



# PS1E Series Electro-pneumatic Interface Valves

Catalog PS1E-1/USA  
November, 2009



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Features .....2-3

3/2 and 4/2 Electro-pneumatic interface modules

- complete units, head / tail sets, intermediate pressure supply .....4
- modules without solenoid, solenoids, pressure switch .....5

Technical data, dimensions .....6

Suppressor and LED indicators, spare parts, marking accessories.....7

Offer of sale .....9

## ***Compact, easy to install, reliable...***

### **Easy to meet system design needs**

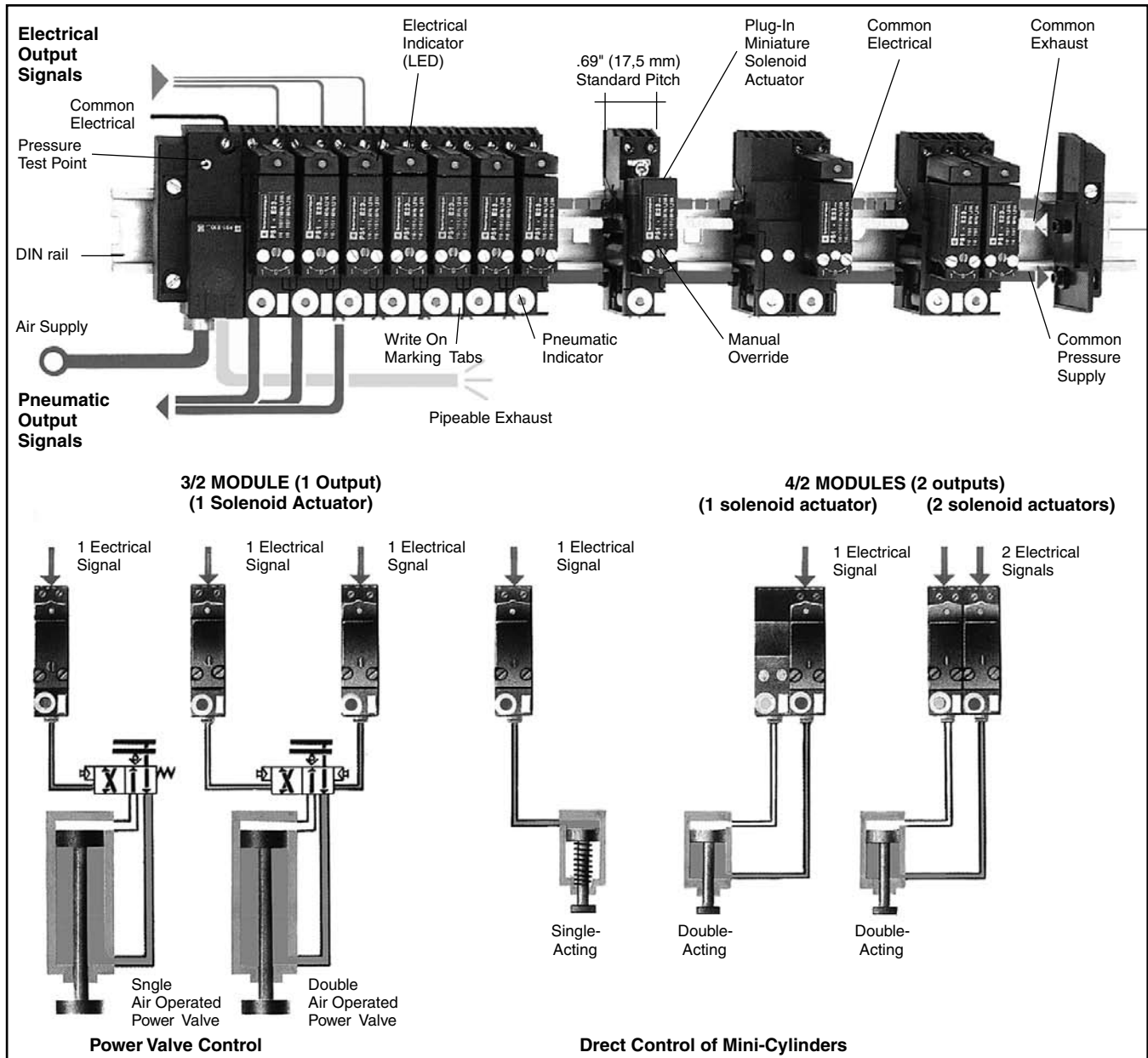
- Full flow capacity allows direct operation of small cylinders (single or double acting) or pneumatic piloting of larger control valves (pneumatic or hydraulic).
- Valve configurations in 3/2 or 4/2 (single or double acting).
- Outlet fittings (push-in) for 5/32" or 1/4" tubing.
- System modification or expansion simplified by easily adding modules to stack.
- Wide range of voltages available.
- Multiple pressures possible in one assembly.

### **Easy to install in your system**

- Modules snap together and mount on 35mm (DIN) rail.
- Micro-valve stack and PLC may be mounted in the same enclosure.
- Common air supply, exhaust, and electrical supply reduce connections to 1 wire and 1 tube per module.
- Supply and exhaust air can be piped with only one tube for each.
- Fast hook-up with captive wire clamp connections and push-in fittings.
- Compatible pneumo-electric module provides integrated feedback capability for the PLC.
- Eliminates cumbersome electrical connections on machine mounted solenoid valves.

### **Easy to maintain system operation**

- Manual override for setup and troubleshooting.
- Poppet design for long, trouble free life (lubricated or non-lubricated air).
- Integrated diagnostics (main air test point, output pneumatic indicator, optional suppressor/LED) provide system status at a glance.
- All electrical connections are in a protected enclosure.
- Modular design and easy connection aid in module replacement or system expansion.



**⚠ Caution:** Because these are poppet valves, the common air supply pressure must be built up rapidly (never use a slow start valve 2/2 on the air supply for the interfaces). When pressure is applied, the 4/2 valve takes up a predetermined position (unactuated) when no electrical signal is present.

- Output 2 (yellow indicator) passing.
- Output 4 (red indicator) non-passing.

### Assembled Units

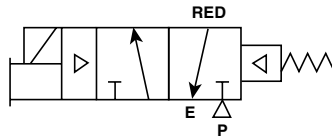
All units include pop-up indicator for pneumatic output. Red indicates NNP / NC function. Yellow indicates NP / NO function.

All model numbers shown include non-locking manual override.  
 (For other voltages, use component parts shown on page 5).



PS1E21102\*\*

#### Single Solenoid - Spring Return 3/2 - Normally Non-Passing (NNP) / Normally Closed (NC)



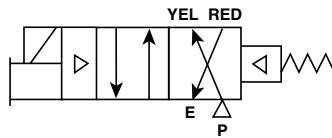
Voltage	Output Port Push-In Connection Size	
	5/32" (4 mm) Tube	1/4" Tube
12V DC	PS1E21102J	PS1E216702J
24V DC	PS1E21102B	PS1E216702B
24V AC	PS1E21101B	PS1E216701B
120V AC	PS1E21101F	PS1E216701F

Weight: 0.21 lb (0.095 kg)

#### Single Solenoid - Spring Return 4/2



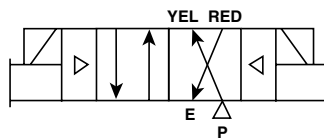
PS1E29102\*\*



Voltage	Output Port Push-In Connection Size	
	5/32" (4 mm) Tube	1/4" Tube
12V DC	PS1E28102J	PS1E286702J
24V DC	PS1E28102B	PS1E286702B
24V AC	PS1E28101B	PS1E286701B
120V AC	PS1E28101F	PS1E286701F

Weight: 0.36 lb (0.165 kg)

#### Double Solenoid 4/2



Voltage	Output Port Push-In Connection Size	
	5/32" (4 mm) Tube	1/4" Tube
12V DC	PS1E29102J	PS1E296702J
24V DC	PS1E29102B	PS1E296702B
24V AC	PS1E29101B	PS1E296701B
120V AC	PS1E29101F	PS1E296701F

Weight: 0.45 lb (0.205 kg)



PS1E1027

### Head and Tail Sets

Used to mount valves to DIN rail and provide supply and exhaust ports. All hardware is included.

Single supply type supplies from one end of the manifold assembly with the other end blocked.

Double supply type provides pressure and exhaust ports on both ends of the assembly.

Push-In Connection Ports		
1/4" Tube	PS1E1017	PS1E1027
6mm Tube	PS1E101	PS1E102

Wt: 0.22 lb (0.100 kg)    Wt: 0.28 lb (0.125 kg)



PS1E10387

### Intermediate Supply Module - PS1E10387

1/8" Pipe port for supply and exhaust ports.

Allows replenishment or isolation of the supply and / or exhaust ports using included plugs.

Weight: 0.28 lb (0.125 kg)

1/8" Pipe Supply & Exhaust	
NPT	PS1E10387
BSP	PS1E1038

Shaded Items: Consult factory for availability.

## Valves Without Solenoid Operators <sup>(1)</sup>

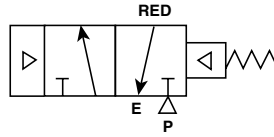
All valve units include pop-up indicator for pneumatic output. Red indicates NNP / NC function. Yellow indicates NP / NO function.

<sup>(1)</sup> To obtain a complete assembled unit, i.e. PS1E21102J, order valve PS1E111 + solenoid PS1E2302J.

### Single Acting - Spring Return 3/2 - Normally Non-Passing (NNP) / Normally Closed (NC)

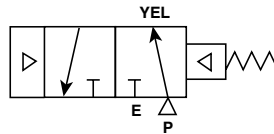


PS1E11●



Output Port Push-in Connection Size			
5/32" (4 mm) Tube	6 mm Tube	1/4" Tube	10-32 UNF
PS1E111	PS1E116	PS1E1167	PS1E115

### Single Acting - Spring Return 3/2 - Normally Passing (NP) / Normally Open (NO)

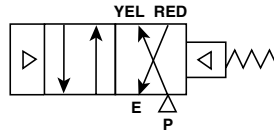


Output Port Push-in Connection Size			
5/32" (4 mm) Tube	6 mm Tube	1/4" Tube	10-32 UNF
PS1E121	PS1E126	PS1E1267	PS1E125

### Single Acting - Spring Return 4/2

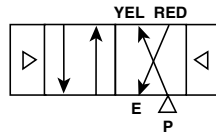


PS1E19●



Output Port Push-in Connection Size			
5/32" (4 mm) Tube	6 mm Tube	1/4" Tube	10-32 UNF
PS1E181	PS1E186	PS1E1867	PS1E185

### Double Acting 4/2



Output Port Push-in Connection Size			
5/32" (4 mm) Tube	6 mm Tube	1/4" Tube	10-32 UNF
PS1E191	PS1E196	PS1E1967	PS1E195



PS1P10●●

## Line Mounted Pressure Switch

Includes pop-up indicator to show presence of pressure.

Includes Clip for mounting on 35mm DIN Rail.

1 SPDT Contact.

5A 250V

5/32 (4 mm) Push-In Tubing Port

Shaded Items: Consult factory for availability.

Switching Pressure	
20 PSIG Fixed PS1P1081	30 - 75 Adjustable PS1P1091

Wt: 0.11 lb (0.050 kg)

## Valve Specifications

**Body Material:**

Glass filled polyamide

**Electrical Connection:**

Captive wire clamp

**LED / Noise Suppressor\*:**

Combination LED (green) and zener diode

**Life Expectancy:**

10 million operations

**Maximum operating frequency:**

10 Hz

**Medium Quality:**

Standard shop air, lubricated or non-lubricated, 50µ filtered

**Mounting:**

35mm (DIN) rail

**Operating Medium:**

Compressed air

**Operating Pressure Range:**

40 to 120 PSI (3 to 8 bar)

**Operating Principal:**

Solenoid pilot operated poppet valve

**Operating Temperature Range:**

5° to 140°F (-15° to 60°C)

**Response Time:**

10-15 ms (electronic signal to pneumatic output)

**Seal Material:**

Poppet - polyurethane  
 Seals - Nitrile (Buna N)

**Supply and Exhaust Ports:**

1/4"

<b>Outlet port:</b>	5/32"	1/4"
<b>Flow rate:</b> (SCFM @ 90 PSI)	7.1	9.2
<b>Cv</b>	.14	.16

**Tube Connections:**

Push-in (instant) fittings

**Voltage Tolerance:**

+10 to -15% of rated voltage @ 70°F

**Wire Size:**

14 - 22 AWG

**Caution:** Memory in double acting (Bistable) 4/2 modules is input dependent. Either air supply or electrical command signal must be maintained or memory may be lost.

\*120/240VAC LED only (No noise suppressor)

## Pressure Switch Specifications

**Body Material:**

Glass filled polyamide

**Contact Material:**

Silver

**Contact Rating:**

10A / 250VAC

**Maximum Operating Frequency:**

10 Hz

**Mechanical Life:**

30 million operations

**Operating Pressure Range:**

**Fixed pressure:**

19 to 120 PSI (1.3 to 8 bar)

**Adjustable pressure:**

30 to 120 PSI (2 to 8 bar)

**Operating Temperature Range:**

5° to 140°F (-15° to 60°C)

**Operating Principal:**

Pressure operated micro switch

**Seal Material:**

Poppet - polyurethane

Seals - Nitrile (Buna N)

**Switch Pressure:**

Fixed pressure:

>19 PSI (>1.3 bar)

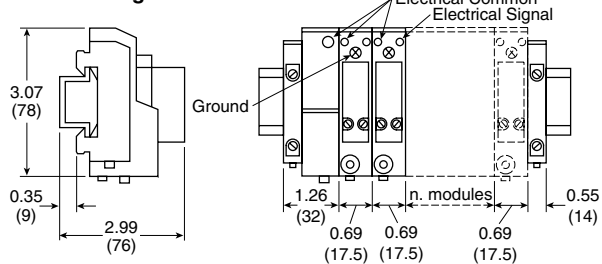
Adjustable pressure:

30 to 75 PSI (2 to 5 bar)

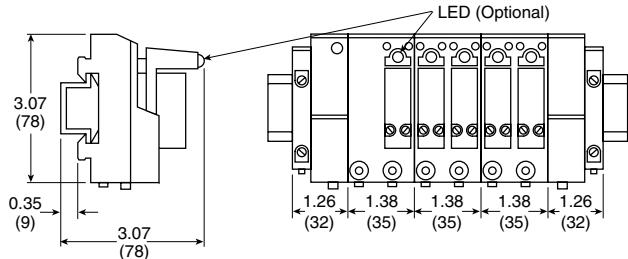
Contact life		AC				DC		
		24V	48V	120V	240V	12V	24V	48V
1 Million Operations	Inductive	25	56	115	140	17	24	37
	Resistive	86	190	370	440	42	58	88
2 Million Operations	Inductive	—	—	—	—	10	14	25
	Resistive	—	—	—	—	30	43	70
5 Million Operations	Inductive	10	14	19	21	—	—	—
	Resistive	35	82	160	200	—	—	—

### Dimensions shown in inches (mm)

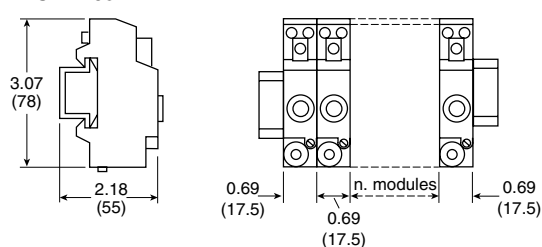
**3/2 and Single Head and Tail Set**



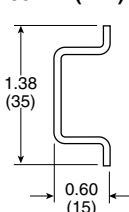
**4/2 and Double Head and Tail Set**



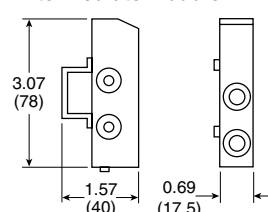
**PS1 P1091**



**35mm (DIN) Rail\***



**Intermediate Module**



\*Rail at less than 0.6" does not allow enough room for mounting clips and may cause air leaks.



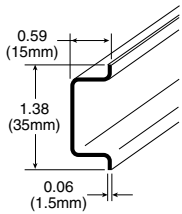
## Suppressor and LED Indicators

Mount between Solenoid Valve and the Interface Module



PS1E1620●

Characteristics	Circuit Diagram	Voltage	Part Number	Weight	
				lb	kg
Indication by LED  Sold in Lots of 5		24 VDC and 50/60 Hz	PS1E1620B	.022	0.010
		48 VDC and 50/60 Hz	PS1E1620E	.022	0.010
		120 V / 60 Hz 115 V / 50 Hz	PS1E1511F	.028	0.012
		240 V / 60 Hz 230 V / 50 Hz	PS1E1511M	.028	0.012



I = 15mm (0.6")  
H = 35mm (1.38")  
e = 1.5mm (0.06")

AM1 DE200

## Mounting Rail 35mm (DIN)

Material	Length	Part Number
Steel	6'	AM1 DE200

## Spare Parts

Description	Part Number
<b>1 lot of 100 O-ring seals</b> Between Modules (Pressure - Exhaust)	PPR-L12
<b>1 lot of 50 seals</b> Between Modules 3/2 or 4/2 and Coil PS1-E23 - 25 Seals (Type A) for Modules 3/2 and 4/2 Bistable - 25 Seals (Type B) for Modules 4/2 Monostable and Bistable	PPR-L13

## Marking Accessories

To be used in place of Write-On Marking Tabs



AB1-G●

Clip-On Marker Strips	Part Number
Strip of 10 Identical Numerals (State the Number required)	AB1-R●
Strip of 10 Identical Letters (State the Letter required)	AB1-G●
Strip of 10 + Signs*	AB1-R12
Strip of 10 - Signs*	AB1-R13

\*Sold in Lots of 25 Strips of 10 Markers



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**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.

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**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.

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**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.

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**Parker Hannifin Corporation**

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