

Global FRL Air Preparation System

Fully Modular 1/4" to 3/4" Body Ports

Catalogue PDE2676TCUK September 2020



ENGINEERING YOUR SUCCESS.



DECLARATION OF COMPLIANCE (ROHS)

European Directive 2011/65/EU – RoHS (Restriction us of certain Hazardous Substances in electrical and electronic equipment), restricts the use of the 6 substances in the manufacture of specified electrical equipment.

Lead: Product containing lead and its compound (except for applications of lead as an alloying element by weight in steel up to 0.35%, in aluminium up to 0.4% and in copper alloys up to 4% and in circuit board solder) must not exceed 0.1% by weight

Mercury: The concentration level must not exceed 0.1% by volume

Cadmium: The concentration level must not exceed 0.01% by volume

Hexavalent Chromiou:

This is a corrosive protective finish used on our product line. Where this finish is utilized the Chromate solution is Hexavalent (Chrome 6) free.

Polybrominated Biphenyls (PBB):

The concentration level must not exceed 0.1% by weight. This substance is not know to be in any of our products.

Polybrominated Diphenyl Esters (PBDE):

The concentration level must not exceed 0.1% by weight. This substance is not know to be in any of our products.



ATEX

Following Ignition Hazard Assessments performed on the non-electrical Global Air Preparation products they are in accordance with the requirements of EN 13463-1:2009, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.

The products can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Installation and maintenance of the product must be undertaken by qualified personnel.
- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 6.4.4.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness. Refer to technical file for surface areas of plastics. The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis. Refer to technical file for chemicals known to be incompatible. Product cleaning must be undertaken using a method complying with the specifications of the ATEX zone, preferably by using mild soap and water or antistatic products.
- Regulators, Filter Regulators: Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator / Filter Regulator unit.
- Solenoid Operated Valves: Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
- Technical file available on request.



Global Air Preparation products supplied by Parker Hannifin have been designed and manufactured in accordance with “sound engineering practice”, as defined by Article 3 of Pressure Equipment Directive 97/23/EC.



Global Air Preparation product range is in compliance with REACH to ensure continued compliance additions to the list of SVHC (Substance of Very High Concern) are reviewed periodically.

Global Air Preparation product range has been third party Shock & Vibration tested independently in accordance to EN 61373 : 1999, Category 2



Global Air Preparation product range has been designed and tested in accordance with ISO flow testing, envelope integrity, and catalog data presented.

- Filters – ISO 5782-1 & ISO 5782-2: 1997
- Regulators- ISO 6953-1 & ISO 6953-2: 2000
- Lubricators- ISO 6301-1 & ISO 6301-2: 2009



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”.

Parker Global Air Preparation System

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Parker Global Air Preparation System

**Global.
Modular.**



Performance you need,
wherever you need it.

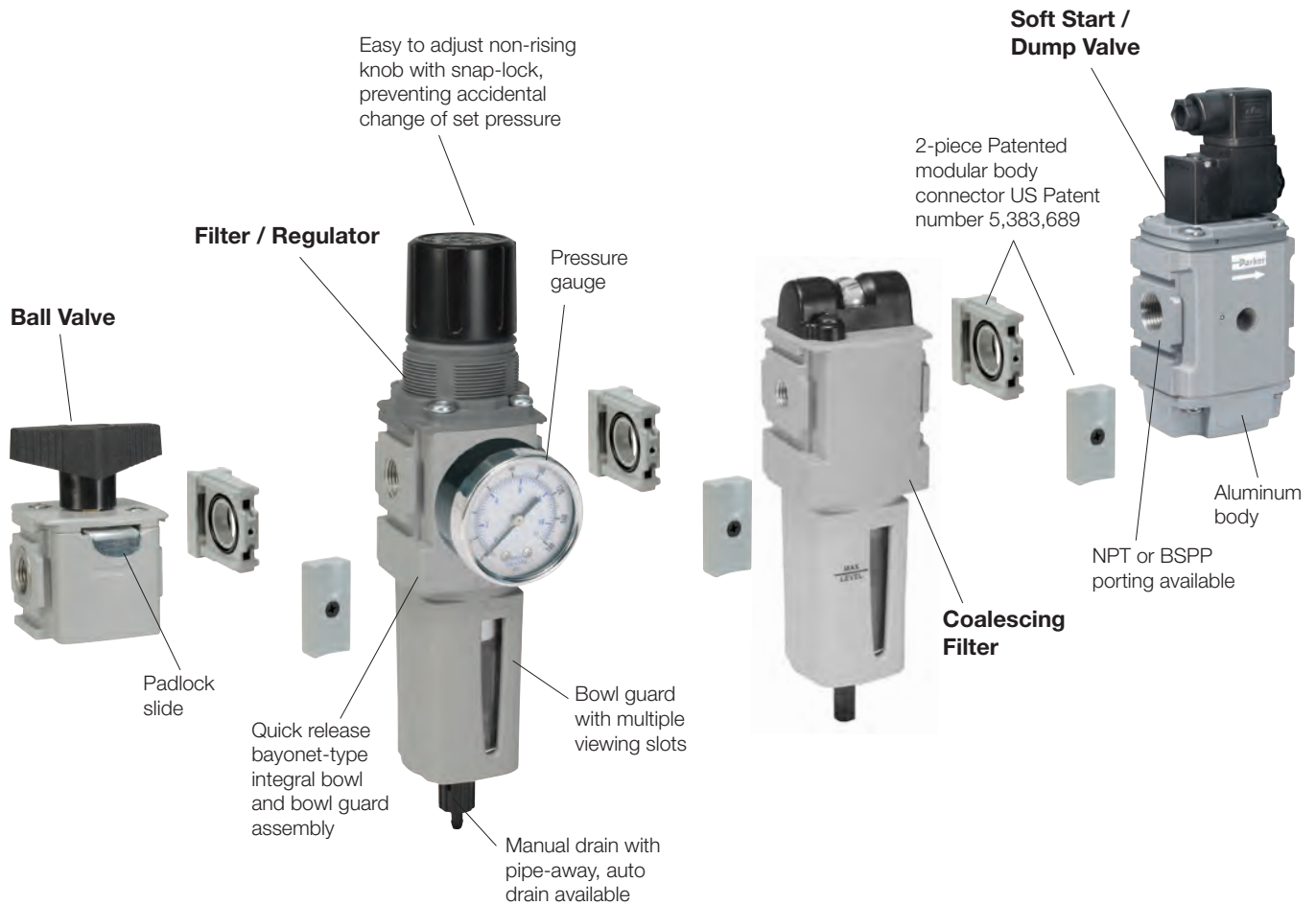


Full featured particulate and coalescing filters, regulators, filter/regulators, and lubricators are available with a wide range of standard options to meet air preparation needs.

The comprehensive Global Air Preparation System is available in three body sizes with either BSPP or NPT to accommodate thread type requirements.

Individual units can easily be assembled into various combinations, utilizing patented modular lightweight body connectors.

A completely modular air preparation system



Optional Tamperproof Kits

- One facilitates the permanent tamperproofing of the Regulator and Filter/Regulator units
- Hinged black part clamps over control knob and is locked in place after sliding yellow cover over it
- Other allows for removable lockout/tagout tamperproofing
 - Four pad lock location holes tagout
 - Hinged locking clamp secures over existing knob via yellow cover which is slid over into place



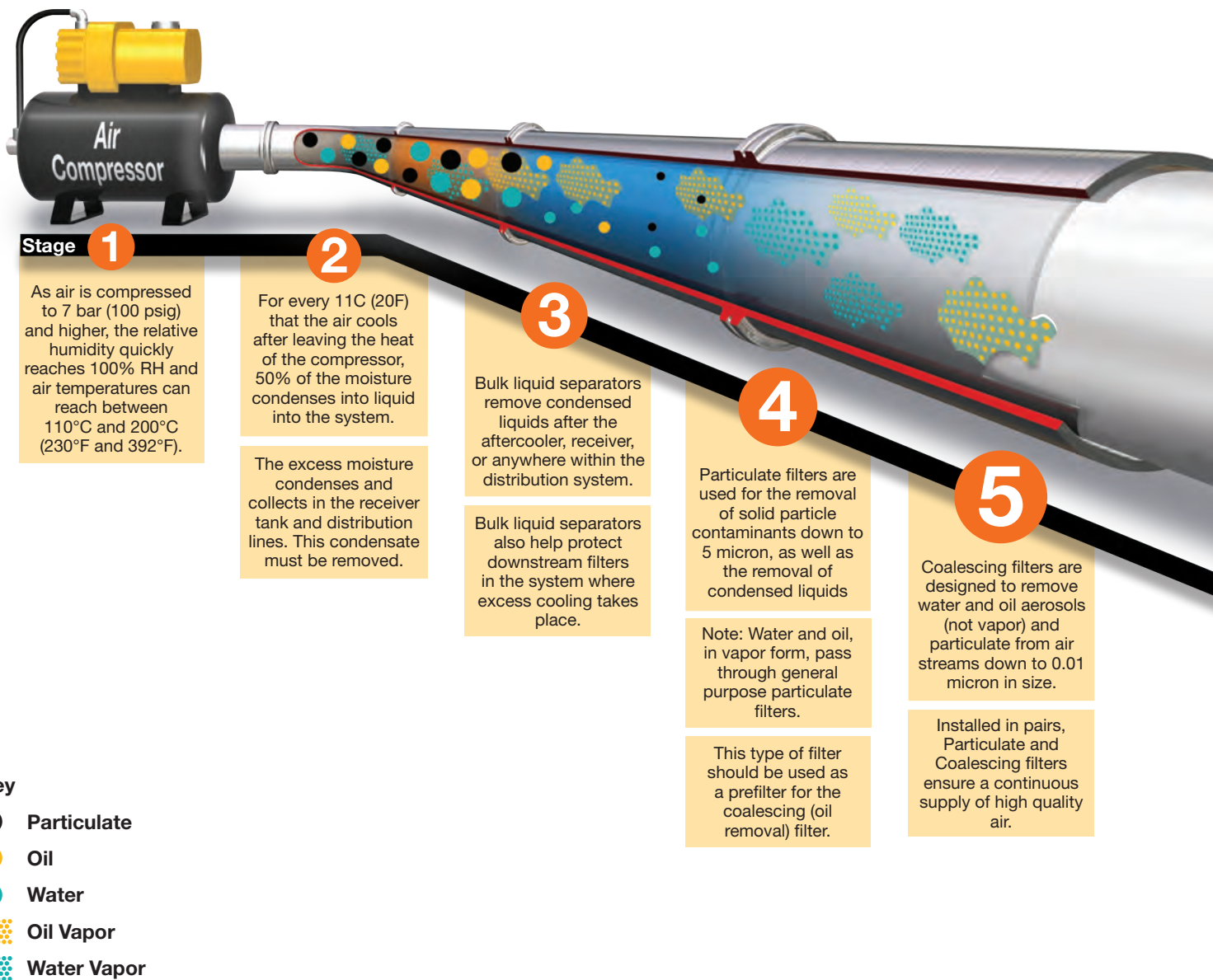
Additional Options (Consult factory for availability)







- T-Handle (P32 only) 
- Preset 
- Preset and Tamperproof 
- Pressure Limiter

Together we can power your application with clean, dry air

Fast cycle times, high product quality, and low downtime all require a clean, dry pneumatic system to function properly. Parker has what it takes to make sure pneumatic systems perform at their best.

Clean, dry pneumatic systems with Parker Global Air Preparation



						
Stages	1 2	3	4	5	6	7
Function	Air Compressor	Bulk Liquid Removal	Particulate Filtration	Coalescing Filtration	Air Dryers	Hydrocarbon Removal
Application	All pneumatic systems	Basic pneumatic systems	Basic pneumatic systems	Systems requiring highest quality air.	Systems requiring air with reduced moisture content	Systems requiring highest quality air for critical applications
Description	Air leaving the compressor room at 93°C (200°F) releases 95% of its moisture into the piping system when it cools to 38°C (100°F)	Removes bulk liquid contamination and protects filters where excess cooling takes place in the distribution piping	Removes solid particulates down to 5 micron, and the separation of bulk contaminants.	Removes liquid aerosols and submicron particulates (not vapor) down to 0.01 micron.	Removes water vapor from air stream. Dew point reduced down to 4°C (40°F) (refrigeration) or -40°C (-40°F) (desiccant).	Removal of odors and trace vapors for critical applications.
Parker Global Air Preparation Solution	Customer supplied	P3TF Bulk Liquid Separator	P31, P32, P33 Particulate Filter	P31, P32, P33 Coalescing Filter	Refrigeration Dryer, TW Regenerative Desiccant Dryer	P31, P32, P33 Activated Carbon (Adsorber) Filter



6

Refrigeration, membrane and desiccant dryers lower the air's dew point by removing water vapor, providing appropriately dry air for the downstream application.

7

Hydrocarbon and oil vapors are removed using filters utilizing activated carbon. These airborne hydrocarbons are often left over from the compressor oils.

Specifying air quality (purity) in accordance with ISO8573-1:2010, the international standard for compressed air quality

ISO8573-1 is the primary document used from the ISO8573 series as it is this document which specifies the amount of contamination allowed in each cubic metre of compressed air.

ISO8573-1 lists the main contaminants as Solid Particulate, Water and Oil. The purity levels for each contaminant are shown separately in tabular form, however for ease of use, this document combines all three contaminants into one easy to use table.

ISO8573-1:2010 CLASS	Solid Particulate			Mass Concentration mg/m ³	Water		Oil
	Maximum number of particles per m ³				Vapour Pressure Dewpoint	Liquid g/m ³	Total Oil (aerosol liquid and vapour)
	0,1 - 0,5 micron	0,5 - 1 micron	1 - 5 micron				mg/m ³
0	As specified by the equipment user or supplier and more stringent than Class 1						
1	≤ 20 000	≤ 400	≤ 10	-	≤ -70 °C	-	0,01
2	≤ 400 000	≤ 6 000	≤ 100	-	≤ -40 °C	-	0,1
3	-	≤ 90 000	≤ 1 000	-	≤ -20 °C	-	1
4	-	-	≤ 10 000	-	≤ +3 °C	-	5
5	-	-	≤ 100 000	-	≤ +7 °C	-	-
6	-	-	-	≤ 5	≤ +10 °C	-	-
7	-	-	-	5 - 10	-	≤ 0,5	-
8	-	-	-	-	-	0,5 - 5	-
9	-	-	-	-	-	5 - 10	-
X	-	-	-	> 10	-	> 10	> 10

Specifying air purity in accordance with ISO8573-1:2010

When specifying the purity of air required, the standard must always be referenced, followed by the purity class selected for each contaminant (a different purity class can be selected for each contamination if required).

An example of how to write an air quality specification is shown below:

ISO 8573-1:2010 Class 1.2.1

ISO 8573-1:2010 refers to the standard document and its revision, the three digits refer to the purity classifications selected for solid particulate, water and total oil. Selecting an air purity class of 1.2.1 would specify the following air quality when operating at the standard's reference conditions:

Class 1 - Particulate

In each cubic metre of compressed air, the particulate count should not exceed 20,000 particles in the 0.1 - 0.5 micron size range, 400 particles in the 0.5 - 1 micron size range and 10 particles in the 1 - 5 micron size range.

Class 2 - Water

A pressure dewpoint (PDP) of -40°C or better is required and no liquid water is allowed.

Class 1 - Oil

In each cubic metre of compressed air, not more than 0.01 mg of oil is allowed. This is a total level for liquid oil, oil aerosol and oil vapour.

ISO8573-1:2010 Class zero





- **Class 0 does not mean zero contamination.**
- **Class 0 requires the user and the equipment manufacturer to agree contamination levels as part of a written specification.**
- **The agreed contamination levels for a Class 0 specification should be within the measurement capabilities of the test equipment and test methods shown in ISO8573 Pt 2 to Pt 9.**
- **The agreed Class 0 specification must be written on all documentation to be in accordance with the standard.**
- **Stating Class 0 without the agreed specification is meaningless and not in accordance with the standard.**
- **A number of compressor manufacturers claim that the delivered air from their oil-free compressors is in compliance with Class 0.**
- **If the compressor was tested in clean room conditions, the contamination detected at the outlet will be minimal. Should the same compressor now be installed in typical urban environment, the level of contamination will be dependent upon what is drawn into the compressor intake, rendering the Class 0 claim invalid.**
- **A compressor delivering air to Class 0 will still require purification equipment in both the compressor room and at the point of use for the Class 0 purity to be maintained at the application.**
- **Air for critical applications such as breathing, medical, food, etc typically only requires air quality to Class 2.2.1 or Class 2.1.1.**
- **Purification of air to meet a Class 0 specification is only cost effective if carried out at the point of use.**

Application Guide

FRL to Valve: The chart below contains recommendations for the correct selection of Global Air Preparation units to suit the number and size of valves in a typical application.

	P31 Mini Series				P32 Compact Series						P33 Standard Series					
	Number of valves that would actuate at once															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Moduflex 1	Orange	Orange	Orange	Orange	Orange	White	White	White	White	White	White	White	White	White	White	White
Isys Micro	Orange	Orange	Orange	Orange	White	White	White	White	White	White	White	White	White	White	White	White
HB / Viking Xtreme	Orange	Orange	Orange	White	White	White	White	White	White	White	White	White	White	White	White	White
Moduflex 2	Orange	Orange	White	White	White	White	White	White	White	White	White	White	White	White	White	White
HA / Global ISO	Orange	White	White	White	White	White	White	White	White	White	White	White	White	White	White	White
See Larger Parker FRL Offering																

Actuator to FRL: The chart below contains recommendations for the correct selection of Global Air Preparation units suitable for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than the chart. The table is based on a Maximum cylinder speed of 0.5m/s

Cyl Ø mm Cyl Ø inches		Cylinder bore size														
		5 (5/16)	10 (7/16)	16 (9/16)	20 (3/4)	25 (1)	28 (1-1/8)	32 (1-1/4)	40 (1-1/2)	45 (1-3/4)	50 (2)	63 (2-1/2)	75 (3)	80 (3-1/4)	100 (4)	
Tube Ø mm Tube Ø inches		Tube diameter external														
		4 (5/32)	4 (5/32)	4 (5/32)	6 (1/4)	6 (1/4)	6 (1/4)	6 (1/4)	8 (5/16)	8 (5/16)	8 (5/16)	10 (3/8)	10 (3/8)	12 (1/2)	12 (1/2)	
Number of cylinders actuating at once	1	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	2	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	3	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	4	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	5	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	6	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	7	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	8	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	9	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
	10	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	White	White
		P31 Mini Series				P32 Compact Series				P33 Standard Series				P3Y Large Series		
																

Note: Data listed above is simply a guideline for a typical application only. Proper sizing and correct flow requirements must be taken into account.

Comprehensive Offering



P31 Mini Series
1/4" ports
40mm body width



P32 Compact Series
1/4", 3/8" and 1/2"
60mm body width



P33 Standard Series
1/2" and 3/4"
73mm body width



Filters

- 5µ particulate, 1.0µ and 0.01µ coalescing, and adsorber available as standard
- Transparent or metal bowl with manual or auto float drains standard



Regulators

- Available as stand alone, common port and electronic proportional
- Both relieving and non-relieving versions available



Filter / Regulators

- Compact design for space savings
- Available with all the same standard options as the filters and regulators



Lubricators

- Proportional oil delivery over a wide range of air flows
- Fill under pressure



Combinations

- Compact design for space savings
- Easily assembled
- Many configurations available



Accessories

- Solenoid operated soft start, quick dump, and soft start/quick dump valves
- Manifold blocks
- Ball style lockout / shutoff valve
- Repair kits, gauges, etc.

Air Preparation

P31 Mini Series

40mm body width
 1/4" Ported

Flows up to:	dm ³ /s	(scfm)
Filter	12	(25)
Coalescer	3,6	(7,5)
Regulator	32	(68)
Filter/Regulator	35	(74)
Lubricator	25	(52)

Features:

- Space saving integral gauge
- Manifold style regulators available
- OSHA compliant shut-off valves
- Soft-Start & Quick Dump valves
- Electronic Proportional Regulator



P32 Compact Series

60mm body width
 1/4", 3/8", & 1/2" Ported

Flows up to:	dm ³ /s	(scfm)
Filter	39	(82)
Coalescer	17	(36)
Regulator	78	(165)
Filter/Regulator	77	(164)
Lubricator	42	(90)

Features:

- Manifold style regulators available
- OSHA Compliant shut-off valves
- Soft-Start & Quick Dump valves
- Electronic Proportional Regulator



P33 Standard Series

73mm body width
 1/2" & 3/4" Ported

Flows up to:	dm ³ /s	(scfm)
Filter	48	(102)
Coalescer	20	(42)
Regulator	110	(233)
Filter/Regulator	109	(235)
Lubricator	71	(150)

Features:

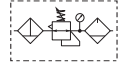
- OSHA Compliant shut-off valves
- Soft-Start & Quick Dump valves (Utilizes P32 size only)
- Electronic proportional regulator (Utilizes P32 size only)



Popular Combinations:



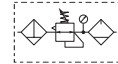
Filter + Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Pulse drain	Weight
1/4"	13 dm ³ /s 27 (scfm)	P31CB12GEMNTLW	0.47 kg (1.04 lbs)	P31CB12GEBNTLW	0.47 kg (1.04 lbs)



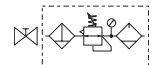
Filter/Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Pulse drain	Weight
1/4"	14 dm ³ /s 28 (scfm)	P31CA12GEMNTLW	0.35 kg (0.77 lbs)	P31CA12GEBNTLW	0.35kg (0.77 lbs)



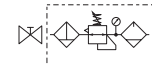
Ball Valve + Filter + Regulator + Lubricator Combinations, poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Pulse drain	Weight
1/4"	13 dm ³ /s 27 (scfm)	P31QB12GEMN5LW	0.62 kg (1.37 lbs)	P31QB12GEBN5LW	0.62 kg (1.37 lbs)



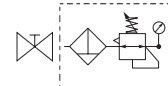
Ball Valve + Filter/Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Pulse drain	Weight
1/4"	14 dm ³ /s 28 (scfm)	P31QA12GEMNTLW	0.53 kg (1.17 lbs)	P31QA12GEBNTLW	0.53kg (1.17 lbs)



Ball Valve + Filter/Regulator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets



Port size	Flow	Manual drain	Weight	Pulse drain	Weight
1/4"	14 dm ³ /s 28 (scfm)	P31QN12GEMNTW	0.37 kg (0.82 lbs)	P31QN12GEBNTW	0.37 kg (0.82 lbs)

Options:

P 3 1

Combination	
Combination	C
Shut off + Combination	Q

2

Thread type	
BSPP	1
NPT	9

E

Drain type	
Manual drain	M
Pulse drain	B

N

Adjustment range	
With square gauge	
2 bar *	V
4 bar	S
8 bar **	T
Without gauge	
2 bar	Y
4 bar	L
8 bar	N
16 bar	H

L N **W**

Add only for options with Lubricator

Combination type	
F/R+L	A
F+R+L	B
F/R	N

Bowl type	
Poly bowl with bowl guard	G
Metal bowl without sight glass	M

Note: All bowl types are the same for each component

Example: If a "G" is specified for a F+L, both units would get a poly bowl with bowl guard.

Standard order code shown in bold.

* Unit comes with 0-4 bar, gauge respectively

** Unit comes with 0-10 bar, gauge respectively

Bar gauges fitted to BSPP

PSI gauges fitted to NPT

Flow with inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

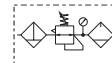
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Parker Hannifin Corporation
 Pneumatic Division - Europe

Popular Combinations:



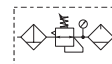
Filter + Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
1/4"	20 dm ³ /s 42 (scfm)	P32CB12GEMNGLNW	1.38 kg (3.04 lbs)	P32CB12GEANGLNW	1.38 kg (3.04 lbs)
3/8"	32 dm ³ /s 68 (scfm)	P32CB13GEMNGLNW	1.38 kg (3.04 lbs)	P32CB13GEANGLNW	1.38 kg (3.04 lbs)
1/2"	40 dm ³ /s 85 (scfm)	P32CB14GEMNGLNW	1.38 kg (3.04 lbs)	P32CB14GEANGLNW	1.38 kg (3.04 lbs)



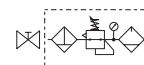
Filter/Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
1/4"	22 dm ³ /s 45 (scfm)	P32CA12GEMNGLNW	1.03 kg (2.27 lbs)	P32CA12GEANGLNW	1.03 kg (2.27 lbs)
3/8"	33 dm ³ /s 70 (scfm)	P32CA13GEMNGLNW	1.03 kg (2.27 lbs)	P32CA13GEANGLNW	1.03 kg (2.27 lbs)
1/2"	43 dm ³ /s 90 (scfm)	P32CA14GEMNGLNW	1.03 kg (2.27 lbs)	P32CA14GEANGLNW	1.03 kg (2.27 lbs)



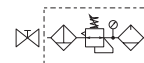
Ball Valve + Filter + Regulator + Lubricator Combinations, poly bowl
5 micron element, 116 psig (8 bar) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
1/4"	20 dm ³ /s 42 (scfm)	P32QB12GEMNGLNW	1.74 kg (3.84 lbs)	P32QB12GEANGLNW	1.74 kg (3.84 lbs)
3/8"	32 dm ³ /s 68 (scfm)	P32QB93GEMNGLNW	1.74 kg (3.84 lbs)	P32QB93GEANGLNW	1.74 kg (3.84 lbs)
1/2"	40 dm ³ /s 85 (scfm)	P32QB94GEMNGLNW	1.74 kg (3.84 lbs)	P32QB94GEANGLNW	1.74 kg (3.84 lbs)



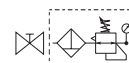
Ball Valve + Filter/Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
3/8"	33 dm ³ /s 70 (scfm)	P32QA13GEMNGLNW	1.58 kg (3.48 lbs)	P32QA13GEANGLNW	1.58 kg (3.48 lbs)
1/2"	43 dm ³ /s 90 (scfm)	P32QA14GEMNGLNW	1.58 kg (3.48 lbs)	P32QA14GEANGLNW	1.58 kg (3.48 lbs)



Ball Valve + Filter/Regulator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
3/8"	33 dm ³ /s 70 (scfm)	P32QN13GEMNGW	1.08 kg (2.38 lbs)	P32QN13GEANGW	1.08 kg (2.38 lbs)
1/2"	43 dm ³ /s 90 (scfm)	P32QN14GEMNGW	1.08 kg (2.38 lbs)	P32QN14GEANGW	1.08 kg (2.38 lbs)

Options:

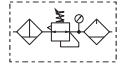
P 3 2					E		N		LN	W
Combination		Thread type		Port size		Drain type		Adjustment range		
Combination C		BSPP 1		1/4 2		Auto drain A		With round gauge		
Shut off + Combination ¹ Q		NPT 9		3/8 3		Manual drain M		2 bar; 0-30 psi; 0.2 MPa Z		
				1/2 4				4 bar; 60 psi; 0.4 MPa M		
								8 bar; 125 psi; 0.8 MPa G		
								Without gauge		
								2 bar Y		
								4 bar L		
								8 bar N		
								17 bar H		
Combination type		Bowl type								
F/R+L A		Poly bowl with bowl guard G								
F+R+L B		Metal bowl with sight glass S								
F/R N										
<p>Note: All bowl types are the same for each component</p> <p>Example: If a "G" is specified for a F+L, both units would get a poly bowl with bowl guard.</p> <p>Standard order code shown in bold.</p>										
<p>¹ Option not available with F+R+L and 1/4" port size</p> <p>* Unit comes with 0-4 bar, gauge respectively</p> <p>** Unit comes with 0-10 bar, gauge respectively</p> <p>Bar gauges fitted to BSPP</p> <p>PSI gauges fitted to NPT</p>										

Flow with inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

Popular Combinations:



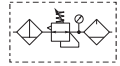
Filter + Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
1/2"	43 dm ³ /s 90 (scfm)	P33CB14GEMNGLNW	1.93 kg (4.25 lbs)	P33CB14GEANGLNW	1.93 kg (4.25 lbs)
3/4"	52 dm ³ /s 110 (scfm)	P33CB16GEMNGLNW	1.93 kg (4.25 lbs)	P33CB16GEANGLNW	1.93 kg (4.25 lbs)



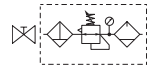
Filter/Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
1/2"	52 dm ³ /s 110 (scfm)	P33CA14GEMNGLNW	1.51 kg (3.33 lbs)	P33CA14GEANGLNW	1.51 kg (3.33 lbs)
3/4"	71 dm ³ /s 150 (scfm)	P33CA16GEMNGLNW	1.51 kg (3.33 lbs)	P33CA16GEANGLNW	1.51 kg (3.33 lbs)



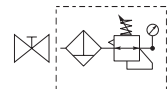
Ball Valve + Filter/Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
1/2"	52 dm ³ /s 110 (scfm)	P33QA14GEMNGLNW	2.25 kg (4.96 lbs)	P33QA14GEANGLNW	2.25 kg (4.96 lbs)
3/4"	71 dm ³ /s 150 (scfm)	P33QA16GEMNGLNW	2.25 kg (4.96 lbs)	P33QA16GEANGLNW	2.25 kg (4.96 lbs)



Ball Valve + Filter/Regulator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets



Port size	Flow	Manual drain	Weight	Auto drain	Weight
1/2"	52 dm ³ /s 110 (scfm)	P33QN14GEMNGW	1.59 kg (3.51 lbs)	P33QN14GEANGW	1.59 kg (3.51 lbs)
3/4"	71 dm ³ /s 150 (scfm)	P33QN16GEMNGW	1.59 kg (3.51 lbs)	P33QN16GEANGW	1.59 kg (3.51 lbs)

Options:

P 3 3					E		N		L N	W
Combination		Thread type		Port size		Drain type		Adjustment range		Add only for options with Lubricator
Combination C		BSPP 1		1/2 4		Auto drain A		With round gauge		
Shut off + Combination Q		NPT 9		3/4 6		Manual drain M		2 bar; 0-30 psi; 0.2 MPa Z		
Combination type		Bowl type						4 bar; 60 psi; 0.4 MPa M		
F/R+L A		Poly bowl with bowl guard G						8 bar; 125 psi; 0.8 MPa G		
F+R+L B		Metal bowl with sight glass S						Without gauge		
F/R N								2 bar Y		
								4 bar L		
								8 bar N		
								17 bar H		

Note: All bowl types are the same for each component

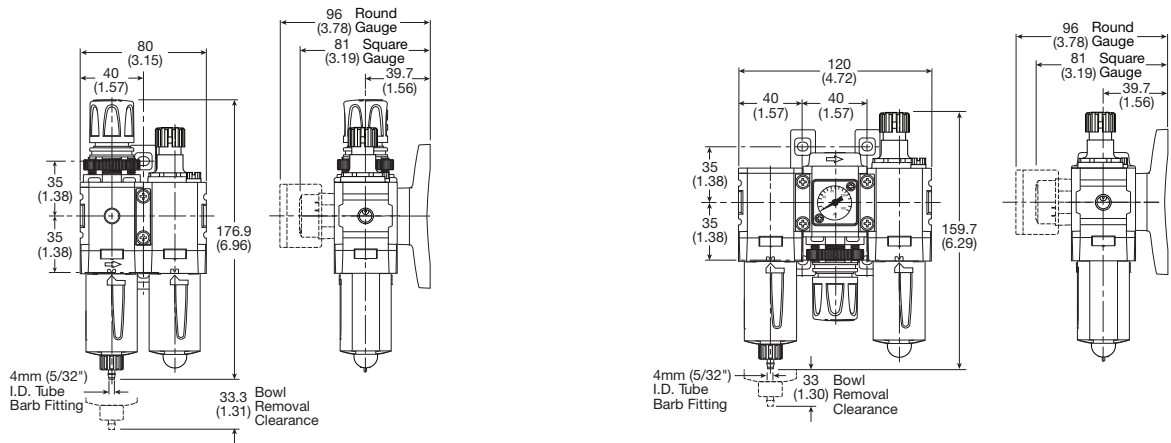
Example: If a "G" is specified for a F+L, both units would get a poly bowl with bowl guard.

Standard order code shown in bold.

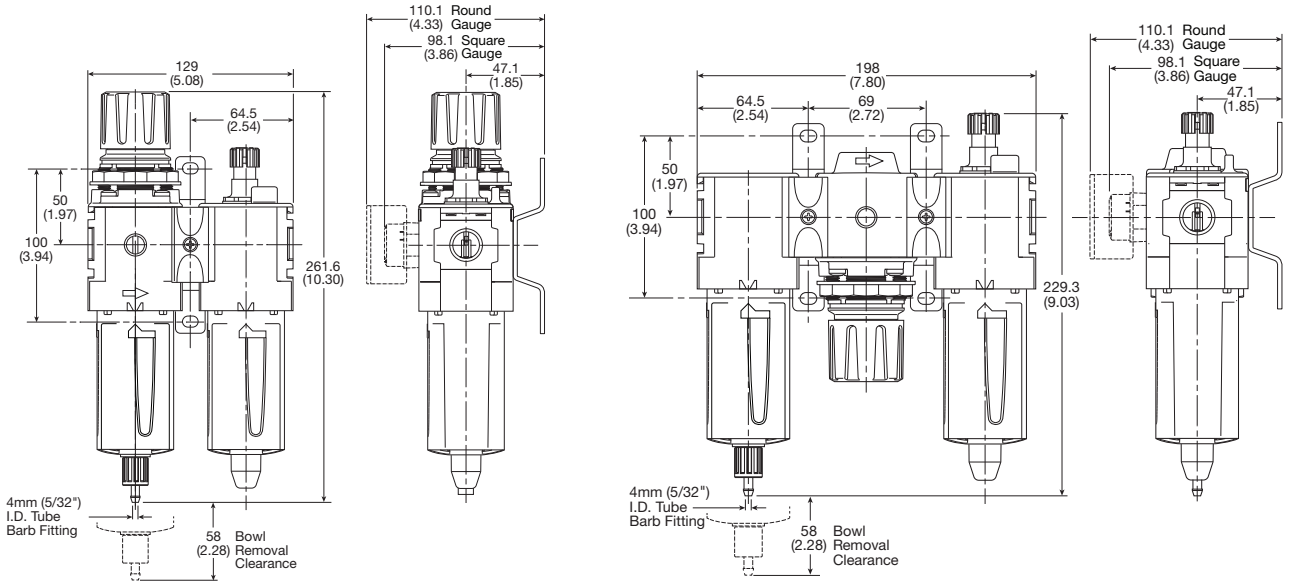
Flow with inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

Popular Combination Dimensions: mm (inches)

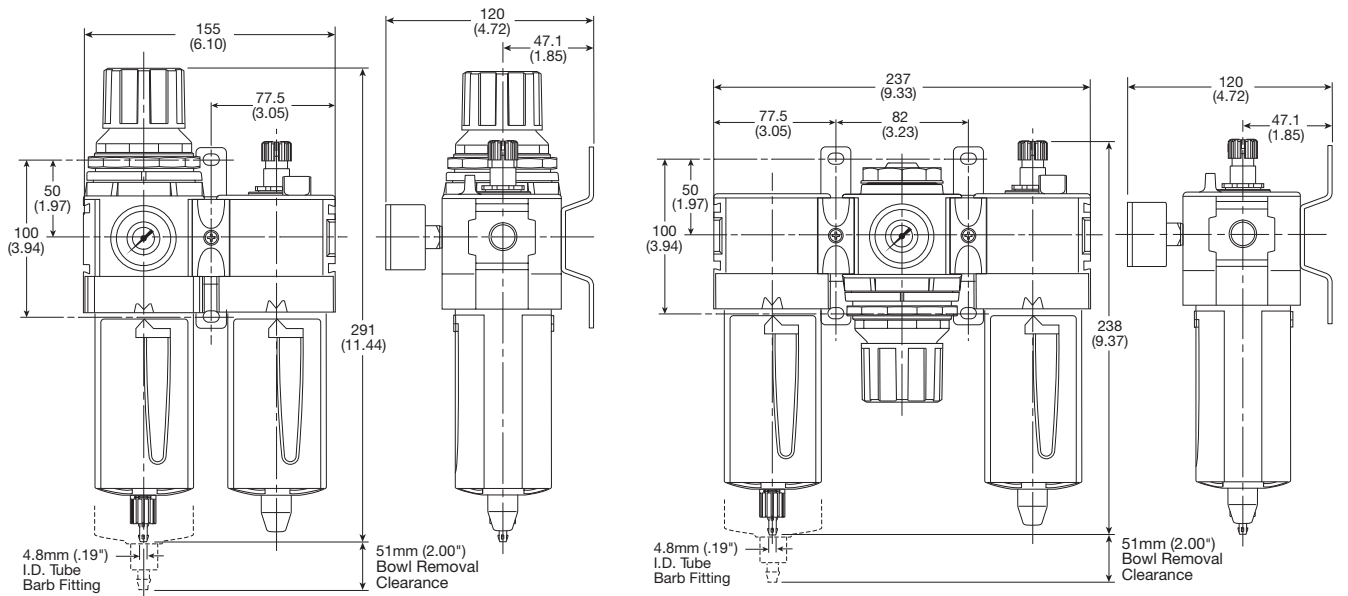
P31C



P32C



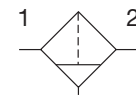
P33C



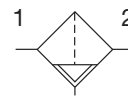
Mini Particulate Filter - P31



Symbols



Manual drain



Pulse drain

- Integral 1/4" ports (NPT & BSPP)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- One hand operation for easy element cartridge removal
- Positive bayonet latch to ensure correct & safe fitting

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
1/4"	Poly bowl - manual drain	12 (25)	10 (150)	124.8 (4.91)	40 (1.58)	40 (1.58)	P31FB12EGMN
1/4"	Poly bowl - pulse drain	12 (25)	10 (150)	119.6 (4.71)	40 (1.58)	40 (1.58)	P31FB12EGBN
1/4"	Metal bowl - manual drain	12 (25)	17 (250)	124.8 (4.91)	40 (1.58)	40 (1.58)	P31FB12EMMN
1/4"	Metal bowl - pulse drain	12 (25)	17 (250)	119.6 (4.71)	40 (1.58)	40 (1.58)	P31FB12EMBN

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 (4.9 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**

Specifications

Flow capacity *	1/4	12 dm ³ /s (25 scfm)
Operating temperature	Plastic bowl	-10°C to 52°C (14°F to 125°F)
	Metal bowl	-10°C to 65.5°C (14°F to 150°F)
Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)
Standard filtration		5 micron
Useful retention †		12 cm ³ (0.4 US oz.)
Port size	BSP / NPT	1/4
Weight		0.11 kg (0.24 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).
 † Useful retention refers to volume below the quiet zone baffle.

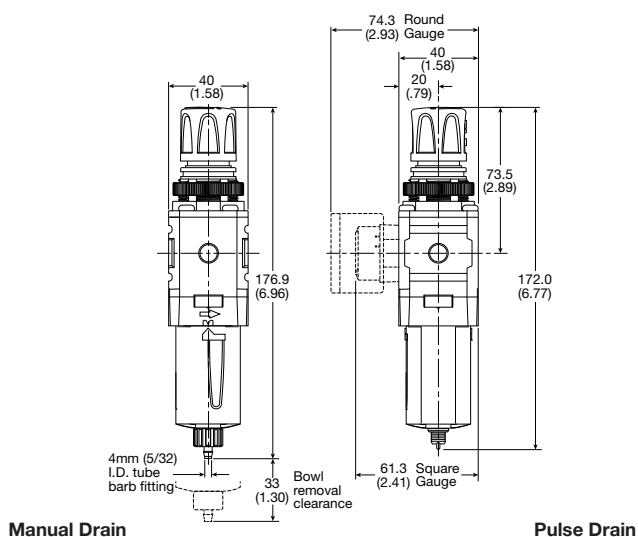
Air quality:

Within ISO 8573-1: 1991 Class 3 (Particulates)
 Within ISO 8573-1: 2010 Class 6 (Particulates)

Material Specifications

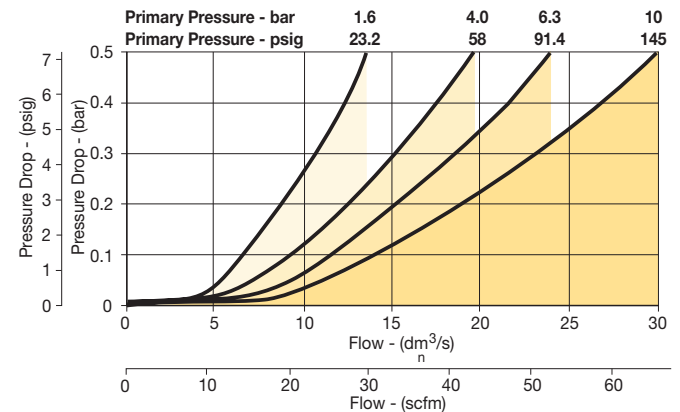
Body	Aluminum
Body cap	ABS
Bowl	Polycarbonate
Bowl guard	Nylon
Element retainer	Acetal
Baffle	Acetal
Filter element	Sintered polyethylene
Seals	Nitrile

Dimensions mm (inches)



Flow Charts

1/4 Filter



Repair and Mounting Kits

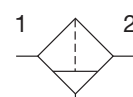
Plastic bowl / Bowl guard manual drain	P31KB00BGM
Metal bowl / w/o sight gauge manual drain	P31KB00BMM
Plastic bowl / Bowl guard pulse drain	P31KB00BGB
Metal bowl / w/o sight gauge pulse drain	P31KB00BMB
5µ particle filter element	P31KA00ESE †
C-bracket (fits to body)	P31KA00MW †
T-bracket with body connector	P31KA00MT †
Body connector	P31KA00CB †

† Standard order code shown in bold.

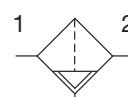
Compact Particulate Filter - P32



Symbols



Manual drain



Auto drain

- Integral 1/4", 3/8" or 1/2" ports (NPT & BSPP)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
1/4"	Poly bowl - manual drain	24 (50)	10 (150)	190.3 (7.49)	60 (2.36)	60 (2.36)	P32FB12EGMN
1/4"	Poly bowl - auto drain	24 (50)	10 (150)	184.3 (7.26)	60 (2.36)	60 (2.36)	P32FB12EGAN
1/4"	Metal bowl - manual drain	24 (50)	17 (250)	190.3 (7.49)	60 (2.36)	60 (2.36)	P32FB12ESMN
1/4"	Metal bowl - auto drain	24 (50)	17 (250)	184.3 (7.26)	60 (2.36)	60 (2.36)	P32FB12ESAN
3/8"	Poly bowl - manual drain	37 (78)	10 (150)	190.3 (7.49)	60 (2.36)	60 (2.36)	P32FB13EGMN
3/8"	Poly bowl - auto drain	37 (78)	10 (150)	184.3 (7.26)	60 (2.36)	60 (2.36)	P32FB13EGAN
3/8"	Metal bowl - manual drain	37 (78)	17 (250)	190.3 (7.49)	60 (2.36)	60 (2.36)	P32FB13ESMN
3/8"	Metal bowl - auto drain	37 (78)	17 (250)	184.3 (7.26)	60 (2.36)	60 (2.36)	P32FB13ESAN
1/2"	Poly bowl - manual drain	39 (82)	10 (150)	190.3 (7.49)	60 (2.36)	60 (2.36)	P32FB14EGMN
1/2"	Poly bowl - auto drain	39 (82)	10 (150)	184.3 (7.26)	60 (2.36)	60 (2.36)	P32FB14EGAN
1/2"	Metal bowl - manual drain	39 (82)	17 (250)	190.3 (7.49)	60 (2.36)	60 (2.36)	P32FB14ESMN
1/2"	Metal bowl - auto drain	39 (82)	17 (250)	184.3 (7.26)	60 (2.36)	60 (2.36)	P32FB14ESAN

† Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 (4.9 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**

Specifications

Flow capacity *	1/4	24 dm ³ /s (50 scfm)
	3/8	37 dm ³ /s (78 scfm)
	1/2	39 dm ³ /s (82 scfm)
Operating temperature	Plastic bowl	-25°C to 52°C (-13°F to 125°F)
	Metal bowl	-25°C to 65.5°C (-13°F to 150°F)
Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)
Standard filtration		5 micron
Useful retention †		51 cm ³ (1.7 US oz.)
Port size	BSPP / NPT	1/4, 3/8, 1/2
Weight		0.28 kg (0.62 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).

† Useful retention refers to volume below the quiet zone baffle.

Air quality:

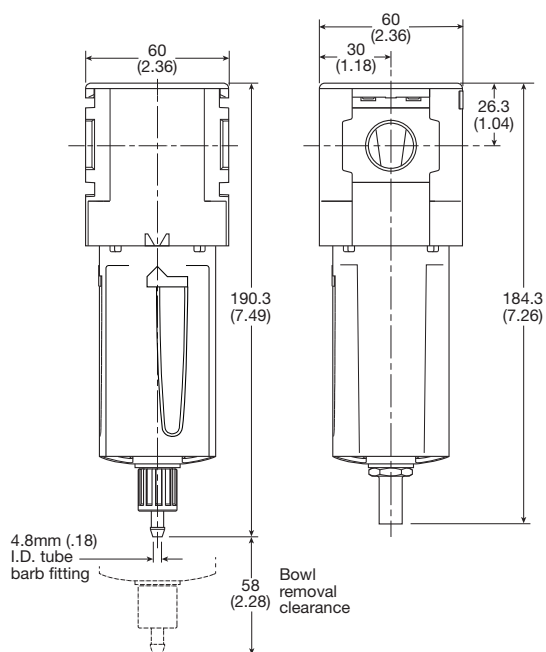
Within ISO 8573-1: 1991 Class 3 (Particulates)

Within ISO 8573-1: 2010 Class 6 (Particulates)

Material Specifications

Body		Aluminum
Body cap		ABS
Bowls	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Bowl guard		Nylon
Deflector		Polypropylene
Element retainer / Baffle		Acetal
Filter element		Sintered polyethylene
Seals		Nitrile
Sight gauge	Metal bowl	Nylon

Dimensions mm (inches)

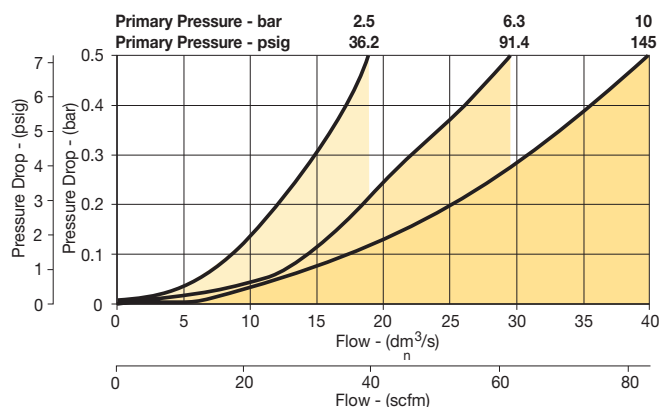


Manual Drain

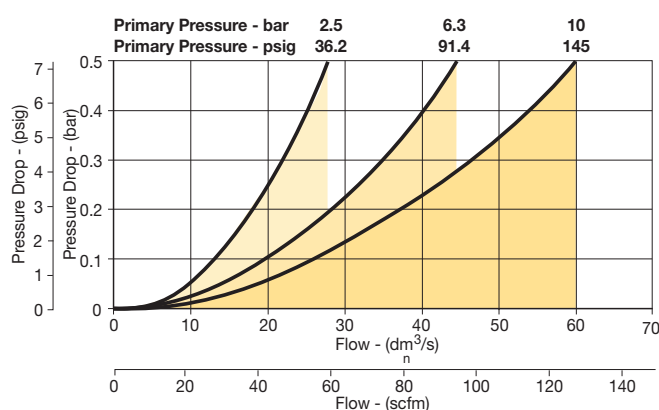
Automatic Drain

Flow Charts

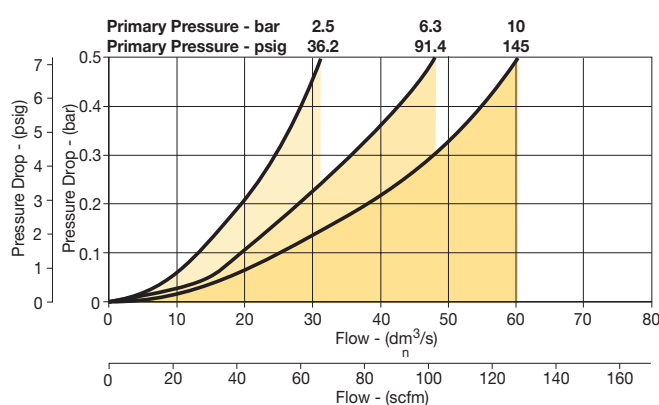
P32FB 1/4" Filter



P32FB 3/8" Filter



P32FB 1/2" Filter



Repair and Mounting Kits

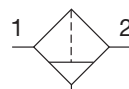
Plastic bowl / Bowl guard manual drain	P32KB00BGM
Metal bowl / Sight gauge manual drain	P32KB00BSM
Auto drain	P32KA00DA
5µ particle filter element	P32KA00ESE †
L-bracket (fits to body)	P32KA00ML †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P32KA00MT †
Body connector	P32KA00CB †

† Standard order code shown in bold.

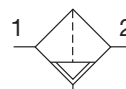
Standard Particulate Filter - P33



Symbols



Manual drain



Auto drain

- Integral 1/2" or 3/4" ports (NPT & BSPP)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
1/2"	Poly bowl - manual drain	40 (85)	10 (150)	213 (8.39)	73 (2.87)	73 (2.87)	P33FA14EGMN
1/2"	Poly bowl - auto drain	40 (85)	10 (150)	207 (8.15)	73 (2.87)	73 (2.87)	P33FA14EGAN
1/2"	Metal bowl - manual drain	40 (85)	17 (250)	213 (8.39)	73 (2.87)	73 (2.87)	P33FA14ESMN
1/2"	Metal bowl - auto drain	40 (85)	17 (250)	207 (8.15)	73 (2.87)	73 (2.87)	P33FA14ESAN
3/4"	Poly bowl - manual drain	48 (102)	10 (150)	213 (8.39)	73 (2.87)	73 (2.87)	P33FA16EGMN
3/4"	Poly bowl - auto drain	48 (102)	10 (150)	207 (8.15)	73 (2.87)	73 (2.87)	P33FA16EGAN
3/4"	Metal bowl - manual drain	48 (102)	17 (250)	213 (8.39)	73 (2.87)	73 (2.87)	P33FA16ESMN
3/4"	Metal bowl - auto drain	48 (102)	17 (250)	207 (8.15)	73 (2.87)	73 (2.87)	P33FA16ESAN

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 (4.9 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**

Specifications

Flow capacity *	1/2	40 dm ³ /s (85 scfm)
	3/4	48 dm ³ /s (102 scfm)
Operating temperature	Plastic bowl	-25°C to 52°C (-13°F to 125°F)
	Metal bowl	-25°C to 65.5°C (-13°F to 150°F)
Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)
Standard filtration		5 micron
Useful retention †		85 cm ³ (2.8 US oz.)
Port size	BSP / NPT	1/2, 3/4
Weight		0.46 kg (1.01 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).
 † Useful retention refers to volume below the quiet zone baffle.

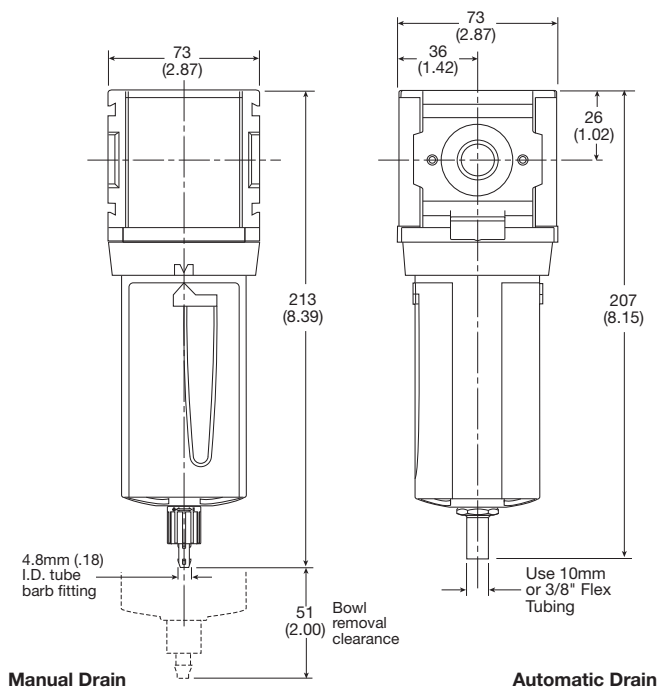
Air quality:

Within ISO 8573-1: 1991 Class 3 (Particulates)
 Within ISO 8573-1: 2010 Class 6 (Particulates)

Material Specifications

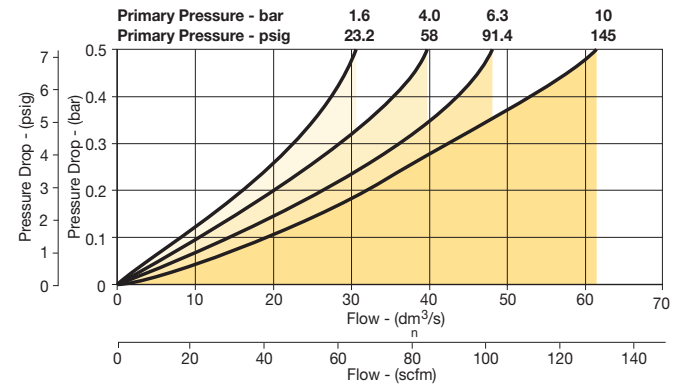
Body		Aluminum
Body cap		ABS
Bowls	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Bowl guard		Nylon
Deflector		Polypropylene
Element retainer / Baffle		Acetal
Filter element		Sintered polyethylene
Seals		Nitrile
Sight gauge	Metal bowl	Polycarbonate

Dimensions mm (inches)

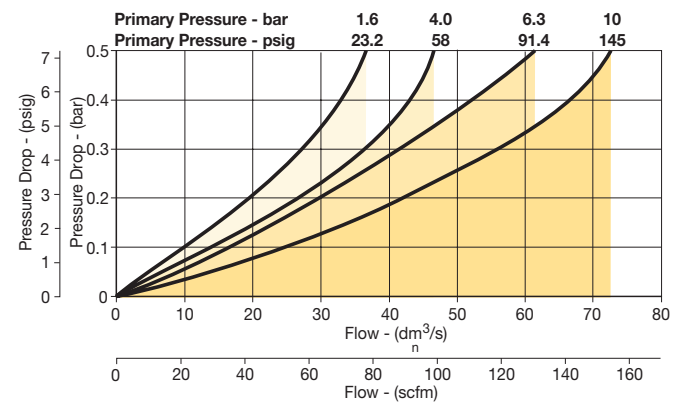


Flow Charts

1/2 Filter



3/4 Filter



Repair and Mounting Kits

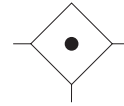
Plastic bowl / Bowl guard manual drain	P33KA00BGM
Metal bowl / Sight gauge manual drain	P33KA00BSM
Auto drain	P32KA00DA
5µ particle filter element	P33KA00ESE †
L-bracket (fits to body)	P33KA00ML †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P33KA00MT †
Body connector	P32KA00CB †

† Standard order code shown in bold.

Mini Coalescing and Adsorber Filters - P31



Symbol



- Integral 1/4" ports (NPT & BSPP)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- Differential Pressure Indicator (DPI) standard on Coalescing Filters
- Positive bayonet latch to ensure correct and safe fitting
- Adsorbing activated carbon element removes oil vapors and most hydrocarbons

Note: To optimize the life of coalescing element, it is advisable to install a P31F pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of an Adsorber it is advisable to install a P31 Coalescing Filter upstream of the Adsorber. Adsorber element should be replaced approximately every 1000 hours of service.

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
1/4"	Poly bowl - 0.01 micron - manual drain - with DPI	3.6 (7.5)	10 (150)	136.9 (5.39)	40 (1.58)	40 (1.58)	P31FB12DGMN
1/4"	Poly bowl - 0.01 micron - pulse drain - with DPI	3.6 (7.5)	10 (150)	131.7 (5.19)	40 (1.58)	40 (1.58)	P31FB12DGBN
1/4"	Metal bowl - 0.01 micron - manual drain - with DPI	3.6 (7.5)	10 (150)	136.9 (5.39)	40 (1.58)	40 (1.58)	P31FB12DMMN
1/4"	Metal bowl - 0.01 micron - pulse drain - with DPI	3.6 (7.5)	10 (150)	131.7 (5.19)	40 (1.58)	40 (1.58)	P31FB12DMBN
1/4"	Poly bowl - 1 micron - manual drain - with DPI	5.5 (12)	10 (150)	136.9 (5.39)	40 (1.58)	40 (1.58)	P31FB12QGMMN
1/4"	Poly bowl - 1 micron - pulse drain - with DPI	5.5 (12)	10 (150)	131.7 (5.19)	40 (1.58)	40 (1.58)	P31FB12QGBN
1/4"	Metal bowl - 1 micron - manual drain - with DPI	5.5 (12)	10 (150)	136.9 (5.39)	40 (1.58)	40 (1.58)	P31FB12QMMN
1/4"	Metal bowl - 1 micron - pulse drain - with DPI	5.5 (12)	10 (150)	131.7 (5.19)	40 (1.58)	40 (1.58)	P31FB12QMBN
1/4"	Poly bowl - Adsorber - manual drain	6 (12.7)	10 (150)	136.9 (5.39)	40 (1.58)	40 (1.58)	P31FB12AGMMN
1/4"	Metal bowl - Adsorber - manual drain	6 (12.7)	10 (150)	131.7 (5.19)	40 (1.58)	40 (1.58)	P31FB12AMMN

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.2 (3 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**

Specifications

Flow capacity		
1.0 micron coalescing		5.5 dm ³ /s (12 scfm)
0.01 micron coalescing		3.6 dm ³ /s (7.5 scfm)
Activated carbon adsorber		6 dm ³ /s (12.7 scfm)
Operating temperature	Plastic bowl	-10°C to 52°C (14°F to 125°F)
	Metal bowl	-10°C to 65.5°C (14°F to 150°F)
Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	10 bar (150 psig) [§]
Standard filtration 1.0 and 0.01 micron		
Adsorber	Max. oil carryover (ppm w/w) 0.003 @ 21°C (70°F)	
Useful retention † 12 cm ³ (0.4 US oz.)		
Port size	BSPP / NPT 1/4	
Weight 0.11 kg (0.24 lbs)		

Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.2 bar (3 psig), Saturated Element.

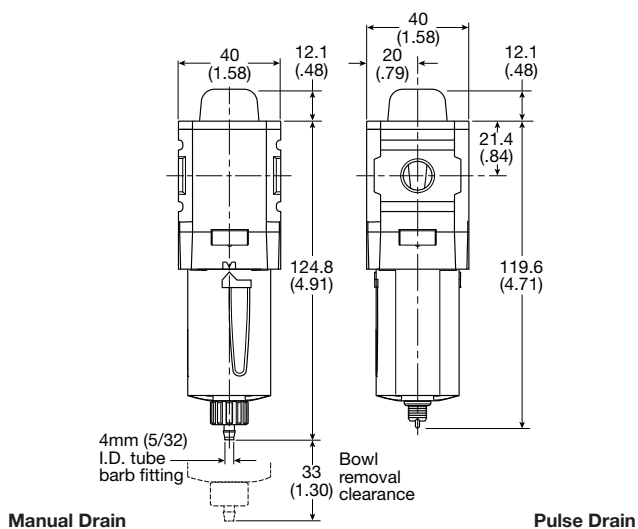
† Useful retention refers to volume below the quiet zone baffle.

§ Without pressure indicator (DPI) – max. pressure for metal bowl version is 17 bar (250 psig).

Material Specifications

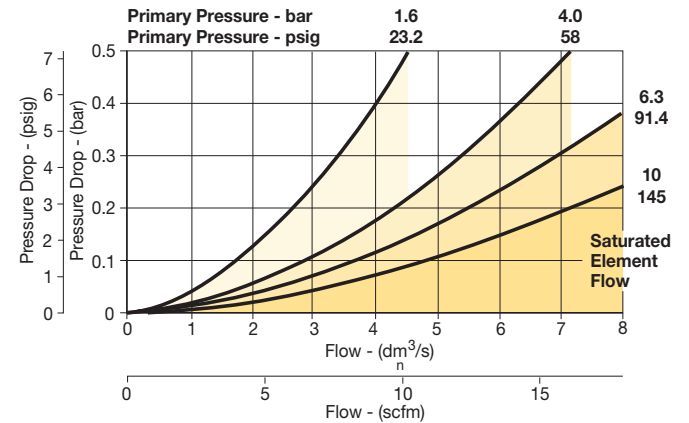
Body	Aluminum	
Body cap	ABS	
Bowl	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Filter element	1.0 and .01 micron	Borosilicate cloth
Adsorber	Activated carbon	
Seals	Nitrile	

Dimensions mm (inches)

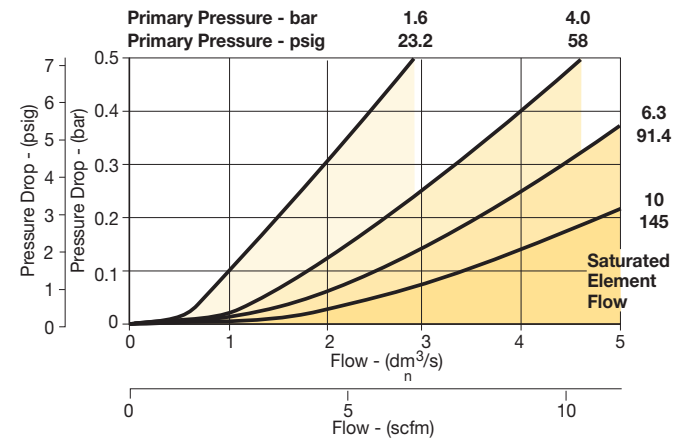


Flow Charts

P31 - 1.0 micron flow



P31 - 0.01 micron flow

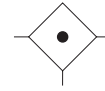


Repair and Mounting Kits

Plastic bowl / Bowl guard manual drain	P31KB00BGM
Metal bowl / w/o sight gauge manual drain	P31KB00BMM
Plastic bowl / Bowl guard pulse drain	P31KB00BGB
Metal bowl / w/o sight gauge pulse drain	P31KB00BMB
1µ coalescing filter element	P31KA00ES9 †
0.01µ coalescing filter element	P31KA00ESC †
Activated carbon adsorber filter element	P31KA00ESA †
C-bracket (fits to body)	P31KA00MW †
T-bracket with body connector	P31KA00MT †
Body connector	P31KA00CB †
Differential pressure indicator (replacement)	P31KB00RQ

† Standard order code shown in bold.

Compact Coalescing and Adsorber Filter - P32 Symbol



- Integral 1/4", 3/8" or 1/2" ports (NPT & BSPP)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- Differential Pressure Indicator (DPI) standard on Coalescing Filters
- Positive bayonet latch to ensure correct & safe fitting
- Adsorbing activated carbon element removes oil vapors and most hydrocarbons

Note: To optimize the life of coalescing element, it is advisable to install a P32F pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of an Adsorber it is advisable to install a P32 Coalescing Filter upstream of the Adsorber. Adsorber element should be replaced approximately every 1000 hours of service.

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
3/8"	Poly bowl - 0.01 micron - manual drain - with DPI	17 (36)	10 (150)	212.3 (8.36)	60 (2.36)	60 (2.36)	P32FB13DGMN
3/8"	Poly bowl - 0.01 micron - auto drain - with DPI	17 (36)	10 (150)	206.3 (8.12)	60 (2.36)	60 (2.36)	P32FB13DGAN
3/8"	Metal bowl - 0.01 micron - manual drain - with DPI	17 (36)	17 (250)	212.3 (8.36)	60 (2.36)	60 (2.36)	P32FB13DMMN
3/8"	Metal bowl - 0.01 micron - auto drain - with DPI	17 (36)	17 (250)	206.3 (8.12)	60 (2.36)	60 (2.36)	P32FB13DMAN
3/8"	Poly bowl - 1 micron - manual drain - with DPI	25 (53)	10 (150)	212.3 (8.36)	60 (2.36)	60 (2.36)	P32FB13QGMMN
3/8"	Poly bowl - 1 micron - auto drain - with DPI	25 (53)	10 (150)	206.3 (8.12)	60 (2.36)	60 (2.36)	P32FB13QGAMN
3/8"	Metal bowl - 1 micron - manual drain - with DPI	25 (53)	17 (250)	212.3 (8.36)	60 (2.36)	60 (2.36)	P32FB13QMMN
3/8"	Metal bowl - 1 micron - auto drain - with DPI	25 (53)	17 (250)	206.3 (8.12)	60 (2.36)	60 (2.36)	P32FB13QMAN
3/8"	Poly bowl - Adsorber - manual drain	40 (85)	10 (150)	212.3 (8.36)	60 (2.36)	60 (2.36)	P32FB13AGMN
3/8"	Metal bowl - Adsorber - manual drain	40 (85)	17 (250)	206.3 (8.12)	60 (2.36)	60 (2.36)	P32FB13AMMN

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.2 (3 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**

Replace **3** with 2 for 1/4", **3** with 4 for 1/2" ports

Specifications

Flow capacity		
1.0 micron coalescing		25 dm ³ /s (53 scfm)
0.01 micron coalescing		17 dm ³ /s (36 scfm)
Activated carbon adsorber		40 dm ³ /s (85 scfm)
Operating temperature		
Plastic bowl		-25°C to 52°C (-13°F to 125°F)
Metal bowl		-25°C to 65.5°C (-13°F to 150°F)
Max. supply pressure		
Plastic bowl		10 bar (150 psig)
Metal bowl		17 bar (250 psig) §
Standard filtration		
		1.0 and 0.01 micron
Adsorber Max. oil carryover (ppm w/w)		
		0.003 @ 21°C (70°F)
Useful retention †		
		51 cm ³ (1.7 US oz.)
Port size		
	BSP / NPT	1/4, 3/8, 1/2
Weight		
		0.32 kg (0.71 lbs)

Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.2 bar (3 psig), Saturated Element.

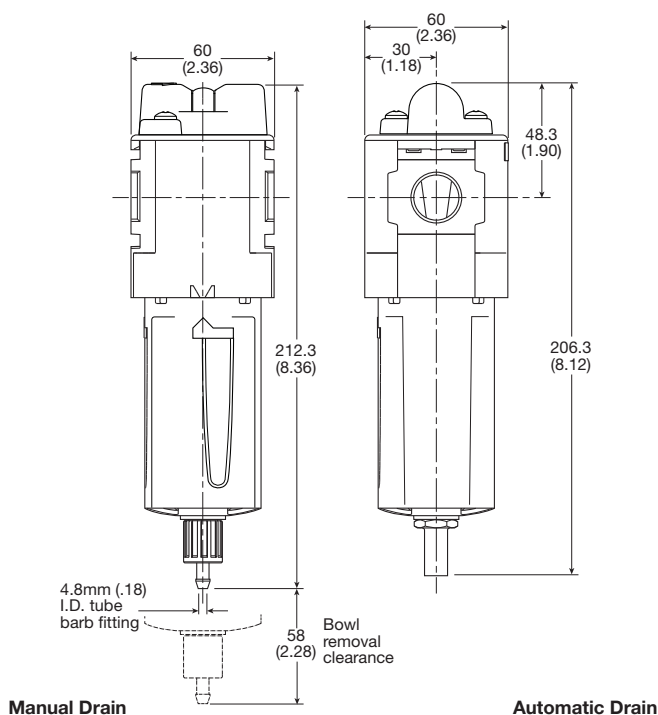
† Useful retention refers to volume below the quiet zone baffle.

§ Without pressure indicator (DPI) – max. pressure for metal bowl version is 17 bar (250 psig).

Material Specifications

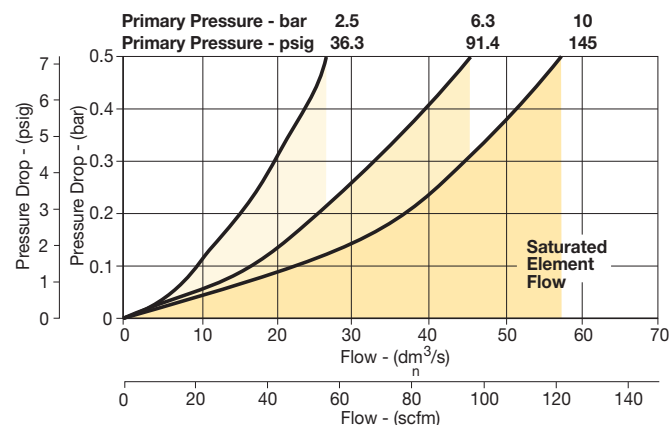
Body	Aluminum	
Body cap	ABS	
Bowls	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Filter element	1.0 and .01 micron	Borosilicate cloth
Adsorber	Activated carbon	
Seals	Nitrile	
Sight gauge	Metal bowl	Polycarbonate

Dimensions mm (inches)

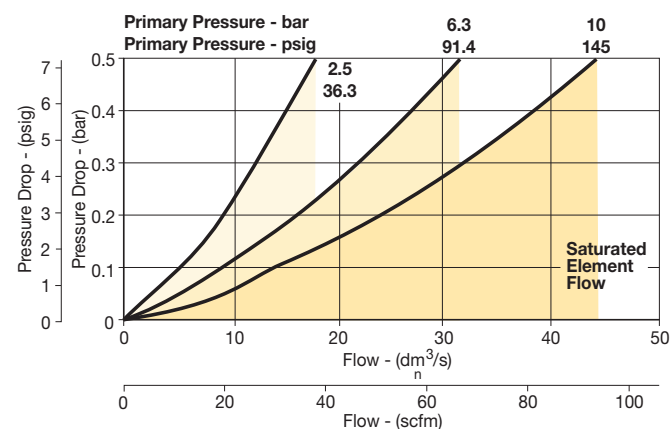


Flow Charts

P32 - 1.0 micron flow



P32 - 0.01 micron flow



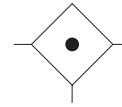
Repair and Mounting Kits

Plastic bowl / Bowl guard manual drain	P32KB00BGM
Metal bowl / Sight gauge manual drain	P32KB00BSM
Auto drain	P32KA00DA
1µ coalescing filter element	P32KA00ES9 †
0.01µ coalescing filter element	P32KA00ESC †
Activated carbon adsorber filter element	P32KA00ESA †
L-bracket (fits to body)	P32KA00ML †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P32KA00MT †
Body connector	P32KA00CB †
Differential pressure indicator (replacement)	P32KA00RQ

† Standard order code shown in bold.

Standard Coalescing and Adsorber Filter - P33

Symbol



- Integral 1/2" or 3/4" ports (NPT & BSPP)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- Differential Pressure Indicator (DPI) standard on Coalescing Filters
- Positive bayonet latch to ensure correct & safe fitting
- Adsorbing activated carbon element removes oil vapors and most hydrocarbons

Note: To optimize the life of coalescing element, it is advisable to install a P33F pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of an Adsorber it is advisable to install a P33 Coalescing Filter upstream of the Adsorber. Adsorber element should be replaced approximately every 1000 hours of service.

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
3/4"	Poly bowl - 0.01 micron - manual drain - with DPI	20 (42)	10 (150)	235 (9.25)	73 (2.87)	73 (2.87)	P33FA16DGMMN
3/4"	Poly bowl - 0.01 micron - auto drain - with DPI	20 (42)	10 (150)	229 (9.02)	73 (2.87)	73 (2.87)	P33FA16DGAN
3/4"	Metal bowl - 0.01 micron - manual drain - with DPI	20 (42)	17 (250)	235 (9.25)	73 (2.87)	73 (2.87)	P33FA16DMMN
3/4"	Metal bowl - 0.01 micron - auto drain - with DPI	20 (42)	17 (250)	229 (9.02)	73 (2.87)	73 (2.87)	P33FA16DMAN
3/4"	Poly bowl - 1 micron - manual drain - with DPI	32 (68)	10 (150)	235 (9.25)	73 (2.87)	73 (2.87)	P33FA16QGMMN
3/4"	Poly bowl - 1 micron - auto drain - with DPI	32 (68)	10 (150)	229 (9.02)	73 (2.87)	73 (2.87)	P33FA16QGAN
3/4"	Metal bowl - 1 micron - manual drain - with DPI	32 (68)	17 (250)	235 (9.25)	73 (2.87)	73 (2.87)	P33FA16QMMN
3/4"	Metal bowl - 1 micron - auto drain - with DPI	32 (68)	17 (250)	229 (9.02)	73 (2.87)	73 (2.87)	P33FA16QMAN
3/4"	Poly bowl - Adsorber - manual drain	34 (72)	10 (150)	235 (9.25)	73 (2.87)	73 (2.87)	P33FA16AGMMN
3/4"	Metal bowl - Adsorber - manual drain	34 (72)	17 (250)	229 (9.02)	73 (2.87)	73 (2.87)	P33FA16AMMN

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.2 (3 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**
Replace **6** with **4** for 1/2" ports

Specifications

Flow capacity		
1.0 micron coalescing		32 dm ³ /s (68 scfm)
0.01 micron coalescing		20 dm ³ /s (42 scfm)
Activated carbon adsorber		34 dm ³ /s (72 scfm)
Operating temperature		
Plastic bowl		-25°C to 52°C (-13°F to 125°F)
Metal bowl		-25°C to 65.5°C (-13°F to 150°F)
Max. supply pressure		
Plastic bowl		10 bar (150 psig)
Metal bowl		17 bar (250 psig) §
Standard filtration		
		1.0 and 0.01 micron
Adsorber Max. oil carryover (ppm w/w)		
		0.003 @ 21°C (70°F)
Useful retention †		
		85 cm ³ (2.8 US oz.)
Port size		
	BSPP / NPT	1/2, 3/4
Weight		
		0.50 kg (1.10 lbs)

Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.2 bar (3 psig),

Saturated Element.

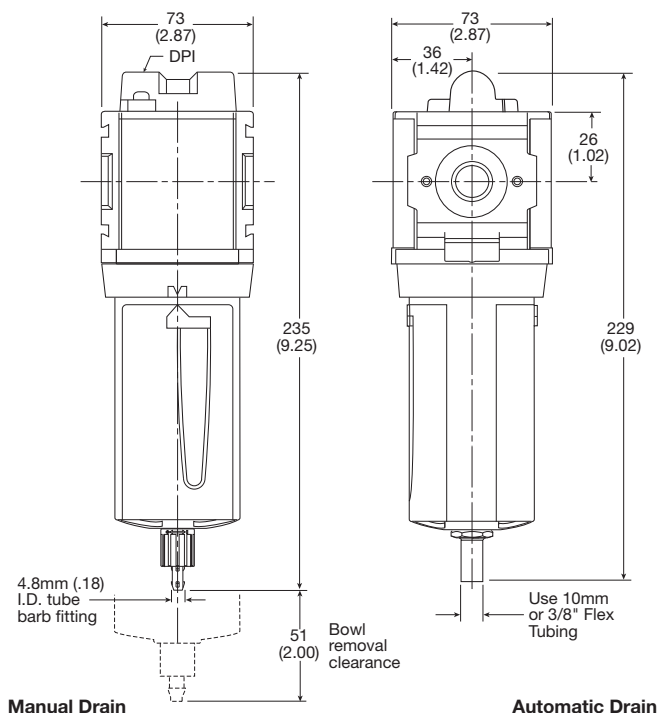
† Useful retention refers to volume below the quiet zone baffle.

§ Without pressure indicator (DPI) – max. pressure for metal bowl version is 17 bar (250 psig).

Material Specifications

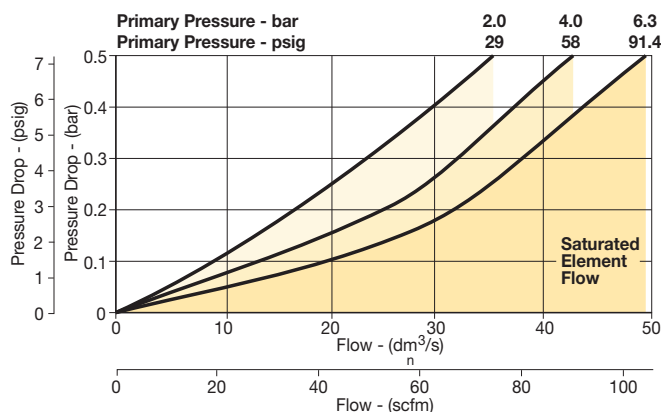
Body	Aluminum	
Body cap	ABS	
Bowls	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Filter element	1.0 and .01 micron	Borosilicate cloth
Adsorber	Activated carbon	
Seals	Nitrile	
Sight gauge	Metal bowl	Polycarbonate

Dimensions mm (inches)

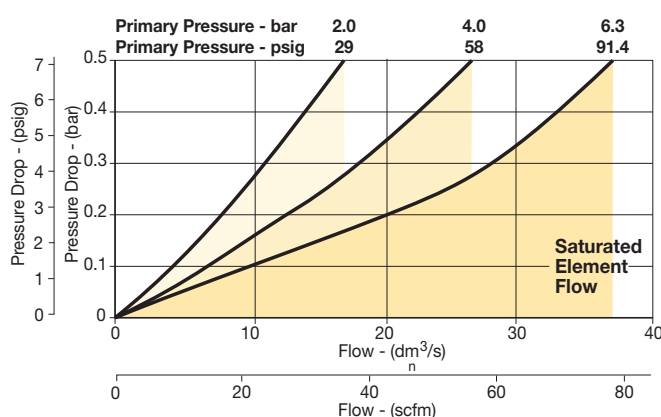


Flow Charts

P33 - 1.0 micron flow



P33 - 0.01 micron flow



Repair and Mounting Kits

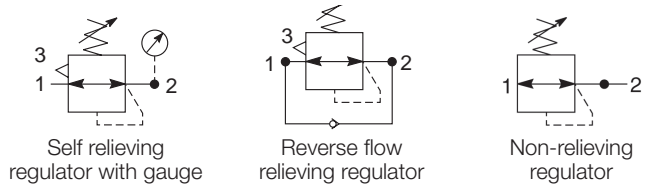
Plastic bowl / Bowl guard manual drain	P33KA00BGM
Metal bowl / Sight gauge manual drain	P33KA00BSM
Auto drain	P32KA00DA
1µ coalescing filter element	P33KA00ES9 †
0.01µ coalescing filter element	P33KA00ESC †
Activated carbon adsorber filter element	P33KA00ESA †
L-bracket (fits to body)	P33KA00ML †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P32KA00MT †
Body connector	P32KA00CB †
Differential pressure indicator (replacement)	P32KA00RQ

† Standard order code shown in bold.

Mini Regulator - P31



Symbols



- Integral 1/4" ports (NPT & BSPP)
- Robust but lightweight aluminum construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-16 bar (0-232 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Relieving & Non-relieving types
- Non-rising knob

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number
1/4"	8 bar (125 psig) relieving	32 (68)	20 (300)	104.1 (4.1)	40 (1.58)	40 (1.58)	P31RB12BNNP
1/4"	8 bar (125 psig) + gauge	32 (68)	20 (300)	104.1 (4.1)	40 (1.58)	61.3 (2.41)	P31RB12BNTF

‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3) psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P31RB			2		N		P
Basic series Global modular mini regulator P31RB		Thread type BSPP 1 NPT 9	Port size 1/4 2	Relief Relieving B Non-relieving N Reverse flow / Relieving R		Mounting P Plastic panel mount nut	
				Adjustment range			
		With square gauge		With round gauge			
	psig	bar					
1	= 30 *	V = 2 *		Z	2 bar; 30 psig; 0.2 MPa		
3	= 60	S = 4		M	4 bar; 60 psig; 0.4 MPa		
5	= 125	T = 8		G	8 bar; 125 psig; 0.8 MPa		
				J	16 bar; 232 psig; 1.6 MPa		
				Without gauge			
				Y	2 bar; 30 psig; 0.2 MPa		
				L	4 bar; 60 psig; 0.4 MPa		
				N	8 bar; 125 psig; 0.8 MPa		
				H	16 bar; 232 psig; 1.6 MPa		

* Unit comes with 0-4 bar or 0-60 psig gauge respectively.
Bar gauges fitted to BSPP
PSI gauges fitted to NPT

Standard order code shown in bold.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

WARNING
Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.

Specifications

Flow capacity *	1/4	32 dm ³ /s (68 scfm)
Operating temperature †	-20°C to 65.5°C (-4°F to 150°F)	
Max. supply pressure	20 bar (300 psig)	
Adjusting range pressure	0-2 bar (30 psig)	
	0-4 bar (60 psig)	
	0-8 bar (125 psig)	
	0-16 bar (232 psig)	
Port size	BSPP / NPT	1/4
Gauge port (2 ea.) **	BSPP / NPT	1/8
Weight	0.17 kg (0.37 lbs)	

* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

** Non-gauge option only.

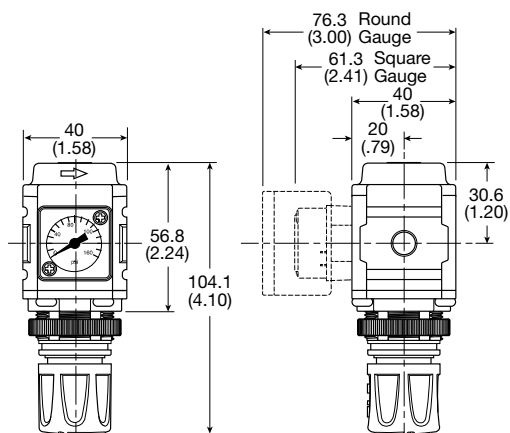
† Units with square gauges: -15°C to 65.5°C (5°F to 150°F)

Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Bonnet	PBT
Diaphragm assembly	Brass / Nitrile
Valve assembly	Brass / Nitrile
Springs	Steel
Seals	Nitrile
Panel nut	Acetal

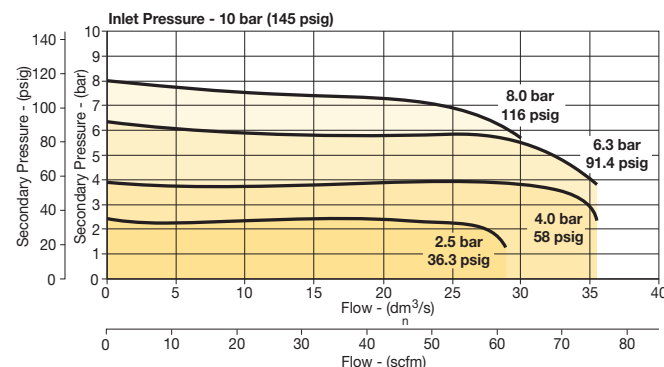
Dimensions mm (inches)

NOTE: 30 mm (1.20 in.) hole required for panel nut mounting.



Flow Charts

1/4 Regulator



Repair and Mounting Kits

Diaphragm repair kit - relieving	P31KB00RB
Diaphragm repair kit - non-relieving	P31KB00RC
Panel mount nut - aluminum	P31KA00MM
Panel mount nut - plastic	P31KA00MP
Angle bracket (attaches via panel nut)	P31KB00MR
C-bracket (fits to body)	P31KA00MW
T-bracket with body connector	P31KA00MT
Body connector	P31KA00CB

Gauges

Square flush mount gauge

0-4 bar	K4511SCR04B
0-11 bar	K4511SCR11B
0-60 psig	K4511SCR060
0-160 psig	K4511SCR160

Square with adapter kit

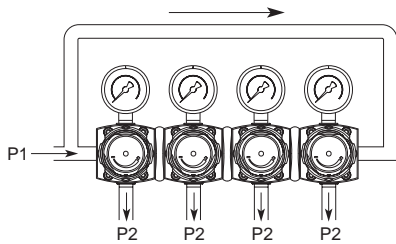
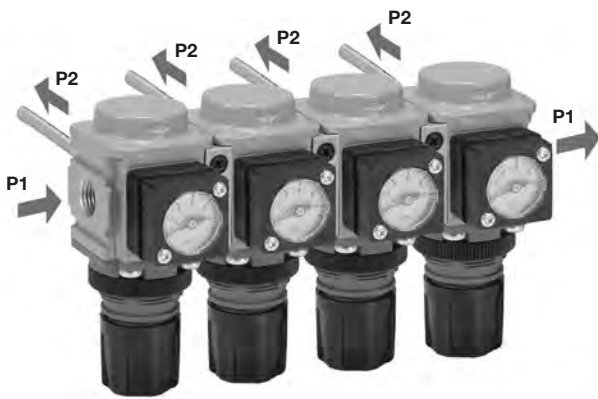
0-4 bar	P6G-PR11040
0-11 bar	P6G-PR11110
0-60 psig	P6G-PR90060
0-160 psig	P6G-PR90160

40mm Round 1/8" center back mount

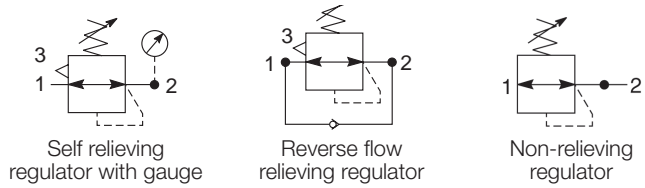
0-30 psig / 0-2 bar	P3D-KAB1AYN
0-60 psig / 0-4 bar	P3D-KAB1ALN
0-160 psig / 0-11 bar	P3D-KAB1ANN
0-300 psig / 0-20 bar	P3D-KAB1AHN

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Mini Common - P1 Regulator - P31



Symbols



- Manifold style regulator with line pressure on both sides
- Pressure output is at front or rear
- Inlet port 1/4" (NPT & BSPP)
- Working port 1/8"
- Robust construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-16 bar (0-232 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number
1/4"	8 bar (125 psig) relieving	20 (42)	20 (300)	104.1 (4.1)	40 (1.58)	40 (1.58)	P31HB12BNNP

† Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P31HB

2

N

P

Basic series

Global modular mini common regulator **P31HB**

Thread type

BSPP **1**

NPT 9

Port size †

1/4 **2**

† Working port 1/8".

Mounting

P Plastic panel mount nut

Relief

Relieving **B**

Non-relieving N

Reverse flow / Relieving R

Adjustment range			
With square gauge		Without gauge	
psig	bar	Y	Without gauge
1 = 30*	V = 2*	L	2 bar; 30 psig; 0.2 MPa
3 = 60	S = 4	N	4 bar; 60 psig; 0.4 MPa
5 = 125	T = 8	H	8 bar; 125 psig; 0.8 MPa
			16 bar; 232 psig; 1.6 MPa

* Unit comes with 0-4 bar or 0-60 psig gauge respectively.

Bar gauges fitted to BSPP
PSI gauges fitted to NPT

Standard order code shown in bold.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

⚠ WARNING

**Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed Maximum primary pressure rating.**

Specifications

Flow capacity *	1/4	20 dm ³ /s (42 scfm)
Operating temperature	-20°C to 65.5°C (-4°F to 150°F)	
Max. supply pressure	20 bar (300 psig)	
Adjusting range pressure	0-2 bar (30 psig) 0-4 bar (60 psig) 0-8 bar (125 psig) 0-16 bar (232 psig)	
P1 Port size (Inlet / Outlet)	BSPP / NPT	1/4
P2 Regulated ports (2 ea.)	BSPP / NPT	1/8
Weight	0.30 kg (0.66 lbs)	

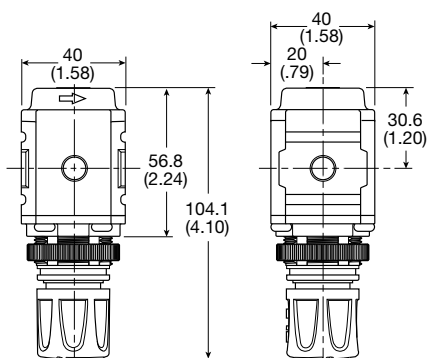
* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

Materials of Construction

Body	Aluminum
Adjustment knob	Acetal
Bonnet	33% Glass-filled PBT
Diaphragm assembly	Brass / Nitrile
Valve assembly	Brass / Nitrile

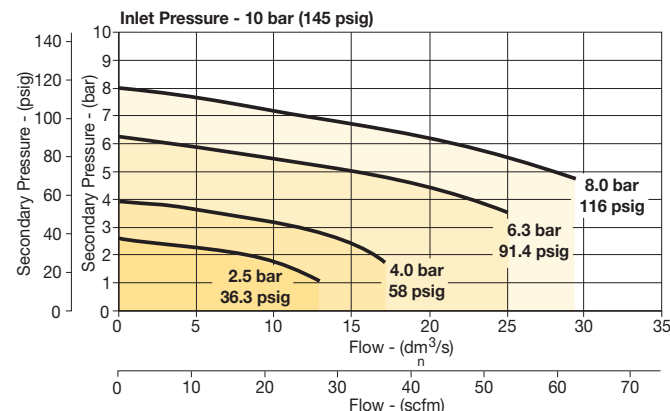
Dimensions mm (inches)

NOTE: 30 mm (1.20 in.) hole required for panel nut mounting.



Flow Charts

1/4 Common Regulator



Repair and Mounting Kits

Diaphragm repair kit - relieving	P31KB00RB
Diaphragm repair kit - non-relieving	P31KB00RC
Panel mount nut - aluminum	P31KA00MM
Panel mount nut - plastic	P31KA00MP
Angle bracket (attaches via panel nut)	P31KB00MR
T-bracket with body connector	P31KA00MT
Body connector	P31KA00CB

Gauges

Square with adapter kit

0-4 bar	P6G-PR11040
0-11 bar	P6G-PR11110
0-60 psig	P6G-PR90060
0-160 psig	P6G-PR90160

40mm Round 1/8" center back mount

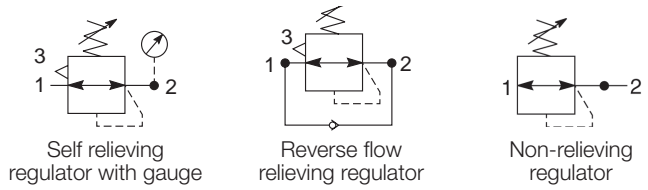
0-30 psig / 0-2 bar	P3D-KAB1AYN
0-60 psig / 0-4 bar	P3D-KAB1ALN
0-160 psig / 0-11 bar	P3D-KAB1ANN
0-300 psig / 0-20 bar	P3D-KAB1AHN

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Compact Regulator – P32



Symbols



- Integral 1/4", 3/8" or 1/2" ports (NPT & BSPP)
- Robust but lightweight aluminum construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number
1/4"	8 bar (125 psig) relieving	70 (148)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32RB12BNNP
1/4"	8 bar (125 psig) relieving + gauge	70 (148)	20 (300)	136 (5.4)	60 (2.36)	93 (3.66)	P32RB12BNGP
3/8"	8 bar (125 psig) relieving	78 (165)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32RB13BNNP
3/8"	8 bar (125 psig) relieving + gauge	78 (165)	20 (300)	136 (5.4)	60 (2.36)	93 (3.66)	P32RB13BNGP
1/2"	8 bar (125 psig) relieving	78 (165)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32RB14BNNP
1/2"	8 bar (125 psig) relieving + gauge	78 (165)	20 (300)	136 (5.4)	60 (2.36)	93 (3.66)	P32RB14BNGP

‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P32RB					N		P
Basic series Global modular compact regulator P32RB	Thread type BSPP 1 NPT 9	Port size 1/4 2 3/8 3 1/2 4	Relief Relieving B Non-relieving N	Mounting P Plastic panel mount nut			
				Adjustment range			
				With round gauge			
				Z 2 bar; 30 psig; 0.2 MPa			
				M 4 bar; 60 psig; 0.4 MPa			
				G 8 bar; 125 psig; 0.8 MPa			
				J 16 bar; 232 psig; 1.6 MPa			
				Without gauge			
				Y 2 bar; 30 psig; 0.2 MPa			
				L 4 bar; 60 psig; 0.4 MPa			
				N 8 bar; 125 psig; 0.8 MPa			
				H 16 bar; 232 psig; 1.6 MPa			

Note: Regulators will reverse flow as standard.

Standard order code shown in bold.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

WARNING

Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.

Specifications

Flow capacity *	1/4	70 dm ³ /s (148 scfm)
	3/8	78 dm ³ /s (165 scfm)
	1/2	78 dm ³ /s (165 scfm)
Operating temperature	-25°C to 65.5°C (-13°F to 150°F)	
Max. supply pressure	20 bar (300 psig)	
Adjusting range pressure	0-2 bar (30 psig)	
	0-4 bar (60 psig)	
	0-8 bar (125 psig)	
	0-17 bar (250 psig)	

Port size	BSPP / NPT	1/4, 3/8, 1/2
Gauge port (2 ea.)	BSPP / NPT	1/4
Weight	0.41 kg (0.90 lbs)	

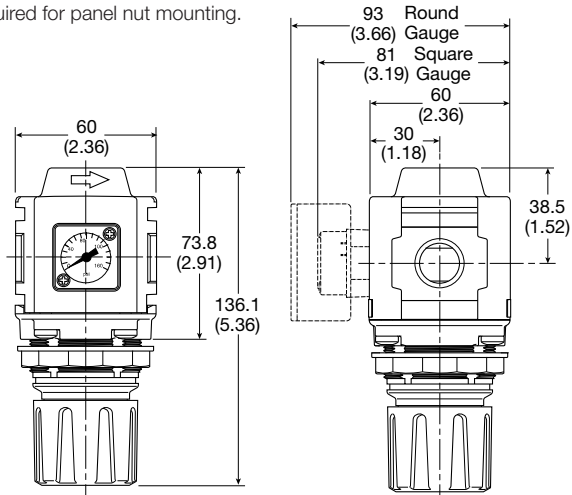
* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Bonnet	33% Glass-filled nylon
Diaphragm assembly	Nitrile / Zinc
Valve assembly	Brass / Nitrile
Spring, main regulating valve	Steel, Stainless Steel
Seals	Nitrile
Panel nut	Acetal

Dimensions mm (inches)

NOTE: 48 mm (1.90 in.) hole required for panel nut mounting.

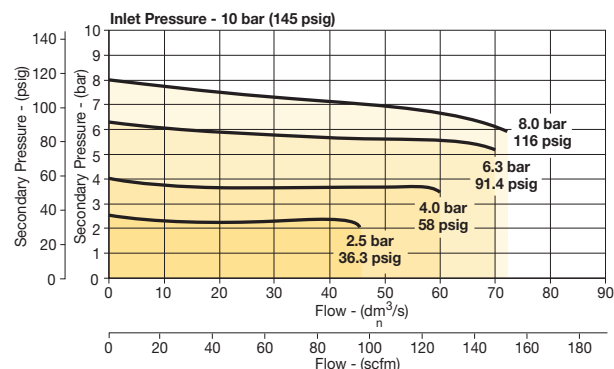


Repair and Mounting Kits

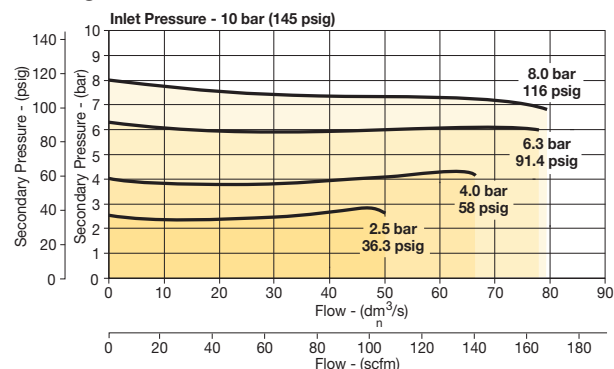
Diaphragm repair kit - relieving	P32KB00RB
Diaphragm repair kit - non-relieving	P32KB00RC
Panel mount nut - aluminum	P32KA00MM
Panel mount nut - plastic	P32KA00MP
Angle bracket (attaches via panel nut)	P32KB00MR
T-bracket with body connector	P32KA00MT
T-bracket	P32KA00MB
Body connector	P32KA00CB

Flow Charts

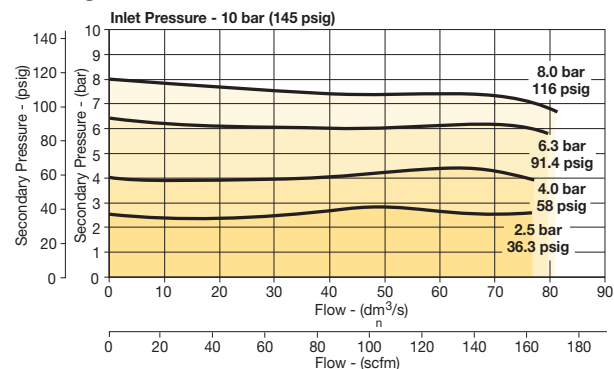
1/4 Regulator



3/8 Regulator



1/2 Regulator



Gauges

50mm (2") Round 1/4" center back mount

0-60 psig / 0-4 bar	P6G-ERB2040
0-160 psig / 0-11 bar	P6G-ERB2110
0-300 psig / 0-20 bar	P6G-ERB2200

Square with adapter kit

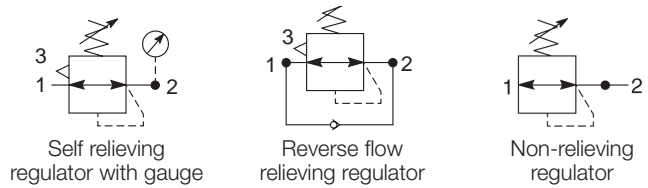
0-4 bar	P6G-PR11040
0-11 bar	P6G-PR11110
0-60 psig	P6G-PR90060
0-160 psig	P6G-PR90160

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Compact Semi-Precision Regulator – P32



Symbols



- Integral 1/4", 3/8" or 1/2" ports (NPT & BSPP)
- Robust but lightweight aluminum construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number †
1/4"	8 bar (125 psig) relieving	25 (53)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32RB12PNNP
1/4"	8 bar (125 psig) relieving + gauge	25 (53)	20 (300)	136 (5.4)	60 (2.36)	93 (3.66)	P32RB12PNGP
3/8"	8 bar (125 psig) relieving	25 (53)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32RB13PNNP
3/8"	8 bar (125 psig) relieving + gauge	25 (53)	20 (300)	136 (5.4)	60 (2.36)	93 (3.66)	P32RB13PNGP
1/2"	8 bar (125 psig) relieving	25 (53)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32RB14PNNP
1/2"	8 bar (125 psig) relieving + gauge	25 (53)	20 (300)	136 (5.4)	60 (2.36)	93 (3.66)	P32RB14PNGP

† Standard part numbers shown in bold. For other models refer to Options chart above.
 ‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P32RB					N		P
Basic series Global modular compact regulator	P32RB	Thread type BSPP 1 NPT 9	Port size 1/4 2 3/8 3 1/2 4	Relief Relieving P Non-relieving E			Mounting P Plastic panel mount nut
				Adjustment range			
				With round gauge			
				Z	2 bar; 30 psig; 0.2 MPa		
				M	4 bar; 60 psig; 0.4 MPa		
				G	8 bar; 125 psig; 0.8 MPa		
				J	17 bar; 250 psig; 1.7 MPa		
				Without gauge			
				Y	2 bar; 30 psig; 0.2 MPa		
				L	4 bar; 60 psig; 0.4 MPa		
				N	8 bar; 125 psig; 0.8 MPa		
				H	17 bar; 250 psig; 1.7 MPa		

Note: Regulators will reverse flow as standard.

Standard order code shown in bold.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

WARNING

Product rupture can cause serious injury.
 Do not connect regulator to bottled gas.
 Do not exceed Maximum primary pressure rating.

Specifications

Flow capacity *	1/4	25 dm ³ /s (53 scfm)
	3/8	25 dm ³ /s (53 scfm)
	1/2	25 dm ³ /s (53 scfm)
Effect of supply pressure variation	0.04 bar (0.6 PSIG) for 1.7 bar (25 PSIG) change in P1	
Operating temperature	-25°C to 65.5°C (-13°F to 150°F)	
Max. supply pressure	20 bar (300 psig)	
Adjusting range pressure	0-2 bar (30 psig) 0-4 bar (60 psig) 0-8 bar (125 psig) 0-17 bar (250 psig)	
Port size	BSPP / NPT	1/4, 3/8, 1/2
Gauge port (2 ea.)	BSPP / NPT	1/4
Weight	0.41 kg (0.90 lbs)	

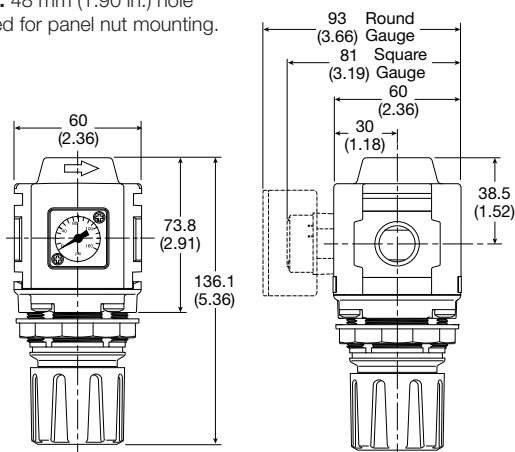
* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Bonnet	33% Glass-filled nylon
Diaphragm assembly	Nitrile / Zinc
Valve assembly	Brass / Nitrile
Spring, main regulating valve	Steel, Stainless Steel
Seals	Nitrile
Panel nut	Acetal

Dimensions mm (inches)

NOTE: 48 mm (1.90 in.) hole required for panel nut mounting.

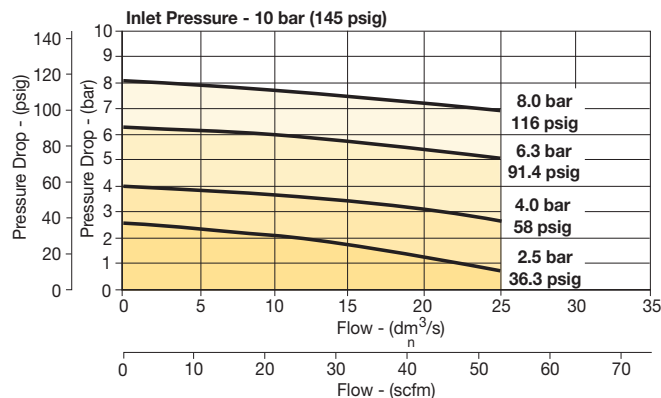


Repair and Mounting Kits

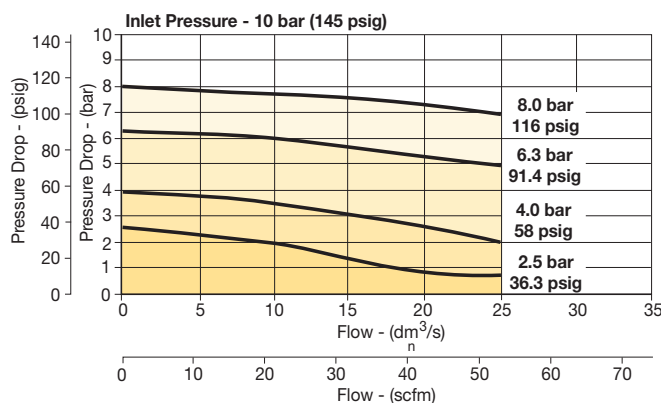
Diaphragm repair kit - relieving	P32KB00RB
Diaphragm repair kit - non-relieving	P32KB00RC
Panel mount nut - aluminum	P32KA00MM
Panel mount nut - plastic	P32KA00MP
Angle bracket (attaches via panel nut)	P32KB00MR
T-bracket with body connector	P32KA00MT
T-bracket	P32KA00MB
Body connector	P32KA00CB

Flow Charts

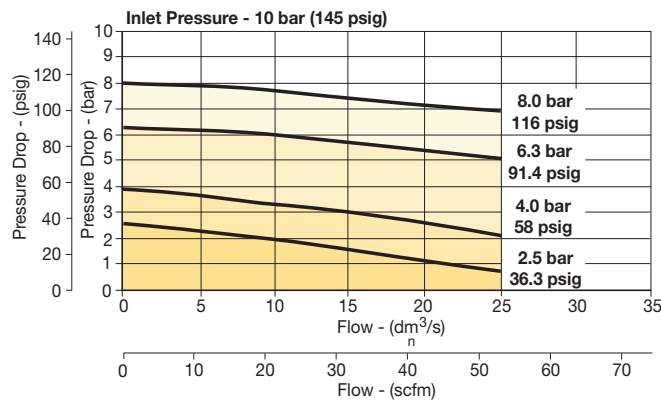
1/4 Regulator



3/8 Regulator



1/2 Regulator

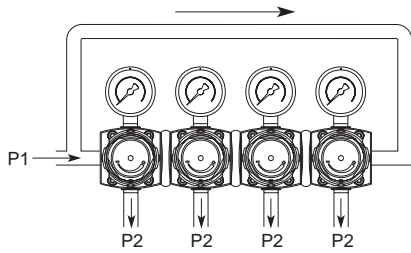


Gauges

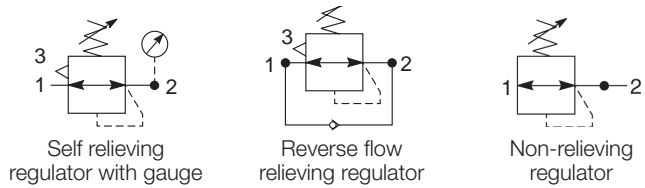
50mm (2") Round 1/4" center back mount	
0-60 psig / 0-4 bar	P6G-ERB2040
0-160 psig / 0-11 bar	P6G-ERB2110
0-300 psig / 0-20 bar	P6G-ERB2200

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Compact Common - P1 Regulator - P32



Symbols



- Manifold style regulator with line pressure on both sides.
- Pressure output is at front or rear.
- Inlet ports 1/4", 3/8" or 1/2" (NPT & BSPP)
- Working port 1/4"
- Robust construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number †
1/4"	8 bar (125 psig) relieving	30 (64)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32HB12BNNP
3/8"	8 bar (125 psig) relieving	30 (64)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32HB13BNNP
1/2"	8 bar (125 psig) relieving	30 (64)	20 (300)	136 (5.4)	60 (2.36)	60 (2.36)	P32HB14BNNP

† Standard part numbers shown in bold. For other models refer to Options chart above.
 ‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P32HB					N		P
Basic series Global modular compact regulator	P32HB	Thread type BSPP 1 NPT 9					Mounting P Plastic panel mount nut
		Port size † 1/4 2 3/8 3 1/2 4					Adjustment range With round gauge Z 2 bar; 30 psig; 0.2 MPa M 4 bar; 60 psig; 0.4 MPa G 8 bar; 125 psig; 0.8 MPa J 17 bar; 250 psig; 1.7 MPa Without gauge Y 2 bar; 30 psig; 0.2 MPa L 4 bar; 60 psig; 0.4 MPa N 8 bar; 125 psig; 0.8 MPa H 17 bar; 250 psig; 1.7 MPa
		† Working port 1/4".					
		Relief Relieving B Non-relieving N					
Note: Regulators will reverse flow as standard.							
Standard order code shown in bold.							

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

⚠ WARNING
Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.

Specifications

Flow capacity *	1/4	30 dm ³ /s (64 scfm)
	3/8	30 dm ³ /s (64 scfm)
	1/2	30 dm ³ /s (64 scfm)
Operating temperature	-25°C to 65.5°C (-13°F to 150°F)	
Max. supply pressure	20 bar (300 psig)	
Adjusting range pressure	0-2 bar (30 psig)	
	0-4 bar (60 psig)	
	0-8 bar (125 psig)	
	0-17 bar (250 psig)	
Port size	BSPP / NPT	1/4, 3/8, 1/2
Gauge port (2 ea.)	BSPP / NPT	1/4
Weight	0.50 kg (1.10 lbs)	

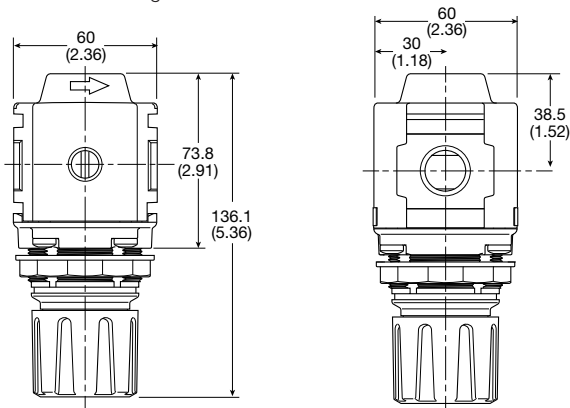
* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Bonnet	33% Glass-filled nylon
Diaphragm assembly	Nitrile / Zinc
Valve assembly	Brass / Nitrile
Spring, main regulating valve	Steel, Stainless Steel
Seals	Nitrile
Panel nut	Acetal

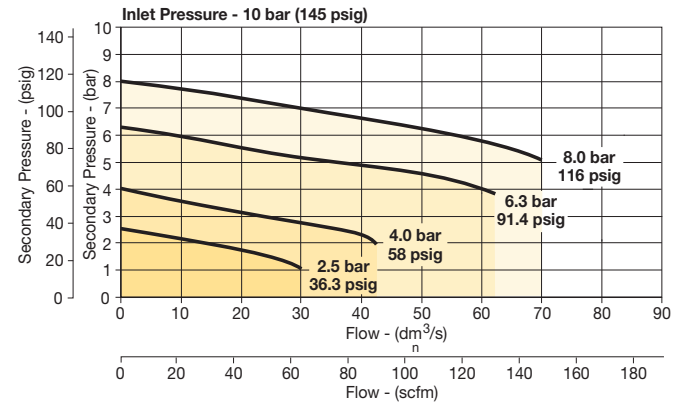
Dimensions mm (inches)

NOTE: 48 mm (1.90 in.) hole required for panel nut mounting.



Flow Charts

P32 Common Port Regulator



Repair and Mounting Kits

Diaphragm repair kit - relieving	P32KB00RB
Diaphragm repair kit - non-relieving	P32KB00RC
Panel mount nut - aluminum	P32KA00MM
Panel mount nut - plastic	P32KA00MP
Angle bracket (attaches via panel nut)	P32KB00MR
T-bracket with body connector	P32KA00MT
T-bracket	P32KA00MB
Body connector	P32KA00CB

Gauges

50mm (2") Round 1/4" center back mount

0-60 psig / 0-4 bar	P6G-ERB2040
0-160 psig / 0-11 bar	P6G-ERB2110
0-300 psig / 0-20 bar	P6G-ERB2200

Square with adapter kit

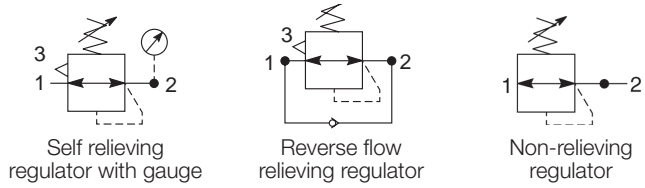
0-4 bar	P6G-PR11040
0-11 bar	P6G-PR11110
0-60 psig	P6G-PR90060
0-160 psig	P6G-PR90160

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Standard Regulator - P33



Symbols



- Integral 1/2" or 3/4" ports (NPT & BSPP)
- Robust but lightweight aluminum construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Part number †
1/2"	8 bar (125 psig) relieving	110 (233)	20 (300)	149 (5.87)	73 (2.87)	P33RA14BNNP
1/2"	8 bar (125 psig) relieving + gauge	110 (233)	20 (300)	149 (5.87)	108 (4.27)	P33RA14BNGP
3/4"	8 bar (125 psig) relieving	110 (233)	20 (300)	149 (5.87)	73 (2.87)	P33RA16BNNP
3/4"	8 bar (125 psig) relieving + gauge	110 (233)	20 (300)	149 (5.87)	108 (4.27)	P33RA16BNGP

† Standard part numbers shown in bold. For other models refer to Options chart above.
 ‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3) psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P33RA					N		P
Basic series	Global modular standard regulator	P33RA	Thread type	BSPP 1 NPT 9	Port size	1/2 4 3/4 6	Relief
							Relieving B Non-relieving N Reverse flow-relieving R
							Adjustment range
							With round gauge
							Z 2 bar; 30 psig; 0.2 MPa
							M 4 bar; 60 psig; 0.4 MPa
							G 8 bar; 125 psig; 0.8 MPa
							J 17 bar; 250 psig; 1.7 MPa
							Without gauge
							Y 2 bar; 30 psig; 0.2 MPa
							L 4 bar; 60 psig; 0.4 MPa
							N 8 bar; 125 psig; 0.8 MPa
							H 17 bar; 250 psig; 1.7 MPa
							Mounting
							P Plastic panel mount nut

Standard order code shown in bold.

CAUTION:
REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

⚠ WARNING

**Product rupture can cause serious injury.
 Do not connect regulator to bottled gas.
 Do not exceed Maximum primary pressure rating.**

Specifications

Flow capacity *	1/2	110 dm ³ /s (233 scfm)
	3/4	110 dm ³ /s (233 scfm)
Operating temperature	-25°C to 65.5°C (-13°F to 150°F)	
Max. supply pressure	20 bar (300 psig)	
Adjusting range pressure	0-2 bar (30 psig) 0-4 bar (60 psig) 0-8 bar (125 psig) 0-17 bar (250 psig)	
Port size	BSPP / NPT	1/2, 3/4
Gauge port (2 ea.)	BSPP / NPT	1/4
Weight	0.62 kg (1.37 lbs)	

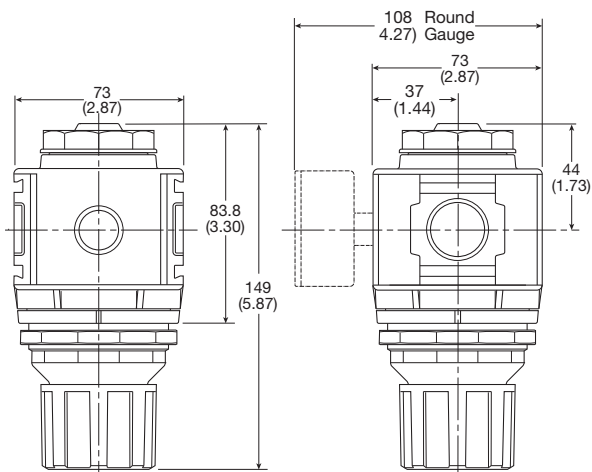
* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Body cap	ABS
Bonnet	33% Glass-filled nylon
Diaphragm assembly	Nitrile / Zinc
Valve assembly	Brass / Nitrile
Spring, main regulating valve	Steel, Stainless Steel
Seals	Nitrile
Panel nut	Acetal

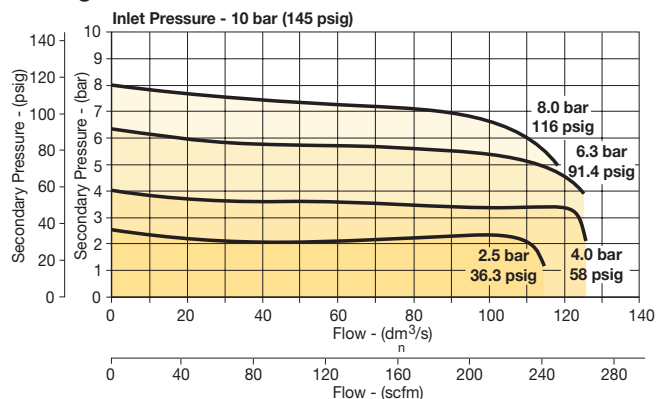
Dimensions mm (inches)

NOTE: 61 mm (2.40 in.) hole required for panel nut mounting.

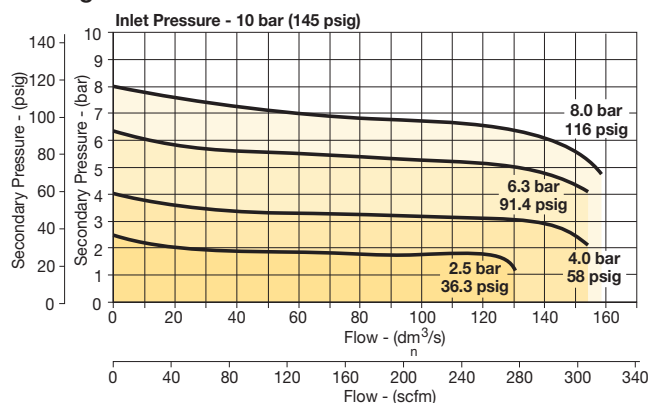


Flow Charts

1/2 Regulator



3/4 Regulator



Repair and Mounting Kits

Diaphragm repair kit - relieving	P33KA00RB
Diaphragm repair kit - non-relieving	P33KA00RC
Panel mount nut - aluminum	P33KA00MM
Panel mount nut - plastic	P33KA00MP
Angle bracket (attaches via panel nut)	P33KA00MR
T-bracket with body connector	P32KA00MT
T-bracket	P32KA00MB
Body connector	P32KA00CB

Gauges

50mm (2") Round 1/4" center back mount

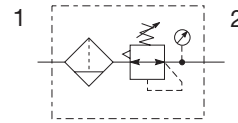
0-60 psig / 0-4 bar	P6G-ERB2040
0-160 psig / 0-11 bar	P6G-ERB2110
0-300 psig / 0-20 bar	P6G-ERB2200

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Mini Filter / Regulator - P31



Symbols



- Integral 1/4" ports (NPT & BSPP)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-16 bar (0-232 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number †
1/4"	8 bar (125 psig) relieving - poly bowl - manual drain	35 (74)	10 (150)	176.9 (6.96)	40 (1.58)	61.3 (2.41)	P31EB12EGMBNTP
1/4"	8 bar (125 psig) relieving - poly bowl - pulse drain	35 (74)	10 (150)	172.0 (6.77)	40 (1.58)	61.3 (2.41)	P31EB12EGBBNTP
1/4"	8 bar (125 psig) relieving - metal bowl - manual drain	35 (74)	17 (250)	176.9 (6.96)	40 (1.58)	61.3 (2.41)	P31EB12EMMBNTP
1/4"	8 bar (125 psig) relieving - metal bowl - pulse drain	35 (74)	17 (250)	172.0 (6.77)	40 (1.58)	61.3 (2.41)	P31EB12EMBBNTP

† Standard part numbers shown in bold. For other models refer to Options chart above.
 ‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P31EB			2	E			N		P
Basic series Global modular mini filter / regulator P31EB		Thread type BSPP 1 NPT 9		Element 5µ Element E		Relief B Relieving N Non-relieving		Mounting P Plastic panel mount nut	
		Port size 1/4 2				Drain type B Pulse drain M Manual drain			
		Bowl type Poly bowl with bowl guard G Metal bowl without sight gauge M				Adjustment range			
						With square gauge		With round gauge	
						psig	bar	Z	2 bar; 30 psig; 0.2 MPa
						1 = 30 *	V = 2 *	M	4 bar; 60 psig; 0.4 MPa
						3 = 60	S = 4	G	8 bar; 125 psig; 0.8 MPa
						5 = 125	T = 8	J [§]	16 bar; 232 psig; 1.6 MPa
						Without gauge			
								Y	2 bar; 30 psig; 0.2 MPa
								L	4 bar; 60 psig; 0.4 MPa
								N	8 bar; 125 psig; 0.8 MPa
								H [§]	16 bar; 232 psig; 1.6 MPa

* Unit comes with 0-4 bar or 0-60 psig gauge respectively.
 § Not available with poly bowl with bowl guard.
 Bar gauges fitted to BSPP
 PSI gauges fitted to NPT

Standard order code shown in bold.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

WARNING

**Product rupture can cause serious injury.
 Do not connect regulator to bottled gas.
 Do not exceed Maximum primary pressure rating.**

Specifications

Flow capacity *	1/4	35 dm ³ /s (74 scfm)
Operating temperature †	Plastic bowl	-10°C to 52°C (14°F to 125°F)
	Metal bowl	-10°C to 65.5°C (14°F to 150°F)
Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)
Standard filtration	5 micron	
Useful retention	12 cm ³ (0.4 US oz.)	
Adjusting range pressure	0-2 bar (30 psig)	
	0-4 bar (60 psig)	
	0-8 bar (125 psig)	
	0-16 bar (232 psig)	
Port size	BSP / NPT	1/4
Gauge port (2 ea.) **	BSP / NPT	1/8
Weight	0.19 kg (0.42 lbs)	

* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

** Non-gauge option only.

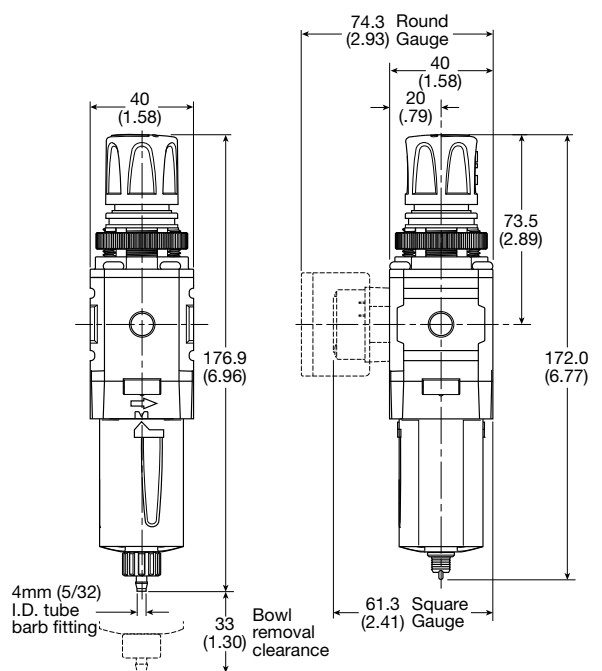
† Units with square gauges: -15°C to 65.5°C (5°F to 150°F)

Air quality:

Within ISO 8573-1: 1991 Class 3 (Particulates)

Within ISO 8573-1: 2010 Class 6 (Particulates)

Dimensions mm (inches)



Manual Drain

Pulse Drain

Gauges

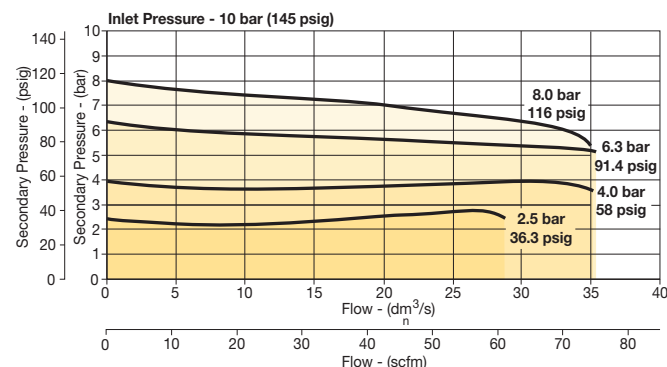
Square flush mount gauge

0-4 bar	K4511SCR04B
0-11 bar	K4511SCR11B
0-60 psig	K4511SCR060
0-160 psig	K4511SCR160

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Flow Charts

1/4 Filter / Regulator



Material Specifications

Body	Aluminum	
Adjustment knob	Acetal	
Body cap	ABS	
Bonnet	PBT	
Bowl	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Bowl guard	Nylon	
Filter element	Polyethylene	
Seals	Nitrile	
Springs	Steel	
Valve assembly	Brass / Nitrile	
Diaphragm assembly	Brass / Nitrile	
Panel nut	Acetal	

Repair and Mounting Kits

Plastic bowl / Bowl guard manual drain	P31KB00BGM
Plastic bowl / Bowl guard pulse drain	P31KB00BGB
Metal bowl / w/o sight gauge pulse drain	P31KB00BMB
5µ particle filter element	P31KA00ESE †
Diaphragm repair kit - Relieving	P31KB00RB †
Diaphragm repair kit - Non-relieving	P31KB00RC †
Panel mount nut - aluminum	P32KA00MM †
Panel mount nut - plastic	P32KA00MP †
Angle bracket (attaches via panel nut)	P31KB00MR †
C-bracket (fits to body)	P31KA00MW †
T-bracket with body connector	P31KA00MT †
Body connector	P31KA00CB †

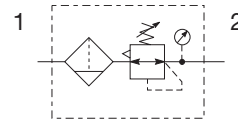
† Standard order code shown in bold.

Square with adapter kit

0-4 bar	P6G-PR11040
0-11 bar	P6G-PR11110
0-60 psig	P6G-PR90060
0-160 psig	P6G-PR90160

Compact Filter / Regulator - P32

Symbols



- Integral 1/4", 3/8" or 1/2" ports (NPT & BSPP)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number †
1/4"	8 bar (125 psig) relieving - poly bowl - manual drain	70 (148)	10 (150)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB12EGMBNGP
1/4"	8 bar (125 psig) relieving - poly bowl - auto drain	70 (148)	10 (150)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB12EGABNGP
1/4"	8 bar (125 psig) relieving - metal bowl - manual drain	70 (148)	17 (250)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB12ESMBNGP
1/4"	8 bar (125 psig) relieving - metal bowl - auto drain	70 (148)	17 (250)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB12ESABNGP
3/8"	8 bar (125 psig) relieving - poly bowl - manual drain	75 (158)	10 (150)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB13EGMBNGP
3/8"	8 bar (125 psig) relieving - poly bowl - auto drain	75 (158)	10 (150)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB13EGABNGP
3/8"	8 bar (125 psig) relieving - metal bowl - manual drain	75 (158)	17 (250)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB13ESMBNGP
3/8"	8 bar (125 psig) relieving - metal bowl - auto drain	75 (158)	17 (250)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB13ESABNGP
1/2"	8 bar (125 psig) relieving - poly bowl - manual drain	77 (164)	10 (150)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB14EGMBNGP
1/2"	8 bar (125 psig) relieving - poly bowl - auto drain	77 (164)	10 (150)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB14EGABNGP
1/2"	8 bar (125 psig) relieving - metal bowl - manual drain	77 (164)	17 (250)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB14ESMBNGP
1/2"	8 bar (125 psig) relieving - metal bowl - auto drain	77 (164)	17 (250)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB14ESABNGP

† Standard part numbers shown in bold. For other models refer to Options chart above.

‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3) psig set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P32EB				E				N		P
Basic series	Thread type	Element	Relief	Drain type	Mounting	Adjustment range				
Global modular compact filter / regulator	BSPP 1 NPT 9	5µ Element E	B Relieving N Non-relieving	M Manual drain A Auto drain	P Plastic panel mount nut	With square gauge		With round gauge		
P32EB	Port size					psig	bar	Z	2 bar; 30 psig; 0.2 MPa	
	1/4 2 3/8 3 1/2 4					1 = 30*	V = 2*	M	4 bar; 60 psig; 0.4 MPa	
	Bowl type					3 = 60	S = 4	G	8 bar; 125 psig; 0.8 MPa	
	Poly bowl with bowl guard G Metal bowl with sight gauge S					5 = 125	T = 8	J§	17 bar; 250 psig; 1.7 MPa	
								Without gauge		
								Y	2 bar; 30 psig; 0.2 MPa	
								L	4 bar; 60 psig; 0.4 MPa	
								N	8 bar; 125 psig; 0.8 MPa	
								H§	17 bar; 250 psig; 1.7 MPa	

* Unit comes with 0-4 bar or 0-60 psig gauge respectively.
§ Not available with poly bowl with bowl guard.

Standard order code shown in bold.

Specifications

Flow capacity *	1/4	70 dm ³ /s (148 scfm)
	3/8	75 dm ³ /s (158 scfm)
	1/2	77 dm ³ /s (164 scfm)

Operating temperature	Plastic bowl	-25°C to 52°C (-13°F to 125°F)
	Metal bowl	-25°C to 65.5°C (-13°F to 150°F)

Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)

Standard filtration	5 micron
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Useful retention†	51 cm ³ (1.7 US oz.)
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Adjusting range pressure	0-2 bar (30 psig)
	0-4 bar (60 psig)
	0-8 bar (125 psig)
	0-17 bar (250 psig)

Port size	BSPP / NPT	1/4, 3/8, 1/2
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Gauge port (2 ea.)	BSPP / NPT	1/4
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Weight	0.53 kg (1.17 lbs)
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* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).
 † Useful retention refers to volume below the quiet zone baffle.

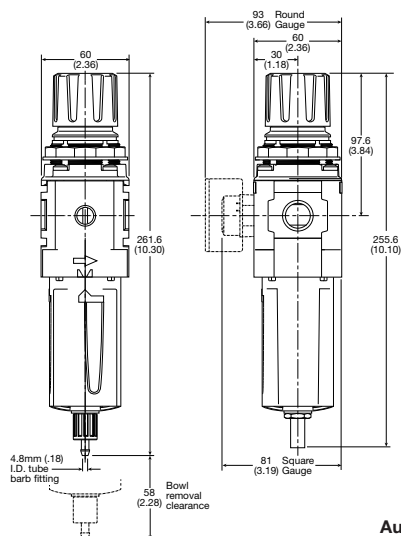
Air quality:

Within ISO 8573-1: 1991 Class 3 (Particulates); 2010 Class 6 (Particulates)

Material Specifications

Body	Aluminum	
Adjustment knob	Acetal	
Element retainer / Baffle	Acetal	
Bowl	Plastic bowl	Polycarbonate
	Metal bowl	Zinc
Bowl guard	Nylon	
Filter element	Sintered polyethylene	
Seals	Nitrile	
Springs	Main regulating / valve	Steel / S.S.
Valve assembly	Brass / Nitrile	
Diaphragm assembly	Nitrile / Zinc	
Panel nut	Acetal	
Sight gauge	Metal bowl	Polycarbonate

Dimensions mm (inches)

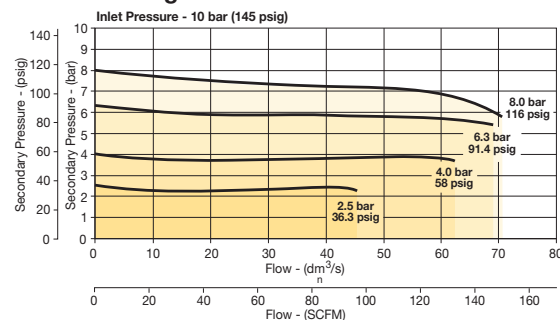


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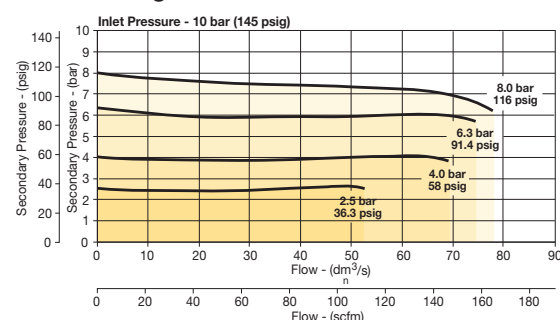
Product rupture can cause serious injury.
 Do not connect regulator to bottled gas.
 Do not exceed Maximum primary pressure rating.

Flow Charts

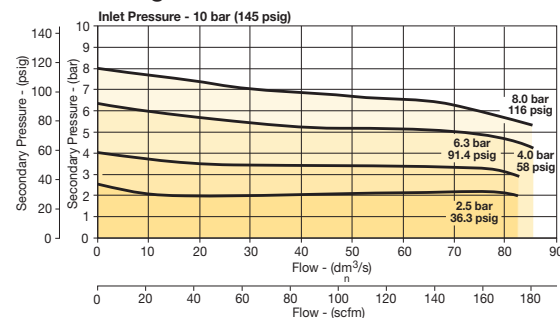
1/4 Filter / Regulator



3/8 Filter/Regulator



1/2 Filter/Regulator



Repair and Mounting Kits

Plastic bowl / Bowl guard manual drain	P32KB00BGM
Metal bowl / Sight gauge manual drain	P32KB00BSM
Auto drain	P32KA00DA
5µ particle filter element	P32KA00ESE †
Diaphragm repair kit - Relieving	P32KB00RB †
Diaphragm repair kit - Non-relieving	P32KB00RC †
Panel mount nut - aluminum	P32KA00MM †
Panel mount nut - plastic	P32KA00MP †
Angle bracket (fits to panel mount threads)	P32KB00MR †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P32KA00MT †
Body connector	P32KA00CB †

† Standard order code shown in bold.

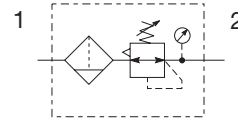
Gauges

50mm (2") Round 1/4" center back mount

0-60 psig / 0-4 bar	P6G-ERB2040
0-160 psig / 0-11 bar	P6G-ERB2110
0-300 psig / 0-20 bar	P6G-ERB2200

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Compact Semi-Precision Filter / Regulator - P32 Symbols



- Integral 1/4", 3/8" or 1/2" ports (NPT & BSPP)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number †
1/4"	8 bar (125 psig) relieving - poly bowl - manual drain	35 (75)	10 (150)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB12EGMPNGP
1/4"	8 bar (125 psig) relieving - poly bowl - auto drain	35 (75)	10 (150)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB12EGAPNGP
1/4"	8 bar (125 psig) relieving - metal bowl - manual drain	35 (75)	17 (250)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB12ESMPNGP
1/4"	8 bar (125 psig) relieving - metal bowl - auto drain	35 (75)	17 (250)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB12ESAPNGP
3/8"	8 bar (125 psig) relieving - poly bowl - manual drain	35 (75)	10 (150)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB13EGMPNGP
3/8"	8 bar (125 psig) relieving - poly bowl - auto drain	35 (75)	10 (150)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB13EGAPNGP
3/8"	8 bar (125 psig) relieving - metal bowl - manual drain	35 (75)	17 (250)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB13ESMPNGP
3/8"	8 bar (125 psig) relieving - metal bowl - auto drain	35 (75)	17 (250)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB13ESAPNGP
1/2"	8 bar (125 psig) relieving - poly bowl - manual drain	35 (75)	10 (150)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB14EGMPNGP
1/2"	8 bar (125 psig) relieving - poly bowl - auto drain	35 (75)	10 (150)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB14EGAPNGP
1/2"	8 bar (125 psig) relieving - metal bowl - manual drain	35 (75)	17 (250)	261.6 (10.3)	60 (2.36)	93 (3.66)	P32EB14ESMPNGP
1/2"	8 bar (125 psig) relieving - metal bowl - auto drain	35 (75)	17 (250)	255.6 (10.1)	60 (2.36)	93 (3.66)	P32EB14ESAPNGP

† Standard part numbers shown in bold. For other models refer to Options chart above.
 ‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P32EB				E				N		P
Basic series Global modular compact filter / regulator P32EB	Thread type BSPP 1 NPT 9	Element 5µ Element E		Relief P Relieving E Non-relieving		Drain type M Manual drain A Auto drain		Mounting P Plastic panel mount nut		
	Port size 1/4 2 3/8 3 1/2 4	Bowl type Poly bowl with bowl guard G Metal bowl with sight gauge S		Adjustment range With round gauge Z 2 bar; 30 psig; 0.2 MPa M 4 bar; 60 psig; 0.4 MPa G 8 bar; 125 psig; 0.8 MPa J^s 17 bar; 250 psig; 1.7 MPa Without gauge Y 2 bar; 30 psig; 0.2 MPa L 4 bar; 60 psig; 0.4 MPa N 8 bar; 125 psig; 0.8 MPa H^s 17 bar; 250 psig; 1.7 MPa						

§ Not available with poly bowl with bowl guard.

Standard order code shown in bold.

Specifications

Flow capacity *	1/4	35 dm ³ /s (75 scfm)
	3/8	35 dm ³ /s (75 scfm)
	1/2	35 dm ³ /s (75 scfm)

Effect of supply pressure variation 0.04 bar (0.6 PSIG) for 1.7 bar (25 PSIG) change in P1

Operating temperature	Plastic bowl	-25°C to 52°C (-13°F to 125°F)
	Metal bowl	-25°C to 65.5°C (-13°F to 150°F)

Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)

Standard filtration 5 micron

Useful retention † 51 cm³ (1.7 US oz.)

Adjusting range pressure
 0-2 bar (30 psig)
 0-4 bar (60 psig)
 0-8 bar (125 psig)
 0-17 bar (250 psig)

Port size BSPP / NPT 1/4, 3/8, 1/2

Gauge port (2 ea.) BSPP / NPT 1/4

Weight 0.53 kg (1.17 lbs)

* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

† Useful retention refers to volume below the quiet zone baffle.

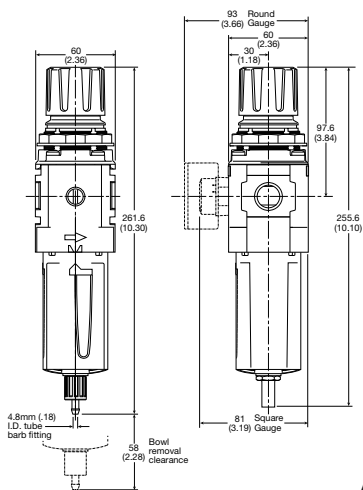
Air quality:

Within ISO 8573-1: 1991 Class 3 (Particulates); 2010 Class 6 (Particulates)

Material Specifications

Body	Aluminum	
Adjustment knob	Acetal	
Element retainer / Baffle	Acetal	
Bowl	Plastic bowl	Polycarbonate
	Metal bowl	Zinc
Bowl guard	Nylon	
Filter element	Sintered polyethylene	
Seals	Nitrile	
Springs	Main regulating / valve	Steel / S.S.
Valve assembly	Brass / Nitrile	
Diaphragm assembly	Nitrile / Zinc	
Panel nut	Acetal	
Sight gauge	Metal bowl	Polycarbonate

Dimensions mm (inches)

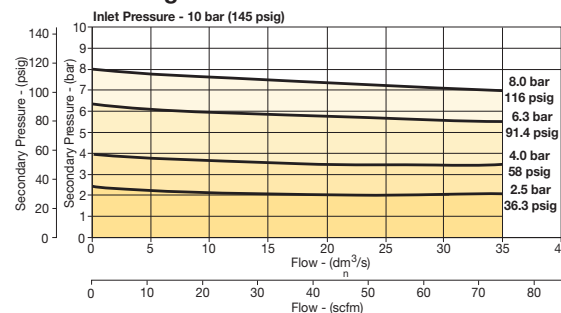


WARNING

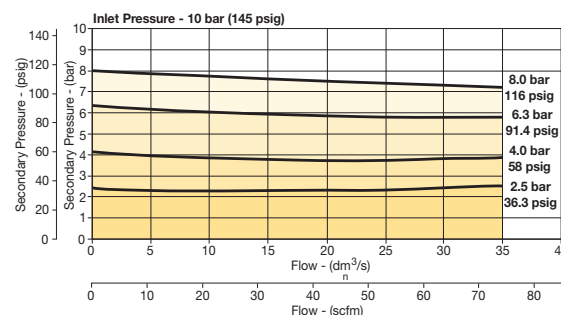
Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.

Flow Charts

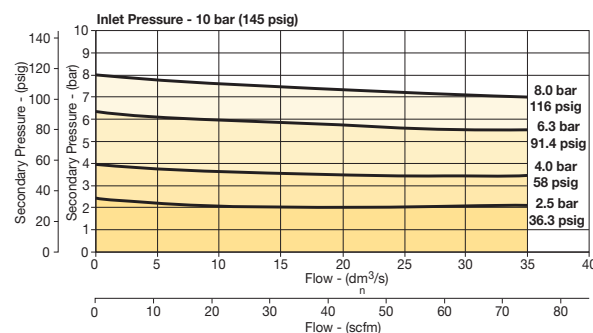
1/4 Filter / Regulator



3/8 Filter/Regulator



1/2 Filter/Regulator



Repair and Mounting Kits

Plastic bowl / Bowl guard manual drain	P32KB00BGM
Metal bowl / Sight gauge manual drain	P32KB00BSM
Auto drain	P32KA00DA
5µ particle filter element	P32KA00ESE †
Diaphragm repair kit - Relieving	P32KB00RB †
Diaphragm repair kit - Non-relieving	P32KB00RC †
Panel mount nut - aluminum	P32KA00MM †
Panel mount nut - plastic	P32KA00MP †
Angle bracket (fits to panel mount threads)	P32KB00MR †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P32KA00MT †
Body connector	P32KA00CB †

† Standard order code shown in bold.

Gauges

50mm (2") Round 1/4" center back mount

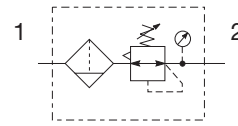
0-60 psig / 0-4 bar	P6G-ERB2040
0-160 psig / 0-11 bar	P6G-ERB2110
0-300 psig / 0-20 bar	P6G-ERB2200

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



Standard Filter / Regulator - P33

Symbols



- Integral 1/2" or 3/4" ports (NPT & BSPP)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number †
1/2"	8 bar (125 psig) relieving - poly bowl - manual drain	94 (200)	10 (150)	291 (11.44)	73 (2.87)	108 (4.27)	P33EA14EGMBNGP
1/2"	8 bar (125 psig) relieving - poly bowl - auto drain	94 (200)	10 (150)	285 (11.22)	73 (2.87)	108 (4.27)	P33EA14EGABNGP
1/2"	8 bar (125 psig) relieving - metal bowl - manual drain	94 (200)	17 (250)	291 (11.44)	73 (2.87)	108 (4.27)	P33EA14ESMBNGP
1/2"	8 bar (125 psig) relieving - metal bowl - auto drain	94 (200)	17 (250)	285 (11.22)	73 (2.87)	108 (4.27)	P33EA14ESABNGP
3/4"	8 bar (125 psig) relieving - poly bowl - manual drain	109 (235)	10 (150)	291 (11.44)	73 (2.87)	108 (4.27)	P33EA16EGMBNGP
3/4"	8 bar (125 psig) relieving - poly bowl - auto drain	109 (235)	10 (150)	285 (11.22)	73 (2.87)	108 (4.27)	P33EA16EGABNGP
3/4"	8 bar (125 psig) relieving - metal bowl - manual drain	109 (235)	17 (250)	291 (11.44)	73 (2.87)	108 (4.27)	P33EA16ESMBNGP
3/4"	8 bar (125 psig) Relieving - Metal bowl - Auto drain	109 (235)	17 (250)	285 (11.22)	73 (2.87)	108 (4.27)	P33EA16ESABNGP

† Standard part numbers shown in bold. For other models refer to Options chart above.
 ‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Options:

P33EA			E				N		P	
Basic series Global modular standard filter / regulator P33EA	Thread type BSPP 1 NPT 9	Port size 1/2 4 3/4 6	Element 5µ Element E	Relief B Relieving N Non-relieving	Drain type M Manual drain A Auto drain	Mounting P Plastic panel mount nut	Adjustment range With round gauge Z 2 bar; 30 psig; 0.2 MPa M 4 bar; 60 psig; 0.4 MPa G 8 bar; 125 psig; 0.8 MPa J[§] 17 bar; 250 psig; 1.7 MPa Without gauge Y 2 bar; 30 psig; 0.2 MPa L 4 bar; 60 psig; 0.4 MPa N 8 bar; 125 psig; 0.8 MPa H[§] 17 bar; 250 psig; 1.7 MPa			
			Bowl type Poly bowl with bowl guard G Metal bowl with sight gauge S							

Standard order code shown in bold.

§ Not available with poly bowl with bowl guard.

Specifications

Flow capacity *	1/2 3/4	94 dm ³ /s (200 scfm) 109 dm ³ /s (235 scfm)
Operating temperature	Plastic bowl Metal bowl	-25°C to 52°C (-13°F to 125°F) -25°C to 65.5°C (-13°F to 150°F)
Supply pressure	Plastic bowl Metal bowl	10 bar (150 psig) 17 bar (250 psig)
Standard filtration		5 micron
Useful retention †		85 cm ³ (2.8 US oz.)
Adjusting range pressure		0-2 bar (30 psig) 0-4 bar (60 psig) 0-8 bar (125 psig) 0-17 bar (250 psig)
Port size	BSP / NPT	1/2, 3/4
Gauge port (2 ea.)	BSP / NPT	1/4
Weight		0.85 kg (1.87 lbs)

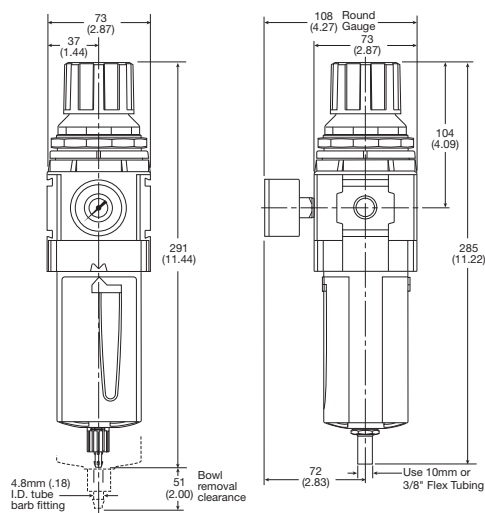
* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).
 † Useful retention refers to volume below the quiet zone baffle.

Air quality:
 Within ISO 8573-1: 1991 Class 3 (Particulates); 2010 Class 6 (Particulates)

Material Specifications

Body		Aluminum
Adjustment knob		Acetal
Body cap		ABS
Element retainer / Baffle		Acetal
Bowls	Plastic bowl Metal bowl	Polycarbonate Aluminum
Filter element		Sintered Polyethylene
Seals		Nitrile
Springs	Main regulating / Valve	Steel / S.S.
Valve assembly		Brass / Nitrile
Diaphragm assembly		Nitrile / Zinc
Panel nut		Acetal
Sight gauge	Metal bowl	Polycarbonate

Dimensions mm (inches)



Manual Drain

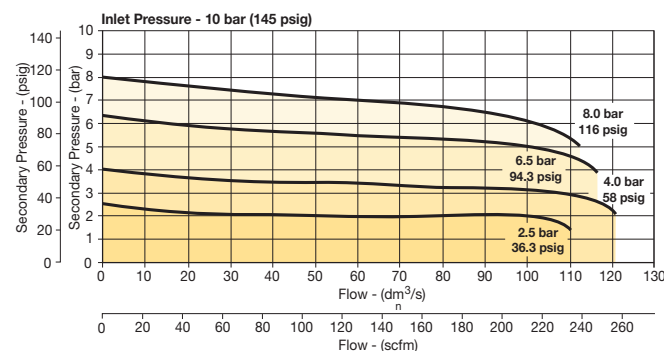
Automatic Drain

⚠ WARNING

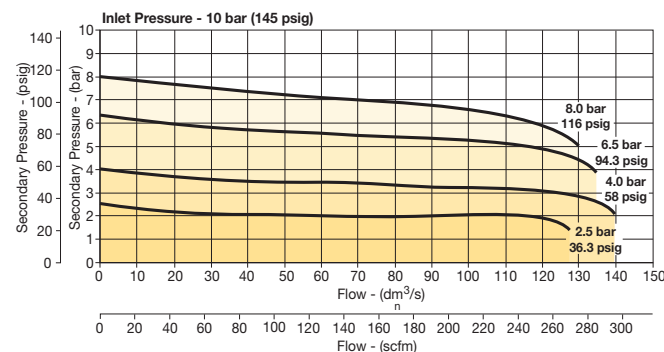
**Product rupture can cause serious injury.
 Do not connect regulator to bottled gas.
 Do not exceed Maximum primary pressure rating.**

Flow Charts

1/2 Filter / Regulator



3/4 Filter/Regulator



Repair and Mounting Kits

Plastic bowl / Bowl guard manual drain	P33KA00BGM
Metal bowl / Sight gauge manual drain	P33KA00BSM
Auto drain	P32KA00DA
5µ particle filter element	P33KA00ESE †
Diaphragm repair kit - Relieving	P33KB00RB †
Diaphragm repair kit - Non-relieving	P33KB00RC †
Panel mount nut - Aluminum	P33KA00MM †
Panel mount nut - Plastic	P33KA00MP †
Angle bracket (fits to panel mount threads)	P33KA00MR †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P32KA00MT †
Body connector	P32KA00CB †

† Standard order code shown in bold.

Gauges

50mm (2") Round 1/4" center back mount

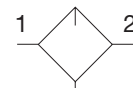
0-60 psig / 0-4 bar	P6G-ERB2040
0-160 psig / 0-11 bar	P6G-ERB2110
0-300 psig / 0-20 bar	P6G-ERB2200

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Mini Lubricator - P31



Symbol

Lubricator
with drain

- Integral 1/4" ports (NPT & BSPP)
- Robust but lightweight aluminum construction
- Proportional oil delivery over a wide range of air flows
- Finger tip ratchet control for precise oil drip rate adjustment
- Oil mist standard sight dome
- No drain closed end

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
1/4"	Poly bowl - No drain	25 (52)	10 (150)	153.3 (6.04)	40 (1.58)	40 (1.58)	P31LB12LGNN
1/4"	Metal bowl - No drain	25 (52)	17 (250)	153.3 (6.04)	40 (1.58)	40 (1.58)	P31LB12LMNN

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 bar (4.9 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**

Specifications

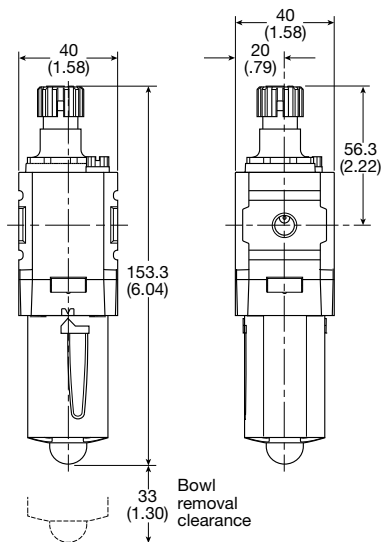
Flow capacity *	1/4	19 dm ³ /s (40 scfm)
Operating temperature	Plastic bowl	-10°C to 52°C (14°F to 125°F)
	Metal bowl	-10°C to 65.5°C (14°F to 150°F)
Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)
Useful retention		18 cm ³ (0.6 US oz.)
Port size	BSPP / NPT	1/4
Weight		0.13 kg (0.29 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).

Material Specifications

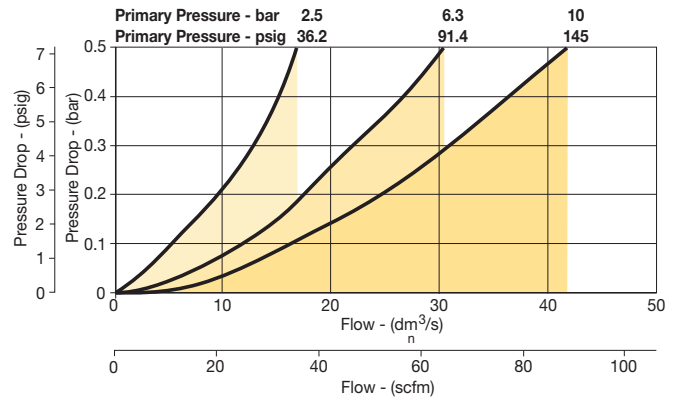
Body	Aluminum	
Body cap	ABS	
Bowl	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Seals	Nitrile	
Sight dome	Polycarbonate	
Suggested lubricant	ISO / ASTM VG32	
Pick-up filter	Sintered bronze	

Dimensions mm (inches)



Flow Charts

P31LB 1/4" Lubricator



Repair and Mounting Kits

Plastic bowl / Bowl guard no drain	P31KB00BGN
Metal bowl / w/o sight gauge no drain	P31KB00BMN
Drip control assembly	P32KA00PG
Nylon drip control ass.	P32KA00PH
Fill plug	P31KA00PL
C-bracket (fits to body)	P31KA00MW †
T-bracket with body connector	P31KA00MT †
Body connector	P31KA00CB †
Lubricator oil - VG15: ISO 3448 - 100 ml	P3XKA00PPA †
Lubricator oil - VG32 - 1 litre	P3YKA00PPBB †

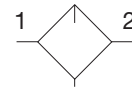
† Standard order code shown in bold.

(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Compact Lubricator - P32



Symbol



Lubricator with drain

- Integral 1/4", 3/8" or 1/2" ports (NPT & BSPP)
- Robust but lightweight aluminum construction
- Proportional oil delivery over a wide range of air flows
- Finger tip ratchet control for precise oil drip rate adjustment
- Fill from top under system pressure
- Oil mist standard sight dome
- No drain closed end

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
1/4"	Poly bowl - No drain	17 (38)	10 (150)	217.3 (8.56)	60 (2.36)	60 (2.36)	P32LB12LGNN
1/4"	Metal bowl - No drain	17 (38)	17 (250)	217.3 (8.56)	60 (2.36)	60 (2.36)	P32LB12LSNN
3/8"	Poly bowl - No drain	33 (70)	10 (150)	217.3 (8.56)	60 (2.36)	60 (2.36)	P32LB13LGNN
3/8"	Metal bowl - No drain	33 (70)	17 (250)	217.3 (8.56)	60 (2.36)	60 (2.36)	P32LB13LSNN
1/2"	Poly bowl - No drain	42 (90)	10 (150)	217.3 (8.56)	60 (2.36)	60 (2.36)	P32LB14LGNN
1/2"	Metal bowl - No drain	42 (90)	17 (250)	217.3 (8.56)	60 (2.36)	60 (2.36)	P32LB14LSNN

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 bar (4.9 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**

Specifications

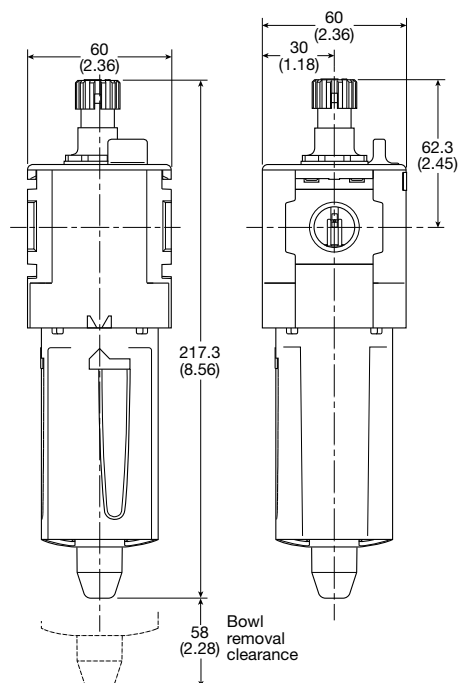
Flow capacity *	1/4	17 dm ³ /s (38 scfm)
	3/8	33 dm ³ /s (70 scfm)
	1/2	42 dm ³ /s (90 scfm)
Operating temperature	Plastic bowl	-10°C to 52°C (14°F to 125°F)
	Metal bowl	-10°C to 65.5°C (14°F to 150°F)
Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)
Useful retention		121 cm ³ (4.09 US oz.)
Port size	BSP / NPT	1/4, 3/8, 1/2
Weight		0.31 kg (0.68 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).

Material Specifications

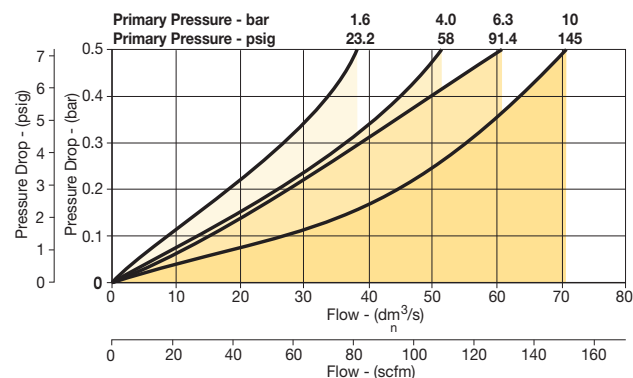
Body	Aluminum	
Body cap	ABS	
Bowls	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Seals	Nitrile	
Sight dome	Polycarbonate	
Sight gauge	Metal bowl	Polycarbonate
Suggested lubricant	ISO / ASTM VG32	
Pick-up filter	Sintered bronze	

Dimensions mm (inches)

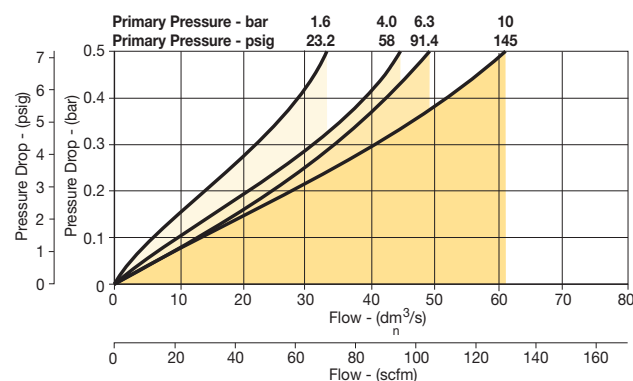


Flow Charts

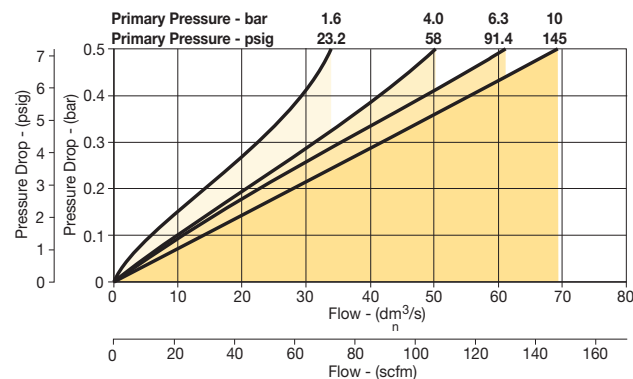
1/4 Lubricator



3/8 Lubricator



1/2 Lubricator



Repair and Mounting Kits

Plastic bowl / Bowl guard no drain	P32KB00BGN
Metal bowl / w/o sight gauge no drain	P32KB00BMN
Metal bowl / Sight gauge no drain	P32KB00BSN
Drip control assembly	P32KA00PG
Nylon drip control ass.	P32KA00PH
Fill plug	P32KA00PL
L-bracket (fits to body)	P32KA00ML †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P32KA00MT †
Body connector	P32KA00CB †

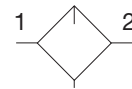
† Standard order code shown in bold.

(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Standard Lubricator - P33



Symbol

Lubricator
with drain

- Integral 1/2" or 3/4" ports (NPT & BSPP)
- Robust but lightweight aluminum construction
- Proportional oil delivery over a wide range of air flows
- Finger tip ratchet control for precise oil drip rate adjustment
- Fill from top under system pressure
- Oil mist standard sight dome
- No drain closed end

Order Code for Ordering

Port size	Description	Flow ‡ dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number ◊
1/2"	Poly bowl - No drain	52 (110)	10 (150)	234 (9.21)	73 (2.9)	73 (2.9)	P33LA14LGNN
1/2"	Metal bowl - No drain	52 (110)	17 (250)	234 (9.21)	73 (2.9)	73 (2.9)	P33LA14LSNN
3/4"	Poly bowl - No drain	71 (150)	10 (150)	234 (9.21)	73 (2.9)	73 (2.9)	P33LA16LGNN
3/4"	Metal bowl - No drain	71 (150)	17 (250)	234 (9.21)	73 (2.9)	73 (2.9)	P33LA16LSNN

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 bar (4.9 psig) pressure drop.

◊ For thread type: BSPP **1** NPT **9**

Specifications

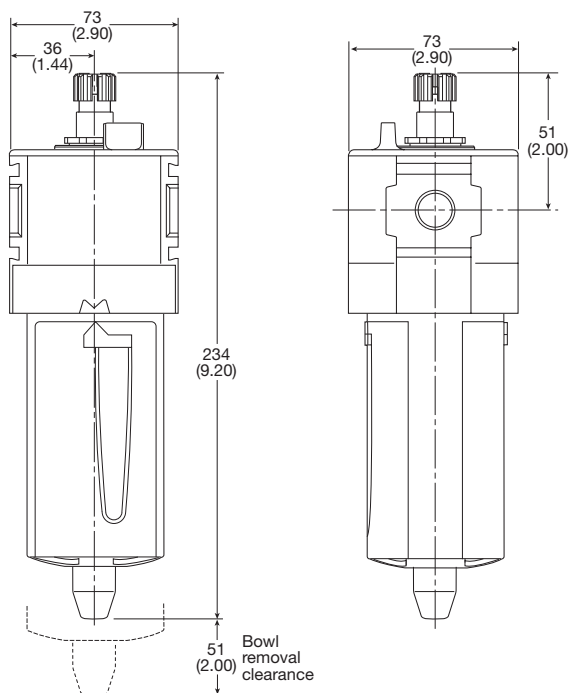
Flow capacity *	1/2	52 dm ³ /s (110 scfm)
	3/4	71 dm ³ /s (150 scfm)
Operating temperature	Plastic bowl	-10°C to 52°C (14°F to 125°F)
	Metal Bowl	-10°C to 65.5°C (14°F to 150°F)
Max. supply pressure	Plastic bowl	10 bar (150 psig)
	Metal bowl	17 bar (250 psig)
Useful retention		181 cm ³ (6.1 US oz.)
Port size	BSP / NPT	1/2, 3/4
Weight		0.47 kg (1.04 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).

Material Specifications

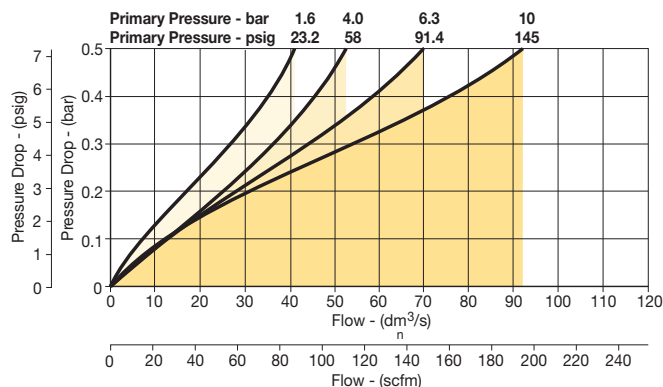
Body	Aluminum	
Body cap	ABS	
Bowls	Plastic bowl	Polycarbonate
	Metal bowl	Aluminum
Seals	Nitrile	
Sight dome	Polycarbonate	
Sight gauge	Metal bowl	Polycarbonate
Suggested lubricant	ISO / ASTM VG32	
Pick-up filter	Sintered bronze	

Dimensions mm (inches)

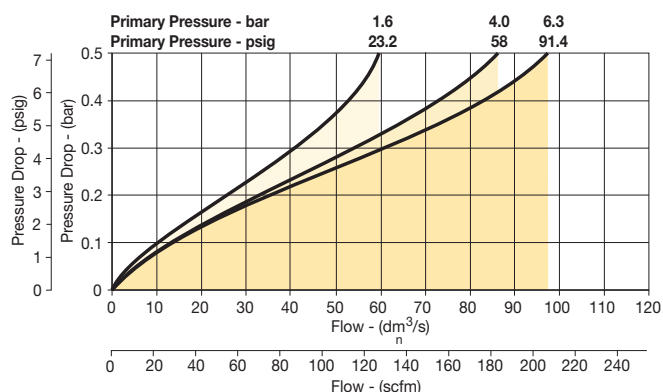


Flow Charts

1/2 Lubricator



3/4 Lubricator



Repair and Mounting Kits

Plastic bowl / Bowl guard no drain	P33KA00BGN
Metal bowl / w/o sight gauge no drain	P33KA00BMN
Metal bowl / Sight gauge no drain	P33KA00BSN
Drip control assembly	P32KA00PG
Nylon drip control ass.	P32KA00PH
Fill plug	P32KA00PL
L-bracket (fits to body)	P33KA00ML †
T-bracket (fits to body connector)	P32KA00MB †
T-bracket with body connector	P32KA00MT †
Body connector	P32KA00CB †
Lubricator oil - VG15: ISO 3448 - 100 ml	P3XKA00PPA †
Lubricator oil - VG32 - 1 litre	P3YKA00PPBB †

† Standard order code shown in bold.

(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Man-Machine Interface

High Visibility LED Display
 Easy to Read Characters
 All Controls on the Same Face

Energy Saving

Low Watt Power Consumption
 No Unnecessary Loss of Air in Steady State

Total Flexibility

User Friendly and Easily Accessible Software Control
 One Basic Unit Suits All Customer Requirements -
 0-10V Control Signal Standard
 4-20mA Control Signal Software Selectable
 Modular Mounting
 10, 7 & 2 bar Versions

Special Applications

Clean Line Design
 Suitable for Washdown: IP65
 Forced Exhaust Option Available
 4 Output Signal Versions Available

Compact and Light Weight

40 & 60 mm Body Sizes
 Light Weight Aluminum Bodies

Flexible Mounting Options

Stand-alone or Modular Mounting
 Foot Bracket Mounting

Outstanding Performance

Very Fast Response Times
 Full Flow Exhaust
 Excellent Linearity
 High Flow



Why Proportional Technology ?

The Difference Between Open or Closed Circuit Control

Standard pressure regulators go a long way towards meeting customers needs. In most cases these regulators work well in general pneumatic and automation applications. However, sometimes the application calls for more precise pressure control. The effects of time, cycling, input, back pressure or pressure and flow variation can all cause inconsistencies in pneumatic systems. Proportional Regulators are designed to eliminate those inconsistencies.

Open Control Circuit

In a normal pressure regulated control system, the inlet pressure (p_1) is converted into the output pressure (p_2) by the regulator. The set pressure (set value) is usually manually set by adjusting the control knob and in normal circumstances the regulator maintains the output pressure (actual value).

No facility for monitoring the output pressure is provided and there is consequently no way of checking that the set value and the actual value are the same. Also, no account is taken of external influences such as air consumption by the system, which can drastically alter the actual value.

Closed Loop Control Circuit

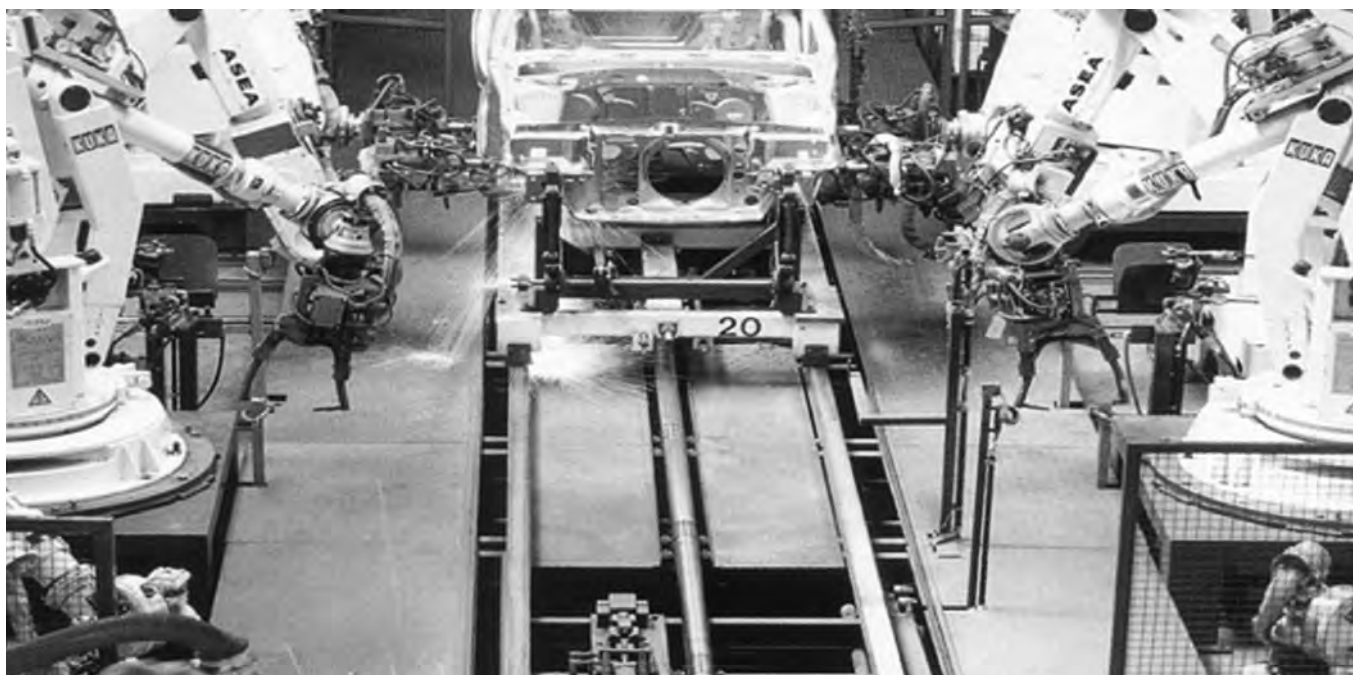
The input signal (Electronic Control Signal) is converted into the output value (P2 Output Pressure). This output value is continuously measured and compared with the input signal. If they are different, the unit adjusts the output value to correspond to the set value, to close the loop.

Proportional Pressure Regulators

The Proportional Regulators provide all the advantages of a closed circuit regulated system. When a set value is defined via the input signal (e.g. 0-10 V), the pressure regulator sets the corresponding output pressure (e.g. 0-150 PSI/0-10 bar). At the same time the integrated pressure sensor measures the actual pressure at the unit's outlet (actual value).

If the electronic regulation system finds that the actual value has deviated from the set value, it immediately corrects the actual value. This is a continuous process ensuring fast, accurate pressure regulation.

Typical Application in Automotive Body in White Welding Pressure Control



Proportional Regulators - P31P & P32P



P31P Series
Bottom exhaust



P32P Series
Bottom exhaust

- Very fast response times
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Part number
1/4"	Bottom ported exhaust (NC) - 0-10V - Digital PNP	19 (40)	10 (150)	126.25 (4.99)	57 (2.25)	40 (1.58)	P31PA12AD2VD1A
1/4"	Bottom ported exhaust (NC) - 4-20mA - Digital PNP	19 (40)	7 (100)	126.25 (4.99)	57 (2.25)	40 (1.58)	P31PA12AS2AD1A
1/4"	Bottom ported exhaust (NC) - 0-10V - Digital PNP	19 (40)	7 (100)	126.25 (4.99)	57 (2.25)	40 (1.58)	P31PA12AS2VD1A
1/4"	Bottom ported exhaust (NC) - 0-10V - PNP or 0-10V	19 (40)	10 (150)	126.25 (4.99)	57 (2.25)	40 (1.58)	P31PA12AD2VP1A
1/4"	Bottom ported forced exhaust (NO) - 0-10V - PNP or 0-10V	19 (40)	10 (150)	126.25 (4.99)	57 (2.25)	40 (1.58)	P31PA12ED2VP1A
1/4"	Bottom ported forced exhaust (NO) - 0-10V - Digital PNP	19 (40)	10 (150)	126.25 (4.99)	57 (2.25)	40 (1.58)	P31PA12ED2VD1A
1/2"	Bottom ported exhaust (NC) - 0-10V - Digital PNP	57 (120)	10 (150)	175.7 (6.94)	75 (2.96)	57.2 (2.26)	P32PA14AD2VD1A
1/2"	Bottom ported exhaust (NC) - 0-10V - 4-20mA fixed	57 (120)	10 (150)	175.7 (6.94)	75 (2.96)	57.2 (2.26)	P32PA14AD2VM1A
1/2"	Bottom ported exhaust (NC) - 0-10V - PNP or 0-10V	57 (120)	10 (150)	175.7 (6.94)	75 (2.96)	57.2 (2.26)	P32PA14AD2VP1A
1/2"	Bottom ported forced exhaust (NO) - 0-10V - 4-20mA fixed	57 (120)	10 (150)	175.7 (6.94)	75 (2.96)	57.2 (2.26)	P32PA14ED2VM1A

† Flow with 6.3 bar (91.3 psig) inlet pressure and 0.2 (3 psig) pressure drop.

Options:

P3 PA					2			1 A
Body size		Thread type		Power supply		Control signal		Input connector
Global modular mini (1/4")	P31PA	BSPP	1	2	24 volts	V	0-10V [‡]	1 M12 (4-pin)
Global modular compact (1/2")	P32PA	NPT	9			A	4 - 20mA	
Port size		Version		Pressure range		Output signal		
Global modular mini (1/4")	2	Bottom ported exhaust (NC)	A	Z	0 - 2 bar (0-29 PSIG)	D	Digital, PNP	
Global modular compact (1/2")	4	Bottom ported forced exhaust (NO) [†]	E	S	0 - 7 bar (0-101 PSIG)	P	PNP or 0-10V	
		Side ported exhaust (NC)	B	D	0 - 10 bar (0-145 PSIG)	N	NPN or 0-10V	
		Side ported forced exhaust (NO) [†]	C			M	4-20mA fixed	

† When the supply voltage is lost the unit will automatically exhaust the regulated pressure to 0 bar (atmospheric pressure)

‡ Digital PNP output only, no analog output selectable

§ Digital PNP and analogue 0-10V outputs selectable, by means of parameter 6. (Factory default 0-10V)

¶ Digital NPN and analog 0-10 V outputs selectable by means of parameter 6. Factory default 0-10V)

Ⓜ Analog 4-20mA output only.

Note: On all analog outputs the F.S. value can be adjusted by means of parameter 8.

Standard order code shown in bold.



Technical Information

Working medium

Compressed air or inert gasses, filtered to 40µ.

Supply pressure

Max. Operating Pressure:

2 bar unit: 3 bar (43.5 psig)
 10 bar unit: 10.5 bar (152 psig)
 Min. Operating Pressure P2 Pressure + 0.5 bar (7.3 psig)

Pressure control range

Available in three pressure ranges, 0-2 bar (0-29 psig), 0-7 bar (0-101.5 psig) or 0-10 bar (0-145 psig). Pressure range can be changed through the software at all times. (parameter 19)

Flow Capacity

P31P flows to 19 dm³/s (40 scfm)
 P32P flows to 57 dm³/s (120 scfm)

Temperature range

0°C up to +50°C (32°F up to 122°F)

Weights:

P31P = 0.291 kg (0.64 lbs)
 P32P = 0.645 kg (1.42 lbs)

Air consumption

No consumption in stable regulated situation.

Display

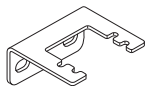
The regulator is provided with a digital display, indicating the output pressure, either in bar or psig. The factory setting is as indicated on the label, can be changed through to software at all times (parameter 14)

Supply voltage

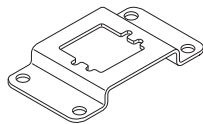
24 VDC +/- 10%

P31P Mounting brackets

Description	Part number
L-Bracket mounting kit	P3HKA00ML
Foot bracket mounting kit	P3HKA00MC



L-Bracket



Foot Bracket

Power consumption

Max. 1.1W with unloaded signal outputs

Control signals

The electronic pressure regulator can be externally controlled through an analogue control signal of either 0-10V or 4-20mA. (parameter 4).

Output signals

As soon as the output pressure is within the signal band a signal is given of 24VDC, PNP Ri = 1 kOhm Outside the signal band this connection is 0V.

Connections

(In case of output signal (Option D))

Central M12 connector 4-pole

The electrical connections are as follows:

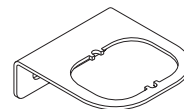
Pin No.	Function	Color	
1	24 V	Supply	Brown
2	0 to 10 V 4 to 20mA	Control Signal Ri = 100k Ω Control Signal Ri = 500 Ω	White
3	0 V (GND)	Supply	Blue
4	24 V	Alarm Output Signal	Black

Cables

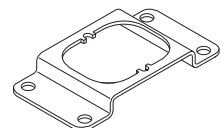
Description	Part number
2 mtr. cable with moulded straight M12x1 connector	P8L-MC04A2A-M12
2 mtr. cable with moulded 90 degree M12x1 connector	P8L-MC04R2A-M12

P32P Mounting brackets

Description	Part number
L-Bracket mounting kit	P3KKA00ML
Foot bracket mounting kit	P3KKA00MC



L-Bracket

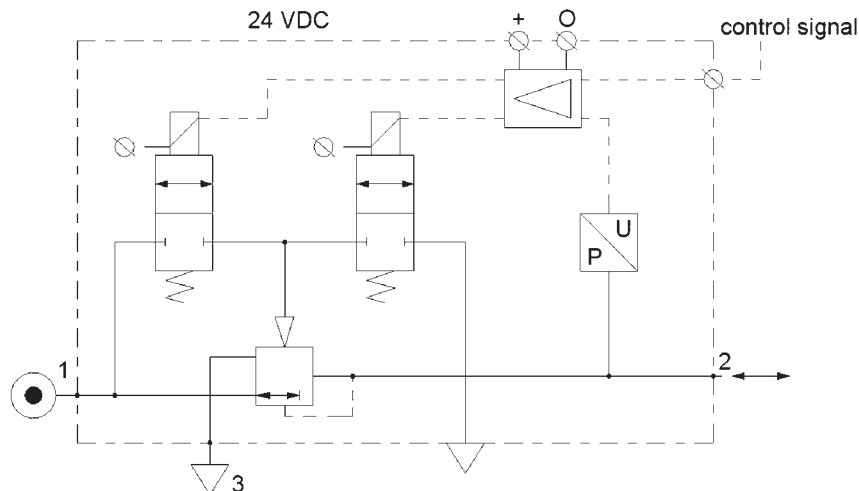


Foot Bracket

Note:

These brackets fit both Proportional Regulators and Combined Soft Start & Dump Valves. Dimensions see page 60.

Schematic



Technical information

Dead band

The dead band is preset at 1.3% of Full Scale*, adjustable via parameter 13.

Accuracy

Linearity: = < 0.3% of Full Scale.*

Proportional band

The proportional band is preset at 10% of Full Scale.*

Fail safe operation

- If the P31P / P32P unit has an “0” or “A” in the 12th digit of the model number
 - When the supply voltage drops, the electronic control reverts to the fail safe mode. The last known output pressure is maintained at approximately the same level depending upon air consumption. The digital display indicates the last known pressure setting.
 - When the supply voltage is reinstated to the correct level, the valve moves from the fail safe mode and the output pressure immediately follows the control signal requirement. The display indicates the actual output pressure.
 - Note: In the event of loss of both power and inlet pressure the unit will exhaust downstream pressure.
- If the P31P / P32P unit has an “E” in the 12th digit of the model number
 - When the supply voltage drops, the electronic control reverts to “Forced Exhaust Mode” and will automatically exhaust the downstream (regulated) pressure.
 - When the supply voltage is reinstated to the correct level the unit will return to normal operation and follows the control signal requirement. The display indicates the actual pressure.
- If the unit has been programmed in manual mode (not with a control signal) the unit will EXHAUST and the regulator will need to be reset when power is applied.

Full exhaust

Complete exhaust of the regulator is defined as P2 ≤ 1% Full Scale

*** Full scale (F.S.)**

For 2 bar (29 psig) versions this will be 2 bar (29 psig), for the 10 bar (145 psig) version full scale will be 10 bar (145 psig).

Degree of protection

IP65

EU conformity

CE: standard

EMC: according to directive 89/336/EEC

The new pressure regulator is in accordance with:

- EN 61000-6-1:2001** **EN 61000-6-2:2001**
- EN 61000-6-3:2001** **EN 61000-6-4:2001**

These standards ensure that this unit meets the highest level of EMC protection.

Mounting position

Preferably vertical, with the cable gland on top.

Materials: P31P & P32P

- Magnet Core Steel
- Solenoid Valve Poppet FPM
- Solenoid Valve Housing Techno Polymer
- Regulator Body (P31P & P32P versions) Aluminum
- Regulator Top Housing Nylon
- Valve Head Brass & NBR
- Remaining Seals NBR

Advanced functionality

Pilot valve protection

When the required output pressure can not be achieved because of a lack of input pressure the unit will open fully and will display NoP. Approximately every 10 seconds the unit will retry. The output pressure will then be approximately equal to the inlet pressure. As soon as the input pressure is back on the required level, the normal control function follows.

Safety exhaust

Should the **control signal** fall below 0.1 volts the valve will automatically dump downstream system pressure .

Input protection

The unit has built-in protection against failure and burnout resulting from incorrect input value, typically:

The 24VDC supply is incorrectly connected to the setpoint input, the display will show ‘OL’, as an overload indication. The unit will need to be rewired and when correctly connected will operate normally.

The overload indicator ‘OL’ will also appear should the wrong input value be applied or the wrong input value be programmed: 4 - 20m instead of 0 - 10V. To correct this a different set point value should be input or the unit reprogrammed to correct the set point value acceptance. (via parameter 4).

Response time	P31P	P32P
2 to 4 bar	25 msecs	35 msecs
1 to 6 bar	55 msecs	135 msecs
4 to 2 bar	70 msecs	85 msecs
6 to 1 bar	80 msecs	225 msecs

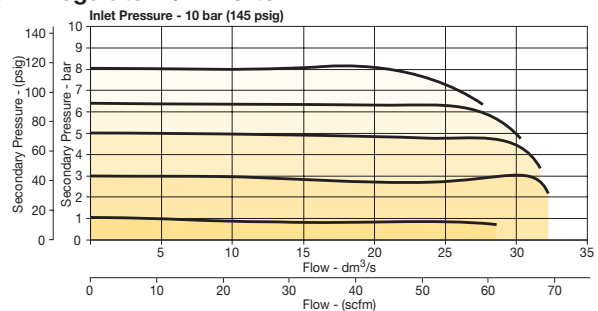
To fill volume of:
 100cm³ - P31P
 330cm³ - P32P
 connected to the outlet of the regulator.

Settings

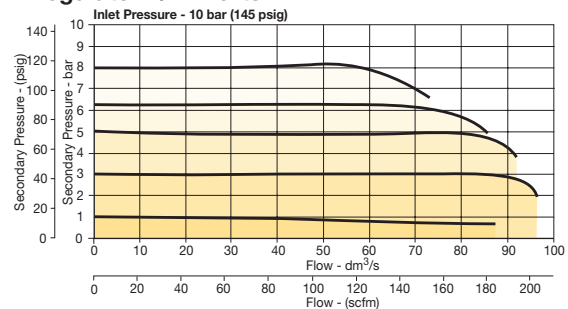
The regulator is pre-set at the factory. If required, adjustments can be made.

Flow Charts

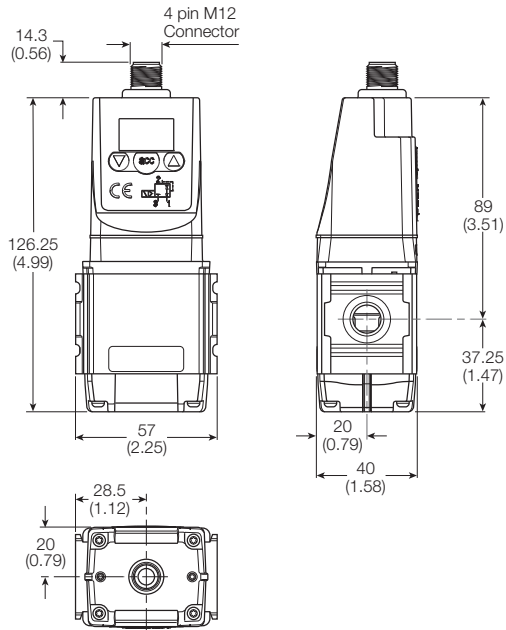
P31P Regulator 1/4” Ports



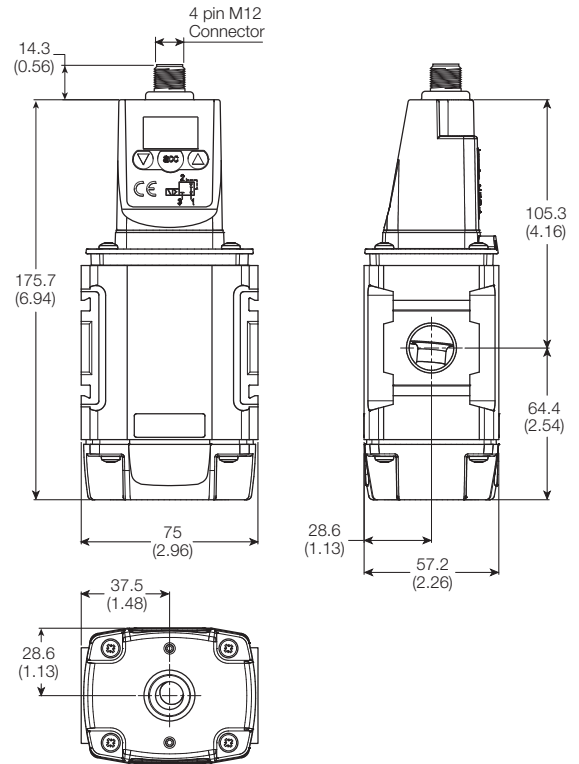
P32P Regulator 1/2” Ports



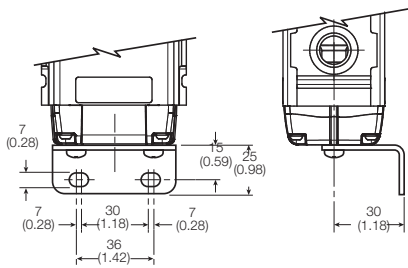
P31P



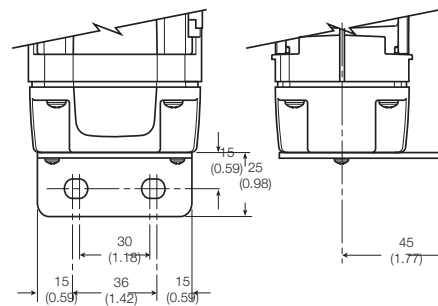
P32P



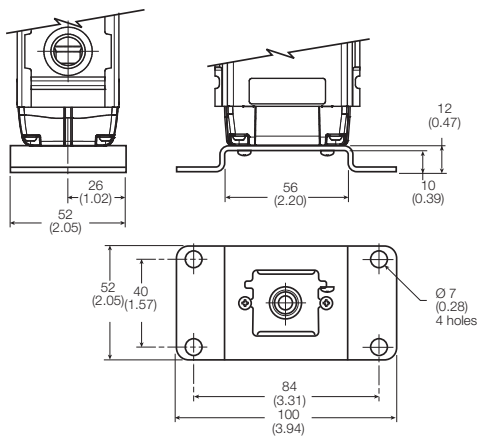
L-Bracket



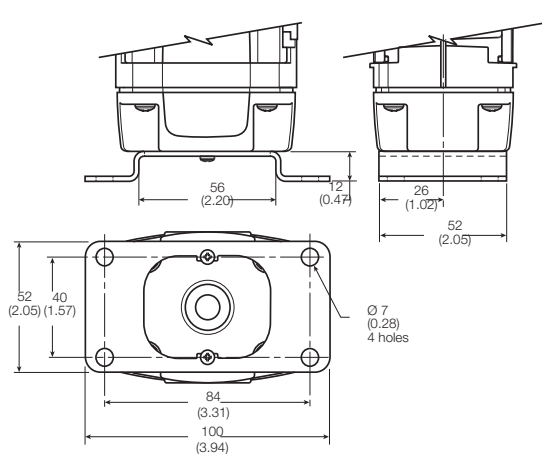
L-Bracket



Foot Bracket



Foot Bracket

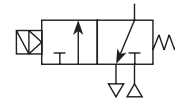


Dimensions are in mm (Inches)

Dump Valve



Symbol



- Modular design with 1/4" or 1/2" integral ports (NPT & BSPP)
- The 3-way, 2-position function automatically dumps downstream pressure on the loss of pilot signal
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included
- P32 unit used for both P32 & P33 series

Remotely operated dump valves automatically shut off upstream pressure and exhaust the downstream pressure when the pilot pressure is released.

To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained. The valve will automatically dump when the holding signal is removed.

Order Code for Ordering

Port size	Description	Flow dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lbs)	Part number
1/4"	Solenoid operated (not included)	17 (36)	10 (150)	115.6 (4.5)	57 (2.2)	40 (1.5)	0.37 (0.8)	P31DA12SGN0000
1/4"	24VDC Solenoid & cable plug	17 (36)	10 (150)	166 [‡] (6.5)	57 (2.2)	40 (1.5)	0.41 (0.9)	P31DA12SGNC2CN
1/4"	External air pilot operated	17 (36)	17 (250)	115.6 (4.5)	57 (2.2)	40 (1.5)	0.37 (0.8)	P31DA12PPN
1/2"	Solenoid operated (not included)	51 (108)	10 (150)	162.5 [‡] (6.3)	75 (2.9)	57.2 (2.2)	0.69 (1.5)	P32DA14SCN0000
1/2"	24VDC 30mm coil & cable plug incl.	51 (108)	10 (150)	227.5 [‡] (8.9)	75 (2.9)	57.2 (2.2)	0.91 (2.0)	P32DA14SCNA2CN
1/2"	External air pilot operated	51 (108)	17 (250)	162.5 [‡] (6.3)	75 (2.9)	57.2 (2.2)	0.87 (1.9)	P32DA14PPN

‡ Includes exhaust silencer

Options:

P3 DA

N

Body size	
Dump valve (1/4")	P31DA
Dump valve (1/2")	P32DA

Thread type	
BSPP	1
NPT	9

Port size	
Global modular mini (1/4")	2
Global modular compact (1/2")	4

Actuator interface	
G	15mm solenoid (P31 only)
C	30mm solenoid
P	Threaded Air Pilot

Pilot type	
P	External air pilot
S	Solenoid pilot

Solenoid type only

Solenoid voltage	
000	Solenoid / Coil not fitted
2CN	24VDC non locking manual override
3GN	120VAC non locking manual override
1FN	120VAC non locking manual override (P31 series only)

Solenoid type	
0	None (For P32 series - operator is fitted to valve)
C	15mm (P31 series only)
A	30mm CNOMO coil (P32 only)
D	30mm CNOMO coil (M12 connection) (P32 only)

Standard order code shown in bold.

Technical Information

Fluid:	Compressed air
Max. pressure solenoid operated:	10 bar (150 psig)
Max. pressure air pilot operated:	17 bar (250 psig)
Min. operating pressure:	3 bar (44 psig)
Temperature Max.* solenoid operated:	-10°C to 50°C (14°F to 122°F)
Temperature Max.* air pilot operated:	-20°C to 80°C (-4°F to 176°F)
Air pilot port:	1/8"
Exhaust port:	P31D - 1/4" / P32D - 1/2"
Gauge port:	P31D - 1/8" / P32D - 1/4"

Typical flow with 6.3 bar inlet pressure and 1 bar pressure drop:	P31D	17 dm ³ /s (36 scfm)
	P32D	51 dm ³ /s (108 scfm)

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specifications

Body:	Aluminum
Body cover:	Polyester
Seals:	Nitrile NBR

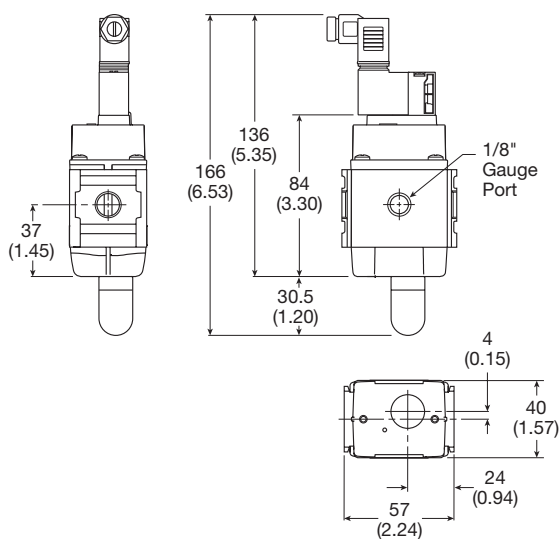
Mounting Brackets

Description	Part number
L-bracket mounting kit	P31D
Foot bracket mounting kit	P3HKA00ML
	P3HKA00MC

Note:
For solenoid operators and cable plugs (connectors) see pages 66 to 67.

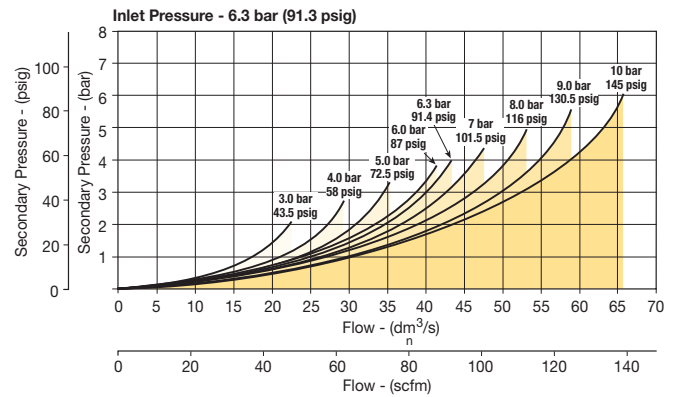
Dimensions Pneumatic version dimensions without solenoid mm (inches)

P31D

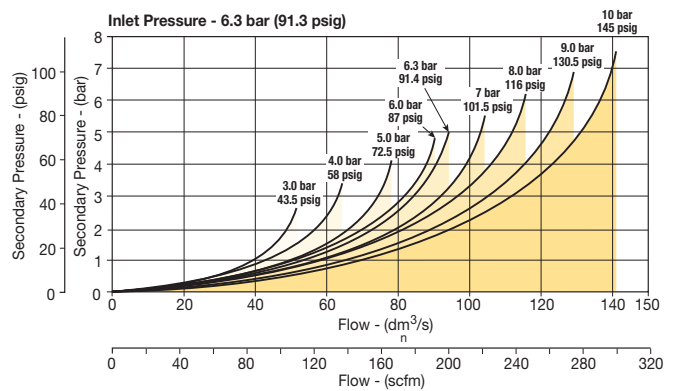


Flow Charts

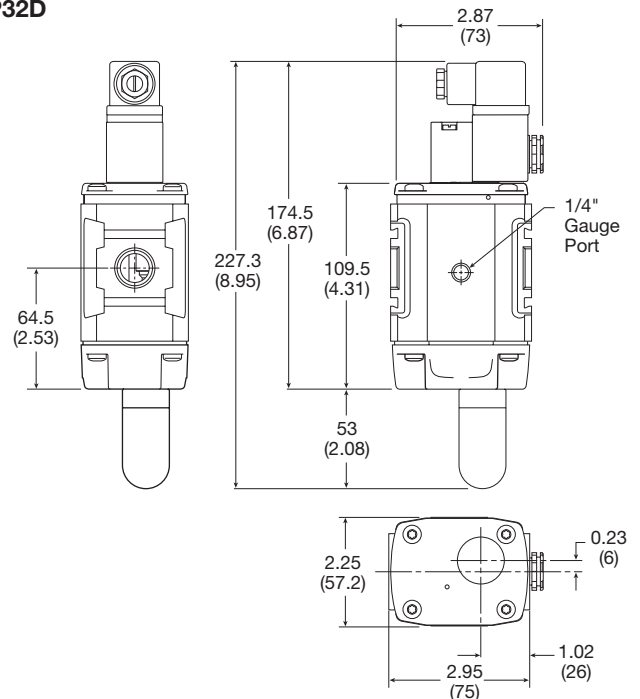
P31DA 1/4" Remote Dump Valve



P32DA 1/2" Remote Dump Valve



P32D



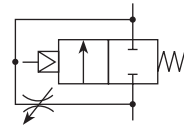
For mounting brackets see page 77.



Soft Start Valve



Symbol



- Modular design with 1/4" or 1/2" integral ports (NPT & BSPP)
- The 2-way, 2-position function provides for the safe introduction of pressure
- Adjustable slow start
- Solenoid or air pilot options
- High flow
- P32 unit used for both P32 & P33 series

Parker Global Series Soft Start Valves, provide for the safe introduction of pressure to machines or systems. Soft Start Valves, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Note: Soft Start Valves must be installed downstream of a 3/2 valve with exhaust capability

Order Code for Ordering

Port size	Description	Flow dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lbs)	Part number
1/4"	Solenoid operated (not included)	17 (36)	10 (150)	115.6 (4.5)	57 (2.2)	40 (1.5)	0.37 (0.8)	P31SA12SGN0000
1/4"	24VDC Solenoid & cable plug	17 (36)	10 (150)	166.0 (6.5)	57 (2.2)	40 (1.5)	0.41 (0.9)	P31SA12SGNC2CN
1/4"	Internal air pilot operated	17 (36)	17 (250)	115.6 (4.5)	57 (2.2)	40 (1.5)	0.37 (0.8)	P31SA12Y0N
1/4"	External air pilot (1/8" threaded)	17 (36)	17 (250)	115.6 (4.5)	57 (2.2)	40 (1.5)	0.37 (0.8)	P31SA12PPN
1/2"	Solenoid operated (not included)	48 (101)	10 (150)	162.5 (6.3)	88 (3.4)	57.2 (2.28)	0.87 (1.5)	P32SA14SCN0000
1/2"	24VDC 30mm coil & cable plug	48 (101)	10 (150)	227.5 (8.9)	88 (3.4)	57.2 (2.28)	0.90 (2.0)	P32SA14SCNA2CN
1/2"	Internal air pilot operated	48 (101)	17 (250)	162.5 (6.3)	75 (2.9)	57.2 (2.28)	0.90 (2.0)	P32SA14Y0N
1/2"	External air pilot (1/8" threaded)	48 (101)	17 (250)	162.5 (6.3)	75 (2.9)	57.2 (2.28)	0.87 (1.5)	P32SA14PPN

Options:

P3 SA						N	Solenoid type only	
Body size		Thread type		Actuator interface		Solenoid voltage		
Soft start	P31SA	BSPP	1	0	Internal Pilot	000	Solenoid / Coil not fitted	
Soft start	P32SA	NPT	9	G	15mm solenoid (P31 only)	2CN	24VDC non locking manual override	
Port size				C	30mm solenoid	3GN	120VAC non locking manual override	
Global modular mini (1/4")	2			P*	Threaded air pilot	1FN	120VAC non locking manual override (P31 series only)	
Global modular compact (1/2")	4			Pilot type		Solenoid type		
				P	External air pilot	0	None (For P32 series - Operator is fitted to valve)	
				S	Solenoid pilot	C	15mm (P31 series only)	
				Y	Internal air pilot	A	30mm CNOMO coil (P32 only)	
						D	30mm CNOMO coil (M12 connection) (P32 only)	

Standard order code shown in bold.

Technical Information

Fluid:	Compressed air
Max. pressure solenoid operated:	10 bar (150 psig)
Max. pressure air pilot operated:	17 bar (250 psig)
Min. operating pressure:	3 bar (44 psig)
Temperature Max.* solenoid operated:	-10°C to 50°C (14°F to 122°F)
Temperature Max.* air pilot operated:	-20°C to 80°C (-4°F to 176°F)
Air pilot port:	1/8"
Gauge port:	P31S - 1/8" / P32S - 1/4"

Typical flow with 6.3 bar inlet pressure and 1 bar pressure drop:	P31S	17 dm ³ /s (36 scfm)
	P32S	48 dm ³ /s (101 scfm)

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specifications

Body:	Aluminum
Body cover:	Polyester
Seals:	Nitrile NBR

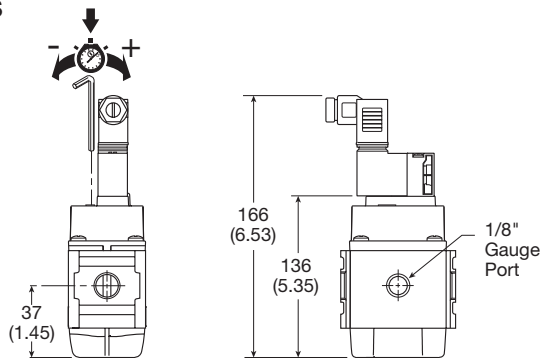
Mounting Brackets

Description	Part number
	P31S
L-bracket mounting kit	P3HKA00ML
Foot bracket mounting kit	P3HKA00MC

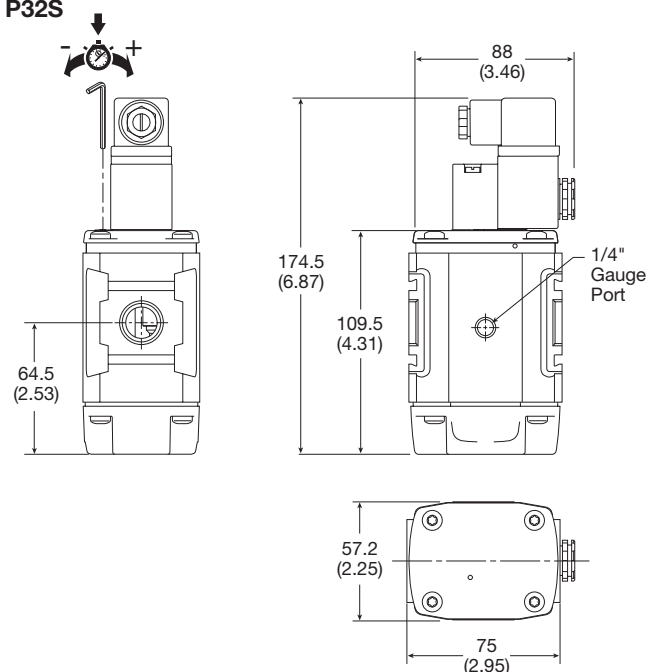
Note:
For solenoid operators and cable plugs (connectors) see pages 66 to 67.

Dimensions mm (inches) Pneumatic version dimensions without solenoid

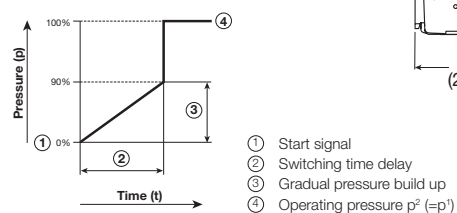
P31S



P32S



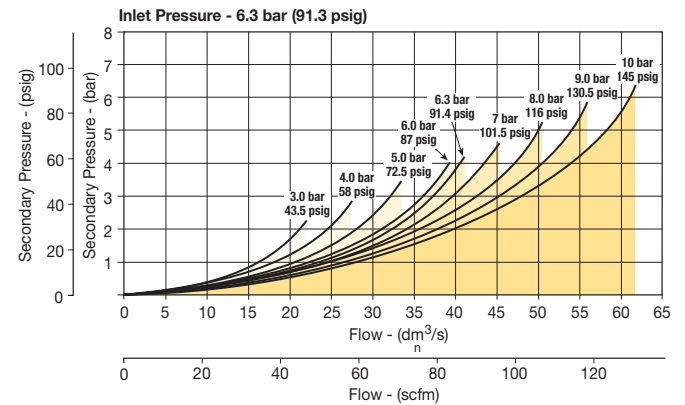
Soft Start Function:



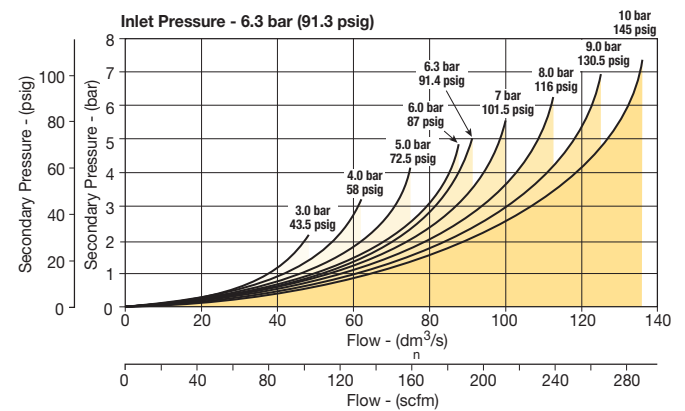
For mounting brackets see page 77.

Flow Charts

P31SA 1/4" Soft Start Valve

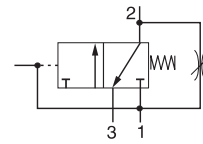
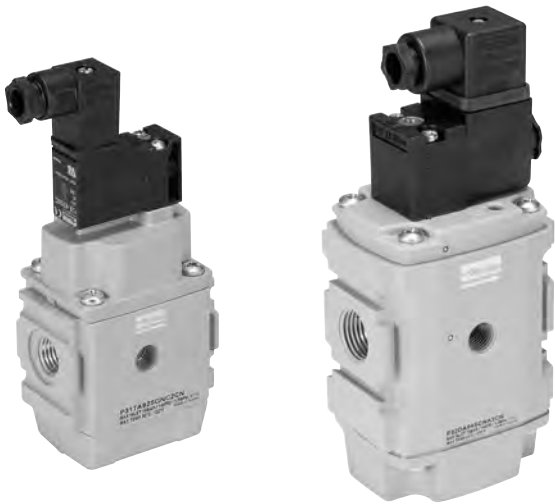


P32SA 1/2" Soft Start Valve



Combined Soft Start / Dump Valve

Symbol



- Modular design with 1/4" or 1/2" integral ports (NPT & BSPP)
- Provides for the safe introduction of pressure
- The 3-way, 2-position function automatically dumps downstream pressure on the loss of pilot signal
- Adjustable slow start
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included
- P32 unit used for both P32 & P33 series

Parker Global Series Combined Soft Start / Dump Valves, provide for the safe introduction of pressure to machines or systems. Soft Start / Dump Valves when set, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained. The valve will automatically dump when the holding signal is removed.

Order Code for Ordering

Port size	Description	Flow † dm ³ /s (scfm)	Max. bar (psig)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lbs)	Part number
1/4"	Solenoid operated (not included)	17 (36)	10 (150)	115.6 (4.5)	57 (2.2)	40 (1.5)	0.37 (0.8)	P31TA12SGN0000
1/4"	24VDC Solenoid & cable plug	17 (36)	10 (150)	166† (6.5)	57 (2.2)	40 (1.5)	0.41 (0.9)	P31TA12SGNC2CN
1/4"	External air pilot operated	17 (36)	17 (250)	115.6 (4.5)	57 (2.2)	40 (1.5)	0.37 (0.8)	P31TA12PPN
1/2"	Solenoid operated (not included)	46 (97)	10 (150)	162.5† (6.3)	88 (3.4)	57.2 (2.2)	0.87 (1.9)	P32TA14SCN0000
1/2"	24VDC 30mm coil & cable plug incl.	46 (97)	10 (150)	227.5† (8.9)	88 (3.4)	57.2 (2.2)	0.91 (2.0)	P32TA14SCNA2CN
1/2"	External air pilot operated	46 (97)	17 (250)	162.5† (6.3)	75 (2.9)	57.2 (2.2)	0.87 (1.9)	P32TA14PPN

† Includes exhaust silencer. Flow with 6.3 bar (91.3 psig) inlet and 1 bar (14.5 psig) pressure drop.

Options:

P3 TA						N	Solenoid type only	
Body size		Thread type		Actuator interface		Solenoid voltage		
Soft start / dump valve (1/4") P31TA		BSPP 1		G 15mm solenoid (P31 only)		000 Solenoid / Coil not fitted		
Soft start / dump valve (1/2") P32TA		NPT 9		C 30mm solenoid		2CN 24VDC non locking manual override		
Port size		Pilot type		P Threaded air pilot		3GN 120VAC non locking manual override		
Global modular mini (1/4") 2		P External air pilot		S Solenoid pilot		1FN 120VAC non locking manual override (P31 series only)		
Global modular compact (1/2") 4						Solenoid type		
						0 None (For P32 series - Operator is fitted to valve)		
						C 15mm (P31 series only)		
						A 30mm CNOMO coil (P32 only)		
						D 30mm CNOMO coil (M12 connection) (P32 only)		

Standard order code shown in bold.

Technical Information

Fluid:	Compressed air		
Max. pressure solenoid operated:	10 bar (150 psig)		
Max. pressure air pilot operated:	17 bar (250 psig)		
Min. operating pressure:	3 bar (44 psig)		
Temperature Max.* solenoid operated:	-10°C to 50°C (14°F to 122°F)		
Temperature Max.* air pilot operated:	-20°C to 80°C (-4°F to 176°F)		
Air pilot port:	1/8"		
Exhaust port:	P31T - 1/4" / P32T - 1/2"		
Gauge port:	P31T - 1/8" / P32T - 1/4"		
Typical flow with 6.3 bar inlet pressure and 1 bar pressure drop:	P31T	17 dm ³ /s (36 scfm)	
	P32T	48 dm ³ /s (101 scfm)	

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specifications

Body:	Aluminum
Body cover:	Polyester
Seals:	Nitrile NBR

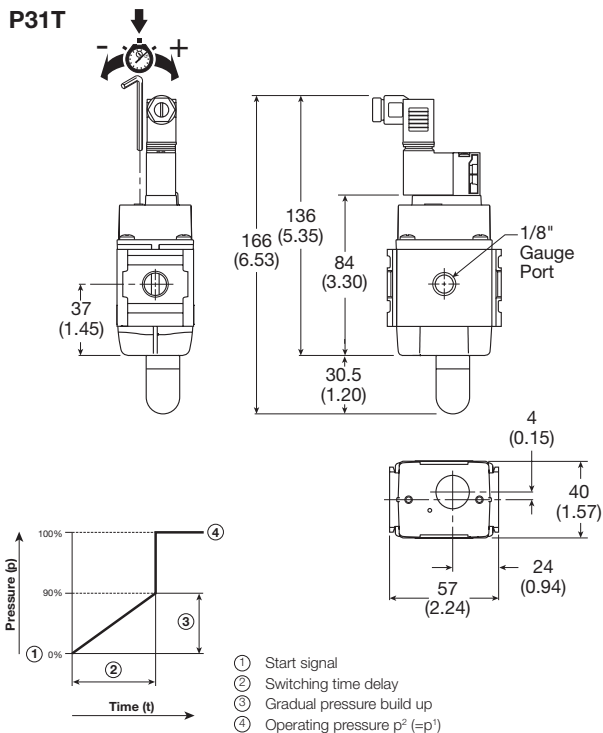
Mounting Brackets

Description	Part number
	P31T
L-bracket mounting kit	P3HKA00ML
Foot bracket mounting kit	P3HKA00MC

Note:

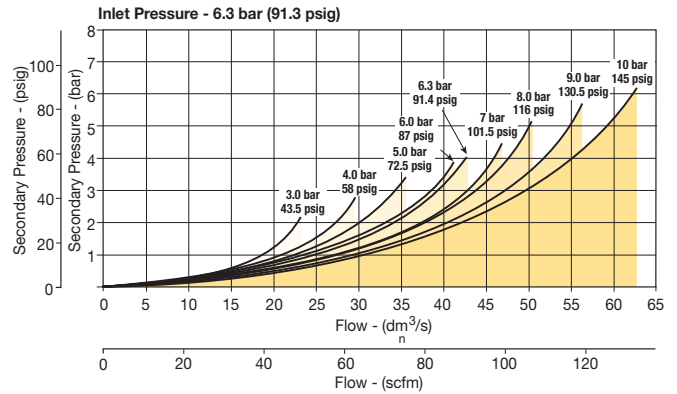
For solenoid operators and cable plugs (connectors) see pages 66 to 67.

Dimensions mm (inches) Pneumatic version dimensions without solenoid

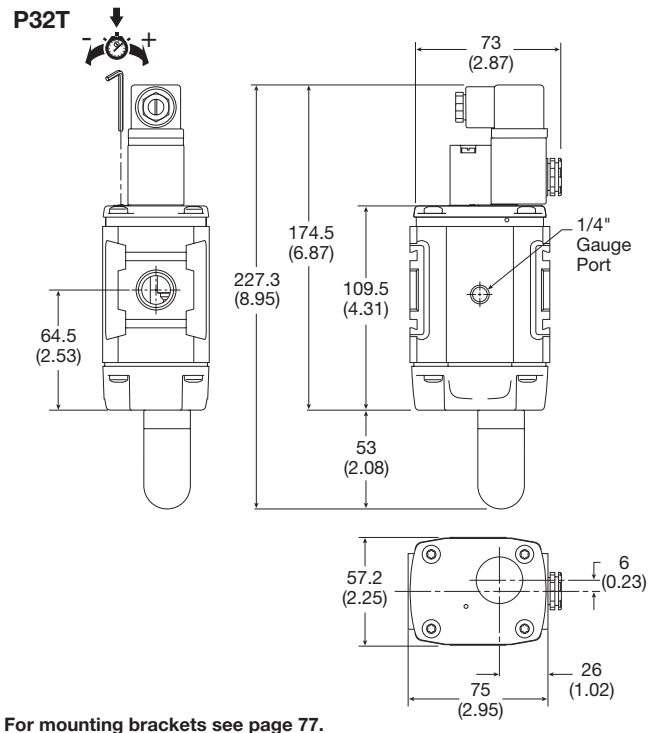
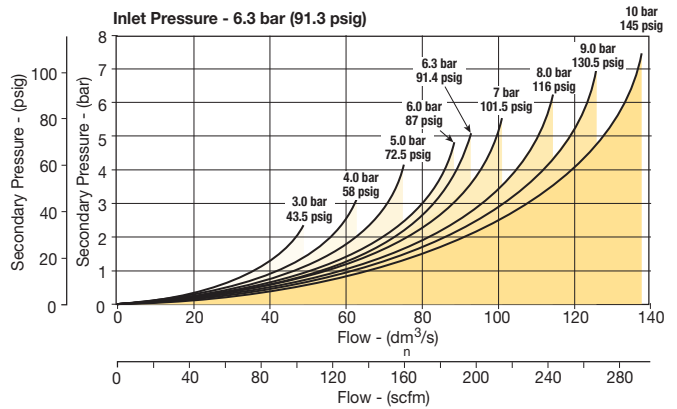


Flow Charts

P31TA 1/4" Soft Start & Dump Valve



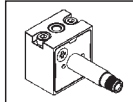
P32TA 1/2" Soft Start & Dump Valve



For mounting brackets see page 77.

Solenoid Operator - CNOMO

Order Code for Ordering

P	2	F	P	2	3	N	4	B	
Operator Type				Pressure / Temp			Manual / Override		
2 CNOMO 22 x 30 Plastic				N 10 bar / -10°C to +50°C			B Non locking - monostable - Flush - Brass		

Technical data - Solenoid operators, coil combinations

	NC Normal Operator with 30 x 30 standard coil	NC Normal Operator with 22 x 30 standard coil
Working pressure	0 to 10 bar	0 to 10 bar
Ambient temperature	-10 °C to 60 °C (1)	-10 °C to 60 °C (1)
Orifice	1.3/1.5mm	1.3/1.5mm
Flow Qn	0.84 dm³/s	0.84 dm³/s
Power (DC)	2.7W	4.8W
Power (AC)	4.9VA	8.5VA
Voltage tolerance	+/- 10%	+/- 10%
Duty cycle	100%	100%
Insulation class	F	F
Electric connection	Form A	Industrial B
Protection	IP65	IP65
Shock & Vibration	1g	1g
Approval	UL/CSA	
Working media	All neutral media such as compressed air and inert gases.	

(1) limited to 50°C if use with 100% duty cycle

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavourable conditions, can amount to several hundred times the rated operating voltage. Normally, these transients do not cause problems, but to achieve the maximum life of relays in the circuit (and particularly of transistors, thyristors and integrated circuits) it is desirable to provide protection by means of voltage-dependent resistors (varistors). All connectors/cable plugs EN175301-803 with LED's include this type of circuit protection.

Materials

Pilot Valve

Body:	Polyamide
Armature tube:	Brass
Plunger & core:	Corrosion resistant Cr-Ni steel
Seals:	FKM (Viton™)
Screws:	Stainless steel

Coil

Encapsulation material:	Thermoplastic as standard Duroplast for M12 connection
-------------------------	---

Solenoid coils with Din A or Industrial B connection

Voltage Order code DIN A Standard	30mm x 30mm		22mm x 30mm	
	Weight (Kg)	Order code Industrial B Standard	Weight (Kg)	
Direct current				
12V DC	P2FCA445	0.105	P2FCB445	0.093
24V DC	P2FCA449	0.105	P2FCB449	0.093
48V DC	P2FCA453 *	0.105	P2FCB451	0.093
Alternative current				
12V 50/60Hz	P2FCA440	0.105	P2FCB440	0.093
24V 50/60Hz	P2FCA442	0.105	P2FCB442	0.093
48V 50/60Hz	P2FCA469 #	0.105		
110V 50Hz, 120V 60Hz	P2FCA453 *	0.105	P2FCB453	0.093
230V 50Hz, 230V 60Hz	P2FCA457	0.105	P2FCB457	0.093

* P2FCA453 is compatible with 110 V AC and 48 V DC

#P2FCA469 is 24 V DC 6.8W or 48 V 50Hz 9.9 VA

Solenoid coils with M12 connection

Voltage	Order code Form A 30 x 30		Order code Form B 22 x 30	
	W (Kg)		W (Kg)	
Direct current				
24V DC	P2FC6419	0.065	P2FC7419	0.065

Spare Solenoid Operators

Solenoid pilot operator CNOMO NC

Description	Order code	Weight (Kg)
	Non-lock manual override	
Standard duty	P2FP23N4B	0.065

Note.

Solenoid pilot operators are fitted to the Global range. Order the above part numbers for spares. The operators are supplied with mounting screws and interface 'O' rings.

Coils and connectors must be ordered separately.

Spare Solenoid Nuts

Valves requiring captured exhaust should be fitted with plastic knurled nut

Order code	P2FNP
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Valves with vented exhaust are fitted with diffuser plastic nut

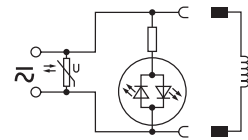
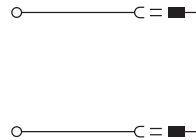
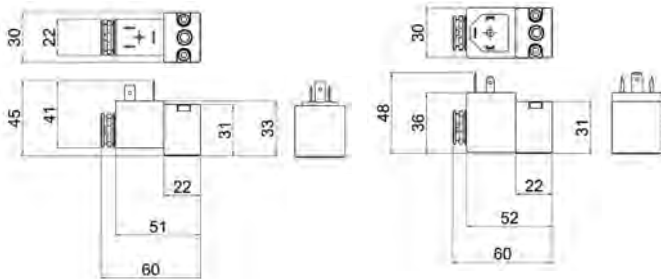
Order code	P2FND
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Solenoid Connectors / Cable Plugs EN175301-803

	Description	Order code 15mm Form C ISO15217	Order code 22mm Form B Industrial	Order code 30mm Form A ISO4400
With large headed screw suitable for mounting in inaccessible or recess position	Standard IP65	P8C-C		
	24V DC LED and protection IP65	P8C-C26C		
	110V AC LED and protection IP65	P8C-C21E		
With standard screw	Standard IP65 without flying lead	P8C-D	3EV10V10	3EV290V10
	With LED and protection 24V AC/DC	P8C-D26C	3EV10V20-24	3EV290V20-24
	With LED and protection 110V AC	P8C-D21E	3EV10V20-110	3EV290V20-110
	With LED and protection 230V AC		3EV10V20-230	3EV290V20-230
With cable	Standard with 2m cable IP65	P8L-C2		
	Standard with 5m cable IP65	P8L-C5		
	24V AC/DC, 2m cable LED and protection IP65	P8L-C226C		
	24V AC/DC, 5m cable LED and protection IP65	P8L-C526C	3EV10V20-24L5	3EV290V20-24L5
	24V AC/DC, 10m cable LED and protection IP65	P8L-CA26C		
	110V AC/DC, 2m cable LED and protection IP65	P8L-C221E		
	110V AC/DC, 5m cable LED and protection IP65	P8L-C521E	3EV10V20-110L5	3EV290V20-110L5
	230V AC, 5m cable LED and protection IP65		3EV10V20-230L5	3EV290V20-230L5

Solenoid Coil & Cable Plug Dimensions (mm)

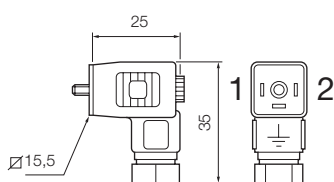
P2F - CNOMO - 22 x 30mm



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

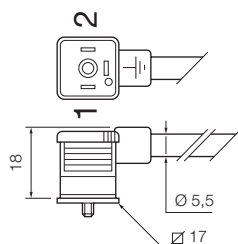
Form C
Cable plugs

- P8C-C**
- P8C-C26C**
- P8C-C21E**
- P8C-D**
- P8C-D26C**
- P8C-D21E**



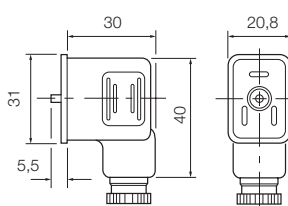
Form C
Cable plugs

- P8L-C2**
- P8LC5**
- P8L-C226C**
- P8L-C526C**
- P8L-CA26C**
- P8L-C221E**
- P8L-C521E**



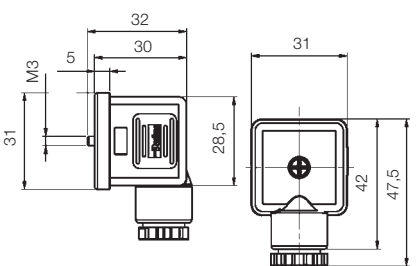
Form B
Cable plugs

- 3EV10V10**



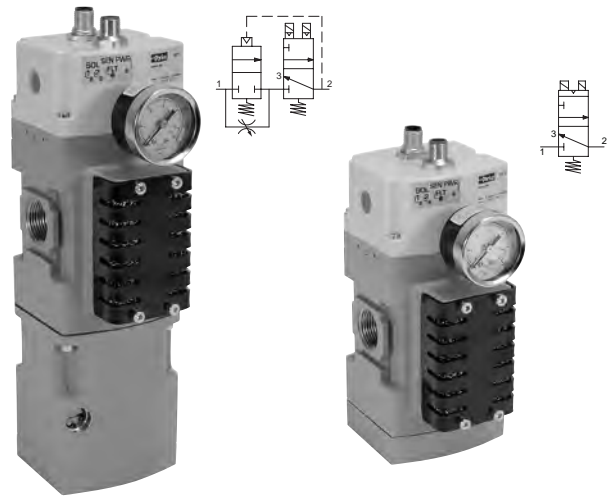
Form A
Cable plugs

- 3EV290V10**



Safety Exhaust Valves

- Easy electrical interface with M12 connectors to safety circuit
- External monitoring provides a cost and space saving advantage
- Solid state pressure sensors provide accurate, fast fault detection
- Quick visual LED indicators on the front of the valve
- Superior seated seal design for longer life
- Safety exhaust outlet is no-maintenance and non-clog by design
- Suitable for stand alone use or modular mounting to P32 or P33 FRL assembly
- High B10 life value
- Fast exhaust times allow for smaller machine footprint



(optional soft start)

Operating information

Operating pressure:	2 to 10 PSIG (30 to 150 bar)
Minimum operating pressure:	30 PSIG (2 bar)
Ambient temperature:	4° to 50°C (40° to 120°F)
Recommended filtration:	40µ
Operating medium:	Compressed air
Ingress protection class:	IP65
B10 (mio):	10 million switching cycles
B10 d (mio):	20 million switching cycles
Allowable discordance:	150ms
Flow media:	Compresses air to ISO 8573-1 Class 7:4:4
Weight kg (lbs):	2.9 (6.5) with soft start 1.9 (4.2) without soft start

The soft start opens to full flow at approximately 60% of input pressure.

Order Code for Ordering:

P3	3		B	1	6			E	N
Series Standard P3	Global Standard 3		Design Current B	Thread type BSPP 1	Port size 3/4" ¹ 6			Sensor Monitoring External E	Gauge ² No gauge N
		Type Safety redundant (no soft start) D Safety redundant (c/w soft start) T			Output for Solenoid, M12 Connector Pin		Output for Sensors, M12 Connector Pin		
					2 & 4, common 3 A		1 & 2, 1 & 4, common 3 A		
					3 & 4 C		1 & 2, 5 & 4, common 3 B		
					2 & 4 D		5 & 2, 1 & 4, common 3 C		

Notes:

1. For 1/2" connections use 1/2" port blocks on standard 3/4" housing.
2. Safety valve supplied with 1/8" gauge port in BSPP threads as specified for ports. Gauges shipped loose.

Note: Mounting and port blocks are sold separately.

Standard order code shown in bold.

General Technical Data

Valve type	Externally monitored, redundant, dual poppet
Soft start	Optional
Valve function	3/2 way, normally closed
Housing material	Cast aluminum
Seals	NBR
Fasteners	Stainless steel / brass
Silencer	Steel, non clog safety design

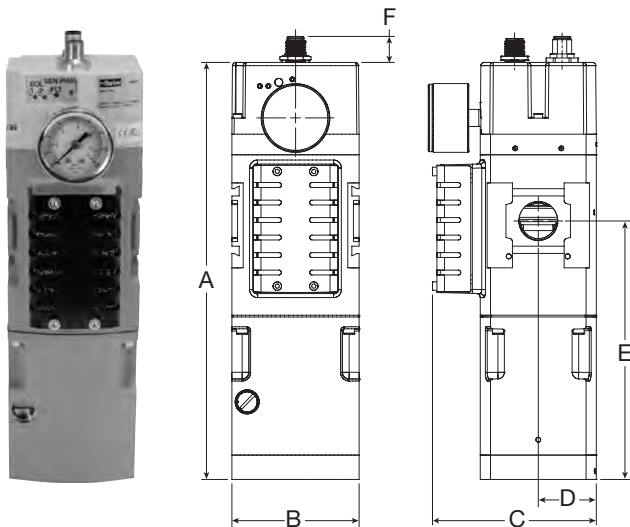
Electrical Specifications

Operating voltage	24V DC
Electrical connection	Two M12 connectors
Switching time 1-2 (ms)	23.3
Switching time 2-3 (ms)	42.7
Duty cycle (%)	100%
Operating voltage (DC)	21.6 to 26.4
Nominal power	
per solenoid coil at 24V DC (W) +/- 10%	1.2 W
per pressure sensor at 24V DC	1.2 W

In accordance with EN ISO 13849-1 this safety valve is suitable for use up to Category 4, Plc, sil 3. Certified to cCSAus and bears the CE mark.

A product Integration Guide is available to help connect your logic controller to the Parker Safety Exhaust Valve under the Product Support tab at www.parker.com/pdn/safetyvalve

Externally Monitored (with Soft Start)

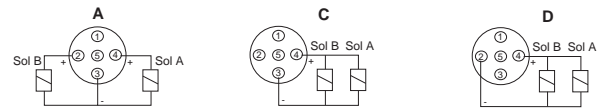


Mountings

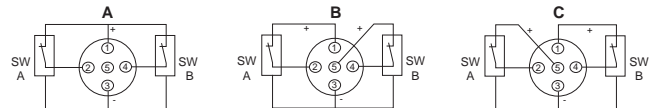
Body Connector		P32KA00CB †
T-Bracket w / Body Connector		P32KA00MT †
T-Bracket (fits to body connector or port block)		P32KA00MB †
Port Block Kits (includes two)	1/2" NPT	P32KA94CP
	1/2" BSPP	P32KA14CP †
	3/4" NPT	P32KA96CP
	3/4" BSPP	P32KA16CP †

† Standard order code shown in bold.

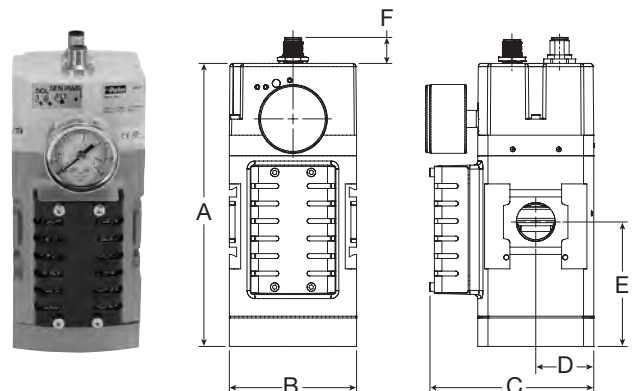
Solenoid M12 Pinouts



Pressure Sensor M12 Pinouts



Externally Monitored (No Soft Start)



Dimensions mm (inches)

	Ports	Standard nominal flow rate		A	B	C	D	E	F
		1 → 2 L/min (scfm) *	2 → 3 L/min (scfm) *						
Externally Monitored with soft start	3/4"	145 (4,100)	265 (7,500)	261.9 (10.31)	80 (3.15)	109.3 (4.30)	36.5 (1.44)	162.3 (6.39)	16.3 (0.64)
Externally Monitored no soft start	3/4"	152 (4,300)	265 (7,500)	178.7 (7.03)	80 (3.15)	109.3 (4.30)	36.5 (1.44)	79.0 (3.11)	16.3 (0.64)

* Standard nominal flow rate is based on 6 bar input pressure with ΔP = 1 bar

Safety Exhaust Valve Function

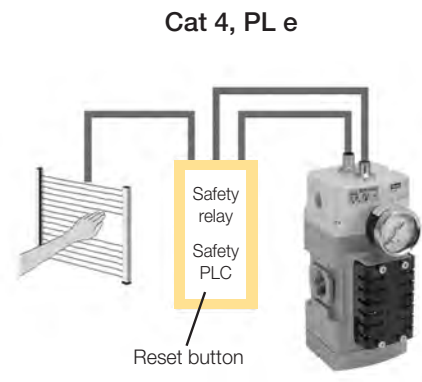
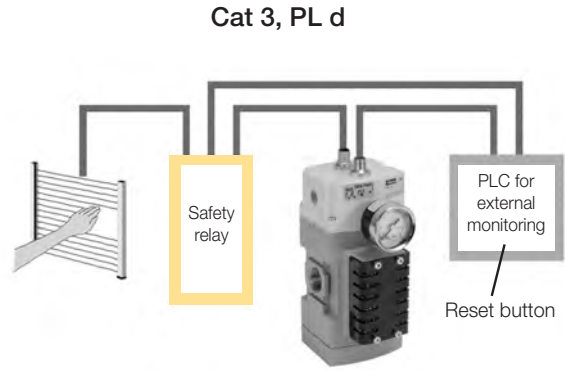
When applications demand a safe environment you can count on safety valves from Parker Hannifin. The P33 family of safety exhaust valves are 3/2 normally closed valves designed to rapidly exhaust compressed air in the event of a fault condition and to provide monitored coverage ensuring safe function. The P33 is available in two distinct styles, internally* or externally monitored. The valve is suitable for use up to Category 4, performance level e. Monitoring is achieved externally via a two channel system connected to a safety interface device. Both valves are available with an adjustable soft start and high flow exhaust to shut your equipment down faster when needed. LED's provide clear status of main solenoid operation, sensor power and fault condition for quick visual reference.

Externally Monitored Valve, Faults and Resets

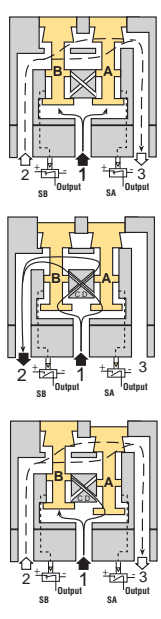
The externally monitored valve has the monitoring done via a PLC or relay which offers a size and cost advantage over internally monitored valves. The integration of a safety interface into the PLC or relay will help determine the achievable category and performance level of the control system. Customers are required to provide the logic function via the safety device. The valve will lock-out to the "safe state" if asynchronous movement of the valve elements occur which will be detected by solid state pressure sensors. To achieve the proper safety rating, the safety PLC or relay must monitor the solid state pressure sensors to ensure they are not in different states for more than 150ms. If the sensors are in different states for longer than 150ms then the programming logic must shut off power to the solenoids and consider it a fault condition. If during operation the externally monitored P33 enters a fault condition the valve will shut off. A separate reset signal must be incorporated into the logic sequence to avoid automatic restart of the valve. The safety exhaust valves are not for use with clutch or brake applications and are designed for use in conjunction with a safety relay or safety PLC for safe monitoring and fault detection.

Achieving Desired Performance Level **

The category and performance level (PLr) needed for your machine is determined by a risk assessment of the machinery design and application based on EN ISO 13849-1. The Parker P33 safety valve is designed for those applications requiring a PL of d or e. Please note these levels require other aspects of the system to meet these requirements. As a guide: you can achieve a Cat 4 PL e system by integrating monitoring via a programmable safety rated device. Because the P33 is a mechanical fail-safe device, the monitoring could also be done via a standard PLC and still attain as high as a PL d rating.



* For information on internally monitored safety valves reference Bulletin 0700-B13.
 ** An integration guide is available to provide further information on connecting the safety valve product to achieve the desired performance level. Please consult Parker and the standard EN ISO 13849-1 for more information.



Conditions at Start

The Safety exhaust valve starts with inlet 1 closed to outlet 2 by both valve elements A and B. Outlet 2 is open to exhaust 3. Pressure signals at both sensors SA and SB are exhausted and contacts 1 and 2 of sensors SA and SB are connected. The normally closed sensors both provide voltage feedback signals to the external monitoring system.

Normal Operation

During normal operation the two solenoids are simultaneously energized which actuates both pilots and causes valve elements A and B to shift. Inlet 1 is then connected to outlet 2 via crossflow passages C and D. Exhaust 3 is closed. Sensing pressure signals go to each pressure sensor and become equal to inlet pressure. Both sensors contacts open and no voltage signals are provided to the external monitoring system. This indicates that both sides of the valve actuated as expected.

Detecting a Malfunction

A malfunction in the system or the valve itself could cause one valve element to be open and the other closed. Air then flows past the inlet poppet on valve element A, into crossflow passage D, but is substantially blocked by the spool portion of element B. The large size of the open exhaust passage past element B keeps the pressure at the outlet port below 2% of inlet pressure. Full sensing air pressure from side A goes to sensor SA, and a reduced pressure goes to sensor SB. This full pressure signal causes SA to open. Sensor SB, with a reduced pressure signal, does not open. An external monitoring system can detect the malfunction by monitoring the outputs of the SA and SB sensors. The external monitor system must then react accordingly by shutting down the power to the valve solenoids and any other components deemed necessary to stop the machine.

Machinery Directive - Overview

The Machinery Directives' goal is to protect people and the environment from accidents caused from all types of machinery. Based on the standard EN 13849 [safety of machines; safety-related parts of control systems] these standards build the procedure to assess safety-related control systems.

Required Performance Level (PLr) based on a risk assessment are now commonly used to determine the safety level required for the controls system, for the application of machinery.

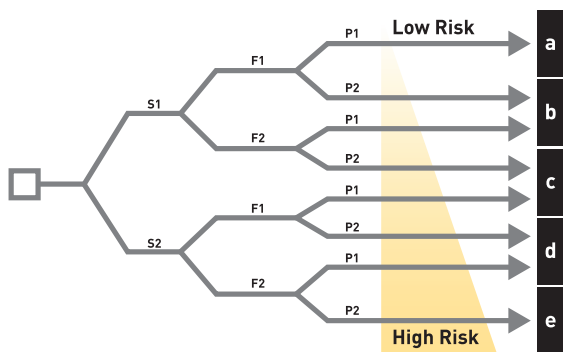
Performance Level (PL) based on the original B, 1,2,3,4 safety categories, diagnostic capabilities, Mean time to dangerous failure (MTTFd), and common cause failure (CCF), define safety levels of a given safety function. This ensures that safety is not just focused on component reliability, but instead introduces common sense safety principles such as redundancy, diversity, and fail-safe behavior of safety related control parts.

The new EN 13849 standards of the Machinery Directive dictates the machine is safe when the Performance Level of the safety control circuit is equal to or greater than the Required Performance Level of the application. When determining the required performance level, the greater the risk, the higher the requirements of the control system.

$$PLr \leq PL$$

Determining PLr According to EN 13849-1

The level of each hazardous situation is classified in five Performance levels from a to e. With PL a the control functions contribution to risk reduction is low, while at PL e it is high. The risk graph above can be used as a guideline to determine the required performance level PLr for safety function.



Risk Parameters

(S) Severity of injury

- S1 Slight (normally reversible injury)
- S2 Serious (normally irreversible injury, or death)

(F) Frequency and / or duration of exposure to hazard

- F1 Seldom to less often and / or brief
- F2 Frequent to continuous and / or long

(P) Possibility of avoiding the hazard

- P1 Possibility of avoiding the hazard
- P2 Scarcely ever possible

Determining PL According to EN 13849-1

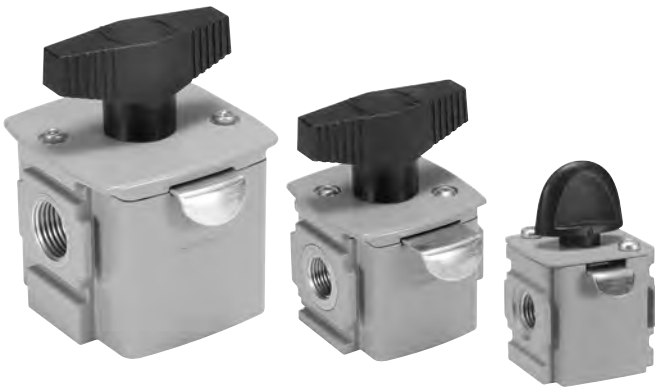
Determining the MTTF_d = Mean Time To Dangerous Failure

Determining the PL = Performance Level	a								10 ⁻⁴ ≤ PFH _d < 10 ⁻³	Determining the SIL = Safety Integrity Level
	b								3 X 10 ⁻⁴ ≤ PFH _d < 10 ⁻³	
	c								10 ⁻⁴ ≤ PFH _d < 3 X 10 ⁻⁴	
	d								10 ⁻⁵ ≤ PFH _d < 10 ⁻⁴	
	e								10 ⁻⁶ ≤ PFH _d < 10 ⁻⁵	
		DC < 60% None	DC < 60% None	60% ≤ DC < 90% Low	90% ≤ DC < 99% Medium	60% ≤ DC < 90% Low	90% ≤ DC < 99% Medium	99% ≤ DC High		
	Cat. B	Cat. 1	Cat. 2	Cat. 3	Cat. 4					
	CCF not relevant		CCF ≥ 65%							

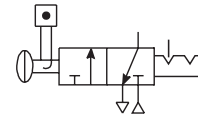
Categories Defined by EN 13849-1

Category	Summary
Category B	When a fault occurs it can lead to the loss of the safety function.
Category 1	Same that Category B, but loss of the safety function is less likely thanks to a good MTTFd of each channel.
Category 2	System behavior allow that the occurrence of a fault can lead to the loss of the safety function between the checks; the loss of the safety function is detected by the check.
Category 3	A single fault in any of safety related parts does not lead to the loss of the safety function. Whenever reasonably possible the single fault shall be detected at or before the next demand upon the safety function. (Means redundancy)
Category 4	Same as Category 3, but if detection of single fault is not possible on or before the next demand upon the safety, an accumulation of these undetected faults shall not lead to the loss of the safety function. (Means redundancy & check)

Ball Valve / Lockout Valve



Symbol



Features

The Ball / Lockout Valve shuts off downstream line pressure in the closed position with a 90° turn of the handle. In the closed position, inlet air pressure is blocked and downstream / system air is exhausted through a threaded port. To prevent unauthorized adjustment, the padlock slide may be assembled on either side. It is recommended that this slide is installed after final system assembly.

Note: This padlock slide is a permanent assembly and may not be removed later, any unauthorized tampering will void any warranty claims. The valve can only be locked in the closed position.

Ordering Information

Model type	Port size	Exhaust port	Thread type	Flow dm ³ /s (scfm)	Modular ball valve flow from left to right ◊
P31	1/4"	1/4"	BSPP	20 (42.4)	P31VB12LBNN
P32	3/8"	1/4"	BSPP	90 (190.7)	P32VB13LBNN
	1/2"	1/4"	BSPP	122 (258.5)	P32VB14LBNN
P33	1/2"	1/2"	BSPP	265 (561.5)	P33VB14LBNN
	3/4"	1/2"	BSPP	320 (678)	P33VB16LBNN

◊ For thread type: BSPP **1** NPT **9**

Specifications

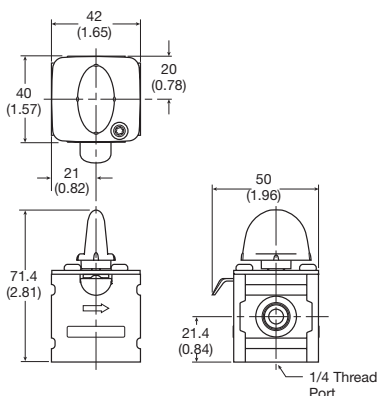
Operating temperature	-40°C to 80°C (-40°F to 176°F)	
Max. supply pressure	17 bar (250 psig)	
Port size	BSPP / NPT	1/4, 3/8, 1/2, 3/4
Weight	P31:	0.15 kg (0.33 lbs)
	P32:	0.36 kg (0.79 lbs)
	P33:	0.55 kg (1.21 lbs)

Material Specifications

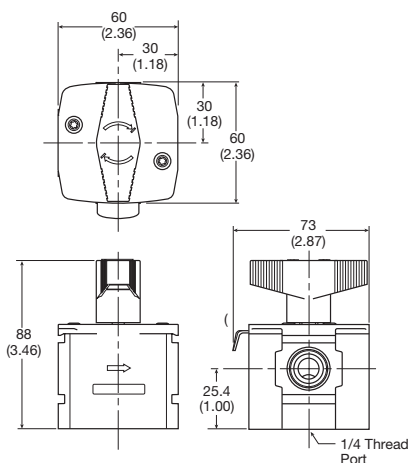
Body	Aluminum
Seals	PTFE
Ball	Stainless Steel
Lockout Tab	Zinc Plated Steel
Screw	Zinc Plated Steel

Dimensions mm (inches)

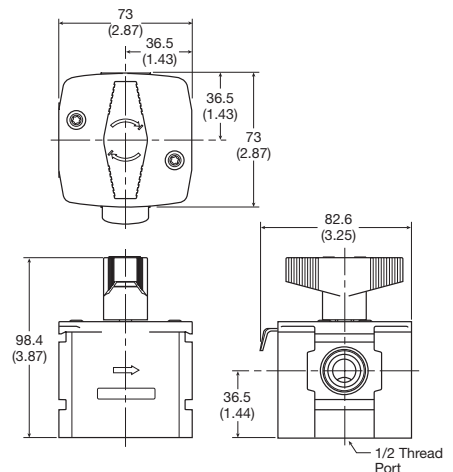
P31



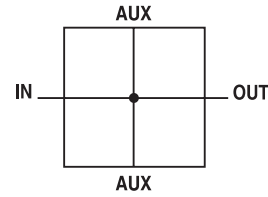
P32



P33



Manifold and Branch Blocks



Features

- Available in 1/4, 1/2 & 3/4 threaded inlet / outlet ports
- Two additional top and bottom auxiliary ports standard
- Can be mounted anywhere in the FRL system
- Flow capacity: 1/4 66 dm³/s, 1/2 189 dm³/s, 3/4 305 dm³/s

Manifold Blocks

Model Type	In / Out Port Size	Auxiliary Port Size Top	Auxiliary Port Size Bottom	Thread Type	Order Code
P31	1/4"	1/4"	1/4"	BSPP	P31MA12022N
P32	1/2"	1/4"	1/2"	BSPP	P32MA14024N
P33	3/4"	1/4"	1/2"	BSPP	P33MA16024N

For thread type: BSPP 1 NPT 9

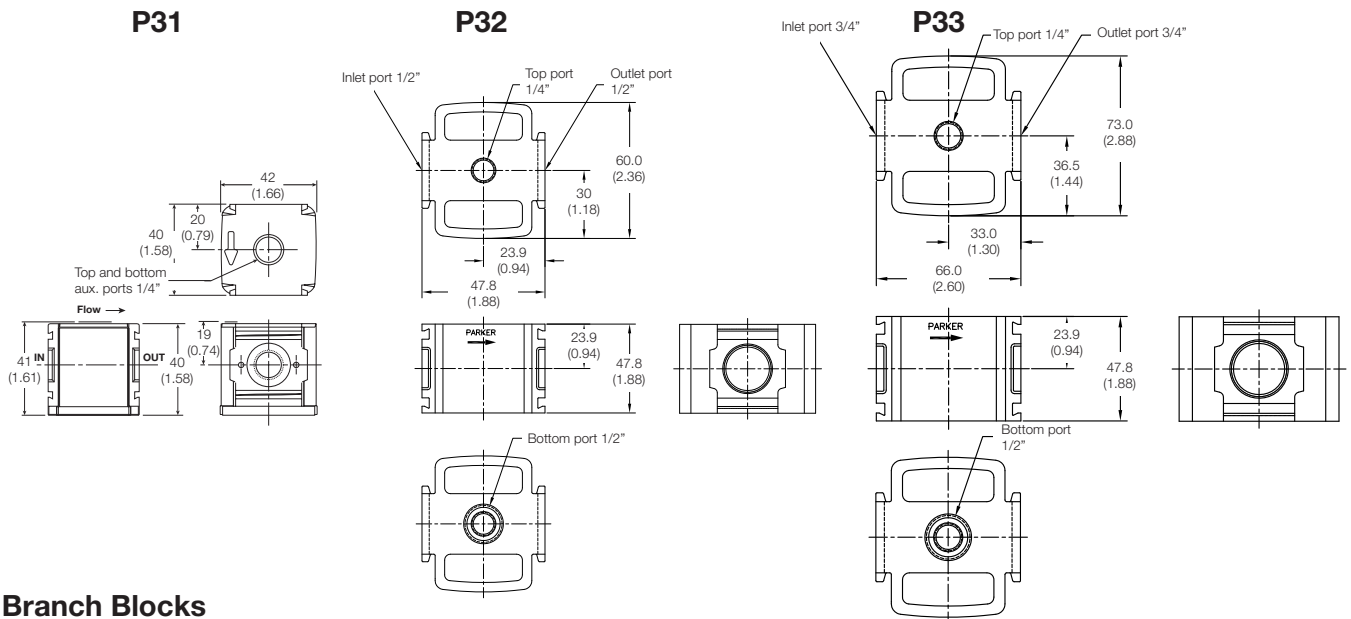
Materials of Construction

Body Aluminium

Specifications

Max Operating Temperature	65.5°C (150°F)	
Max Supply Pressure	20.7 bar (300 psi)	
Weight	P31:	0.19 kg (0.42 lbs)
	P32:	0.30 kg (0.66 lbs)
	P33:	0.34 kg (0.75 lbs)

Manifold Block - Dimensions



Branch Blocks

P32	1/2"	1/4"	1/4"	BSPP	P32MD14022N
P32	1/4"	1/4"	1/4"	BSPP	P32MD12022N

Materials of Construction

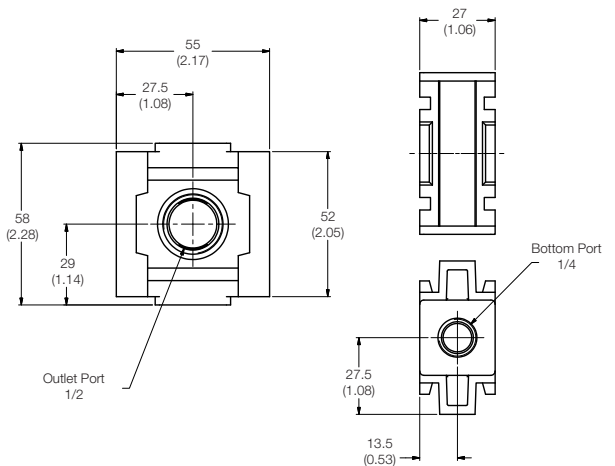
Body Aluminium

Specifications

Max Operating Temperature	65.5°C (150°F)
Max Supply Pressure	20.7 bar (300 psi)
Weight	0.14 kg (0.31 lbs)

Flow Capacity Manifold and Branch Blocks

1/4"	66 dm ³ /s (140 scfm)
1/2"	189 dm ³ /s (400 scfm)
3/4"	305 dm ³ /s (646 scfm)



Digital Pressure Sensor

- Sensor output:
PNP Open collector
Transistor output, 30VDC, 125mA with Analog output, 4 to 20mA
- Output response time less than 2.0 milliseconds
- RoHS
- Air and non-corrosive gases
- Sensor face includes icons to show sensor programming status

Programming options

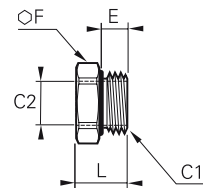
Outputs change N.O. / N.C.	4
Units of measure change	4
Hysteresis mode	4
Window comparator mode	4
Auto teach mode	4
Output response time	4
Lockout option	4
Password lockout	—
Max. value display	4
Min. value display	4
Zero reset	4
Red / Green LED display options	4
Error output mode	4



**Reducer Male/Female BSPP for MPS-34
Sensor BSPP Male**

Gauge port	Gauge port size	C1	C2	E	F	L	Weight (kg)	Order code	
P31R/P31H/P31E	1/8	Not concerned							
P32R/P32H/P32E	1/4	G1/4	G1/8	5.5	16	9.5	0.006	0178 13 10	
P33R/P33E	1/4								

With integrated O-Ring seal



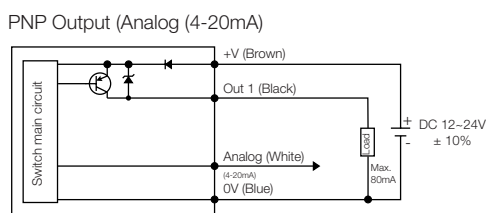
MPS-34 Sensor Only Order Codes

Pressure range	Electrical output	Electrical connection	Order code
0-30 inHg	(1) PNP with (1) 4-20ma	M8, 4 Pin	MPS-V34G-PCI
0-145 PSI	(1) PNP with (1) 4-20ma	M8, 4 Pin	MPS-P34G-PCI

MPS-34 Accessories

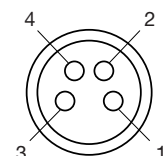
Description	Order code
M8, 4-pin, 2 meter cable	CB-M8-4P-2M-PUR
M8, 4-pin, 5 meter cable	CB-M8-4P-5M-PUR

Internal circuit for open collector and analog output wiring



Sensor pin out with analog output

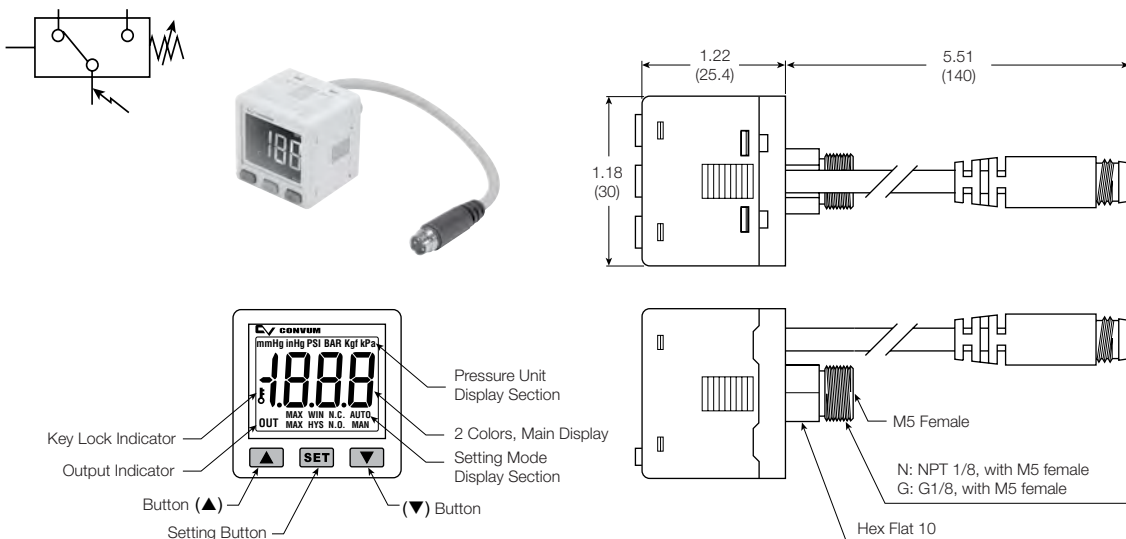
- Pin #**
- 1 Brown: 24VDC
 - 2 White: 4 to 20mA
 - 3 Blue: 0VDC
 - 4 Black: PNP Open Collector Output 1



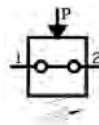
Specifications

	Vacuum (V)	Positive (P)
Pressure range	-101.3 to 0 kPa (-14.5 to 0 PSI)	-0.1 to 1 Mpa (0 to 145 PSI)
Proof pressure	0.3 Mpa (44PSI)	1.5 Mpa (218 PSI)
Display resolution, Units of measure	0.1, kPa	1, kPa
	0.001, kgf/cm ²	0.01, kgf/cm ²
	0.001, bar	0.01, bar
	0.01, PSI	0.1, PSI
	0.01, inHg	-
	1, mmHg	-
Media	Air & non-corrosive gases	
Pressure port	(N) 1/8" NPT male, (G) 1/8 BSPP male both with M5 female port	
Operating temperature	32 to 122°F (0 to 50°C)	
Storage temperature	-4 to 140°F (-20 to 60°C)	
Humidity	35 to 85% RH (no condensation)	
Electrical connection	(C) 4-pin, M8 connector on 150mm lead wire	
Power supply	12 to 24VDC ±10%, Ripple (P-P) 10% or less	
Display	3 + 1/2 digit, 2 color, 7-segment RED / GREEN LED	
Display refresh	Timing update : 0.1 ~ 3 sec. (Factory Set Unit: 0.1 sec.)	
Switch output	Output signal, PNP, Normally open or closed, LED indicator, 125 mA max. output load	
Output modes	Hysteresis or Window Comparator	
Response time	≤ 2.5ms (chattering-proof function: 24ms, 250ms, 500ms, 1000ms and 1500ms selections)	
Repeatability	± 0.2% of F.S. ± 1 digit	
Output current	Output current 4 to 20mA; Linearity ±1.0% of F.S.; Maximum load impedance 300Ω at power supply of 12V; 600Ω at power supply of 12V; Minimum load impedance 50Ω	
Thermal error	32 to 122°F (0 to 50°C) 25°C (77°C) + 2% of F.S. or less at range of 32 to 122°F (0 to 50°C)	
General protection	IP40, CE marked, EMC-EN61000-6-2: 2001	
Current consumption	45mA (with no load)	
Vibration resistance	10 to 150Hz, Double amplitude 1.5mm, XYZ, 2 hrs.	
Shock resistance	980 m/s ² (about 10G), 3 times/each directions X, Y, Z	
Noise Resistance	Vp-p400V, 10 ms, 0.5µs noise simulator	
Material	Housing: ABS (gray) , Pressure port: Zinc die-cast, Diaphragm: Silicon	
Mass	1.45 oz. (45g) with M8 connector	

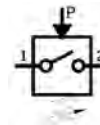
Dimensions mm (inches)



Analog Pressure Sensors



Break contact



Make contact

Characteristics

Safety pressure relief P _{max}	300 bar
Port size	G1/8, G1/4
Medium and ambient T _{max} temperature range	+100 °C
Switch back difference	Max. 5 - 15%
Voltage	Max. 48 V
Current	0.5 A
Degree of protection	IP 65
Switching frequency	Max. 200 s/min

Material

Housing	Passivated steel
Diaphragm	Buna N

Switching function

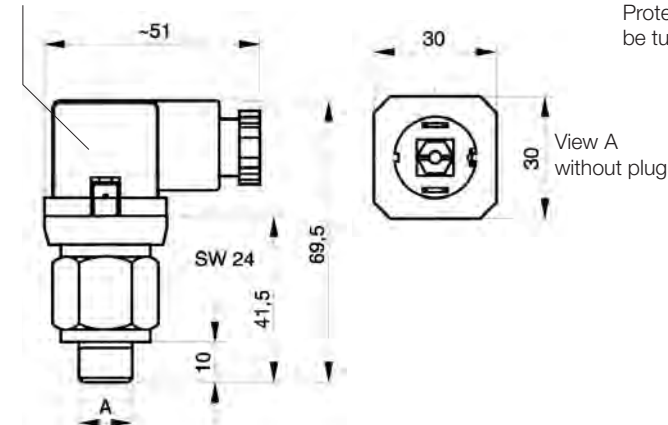
Make contact	Closes the circuit when the set pressure is reached
Break contact	Interrupts the circuit when the set pressure is reached

Order Code for Ordering

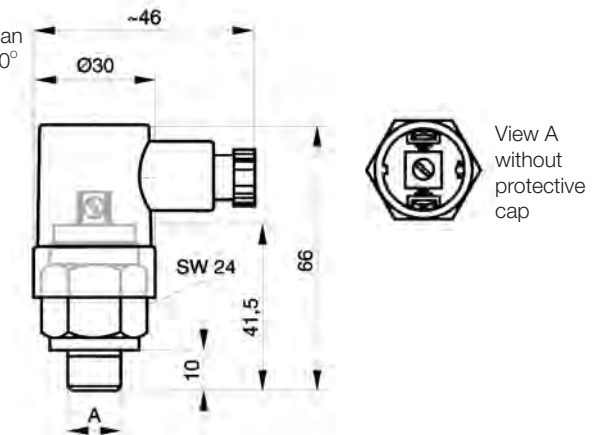
Order instructions Type	Port size A	Function	Setting range (bar)	Order code
PR / 0.1-1 NC ST 1/4 48	G1/4	Break contact	0.1-1	KL3439
PR / 0.1-1 NO ST 1/4 48	G1/4	Make contact	0.1-1	KL3440
PR / 1-10 NC ST 1/8 48	G1/8	Break contact	1-10	KL3437
PR / 1-10 NC ST 1/4 48	G1/4	Break contact	1-10	KL3436
PR / 1-10 NO ST 1/8 48	G1/8	Make contact	1-10	KL3438
PR / 1-10 NO ST 1/4 48	G1/4	Make contact	1-10	KL3435

Order instructions Type	Port size A	Function	Setting range (bar)	Order code
PR / 0.2-1 NO SR 1/4 48	G1/4	Make contact	0.2-1	KL3445
PR / 0.1-1 NC SR 1/4 48	G1/4	Break contact	0.1-1	KL3454
PR / 0.1-1 NO SR 1/4 48	G1/4	Make contact	0.1-1	KL3455
PR / 1-10 NC SR 1/8 48	G1/8	Break contact	1-10	KL3452
PR / 1-10 NC SR 1/4 48	G1/4	Break contact	1-10	KL3451
PR / 1-10 NO SR 1/8 48	G1/8	Make contact	1-10	KL3453
PR / 1-10 NO SR 1/4 48	G1/4	Make contact	1-10	KL3450

Plug can be turned 90°



Protective cap can be turned 6 x 60°

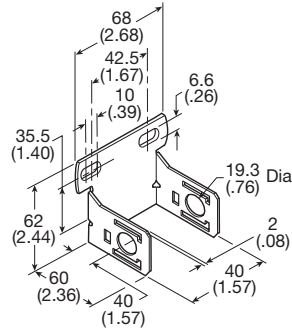


Dimensions in mm

Accessories - P31 Series

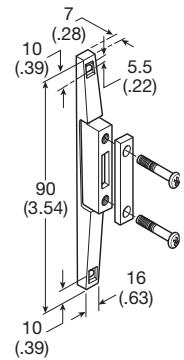
C-Bracket
(Fits to filter and lubricator body)

P31KA00MW



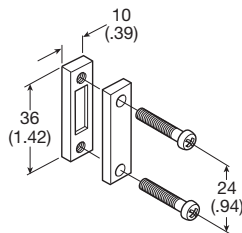
T-Bracket w/ Body Connector
(O-ring not shown)

P31KA00MT (0, 03kg)



Body Connector
(O-ring not shown)

P31KA00CB (0, 02kg)



Port Block Kit
(O-ring not shown)

- 1/8 NPT **P31KA91CP**
- 1/4 NPT **P31KA92CP**
- 3/8 NPT **P31KA93CP**
- 1/8 BSPP **P31KA11CP** †
- 1/4 BSPP **P31KA12CP** †
- 3/8 BSPP **P31KA13CP** †

† Standard order code shown in bold.



Port Block Kit w/ T-Bracket
(O-ring not shown)

- 1/8 NPT **P31KA91CN**
- 1/4 NPT **P31KA92CN**
- 3/8 NPT **P31KA93CN**
- 1/8 BSPP **P31KA11CN** †
- 1/4 BSPP **P31KA12CN** †
- 3/8 BSPP **P31KA13CN** †

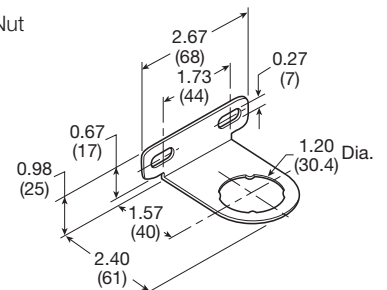
† Standard order code shown in bold.



Angle Bracket
(Fits to regulator and filter/regulator body)

P31KB00MR - with Plastic Nut

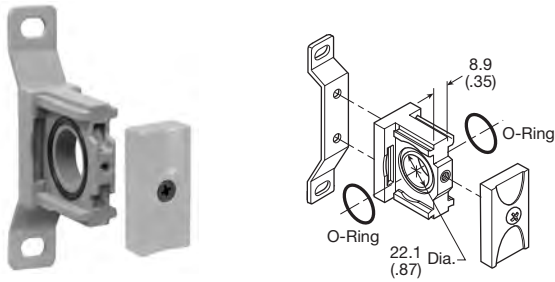
P31KB00MS - with Metal Nut



Accessories - P32 Series

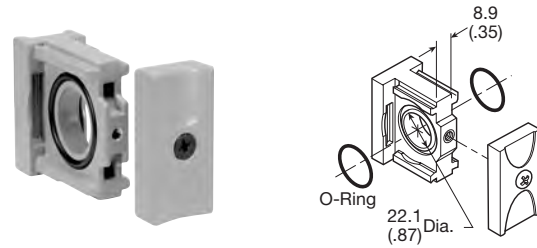
T-Bracket w/ Body Connector

P32KA00MT (0, 19kg)



Body Connector

P32KA00CB (0, 15kg)



Port Block Kit

- 1/4 NPT.....**P32KA92CP**
- 3/8 NPT.....**P32KA93CP**
- 1/2 NPT.....**P32KA94CP**
- 3/4 NPT.....**P32KA96CP**
- 1/4 BSPP**P32KA12CP** †
- 3/8 BSPP**P32KA13CP** †
- 1/2 BSPP**P32KA14CP** †
- 3/4 BSPP**P32KA16CP** †

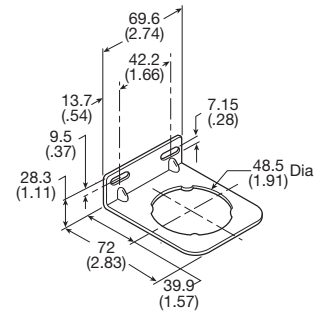
† Standard order code shown in bold.



Angle Bracket

(Fits to regulator and filter/regulator bonnet)

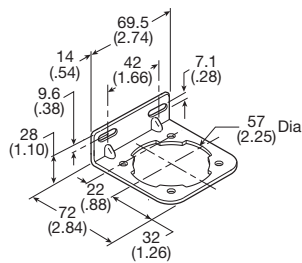
- P32KB00MR** - with Plastic Nut
- P32KB00MS** - with Metal Nut



L-Bracket

(Fits to filter and lubricator body)

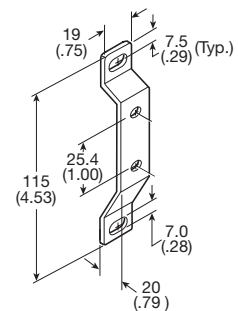
P32KA00ML



T-Bracket

(fits to body connector or port block)

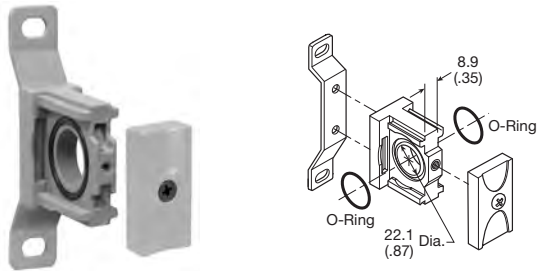
P32KA00MB



Accessories - P33 Series

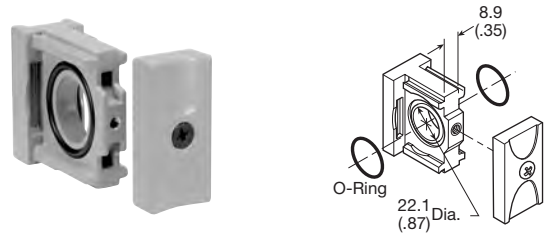
T-Bracket w/ Body Connector

P32KA00MT (0, 19kg)



Body Connector

P32KA00CB (0, 15kg)



Port Block Kit

- 1/4 NPT.....**P32KA92CP**
- 3/8 NPT.....**P32KA93CP**
- 1/2 NPT.....**P32KA94CP**
- 3/4 NPT.....**P32KA96CP**
- 1/4 BSPP**P32KA12CP** †
- 3/8 BSPP**P32KA13CP** †
- 1/2 BSPP**P32KA14CP** †
- 3/4 BSPP**P32KA16CP** †

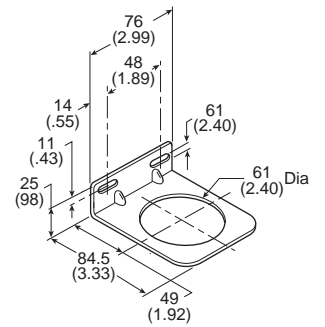
† Standard order code shown in bold.



Angle Bracket

(Fits to regulator and filter/regulator bonnet)

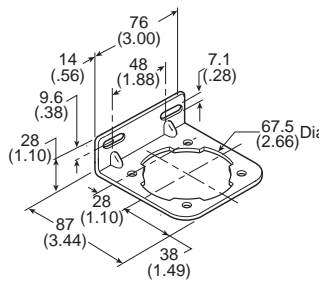
P33KA00MR



L-Bracket

(Fits to filter and lubricator body)

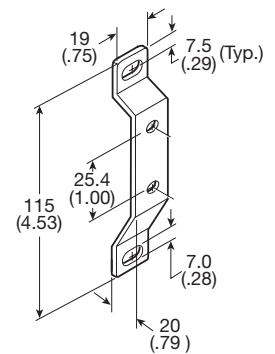
P33KA00ML



T-Bracket

(fits to body connector or port block)

P32KA00MB



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 Gauges:** To avoid potential polycarbonate bowl failures:
 - Do not locate polycarbonate bowls or sight gauges in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
 - Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, ketones, esters or certain alcohols.
 - Do not use polycarbonate bowls or sight gauges in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

Parker Global Air Preparation System

- 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 Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates,
Dubai

Tel: +971 4 8127100
parker.me@parker.com

AT – Austria, St. Florian

Tel: +43 (0)7224 66201
parker.austria@parker.com

AZ – Azerbaijan, Baku

Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/NL/LU – Benelux,

Hendrik Ido Ambacht
Tel: +31 (0)541 585 000
parker.nl@parker.com

BG – Bulgaria, Sofia

Tel: +359 2 980 1344
parker.bulgaria@parker.com

BY – Belarus, Minsk

Tel: +48 (0)22 573 24 00
parker.poland@parker.com

CH – Switzerland, Etoy

Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CZ – Czech Republic, Klecany

Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst

Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup

Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid

Tel: +34 902 330 001
parker.spain@parker.com

FI – Finland, Vantaa

Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve

Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Piraeus

Tel: +30 210 933 6450
parker.greece@parker.com

HU – Hungary, Budaörs

Tel: +36 23 885 470
parker.hungary@parker.com

IE – Ireland, Dublin

Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IL – Israel

Tel: +39 02 45 19 21
parker.israel@parker.com

IT – Italy, Corsico (MI)

Tel: +39 02 45 19 21
parker.italy@parker.com

KZ – Kazakhstan, Almaty

Tel: +7 7273 561 000
parker.easteurope@parker.com

NO – Norway, Asker

Tel: +47 66 75 34 00
parker.norway@parker.com

PL – Poland, Warsaw

Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal

Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest

Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow

Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Borås

Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SK – Slovakia, Banská Bystrica

Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto

Tel: +386 7 337 6650
parker.slovenia@parker.com

TR – Turkey, Istanbul

Tel: +90 216 4997081
parker.turkey@parker.com

UA – Ukraine, Kiev

Tel: +48 (0)22 573 24 00
parker.poland@parker.com

UK – United Kingdom, Warwick

Tel: +44 (0)1926 317 878
parker.uk@parker.com

ZA – South Africa, Kempton Park

Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

North America

CA – Canada, Milton, Ontario

Tel: +1 905 693 3000

US – USA, Cleveland

Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill

Tel: +61 (0)2-9634 7777

CN – China, Shanghai

Tel: +86 21 2899 5000

HK – Hong Kong

Tel: +852 2428 8008

IN – India, Mumbai

Tel: +91 22 6513 7081-85

JP – Japan, Tokyo

Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul

Tel: +82 2 559 0400

MY – Malaysia, Shah Alam

Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington

Tel: +64 9 574 1744

SG – Singapore

Tel: +65 6887 6300

TH – Thailand, Bangkok

Tel: +662 186 7000

TW – Taiwan, Taipei

Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires

Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos

Tel: +55 800 727 5374

CL – Chile, Santiago

Tel: +56 2 623 1216

MX – Mexico, Toluca

Tel: +52 72 2275 4200

EMEA Product Information Centre

Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL,
IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

US Product Information Centre

Toll-free number: 1-800-27 27 537

www.parker.com

