



ISO Series Valves & Field Bus Communication

Bulletin 0600-B60-1



Global Pneumatics



**Global
Pneumatics**

This icon can be found next to products that are widely supported by Parker Pneumatics' worldwide manufacturing and sales network. When you see this icon, you can be confident that this product is manufactured and/or stocked* worldwide for rapid delivery. In addition to local manufacturing or inventory, our sales network has been specifically trained on these products to provide our customers with the best possible service.

Products not showing this icon are still sold and distributed worldwide. However, the Global Pneumatics icon represents products that customers can expect the best level of support.

If you are a multi-national company, seek global sourcing or ship globally, depend on Parker Pneumatic for **PREMIER CUSTOMER SERVICE**.

* Stocking levels vary by country

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".

© Copyright 2005 Parker Hannifin Corporation. All Rights Reserved.

Index

15407-2, HB & HA Features	2
H1, H2 & H3 Features	3
Common Part Numbers 15407-2, HB & HA	4
Model Number Index 15407-2 HB & HA.....	5
Common Part Numbers 5599-2 H1, H2 & H3 Plug-In	6
Model Number Index 5599-2 H1, H2 & H3 Plug-In	7
Common Part Numbers 5599-1 H1, H2 & H3 AUTO	8
Model Number Index 5599-1 H1, H2 & H3 AUTO	9
Common Part Numbers 5599-1 H1, H2 & H3 CNOMO	10
Model Number Index 5599-1 H1, H2 & H3 CNOMO	11
15407-2 Manifold / Subbase Kits	12
Hi-Flow Manifold / Subbase Kits	13
Add-A-Fold Manifolds	14-16
End Plate Kits	17
Accessories	18-24
Technical Information	25
Sandwich Regulators	26
Sandwich Regulator Kit Ordering Information	27
Sandwich Flow Controls	28
Technical Information	29
Service & Repair Kits	30-32
isysnet Field Bus System	33
isysnet Components	34-35
isysnet Dimensions	36
Offer of Sale	37

15407-2

Specifications

HB	HB: 0.55 Cv (18mm)
HA	HA: 1.1 Cv (26mm)

Materials of Construction

- End Caps: PBT
- Fasteners: Zinc Plated Steel
- Valve Body: Die Cast Aluminum
- Coils: Thermoset Plastic

Operating Pressure

- Vacuum to 145 PSIG
- Minimum Operating Pressure
 - 2-Position: 20 PSI
 - 3-Position: 30 PSI

Ports

- NPT and BSPP “G” Standard

Manifolds

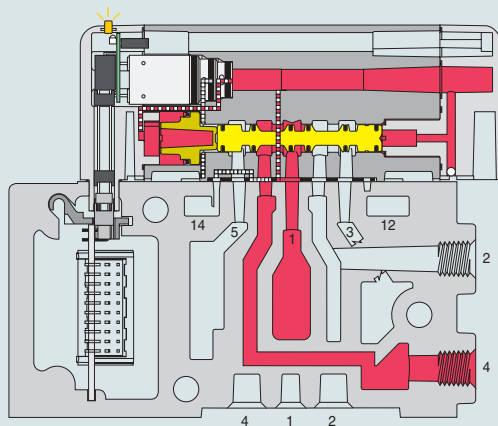
- Terminal Block Wiring (HA Only)
- Collective Wiring
 - 25-Pin, D-Sub
 - 19-Pin Round
 - 16 Point Terminal Strip
 - M23, 12-Pin
 - isysnet Field Bus

Certification / Approval

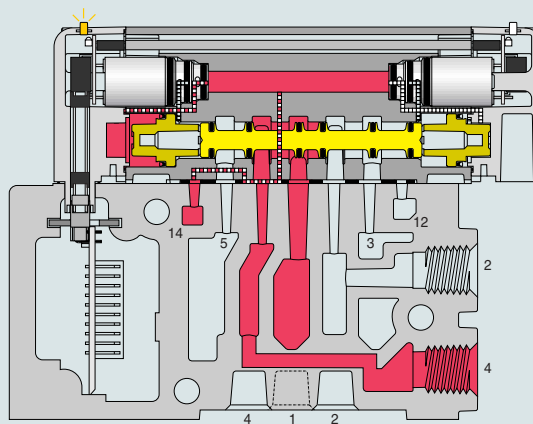
- Approved to be CE Marked
- CSA / C-US Approved
- NEMA 4
- IP65
- Manifold and Subbase Ports Meet ISO 1179 Specifications

Solenoids



- Bi-Polar
- Surge Suppression (Standard)
- Low Watt – 1.0, 24VDC, 2.0VA, 120VAC
- Indicator Lights



**15407-2 18mm Single Solenoid Internal Pilot
Manifold Mounted**



**15407-2 26mm Double Solenoid External Pilot
Manifold Mounted**

 Pressure  Exhaust

5599-2 5599-1

Specifications

H1	H1: 1.5 Cv
H2	H2: 3.0 Cv
H3	H3: 6.0 Cv

Materials of Construction

- End Caps: PBT
- Fasteners: Zinc Plated Steel
- Valve Body: Die Cast Aluminum
- Coils: Thermoset Plastic

Operating Pressure

- Vacuum to 145 PSIG
- Minimum Operating Pressure
 - 2-Position: 25 PSI
 - 3-Position: 30 PSI

Ports

- NPT and BSPP “G”

Manifolds

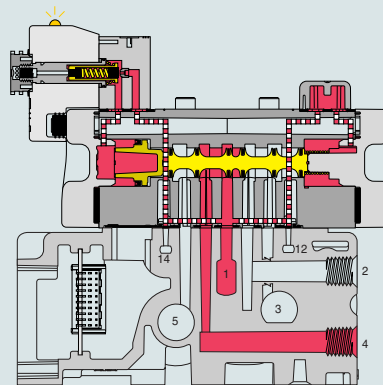
- Flying Leads
- Terminal Block Wiring
- Collective Wiring
 - 25-Pin, D-Sub
 - 19-Pin Round
 - M23, 12-Pin
 - isysnet Field Bus

Certification / Approval

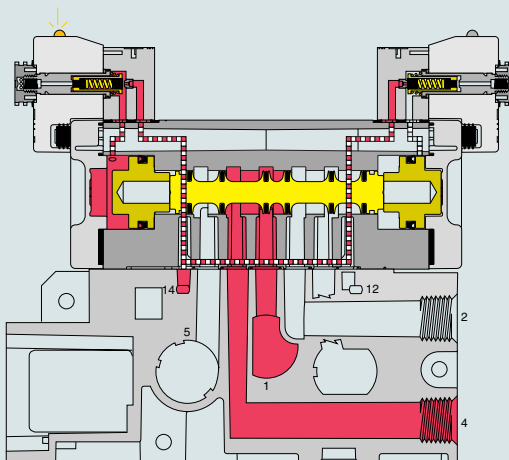
- Approved to be CE Marked
- CSA / C-US Approved
- NEMA 4
- IP65
- Manifold and Subbase Ports Meet ISO 1179 Specifications

Solenoids

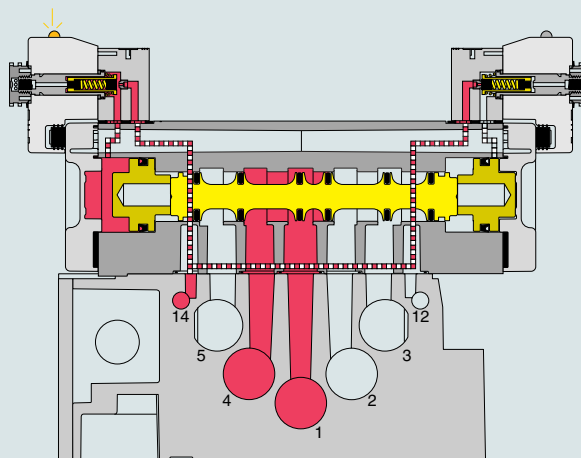
- Bi-Polar
- Surge Suppression (On Lighted Coils)
- Low Watt – 3.0, 24VDC, 4.5VA, 120VAC
- Indicator Lights, 24VDC & 120VAC





H1 5599-2 Single Solenoid Internal Pilot
Manifold Mounted



H2 5599-2 Double Solenoid External Pilot
Manifold Mounted



H3 5599-2 Double Solenoid External Pilot
Subbase Mounted

 Pressure  Exhaust

Common Part Numbers 15407-2 Size 18mm (HB) & 26mm (HA)

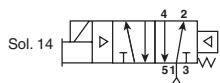
Single Solenoid 2-Position



HB: 18mm



HA: 26mm



HB	HBEVXBG023A	120VAC	0.55 Cv
	HBEVXBG0G9A	24VDC	
HA	HAEVXBG023A	120VAC	1.1 Cv
	HAEVXBG0G9A	24VDC	

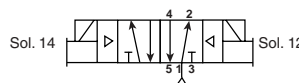
Double Solenoid 2-Position



HB: 18mm



HA: 26mm



HB	HB2VXBG023A	120VAC	0.55 Cv
	HB2VXBG0G9A	24VDC	
HA	HA2VXBG023A	120VAC	1.1 Cv
	HA2VXBG0G9A	24VDC	

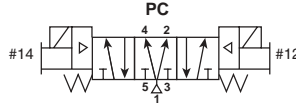
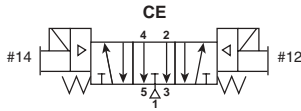
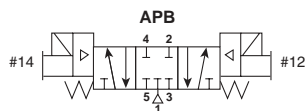
Double Solenoid 3-Position APB 3-Position CE 3-Position PC



HB: 18mm



HA: 26mm

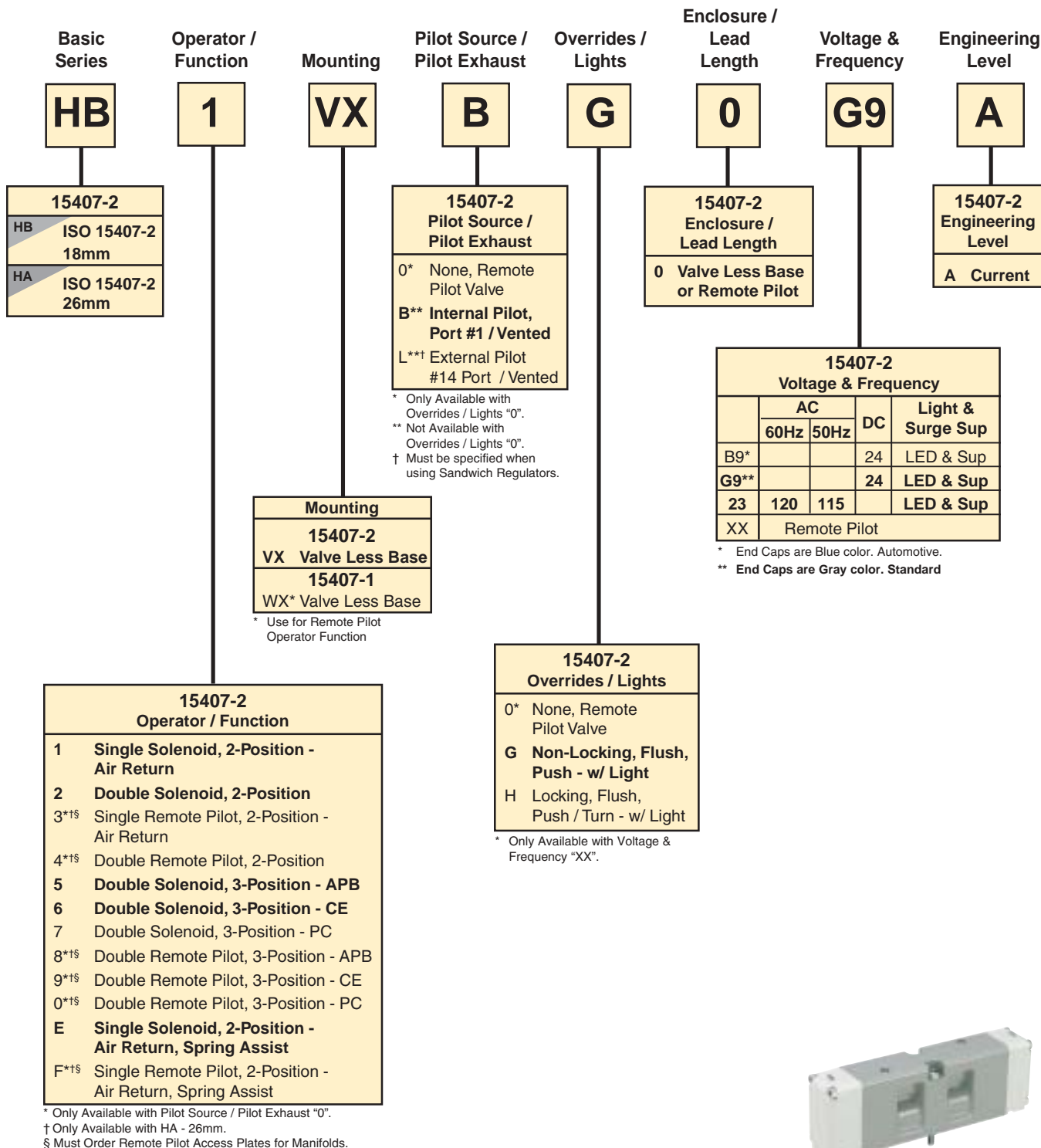


APB			
HB	HB5VXBG023A	120VAC	0.50 C _v
	HB5VXBG0G9A	24VDC	
HA	HA5VXBG023A	120VAC	1.0 C _v
	HA5VXBG0G9A	24VDC	
CE			
HB	HB6VXBG023A	120VAC	0.50 C _v
	HB6VXBG0G9A	24VDC	
HA	HA6VXBG023A	120VAC	1.0 C _v
	HA6VXBG0G9A	24VDC	

PC			
HB	HB7VXBG023A	120VAC	0.50 Cv
	HB7VXBG0G9A	24VDC	
HA	HA7VXBG023A	120VAC	1.0 Cv
	HA7VXBG0G9A	24VDC	

Model Number Index 15407-2 Size 18mm (HB) & 26mm (HA)

BOLD OPTIONS ARE MOST POPULAR

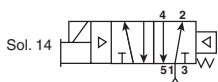


Common Part Numbers 5599-2 Size 1, 2, & 3

Single Solenoid

2-Position, Spring / Air Return

(H2 Series Shown)

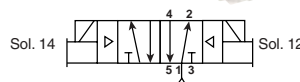
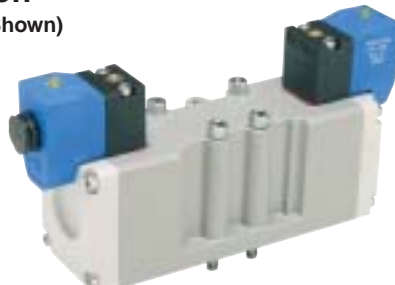


H1	H1EVXBG023C	120VAC	1.5 Cv
	H1EVXBG0B9C	24VDC	
H2	H2EVXBG023C	120VAC	3.0 Cv
	H2EVXBG0B9C	24VDC	
H3	H3EVXBG023C	120VAC	6.0 Cv
	H3EVXBG0B9C	24VDC	

Double Solenoid

2-Position

(H2 Series Shown)



H1	H12VXBG023C	120VAC	1.5 Cv
	H12VXBG0B9C	24VDC	
H2	H22VXBG023C	120VAC	3.0 Cv
	H22VXBG0B9C	24VDC	
H3	H32VXBG023C	120VAC	6.0 Cv
	H32VXBG0B9C	24VDC	

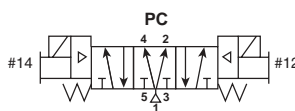
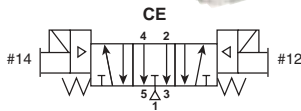
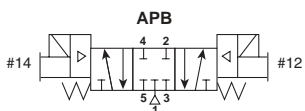
Double Solenoid

3-Position APB

3-Position CE

3-Position PC

(H2 Series Shown)

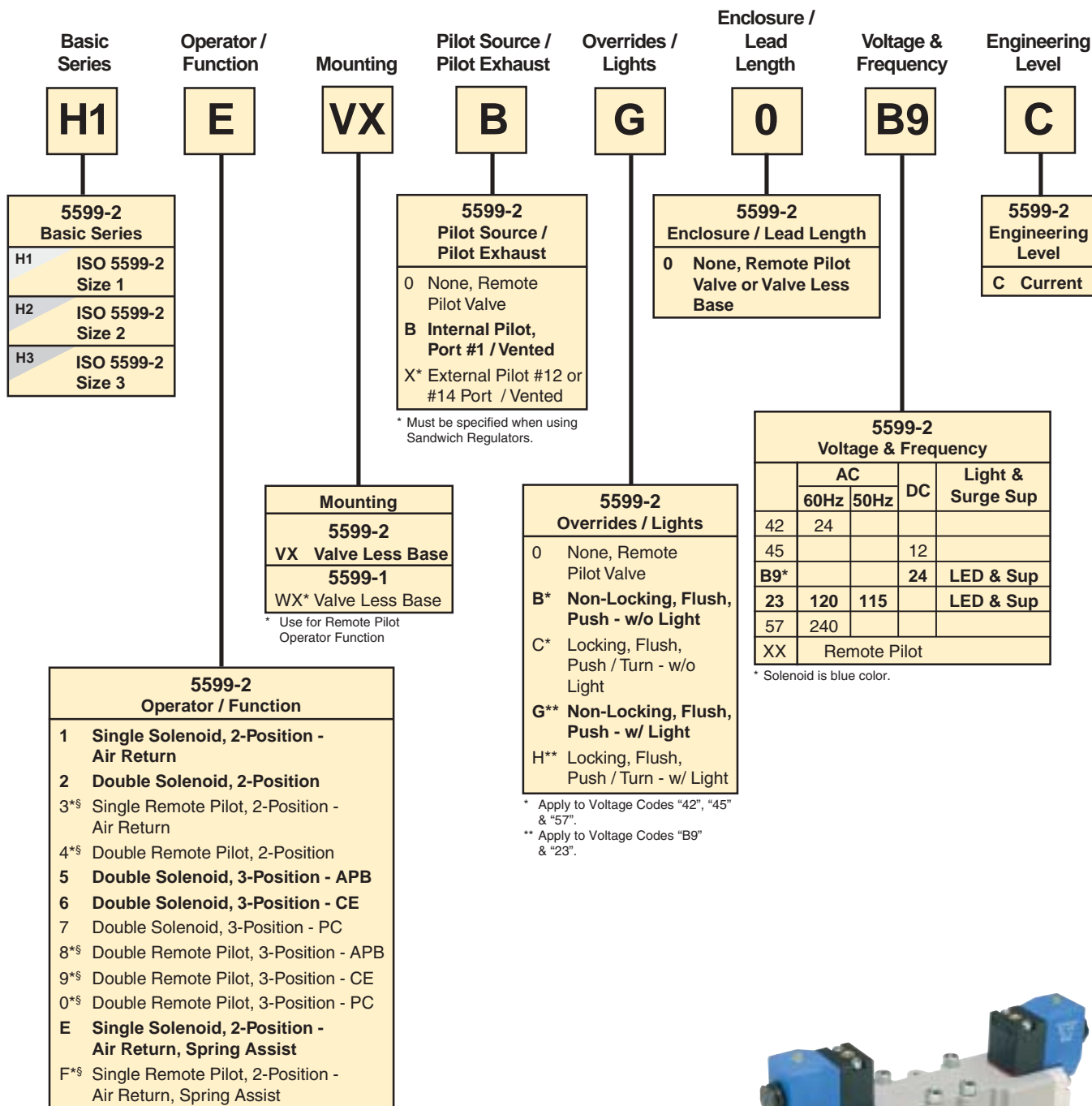


APB			
H1	H15VXBG023C	120VAC	1.2 C _V
	H15VXBG0B9C	24VDC	
H2	H25VXBG023C	120VAC	2.8 C _V
	H25VXBG0B9C	24VDC	
H3	H35VXBG023C	120VAC	5.0 C _V
	H35VXBG0B9C	24VDC	
CE			
H1	H16VXBG023C	120VAC	1.2 C _V
	H16VXBG0B9C	24VDC	
H2	H26VXBG023C	120VAC	2.8 C _V
	H26VXBG0B9C	24VDC	
H3	H36VXBG023C	120VAC	5.0 C _V
	H36VXBG0B9C	24VDC	

PC			
H1	H17VXBG023C	120VAC	1.2 Cv
	H17VXBG0B9C	24VDC	
H2	H27VXBG023C	120VAC	2.8 Cv
	H27VXBG0B9C	24VDC	
H3	H37VXBG023C	120VAC	5.0 Cv
	H37VXBG0B9C	24VDC	

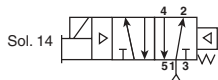
Model Number Index 5599-2 Size 1, 2, & 3

BOLD OPTIONS ARE MOST POPULAR



Common Part Numbers 5599-1 AUTO - Size 1, 2, & 3

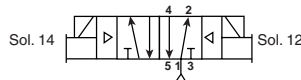
Single Solenoid 2-Position, Spring / Air Return (H2 Series Shown)



H1	H1EWXBG323000*C	120VAC	1.5 Cv
	H1EWXBG2B9000*C	24VDC	
H2	H2EWXBG323000*C	120VAC	3.0 Cv
	H2EWXBG2B9000*C	24VDC	
H3	H3EWXBG323000*C	120VAC	6.0 Cv
	H3EWXBG2B9000*C	24VDC	

H##WXBG323000*C = 5-Pin Mini Automotive Straight Connector
H##WXBG2B9000*C = 4-Pin M12 Micro Straight Connector

Double Solenoid 2-Position (H2 Series Shown)



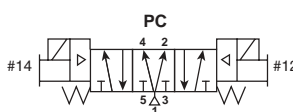
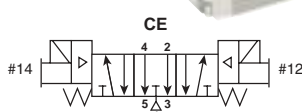
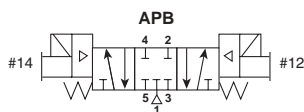
H1	H12WXBG323000*C	120VAC	1.5 Cv
	H12WXBG2B9000*C	24VDC	
H2	H22WXBG323000*C	120VAC	3.0 Cv
	H22WXBG2B9000*C	24VDC	
H3	H32WXBG323000*C	120VAC	6.0 Cv
	H32WXBG2B9000*C	24VDC	

H##WXBG323000*C = 5-Pin Mini Automotive Straight Connector
H##WXBG2B9000*C = 4-Pin M12 Micro Straight Connector

Double Solenoid 3-Position APB 3-Position CE 3-Position PC (H2 Series Shown)



* Specify
Automotive
Wiring Code
C - Chrysler
F - SAE / Ford
G - GM



APB			
H1	H15WXBG323000*C H15WXBG2B9000*C	120VAC 24VDC	1.2 Cv
H2	H25WXBG323000*C H25WXBG2B9000*C	120VAC 24VDC	2.8 Cv
H3	H35WXBG323000*C H35WXBG2B9000*C	120VAC 24VDC	5.0 Cv
CE			
H1	H16WXBG323000*C H16WXBG2B9000*C	120VAC 24VDC	1.2 Cv
H2	H26WXBG323000*C H26WXBG2B9000*C	120VAC 24VDC	2.8 Cv
H3	H36WXBG323000*C H36WXBG2B9000*C	120VAC 24VDC	5.0 Cv

PC			
H1	H17WXBG323000*C	120VAC	1.2 Cv
	H17WXBG2B9000*C	24VDC	
H2	H27WXBG323000*C	120VAC	2.8 Cv
	H27WXBG2B9000*C	24VDC	
H3	H37WXBG323000*C	120VAC	5.0 Cv
	H37WXBG2B9000*C	24VDC	

H##WXBG323000*C = 5-Pin Mini Automotive Straight Connector
H##WXBG2B9000*C = 4-Pin M12 Micro Straight Connector

Model Number Index 5599-1 AUTO - Size 1, 2, & 3

BOLD OPTIONS ARE MOST POPULAR

Basic Series	Operator / Function	Mounting	Pilot Source / Pilot Exhaust	Overrides / Lights	Enclosure / Lead Length	Voltage & Frequency	Automotive Enclosure	Automotive Wiring Options	Engineering Level																																		
<div>H1</div>	<div>E</div>	<div>WX</div>	<div>B</div>	<div>G</div>	<div>2</div>	<div>B9</div>	<div>000</div>	<div>F</div>	<div>C</div>																																		
<div>5599-1 Basic Series</div> <div>H1 ISO 5599-1 Size 1</div> <div>H2 ISO 5599-1 Size 2</div> <div>H3 ISO 5599-1 Size 3</div>			<div>5599-1 Pilot Source / Pilot Exhaust</div> <div>B Internal Pilot, Port #1 / Vented</div> <div>X* External Pilot #12 or #14 Port / Vented</div> <div>* Must be specified when using Sandwich Regulators.</div>	<div>5599-1 Enclosure / Lead Length</div> <div>1** 3-Pin Mini Straight</div> <div>2*† 4-Pin M12 Micro Straight Connector</div> <div>3* 5-Pin Mini Automotive Straight Connector</div> <div>* Must specify Auto Wiring Option "C", "F", or "G".</div> <div>** Operator Function "1" or "E"</div> <div>† Voltage Code "B9" Only.</div>				<div>5599-1 Automotive Wiring Options</div> <div>C* Chrysler</div> <div>F* SAE / Ford</div> <div>G* General Motors</div> <div>* Required with Enclosure "1", "2" & "3".</div>	<div>5599-1 Engineering Level</div> <div>C Current</div>																																		
		<div>5599-1 Mounting</div> <div>WX Valve Less Base</div>																																									
<div>5599-1 Operator / Function</div> <div>1 Single Solenoid, 2-Position - Air Return</div> <div>2 Double Solenoid, 2-Position</div> <div>5 Double Solenoid, 3-Position - APB</div> <div>6 Double Solenoid, 3-Position - CE</div> <div>7 Double Solenoid, 3-Position - PC</div> <div>E Single Solenoid, 2-Position - Air Return, Spring Assist</div>			<div>5599-1 Overrides / Lights</div> <div>B* Non-Locking, Flush, Push - w/o Light</div> <div>C* Locking, Flush, Push / Turn - w/o Light</div> <div>G** Non-Locking, Flush, Push - w/ Light</div> <div>H** Locking, Flush, Push / Turn - w/ Light</div> <div>* Apply to Voltage Codes "42", "45" & "57".</div> <div>** Apply to Voltage Codes "B9" & "23".</div>		<div>5599-1 Voltage & Frequency</div> <table><tr><th></th><th colspan="2">AC</th><th>DC</th><th>Light & Surge Sup</th></tr><tr><th></th><th>60Hz</th><th>50Hz</th><th></th><th></th></tr><tr><td>42</td><td>24</td><td></td><td></td><td></td></tr><tr><td>45</td><td></td><td></td><td>12</td><td></td></tr><tr><td>B9*</td><td></td><td></td><td>24</td><td>LED & Sup</td></tr><tr><td>23</td><td>120</td><td>115</td><td></td><td>LED & Sup</td></tr><tr><td>57</td><td>240</td><td></td><td></td><td></td></tr></table> <div>* Solenoid is blue color.</div>					AC		DC	Light & Surge Sup		60Hz	50Hz			42	24				45			12		B9*			24	LED & Sup	23	120	115		LED & Sup	57	240			
	AC		DC	Light & Surge Sup																																							
	60Hz	50Hz																																									
42	24																																										
45			12																																								
B9*			24	LED & Sup																																							
23	120	115		LED & Sup																																							
57	240																																										

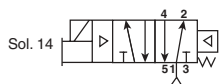


Common Part Numbers 5599-1 CNOMO - Size 1, 2, & 3

Single Solenoid

2-Position, Spring / Air Return

(H1 Series Shown)

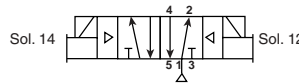
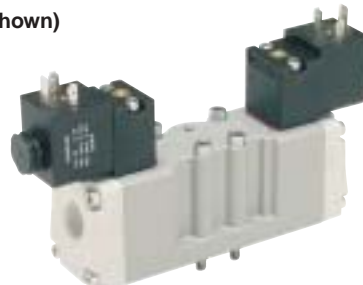


H1	H1EWXBBL53C	120VAC	1.5 Cv
	H1EWXBBL49C	24VDC	
H2	H2EWXBBL53C	120VAC	3.0 Cv
	H2EWXBBL49C	24VDC	
H3	H3EWXBBL53C	120VAC	6.0 Cv
	H3EWXBBL49C	24VDC	

Double Solenoid

2-Position

(H1 Series Shown)



H1	H12WXBBL53C	120VAC	1.5 Cv
	H12WXBBL49C	24VDC	
H2	H22WXBBL53C	120VAC	3.0 Cv
	H22WXBBL49C	24VDC	
H3	H32WXBBL53C	120VAC	6.0 Cv
	H32WXBBL49C	24VDC	

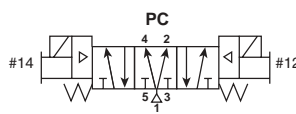
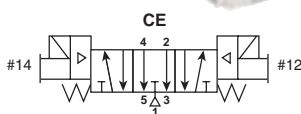
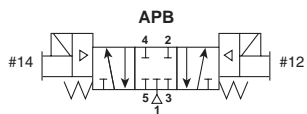
Double Solenoid

3-Position APB

3-Position CE

3-Position PC

(H1 Series Shown)

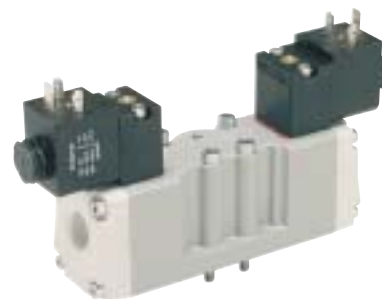
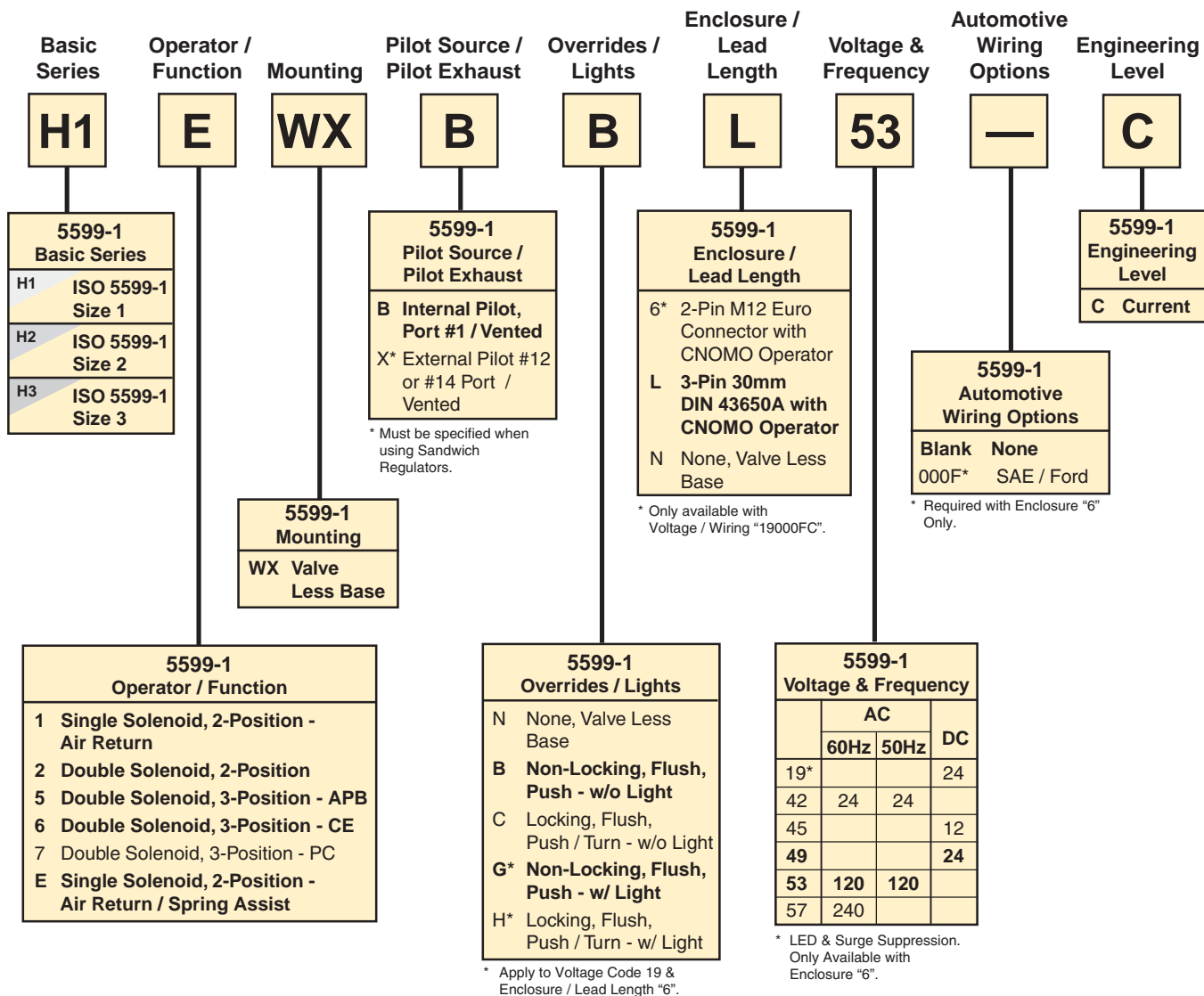


APB			
H1	H15WXBBL53C H15WXBBL49C	120VAC 24VDC	1.2 Cv
H2	H25WXBBL53C H25WXBBL49C	120VAC 24VDC	2.8 Cv
H3	H35WXBBL53C H35WXBBL49C	120VAC 24VDC	5.0 Cv
CE			
H1	H16WXBBL53C H16WXBBL49C	120VAC 24VDC	1.2 Cv
H2	H26WXBBL53C H26WXBBL49C	120VAC 24VDC	2.8 Cv
H3	H36WXBBL53C H36WXBBL49C	120VAC 24VDC	5.0 Cv

PC			
H1	H17WXBBL53C	120VAC	1.2 Cv
	H17WXBBL49C	24VDC	
H2	H27WXBBL53C	120VAC	2.8 Cv
	H27WXBBL49C	24VDC	
H3	H37WXBBL53C	120VAC	5.0 Cv
	H37WXBBL49C	24VDC	

Model Number Index 5599-1 CNOMO - Size 1, 2, & 3

BOLD OPTIONS ARE MOST POPULAR



15407-2 Manifold / Subbase Kits - Size 18mm & 26mm

Manifold and Subbase Kit Ordering Code

Basic Series	Mounting Style / Port Size	Enclosures / Lead Length	Factory Designator
PS5511	13	C	P
Basic Series PS5611 ISO 15407-2 18mm, HB PS5511 ISO 15407-2 26mm, HA	Mounting Style / Port Size 13* Subbase with 1/4 NPT Side Ports 14* Subbase with 1/4 BSPP Side Ports 23* Subbase with 1/4 NPT Bottom / Side Port 24* Subbase with 1/4 BSPP Bottom / Side Port 51† Manifold with 1/8 NPT Side Ports 52† Manifold with 1/8 BSPP End Port 53* Manifold with 1/4 NPT End Port 54* Manifold with 1/4 BSPP End Port 61† Manifold with 1/8 NPT Bottom / End Port 62† Manifold with 1/8 BSPP Bottom / End Port 63* Manifold with 1/4 NPT Bottom / End Port 64* Manifold with 1/4 BSPP Bottom / End Port	Enclosures / Lead Length 0† None, Remote Pilot C† Terminal Strip J* Single Address Circuit Board M* Double Address Circuit Board N*§ Single Address Circuit Board with 32 Output Expansion	

* Manifolds Only.
 † Available with 26mm.
 § When using an HA or HB manifold base with the "N" Enclosure / Lead Length option:

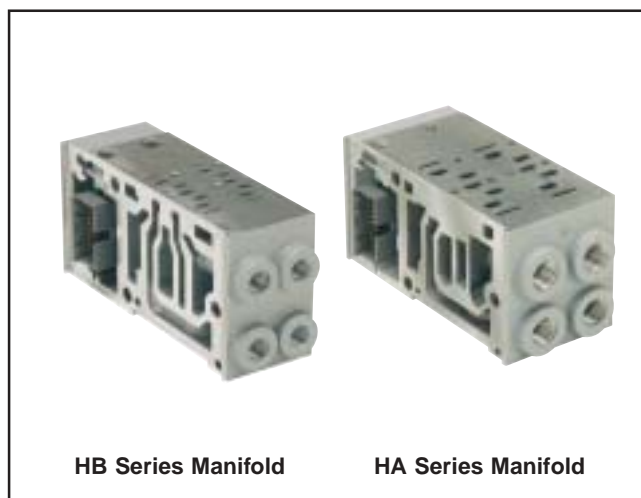
- Outputs 1–24 can be single or double address bases. Use a base with "J" or "M" Enclosure / Lead Length option.
- Outputs 25–26 are single address bases. Use a base with "N" Enclosure / Lead Length option (this is a single address board with a ribbon connection from the valve driver module, PSSV32A).
- Outputs 27–32 can be single or double. Use a base with "J" or "M" Enclosure / Lead Length option.

* Available with 26mm, PS5511.
 † Available with 18mm, PS5611.

Subbase Kits



Manifold Kits



Hi-Flow Manifold / Subbase Kits - Size 1, 2, & 3

Manifold and Subbase Kit Ordering Code

H1 Basic Series	Mounting Base Style / Port Size	Enclosures / Lead Length	Wiring Options	Engineering Level	Factory Designator
PS4011	55	A	—	C	P
H2		Enclosures / Lead Length 0 None, No Electrical Plug - 5599-1 7† 3-Pin Mini Connector in Base 8*† 4-Pin M12 Micro Connector in Base 9† 5-Pin Mini Connector in Base A 6" Leads C Terminal Block J† Circuit Board, Single Address M† Circuit Board, Double Address T* SAM Gen 3.0 Wiring	Wiring Options Blank None C Chrysler F SAE / Ford G General Motors	Engineering Level C Current	
H3					
PS4111					
PS4211					

Note:
When using the Enclosure / Lead Length "J" or "M" option:
 12VDC - maximum number of coils is 13
 24VDC - maximum number of coils is 21
 120VAC - Coils limited by the number of pins available in the connector
 (25-Pin D-Sub = 24 coils, 19-Pin Brad Harrison = 16, 12-Pin M23 = 8)
 240VAC - Must use "A" or "C" Option, Lead Wires or Terminal Blocks

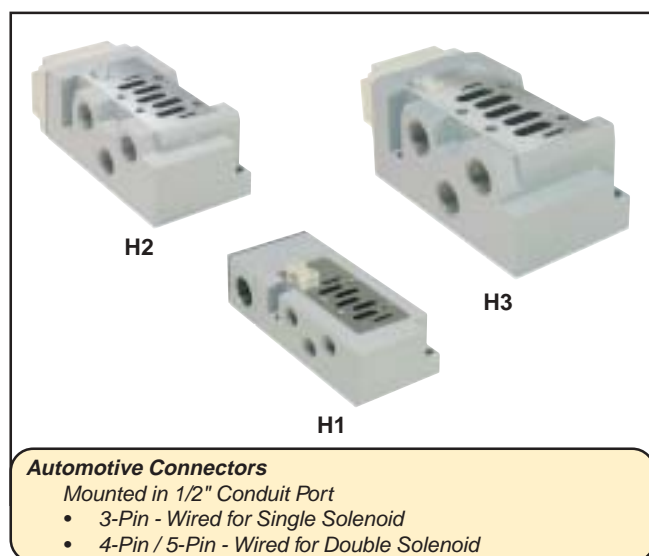
* Valve Voltage Code "B9" Only.
 † Must Specify Valve Auto Wiring Option "C", "F", or "G".
 ‡ Not Available with Subbase Kits.

Mounting Base Style / Port Size		
H1	H2	H3
15 Subbase: 3/8 NPT Side Ports 16* Subbase: 3/8 BSPP Side Ports 53 Manifold: 1/4 NPT, End Ports 54 Manifold: 1/4 BSPP, End Ports 55 Manifold: 3/8 NPT, End Ports 56* Manifold: 3/8 BSPP, End Ports 65† Manifold: 3/8 NPT Bottom / End Port 66*† Manifold: 3/8 BSPP Bottom / End Port	17 Subbase: 1/2 NPT Side Ports 18* Subbase: 1/2 BSPP Side Ports 27 Subbase: 1/2 NPT Bottom / End Port 28 Subbase: 1/2 BSPP Bottom / End Port 55 Manifold: 3/8 NPT, End Ports 56* Manifold: 3/8 BSPP, End Ports 57 Manifold: 1/2 NPT End Port 58* Manifold: 1/2 BSPP, End Ports 67 Manifold: 1/2 NPT Bottom / End Port 68* Manifold: 1/2 BSPP Bottom / End Port	19 Subbase: 3/4 NPT Side Ports 10* Subbase: 3/4 BSPP Side Port 20 Subbase: 3/4 BSPP Bottom / End Port 29 Subbase: 3/4 NPT Bottom / End Port 57 Manifold: 1/2 NPT End Port 58* Manifold: 1/2 BSPP, End Ports 59 Manifold: 3/4 NPT End Port 50 Manifold: 3/4 BSPP End Port 69 Manifold: 3/4 NPT Bottom / End Port 60* Manifold: 3/4 BSPP Bottom / End Port

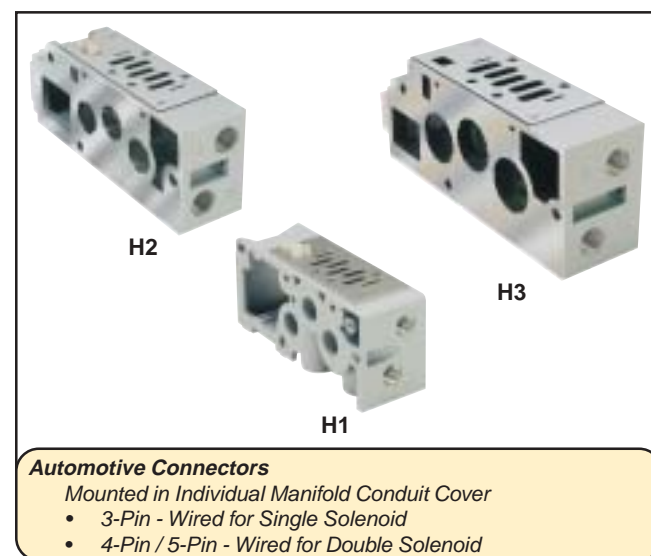
* BSPP ISO 1179 Specifications.

† #1 Bottom Port - 1/4".

Subbase Kits



Manifold Kits



Add-A-Fold Manifolds — HB & HA

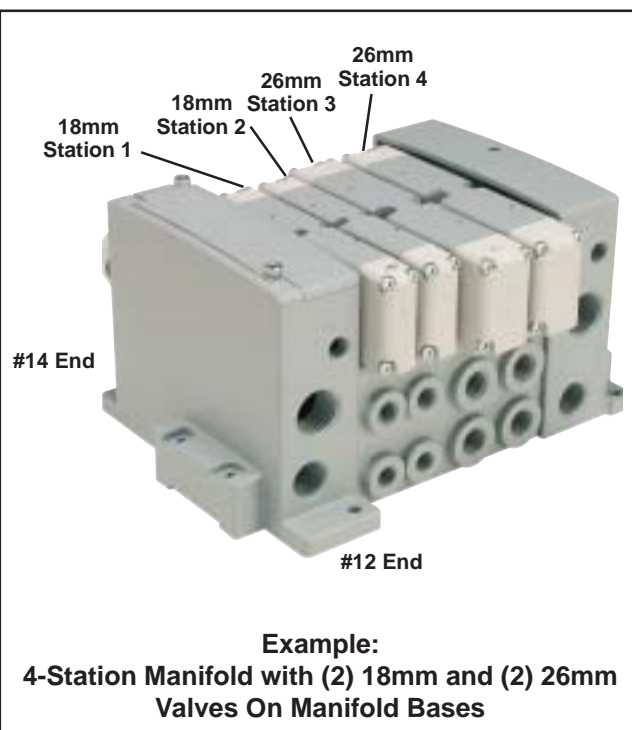
How To Order Add-A-Fold Assemblies

1. List Add-A-Fold Assembly call out. This automatically includes the end plate kit assembly.
2. List complete Valve, Regulator, Flow Control and Base model number. List left to right, LOOKING AT THE CYLINDER PORTS on the #12 end of the manifold. The left most station is station 1.
(If a blank station is needed, list the blanking plate part number and the individual manifold number in the station specified.)

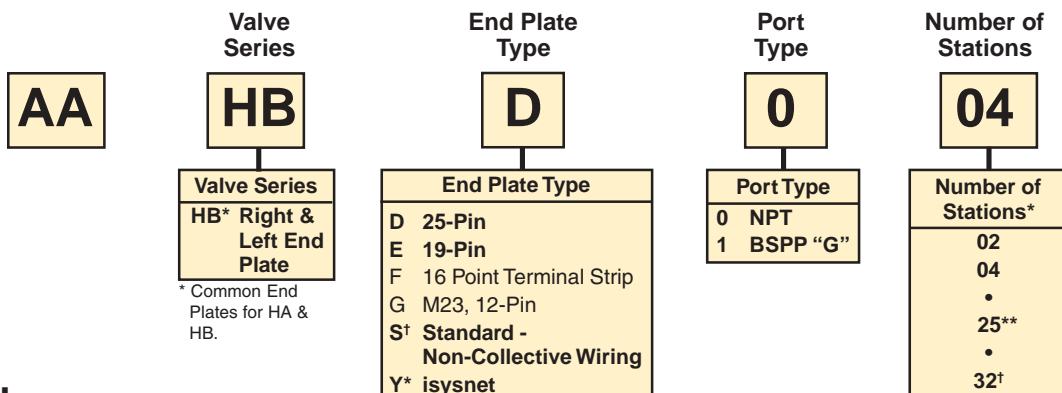
Maximum Solenoids Energized Simultaneously (Interconnect Circuit Boards)

HA HB	Voltage Code	25-Pin D-Sub	19-Pin Round	Single 12-Pin M23	isysnet
24VDC	B9 / G9	24	16	8	32
120VAC*	23	24	16	8	32

* Not CSA certified for 25-Pin, D-Sub option.



Add-A-Fold Assembly Model Number



Example

Application requires a 4-Station manifold with a regulator on Station 2.
(Two 18mm + Two 26mm Stations)

Item	Qty.	Part No.
01	1	AAHBD004
02	1	HB1VXBG0G9A Station 1
03	1	HB2VXLG0G9A Station 2
04	1	PS5638166P Station 2
05	1	PS561151MP Station 1 & 2
06	2	HA1VXBG0G9A Station 3 & 4
07	1	PS551151MP Station 3 & 4

* Valve Driver Module included. Must order serial modules separately.

† Available with HA (26mm) Valves Only and Terminal Strip Manifold Bases.

* Must be ordered in multiples of (2).

† Maximum Number

** When using an HA or HB manifold base with the "N" Enclosure / Lead Length option:

- Outputs 1–24 can be single or double address bases. Use a base with "J" or "M" Enclosure / Lead Length option.
- Outputs 25–26 are single address bases. Use a base with "N" Enclosure / Lead Length option (this is a single address board with ribbon connection from the valve driver module, PSSV32A).
- Outputs 27–32 can be single or double. Use a base with "J" or "M" Enclosure / Lead Length option.

NOTE: Construct manifold assemblies from left to right while looking at the ports. Valves must be ordered as External Pilot when using Sandwich Regulator.

Add-A-Fold Manifolds — H1

How To Order Add-A-Fold Assemblies

1. List Add-A-Fold Assembly call out. This automatically includes the end plate kit assembly.
2. List complete Valve, Regulator, Flow Control and Base model number. List left to right, LOOKING AT THE CYLINDER PORTS on the #12 end of the manifold. The left most station is station 1.
(If a blank station is needed, list the blanking plate part number and the individual manifold number in the station specified.)

Maximum Solenoids Energized Simultaneously (Interconnect Circuit Boards)

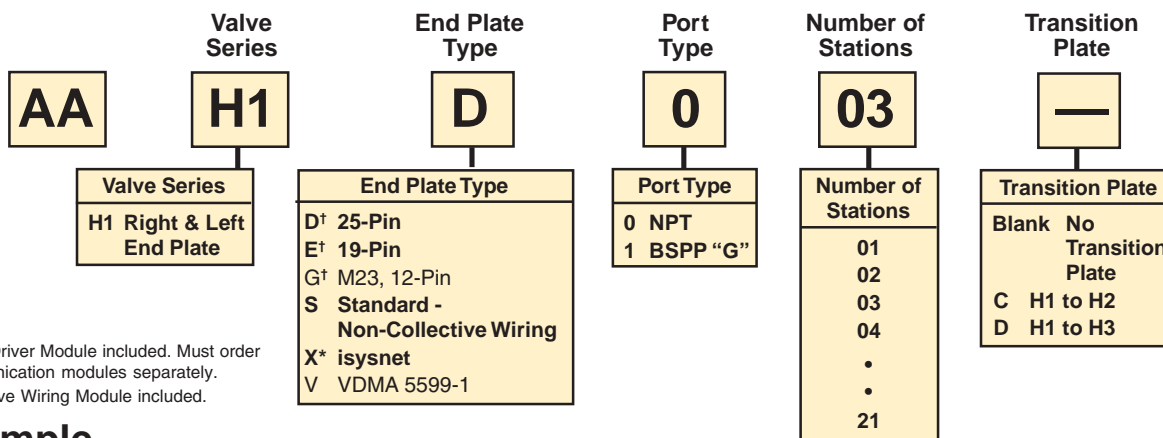
H1	Voltage Code	25-Pin D-Sub	19-Pin Round	Single 12-Pin M23	isysnet	SAM 3.0
12VDC	45	13	13	8	N/A	N/A
24VAC*	42	24	16	8	N/A	N/A
24VDC	B9	20	16	8	21	4
120VAC*	23	24	16	8	N/A	N/A

* Not CSA certified for 25-Pin, D-Sub option.



Example:
3-Station Manifold with (3) H1 Valves
On Manifold Bases
and Regulator at Station 3

Add-A-Fold Assembly Model Number



* Valve Driver Module included. Must order communication modules separately.

† Collective Wiring Module included.

Example

Application requires a 3-Station manifold with a valve, regulator and flow control on Station 3.

Item	Qty.	Part No.
01	1	AAH1E003
02	2	H12VXBG0B9C Station 1 & 2
03	2	PS401165MCP Station 1 & 2
04	1	H11VXXG0B9C Station 3
05	1	PS4038166CP Station 3
06	1	PS4035CP Station 3
07	1	PS401165MCP Station 3

NOTE:

When using the Enclosure / Lead Length "J" or "M" option:

12VDC - maximum number of coils is 13.

24VDC - maximum number of coils is 20.

120VAC - Coils limited by the number of pins available in the connector. (25-Pin D-Sub = 24 coils, 19-Pin Brad Harrison = 16, 12-Pin M23 = 8).

240VAC - Must use "A" or "C" option, lead wires or terminal blocks.

NOTE: Construct manifold assemblies from left to right while looking at the cylinder ports.
Valves must be ordered as External Pilot when using Sandwich Regulator.

Add-A-Fold Manifolds — H2 & H3

How To Order Add-A-Fold Assemblies

1. List Add-A-Fold Assembly call out. This automatically includes the end plate kit assembly.
2. List complete Valve, Regulator, Flow Control and Base model number. List left to right, LOOKING AT THE CYLINDER PORTS on the #12 end of the manifold. The left most station is station 1.
(If a blank station is needed, list the blanking plate part number and the individual manifold number in the station specified.)

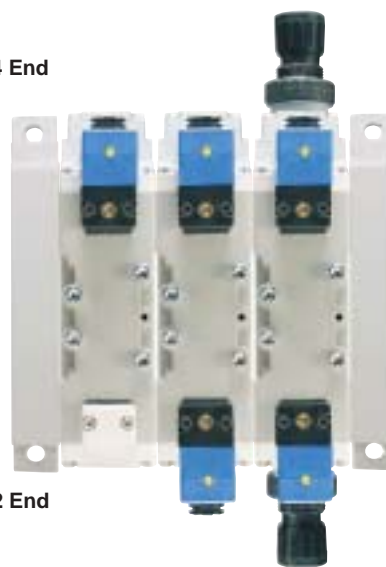
Maximum Solenoids Energized Simultaneously (Interconnect Circuit Boards)

H2 H3	Voltage Code	25-Pin D-Sub	19-Pin Round	Single 12-Pin M23	isysnet	SAM 3.0
12VDC	45	13	13	8	N/A	N/A
24VAC*	42	24	16	8	N/A	N/A
24VDC	B9	20	16	8	21	4
120VAC*	23	24	16	8	N/A	N/A

* Not CSA certified for 25-Pin, D-Sub option.

#14 End

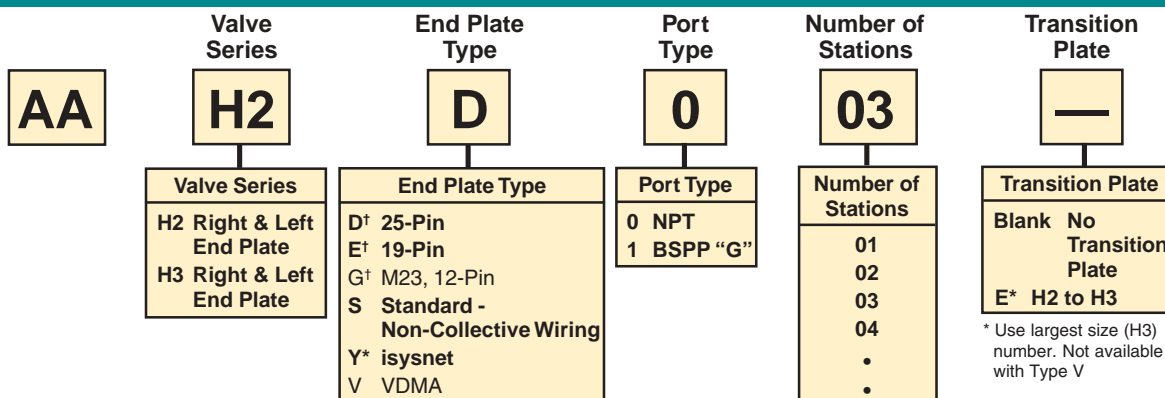
#12 End



Station 1 Station 2 Station 3

Example:
3-Station Manifold with (3) H2 Valves
On Manifold Bases
and Regulator at Station 3

Add-A-Fold Assembly Model Number



* Use largest size (H3) number. Not available with Type V

* Valve Driver Module included.
Must order communication modules separately.
† Collective Wiring Module Included.

Example

Application requires a 3-Station manifold with a valve, regulator and flow control on Station 3.

Item	Qty.	Part No.
01	1	AAH2E003
02	2	H22VXBG0B9C Station 1 & 2
03	2	PS411157MCP Station 1 & 2
04	1	H21VXXG0B9C Station 3
05	1	PS4138166CP Station 3
06	1	PS4135CP Station 3
07	1	PS411157MCP Station 3

NOTE:

When using the Enclosure / Lead Length "J" or "M" option:

12VDC - maximum number of coils is 13.

24VDC - maximum number of coils is 20.

120VAC - Coils limited by the number of pins available in the connector. (25-Pin D-Sub = 24 coils, 19-Pin Brad Harrison = 16, 12-Pin M23 = 8).

240VAC - Must use "A" or "C" option, lead wires or terminal blocks.

NOTE: Construct manifold assemblies from left to right while looking at the cylinder ports.
Valves must be ordered as External Pilot when using Sandwich Regulator.

End Plate Kits

HB HA

Basic Series
PS56

End Plate Kit Type
20

Option
01

Thread Type
0

Factory Designator
P

End Plate Kit Type
20 End Plate - Collective Wiring
31 End Plate - Non-Collective Wiring

Thread Type
0 NPT or No Ports
1 G (BSPP)

Basic Series
PS56 ISO 15407, Size HB, 18mm & HA, 26mm

Option
01* Non-Collective Wiring
L2†‡ 25-Pin, D-Sub
L3†‡ 19-Pin, Round, Brad Harrison
L4†‡ 12-Pin, M23
L5†‡ 16-Point Terminal Strip
L6†‡ isysnet

* Only Available with End Plate Kit Type "31" & HA Valves.
† Only Available with End Plate Kit Type "20".
‡ 120VAC is not CSA rated.
‡ Valve Driver Module and Cable Installed. Must order communication modules separately.
Must Order Bases with Circuit Boards.

HB - HA 25-Pin

HB - HA 16-Point Terminal Strip

HB - HA 19-Pin

HB - HA Non-Collective Wiring End Plates

H1 H2 H3

Basic Series
PS40

End Plate Kit Type
20

Option
L2

Thread Type
0

Engineering Level
C

Factory Designator
P

End Plate Kit Type
20 End Plate - Collective Wiring
31 End Plate - Non-Collective Wiring

Thread Type
0 NPT or No Ports
1 G (BSPP)

Engineering Level
C Current

Basic Series
PS40 ISO 5599, Size 1
PS41 ISO 5599, Size 2
PS42 ISO 5599, Size 3

Option
01* Non-Collective Wiring
L1†‡‡‡ Collective Wiring End Plate, Top Ported
L2†‡‡ 25-Pin, D-Sub
L3†‡‡ 19-Pin, Round, Brad Harrison
L4†‡‡ 12-Pin, M23
L6†‡‡ isysnet

* Only Available with End Plate Kit Type "31".
** For PS41 and PS42 Kits Only.
† Only Available with End Plate Kit Type "20".
‡ Must Order Collective Wiring Module or Valve Driver Module Separately.
‡ 120VAC is Not CSA Rated.
^ Valve Driver Module and Cable Installed. Must order communication modules separately.
+ Must Order Bases with Circuit Boards.

H1 25-Pin D-Sub End Plates

H1 Non-Collective Wiring End Plates

H1 19-Pin Round End Plates

Integrated Solution

- A complete field bus communication offering for all ISO valves.
- Extremely fast I/O backplane uses change-of-state (COS) connections to maximize performance.
- UL, C-UL and CE certifications (as marked).



Communication Modules

- A Communication Module supports up to a maximum of 62 I/O modules and up to 264 Inputs and 264 Outputs.

ControlNet™



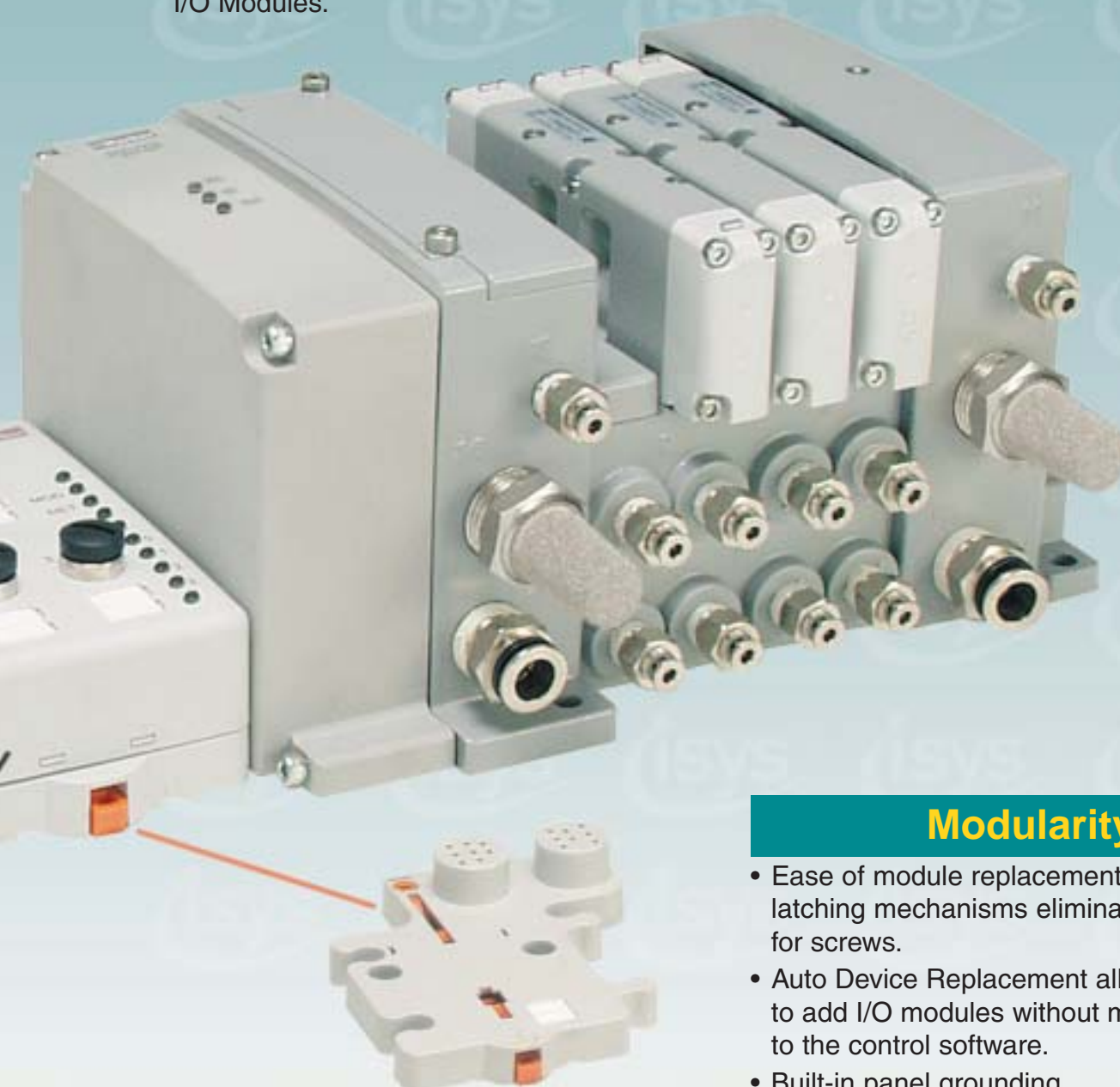
EtherNet/IP™



I/O Modules

I/O Modules

- Accepts signals from sensors, photo eyes, limits and other field input devices.
- Provides signals to remotely operating solenoid valves and other field operating output devices.
- Choice of digital, analog, high watt I/O Modules.
- Choose from a broad range of color coded I/O types with connector choices of 8mm, 12mm or M23.
- Built-in miswiring, short circuit, open circuit detection with electronic feedback.



Modularity

- Ease of module replacement with unique latching mechanisms eliminating the need for screws.
- Auto Device Replacement allows OEMs to add I/O modules without making changes to the control software.
- Built-in panel grounding.
- Electronic and mechanical keying prevents users from placing I/O modules in the wrong sequence.

Accessories

Transition Plate Kits

H1 H2 H3

Basic Series
PS40

Transition Plate Type
26

Transition Plate Type
25 H1 to H2 to H3
26 H1 to H3
27 H1 to H2
28 H2 to H3

Option
L2

Option
01 Non-Collective Wiring
L1' Collective Wiring End Plate, Top Ported
L2 25-Pin, D-Sub
L3 19-Pin, Round, Brad Harrison
L4 12-Pin, M23
L6 isysnet

Thread Type
0

Thread Type
0 NPT or No Ports
1 G (BSPP)

Engineering Level
C

Engineering Level
C Current

Factory Designator
P

K21R01100P
1 Inch Plastic Conduit Plug

Interface Plate

Transition Plate

Right Hand End Plate

H1 to H2 Shown

* Used Only with Transition Plate Type "28". Must order Collective Wiring Modules Separately.

Collective Wiring Module Kits Size 2 & 3

Size	Kit Number
25-Pin, D-Sub Module*†	SCD251MC
M23, 12-Pin*†	SCM231MC
19-Pin Heavy Duty Round*†	SCC191MC
D-Sub Cable, Non-IP, 3 Meters	P8LMH25M3A
D-Sub Cable, IP65, 3-Meter	SCD253W

* **Kit includes:** Wiring Module with Circuit Board Connection, Gasket, Tie Rods and Bolts.

† Available with "H" Series, ISO 5599-2, Sizes 2 & 3.

H2 H3

25-Pin, D-Sub Collective Wiring Module

19-Pin Heavy Duty Wiring Module

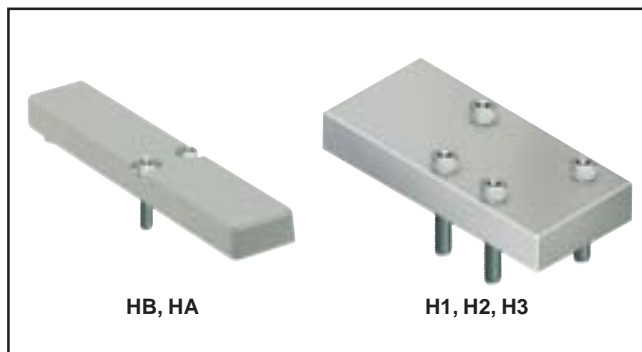
HB, HA, H1, H2, H3
25-Pin, D-Sub Cable

Accessories

Blanking Plate Kits

Size	Kit Number
HB	PS5634P
HA	PS5534P
H1	PS4034CP
H2	PS4134CP
H3	PS4234CP

Kit includes: Blanking Plate, Gasket, and Mounting Bolts.

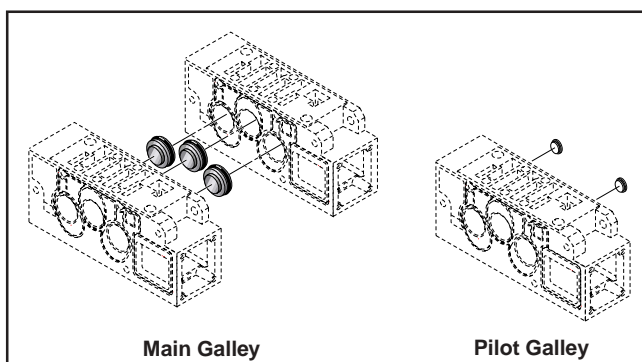


Manifold Port Isolation Kits

Main Galley (1, 3, 5)

Size	Kit Number
H1	PS4032CP
H2	PS4132CP
H3	PS4232CP

Kit includes: Plugs with O-rings.



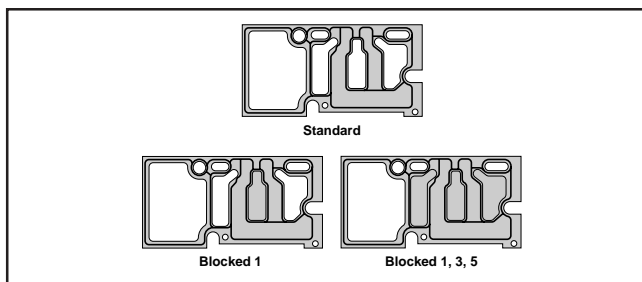
Pilot Galley

Size	Kit Number
H1 H2 H3	PS4033CP

Kit includes: Plugs with O-rings.

Manifold to Manifold Gasket Kits

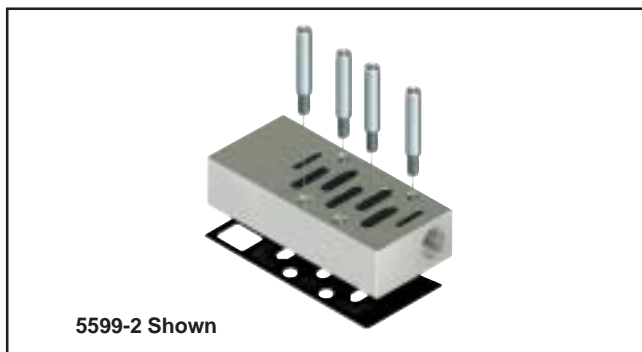
Size	Standard	Blocked #1 Port	Blocked #1, 3, 5 Ports
HB	PS561AP	PS561BP	PS561CP
HA			



Remote Pilot Access Plate Kits

Size	Port Size	Kit Number	
		NPT	BSPP "G"
HA	1/8"	PS551500P	PS551501P
H1	1/8"	PS401500CP	PS401501CP
H2	1/8"	PS411500CP	PS411501CP
H3	1/8"	PS421500CP	PS421501CP

Kit includes: Pilot Port Access Plate, Gasket and Mounting Studs.



Accessories

H1 Auxiliary Access Plate Kits

Size	Port Size	Kit Number	
		NPT	BSPP "G"
H1	1/4" & 3/8"	PS403000CP	PS403001CP

Kit includes: Pilot Port Access Plate, Gasket and Mounting Screws.

- Used on H1 Manifolds to provide auxiliary access to Ports 1, 3 & 5.
- Port 1: 1/4", Ports 3 & 5: 3/8".



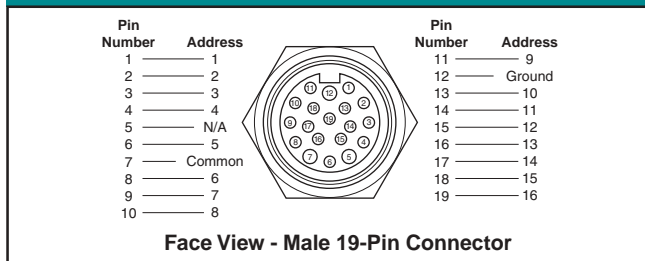
Accessories

Maximum Solenoids Energized Simultaneously (Interconnect Circuit Boards)

HA HB	Voltage Code	25-Pin D-Sub	19-Pin Round	Single 12-Pin M23	isysnet	
24VDC	B9 / G9	24	16	8	32	
120VAC*	23	24	16	8	32	
H1 H2 H3	Voltage Code	25-Pin D-Sub	19-Pin Round	Single 12-Pin M23	isysnet	SAM 3.0
12VDC	45	13	13	8	N/A	N/A
24VAC*	42	24	16	8	N/A	N/A
24VDC	B9	20	16	8	21	4
120VAC*	23	24	16	8	N/A	N/A

* Not CSA certified for 25-Pin, D-Sub option.

19-Pin Round Brad Harrison



19-Pin Round Cable Specifications

Common Pin "7" is rated for 8 amps. Cable common wire must be greater than total amperage of solenoids on Add-A-Fold assembly.

Example: 8 station manifold, 16 solenoids,
120VAC - 16 x .039 amps = .63 total amp rating.

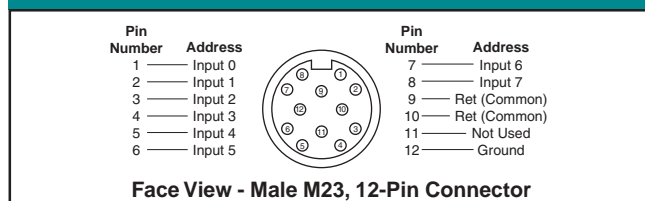
NEMA 4 rated with properly assembled NEMA 4 rated cable.

Female Cable Assemblies:

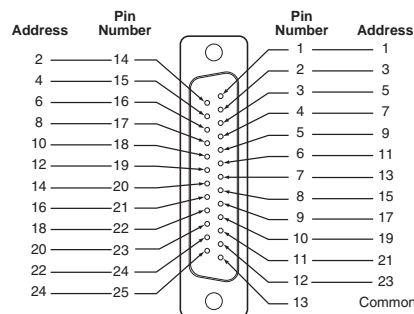
Refer to www.connector.com

Brad Harrison #333030P80M050	16.40 ft. (Female to Male Cable)
Brad Harrison #333030P80M0100	32.80 ft. (Female to Male Cable)

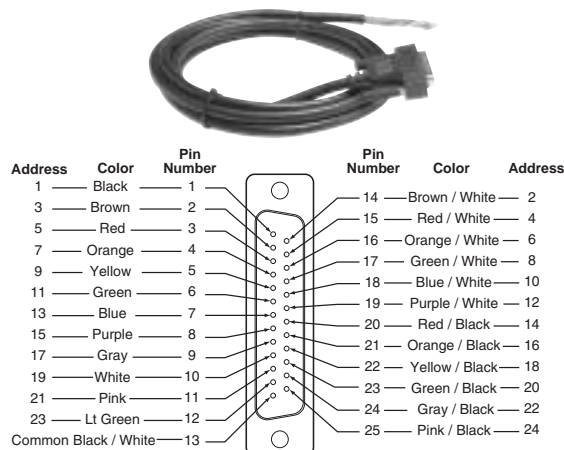
M23, 12-Pin Round Connector (Male)



25-Pin, D-Sub Connector (Male)



25-Pin, D-Sub Cable (Female)

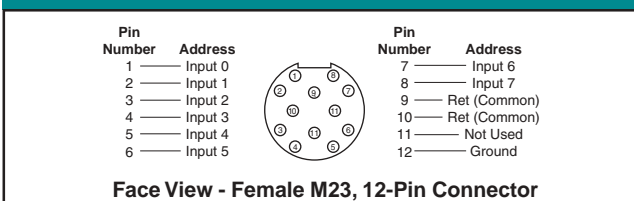


25-Pin, D-Sub Cable Specifications

Common Pin "13" is rated for 3 amps. Common wire rating must be greater than total amperage of all solenoids on a Add-A-Fold assembly.

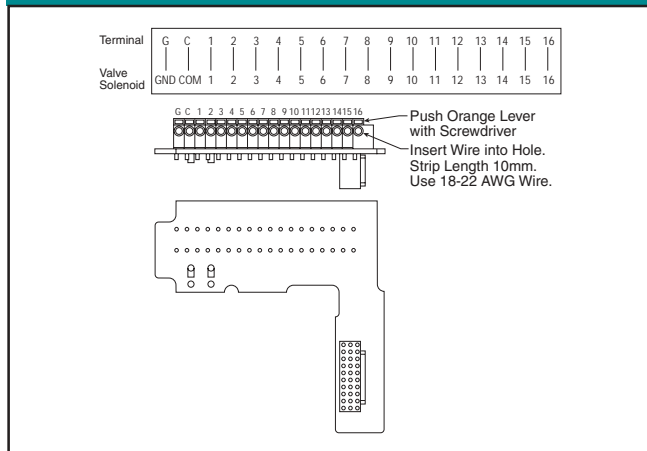
IP65 rated with properly assembled IP65 rated cable.

M23, 12-Pin Round Connector (Female)

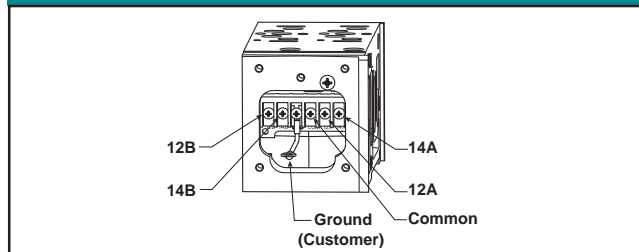


Accessories

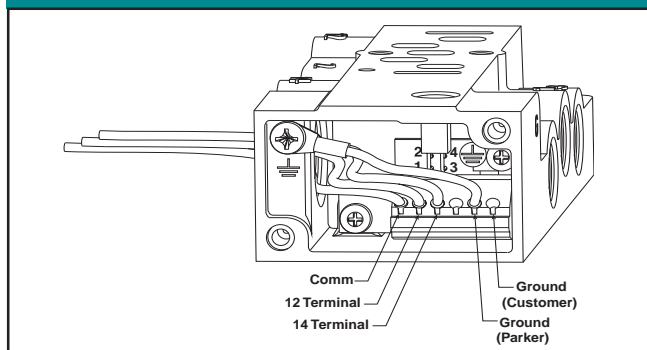
16-Point Terminal Strip



Manifold Wiring



Subbase Wiring

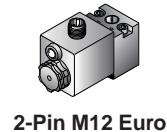


Connections

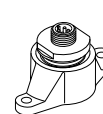
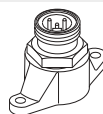
	14 Solenoid	12 Solenoid
Valves with Wires	Black Wires	Red Wires
Valves with Terminal Block (Will accept 18 to 24 Gauge Wires)	14 and Com Terminals	12 and Com Terminals

Electrical Connectors – Size 1, 2 & 3

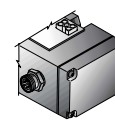
5599-1 CNOMO



5599-1 AUTO



5599-2



90° Cord Sets:

Refer to www.connector.com

4-Pin (Micro): Brad Harrison 884031A09M030 (3 Meter)

5-Pin (Mini): Brad Harrison 115021A01F010 (1 Foot)

Female Electrical Connectors (IP65 Rated)

30mm 3-Pin ISO 4400 (DIN 43650A)

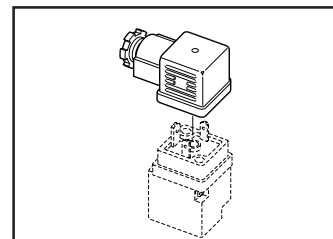
Connector	Connector with 6' (2m) Cord	Description
PS2028BP	PS2028JBP	Unlighted
PS203279BP	PS2032J79CP*	Light – 6-48V, 50/60Hz; 6-48VDC
PS203283BP	PS2032J83CP*	Light – 120V/60Hz
PS203283CP	N/A	Light – 240V/60Hz

* With surge suppression.

Engineering Data:

Conductors: 2 Poles Plus Ground; Cable Range (Connector Only): 8 to 10mm (0.31 to 0.39 Inch);

Contact Spacing: 18mm

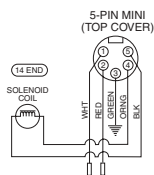


Technical Information

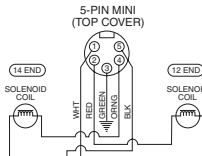
Automotive Connection – Wiring Options

'C' Chrysler Connection

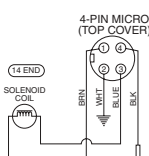
5-Pin Male / Single Solenoid
(Encl. Option 3, Auto Option C)



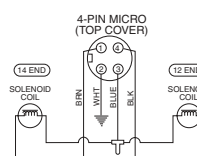
5-Pin Male / Double Solenoid
(Encl. Option 3, Auto Option C)



4-Pin Male / Single Solenoid
(Encl. Option 2, Auto Option C)

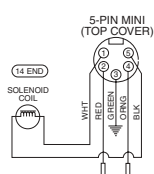


4-Pin Male / Double Solenoid
(Encl. Option 2, Auto Option C)

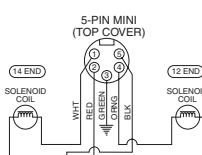


'F' SAE / Ford Wiring

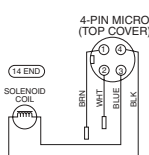
5-Pin Male / Single Solenoid
(Encl. Option 3, Auto Option F)



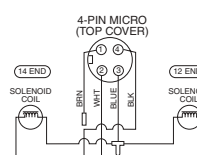
5-Pin Male / Double Solenoid
(Encl. Option 3, Auto Option F)



4-Pin Male / Single Solenoid
(Encl. Option 2, Auto Option F)

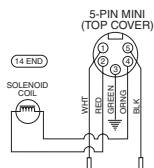


4-Pin Male / Double Solenoid
(Encl. Option 2, Auto Option F)

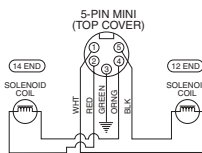


'G' GM Wiring

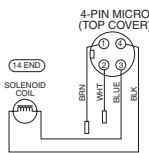
5-Pin Male / Single Solenoid
(Encl. Option 3, Auto Option G)



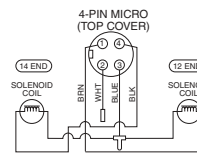
5-Pin Male / Double Solenoid
(Encl. Option 3, Auto Option G)



4-Pin Male / Single Solenoid
(Encl. Option 2, Auto Option G)

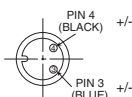


4-Pin Male / Double Solenoid
(Encl. Option 2, Auto Option G)

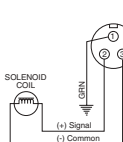


CNOMO Connection - Wiring Options

2-Pin Male / Single Solenoid
(Encl. Option 6, Auto Option F)

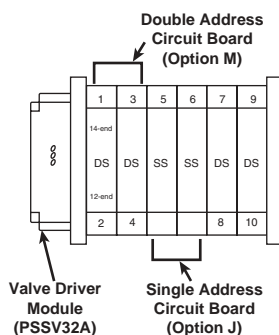


3-Pin Male / Single Solenoid
(Encl. Option 1, Auto Options C, F & G)



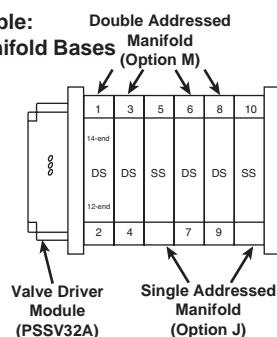
I/O Addressing Examples

HB & HA Example Two Station Manifold Bases



Notes: SS = Single Solenoid Valve
DS = Double Solenoid Valve
First output address the #14 end of the valve closest to the valve driver module.

H1, H2 & H3 Example: Single Station Manifold Bases



Sandwich Regulators

Features

- Remote Air Pilot Operated for hard-to-reach pressure control.
- Unregulated Pilot Pressure to valve for consistent valve shifting regardless of pressure adjustment.

Gauge Adapter Kit

Included with all HB Regulators. Both kits are required on all HA & HB Regulators when the Regulator is on the last Station on the Right (14) End.



Description	Part Number
Gauge Kit	PS5651160P
1/8" Female to 1/8" Female Coupling	207P-2*
1/8" Male to 1/8" Male Long Nipple	VS215PNL-2-15*

* Included in Gauge Kit PS5651160P



H1 - Size 1
(Independent Dual Port Regulator Shown)



H2 - Size 2
(Independent Dual Port Regulator Shown)



HB - 18mm
(Independent Dual Port Regulator Shown)



HA - 26mm
(Common Port Regulator Shown)

Sandwich Regulator Kit Ordering Code

Series	Regulator Function	#4 Port Regulator / Gauge	#2 Port Regulator / Gauge	Factory Designator
PS5637	1	6	6	P
Series HB 15407-1 18mm PS5637 15407-2 18mm PS5638 HA 15407-1 26mm PS5537 15407-2 26mm PS5538	Regulator Function 1 Common Pressure Regulator 2 Independent Pressure Regulator	#4 Port Regulator / Gauge* 2 2-60 PSIG w/o Gauge 3 5-125 PSIG w/o Gauge 5 2-60 PSIG w/Gauge 6 5-125 PSIG w/Gauge	#2 Port Regulator / Gauge* 2 2-60 PSIG w/o Gauge 3 5-125 PSIG w/o Gauge 5 2-60 PSIG w/Gauge 6 5-125 PSIG w/Gauge	
		<small>* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)</small>		

Series	Regulator Function	#4 Port Regulator / Gauge	#2 Port Regulator / Gauge	Engineering Level	Factory Designator
PS4037	1	6	6	C	P
Series H1 5599-1 PS4037 5599-2 PS4038 H2 5599-1 PS4137 5599-2 PS4138 H3 5599-1 PS4237 5599-2 PS4238	Regulator Function 1 Common Pressure Regulator 2 Independent Pressure Regulator 3 Selector Regulator	#4 Port Regulator / Gauge* 0 Line By-Pass Plate** 1 1-30 PSIG w/o Gauge 2 2-60 PSIG w/o Gauge 3 5-125 PSIG w/o Gauge 4 1-30 PSIG w/Gauge 5 2-60 PSIG w/Gauge 6 5-125 PSIG w/Gauge C Air Pilot w/60 PSIG Gauge D Air Pilot w/160 PSIG Gauge	#2 Port Regulator / Gauge* 0 Line By-Pass Plate** 1 1-30 PSIG w/o Gauge 2 2-60 PSIG w/o Gauge 3 5-125 PSIG w/o Gauge 4 1-30 PSIG w/Gauge 5 2-60 PSIG w/Gauge 6 5-125 PSIG w/Gauge C Air Pilot w/60 PSIG Gauge D Air Pilot w/160 PSIG Gauge		
		<small>* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)</small>			
		<small>** Pressure Line By-Pass Option can only be used with Independent and Selector Regulators (Option 2 & 3 in Sandwich Block Function).</small>			

How to Configure Sandwich Regulator / Valve Combinations

Ordering Components

- Manifold or Subbase Kit required.
- Sandwich Regulator Kit configured for Internal Pilot as standard.
- Order valve as External Pilot.

Internal Pilot Configuration -

Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

External Pilot Configuration - H1, H2, H3

An External Pilot pressure in Port 12 or 14 of the base feeds thru the Sandwich Regulator 12 or 14 galley directly to the 12/14 pilot of the valve.

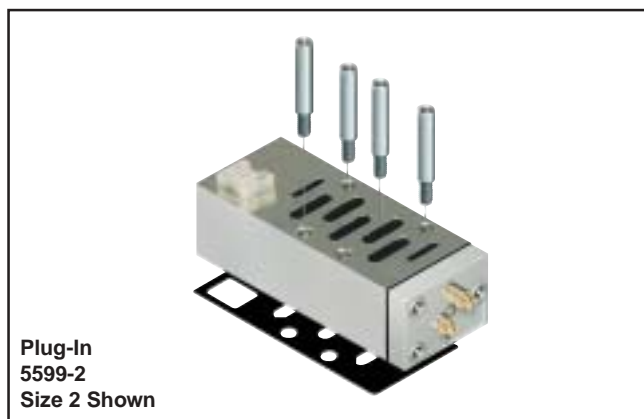
This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

Sandwich Flow Controls

Features

- Both adjustment screws are located on the 12 end of the unit.
- Sandwich Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting.
- Sandwich Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down.

Valve Size	Plug-In 15407-2	Non Plug-In 15407-1
HB	PS5635P	PS5642P
HA	PS5535P	PS5542P
Valve Size	Plug-In 5599-2	Non Plug-In 5599-1
H1	PS4035CP	PS4042CP
H2	PS4135CP	PS4142CP
H3	PS4235CP	PS4242CP



A Sandwich Flow Control and Common Port Sandwich Regulator may be sandwiched together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator.

Technical Information

Temperature Rating

HB	HA	H1	H2	H3
-15°C to 49°C (5°F to 120°F) Ambient.				

CSA / C-US

HB	HA	H1	H2	H3
Standard at - 1000kPa (145 PSIG)				

Flow Rating (Cv)

Valve Size	Port Size	2-Position	3-Position
HB	1/8"	0.55	0.50
HA	1/4"	1.1	1.0
H1	3/8"	1.5	1.2
H2	1/2"	3.0	2.8
H3	3/4"	6.0	5.0

Cv tested per ANSI / (NFPA) T3.21.3

Response Time**

HB	HA	H1	H2	H3	
Valve Size	Port Size	0 Cu. In. Chamber		## Cu. In. Chamber	
		Fill	Exhaust	Fill	Exhaust
Single Solenoid 2-Position - Air Return / Spring Assist					
HB	1/8"	28	30	141	154
HA	1/4"	24	26	77	124
H1	3/8"	39	41	159	210
H2	1/2"	78	81	219	310
H3	3/4"	90	93	244	320

HB (12), HA (25), H1 (50), H2 (100), H3 (200)

** With 100 PSIG supply, time (ms) required to fill from 0 to 90 PSIG and Exhaust from 100 PSIG to 10 PSIG measured from the instant of energizing or de-energizing 24VDC solenoid.

Tested per ANSI / (NFPA) T3.21.8

Minimum Operating Voltage

	HB	HA	H1	H2	H3
MOV (24VDC)	20.4	20.4	20.4	20.4	20.4
MOV (120VAC)	102	102	102	102	102

Operating Pressure

HB	HA	H1	H2	H3		
Maximum: 145 PSIG (1000 kPa)						
Minimum:						
Operator/ Function	Internal Pilot	PSIG (Min. kPa) HB	PSIG (Min. kPa) HA	PSIG (Min. kPa) H1	PSIG (Min. kPa) H2	PSIG (Min. kPa) H3
1	Single Solenoid - 2-Pos	25 (173)	25 (173)	25 (173)	25 (173)	35 (241)
2	Double Solenoid- 2-Pos					
3	Single Remote Pilot - 2-Pos **	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
4	Double Remote Pilot - 2-Pos**	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
5, 6, 7	Double Solenoid - 3-Pos APB, CE, PC	35 (241)	35 (241)	35 (241)	50 (345)	50 (345)
8, 9, 0	Double Remote Pilot - 3-Pos** APB, CE, PC	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
E	Single Solenoid Pilot - 2-Pos Air Return / Spring Assist	30 (207)	30 (207)	35 (241)	45 (310)	45 (310)
F	Single Remote Pilot - 2-Pos** Air Return / Spring Assist					
	External Pilot *	*	*	*	*	*
All	isys	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum

* External Pilot Pressure / Remote Pilot Supply - 45-145 PSIG (310-1000 kPa).

** Must be equal to or greater than operating pressure.

Service & Repair Kits

5599-2 & 5599-1 AUTO Solenoid Kits

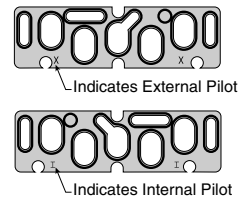
H1	H2	H3
Voltage Code		Kit Number
42 (24VAC)		PS404142P
45 (12VDC)		PS404145P
B9 (24VDC)		PS4041B9P
23 (120VAC)		PS404123P
57 (240VAC)		PS404157P

Quantity 1

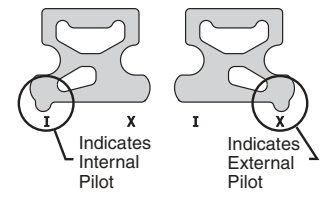
Pilot Select Gasket Kits

Valve Size	Kit Number
HB	PS5605P
HA	PS5505P
H1 H2 H3	PS4007P

Quantity 10



HB, HA



H1, H2, H3

5599-1 CNOMO Solenoid Kits

H1	H2	H3
Voltage Code	3-Pin 30mm 'L' Coil Kit	2-Pin M12 Euro '6' Coil Kit
19	—	PS2828619P*
42	PS2828A42P	—
45	PS2828A45P	—
49	PS2828A49P	—
53	PS2828A53P	—
57	PS2828A57P	—

Quantity 1

Pilot By-Pass Plate

Valve Size	Kit Number
H1 H2 H3	PS4051P

Quantity 10

Valve to Base Gasket Kits

Valve Size	Standard	Remote Pilot	Dual Pressure #3	Dual Pressure #5
HB	PS5605P	—	—	—
HA	PS5505P	—	—	—
H1	PS4005CP	PS4006CP	PS40D3CP	—
H2	PS4105CP	PS4106CP	PS41D3CP	PS41D5CP
H3	PS4205CP	PS4206CP	PS42D3CP	PS42D5CP

Quantity 1

Body Service Kits

Valve Size	2-Position APB	3-Position		
		CE	PC	
HB	PS5601P	PS5602P	PS5603P	PS5604P
HA	PS5501P	PS5502P	PS5503P	PS5504P
H1	PS4001CP	PS4002CP	PS4003CP	PS4004CP
H2	PS4101CP	PS4102CP	PS4103CP	PS4104CP
H3	PS4201CP	PS4202CP	PS4203CP	PS4204CP

Kit Includes: Spool assembly with seals, all piston seals, return spring, pilot selector gasket, coil to end cap gasket.

Quantity 1

Manifold to Manifold Gasket Kits

Valve Size	Std	Blocked #1 Port	Blocked #1, 3, 5 Ports
HB	PS561AP	PS561BP	PS561CP
HA			
H1	PS4013P	—	—
H2	PS4113P	—	—
H3	PS4213P	—	—

Quantity 1

Service & Repair Kits

Manifold Hardware Kits

Valve Size	Kit Number
HA	PS5512P
HB	PS5612P
H1	PS4012P
H2	PS4112P
H3	PS4212P

Quantity 12

Regulator & Flow Control Mounting Studs

Type	HA	HB	
Flow Control	PS5636P	PS5536P	
Regulator	PS5636P	PS5536P	
Type	H1	H2	H3
Flow Control	PS4036P	PS4136P	PS4236P
Regulator	PS4040P	PS4140P	PS4240P

Quantity 12

Valve Bolt Kits

Valve Size	Kit Number
HB	PS5687P
HA	PS5587P
H1	PS4087CP
H2	PS4187CP
H3	PS4287CP

Quantity 12

Regulator Gauge Kits – Size 1, 2 & 3

Gauge Type	Kit Number
3/4" Face Air - Standard 0-60 PSIG 0-160 PSIG	PS4051060BP PS4051160BP
1-1/2" Face Air - Large* 0-60 PSIG 0-160 PSIG	PS4053060BP PS4053160BP
1-1/2" Face Liquid* 0-160 PSIG	PS4052160BP

* Includes brass pipe fitting extensions

Quantity 1

Sandwich Supply & Exhaust Modules

Valve Size		NPT	BSPP
HB	Supply	PS561600P	PS561601P
	Exhaust	PS561700P	PS561701P
HA	Supply	PS551600P	PS551601P
	Exhaust	PS551700P	PS551701P

Quantity 1

Regulator Spring Range Kits

Spring Range	H1	H2	H3
0 to 30 PSIG	PS4050030P	PS4150030BP	
2 to 60 PSIG	PS4050060P	PS4150060BP	
5 to 125 PSIG	PS4050125P	PS4150125BP	

Quantity 1

Regulator Conversion Kits

Valve Size	Manual Bonnet Assembly (w/o Spring)	Air Pilot Bonnet Assembly	Independent By-Pass Plate
H1	PS4045BP	PS4047BP	PS4048BP
H2	PS4145BP	PS4147BP	PS4148BP
H3			

Quantity 1

Service & Repair Kits

Regulator Kits

Valve Size		Kit Number
H1		PS4039P
H2	H3	PS4139P

Pilot Operator CNOMO - LMOR

Valve Size		Kit Number
H1	H2 H3	PS4052P

Pilot Operator CNOMO - NLMOR

Valve Size		Kit Number
H1	H2 H3	PS4053P

Field Bus System



Communication Modules*

† DeviceNet™ (M18 or M12)	PSSCDM18PA (M8) or PSSCDM12A (M12)	10 to 28.8VDC
† ControlNet™	PSSCCNA	10 to 28.8VDC
† Ethernet I/P™	PSSCENA	10 to 28.8VDC
† Profibus-DP®	PSSCPBA	10 to 28.8VDC

* IP67 Certified

† Reference the following Documents for Installation Instructions.

DeviceNet - E101P, PSS-UM001A

ControlNet - E103P

Ethernet I/P - E104P

Profibus-DP - E102P

See www.parker.com/pneu/isisnet



PSSCENA

PSSCCNA

I/O Modules*

† 8 Digital Inputs M12 (NPN Sinking - Requires PNP Sourcing Input Device)	PSSN8M12A	10 to 28.8VDC
† 8 Digital Inputs M12 (PNP Sourcing - Requires NPN Sinking Input Device)	PSSP8M12A	10 to 28.8VDC
† 8 Digital Inputs M8 (NPN Sinking - Requires PNP Sourcing Input Device)	PSSN8M8A	10 to 28.8VDC
† 8 Digital Inputs M8 (PNP Sourcing - Requires NPN Sinking Input Device)	PSSP8M8A	10 to 28.8VDC
† 8 Digital Inputs M23 12-Pin (PNP Sourcing - Requires NPN Sinking Input Device)	PSSP8M23A	10 to 28.8VDC
† 8 Digital Inputs M23 12-Pin (NPN Sinking - Requires PNP Sourcing Input Device)	PSSN8M23A	10 to 28.8VDC
+ 8 Digital Outputs M12 (PNP Sourcing)	PSST8M12A	10 to 28.8VDC
+ 8 Digital Outputs M8 (PNP Sourcing)	PSST8M8A	10 to 28.8VDC
§ 4 Digital Output, High Watt Relay M12 (PNP Sourcing) (2 Amp)	PSTR4M12A	24VDC
** 8 Digital Outputs M23 (PNP Sourcing)	PSST8M23A	10 to 28.8VDC
‡ 2 Analog Inputs Voltage (M12)	PSSNAVM12A	0 to 10V ± 10V
‡ 2 Analog Inputs Current (M12)	PSSNACM12A	4 to 20mA or 0 to 20mA
** 2 Analog Outputs Voltage (M12)	PSSTAVM12A	0 to 10V ± 10V
** 2 Analog Outputs Current (M12)	PSSTACM12A	4 to 20mA or 0 to 20mA



PSST8M12A

PSSP8M23A

PSSNACM12A

PSSTACM12A

PSSN8M8A

* IP67 Certified

Reference the following Documents for Installation Instructions.

† E106P

+ E107P

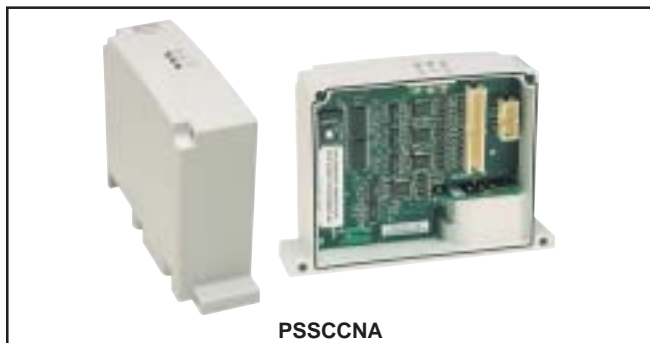
§ E109P

‡ E110P

** E111P

Can be used with PSSTERM.

See www.parker.com/pneu/isisnet



Valve Driver Module

32 Point Module – HB, HA, H1, H2, H3	PSSV32A*
24 Output Cable – HB, HA	PS5624P
25 - 32 Output Cable – HB, HA	PS5632P
24 Output Cable – H1, H2, H3	PS4024P

* Reference Document E100P for Installation Instructions.
See www.parker.com/pneu/isysnet



Terminating Base Module

Terminating Module	PSSTERM
--------------------	---------

Used as the last Terminating Module for a Stand Alone isysnet Assembly.

Must be used with PSST8M23A.

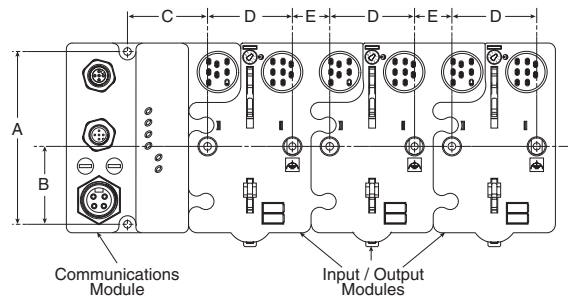


Power Extender Module

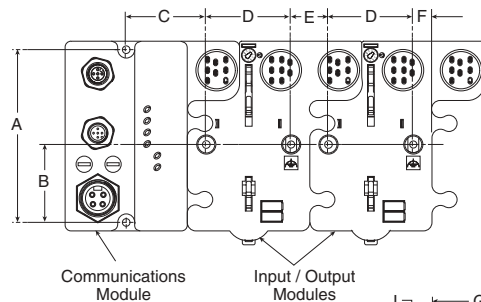
24VDC Field Power Module	PSSSE24A	24VDC
--------------------------	----------	-------

A Power Extender Module must be used on every 12th Module in an isysnet Assembly. See www.parker.com/pneu/isysnet

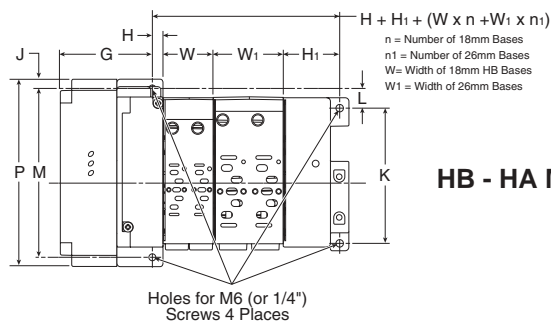
Dimensions

**HB-HA****Dimensions**

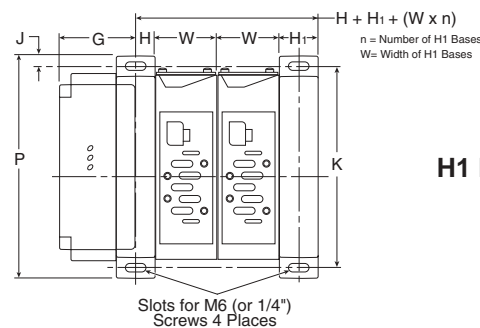
A	B	C	D
4.02 (102)	1.81 (46)	1.90 (48)	2.00 (51)
E	F		
.87 (22)	.43 (11)		

**HB-HA****Dimensions**

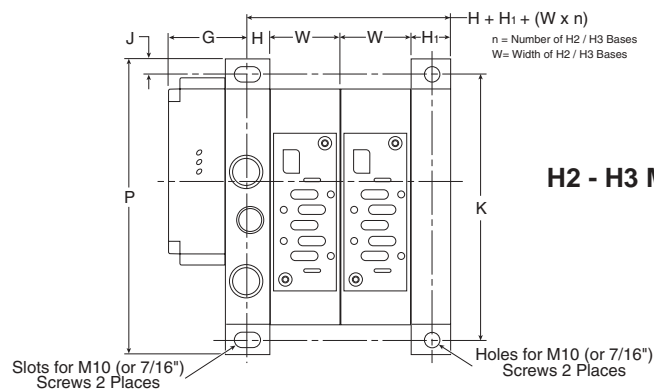
G	H	H ₁	J	K
2.68 (68)	.33 (8.4)	1.80 (45.8)	.15 (4)	4.32 (110)
L	M	P	W	W ₁
.63 (16)	5.39 (137)	5.98 (152)	1.61 (40.8)	2.24 (56.8)

**HB - HA Manifold Assembly****H1****Dimensions**

G	H	H ₁	J	K
2.20 (56)	.63 (15.9)	.63 (15.9)	.33 (8.5)	6.50 (165)
P	W			
7.17 (182)	1.93 (49)			

**H1 Manifold Assembly****H2****Dimensions**

G	H	H ₁	J	K
2.28 (58)	.71 (8.418)	.59 (15)	.47 (12)	8.46 (215)
P	W			
9.41 (239)	2.20 (56)			

**H2 - H3 Manifold Assembly****H3****Dimensions**

G	H	H ₁	J	K
2.52 (64)	.94 (24)	.65 (16.5)	.59 (15)	10.43 (265)
P	W			
11.61 (295)	2.80 (71)			

Offer of Sale

The items described in this document and other documents or descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors, are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any such item, when communicated to Parker Hannifin Corporation, its subsidiaries or an authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

1. Terms and Conditions of Sale: All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from date of shipment from Parker Hannifin Corporation. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.

NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGN OR SPECIFICATIONS.

5. Limitation of Remedy: SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitations, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. 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 items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and

notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. 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, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are 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. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter "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 an item sold pursuant to this contract 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 an item sold hereunder 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 said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items 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 item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgements resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

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

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.