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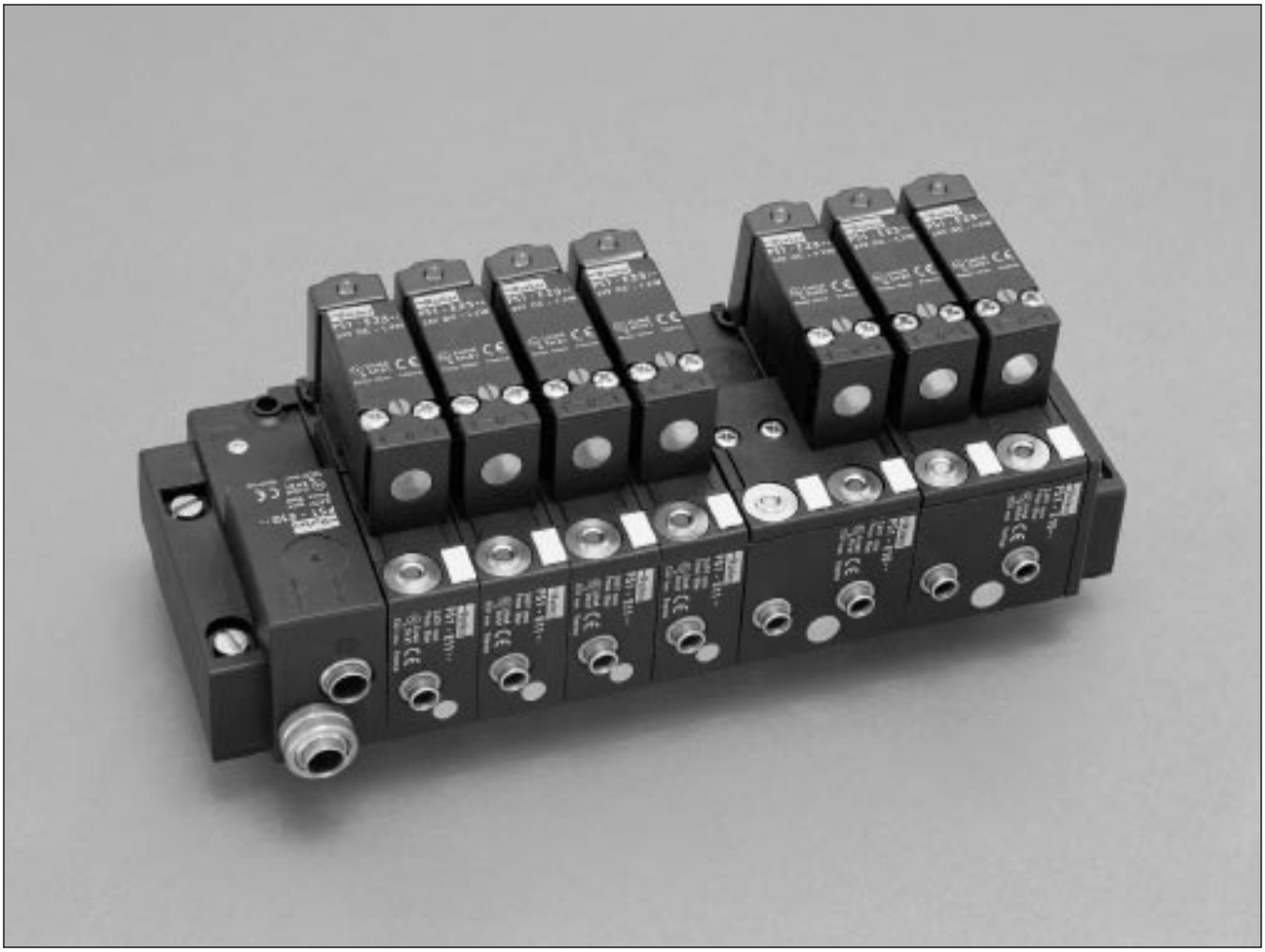
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Find the *Parker PS1-E2302B* at our website: ***Click HERE***

PS1E Series Electro-pneumatic Interface Valves

Section D



D

Features D2-D3

3/2 and 4/2 Electro-Pneumatic Interface Modules

Complete Units, Head / Tail Sets, Intermediate Pressure Supply D4

Modules without Solenoid, Solenoids, Pressure Switch D5

Technical Data, Dimensions D6

Suppressor and LED Indicators, Spare Parts, Marking Accessories.....D7

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Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

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.

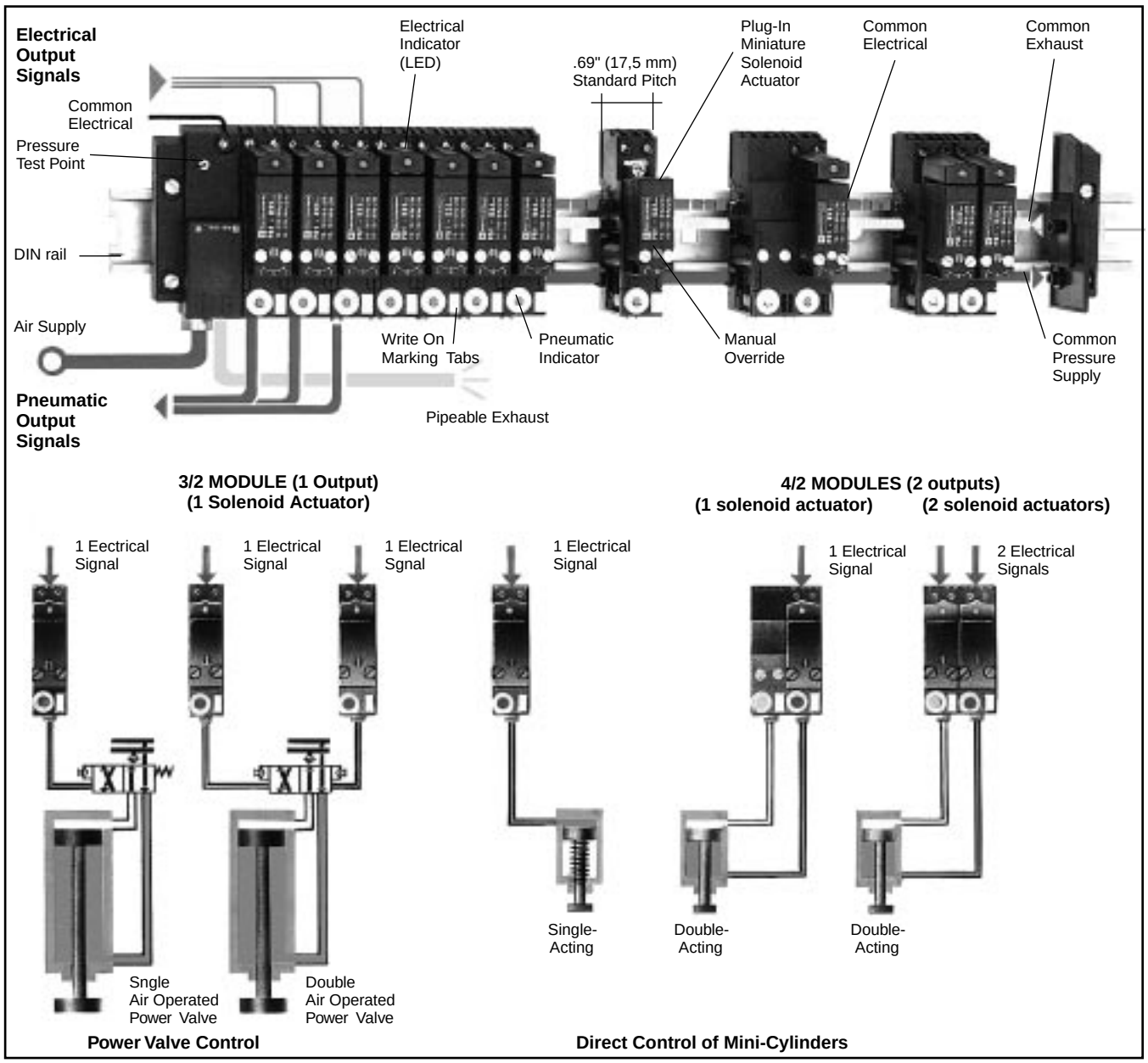
Easy To Install In Your System

- 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.

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⚠ **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.

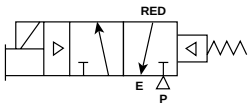
- Output 2 (yellow indicator) passing.
- Output 4 (red indicator) non-passing.

D

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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 D5).

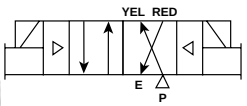






PS1E21102•• **PS1E111**







PS1E29102•• **PS1E29102••**

Assembled Units

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

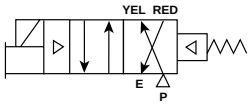
Voltage	Output Port Push-In Connection Size	
	5/32" (4 mm) Tube	1/4" Tube
12V DC	PS1E21102J	PS1E216702J
24V DC	**PS1E21102B**	**PS1E216702B**
24V AC	PS1E21101B	PS1E216701B
120V AC	**PS1E21101F**	**PS1E216701F**

Weight: 0.21 lb (0.095 kg)

Valves Without Solenoid Operators

Output Port Push-In Connection Size		
5/32" (4mm) Tube	6mm Tube	1/4" Tube
PS1E111	PS1E116	**PS1E1167**







PS1E28102•• **PS1E181**

Assembled Units

Single Solenoid - Spring Return 4/2

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

Weight: 0.36 lb (0.165 kg)

Valves Without Solenoid Operators

Output Port Push-In Connection Size		
5/32" (4mm) Tube	6mm Tube	1/4" Tube
PS1E181	PS1E186	**PS1E1867**

Assembled Units

Double Solenoid 4/2

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

Weight: 0.45 lb (0.205 kg)

Valves Without Solenoid Operators

Output Port Push-In Connection Size		
5/32" (4mm) Tube	6mm Tube	1/4" Tube
PS1E191	PS1E196	**PS1E1967**

Head and Tail Sets

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

Single supply type supplys 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.



PS1E1027

Push-In Connection Ports	Single Supply	Double Supply
1/4" Tube	**PS1E1017**	**PS1E1027**
6mm Tube	PS1E101	PS1E102
	Wt: 0.22 lb (0.100 kg)	Wt: 0.28 lb (0.125 kg)

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)



PS1E10387

1/8" Pipe Supply & Exhaust

NPT	PS1E10387
BSP	PS1E1038

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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	30 - 75 Adjustable
PS1P1081	PS1P1091

Wt: 0.11 lb (0.050 kg)



P2E-KS32C1

D

NC (NNP)
15mm Solenoids / Kits
(8mm Pin Spacing DIN 43650C)

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.



PS1E230●●

Plug-In Solenoid Operators
(9.4mm Pin Spacing) For MRO Replacement Only

Voltage	Power Consumption	Drop-out* Current (mamp)	With Non-Locking Manual Override	With Locking Manual Override
12 VDC	1.2W	—	PS1E2302J	PS1E2352J
24 VDC	1.2W	5	PS1E2302B	PS1E2352B
48 VDC	1.2W	2.5	PS1E2302E	PS1E2352E
24 V 50-60 Hz	1.6VA**	22	PS1E2301B	PS1E2351B
48 V 50-60 Hz	1.6VA**	12	PS1E2301E	PS1E2351E
120V 60Hz / 115V 50Hz	1.6VA**	5	PS1E2301F	PS1E2351F

** 3.5VA Inrush

Weight: 0.10 lb (0.043 kg)

* The solenoid valves are programmable controller compatible provided that leakage currents of the PLC outputs are lower than the drop-out current value.

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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

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

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"

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

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**

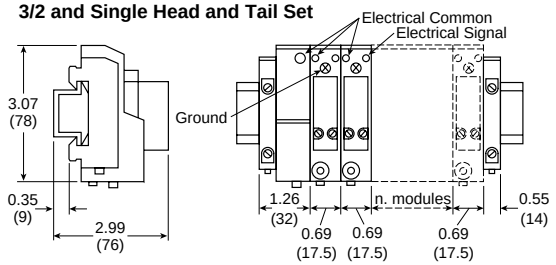
Pressure Range:
Fixed pressure:
19 to 120 PSI (1.3 to 8 bar)
Adjustable pressure:
30 to 120 PSI (2 to 8 bar)
Operating Temperature Range:
5° to 140°F (-15° to 60°C)
Operating Principal:
Pressure operated micro switch

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)

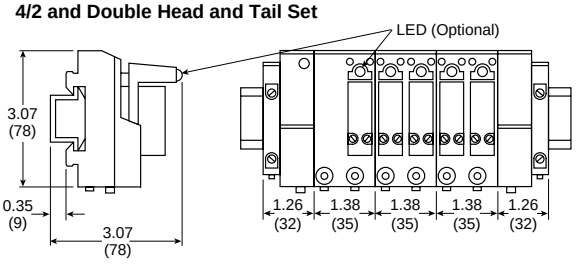
		AC				DC		
Contact life		**24V**	**48V**	**120V**	**240V**	**12V**	**24V**	**48V**
1 Million	Inductive	25	56	115	140	17	24	37
Operations	Resistive	86	190	370	440	42	58	88
2 Million	Inductive	–	–	–	–	10	14	25
Operations	Resistive	–	–	–	–	30	43	70
5 Million	Inductive	10	14	19	21	–	–	–
Operations	Resistive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

Dimensions *shown in inches (mm)*

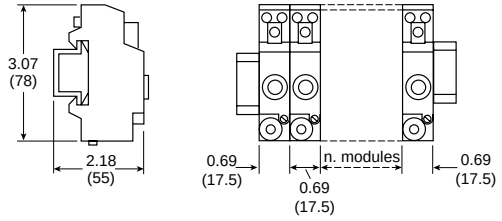
3/2 and Single Head and Tail Set



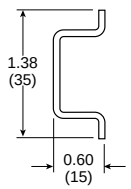
4/2 and Double Head and Tail Set



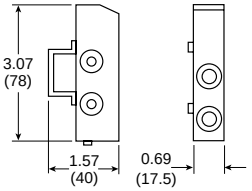
PS1 P1091



35mm (DIN) Rail*



Intermediate Module

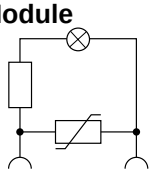


***Rail at less than 0.6" does not allow enough room for mounting clips and may cause air leaks.**

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Suppressor and LED Indicators for PS1E

Mount between Solenoid Valve and the Interface Module



Circuit Diagram



PS1E1620●

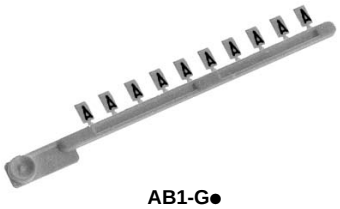
Characteristics	Voltage	Part Number	Weight	
			lb	kg
Indication by LED Sold in Lots of 5	24 VDC and 50/60 Hz	PS1E1620B	.022	0.010
	48 VDC and 50/60 Hz	PS1E1620E	.022	0.010
	120 V / 60 Hz 115 V / 50 Hz	PS1E1511F	.028	0.012

Spare Parts

Description	Part Number
1 lot of 100 O-ring Seals Between Modules (Pressure - Exhaust)	PPR-L12
1 lot of 50 Seals 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-R13

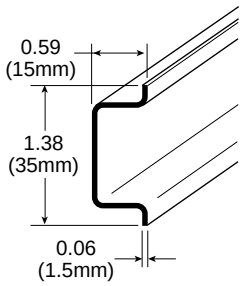
*Sold in Lots of 25 Strips of 10 Markers

35mm DIN Rail

AM1DE200	6 Feet

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.



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Notes

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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, keytones, 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.

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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.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Offer of Sale

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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.

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.

J

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Pneumatic Division
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