumatic Head and Tail Module Set
2	1	P2M2HBVD11600	DeviceNet Module
3	1	P2M2V4EE2CV	Size 2, V Series Island Valve Module, Double Solenoid, 4-Way
4	1	P2M1V4ES2CV	Size 1, V Series Island Valve Module, Single Solenoid, 4-Way
5	1	P2M2BXV0A	Intermediate Module
6	1	P2M1VGEE2CV	Size 1, V Series Island Valve Module, Dual 3/2 NC + NC
7	2	P2M1VJEE2CV	Size 1, V Series Island Valve Module, Dual 4/2
8	2	CMD07-1B	Size 1, 1/4" OD Tube Elbow Push-in Connector
9	6	FMD07-1B	Size 1, 1/4" OD Tube Straight Push-in Connector
10	4	FMD09-2B	Size 2, 3/8" OD Tube Straight Push-in Connector
11	2	MMDVA2	Clip-on Muffler

“V”, “T” and “S” Series Maintenance

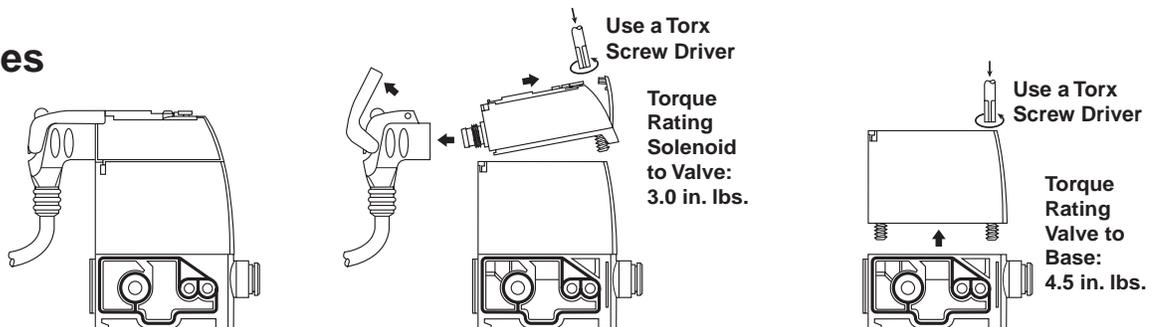
The latest generations of compact pneumatic valves have a life expectancy which generally exceeds the equipment they control. Therefore, maintenance is seldom required. When it

is necessary to change the solenoid pilot, valve or connector, they can be easily replaced without removing the island base, as shown below.

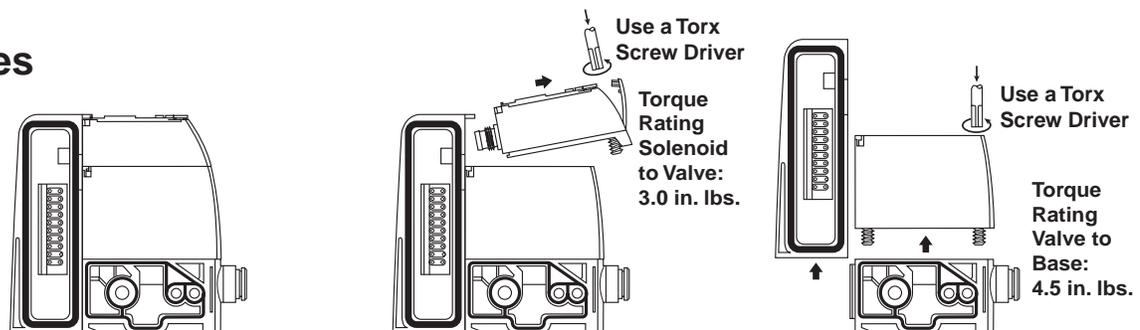
“S” Series



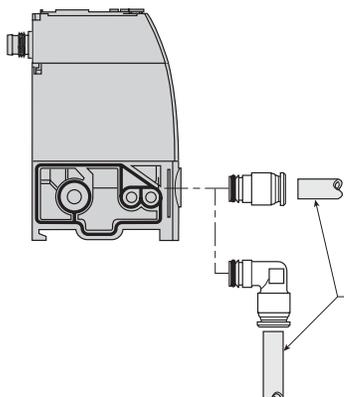
“T” Series



“V” Series



Fitting and Tubing Installation



Fitting Assembly: Pneumatic Connectors are retained by a clip in each module. Assembly is achieved by pushing the fitting into the module and sliding the clip down over the groove in the fitting. Pull fitting to check that it is secure.

Tubing Assembly: Cut tubing squarely & cleanly. Inspect the tubing to insure there are no sharp edges that may nick or cut the o-ring seal. Insert tubing into fitting until it bottoms out. A slight pull on the tube afterwards can help verify it is properly retained / inserted.

Tubing Disassembly: When it is required to remove the tubing from the fitting push the release button in towards the fitting & remove the tubing.

Tubing Reassembly: Inspect the tubing before re-inserting it for any scoring or other damage that would affect the o-ring sealing. It is recommended that for every insertion, the tubing end be trimmed, especially if it has any scoring or damage.

Valve Module Solenoid Pilot 24VDC

Description	Weight	Part Number
Solenoid Pilot (Without Plug-in Electrical Connector)	0.53 oz	P2D8V32C5
Air Pilot with 5/32" (4mm) Tube Fitting	0.30 oz	P2M2K0PA



P2D8V32C5



P2M2K0PA

Size 1 Valve Modules Without Solenoid Pilot and Without Subbase



P2M1X4EE

4-Way / 2-Position / Single Valve

	Solenoid	Weight	Part Number
	Single Solenoid (Monostable)	0.92 oz	P2M1X4ES
	Double Solenoid (Bistable)	0.88 oz	P2M1X4EE

4-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Solenoid Spring with Exhaust Check	0.99 oz	P2M1XJEE

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Solenoid NC + NC with Exhaust Check	0.99 oz	P2M1XDDEE
	Double Solenoid NO + NO with Exhaust Check	0.99 oz	P2M1XCDEE
	Double Solenoid NC + NO with Exhaust Check	0.99 oz	P2M1XEDEE
	Single Solenoid NC with Exhaust Check	0.88 oz	P2M1X3ES

Size 2 Valve Modules Without Solenoid Pilot and Without Subbase



P2M2X4EE

4-Way / 2-Position / Dual Valve

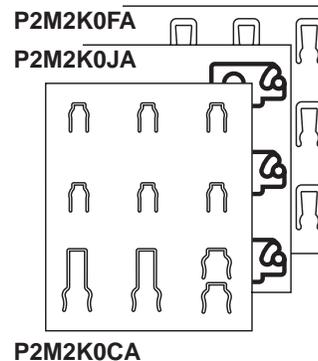
	Solenoid	Weight	Part Number
	Single Solenoid (Monostable)	0.99 oz	P2M2X4ES
	Double Solenoid (Bistable)	1.06 oz	P2M2X4EE

3-Way / 2-Position / Dual Valve

	Solenoid	Weight	Part Number
	Double Solenoid NC + NC with Exhaust Check	1.13 oz	P2M2XDDEE
	Double Solenoid NO + NO with Exhaust Check	1.13 oz	P2M2XCDEE
	Double Solenoid NC + NO with Exhaust Check	1.13 oz	P2M2XEDEE
	Single Solenoid NC with Exhaust Check	0.99 oz	P2M2X3ES

Set of Maintenance Parts

Description		Part Number
Clips	Set of 10 Clips: 6 for Size 1 Valves, 2 for Size 2 Valves, 2 for Island Head and Intermediate Modules	P2M2K0CA
Seals	Set of 10 Seals: 3 for Manifold to Manifold Seals, 3 Under Solenoid Pilot Seals, 4 Under Valve Seals (Two Size 1 Seals, Two Size 2 Seals)	P2M2K0JA
Forks	Set of 10 Isolation Forks for Solenoid Pilot Manual Override	P2M2K0FA



Pneumatic Valve Specifications

Fluid	Air, inert gas, filtered 40µ ¹ , dry ² or lubricated ³		
Operating Pressures	Vacuum to 120 PSI		
Piloting Pressure	43 to 120 PSI for operating pressures below, use external pilot supply available on all head modules ⁵		
Pilot Supply	Internal with "S" Series, mixed internal / external with "T" and "V" Series		
Exhaust Collection	All exhausts are collectable, including solenoid pilot exhaust		
Life Cycle	100 million operations ⁴ (with dry air, 3 Hz, 20°C, 6 bar)		
Operating Temperatures	5°F to 140°F (32°F to 130°F for field bus systems)		
Stocking Temperatures	-40°F to 155°F		
Vibration Resistance	According to IEC 68 - 2 - 6	2G	2 to 150 Hz
Impact Resistance	According to IEC 68 - 2 - 27	15G	11 ms

1. Class 5 according to ISO 8573-1
2. Class 4 according to ISO 8573-1
3. With main air supply lubricated, monitor lubrication rate so that valve bank is not flooded with lubricant.
4. 4/2 valve
5. Double 3/2 minimum 50 PSI

Electrical Specifications

Rated Coil Voltage	24VDC	
Allowable Voltage Fluctuation	-15% to +10 % of nominal voltage	
Electrical Connection	Polarity insensitive: PNP and NPN compatible	
Coil insulation Type	Class B	
Power Consumption	1W (42 mA)	
Manual Override	Locking or non-locking, isolated if required	
Response Time of the Complete Valve	9.6 ms ± 1.2 on 4/2 Double Solenoid Valve Size 1 12.0 ms ± 1.2 on 4/2 Single Solenoid Valve Size 1 14.8 ms ± 2 on 4/2 Double Solenoid Valve Size 2 17.0 ms ± 2 on 4/2 Single Solenoid Valve Size 2	According to ISO 12238
Type of Use	Continuous-duty Solenoid	
Dust and Water Protection	According to EN 60 529	"S" and "T" Series: IP67 "V" Series: IP65

Specifications for 1/4", 3/8" and 1/2" Fittings Construction

Nickel Plated Brass Body; O-ring: Nitrile (Buna N) lubricated with Silicone lubricant; Grab Ring: 301 Stainless Steel;
One Piece Button Collet: Acetal – black

Recommended Parker Tubing Series:

E (Linear Low Density Polyethylene), PP (Polypropylene), N (Plasticized Polyamide, Nylon), NR (Unplasticized Polyamide, Rigid Nylon), U (Polyurethane 90 Durometer Shore A), HU (Polyurethane 95 Durometer Shore A)

Other materials: Polyurethane 85 Durometer Shore A – Applications and service conditions vary and therefore the use of a tube support may be required for any 85A PU tubing. The following commercially available O.D. – I.D. 85A tubing sizes require the use of a tube support regardless of application. (5/32" – 3/32", 3/16" – 1/8", 1/4" - .170", 1/4" – 3/16", 5/16" – 1/4", 3/8" – 5/16", 1/2" – 3/8")

Prestolok fittings should not be used for live swivel applications. Vacuum applications dependent upon temperature and type of tubing used.

Specifications for 6mm, 8mm, 10mm, 12mm Fittings Construction

Polyamide HR Body; O-ring: Nitrile (Buna N) lubricated with Silicone lubricant; Sleeve: Nickel Plate Brass; Grab Ring: 301 Stainless Steel; One Piece Button Collet: Polyacetal – yellow

Recommended Parker Tubing Series for 6mm, 8mm, 10mm, 12mm Fittings:

E (Linear Low Density Polyethylene), N (Plasticized Polyamide, Nylon), U (Polyurethane 90 Durometer Shore A), HU (Polyurethane 95 Durometer Shore A)

Prestolok fittings should not be used for live swivel applications. Vacuum applications dependent upon temperature and type of tubing used.

"S" Series Individual Subbase Valve Dimensions and Mounting

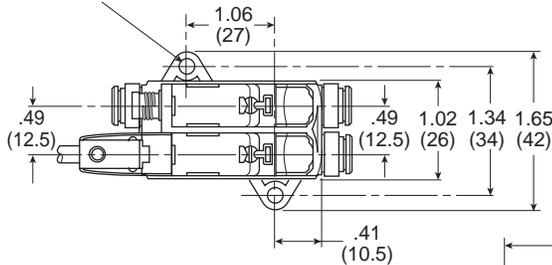
Subbase Valve Size 1



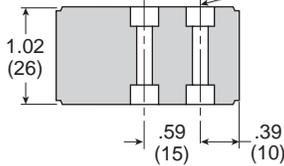
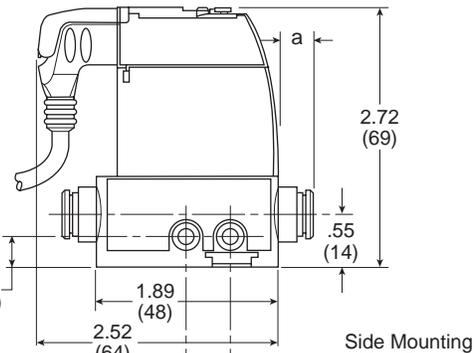
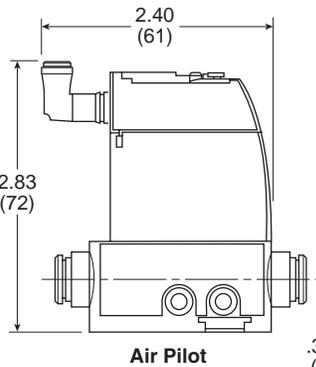
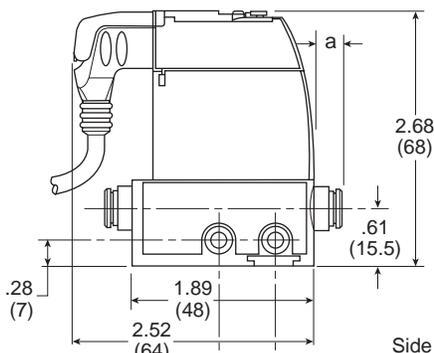
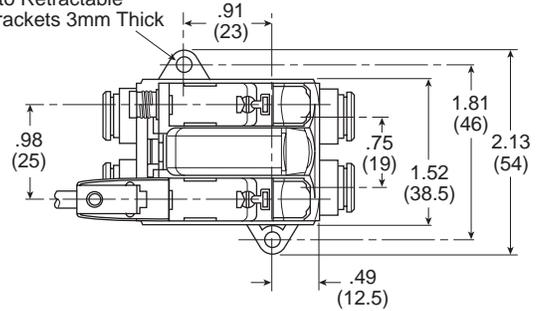
Subbase Valve Size 2



Surface Mounting with Screws 4 mm Dia. into Retractable Brackets 3mm Thick

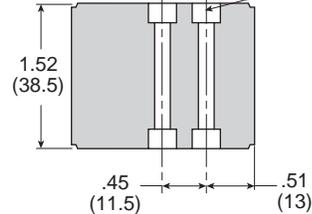


Surface Mounting with Screws 4 mm Dia. into Retractable Brackets 3mm Thick



Side Mounting with 2 Screws 4mm Dia.

Size 1

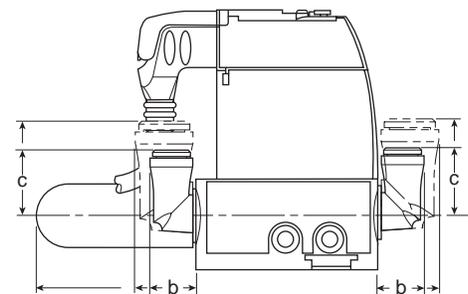


Side Mounting with 2 Screws 4mm Dia.

Size 2

OD Tube Ext.		a	b	c
Size 1 Valves	5/32" (4 mm)	8	10	12
	6 mm	8	13	16
	1/4"	15	18	22
	Muffler		31	
Size 2 Valves	1/4"	12	18	22
	8 mm	9	16	19
	3/8"	16	23	26
	10 mm	13	18	22
	Muffler		40	

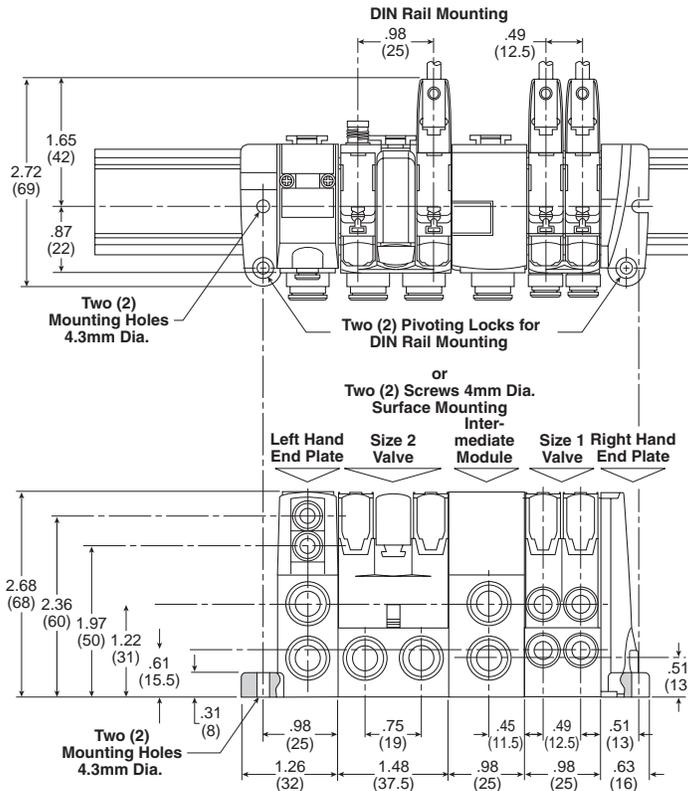
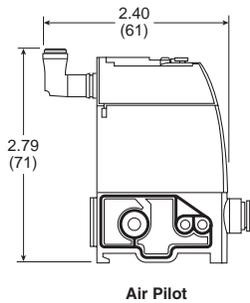
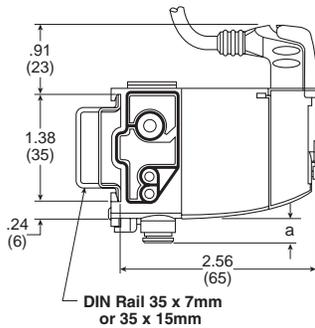
Special Case: 4/3 all ports blocked. Add the dual P.O. check valve module that has been plugged in the basic valve.



"T" Series Manifold Valve Dimensions and Mounting

C
Moduflex
PVL

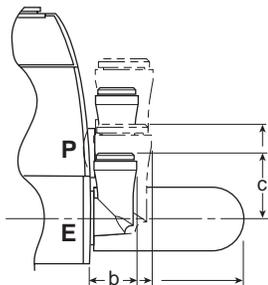
Island Total Width Depends on Valve Composition



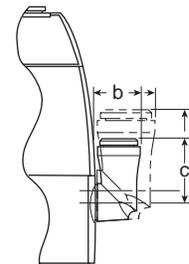
Special Case: 4/3 all ports blocked function within island version, add the dimensions of the dual P.O. check valve module plugged into the island.

End Plate and Intermediate Modules

	a	b	c
6 mm Tube OD	8	13	16
1/4" Tube OD	12	18	22
8 mm Tube OD	9	16	19
3/8" Tube OD	16	23	26
10 mm Tube OD	13	18	25
12 mm Tube OD	13	19	25
1/2" Tube OD	13		
Muffler		40	



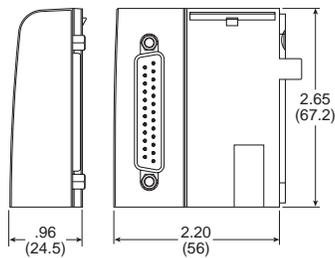
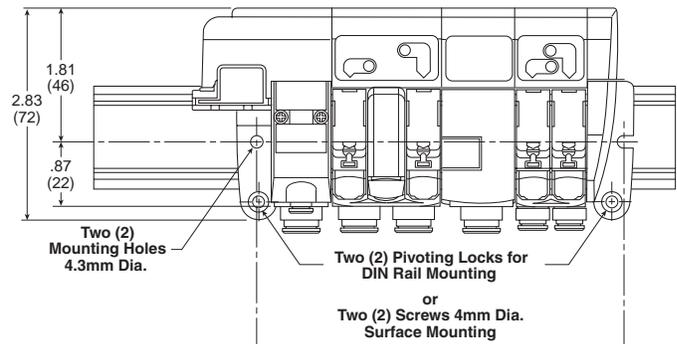
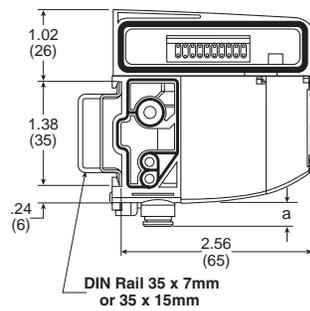
OD Tube	Ext.	a	b	c
Size 1 Modules	5/32" (4 mm)	8	10	12
	6 mm	8	13	16
	1/4"	15	18	22
Size 2 Modules	1/4"	12	18	22
	8 mm	9	16	19
	3/8"	16	23	26
	10 mm	13	18	22



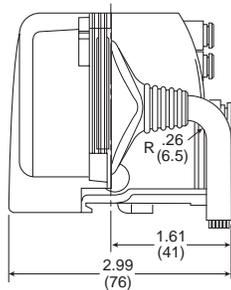
"V" Series Manifold Valve Dimensions and Mounting
20-Pin, Multi-Connector Valve Manifold



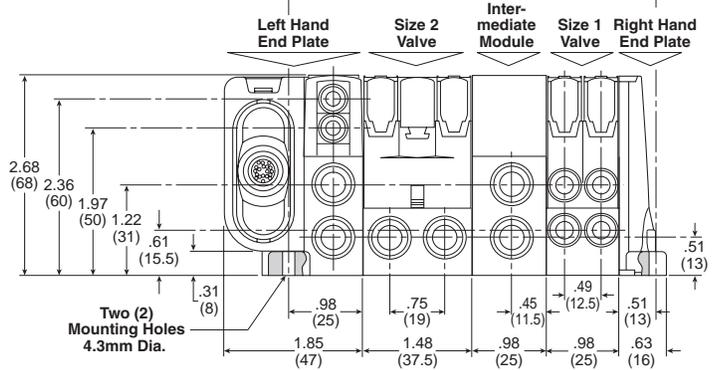
Island Total Width
 Depends on Valve
 Composition



**25-Pin,
 D-Sub Module**

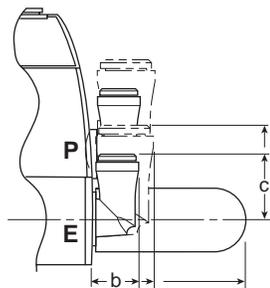


**20-Pin,
 Multi-Connector**

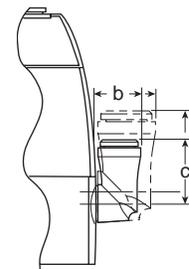


End Plate and Intermediate Modules

	a	b	c
6 mm Tube OD	8	13	16
1/4" Tube OD	12	18	22
8 mm Tube OD	9	16	19
3/8" Tube OD	16	23	26
10 mm Tube OD	13	18	25
12 mm Tube OD	13	19	25
1/2" Tube OD	13		
Muffler		40	



OD Tube	Ext.	a	b	c
Size 1 Modules	5/32" (4 mm)	8	10	12
	6 mm	8	13	16
	1/4"	15	18	22
Size 2 Modules	1/4"	12	18	22
	8 mm	9	16	19
	3/8"	16	23	26
	10 mm	13	18	22

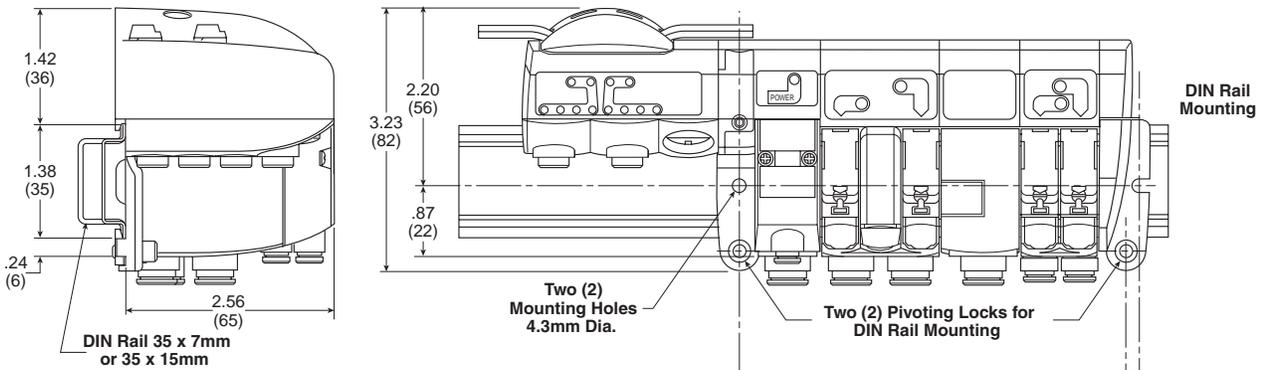


“V” Series Manifold Valve Dimensions and Mounting
Field Bus Connected Islands

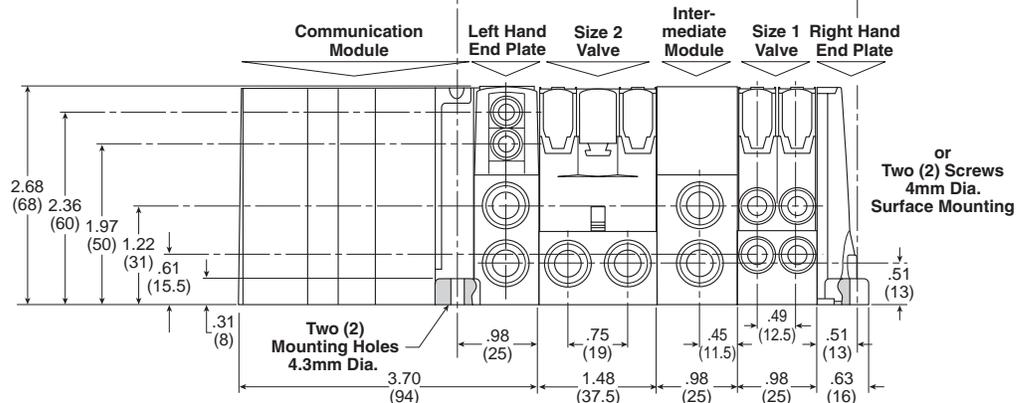
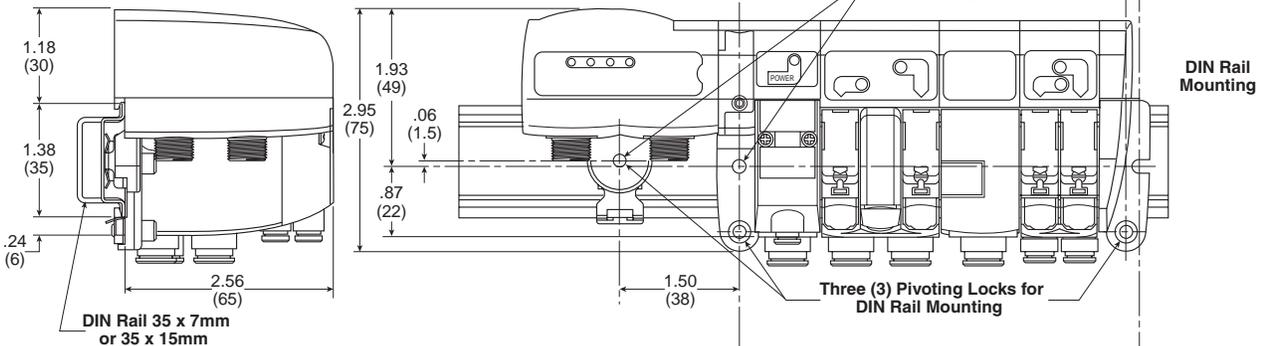


Island Total Width
 Depends on Valve
 Composition

AS-i Bus Islands



Device Bus Islands

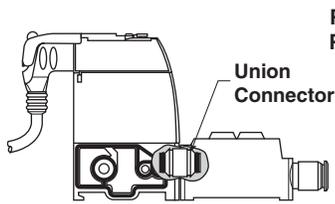


Moduflex

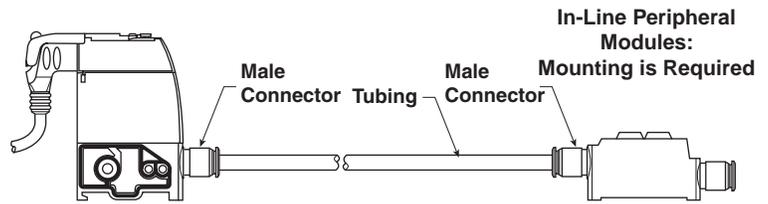
PVL

"P" Series Peripheral Modules Dimensions and Mounting

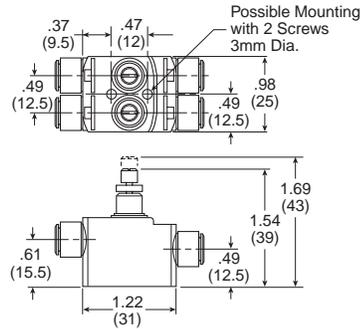
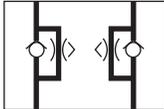
Reminder: Peripheral modules may either be plugged in the valve output ports or mounted in-line separate from the valve.



Peripheral Module Plugged in a Valve

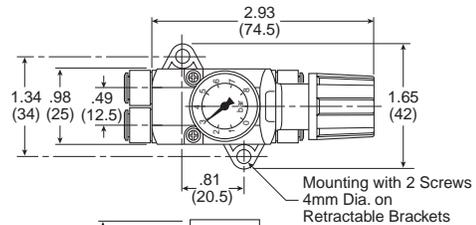
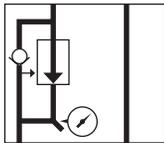


Dual Flow Control Size 1

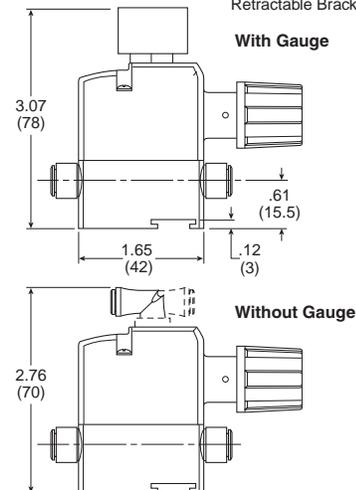
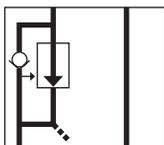


Pressure Regulator Size 1

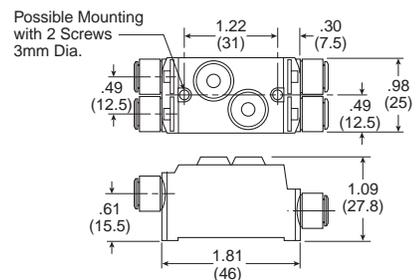
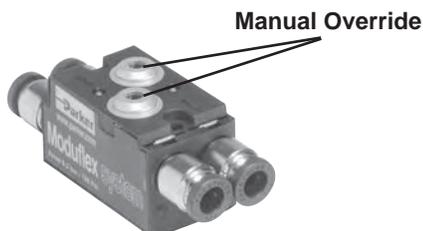
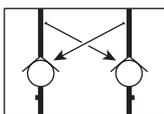
With Gauge



Without Gauge



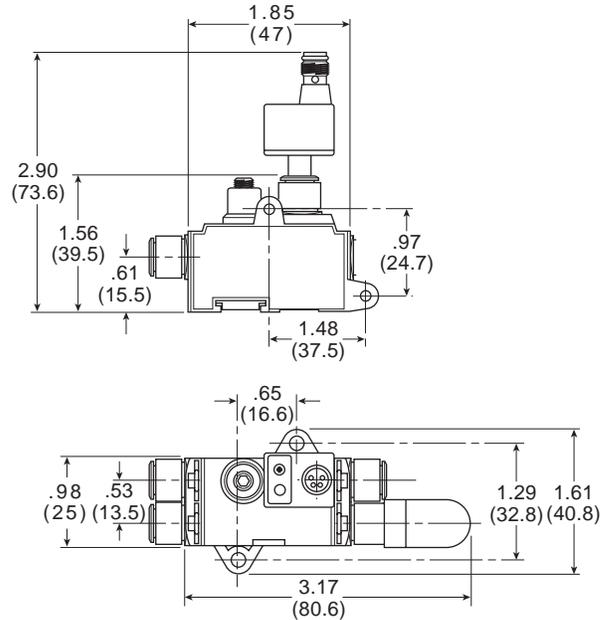
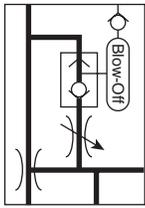
Dual P.O. Check Valve Size 1



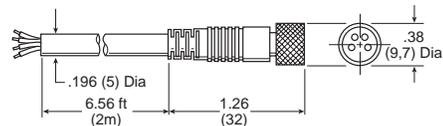
“P” Series Peripheral Modules Dimensions and Mounting

Reminder: Peripheral modules may either be plugged in the valve output ports or mounted in-line separate from the valve.

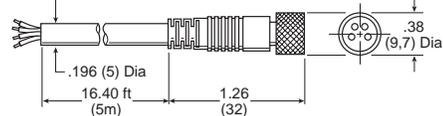
Vacuum Generator Size 1



CB-M8-4P-2M, Female to Open Lead



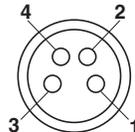
CB-M8-4P-5M, Female to Open Lead



Sensor Pin Out

Pin #

- 1 Brown: 24VDC
- 2 White: NPN / PNP Open Collector Output
- 3 Blue: 0VDC
- 4 Black: NPN / PNP Open Collector Output



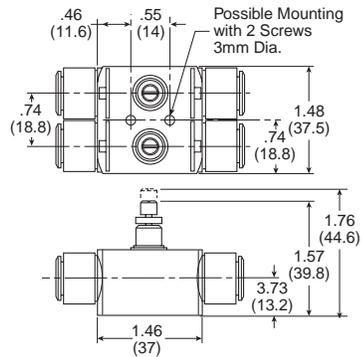
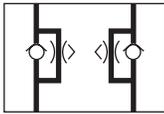
Sensor Specifications

Media	Air and Non-Corrosives Gases
Proof Pressure	(V) 72.5 PSI
Operating Temperature	32 to 122°F (0 to 50°C)
Storage Temperature	14 to 140°F (-10 to 60°C)
Humidity	35 to 85% RH
Electrical Connection	(C) 4-Pin, M8 Connector
Power Supply	10.8 to 30 VDC, Ripple Vp-p 10% max., Reverse Voltage Protection
Switch Output	1 Output Signal Open and Closed, NPN or PNP, 30VDC, 125mA
Linear Output	Analog Output 1 to 5 VDC
Switch Point Setting	2/3 Turn Trimmer
Hysteresis Setting	≤ 2% of F.S.
Output Response Time	<1ms
Repeatability	≤0.2% F.S.
Shock Resistance	100 G, XYZ
Material	Housing: Polycarbonate, Pressure Port: Zinc Die-cast
Mass	T Port: 0.25 oz. (7g)

"P" Series Peripheral Modules Dimensions and Mounting

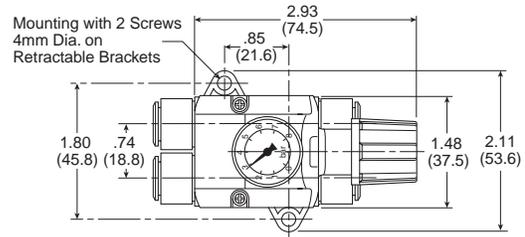
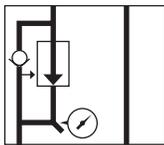
Reminder: Peripheral modules may either be plugged in the valve output ports or mounted in-line separate from the valve.

Dual Flow Control Size 2

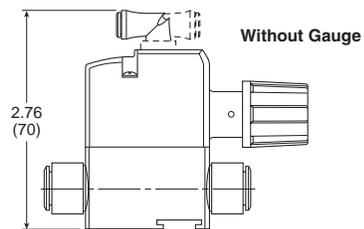
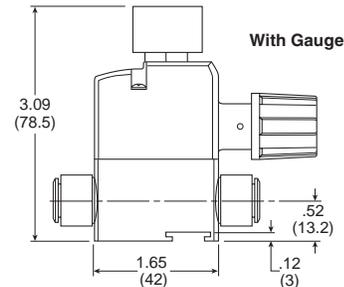
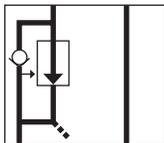


Pressure Regulator Size 2

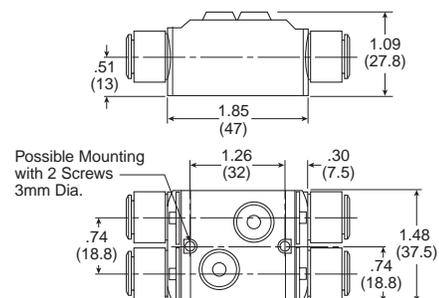
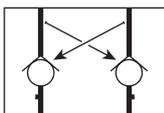
With Gauge



Without Gauge



Dual P.O. Check Valve Size 2



“V” or “T” Series Valve Island Configurator CD-ROM
 Use CD-ROM “Standard Valve Island” Configuration

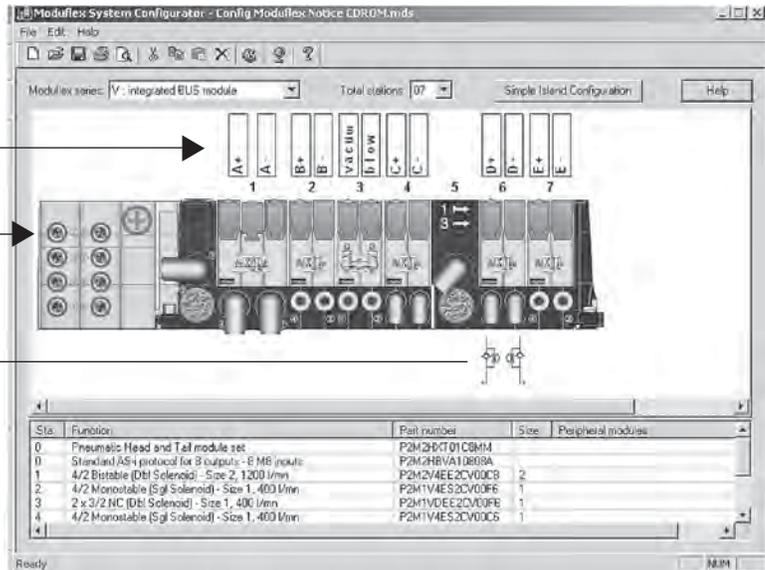


Valve Island Module Identification

Valve Island Graphic Description with Valve Module Symbols, Output Connectors, Pneumatic, and Electrical Head Module, etc....

Peripheral Module Additions

Valve Island Composition with Each Module Description and Order Code



With the Moduflex Valve Island Configurator CD-ROM, you may configure the Moduflex V or T series valve islands that a given application requires.

With the CD-ROM, once the valve island is configured, the following items may be edited for the application:

1. Valve Island Print with Symbols and Marking

This graphic gathers all information required:

- For assembling, marking and connecting the valve island;
- For commissioning and maintaining the machine.

No additional valve circuit is necessary.

2. Report (4 pages) (1)

- Page 1 - Valve island complete modules part numbers
- Page 2 - Valve island basic modules and connectors listing
- Page 3 - Bill of material
- Page 4 - Warnings

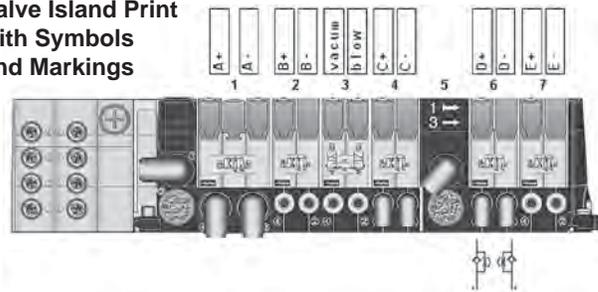
3. 2D Drawings Exported DX File

This transfer on the machine drawings enables defining the valve island mounting onto the machine.

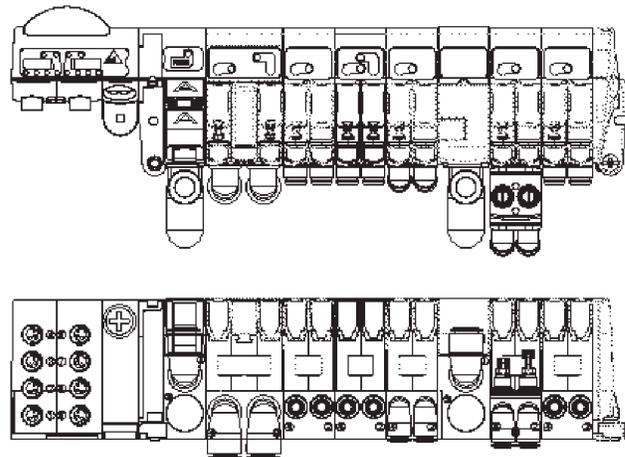
Note: 3D files (IGES, STEP and PRO-ENG) are available in the CD-ROM, for import in your CAD software of separate basic modules and connectors.

- (1) If an assembled valve island is ordered, please combine this 4-page report in order.

Valve Island Print with Symbols and Markings



Valve Island 2D Drawing Exported DX File



Ask for Your Moduflex Valve Island Configurator CD-ROM

Order Code: PDE2536CDV3.1-ev

This multi-language CD-ROM allows installation in English, French, German, Swedish, Italian and Spanish.



**“S”, “V”, & “T” Valve CAD
Configurator go to:
www.parker.com/moduflex**



Moduflex

PVL

Notes



Moduflex

PVL

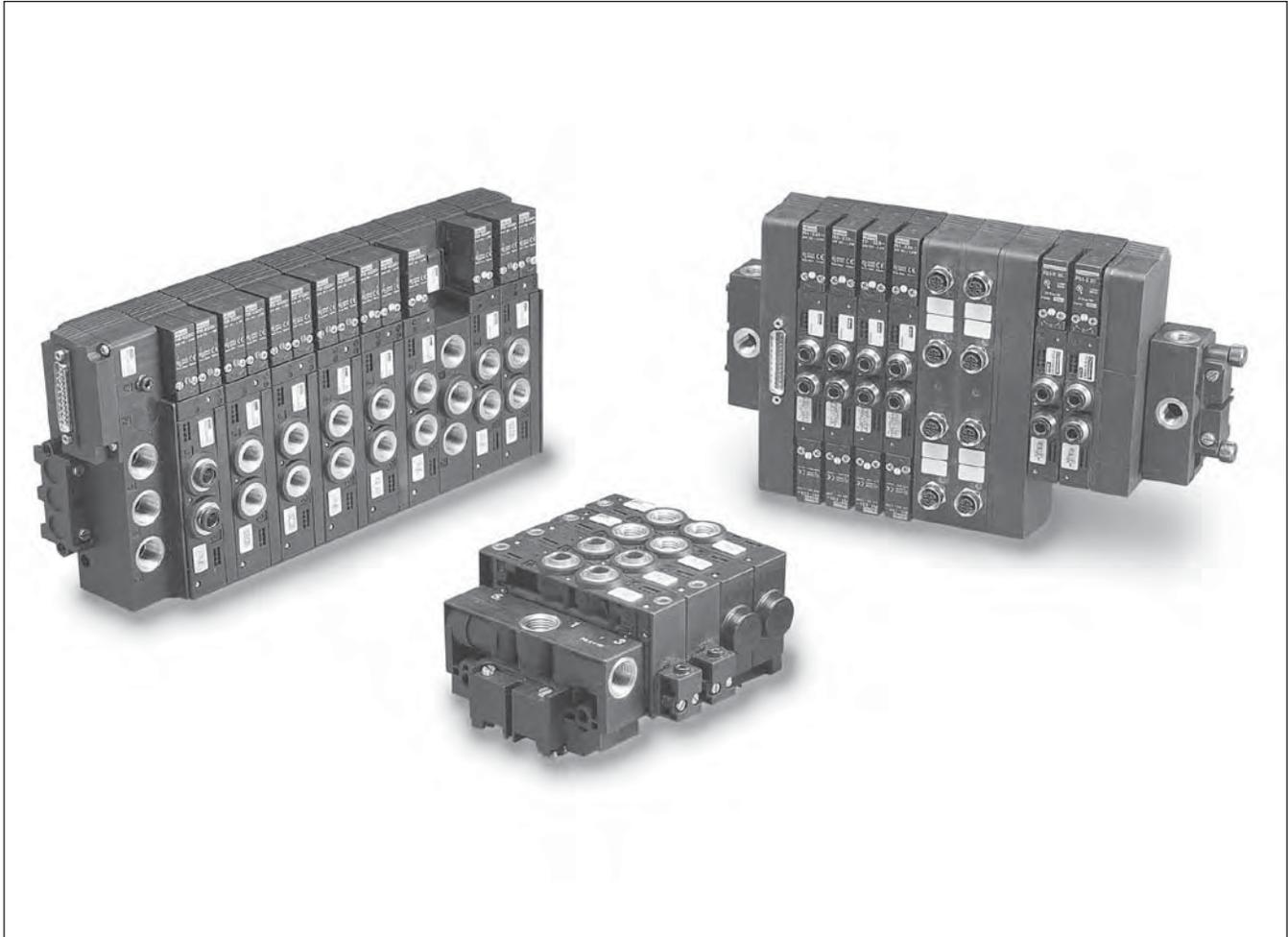


“PVL” Series

Solenoid & Remote Pilot Operated
1/8" & 1/4" Valves

Section C

www.parker.com/pneu/pvl

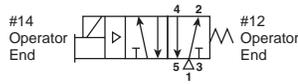


Basic Valve Functions	C60	Common Part Numbers (PVLB10 & PVLC10).....	C72-C73
Stacking Applications	C61-C62	Ordering Information Solenoids (PVLB10 & PVLC10).....	C74
Features (PVLB & PVLC).....	C63	PVLB10	C75-C76
Common Part Numbers-Stacking (PVLB & PVLC).....	C64	PVLC10	C77-C78
Accessories (PVLB & PVLC)	C65	Pin Assignments (PVLB10 & PVLC10).....	C79
Common Part Numbers-Inline (PVLB & PVLC)	C66	Technical Data.....	C80-C81
Solenoids, Electrical Connectors.....	C67-C68	Cables	C82-C83
Features (PVLB10 & PVLC10).....	C69	Accessories / Spare Parts.....	C84-C85
Stacking System Overview (PVLB10 & PVLC10).....	C70	Dimensions.....	C86-C92
Electrical Connection (PVLB10 & PVLC10).....	C71		

BOLD ITEMS ARE MOST POPULAR.



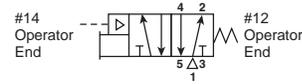
**Single Solenoid
 4-Way, 2-Position**



De-energized position – Solenoid operator #14 de-energized. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Energized position – Solenoid operator #14 energized. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

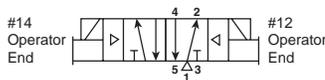
**Single Remote Pilot
 4-Way, 2-Position**



Normal position – Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Operated position – Maintained air signal at port 14. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

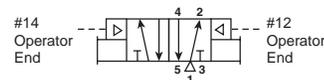
**Double Solenoid
 4-Way, 2-Position**



Solenoid operator #14 energized last. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Solenoid operator #12 energized last. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

**Double Remote Pilot
 4-Way, 2-Position**



Momentary air signal at port 14 last. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Momentary air signal at port 12 last. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

**Double Solenoid
 3-Position**



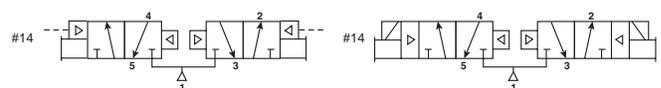
With #12 operator energized – inlet port 1 connected to cylinder port 2, cylinder port 4 connected to exhaust port 5.

With #14 operator energized – inlet port 1 connected to cylinder port 4, cylinder port 2 connected to exhaust port 3.

All Ports Blocked
 All ports blocked in the center position.

Center Exhaust
 Cylinder ports 2 and 4 connected to exhaust ports 3 and 5 in center position. Port 1 is blocked.

**Double Solenoid / Remote Pilot
 Dual 3-Way, 2-Position NC (NNP)**



With #14 & #12 operators both de-energized – pressure at inlet port 1 blocked, outlet port 4 connected to exhaust port 5, outlet port 2 connected to exhaust port 3.

With #14 operator energized – pressure at inlet port 1 connected to outlet port 4, exhaust port 5 blocked, outlet port 2 connected to exhaust port 3.

With #12 operator energized – pressure at inlet port 1 connected to outlet port 2, exhaust port 3 blocked, outlet port 4 connected to exhaust port 5.

With #14 & #12 operators both energized – pressure at inlet port 1 connected to outlet ports 4 & 2, exhaust ports 3 & 5 blocked.

C

Modulflex

PVL

Application

The PVL Series stacking system permits assembly of several valves into one manifold. Supply is connected at either a single or dual head / tail set.* Two common exhaust galleries are provided. Connections to outlet ports #2 and #4 on each valve can be accomplished by threaded pipe or instant tube fittings.

Electrical connection is made to each solenoid utilizing a 15mm, 3-Pin connector plug (PVLB & PVLC).

Each manifold assembly can handle any combination of the following valve types:

- Single Solenoid
- Single Remote Pilot
- Double Solenoid
- Double Remote Pilot

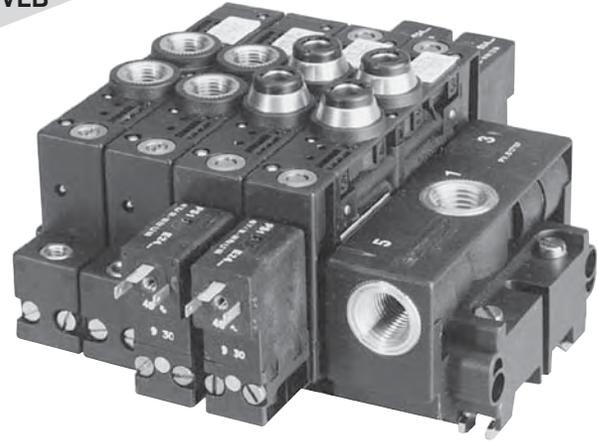
Two valve sizes can be combined in one manifold using a transition kit.

* For simultaneous operation of more than 5 valves, a dual head / tail set is recommended.

Features

- Greatly reduces installation costs.
- Reduces piping and the risk of leaks.
- Consolidates controls, saves space.
- Provides custom valving arrangements with standard components.
- Improves appearance of pneumatic equipment.
- Common main supply port.
- Allows for two common exhausts which can easily be plumbed away for cleanliness.
- Indicator lights and surge suppression available.
- Designed for 35mm DIN rail mounting. May be surface mounted by removing DIN rail clips.
- Servicing valves can be accomplished quickly without disassembling the entire manifold or removing plumbing.

PVLB



Manifold shows solenoid and remote pilot valves, threaded pipe ports, instant tube fittings, and a single supply head / tail set.

C

Modulflex

PVL

Mounting on 35mm DIN Rail

Valve manifolds mount quickly and easily to 35mm DIN rail with the use of a pneumatic head / tail set. The dual head / tail set provides input and exhaust ports at both ends and is recommended if more than 5 valves are to be operated simultaneously.

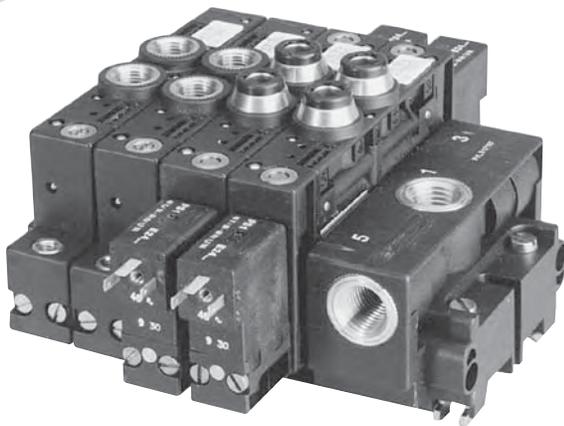
Surface Mounting

Manifolds may be surface mounted by removing the 35mm DIN mounting hardware on the pneumatic head / tail set.

Removal or Replacement

Modules are removed in reverse of the order shown at right. Before removing a module for service or replacement, loosen the *pneumatic* tail piece.

PVLB



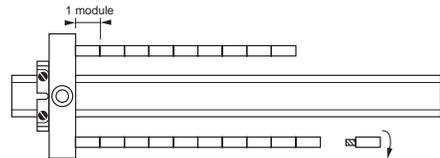
Manifold shows solenoid and remote pilot valves, threaded pipe ports, instant tube fittings, and a single supply head / tail set.

Mounting Procedure

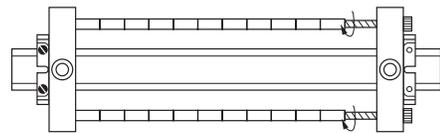
1. Clip on and tighten the pneumatic head piece.



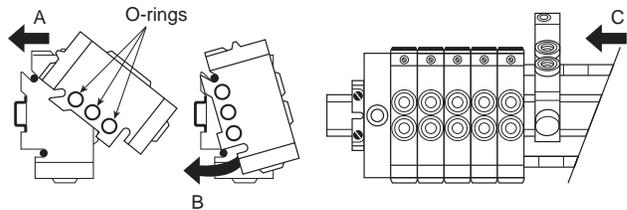
2. Assemble the two parallel mounting rods using cross rods provided with modules.



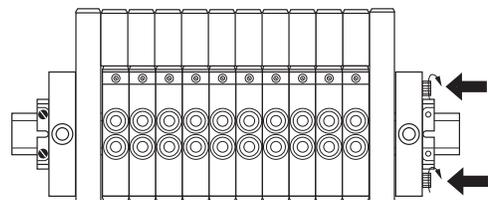
3. Clip on the pneumatic tail piece. Start screws into mounting rod but leave loose for module insertion.



4. To mount valves, position upper slot then push-lock lower slot. Mount modules (valves, modules, transition pieces, etc.) and press together.



5. Tighten the assembly.



"PVLB" Series**"PVLC" Series****Specifications**

- 4-Way, 5-Port, 2 or 3-Position Valves
- Single & Double Solenoid
- Single & Double Remote Pilot
- Dual 3/2

PVLB - .6 Cv

- 1/8" NPT & BSPP
- 1/4" & 6mm Tube Porting

PVLC - 1.2 Cv

- 1/4" NPT & BSPP
- 3/8" & 6mm Tube Porting

Mounting Style

- Stacking Manifold Valve
- DIN Rail Mounting (35mm)

Solenoid Pilot Actuation

- Continuous Duty Rated

PVLB, PVLC

- 1.2W - 12VDC & 24VDC
- 1.6VA - 24VAC, 120VAC, 240VAC
- 3-Pin, 15mm

Manual Overrides

- Brass Locking & Non-Locking

Operating Pressure

- 30 to 150 PSI (310 to 1035 kPa)

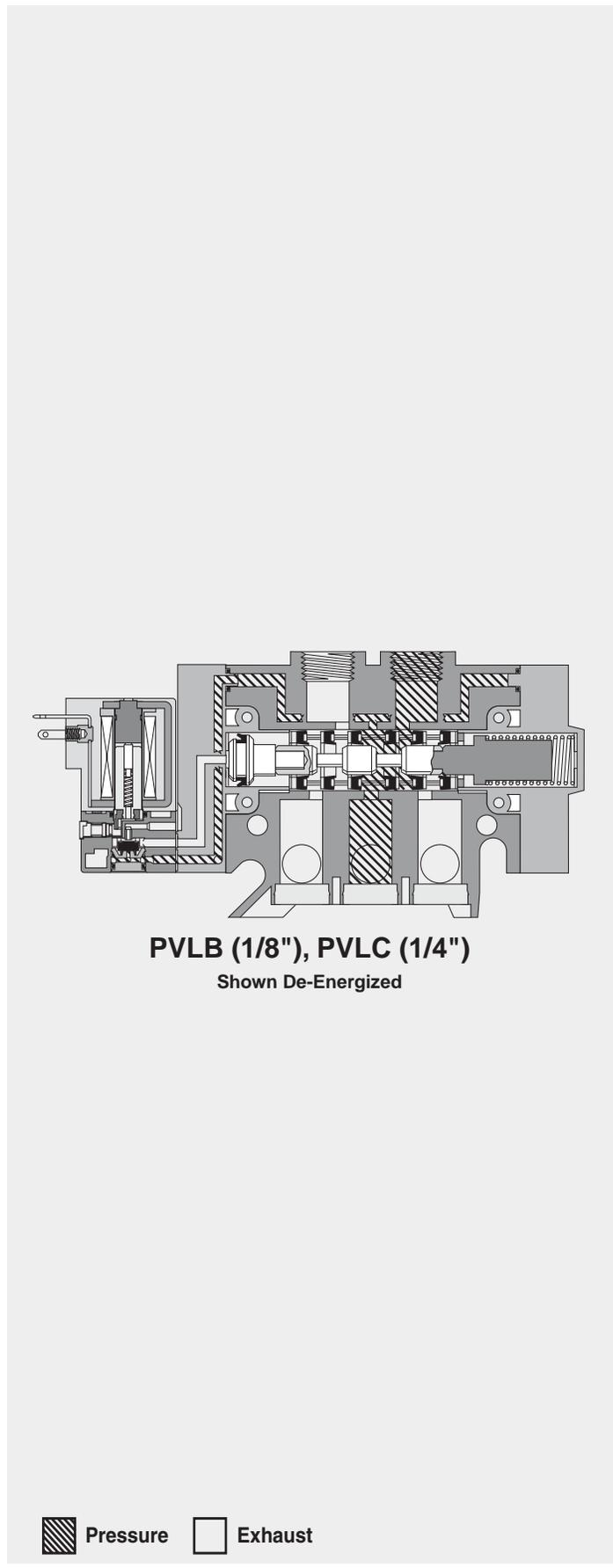
Operating Temperature

- 5°F to 140°F (-15°C to 60°C)

Certification / Approval

- Approved to be CE Marked
- UL (PVLB10 only)
- NFC 79 300

Note: DC units are polarity sensitive.



C

Modulflex

PVL

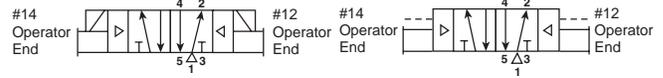
Single Solenoid / Remote Pilot
4-Way, 2-Position



Valve Only			
PVLB	PVLB121618	1/8" BSP	0.6 Cv
	PVLB1216187	1/8" NPT	
	PVLB121606	6mm Tube	
	PVLB1216067	1/4" Tube	
PVLC	PVLC1216197	1/4" NPT	1.2 Cv
	PVLC1216097	3/8" Tube	

Locking Manual Override, Valve Less Solenoid.

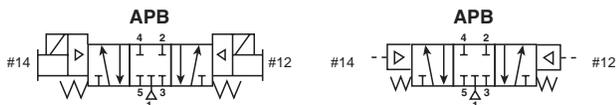
Double Solenoid / Remote Pilot
4-Way, 2-Position



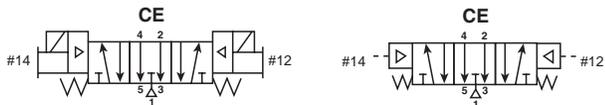
Valve Only			
PVLB	PVLB122618	1/8" BSP	0.6 Cv
	PVLB1226187	1/8" NPT	
	PVLB122606	6mm Tube	
	PVLB1226067	1/4" Tube	
PVLC	PVLC1226197	1/4" NPT	1.2 Cv
	PVLC1226097	3/8" Tube	

Non-Locking Manual Override, Valve Less Solenoid.

Double Solenoid / Remote Pilot
4-Way, 3-Position



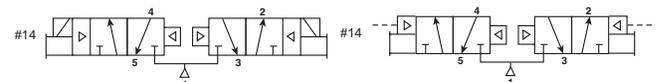
Valve Only			
PVLB	PVLB1276187	1/8" NPT	0.6 Cv
PVLC	PVLC1276197	1/4" NPT	1.2 Cv



Valve Only			
PVLB	PVLB1286187	1/8" NPT	0.6 Cv
PVLC	PVLC1286197	1/4" NPT	1.2 Cv

Non-Locking Manual Override, Valve Less Solenoid.

Double Solenoid / Remote Pilot
Dual 3/2 Normally Closed



Valve Only			
PVLB	PVLB1256187	1/8" NPT	0.6 Cv
	PVLB1256067	1/4" Tube	
PVLC	PVLC1256197	1/4" NPT	1.2 Cv

Non-Locking Manual Override, Valve Less Solenoid.

NOTES:

Solenoids or Remote Pilot Adapter must be ordered separately from page C67.

Each valve is shipped with 2 tie rods for stacking assembly.

BOLD OPTIONS ARE MOST POPULAR.

Single Supply Head / Tail Sets



Series	Model Number	Port Size
PVL	PVLB17197	1/4" NPT
	PVLB1719	1/4" BSP
PVLC**	PVLC17137	3/8" NPT
	PVLC1713	3/8" BSP

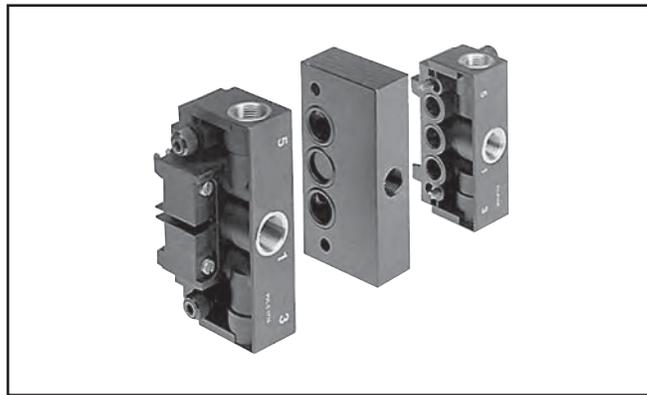
Kit includes: 1 Ported End (head) and 1 Blank End (tail) plus all necessary hardware.

* DIN rail mounting clips on both head and tail. Maximum stack length of 16 valves.

** **⚠ Caution:** DIN rail mounting clips on head piece only. Maximum stack length of 8 valves.

Note: DIN rail mounting clips may be removed for surface mounting.

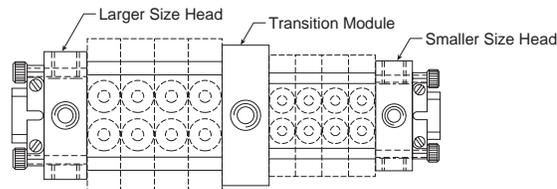
Transition Kits



Combination	Model Number	Port Size
PVLB & PVLC	PVULCB1197	NPT
	PVULCB119	BSP

Kit enables valves of two different sizes to be combined in the same stack.

Kit includes: 2 Ported Heads (one for each valve size) and a Transition Module with an Auxiliary Supply Port. Maximum number of valves for each size is 16.



Dual Supply Head / Tail Sets



Series	Model Number	Port Size
PVLB	PVLB17297	1/4" NPT
	PVLB1729	1/4" BSP
PVLC	PVLC17237	3/8" NPT
	PVLC1723	3/8" BSP

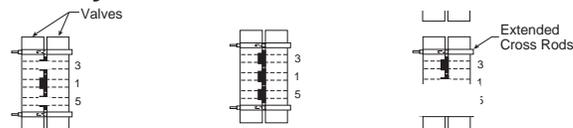
Kit includes: 2 Ported Ends (head and tail) plus all hardware. Mounts to 35mm DIN rail at both ends. Maximum stack length of 16 valves.

Note: DIN rail mounting clips may be removed for surface mounting.

Pressure Isolation Kit



Assembly Instructions



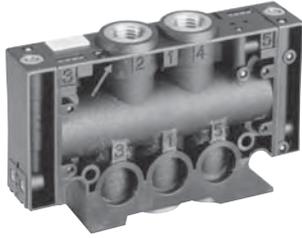
Example 1: Two different pressures P1 and P2 can supply the same bank of power valves, the exhausts remaining common.

Example 2: Complete isolation of the commons in the same bank of power valves: main pressure and exhaust commons.

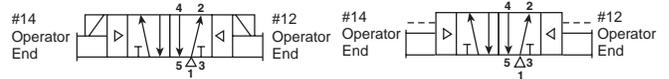
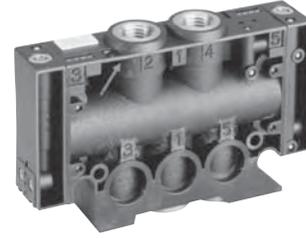
Example 3: The exhaust commons can be isolated within the same bank of power valves, while the main pressure supply remains common.

Series	Model Number	Kit includes:
PVLB	PVLB1901	3 isolation plugs, 2 open port plugs and 2 extended cross rods.
PVLC	PVLC1901	
PVLB	PVLB1902	10 isolation discs and 10 O-rings.
PVLC	PVLC1902	

Single Solenoid / Remote Pilot
4-Way, 2-Position



Double Solenoid / Remote Pilot
4-Way, 2-Position



Valve Only			
PVLB	PVLB111618	1/8" BSP	0.6 Cv
	PVLB1116187	1/8" NPT	
	PVLB1116067	1/4" Tube	
PVLC	PVLC1116197	1/4" NPT	1.2 Cv
	PVLC1116097	3/8" Tube	

Solenoids or Remote Pilot Adapter must be ordered separately from page C67.

Valve Only			
PVLB	PVLB112618	1/8" BSP	0.6 Cv
	PVLB1126187	1/8" NPT	
	PVLB1126067	1/4" Tube	
PVLC	PVLC1126197	1/4" NPT	1.2 Cv
	PVLC1126097	3/8" Tube	

Solenoids or Remote Pilot Adapter must be ordered separately from page C67.

NOTE: BOLD OPTIONS ARE MOST POPULAR.

C

Modulflex

PVL

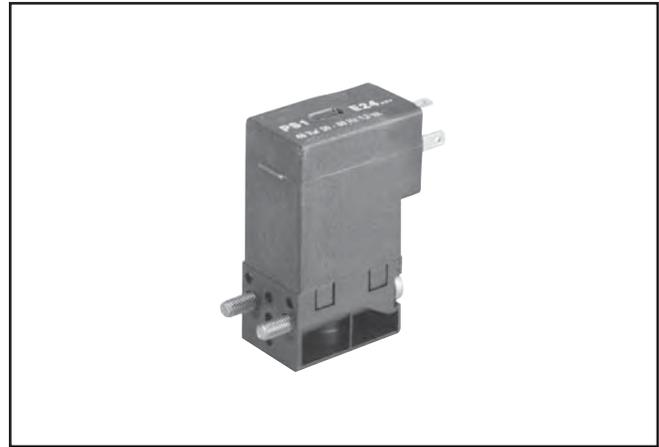
**PVLB & PVLC 3-Pin,
15mm Solenoids, Non-Locking,
Flush Override (w/o electrical connectors)**

Voltage	8mm Pin Spacing Kit Number	8mm Pin Spacing Solenoid	Power Consumption
12VDC	PS2982B45P	P2E-KV32B1	1.2W
24VDC	PS2982B49P	P2E-KV32C1	1.2W
24V-50/60Hz	PS2982B42P	P2E-KV31C1	1.6VA
120V/60Hz	PS2982B53P	P2E-KV31F1	1.6VA
240V/60Hz	PS2982B57P	P2E-KV31J1	1.6VA

Notes:

Kit includes: solenoid, (2) machine screws, (2) self threading screws, (1) gasket, (1) 3-cell gasket.

Electrical connectors must be ordered separately from the chart shown on page C68.



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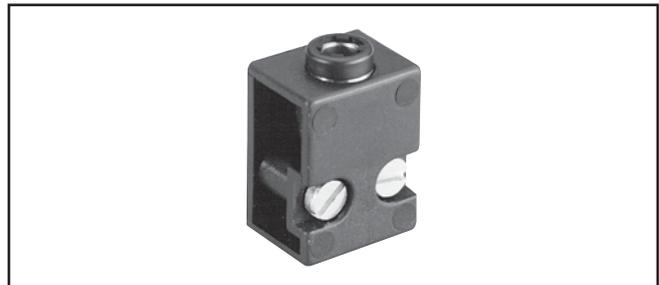
Modulflex

PVL

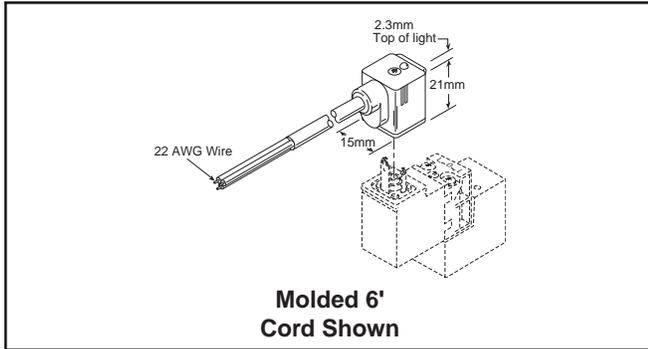
**Remote Pilot Connectors
PVLB (1/8") & PVLC (1/4") Valves**

Model Number	Port Fitting
PVAP111	5/32" Tube
PVAP115	10-32 UNF (M5)

Supplied with two screws to quickly mate with the valve body.



Female Electrical Connectors
15mm 3-Pin DIN 43650C - 8mm



Connector	Connector with Cord	Description
PS2932BP	PS2932HBP 18 Inches	Unlighted
PS2932BP	PS2932JBP 6 Feet	Unlighted
PS294675BP	PS2946J75BP* 6 Feet	Light – 12VAC or DC
PS294679BP	PS2946J79BP* 6 Feet	Light – 24VAC or DC
PS294683BP	PS2946J83BP* 6 Feet	Light – 110/120VAC
PS294687BP	N/A	Light – 240/230VAC

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord.
 IP65 rated when properly installed.

Engineering Data:

- Conductors: 2 Poles Plus Ground
- Cable Range (Connector Only): 4 to 6mm (0.16 to 0.24 Inch)
- Contact Spacing: 8mm

C
Modulflex
PVL

“PVLB10” Series “PVLC10” Series

Specifications

- 4-Way, 5-Port, 2 or 3-Position Valves
- Single & Double Solenoid
- Dual 3/2 Valves

PVLB10 - 0.6 Cv

- 1/8" NPT & BSPP
- 1/4" & 6mm Tube Porting

PVLC10 - 1.2 Cv

- 1/4" NPT & BSPP
- 3/8" & 8mm Tube Porting

Mounting Style

- DIN Rail Mounting (35mm)
- Stacking Manifold Valve

Solenoid Pilot Actuation

- Low watt solenoid pilots: 1.2W/1.6VA
- Lights & Surge Suppression Standard
- 12VDC to 120VAC

Operating Pressure

- 30 to 150 PSI (310 to 1035 kPa)

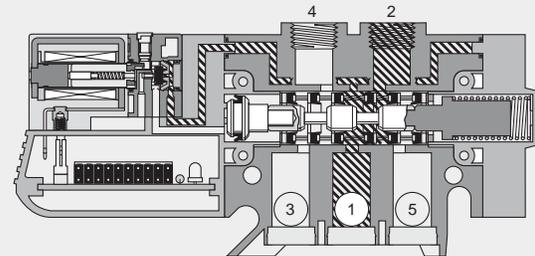
Operating Temperature

- 5°F to 140°F (-15°C to 60°C)

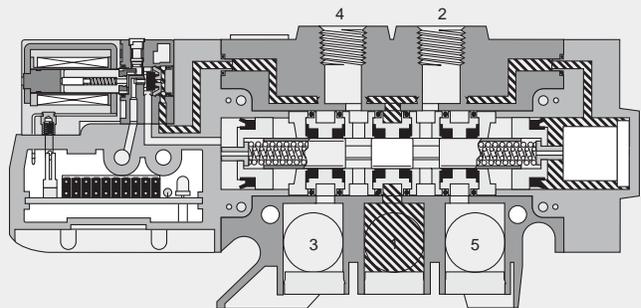
Certification / Approval

- Approved to be CE Marked
- IP65

Note: DC units are polarity sensitive.



PVLB10 Single Solenoid
Shown De-Energized



PVLC10 3-Position APB



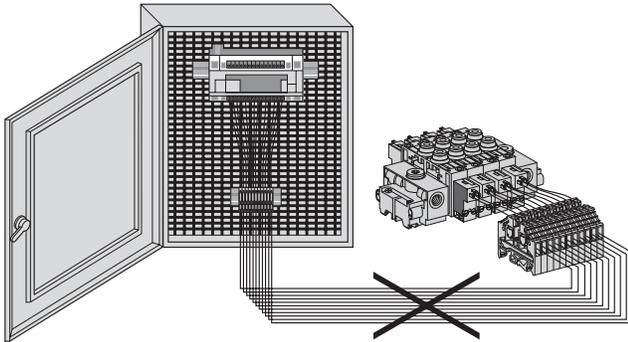
C

Modutex

PVL

Simplified Electrical Wiring

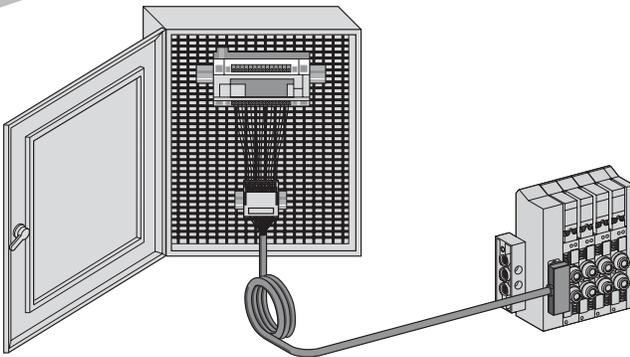
Eliminate costly wiring of individual solenoids with compact PVLB10 or PVLC10 stacks of up to 16 modules with built-in electrical connectors.



Simplified Setup

A single cable provides electrical connection to PLC or special terminal block.

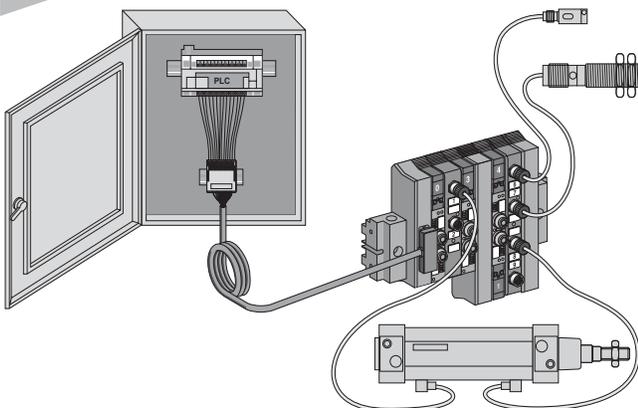
PVLB10



External Connections

External connection modules with PVLB10 valves allow sensor feedback or output connections to be integrated into the valve stack.

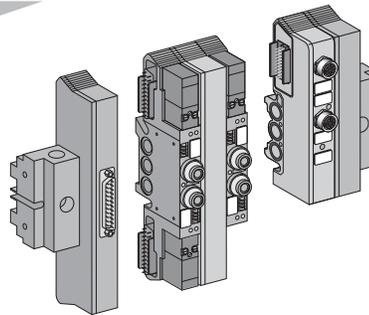
PVLB10



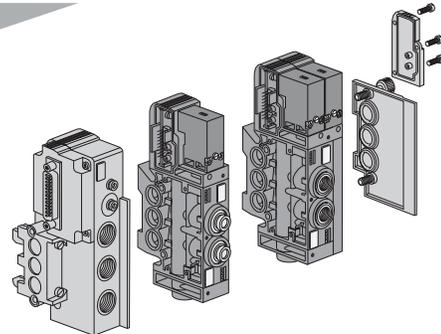
Modular Stacking

- The modular stacking system permits easy assembly of valves and external connection modules into a single stack.
- Integral supply and exhaust ports are manifolded as the stack is assembled.
- Intermodular electrical connection is accomplished through integral 20-Pin electrical connectors, eliminating the need for harnessing or wiring within the stack.
- PVLB10 single and double solenoid valves can be combined into one stack with the use of transition modules.
- PVLC10 single and double solenoid valves can be combined into one stack without any transition modules.
- The electrical head / tail set provides a single electrical connection from the stack to a PLC or terminal block.
- Each stack mounts easily to 35mm DIN rail by means of a pneumatic head / tail set, which also provides common air supply and exhaust.

PVLB10



PVLC10



Stacking System Benefits

- Reduces wiring, saves space.
- Allows custom arrangements with standard components.
- Further reduces wiring by integrating feedback and output connections into the PVLB10 valve stack.
- Greatly reduces installation time and costs.
- Servicing valves can be accomplished quickly without disassembling the entire stack.

C

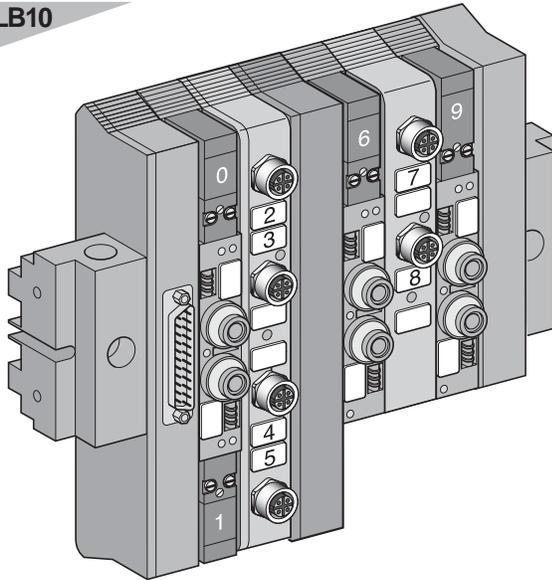
Modulflex

PVL

Autoconfiguration

The construction of the stack determines the relationship of each connector pin and the device it is to control. The address of each solenoid valve and each feedback or output connection is based on its physical position in the stack. For PVLB10, addresses are assigned consecutively from top to bottom and left to right beginning at top left with 0. For PVLC10, addresses are assigned consecutively from left to right and beginning at top left with 0.

PVLB10



It is easy to add or remove one or more modules to adapt to machine modifications. Once the controller is programmed, however, it is recommended that, where possible, the addition or permanent removal of any module be done at the tail (right-hand) end of the stack to prevent affecting the addresses of other modules in the stack. A change in address requires reprogramming of the controller.

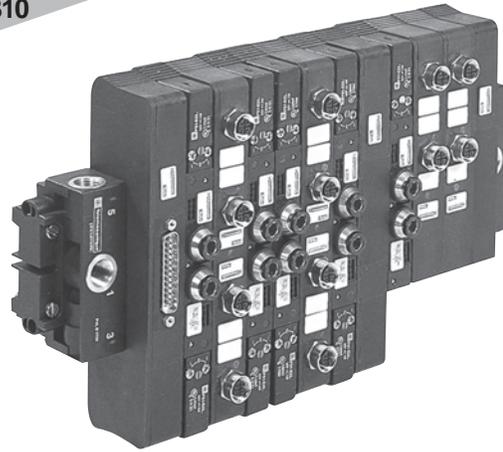
Connector Options

PVLB10



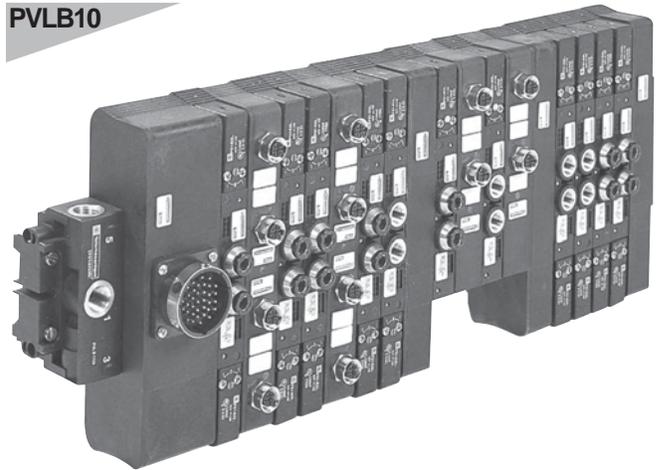
25-Pin Connector, Single Size Stack
Maximum 16 Addresses

PVLB10



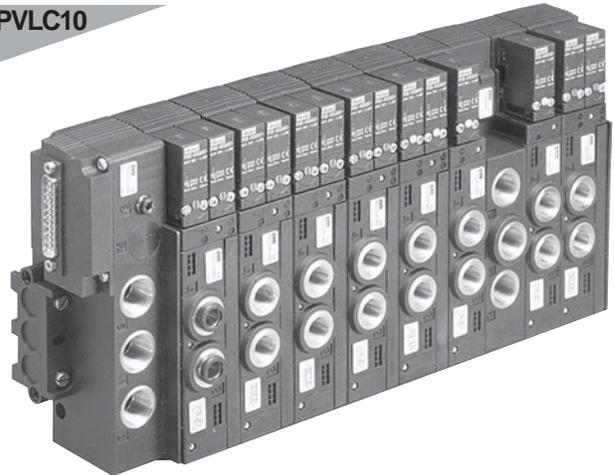
25-Pin Connector, Dual Size Stack
Maximum 21 Addresses

PVLB10



35-Pin Connector, Dual Size Stack
Maximum 32 Addresses

PVLC10



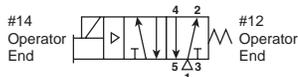
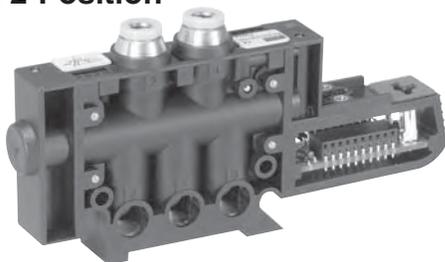
25-Pin Connector,
Maximum 16 Addresses



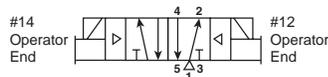
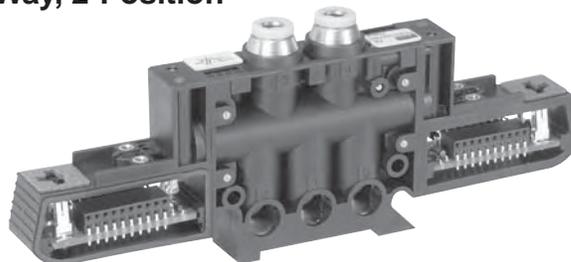
Modulflex

PVL

Single Solenoid
4-Way, 2-Position



Double Solenoid
4-Way, 2-Position



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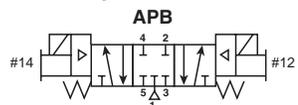
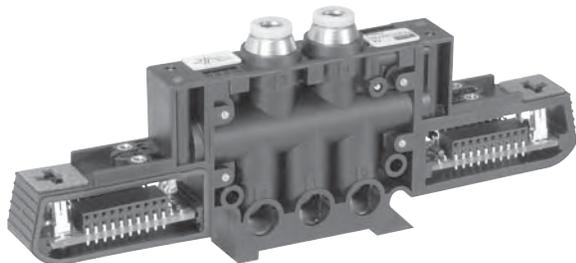
Modulflex

PVL

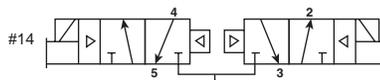
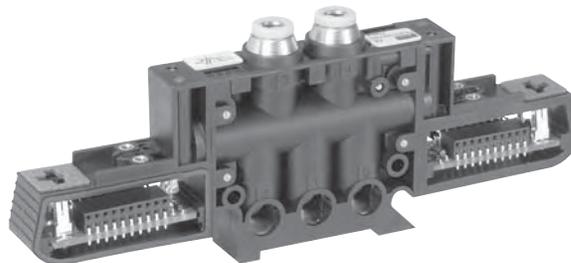
Valve Only				
PVLB10	PVLB1016187W2	1/8" NPT	12-24 VDC	0.6 Cv
	PVLB1016187W1		24-120 VAC	
	PVLB1016067W2	1/4" Tube	12-24 VDC	
	PVLB1016067W1		24-120 VAC	

Valve Only				
PVLB10	PVLB1026187W2	1/8" NPT	12-24 VDC	0.6 Cv
	PVLB1026187W1		24-120 VAC	
	PVLB1026067W2	1/4" Tube	12-24 VDC	
	PVLB1026067W1		24-120 VAC	

Double Solenoid
4-Way, 3-Position APB

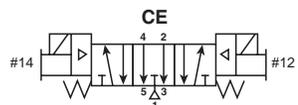


Double Solenoid
Dual 3/2 Normally Closed



Valve Only				
PVLB10	PVLB1076187W2	1/8" NPT	12-24 VDC	0.6 Cv
	PVLB1076187W1		24-120 VAC	
	PVLB1076067W2	1/4" Tube	12-24 VDC	
	PVLB1076067W1		24-120 VAC	

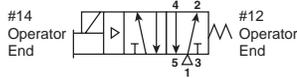
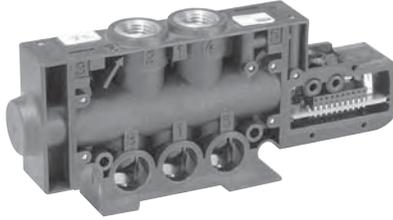
Valve Only				
PVLB10	PVLB1056187W2	1/8" NPT	12-24 VDC	0.6 Cv
	PVLB1056187W1		24-120 VAC	



Valve Only				
PVLB10	PVLB1086187W2	1/8" NPT	12-24 VDC	0.6 Cv
	PVLB1086187W1		24-120 VAC	
	PVLB1086067W2	1/4" Tube	12-24 VDC	
	PVLB1086067W1		24-120 VAC	

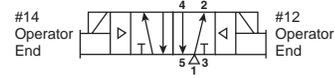
NOTES:
Solenoids sold separately on page C74.
Part Numbers Do Not include Solenoids.
BOLD OPTIONS ARE MOST POPULAR.

Single Solenoid
4-Way, 2-Position



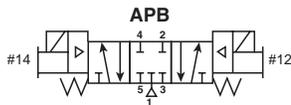
Valve Only				
PVLC10	PVLC1016197W2	1/4" NPT	12-24 VDC	1.2 Cv
	PVLC1016197W1		24-120 VAC	
	PVLC1016097W2	3/8" Tube	12-24 VDC	
	PVLC1016097W1		24-120 VAC	

Double Solenoid
4-Way, 2-Position



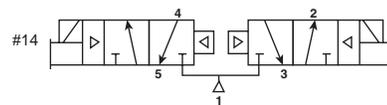
Valve Only				
PVLC10	PVLC1026197W2	1/4" NPT	12-24 VDC	1.2 Cv
	PVLC1026197W1		24-120 VAC	
	PVLC1026097W2	3/8" Tube	12-24 VDC	
	PVLC1026097W1		24-120 VAC	

Double Solenoid
4-Way, 3-Position APB

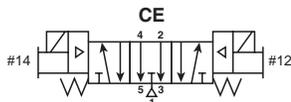


Valve Only				
PVLC10	PVLC1076197W2	1/4" NPT	12-24 VDC	1.2 Cv
	PVLC1076197W1		24-120 VAC	

Double Solenoid
Dual 3/2 Normally Closed



Valve Only				
PVLC10	PVLC1056197W2	1/4" NPT	12-24 VDC	1.2 Cv
	PVLC1056197W1		24-120 VAC	



Valve Only				
PVLC10	PVLC1086197W2	1/4" NPT	12-24 VDC	1.2 Cv
	PVLC1086197W1		24-120 VAC	

NOTES:
Solenoids sold separately on page C74.
 Part Numbers Do Not include Solenoids.
BOLD OPTIONS ARE MOST POPULAR.

**PVLB10 & PVLC10 3-Pin,
15mm Solenoids / Kits
(8mm Pin Spacing) DIN43650C**



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Voltages	Power Consumption	Holding Current	Id (Drop-Out Current)*	Kit Numbers With Non-Locking Flush Manual Override	Solenoid Only	Kit Numbers With Locking Flush Manual Override	Solenoid Only
12VDC	1.2W	100 mA	10 mA	PS3441B45P	P2E-KS32B1	PS3441C45P	P2E-KS32B2
24VDC	1.2W	50 mA	5 mA	PS3441B49P	P2E-KS32C1	PS3441C49P	P2E-KS32C2
24VAC	1.6VA	65 mA	22 mA	PS3441B42P	P2E-KS31C1	PS3441C42P	P2E-KS31C2
110VAC, 50Hz 120VAC, 60Hz	1.6VA	13.3 mA	5 mA	PS3441B53P	P2E-KS31F1	PS3441C53P	P2E-KS31F2

* When using a programmable controller, be sure that the leakage current of the controller outputs is lower than the drop-out current value.

Notes:

Kit includes: Solenoid, (2) machine screws, (2) self threading screws, (1) gasket, (1) 3-cell gasket, (1) L-shaped 3-cell gasket.

Constructing a PVLB10 Stack

When constructing a stack, the following rules apply:

1. A stack must have a pneumatic and an electrical head / tail set.
2. A stack has a physical limit of 16 active modules (valves, feedback modules and output modules), regardless of whether they are double or single.
3. Single feedback and output modules must be stacked with single solenoid valves, and double feedback and output modules must be stacked with double solenoid valves.
4. Double and single modules can be combined in a stack with the use of a transition module. A stack order of double to single is recommended to maximize the number of possible addresses.

CAUTION: If the application requires simultaneous operation of valves and/or external connection modules, see Technical Data page for operating limits.

Addressing

Addresses are automatically assigned to each solenoid and each external connection based on its position in the stack. Addresses are numbered consecutively from top to bottom and left to right beginning at the top left of the stack with 0.

To find the total number of addresses that will be required for a stack, calculate the following for each type of module based on table below and total:

Addresses x Quantity of Units = Addresses Required

Type of Module	Addresses Assigned	Quantity In stack	Addresses Required
Double solenoid valve	2	x	=
Double ck module	4	x	=
Double output module	4	x	=
Single solenoid valve	1	x	=
Single feedback module	2	x	=
Single output module	2	x	=
TOTAL ADDRESSES			=

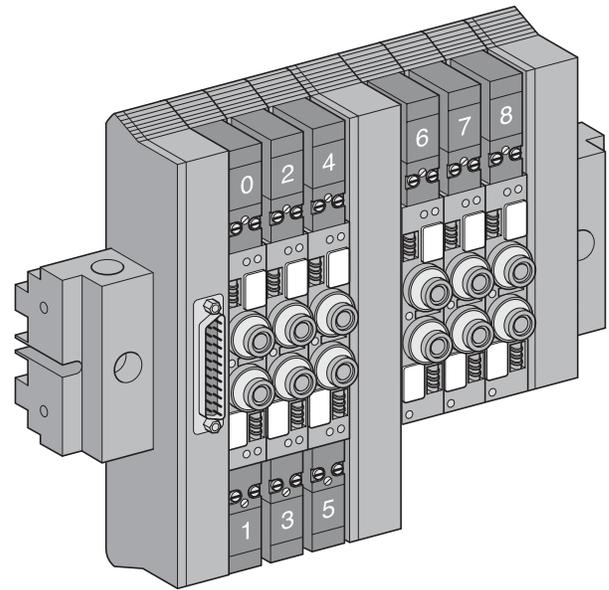
Electrical Connection

When selecting the electrical head / tail set, the following must be considered:

1. The size (double or single) of the electrical head piece must match that of the first module to its right.
2. The electrical connector must provide sufficient addresses for the stack.

The number of addresses possible with each type of head / tail set is shown in the following table. Based on the head type needed, select the connector that provides sufficient addresses for the stack.

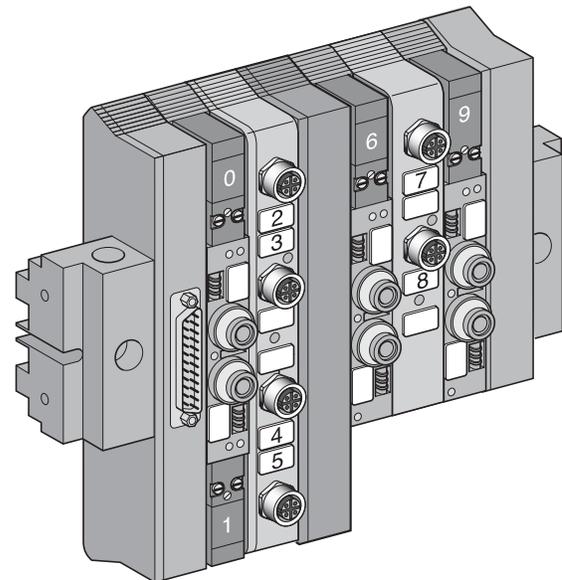
PVLB10



Double Solenoid to Single Solenoid Valve Manifold with 25-Pin Connector:

6 valves

9 addresses



Double Solenoid to Single Solenoid Mixed Manifold with 25-Pin Connector:

5 active modules

10 addresses

Head Type	Connector	Possible Addresses
Single Solenoid	25-Pin	16
Double Solenoid	25-Pin	21
	35-Pin	32

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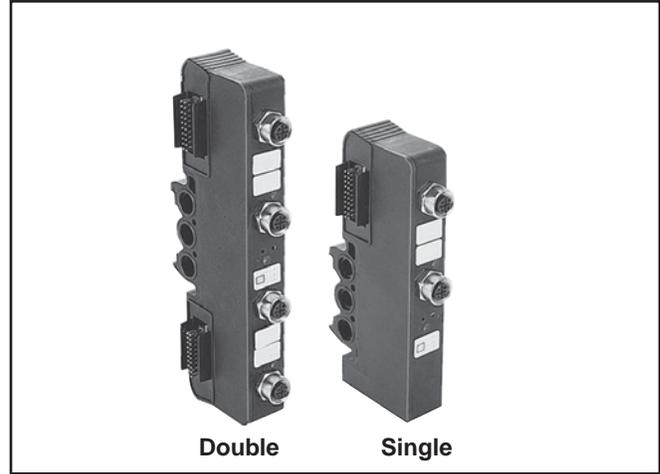
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External Connection Modules

With 20-Pin intermodular system and 12mm (mini) connectors, these modules can be combined with valves and/or other modules. Feedback modules supply voltage to sensors and accept signals for communication back to the PLC. Feedback modules can be used for PNP or NPN sensors, indicator lights will only work on PNP sensors. Output modules allow connection and control of valves mounted externally from the stack.

Type	Size	Connections	Model Number
Feedback	Single	2 Inputs	PVLB1E1302
	Double	4 Inputs	PVLB1E2304
Output	Single	2 Outputs	PVLB1S1302
	Double	4 Outputs	PVLB1S2304



Double

Single

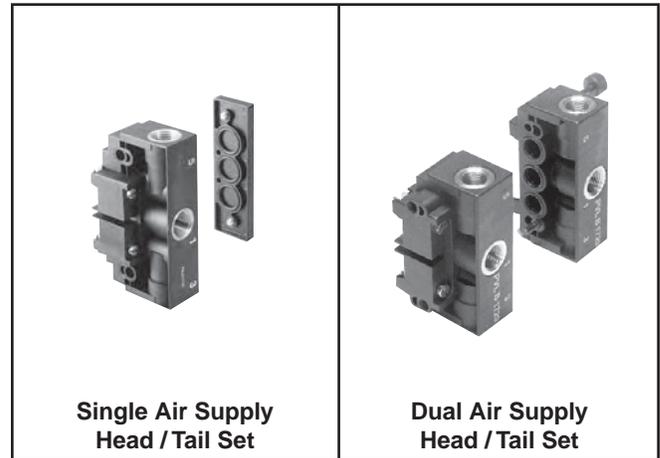
Head / Tail Sets

Pneumatic

Single air supply head / tail are used for shorter manifolds and dual air supply head / tail are used for longer manifolds.

Dual air supply head / tail sets contains 2 ported ends plus all hardware. Clamps to 35mm DIN rail. Removing 35mm hardware provides mounting holes for surface mounting. Single air supply head / tail sets clamp on one side only, Dual air supply head / tail sets clamp on both sides.

Type	Port Size	Model Number
Single Supply	1/4" NPT	PVLB17197
	1/4" BSP	PVLB1719
Double Supply	1/4" NPT	PVLB17297
	1/4" BSP	PVLB1729



Single Air Supply Head / Tail Set

Dual Air Supply Head / Tail Set

Pressure Isolating Disc

Description	Model Number
Sold in lots of 10.	PVLB1902

Electrical

For use with manifolds of all single solenoid valves or all double solenoid valves. Provides electrical link between all functions in the stack and the PLC.

Size	Connector	Model Number
Single Solenoid	25-Pin (Male), D-Sub	PVLB191125
Double Solenoid	25-Pin (Male), D-Sub	PVLB192125
	35-Pin (Male)	PVLB192235



Single Size Stacks

For use with manifolds using both single and double solenoid valves. Provides electrical connection to PLC and transition between single and double solenoid valves.

Valve Order	Connector	Model Number
Double Solenoid then Single Solenoid	25-Pin (Male), D-Sub	PVLB194125
	35-Pin (Male)	PVLB194235
Single Solenoid then Double Solenoid	25-Pin (Male), D-Sub	PVLB193125



Dual Size Stacks

Constructing a PVLC10 Stack

When constructing a stack, the following rules apply:

1. A stack must have a pneumatic and an electrical head / tail set.
2. A stack has a physical limit of 16 solenoids.
3. Single and double solenoid valves can be combined into one stack without any transition module.

⚠ CAUTION: If the application requires simultaneous operation of valves and/or external connection modules, see *Technical Data* page for operating limits.

Addressing

Addresses are automatically assigned to each solenoid and each external connection based on its position in the stack. Addresses are numbered consecutively from left to right beginning at the top left of the stack with 0.

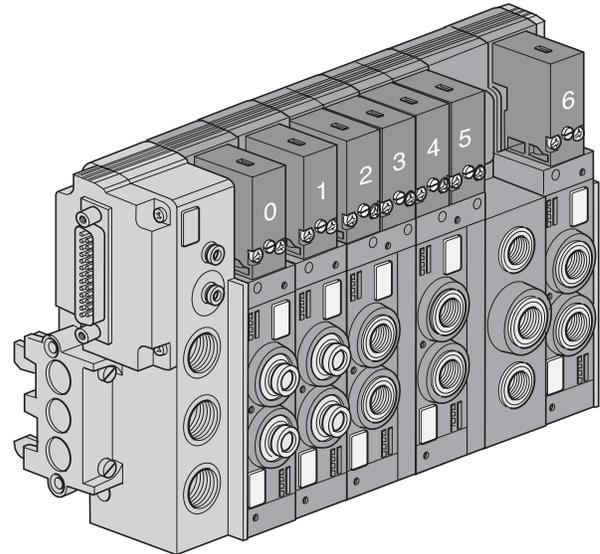
To find the total number of addresses that will be required for a stack, calculate the following for each type of module based on table below and total:

Addresses x Quantity of units = Addresses Required

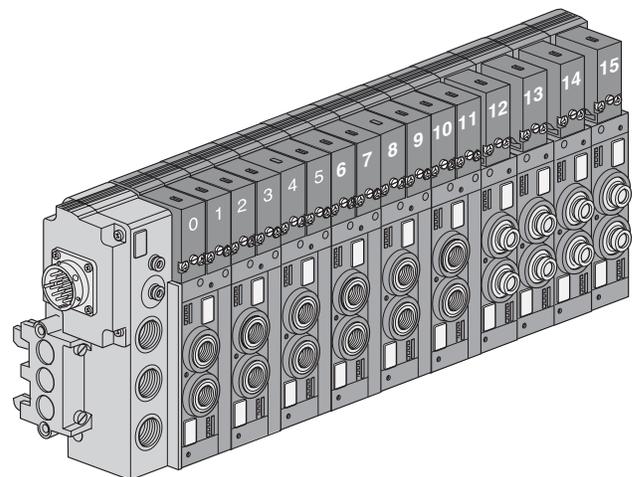
Type of Module	Addresses Assigned	Quantity In stack	Addresses Required
Double solenoid valve	2	x	=
Single solenoid valve	1	x	=
TOTAL ADDRESSES			=

Head Type	Connector Possible Addresses
25-Pin	16
19-Pin	16

PVLC10



25-Pin Connector with Intermediate Air Supply Module:
5 valves
7 addresses



19-Pin Connector:
10 valves
16 addresses

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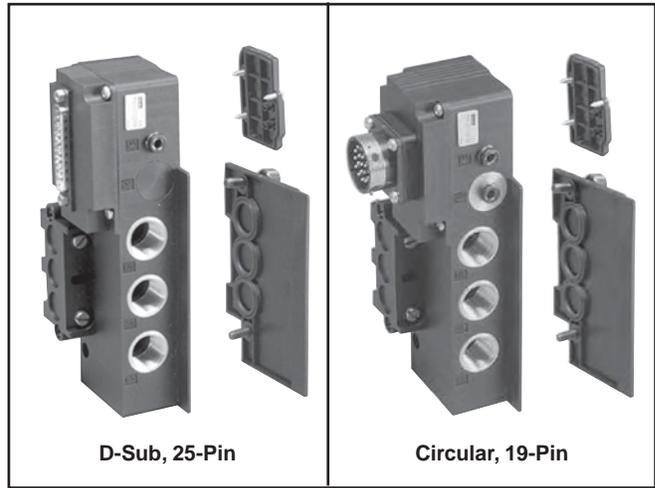
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Head / Tail Sets

Electrical / Pneumatic

Port Size / Type	Connector	Model Number
3/8" NPT, Single	D-Sub, 25-Pin w/ External Pilot (Px)	PVLC27137D25A
3/8" NPT, Single	D-Sub, 25-Pin w/o External Pilot (Px)	PVLC17137D25A
3/8" NPT, Single	Circular, 19-Pin w/o External Pilot (Px)	PVLC17137C19A



D-Sub, 25-Pin

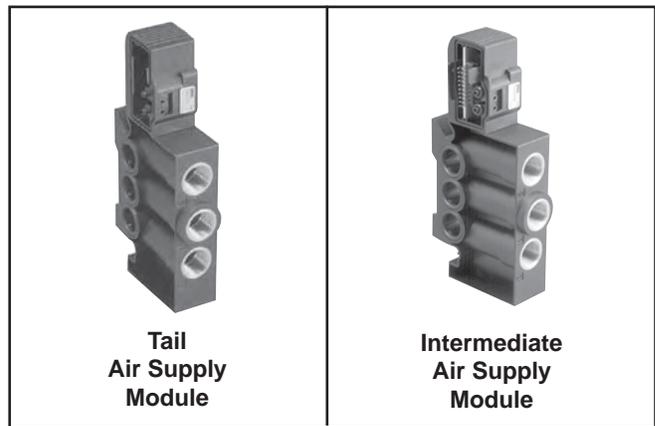
Circular, 19-Pin

Air Supply Modules

Tail Air Supply Module to be mounted at the end of the manifold for dual air supply for longer manifolds.

Intermediate Air Supply Module used when multiple pressures are required on a manifold.

Port Size / Type	Tail Air Supply Module	Intermediate Air Supply Module
3/8" NPT	PVULC2137	PVULC2137E
3/8" BSP	PVULC213	PVULC213E

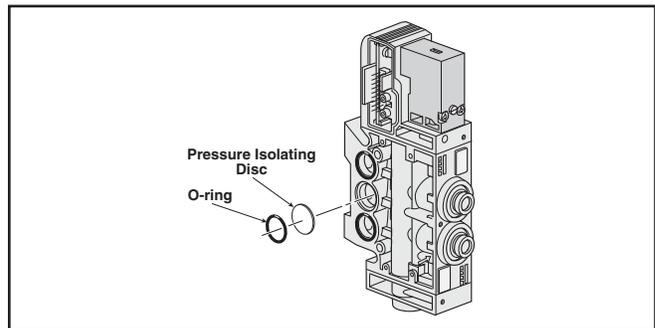


Tail Air Supply Module

Intermediate Air Supply Module

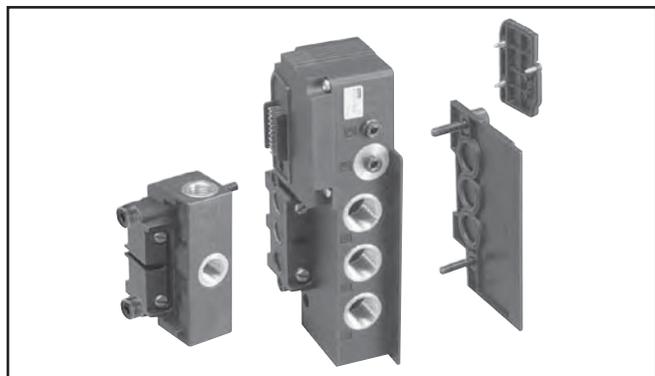
Pressure Isolating Disc

Description	Model Number
Sold in lots of 10	PVLC1902



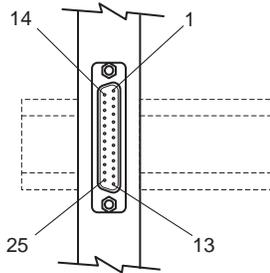
Transition Kits (PVLB10 to PVLC10)

Port Size / Type	Connector	Model Number
1/4" NPT to 3/8" NPT	Transition Kit with External Pilot (Px)	PVLC27137B19
1/4" NPT to 3/8" NPT	Transition Kit without External Pilot (Px)	PVLC17137B19
1/4" BSP to 3/8" BSP	Transition Kit with External Pilot (Px)	PVLC2713B19
1/4" BSP to 3/8" BSP	Transition Kit without External Pilot (Px)	PVLC1713B19



D-Sub, 25-Pin Single Size Head / Tail Set

Pin No.	Stack Address	Pin No.	Stack Address
13	0	8	10
25	1	20	11
12	2	7	12
24	3	19	13
11	4	6	14
23	5	18	15
10	6	5	Not Used
22	7	17	24V (feedback) (PVBL10)
9	8	4	0V (feedback) (PVBL10)
21	9	16	Common 0v

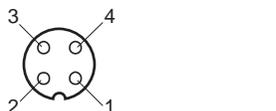


D-Sub, 25-Pin Double Size Head / Tail Set*

Pin No.	Stack Address	Pin No.	Stack Address
13	0	19	13
25	1	6	14
12	2	18	15
24	3	5	Not Used
11	4	17	24V (feedback)
23	5	4	0V (feedback)
10	6	16	Common 0v
22	7	3	16
9	8	15	17
21	9	2	18
8	10	14	19
20	11	1	20
7	12		

Feedback Connector*

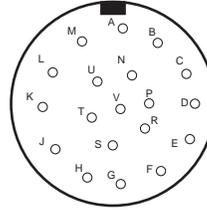
Pin No.	I/O	Pin No.	I/O
1	24V (feedback)	1	—
2	—	2	—
3	0V (feedback)	3	Common 0v
4	Input	4	Output



Notes: Solenoids are polarity sensitive. The common must be at 0V. Switching must be at the high potential.

* Available with PVLB10 Only

19-Pin Circular Connector†

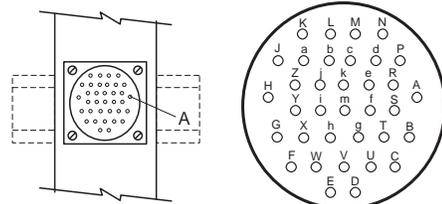


Pin No.	Stack Address
A	0
B	1
C	2
D	3
E	4
F	5
G	6
H	7
J	8
K	9
L	10
M	11
N	12
P	13
R	14
S	15
T	Common 0V
U	Not Used
V	Not Used

† Available with PVLC10 Only

Cylindrical, 35-Pin type “Trident Ringlock” Double Size Head / Tail Set*

Pin No.	Stack Address	Pin No.	Stack Address
A	0	V	18
B	1	W	19
C	2	X	20
D	3	Y	21
E	4	Z	22
F	5	a	23
G	6	b	24
H	7	c	25
J	8	d	26
K	9	e	27
L	10	f	28
M	11	g	29
N	12	h	30
P	13	i	31
R	14	j	Common 0V
S	15	k	0V (feedback)
T	16	m	24V (feedback)
U	17		



* Available with PVLB10 only.

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Operating Pressure Range:

Single Pilot 45 to 150 psi (311 to 1035 kPa)
 Double Pilot 30 to 150 psi (207 to 1035 kPa)

Temperature Range (Ambient)

Operating 5° to 140°F (-15° to 60°C)
 Storage -40° to 158°F (-40° to 70°C)

CAUTION:

If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage or unpredictable behavior.

Medium: Dry or lubricated air or inert gas

Medium Quality:

PVLB & PVLC Dry or lubricated air at 50 micron filtration

Materials:

Body Glass filled polyamide
 Seals Polyurethane
 Fittings Brass

Mounting:

Inline Surface mount on flat surface
 Stacking Mount on 35mm DIN rail or flat surface

Mounting Orientation: All positions

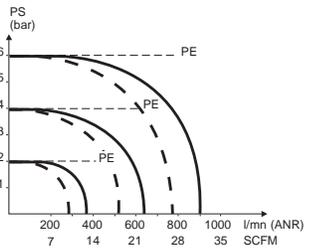
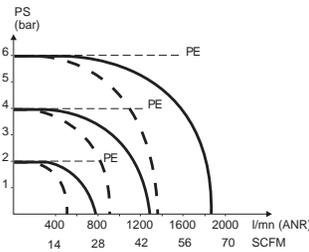
Manual Overrides: Locking or non-locking

Lubrication

Valves are pre-lubricated and may be operated with dry air. If lubrication is desired, use F442 oil.

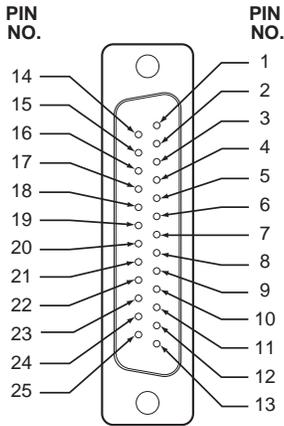
Cycle Life: 30 million (dry air)

Specific Characteristics

Description		1/8" Valves (PVLB) (PVLB10)	1/4" Valves (PVLC) (PVLB10)	
Cv		0.6	1.2	
Flow Rates				
Port Sizes	Instant tube fitting	1/4"	3/8"	
	Threaded	1/8" Pipe	1/4" Pipe	
Maximum Valve Fitting Torque		7.4 ft-lb (10Nm)	14.8 ft-lb (20Nm)	
Head / Tail Port Size / Max. Torque		1/4" Pipe / 14.8 ft-lb (20Nm)	3/8" Pipe / 40.6 ft-lb (55Nm)	
For Air Operated Valves:				
	Single Acting	Double Acting	Single Acting	Double Acting
Response Time (Input to Output)*	14 ms	8 ms	25 ms	11 ms
Pilot Pressure (@ 90 PSIG Inlet)	44 PSI	29 PSI	44 PSI	29 PSI
Depilot Pressure (@ 90 PSIG Inlet)	15 PSI	—	22 PSI	—
Maximum Operating Frequency	5 Hz	10 Hz	5 Hz	10 Hz
For Solenoid Operated Valves:				
	Single Acting	Double Acting	Single Acting	Double Acting
Response Time (Input to Output)*	22 ms	12 ms	39 ms	17 ms
Maximum Operating Frequency	5 Hz	10 Hz	5 Hz	10 Hz
Power Consumption Hold	DC = 1.2 Watt, AC = 1.6VA		DC = 1.2 Watt, AC = 1.6VA	
Power Consumption Inrush	DC = 1.2 Watt, AC = 3.5VA		DC = 1.2 Watt, AC = 3.5VA	
Voltage Tolerance	+10% to -15% rated voltage @ 70° F (20° C)		+10% to -15% rated voltage @ 70° F (20° C)	
Standard Voltages	12 and 24 VDC 24 and 120 VAC		12 and 24 VDC 24 and 120 VAC	
Rated Insulation Voltage	1500 Volts		1500 Volts	
Protection Rating	IP65		IP65	
Standards	UL (except 240 VAC) and NFC 79 300			

* Valves tested with test chamber at 90 PSIG inlet pressure.

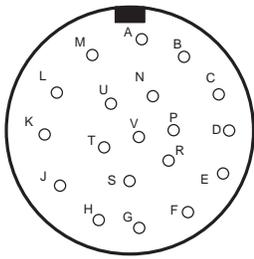
Pin Out Detail
D-Sub,
25-Pin Connector*



Output Solenoid No.	D-Sub 25-Pin No.	IP65 Cable Colors	Output Solenoid No.	D-Sub 25-Pin No.	IP65 Cable Colors
0	13	Green	10	8	Blue / Black
1	25	Transparent	11	20	White / Black
2	12	Dark Blue	12	7	Khaki
3	24	Light Blue	13	19	Orange
4	11	Pink	14	6	White
5	23	Purple	15	18	Gray
6	10	Dark Green / Black	Not Used	5	Red / Black
7	22	Yellow	Not Used	17	Red
8	9	Light Green / Black	Not Used	4	Brown
9	21	Yellow / Black	Valve Common	16	Black

Notes: Solenoids are polarity sensitive. The common must be at OV. Switching must be at the high potential.
 * Available with PVLB10 Only.

19-Pin Circular Connector*

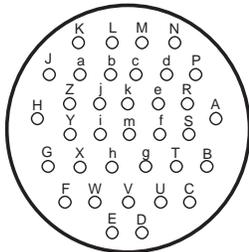


Output Solenoid No.	19-Pin Connector	IP65 Cable Colors	Output Solenoid No.	19-Pin Connector	IP65 Cable Colors
0	A	Pink / Brown	10	L	Blue
1	B	White / Green	11	M	Pink
2	C	White / Yellow	12	N	Grey
3	D	White / Grey	13	P	Yellow
4	E	White / Pink	14	R	White
5	F	Brown / Green	15	S	Green
6	G	Red / Blue	Valve Common	T	Black
7	H	Grey / Pink	Not Used	U	Brown
8	J	Brown / Yellow	Not Used	V	Red
9	K	Violet			

* Available with PVL C10 Only.

Notes: Solenoids are polarity sensitive. The common must be at OV. Switching must be at the high potential.
 Maximum 16 solenoid outputs with one valve (negative) common line on Pin T.

35-Pin Circular Connector*



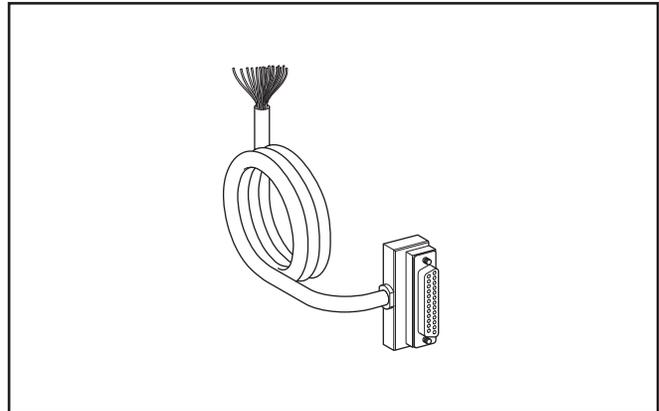
Output Solenoid No.	35-Pin Connector	IP65 Cable Colors	Output Solenoid No.	35-Pin Connector	IP65 Cable Colors
0	A	White / Brown	18	V	Brown / Pink
1	B	White / Green	19	W	Brown / Blue
2	C	White / Yellow	20	X	Brown / Red
3	D	White / Grey	21	Y	Brown / Black
4	E	White / Pink	22	Z	Green / Grey
5	F	White / Blue	23	a	Green / Pink
6	G	White / Red	24	b	Green / Blue
7	H	White / Black	25	c	Green / Red
8	J	Brown / Yellow	26	d	Green / Black
9	K	Violet	27	e	Yellow / Grey
10	L	Blue	28	f	Yellow / Pink
11	M	Pink	29	g	Yellow / Blue
12	N	Grey	30	h	Yellow / Red
13	P	Yellow	31	i	Yellow / Black
14	R	White	0 V valves	j	Black
15	S	Green	0 V inputs	k	Brown
16	T	Brown / Green	24 V inputs	m	Red
17	U	Brown / Grey			

* Available with PVLB10 Only.

**Cable with Female D-Sub,
IP65 Rated, 25-Pin Connector**

P8L-MD25A5B	5 Meters / 16.40 Ft
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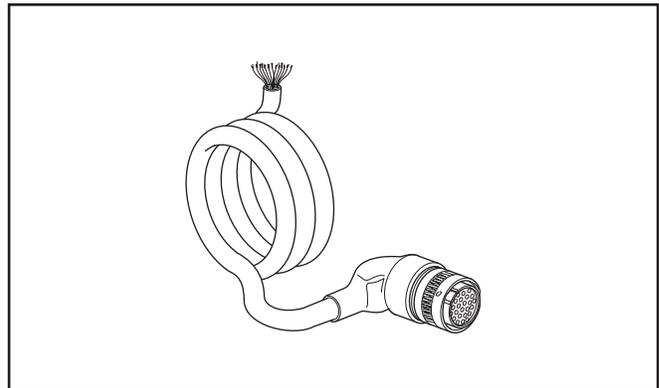
Connection to the control system is through 20 colored wires AWG 24, rated at 2.5 amp.



**Cable with Female
IP65 Rated, 19-Pin Connector**

P8L-MC19A5	5 Meters / 16.40 Ft
-------------------	---------------------

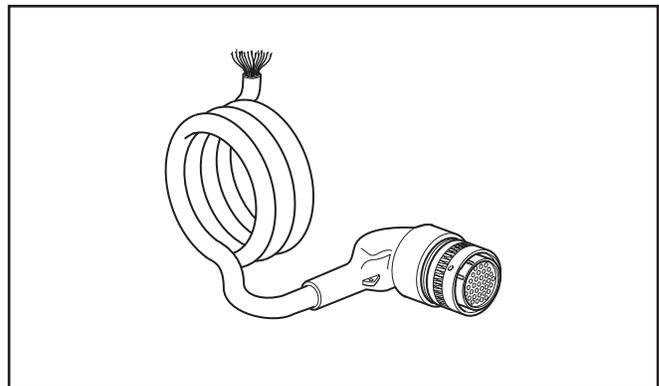
Connection to the control system is through 19 colored wires AWG 20, rated at 5 amp.



**Cable with Female
IP65 Rated, 35-Pin Connector**

P8L-MC35A5	5 Meters / 16.40 Ft
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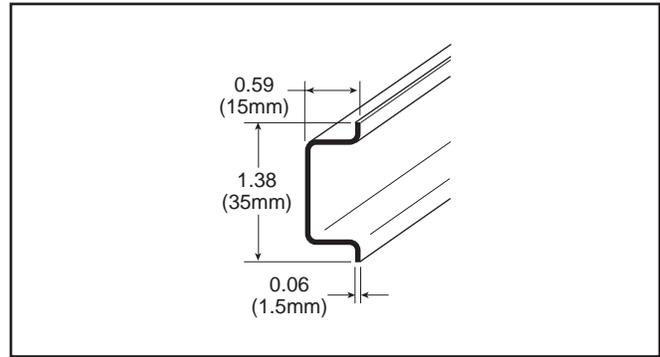
Connection to the control system is through 35 colored wires AWG 20, rated at 5 amp.



35mm DIN Rail

AM1DE200	6 Feet
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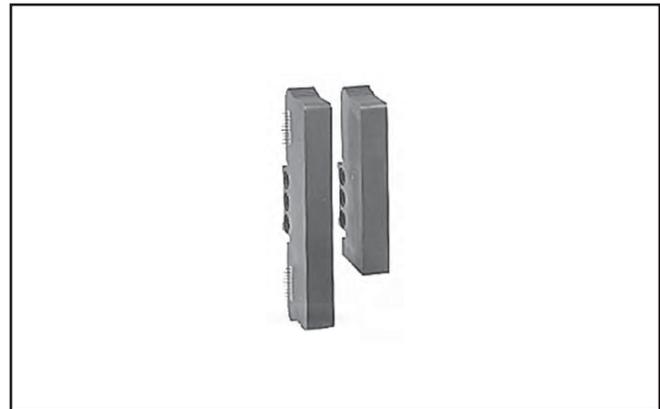
Zinc chromated steel rail for easy mounting of stacks.
 DIN rail can be mounted to grids or other surfaces to allow snap in mounting of pneumatic and electrical components.



Adapter Kits

Contains a size transition module and a replacement tail piece for field conversion to a combination stack.

PVLB1940	Double then Single
PVLB1930	Single then Double



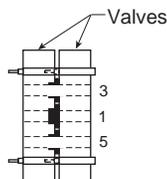
Pressure Isolation Kit

Series	Model Number	Kit includes:
PVLB	PVLB1901	3 Isolation Plugs, 2 Open Port Plugs and 2 Extended Cross Rods.
PVLC	PVLC1901	
PVLB	PVLB1902	10 Isolation Discs
PVLC	PVLC1902	

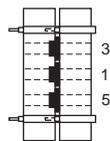


Assembly Instructions

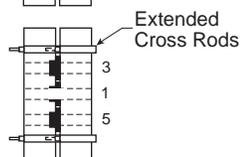
Example 1: Two different pressures P1 and P2 can supply the same bank of power valves, the exhausts remaining common.



Example 2: Complete isolation of the commons in the same bank of power valves: main pressure and exhaust commons.



Example 3: The exhaust commons can be isolated within the same bank of power valves, while the main pressure supply remains common.



Seals and Gaskets

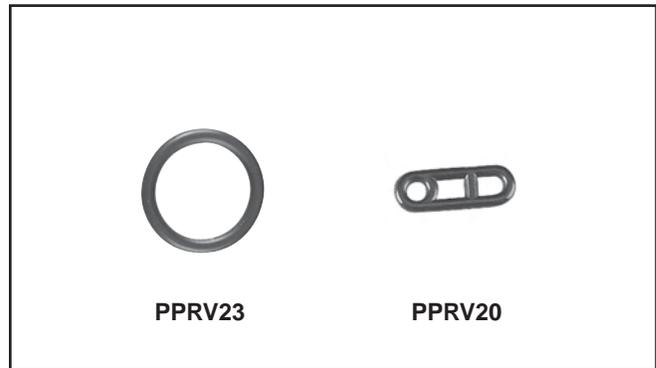
Series	O-Rings ¹	Gaskets ²
PVLB	PPRV23	PPRV20
PVLC	PPRV24	PPRV20

Series	O-Rings
PVLB10	PPRV23
PVLC10	PPRV24

Notes:

¹ O-rings seal between stackable valve bodies.
 Sold in set of 30.

² 3-cell gaskets seal between pilot and valve body.
 Sold as one set of 20 gaskets.



Cross Rods

Series	Model Number
PVLB	PPRV21
PVLC	PPRV22

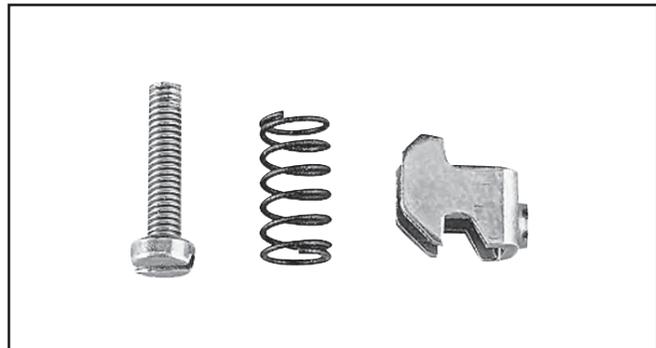
Used in valve stack mounting.
 Sold as 1 set of 10 cross rods.



DIN Rail Clip Assembly

PPRL09	Head / Tail Set – All Sizes
---------------	-----------------------------

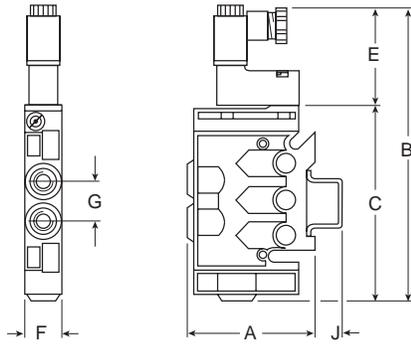
Assembly includes: clamp, screw, and spring.
 Sold as 1 set of 20 each.



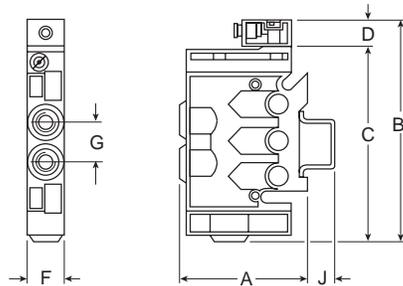
C
Modulflex
PVL

PVLB Valves

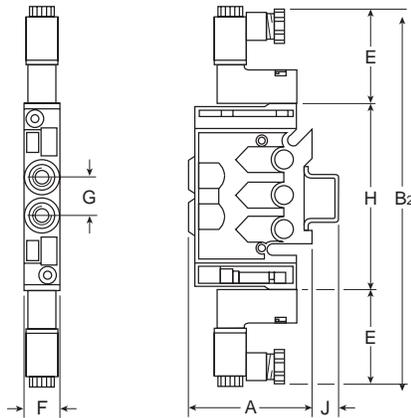
Single Solenoid



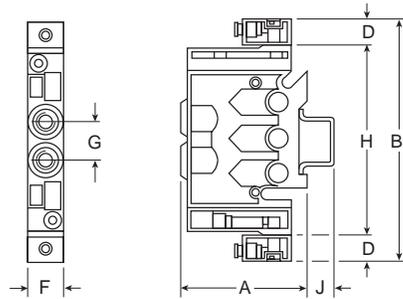
Single Remote Pilot



Double Solenoid



Double Remote Pilot



Dimensions

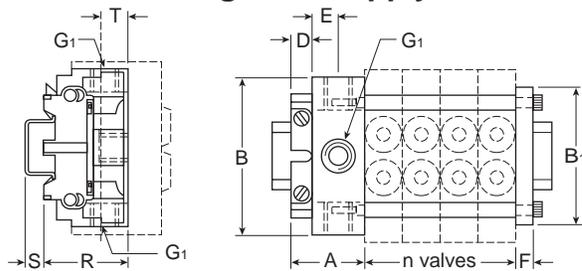
A (Inline Pipe)	2.40 (61)			
A (Inline Tube)	2.80 (71)			
A (Stacking Pipe)	2.40 (61)			
A (Stacking Tube)	2.68 (68)			
B	B₁	B₂	B₃	C
5.91 (150)	4.25 (108)	7.91 (201)	4.60 (117)	3.74 (95)
D	E	F	G	H
.51 (13)	2.17 (55)	.71 (18)	.79 (20)	3.58 (91)
J				
.47 (12)				

Inches (mm)

1/8" Pipe or 1/4" tube or 6mm tube for main ports.

Stacking System – PVLB

Single Air Supply



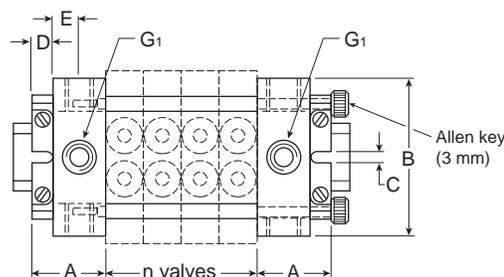
Dimensions

A	B	B₁	C*	D
1.50 (38)	3.27 (83)	2.76 (70)	.17 (4.2)	.39 (10)
E	F	G₁	R	S
.47 (12)	.31 (8)	1/4"	1.73 (44)	.35 (9)
T				
.43 (11)				

Inches (mm)

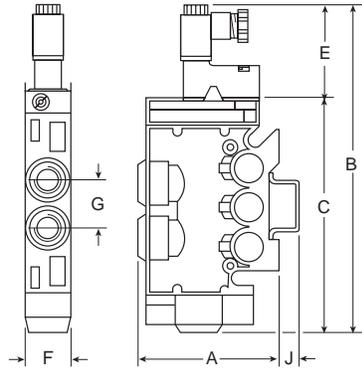
* Clearance for #6 screw.

Double Air Supply

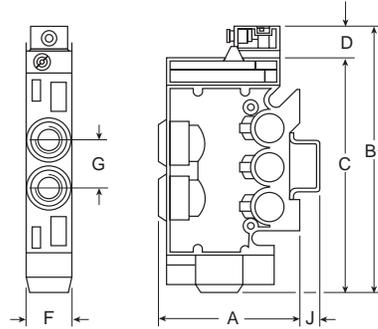


PVLC Valves

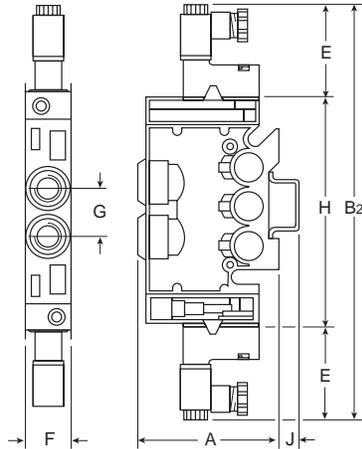
Single Solenoid



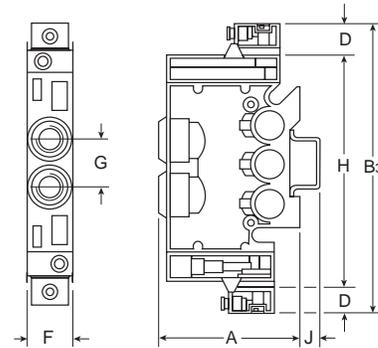
Single Remote Pilot



Double Solenoid



Double Remote Pilot



Dimensions

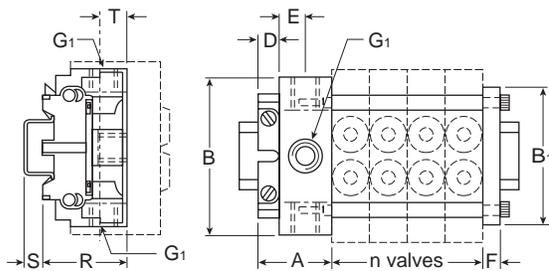
A (Inline Pipe)		2.87 (73)		
A (Inline Tube)		3.66 (93)		
A (Stacking Pipe)		2.87 (73)		
A (Stacking Tube)		3.27 (83)		
B	B₁	B₂	B₃	C
7.00 (178)	5.35 (136)	8.94 (227)	5.62 (143)	4.84 (123)
D	E	F	G	H
.51 (13)	2.17 (55)	.98 (25)	1.00 (26)	4.61 (117)
J				
.43 (11)				

Inches (mm)

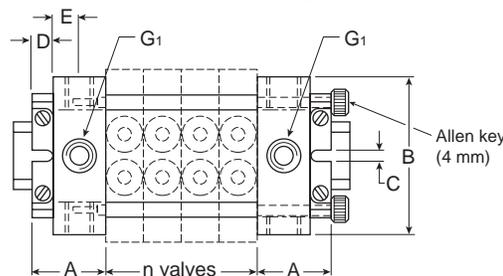
1/4" Pipe or 3/8" tube or 8mm tube for main ports.

Stacking System – PVLC

Single Air Supply



Double Air Supply



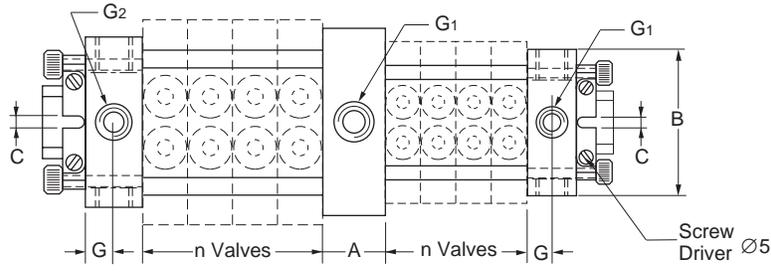
Dimensions

A	B	B₁	C*	D
1.50 (38)	4.25 (108)	3.94 (100)	.17 (4.2)	.39 (10)
E	F	G₁	R	S
.47 (12)	.31 (8)	3/8"	2.17 (55)	.35 (9)
T				
.51 (13)				

Inches (mm)

* Clearance for #6 screw.

Transition Kits – PVLB & PVLC Valves



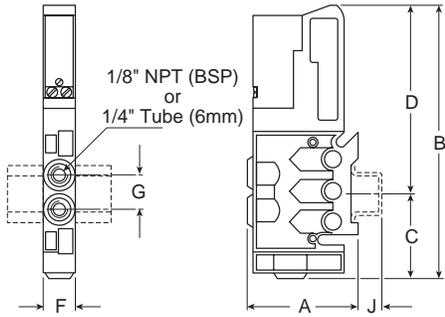
Dimensions

A	B	C	G	G ₁
.98 (25)	3.94 (100)	.17 (4.2)	.47 (12)	1/4"
G ₂ 3/8"				

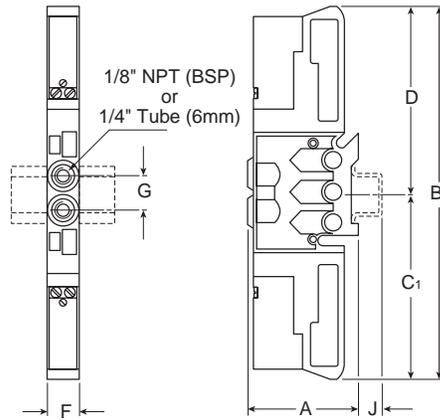
Inches (mm)

C
 Modurflex
 PVL

Single Solenoid



Double Solenoid



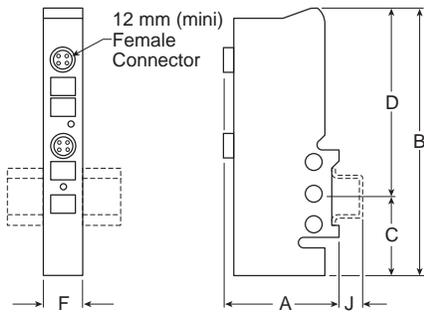
Dimensions

A (Inline Pipe)	2.87 (73)			
A (Inline Tube)	3.66 (93)			
A (Stacking Pipe)	2.87 (73)			
A (Stacking Tube)	3.27 (83)			
B	B₁	C	C₁	D
5.43 (138)	6.97 (177)	1.93 (49)	3.46 (88)	3.50 (89)
F	G	J		
.71 (18)	.79 (20)	.47 (12)		

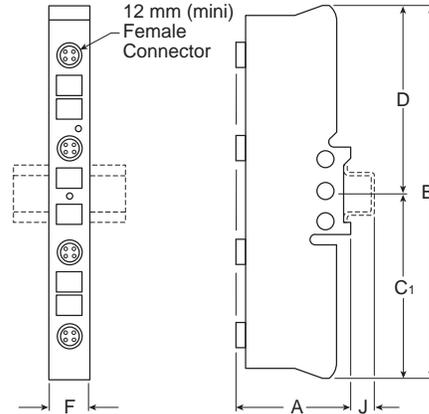
Inches (mm)

External Connection Modules

Single



Double



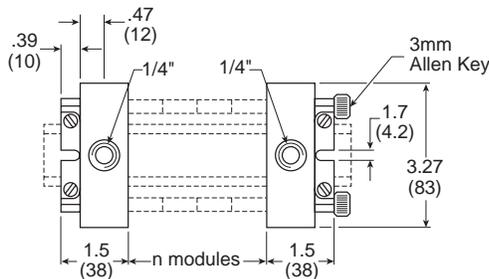
Dimensions

A	B	B₁	C	C₁
2.72 (69)	5.31 (135)	6.97 (177)	1.81 (46)	3.46 (88)
D	F	J		
3.50 (89)	.87 (22)	.47 (12)		

Inches (mm)

Pneumatic Head / Tail Set

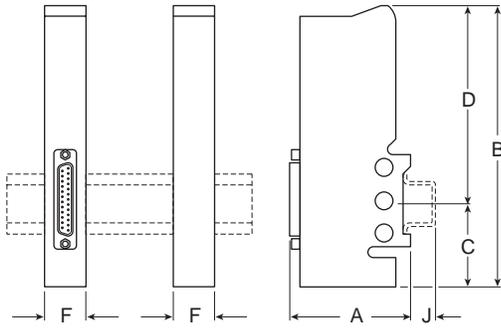
To calculate stack length, add the width of the pneumatic and electrical head / tail sets plus (quantity x width) for each type of active module. Widths shown in inches (mm).



Module	Qty	Width	Total Width
Pneumatic head / tail set	1 x	3.00" (76)	= 3.00" (76)
Electrical head / tail set:	1 x		=
<i>Select 25-Pin head / tail</i>		1.73" (44)	
<i>or 25-Pin w/ transition</i>		2.60" (66)	
<i>or 35-Pin head / tail</i>		2.76" (70)	
<i>or 35-Pin w/ transition</i>		3.62" (92)	
Valves	x	.71" (18)	=
Feedback/output modules	x	.87" (22)	=
TOTAL STACK LENGTH			=

Electrical Head / Tail Sets*

Single Stack D-Sub, 25-Pin Connector



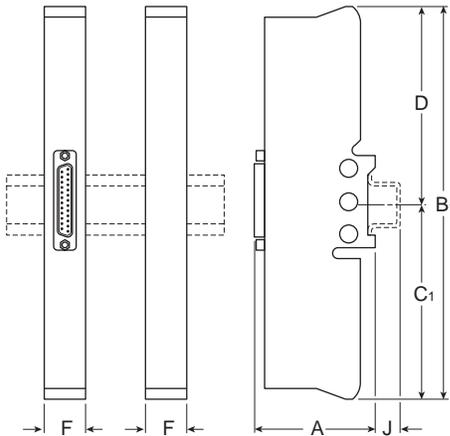
Dimensions

A 2.48 (63)	A₁ 2.40 (60)	B 5.31 (135)	B₁ 6.97 (177)	C 1.81 (46)
C₁ 3.46 (88)	D 3.50 (89)	E .39 (10)	F .87 (22)	H 1.57 (40)
J .47 (12)	K 1.89 (48)			

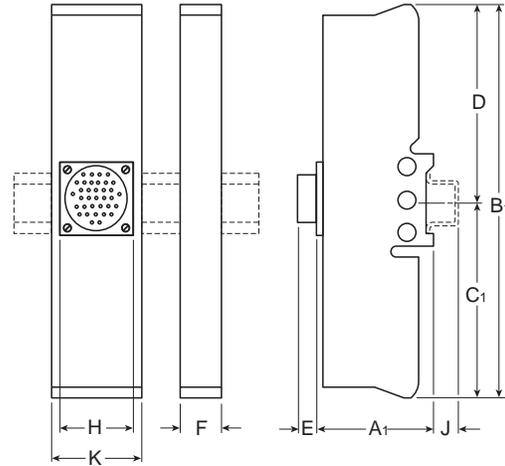
* When the stack contains both single and double modules, you must use a head / tail set that includes a size transition module (shown below).

Inches (mm)

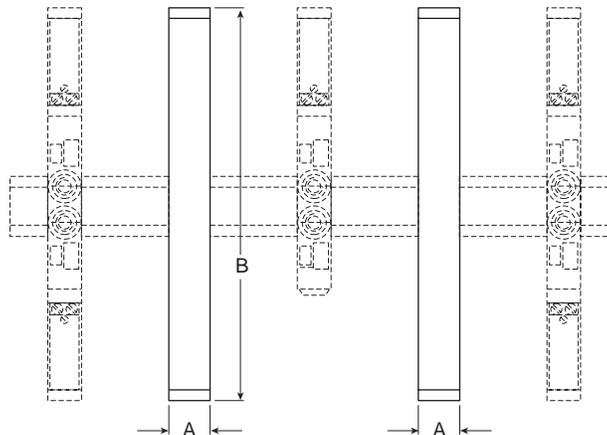
Double Stack D-Sub, 25-Pin Connector



Cylindrical 35-Pin Double Size Head / Tail Set



Size Transition Module



Dimensions

A .87 (22)	B 6.97 (177)			
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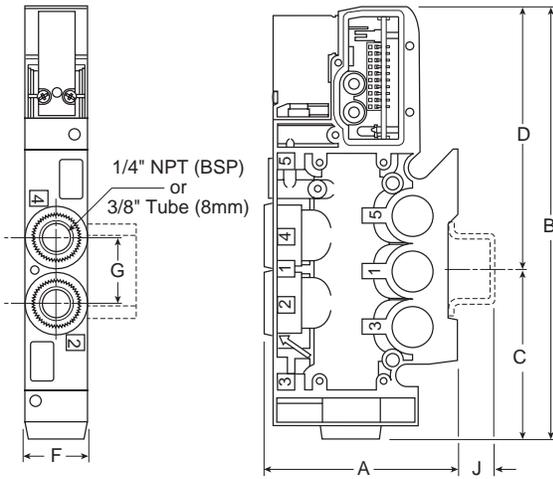
Inches (mm)

C

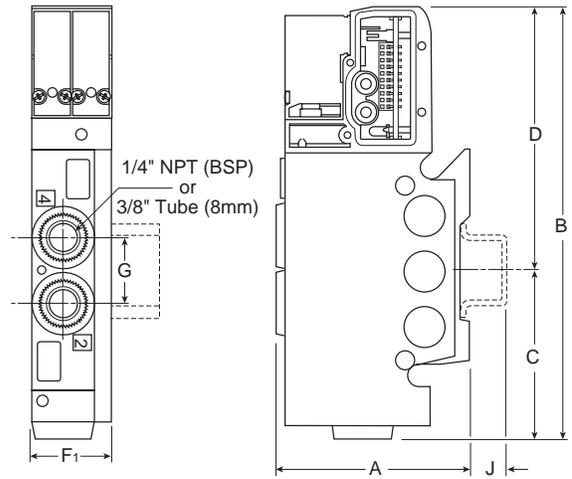
Modulflex

PVL

Single Solenoid



Double Solenoid



Dimensions

A (Inline Pipe)	2.87 (73)			
A (Inline Tube)	3.66 (93)			
A (Stacking Pipe)	2.87 (73)			
A (Stacking Tube)	3.27 (83)			
B	C	D	F	F₁
6.50 (165)	2.56 (65)	3.94 (100)	1.00 (25.4)	1.31 (33)
G	J			
1.00 (25.4)	.47 (12)			

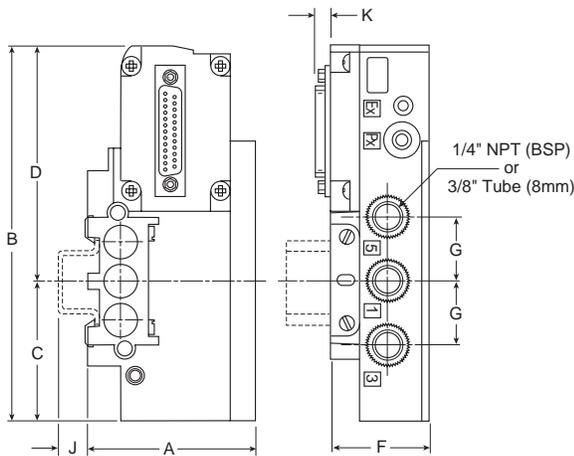
Inches (mm)



Modulflex

PVL

D-Sub, 25-Pin Connector

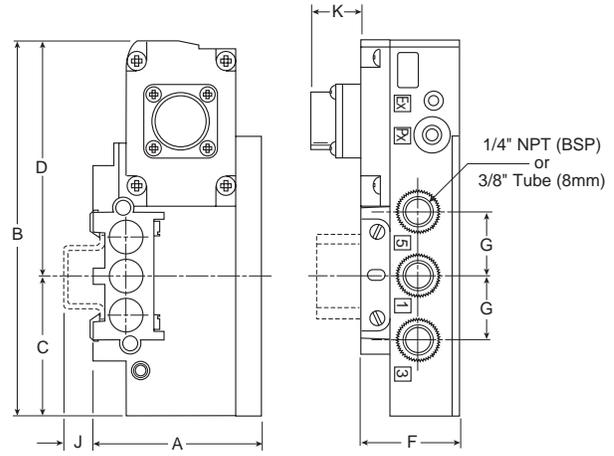


Dimensions

A	B	C	D	F
2.75 (70)	6.22 (158)	2.28 (58)	3.94 (100)	1.65 (42)
G	J	K		
1.06 (27)	.39 (10)	.12 (3)		

Inches (mm)

Cylindrical Connector

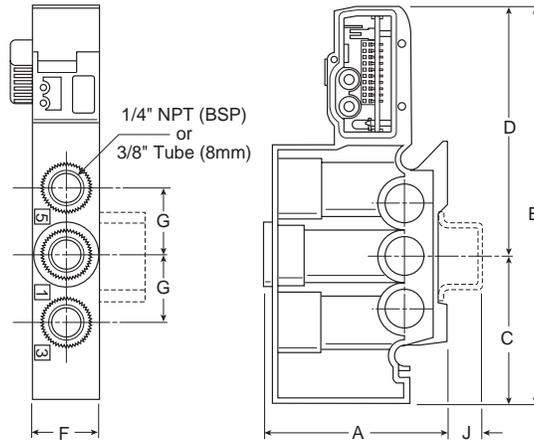


Dimensions

A	B	C	D	F
2.75 (70)	6.22 (158)	2.28 (58)	3.94 (100)	1.65 (42)
G	J	K		
1.06 (27)	.39 (10)	.30 (8)		

Inches (mm)

Intermediary Air Supply Module

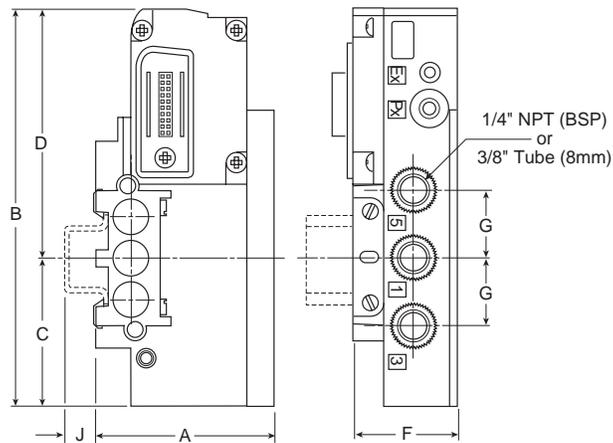


Dimensions

A 2.94 (75)	B 6.22 (158)	C 2.28 (58)	D 3.94 (100)	F 1.08 (28)
G 1.06 (27)	J .47 (12)			

Inches (mm)

Transfer Module



Dimensions

A 2.75 (70)	B 6.22 (158)	C 2.28 (58)	D 3.94 (100)	F 1.65 (42)
G 1.06 (27)	J .39 (10)			

Inches (mm)

C

Modulflex

PVL

Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

WARNING:

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS (“PRODUCTS”) CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

- Unintended or mistimed cycling or motion of machine members or failure to cycle
- Work pieces or component parts being thrown off at high speeds.
- Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
- Explosion
- Suddenly moving or falling objects.
- Release of toxic or otherwise injurious liquids or gasses.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

1. GENERAL INSTRUCTIONS

- 1.1. Scope:** This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters, Pressure Regulators, and Lubricators), Vacuum products and related accessory components.
- 1.2. Fail-Safe:** Valves, FRLs, Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.
- 1.3. Relevant International Standards:** For a good guide to the application of a broad spectrum of pneumatic fluid power devices see: ISO 4414:1998, Pneumatic Fluid Power – General Rules Relating to Systems. See www.iso.org for ordering information.
- 1.4. Distribution:** Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the products considered or selected.
- 1.5. User Responsibility:** Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Parker and its distributors do not represent or warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:
 - Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
 - Assuring that all user's performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
 - Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
 - Assuring compliance with all applicable government and industry standards.
- 1.6. Safety Devices:** Safety devices should not be removed, or defeated.
- 1.7. Warning Labels:** Warning labels should not be removed, painted over or otherwise obscured.
- 1.8. Additional Questions:** Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.com, for telephone numbers of the appropriate technical service department.

2. PRODUCT SELECTION INSTRUCTIONS

- 2.1. Flow Rate:** The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.
- 2.2. Pressure Rating:** Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.
- 2.3. Temperature Rating:** Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.
- 2.4. Environment:** Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.
- 2.5. Lubrication and Compressor Carryover:** Some modern synthetic oils can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.
- 2.6. Polycarbonate Bowls and Sight Glasses:** To avoid potential polycarbonate bowl failures:
 - Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
 - Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, ketones, esters or certain alcohols.
 - Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

2.7. Chemical Compatibility: For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5

2.8. Product Rupture: Product rupture can cause death, serious personal injury, and property damage.

- Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
- Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
- Consult product labeling or product literature for pressure rating limitations.

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

3.1. Component Inspection: Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.

3.2. Installation Instructions: Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.com.

3.3. Air Supply: The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

4.1. Maintenance: Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.10.

4.2. Installation and Service Instructions: Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at www.parker.com.

4.3. Lockout / Tagout Procedures: Be sure to follow all required lockout and tagout procedures when servicing equipment. For more information see: OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – (Lockout / Tagout)

4.4. Visual Inspection: Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:

- Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
- Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation.
- Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
- Any observed improper system or component function: Immediately shut down the system and correct malfunction.
- Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

Caution: Leak detection solutions should be rinsed off after use.

4.5. Routine Maintenance Issues:

- Remove excessive dirt, grime and clutter from work areas.
- Make sure all required guards and shields are in place.

4.6. Functional Test: Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.

4.7. Service or Replacement Intervals: It is the user's responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Service intervals need to be established based on:

- Previous performance experiences.
- Government and / or industrial standards.
- When failures could result in unacceptable down time, equipment damage or personal injury risk.

4.8. Servicing or Replacing of any Worn or Damaged Parts: To avoid unpredictable system behavior that can cause death, personal injury and property damage:

- Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
- Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
- Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.

4.9. Putting Serviced System Back into Operation: Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.

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1. Terms and Conditions. Seller's willingness to offer Products for sale or accept an order for Products is subject to the terms and conditions contained in this Offer of Sale or any newer version of the same, published by Seller electronically at www.parker.com/saleterms/. Seller objects to any contrary or additional terms or conditions of Buyer's order or any other document or other communication issued by Buyer.

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3. Shipment; Delivery; Title and Risk of Loss. All delivery dates are approximate. Seller is not responsible for damages resulting from any delay. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the shipment carrier at Seller's facility. Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Buyer's request beyond the respective dates indicated will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions.

4. Warranty. Seller warrants that the Products sold hereunder shall be free from defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of normal use, whichever occurs first. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **DISCLAIMER OF WARRANTY: THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS PROVIDED. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING DESIGN, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

5. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to the Seller within ten (10) days of delivery. No other claims against Seller will be allowed unless asserted in writing within thirty (30) days after delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the defect is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.

6. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE WITHIN A REASONABLE PERIOD OF TIME. **IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.**

7. User Responsibility. The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.

8. Loss to Buyer's Property. Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the items manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Special Tooling. A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

10. Buyer's Obligation; Rights of Seller. To secure payment of all sums due or otherwise, Seller retains a security interest in all Products delivered to Buyer and this agreement is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.

11. Improper Use and Indemnity. Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs

(including attorney fees and defense costs), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, application, design, specification or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Products; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

12. Cancellations and Changes. Buyer may not cancel or modify or cancel any order for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change Product features, specifications, designs and availability.

13. Limitation on Assignment. Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.

14. Force Majeure. Seller does not assume the risk and is not liable for delay or failure to perform any of Seller's obligations by reason of events or circumstances beyond its reasonable control (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.

15. Waiver and Severability. Failure to enforce any provision of this agreement will not invalidate that provision; nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.

16. Termination. Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate this agreement, in writing, if Buyer: (a) breaches any provision of this agreement (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or one if filed by a third party (d) makes an assignment for the benefit of creditors; or (e) dissolves its business or liquidates all or a majority of its assets.

17. Governing Law. This agreement and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.

18. Indemnity for Infringement of Intellectual Property Rights. Seller is not liable for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and refund the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller is not liable for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

19. Entire Agreement. This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged. The terms contained herein may not be modified unless in writing and signed by an authorized representative of Seller.

20. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards of care, including those of the United Kingdom, the United States of America, and the country or countries in which Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act") and the U.S. Food Drug and Cosmetic Act ("FDCA"), each as currently amended, and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that it is familiar with the provisions of the U. K. Bribery Act, the FCPA, the FDA, and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller.

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