

**E**

Air Preparation Products

# Air Preparation Products

## Air Preparation Products

### Global FRL's



- Port size: 1/4 through 3/4 inch
- Maximum supply pressure: 300 PSIG
- Operating temperature: -13°F through 150°F
- Filters, regulators, filter / regulators, lubricators and accessories

E3

### General Industrial FRL's



- Port size: 1/8 through 3 inch
- Maximum supply pressure: 250 PSIG
- Operating temperature: 32°F through 150°F
- Filters, regulators, filter / regulators, lubricators and accessories

E83

### Prep-Air II FRL's



- Compact & standard
- Port size: 1/4 through 3/4 inch
- Filters, regulators, filter / regulators, lubricators and accessories
- Operating temperature: 32°F through 175°F
- Point of use applications
- Modular construction

E44

### Stainless Steel FRL's



- Port sizes: 1/4 and 1/2 inch
- Stainless steel construction handles most corrosive environments
- Operating temperature -40°F through 180°F
- Meets NACE specifications MR-01-75/ISO 15156
- Filters, regulators, filter / regulators, and lubricators

E104

### Miniature FRL's



- Port size: 1/8 through 3/8 inch
- Filters, regulators, filter / regulators, lubricators and accessories
- Operating temperature: -4°F through 125°F
- Non-modular construction
- Ideal for point of use applications

E63

### Precision / Proportional Regulators



- Port sizes: 1/4 through 2 inch
- Maximum supply pressure: 300 PSIG
- Operating temperature: -40°F through 200°F
- High precision
- Electronic proportional

E111

### P3N FRL's



- Port size: 3/4 through 1-1/2 inch
- Filters, regulators, filter / regulators, lubricators and accessories
- Operating temperature: 32°F through 175°F
- High flow

E74

### Bulk Liquid Separators



- Port sizes 1/4 through 6 inch flange
- High liquid removal efficiencies at all flow conditions
- Low maintenance
- Suitable for variable flow compressors

E122

## Global Modular Particulate Filters

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



**P31**



**P32**



**P33**

### Operating information

	P31 (Mini)	P32 (Compact)	P33 (Standard)
Supply pressure (max):			
Plastic Bowl	10 bar (150 PSIG)	10 bar (150 PSIG)	10 bar (150 PSIG)
Metal Bowl	17 bar (250 PSIG)	17 bar (250 PSIG)	17 bar (250 PSIG)
Operating temperature:			
Plastic Bowl	-10°C to 52°C (14°F to 25°F)	-25°C to 52°C (-13°F to 25°F)	-25°C to 52°C (-13°F to 25°F)
Metal Bowl	-10°C to 65.5°C (14°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)
Standard filtration:	5 micron	5 micron	5 micron
Flow Capacity*:			
1/4	12 dm <sup>3</sup> /s (25 SCFM)*	18 dm <sup>3</sup> /s (38 SCFM)*	—
3/8	—	30 dm <sup>3</sup> /s (64 SCFM)*	—
1/2	—	38 dm <sup>3</sup> /s (80 SCFM)*	40 dm <sup>3</sup> /s (85 SCFM)*
3/4	—	—	48 dm <sup>3</sup> /s (102 SCFM)*

\*Inlet pressure 6.3 bar (91.3 PSIG), pressure 0.34 bar (4.9 PSIG).

For Flow Curve Charts please see page E34.

### Ordering information

**P31F A 9 2 E G M N**

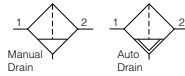
<b>Basic series</b>	<b>Engr level</b>	<b>Thread type</b>	<b>Port size</b>	<b>Element</b>	<b>Drain type</b>	<b>Bowl type</b>	<b>Mounting</b>
Global modular mini particulate filter <b>P31F</b>	Current <b>A</b>	BSPP <b>1</b> BSPT <b>2</b> NPT <b>9</b>	1/4 (P31, P32) <b>2</b> 3/8 (P32) <b>3</b> 1/2 (P32, P33) <b>4</b> 3/4 (P33) <b>6</b>	5µ Element <b>E</b>	M Manual drain A Auto drain (P32, P33) B Pulse drain (P31)	G Poly bowl with bowl guard M Metal bowl without sight gauge S* Metal bowl with sight gauge	N No bracket

**Bold items are most common.**

\* Not available with P31 Series.



**Particulate Filters**



Port size	Bowl type	Drain type	Element type	Part number		
				P31	P32	P33
1/4"	Poly	Manual	5 micron	<b>P31FA92EGMN</b>	<b>P32FA92EGMN</b>	
1/4"	Poly	Pulse	5 micron	<b>P31FA92EGBN</b>		
1/4"	Poly	Auto	5 micron		<b>P32FA92EGAN</b>	
1/4"	Metal	Manual	5 micron	<b>P31FA92EMMN</b>	<b>P32FA92ESMN</b>	
1/4"	Metal	Pulse	5 micron	<b>P31FA92EMBN</b>		
1/4"	Metal	Auto	5 micron		<b>P32FA92ESAN</b>	
3/8"	Poly	Manual	5 micron		<b>P32FA93EGMN</b>	
3/8"	Poly	Auto	5 micron		<b>P32FA93EGAN</b>	
3/8"	Metal	Manual	5 micron		<b>P32FA93ESMN</b>	
3/8"	Metal	Auto	5 micron		<b>P32FA93ESAN</b>	
1/2"	Poly	Manual	5 micron		<b>P32FA94EGMN</b>	<b>P33FA94EGMN</b>
1/2"	Poly	Auto	5 micron		<b>P32FA94EGAN</b>	<b>P33FA94EGAN</b>
1/2"	Metal	Manual	5 micron		<b>P32FA94ESMN</b>	<b>P33FA94ESMN</b>
1/2"	Metal	Auto	5 micron		<b>P32FA94ESAN</b>	<b>P33FA94ESAN</b>
3/4"	Poly	Manual	5 micron			<b>P33FA96EGMN</b>
3/4"	Poly	Auto	5 micron			<b>P33FA96EGAN</b>
3/4"	Metal	Manual	5 micron			<b>P33FA96ESMN</b>
3/4"	Metal	Auto	5 micron			<b>P33FA96ESAN</b>

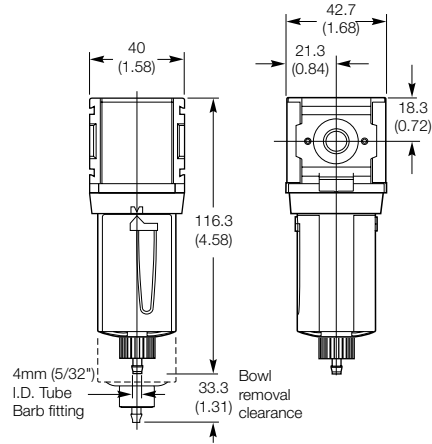
**Service kits**

Description		P31	P32	P33
Plastic bowl / bowl guard	Manual drain	<b>P31KA00BGM</b>	<b>P32KA00BGM</b>	<b>P33KA00BGM</b>
	Pulse drain	<b>P31KA00BGB</b>		
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Metal bowl w/o sight gauge	Manual drain	<b>P31KA00BMM</b>		
	Pulse drain	<b>P31KA00BMB</b>		
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Metal bowl / sight gauge	Manual drain		<b>P32KA00BSM</b>	<b>P33KA00BSM</b>
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Filter element	5µ particulate	<b>P31KA00ESE</b>	<b>P32KA00ESE</b>	<b>P33KA00ESE</b>
C-bracket	Fits to body	<b>P31KA00MW</b>		
L-bracket	Fits to body		<b>P32KA00ML</b>	<b>P33KA00ML</b>
	Fits to body connector		<b>P32KA00MB</b>	<b>P32KA00MB</b>
T-bracket	With body connector	<b>P31KA00MT</b>	<b>P32KA00MT</b>	<b>P33KA00MT</b>
Body connector		<b>P31KA00CB</b>	<b>P32KA00CB</b>	<b>P32KA00CB</b>
Differential pressure indicator (replacement)		<b>P31KA00RQ</b>	<b>P32KA00RQ</b>	<b>P32KA00RQ</b>

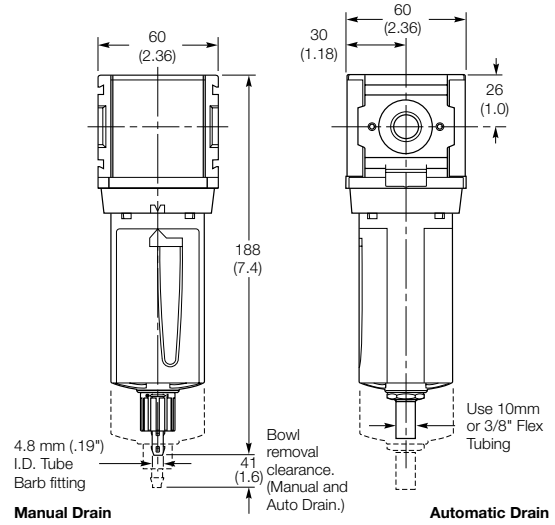
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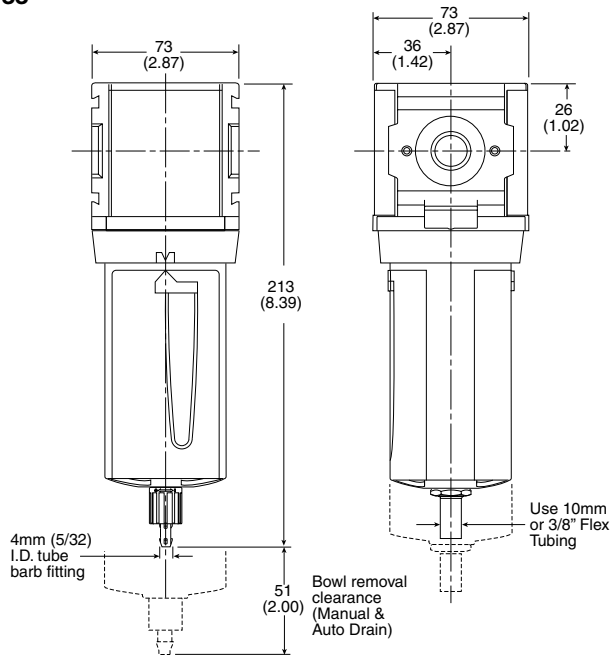
**P31**



**P32**



**P33**



**Material specifications**

Description		P31	P32	P33
Body		Aluminum	Aluminum	Aluminum
Body cap		N/A	N/A	ABS
Bowl	Plastic bowl	Polycarbonate	Polycarbonate	Polycarbonate
	Metal bowl	Aluminum	Aluminum	Aluminum
Bowl guard		Nylon	Nylon	Nylon
Deflector		N/A	Polypropylene	Polypropylene
Element retainer / baffle		Acetal	Acetal	Acetal
Filter element		Sintered Polyethylene	Sintered Polyethylene	Sintered Polyethylene
Seals		Nitrile	Nitrile	Nitrile
Sight gauge	Metal bowl	N/A	Polycarbonate	Polycarbonate



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Prep-Air II

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General Industrial

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Miniature

P3N

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Bulk Liquid Separators

## Global Modular Coalescing & Adsorber Filters

- Integral 1/4", 3/8", 1/2", 3/4" ports (NPT, BSPP & BSPT)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- 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 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 Coalescing Filter upstream of the Adsorber. Adsorber element should be replaced approximately every 1000 hours of service.



### Operating information

	P31 (Mini)	P32 (Compact)	P33 (Standard)
Supply pressure (max):			
Plastic Bowl	10 bar (150 PSIG)	10 bar (150 PSIG) <sup>§</sup>	10 bar (150 PSIG) <sup>§</sup>
Metal Bowl	17 bar (250 PSIG)	10 bar (150 PSIG) <sup>§</sup>	10 bar (150 PSIG) <sup>§</sup>
Operating temperature:			
Plastic Bowl	-10°C to 52°C (14°F to 125°F)	-25°C to 52°C (-13°F to 125°F)	-25°C to 52°C (-13°F to 125°F)
Metal Bowl	-10°C to 65.5°C (14°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)
Standard filtration:	1.0 and 0.01 micron	1.0 and 0.01 micron	1.0 and 0.01 micron
Flow Capacity:			
1.0 Micron Coalescing –			
Energy Efficient Flow*	3.8 dm <sup>3</sup> /s (8 SCFM)	17 dm <sup>3</sup> /s (36 SCFM)	32 dm <sup>3</sup> /s (68 SCFM)
Maximum Flow**	6 dm <sup>3</sup> /s (13 SCFM)	27 dm <sup>3</sup> /s (57 SCFM)	44 dm <sup>3</sup> /s (93 SCFM)
0.01 Micron Coalescing –			
Energy Efficient Flow*	2 dm <sup>3</sup> /s (4.2 SCFM)	11 dm <sup>3</sup> /s (23 SCFM)	20 dm <sup>3</sup> /s (42 SCFM)
Maximum Flow**	3.8 dm <sup>3</sup> /s (8 SCFM)	28 dm <sup>3</sup> /s (38 SCFM)	34 dm <sup>3</sup> /s (72 SCFM)
Activated Carbon Adsorber			
Rated Flow*:	6 dm <sup>3</sup> /s (13 SCFM)	27 dm <sup>3</sup> /s (57 SCFM)	44 dm <sup>3</sup> /s (93 SCFM)

\* Inlet pressure 6.3 bar (91.3 PSIG), pressure drop 0.2 bar (3 PSIG) saturated element.  
 \*\* Inlet pressure 6.3 bar (91.3 PSIG), pressure drop 0.4 bar (6 PSIG) saturated element.  
 § Without pressure indicator (DPI) – max. supply pressure for metal bowl version is 17 bar (250 psig).  
 For Flow Curve Charts please see page E35.

### Ordering information

**P31F A 9 2 C G M N**

<b>Basic series</b>	<b>Engr level</b>	<b>Thread type</b>	<b>Port size</b>	<b>Drain type</b>	<b>Bowl type</b>	<b>Element</b>
Global modular mini coalescing filter P31	Current A	BSPP 1	1/4 (P31, P32) 2	M Manual drain	G Poly bowl with bowl guard	C 0.01µ Element
Global modular compact coalescing filter P32		BSPT 2	3/8 (P32) 3	A Auto drain (P32, P33)	M Metal bowl without sight gauge	D 0.01µ Element with DPI
Global modular standard coalescing filter P33		NPT 9	1/2 (P32, P33) 4	B Pulse drain (P31)	S* Metal bowl with sight gauge	9 1µ Element
			3/4 (P33) 6			Q 1µ Element with DPI
						A Adsorber

**Mounting**  
N No bracket

**Element**  
C 0.01µ Element  
D 0.01µ Element with DPI  
9 1µ Element  
Q 1µ Element with DPI  
A Adsorber

\* Not available with P31 Series.

**Bold items are most common.**





**Coalescing and Adsorber Filters,**



(1 micron and adsorber elements available)



Port size	Bowl type	Drain type	Element type	Part number		
				P31	P32	P33
1/4"	Poly	Manual	0.01 micron	<b>P31FA92CGMN</b>	<b>P32FA92DGMN</b>	
1/4"	Poly	Pulse	0.01 micron	<b>P31FA92CGBN</b>		
1/4"	Poly	Auto	0.01 micron		<b>P32FA92DGAN</b>	
1/4"	Metal	Manual	0.01 micron	<b>P31FA92CMMN</b>	<b>P32FA92DSMN</b>	
1/4"	Metal	Pulse	0.01 micron	<b>P31FA92CMBN</b>		
1/4"	Metal	Auto	0.01 micron		<b>P32FA92DSAN</b>	
3/8"	Poly	Manual	0.01 micron		<b>P32FA93DGMN</b>	
3/8"	Poly	Auto	0.01 micron		<b>P32FA93DGAN</b>	
3/8"	Metal	Manual	0.01 micron		<b>P32FA93DSMN</b>	
3/8"	Metal	Auto	0.01 micron		<b>P32FA93DSAN</b>	
1/2"	Poly	Manual	0.01 micron		<b>P32FA94DGMN</b>	<b>P33FA94DGMN</b>
1/2"	Poly	Auto	0.01 micron		<b>P32FA94DGAN</b>	<b>P33FA94DGAN</b>
1/2"	Metal	Manual	0.01 micron		<b>P32FA94DSMN</b>	<b>P33FA94DSMN</b>
1/2"	Metal	Auto	0.01 micron		<b>P32FA94DSAN</b>	<b>P33FA94DSAN</b>
3/4"	Poly	Manual	0.01 micron			<b>P33FA96DGMN</b>
3/4"	Poly	Auto	0.01 micron			<b>P33FA96DGAN</b>
3/4"	Metal	Manual	0.01 micron			<b>P33FA96DSMN</b>
3/4"	Metal	Auto	0.01 micron			<b>P33FA96DSAN</b>

**Service kits**

Description		P31	P32	P33
Plastic bowl / bowl guard	Manual drain	<b>P31KA00BGM</b>	<b>P32KA00BGM</b>	<b>P33KA00BGM</b>
	Pulse drain	<b>P31KA00BGB</b>		
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Metal bowl w/o sight gauge	Manual drain	<b>P31KA00BMM</b>		
	Pulse drain	<b>P31KA00BMB</b>		
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Metal bowl / sight gauge	Manual drain		<b>P32KA00BSM</b>	<b>P33KA00BSM</b>
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Filter element	1µ coalescing	<b>P31KA00ES9</b>	<b>P32KA00ES9</b>	<b>P33KA00ES9</b>
	0.01µ coalescing	<b>P31KA00ESC</b>	<b>P32KA00ESC</b>	<b>P33KA00ESC</b>
	Activated carbon adsorber	<b>P31KA00ESA</b>	<b>P32KA00ESA</b>	<b>P33KA00ESA</b>
C-bracket	Fits to body	<b>P31KA00MW</b>		
L-bracket	Fits to body		<b>P32KA00ML</b>	<b>P33KA00ML</b>
T-bracket	Fits to body connector		<b>P32KA00MB</b>	<b>P32KA00MB</b>
	With body connector	<b>P31KA00MT</b>	<b>P32KA00MT</b>	<b>P32KA00MT</b>
Body connector		<b>P31KA00CB</b>	<b>P32KA00CB</b>	<b>P32KA00CB</b>
Differential pressure indicator (replacement)		<b>P31KA00RQ</b>	<b>P32KA00RQ</b>	<b>P32KA00RQ</b>

Most popular.



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

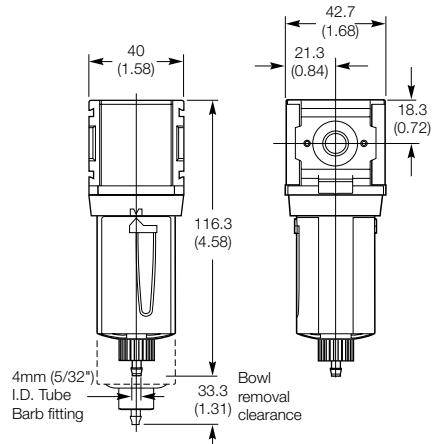
Stainless Steel

Precision / Proportional

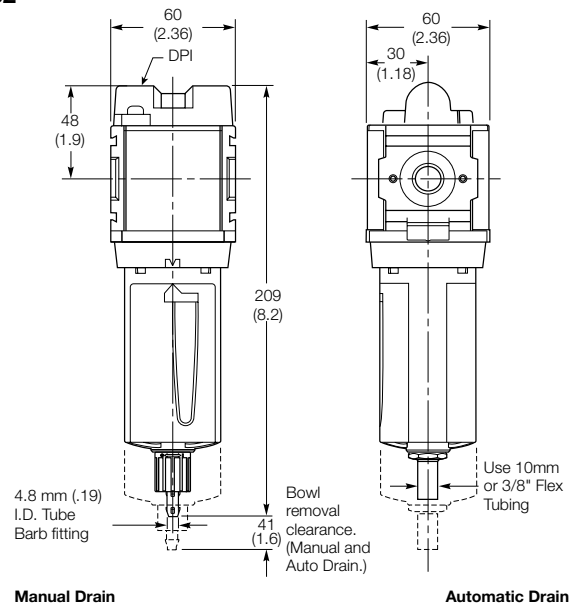
Bulk Liquid Separators

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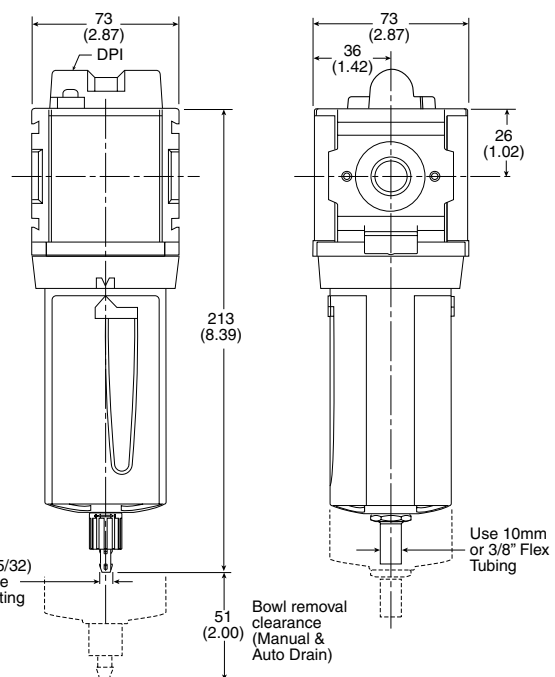
**P31**



**P32**



**P33**



**Material specifications**

Description	P31	P32	P33
Body	Aluminum	Aluminum	Aluminum
Body cap	N/A	N/A	ABS
Bowl	Plastic bowl	Polycarbonate	Polycarbonate
	Metal bowl	Aluminum	Aluminum
Bowl guard	Nylon	Nylon	Nylon
Filter element	Borosilicate cloth, 1.0 and .01 micron	Borosilicate cloth, 1.0 and .01 micron	Borosilicate cloth, 1.0 and .01 micron
Adsorber	Activated carbon	Activated carbon	Activated carbon
Seals	Nitrile	Nitrile	Nitrile
Sight gauge	Metal bowl	N/A	Polycarbonate



## Global Modular Regulators

- Integral 1/4", 3/8", 1/2", 3/4" ports (NPT, BSPP & BSPT)
- 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)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Relieving & Non-relieving types
- Non-rising knob



**P31**



**P32**



**P33**

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

### 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.

### Operating information

	P31 (Mini)	P32 (Compact)	P33 (Standard)
Supply pressure (max):	20 bar (300 PSIG)	20 bar (300 PSIG)	20 bar (300 PSIG)
Operating temperature:	-20°C to 65.5°C (-4°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)
Units with square gauges:	-15°C to 65.5°C (5°F to 150°F)		
Flow Capacity*:	1/4 30 dm³/s (64 SCFM)	41 dm³/s* (81 SCFM)*	—
	3/8 —	65 dm³/s* (138 SCFM)*	—
	1/2 —	67 dm³/s* (142 SCFM)*	100 dm³/s* (212 SCFM)*
	3/4 —	—	100 dm³/s* (212 SCFM)*

\* Inlet pressure 10 bar (145 PSIG). Secondary pressure 6.3 bar (91.3 PSIG), pressure drop 1 bar (14.7 PSIG)

For Flow Curve Charts please see page E36.

### Ordering information

**P31R A 9 2 B N N P**

<b>Basic series</b> Global modular mini regulator <b>P31R</b> Global modular compact regulator <b>P32R</b> Global modular standard regulator <b>P33R</b>	<b>Engr level</b> Current <b>A</b>	<b>Thread type</b> BSPP <b>1</b> BSPT <b>2</b> NPT <b>9</b>	<b>Port size</b> 1/4 (P31, P32) <b>2</b> 3/8 (P32) <b>3</b> 1/2 (P32, P33) <b>4</b> 3/4 (P33) <b>6</b>	<b>Relief</b> Relieving <b>B</b> Non-relieving <b>N</b> Reverse flow-relieving <b>R</b>	<b>Mounting</b> P Plastic panel mount nut	<b>Adjustment range</b> <table border="1"> <thead> <tr> <th colspan="2">P31 &amp; P32 with square gauge</th> <th colspan="2">With round gauge</th> </tr> <tr> <th>psig</th> <th>bar</th> <th>Z</th> <th></th> </tr> </thead> <tbody> <tr> <td>1 = 30*</td> <td>V = 2*</td> <td>M</td> <td>4 bar; 60 psig; 0.4 MPa</td> </tr> <tr> <td>3 = 60</td> <td>S = 4</td> <td>G</td> <td>8 bar; 125 psig; 0.8 MPa</td> </tr> <tr> <td>5 = 125</td> <td>T = 8</td> <td>J<sup>‡</sup></td> <td>17 bar; 250 psig; 1.7 MPa</td> </tr> <tr> <td colspan="4"><b>Without gauge</b></td> </tr> <tr> <td></td> <td></td> <td>Y</td> <td>2 bar; 30 psig; 0.2 MPa</td> </tr> <tr> <td></td> <td></td> <td>L</td> <td>4 bar; 60 psig; 0.4 MPa</td> </tr> <tr> <td></td> <td></td> <td>N</td> <td>8 bar; 125 psig; 0.8 MPa</td> </tr> <tr> <td></td> <td></td> <td>H<sup>‡</sup></td> <td>17 bar; 250 psig; 1.7 MPa</td> </tr> </tbody> </table>	P31 & P32 with square gauge		With round gauge		psig	bar	Z		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 <sup>‡</sup>	17 bar; 250 psig; 1.7 MPa	<b>Without gauge</b>						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 <sup>‡</sup>	17 bar; 250 psig; 1.7 MPa
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**Bold items are most common.**

\* Unit comes with 0-4 bar or 0-60 psig gauge respectively.  
 † Not available with poly bowl with bowl guard.  
 ‡ Not available with P31 Series.



**Regulators**



Port size	Pressure (relieving)	Gauge	Part number		
			P31	P32	P33
1/4"	8 bar (125 PSIG)	—	<b>P31RA92BNNP</b>	<b>P32RA92BNNP</b>	
1/4"	8 bar (125 PSIG)	Square	<b>P31RA92BN5P</b>		
1/4"	8 bar (125 PSIG)	Round		<b>P32RA92BNGP</b>	
3/8"	8 bar (125 PSIG)	—		<b>P32RA93BNNP</b>	
3/8"	8 bar (125 PSIG)	Round		<b>P32RA93BNGP</b>	
1/2"	8 bar (125 PSIG)	—		<b>P32RA94BNNP</b>	<b>P33RA94BNNP</b>
1/2"	8 bar (125 PSIG)	Round		<b>P32RA94BNGP</b>	<b>P33RA94BNGP</b>
3/4"	8 bar (125 PSIG)	—			<b>P33RA96BNNP</b>
3/4"	8 bar (125 PSIG)	Round			<b>P33RA96BNGP</b>

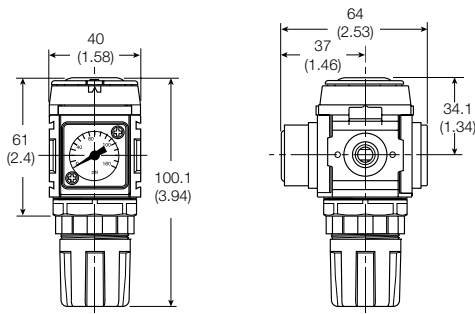
**Service kits**

Description		P31	P32	P33
Regulator repair kit	Relieving	<b>P31KA00RB</b>	<b>P32KA00RB</b>	<b>P33KA00RB</b>
	Non-relieving	<b>P31KA00RC</b>	<b>P32KA00RC</b>	<b>P33KA00RC</b>
Panel mount nut	Aluminum	<b>P31KA00MM</b>	<b>P32KA00MM</b>	<b>P33KA00MM</b>
	Plastic	<b>P31KA00MP</b>	<b>P32KA00MP</b>	<b>P33KA00MP</b>
Angle bracket	Uses panel mount threads	<b>P31KA00MR</b>	<b>P32KA00MR</b>	<b>P33KA00MR</b>
T-bracket	With body connector	<b>P31KA00MT</b>	<b>P32KA00MT</b>	<b>P32KA00MT</b>
T-bracket				<b>P32KA00MB</b>
Body connector		<b>P31KA00CB</b>	<b>P32KA00CB</b>	<b>P32KA00CB</b>
Gauges - Square flush mount gauge	0-4 bar	<b>K4511SCR04B</b>	<b>K4511SCR04B</b>	
	0-10 bar	<b>K4511SCR11B</b>	<b>K4511SCR11B</b>	
	0-60 PSIG	<b>K4511SCR060</b>	<b>K4511SCR060</b>	
	0-160 PSIG	<b>K4511SCR160</b>	<b>K4511SCR160</b>	
1.00" round 1/8" center back mount	0-60 PSIG / 0-4 bar	<b>K4510N18060</b>		
	0-160 PSIG / 0-11 bar	<b>K4510N18160</b>		
40mm round 1/8" center back mount	0-30 PSIG / 0-2 bar	<b>K4515N18030</b>		
	0-60 PSIG / 0-4 bar	<b>K4515N18060</b>		
50mm (2") round 1/4" center back mount	0-160 PSIG / 0-11 bar	<b>K4515N18160</b>		
	0-30 PSIG / 0-2 bar / 0-0.2 MPa		<b>K4520N14030</b>	<b>K4520N14030</b>
44mm (1-3/4") digital round 1/4" center back mount	0-60 PSIG / 0-4 bar / 0-0.4 MPa		<b>K4520N14060</b>	<b>K4520N14060</b>
	0-160 PSIG / 0-11 bar / 0-1.1 MPa		<b>K4520N14160</b>	<b>K4520N14160</b>
	0-300 PSIG / 0-20 bar / 0-2 MPa		<b>K4520N14300</b>	<b>K4520N14300</b>
44mm (1-3/4") digital round 1/4" center back mount	0-160 PSIG / 0-11 bar / 0-1.1 MPa		<b>K4517N14160D</b>	<b>K4517N14160D</b>

Most popular.

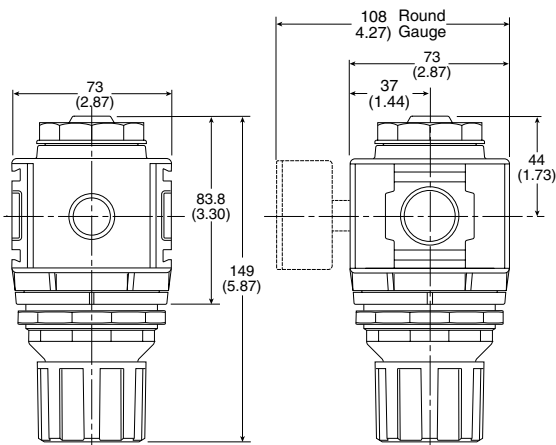


**P31**



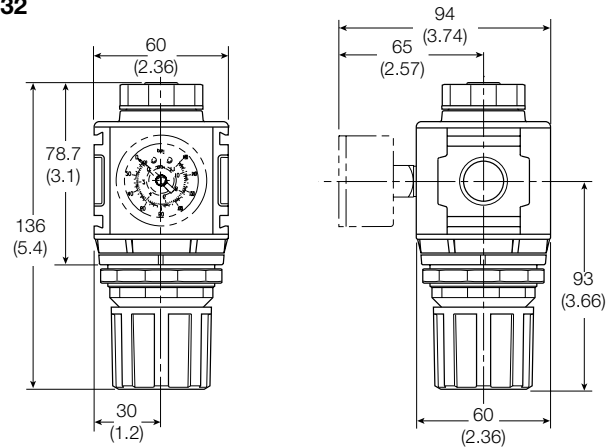
**NOTE:** 31.7 mm (1.25 in.) hole required for panel nut mounting.

**P33**



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

**P32**



**NOTE:** 51 mm (2.00 in.) hole required for panel nut mounting.

**Material specifications**

Description	P31	P32	P33
Body	Aluminum	Aluminum	Aluminum
Adjustment knob	N/A	N/A	Acetal
Body cap	ABS	ABS	ABS
Bonnet	PBT	33% glass-filled nylon	33% glass-filled nylon
Diaphragm assembly	Brass / nitrile	Nitrile / zinc	Nitrile / zinc
Valve assembly	Brass / nitrile	Brass / nitrile	Brass / nitrile / acetal
Springs	Steel	Steel S.S. (main regulating valve)	Steel S.S. (main regulating valve)
Seals	Nitrile	Nitrile	Nitrile
Panel nut	Acetal	Acetal	Acetal



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

Precision / Proportional

Bulk Liquid Separators



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

Precision / Proportional

Bulk Liquid Separators

## Global Modular Common Regulators

- Manifold style regulator with line pressure on both sides
- Pressure output is at front or rear
- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- 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



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

### 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.

### Operating information

	P31 (Mini)	P32 (Compact)
Supply pressure (max):	20 bar (300 PSIG)	20 bar (300 PSIG)
Operating temperature:	-20°C to 65.5°C (-4°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)
Flow Capacity*:		
1/4	18 dm <sup>3</sup> /s* (38 SCFM)*	28 dm <sup>3</sup> /s* (59 SCFM)*
3/8	—	28 dm <sup>3</sup> /s* (59 SCFM)*
1/2	—	28 dm <sup>3</sup> /s* (59 SCFM)*

\* Inlet pressure 10 bar (145 PSIG). Secondary pressure 6.3 bar (91.3 PSIG), pressure drop 1 bar (14.7 PSIG)  
 For Flow Curve Charts please see page E36.

### Ordering information

**P31H A 9 2 B N N P**

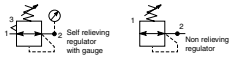
Basic series	Engr level	Thread type	Relief	Mounting
Global modular mini common regulator <b>P31H</b>	Current <b>A</b>	BSPP <b>1</b> BSPT <b>2</b> NPT <b>9</b>	<b>B</b> Relieving <b>N</b> Non-relieving	<b>P</b> Plastic panel mount nut
Global modular compact common regulator <b>P32H</b>				

Port size	Adjustment range Without gauge
<b>2</b> 1/4 (P31, P32)	<b>Y</b> 2 bar; 30 psig; 0.2 MPa
<b>3</b> 3/8 (P32)	<b>L</b> 4 bar; 60 psig; 0.4 MPa
<b>4</b> 1/2 (P32)	<b>N</b> 8 bar; 125 psig; 0.8 MPa
	<b>H*</b> 17 bar; 250 psig; 1.7 MPa

\* Not available with P31 Series.  
 Order gauges separately - see next page.

**Bold items are most common.**

### Regulators



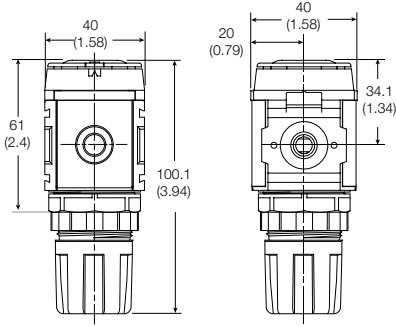
Port size	Pressure	Part number	
		P31	P32
1/4"	8 bar (125 PSIG) relieving	<b>P31HA92BNNP</b>	<b>P32HA92BNNP</b>
3/8"	8 bar (125 PSIG) relieving		<b>P32HA93BNNP</b>
1/2"	8 bar (125 PSIG) relieving		<b>P32HA94BNNP</b>



**Parker Pneumatic**

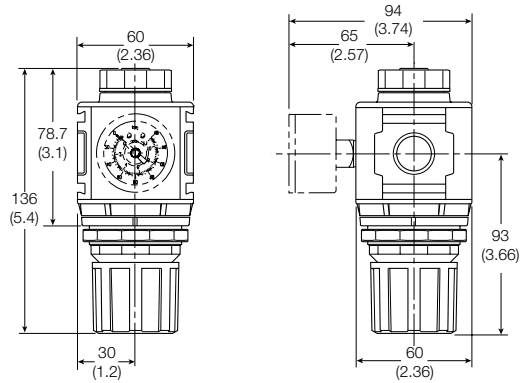
**Global Modular Common Regulators**

**P31**



**NOTE:** 31.7 mm (1.25 in.) hole required for panel nut mounting.

**P32**



**NOTE:** 51 mm (2.0 in.) hole required for panel nut mounting.

**Service kits**

Description		P31	P32	
Regulator repair kit	Relieving	<b>P31KA00RB</b>	<b>P32KA00RB</b>	
	Non-relieving	<b>P31KA00RC</b>	<b>P32KA00RC</b>	
Panel mount nut	Aluminum	<b>P31KA00MM</b>	<b>P32KA00MM</b>	
	Plastic	<b>P31KA00MP</b>	<b>P32KA00MP</b>	
Angle bracket (uses panel mount threads)		<b>P31KA00MR</b>	<b>P32KA00MR</b>	
T-bracket	With body connector	<b>P31KA00MT</b>	<b>P32KA00MT</b>	
	Fits to body connector	<b>P31KA00MB</b>	<b>P32KA00MB</b>	
Body connector		<b>P31KA00CB</b>	<b>P32KA00CB</b>	
Gauges -	Square flush mount gauge	0-4 bar	<b>K4511SCR04B</b>	<b>K4511SCR04B</b>
		0-10 bar	<b>K4511SCR11B</b>	<b>K4511SCR11B</b>
		0-60 PSIG	<b>K4511SCR060</b>	<b>K4511SCR060</b>
		0-160 PSIG	<b>K4511SCR160</b>	<b>K4511SCR160</b>
	Square with adapter kit	0-4 bar	<b>P6G-PR11040</b>	<b>P6G-PR11040</b>
		0-10 bar	<b>P6G-PR11100</b>	<b>P6G-PR11100</b>
		0-60 PSIG	<b>P6G-PR11P06</b>	<b>P6G-PR11P06</b>
		0-160 PSIG	<b>P6G-PR11P16</b>	<b>P6G-PR11P16</b>
	1.00" round 1/8" center back mount	0-60 PSIG / 0-4 bar	<b>K4510N18060</b>	
		0-160 PSIG / 0-11 bar	<b>K4510N18160</b>	
	50mm (2") round 1/4" center back mount	0-30 PSIG / 0-2 bar / 0-0.2 MPa		<b>K4520N14030</b>
		0-60 PSIG / 0-4 bar / 0-0.4 MPa		<b>K4520N14060</b>
		0-160 PSIG / 0-11 bar / 0-1.1 MPa		<b>K4520N14160</b>
		0-300 PSIG / 0-20 bar / 0-2 MPa		<b>K4520N14300</b>
44mm (1-3/4") digital round 1/4" center back mount	0-160 PSIG / 0-11 bar / 0-1.1 MPa		<b>K4517N14160D</b>	

**Material specifications**

Description	P31	P32
Body	Aluminum	Aluminum
Adjustment knob	Acetal	Acetal
Bonnet	33% Glass-filled PBT	33% Glass-filled nylon
Diaphragm assembly	Brass / nitrile	Nitrile / zinc
Valve assembly	Brass / nitrile	Brass / nitrile
Springs		Steel S.S. (Main regulating valve)
Seals		Nitrile
Panel nut		Acetal

Most popular.



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

Precision / Proportional

Bulk Liquid Separators



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

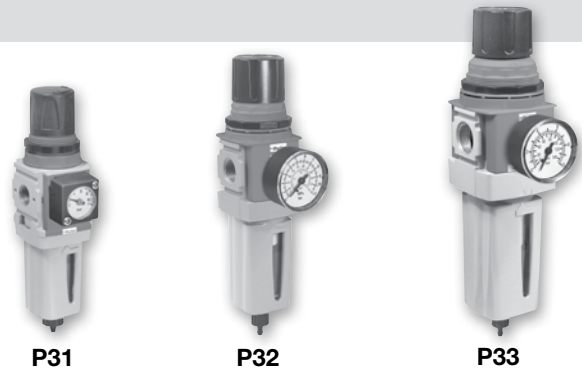
Stainless Steel

Precision / Proportional

Bulk Liquid Separators

## Global Modular Filter / Regulators

- Integral 1/4", 3/8", 1/2", 3/4" ports (NPT, BSPP & BSPT)
- 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



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

### 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.

### Operating information

	P31 (Mini)	P32 (Compact)	P33 (Standard)
Supply pressure (max):			
Plastic Bowl	10 bar (150 PSIG)	10 bar (150 PSIG)	10 bar (150 PSIG)
Metal Bowl	17 bar (250 PSIG)	17 bar (250 PSIG)	17 bar (250 PSIG)
Operating temperature:			
Plastic Bowl	-10°C to 52°C (14°F to 125°F)	-25°C to 52°C (-13°F to 125°F)	-25°C to 52°C (-13°F to 125°F)
Metal Bowl	-10°C to 65.5°C (14°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)	-25°C to 65.5°C (-13°F to 150°F)
Units with square gauges:	-15°C to 65.5°C (5°F to 150°F)		
Standard filtration:	5 micron	5 micron	5 micron
Flow Capacity*:			
1/4	14 dm <sup>3</sup> /s* (30 SCFM)*	42 dm <sup>3</sup> /s* (89 SCFM)*	-
3/8	-	58 dm <sup>3</sup> /s* (123 SCFM)*	-
1/2	-	64 dm <sup>3</sup> /s* (136 SCFM)*	90 dm <sup>3</sup> /s* (191 SCFM)*
3/4	-	-	98 dm <sup>3</sup> /s* (208 SCFM)*

\* Inlet pressure 10 bar (145 PSIG). Secondary pressure 6.3 bar (91.3 PSIG), pressure drop 1 bar (14.7 PSIG)

For Flow Curve Charts please see page E37.

### Ordering information

**P31E A 9 2 E G M B N 5 P**

<b>Basic series</b> Global modular mini filter / regulator P31E Global modular compact filter / regulator P32E Global modular standard filter / regulator P33E	<b>Engr level</b> Current A	<b>Thread type</b> BSPP 1 BSPT 2 NPT 9	<b>Element</b> 5µ Element E	<b>Relief</b> B Relieving N Non-relieving	<b>Mounting</b> P Plastic panel mount nut																																								
		<b>Port size</b> 1/4 (P31, P32) 2 3/8 (P32) 3 1/2 (P32, P33) 4 3/4 (P33) 6		<b>Drain type</b> M Manual drain A Auto drain (P32, P33) B Pulse drain (P31)																																									
		<b>Bowl type</b> Poly bowl with bowl guard G Metal bowl without sight gauge M Metal bowl with sight gauge S		<b>Adjustment range</b> <table border="1"> <thead> <tr> <th colspan="2">P31 &amp; P32 with square gauge</th> <th colspan="2">With round gauge</th> </tr> <tr> <th>psig</th> <th>bar</th> <th>Z</th> <th></th> </tr> </thead> <tbody> <tr> <td>1 = 30*</td> <td>V = 2*</td> <td>M</td> <td>4 bar; 60 psig; 0.4 MPa</td> </tr> <tr> <td>3 = 60</td> <td>S = 4</td> <td>G</td> <td>8 bar; 125 psig; 0.8 MPa</td> </tr> <tr> <td>5 = 125</td> <td>T = 8</td> <td>J<sup>‡</sup></td> <td>17 bar; 250 psig; 1.7 MPa</td> </tr> <tr> <th colspan="4">Without gauge</th> </tr> <tr> <td></td> <td></td> <td>Y</td> <td>2 bar; 30 psig; 0.2 MPa</td> </tr> <tr> <td></td> <td></td> <td>L</td> <td>4 bar; 60 psig; 0.4 MPa</td> </tr> <tr> <td></td> <td></td> <td>N</td> <td>8 bar; 125 psig; 0.8 MPa</td> </tr> <tr> <td></td> <td></td> <td>H<sup>‡</sup></td> <td>17 bar; 250 psig; 1.7 MPa</td> </tr> </tbody> </table>	P31 & P32 with square gauge		With round gauge		psig	bar	Z		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 <sup>‡</sup>	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 <sup>‡</sup>	17 bar; 250 psig; 1.7 MPa	
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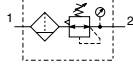
\* Unit comes with 0-4 bar or 0-60 psig gauge respectively.  
 † Not available with poly bowl with bowl guard.  
 ‡ Not available with P31 Series.

**Bold items are most common.**





**Filter / Regulator**



Port size	Pressure (relieving)	Bowl type	Drain type	Part number		
				P31	P32	P33
1/4"	8 bar (125 PSIG)	Poly	Manual	<b>P31EA92EGMBN5P</b>	<b>P32EA92EGMBNGP</b>	
1/4"	8 bar (125 PSIG)	Poly	Pulse	<b>P31EA92EGBBN5P</b>		
1/4"	8 bar (125 PSIG)	Poly	Auto		<b>P32EA92EGMBNGP</b>	
1/4"	8 bar (125 PSIG)	Metal	Manual	<b>P31EA92EMMBN5P</b>	<b>P32EA92ESMBNGP</b>	
1/4"	8 bar (125 PSIG)	Metal	Pulse	<b>P31EA92EMBBN5P</b>		
1/4"	8 bar (125 PSIG)	Metal	Auto		<b>P32EA92ESABNGP</b>	
3/8"	8 bar (125 PSIG)	Poly	Manual		<b>P32EA93EGMBNGP</b>	
3/8"	8 bar (125 PSIG)	Poly	Auto		<b>P32EA93EGABNGP</b>	
3/8"	8 bar (125 PSIG)	Metal	Manual		<b>P32EA93ESMBNGP</b>	
3/8"	8 bar (125 PSIG)	Metal	Auto		<b>P32EA93ESABNGP</b>	
1/2"	8 bar (125 PSIG)	Poly	Manual		<b>P32EA94EGMBNGP</b>	<b>P33EA94EGMBNGP</b>
1/2"	8 bar (125 PSIG)	Poly	Auto		<b>P32EA94EGABNGP</b>	<b>P33EA94EGABNGP</b>
1/2"	8 bar (125 PSIG)	Metal	Manual		<b>P32EA94ESMBNGP</b>	<b>P33EA94ESMBNGP</b>
1/2"	8 bar (125 PSIG)	Metal	Auto		<b>P32EA94ESABNGP</b>	<b>P33EA94ESABNGP</b>
3/4"	8 bar (125 PSIG)	Poly	Manual			<b>P33EA96EGMBNGP</b>
3/4"	8 bar (125 PSIG)	Poly	Auto			<b>P33EA96EGABNGP</b>
3/4"	8 bar (125 PSIG)	Metal	Manual			<b>P33EA96ESMBNGP</b>
3/4"	8 bar (125 PSIG)	Metal	Auto			<b>P33EA96ESABNGP</b>

Most popular.

**Service kits**

Description		P31	P32	P33
Plastic bowl / bowl guard	Manual drain	<b>P31KA00BGM</b>	<b>P32KA00BGM</b>	<b>P33KA00BGM</b>
	Pulse drain	<b>P31KA00BGB</b>		
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Metal bowl w/o sight gauge	Manual drain	<b>P31KA00BMM</b>		
	Pulse drain	<b>P31KA00BMB</b>		
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Metal bowl / sight gauge	Manual drain		<b>P32KA00BSM</b>	<b>P33KA00BSM</b>
	Auto drain		<b>P32KA00DA</b>	<b>P32KA00DA</b>
Filter element	5µ particulate	<b>P31KA00ESE</b>	<b>P32KA00ESE</b>	<b>P33KA00ESE</b>
Regulator repair kit	Relieving	<b>P31KB00RB</b>	<b>P32KB00RB</b>	<b>P33KA00RB</b>
	Non-relieving	<b>P31KB00RC</b>	<b>P32KB00RC</b>	<b>P33KA00RC</b>
Panel mount nut	Aluminum	<b>P31KA00MM</b>	<b>P32KA00MM</b>	<b>P33KA00MM</b>
	Plastic	<b>P31KA00MP</b>	<b>P32KA00MP</b>	<b>P33KA00MP</b>
Angle bracket (uses panel mount threads)		<b>P31KA00MR</b>	<b>P32KA00MR</b>	<b>P33KA00MR</b>
C-bracket	Fits to body	<b>P31KA00MW</b>		
T-bracket	Fits to body connector		<b>P32KA00MB</b>	<b>P32KA00MB</b>
	With body connector	<b>P31KA00MT</b>	<b>P32KA00MT</b>	<b>P32KA00MT</b>
Body connector		<b>P31KA00CB</b>	<b>P32KA00CB</b>	<b>P32KA00CB</b>
Gauges - square flush mount gauge	0-4 bar	<b>K4511SCR04B</b>		
	0-10 bar	<b>K4511SCR11B</b>		
	0-60 PSIG	<b>K4511SCR060</b>		
	0-160 PSIG	<b>K4511SCR160</b>		
50mm (2") round 1/4" center back mount	0-30 PSIG / 0-2 bar / 0-0.2 MPa		<b>K4520N14030</b>	<b>K4520N14030</b>
	0-60 PSIG / 0-4 bar / 0-0.4 MPa		<b>K4520N14060</b>	<b>K4520N14060</b>
	0-160 PSIG / 0-11 bar / 0-1.1 MPa		<b>K4520N14160</b>	<b>K4520N14160</b>
	0-300 PSIG / 0-20 bar / 0-2 MPa		<b>K4520N14300</b>	<b>K4520N14300</b>
44mm (1-3/4") digital round 1/4" center back mount	0-160 PSIG / 0-11 bar / 0-1.1 MPa		<b>K4517N14160D</b>	<b>K4517N14160D</b>



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

Precision / Proportional

Bulk Liquid Separators





Air Preparation Products

Global

Prep-Air II

Miniature

P3N

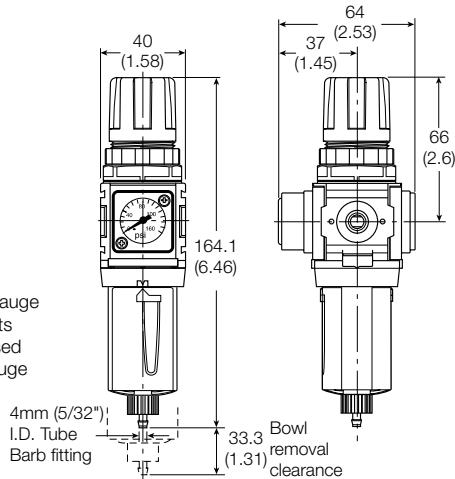
General Industrial

Stainless Steel

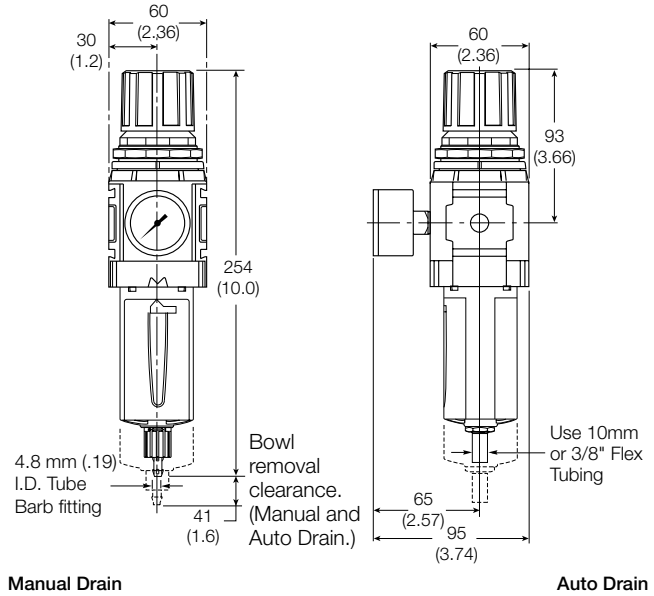
Precision / Proportional

Bulk Liquid Separators

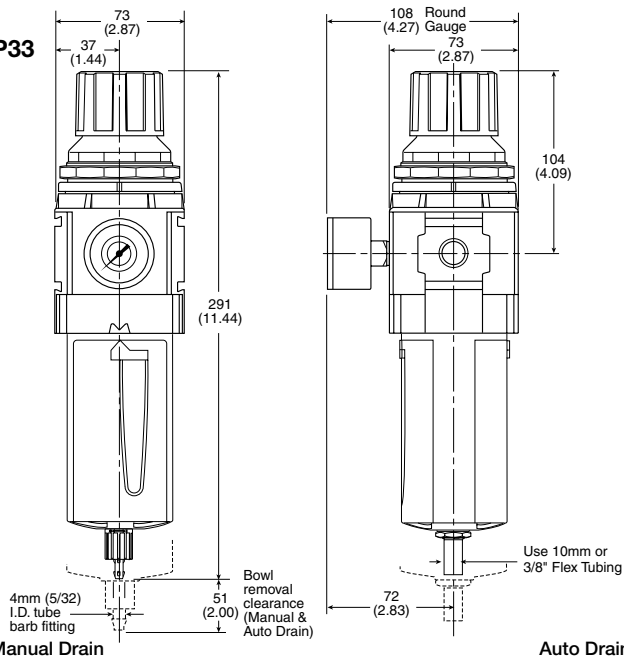
**P31**



**P32**



**P33**



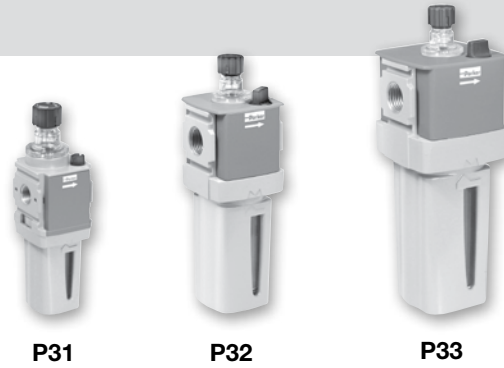
**Material Specifications**

Description	P31	P32	P33
Body	Aluminum	Aluminum	Aluminum
Adjustment knob	Acetal	Acetal	Acetal
Body cap	ABS	ABS	ABS
Bonnet	PBT	33% glass-filled nylon	33% glass-filled nylon
Element retainer/baffle	N/A	Acetal	Acetal
Bowl	Plastic bowl Polycarbonate	Polycarbonate	Polycarbonate
	Metal bowl Aluminum	Zinc	Aluminum
Bowl guard	Nylon	Nylon	Nylon
Filter element	Sintered polyethylene	Sintered polyethylene	Polyethylene
Seals	Nitrile	Nitrile	Nitrile
Springs	Main regulating / valve Steel	Steel / S.S.	Steel
Valve assembly	Brass / nitrile	Brass / nitrile	Brass / nitrile
Diaphragm assembly	Brass / nitrile	Nitrile / zinc	Nitrile / zinc
Panel nut	Acetal	Acetal	Acetal
Sight gauge	Metal bowl N/A	Polycarbonate	Polycarbonate



## Global Modular Lubricators

- Integral 1/4", 3/8", 1/2", 3/4" ports (NPT, BSPP & BSPT)
- 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



### Operating information

Supply pressure (max): Plastic Bowl 10 bar (150 PSIG)  
 Metal Bowl 17 bar (250 PSIG)

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)

Standard filtration: 5 micron

	P31 (Mini)	P32 (Compact)	P33 (Standard)
Flow Capacity*: 1/4	13 dm <sup>3</sup> /s (28 SCFM)	18 dm <sup>3</sup> /s (38 SCFM)	–
3/8	–	32 dm <sup>3</sup> /s (68 SCFM)	–
1/2	–	47 dm <sup>3</sup> /s (100 SCFM)	48 (102 SCFM)
3/4	–	–	68 dm <sup>3</sup> /s (144 SCFM)

\* Inlet pressure 6.3 bar (91.3 PSIG), pressure drop 0.34 bar (4.9 PSIG).

For Flow Curve Charts please see page E38.

### Ordering information

**P31L A 9 2 L G N N**

Basic series		Engr level	Thread type	Port size	Mounting	Drain type	Bowl type	Lube type
Global modular mini lubricator	P31L	Current A	BSPP 1	1/4 (P31, P32) 2	N No bracket	N No drain closed end	G Poly bowl with bowl guard	L Oil mist standard sight dome
Global modular compact lubricator	P32L		BSPT 2	3/8 (P32) 3			M Metal bowl without sight gauge	
Global modular standard lubricator	P33L		NPT 9	1/2 (P32, P33) 4			S* Metal bowl with sight gauge	
				3/4 (P33) 6				

\* Not available with P31 Series.

**Bold items are most common.**



**Lubricators**



Port size	Bowl type	Type	Part number		
			P31	P32	P33
1/4"	Poly / no drain	Mist	<b>P31LA92LGNN</b>	<b>P32LA92LGNN</b>	
1/4"	Metal / no drain	Mist / sight gauge	<b>P31LA92LMNN</b>	<b>P32LA92LSNN</b>	
3/8"	Poly / no drain	Mist		<b>P32LA93LGNN</b>	
3/8"	Metal / no drain	Mist / sight gauge		<b>P32LA93LSNN</b>	
1/2"	Poly / no drain	Mist		<b>P32LA94LGNN</b>	<b>P33LA94LGNN</b>
1/2"	Metal / no drain	Mist / sight gauge		<b>P32LA94LSNN</b>	<b>P33LA94LSNN</b>
3/4"	Poly / no drain	Mist			<b>P33LA96LGNN</b>
3/4"	Metal / no drain	Mist / sight gauge			<b>P33LA96LSNN</b>

**Service kits**

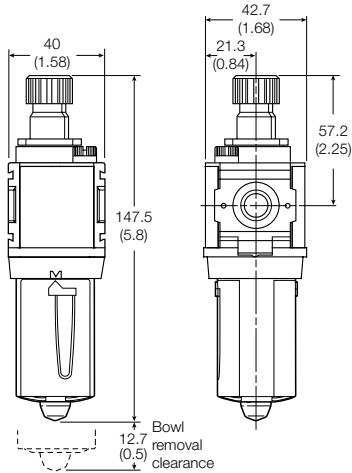
Description	P31	P32	P33
Plastic bowl / bowl guard / no drain	<b>P31KA00BGN</b>	<b>P32KA00BGN</b>	<b>P33KA00BGN</b>
Drip control assembly	<b>P32KA00PG</b>	<b>P32KA00PG</b>	<b>P32KA00PG</b>
Fill plug	<b>P31KA00PL</b>	<b>P32KA00PL</b>	<b>P32KA00PL</b>
C-bracket	Fits to body <b>P31KA00MW</b>		
L-bracket		<b>P32KA00ML</b>	<b>P33KA00ML</b>
T-bracket	Fits to body connector With body connector <b>P31KA00MT</b>	<b>P32KA00MB</b>	<b>P32KA00MB</b>
Body connector	<b>P31KA00CB</b>	<b>P32KA00CB</b>	<b>P32KA00CB</b>
Lubricant* (1 quart)	<b>F442001</b>	<b>F442001</b>	<b>F442001</b>

\* Petroleum based oil of 100 to 200 SUS viscosity at 38°C (100°F) and an aniline point greater than 93°C (200°F). **DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.**

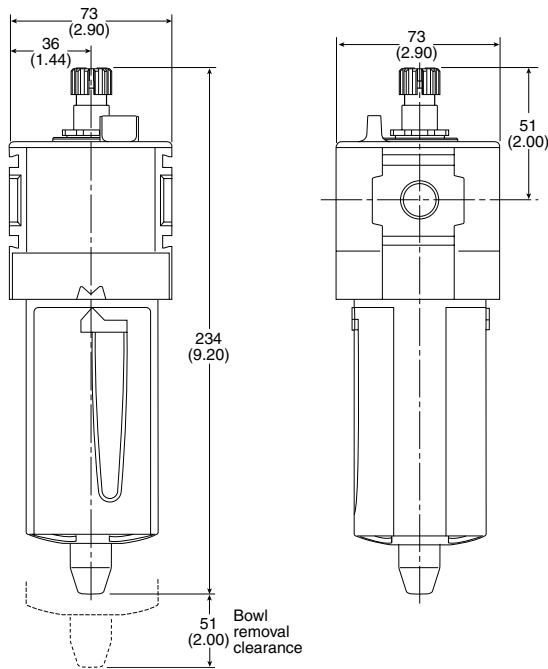
Most popular.



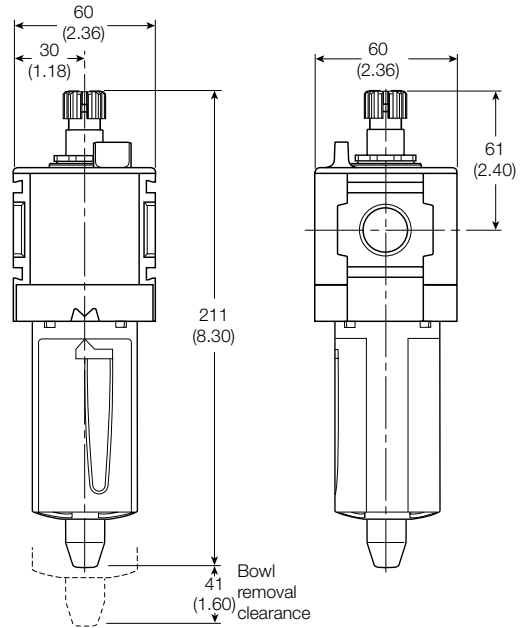
**P31**



**P33**



**P32**



**Material Specifications**

Description		P31	P32	P33
Body		Aluminum	Aluminum	Aluminum
Body cap		N/A	N/A	ABS
Bowl	Plastic bowl	Polycarbonate	Polycarbonate	Polycarbonate
	Metal bowl	Aluminum	Aluminum	Aluminum
Bowl guard		Nylon	Nylon	Nylon
Seals		Nitrile	Nitrile	Nitrile
Sight dome		Polycarbonate	Polycarbonate	Polycarbonate
Suggested lubricant		ISO / ASTM VG32	ISO / ASTM VG32	ISO / ASTM VG32
Pick-up filter		Sintered bronze	Sintered bronze	Sintered bronze
Sight gauge	Metal bowl	N/A	Polycarbonate	Polycarbonate

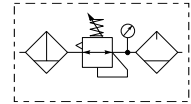




## Global Modular Combinations

### Filter + Regulator + Lubricator Combinations + Poly Bowl

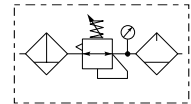
5 micron element, 8 bar (116 PSIG) Regulator + Gauge and Wall Mounting Brackets  
 Inlet pressure 10 bar (145 PSIG), Secondary pressure 6.3 bar (91.3 PSIG),  
 1 bar (14.5 PSIG) pressure drop.



Port size	Drain type	Part number		
		P31 Series	P32 Series	P33 Series
1/4"	Manual	<b>P31CB92GEMN5LNW</b>	<b>P32CB92GEMNGLNW</b>	
1/4"	Pulse	<b>P31CB92GEBN5LNW</b>		
1/4"	Auto		<b>P32CB92GEANGLNW</b>	
3/8"	Manual		<b>P32CB93GEMNGLNW</b>	
3/8"	Auto		<b>P32CB93GEANGLNW</b>	
1/2"	Manual		<b>P32CB94GEMNGLNW</b>	<b>P33CB94GEMNGLNW</b>
1/2"	Auto		<b>P32CB94GEANGLNW</b>	<b>P33CB94GEANGLNW</b>
3/4"	Manual			<b>P33CB96GEMNGLNW</b>
3/4"	Auto			<b>P33CB96GEANGLNW</b>

### Filter / Regulator + Lubricator Combinations + Poly Bowl

5 micron element, 8 bar (116 PSIG) Regulator + Gauge and Wall Mounting Brackets  
 Inlet pressure 10 bar (145 PSIG), Secondary pressure 6.3 bar (91.3 PSIG),  
 1 bar (14.5 PSIG) pressure drop.



Port size	Drain type	Part number		
		P31 Series	P32 Series	P33 Series
1/4"	Manual	<b>P31CA92GEMN5LNW</b>	<b>P32CA92GEMNGLNW</b>	
1/4"	Pulse	<b>P31CA92GEBN5LNW</b>		
1/4"	Auto		<b>P32CA92GEANGLNW</b>	
3/8"	Manual		<b>P32CA93GEMNGLNW</b>	
3/8"	Auto		<b>P32CA93GEANGLNW</b>	
1/2"	Manual		<b>P32CA94GEMNGLNW</b>	<b>P33CA94GEMNGLNW</b>
1/2"	Auto		<b>P32CA94GEANGLNW</b>	<b>P33CA94GEANGLNW</b>
3/4"	Manual			<b>P33CA96GEMNGLNW</b>
3/4"	Auto			<b>P33CA96GEANGLNW</b>

**⚠ WARNING**

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

### 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.

Most popular.





**Ordering information**

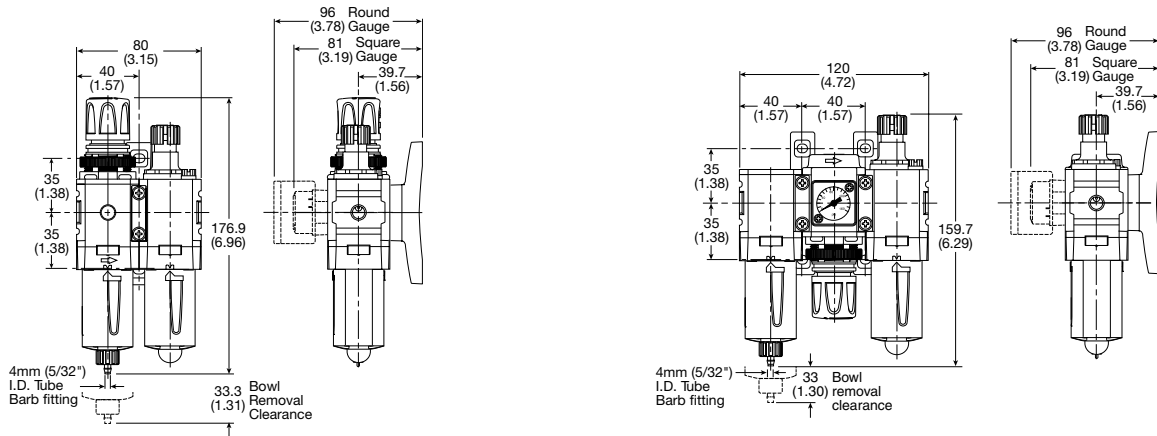
Filter / Regulator coding (use with codes: A M)		Filter coding (use with combo codes: B F G). For multiple filters, repeat as needed		Regulator coding (use with combo code: B)		Lubricator coding (use with combo codes: A B)		Assembly configuration																																														
<b>P31</b>	<b>C</b>	<b>B</b>	<b>9</b>	<b>2</b>	<b>G</b>	<b>E</b>	<b>M</b>	<b>N</b>	<b>5</b>	<b>L</b>	<b>N</b>	<b>W</b>																																										
<b>Combination</b> B/V + Combination <b>Q*</b> Combination + B/V* <b>X</b> Combination <b>C</b>			<b>Thread type</b> BSPP <b>1</b> BSPT <b>2</b> NPT <b>9</b>			<b>Element</b> 0.01µ Element <b>C</b> 0.01µ Element with DPI <b>D*</b> 5µ Element <b>E</b> 5µ Element with DPI <b>F†</b> 1µ Element <b>9</b> 1µ Element with DPI <b>Q*</b> Adsorber <b>A</b>			<b>Relief adjustment</b> Non-rising knob relieving <b>N</b>			<b>Lube type</b> Oil mist standard sight dome <b>L</b>			<b>Mounting</b> No bracket <b>A</b> Port blocks <b>C*</b> Port blocks with wall brkt <b>D*</b> Wall bracket <b>W</b>																																							
* B/V = Ball valve.			<b>Combination type*</b> F/R+L <b>A</b> F+Fc+Fa <b>G</b> F+R+L <b>B</b> F/R+Fc <b>M</b> F+Fc <b>F</b> F+Fc1+Fc <b>Q</b>			<b>Port size</b> 1/4 (P31, P32) <b>2</b> 3/8 (P32) <b>3</b> 1/2 (P32, P33) <b>4</b> 3/4 (P33) <b>6</b>			<b>Drain type</b> Auto drain <b>A†</b> Manual drain <b>M</b> Pulse drain <b>B</b>			<b>Drain type</b> No drain closed end <b>N</b>			* For P31 Series 3/8" Port Blocks please order separately. See Kits section.																																							
† Not available with F/R.			<b>Bowl type</b> Poly bowl with bowl guard <b>G</b> Metal bowl without sight gauge <b>M*</b> Metal bowl with sight gauge <b>S‡</b>			† Not available on P31 Series			<b>Adjustment range</b>			* Unit comes with 0-4 bar or 0-60 psig gauge respectively.																																										
* Combination type F = 5µ Fc1 = 1µ Fc = .01µ Fa = Adsorber			* Not available when using lubricator. ‡ Not available with P31 Series.			† Not available with P31 Series.			<table border="1"> <thead> <tr> <th colspan="2">P31 &amp; P32 with square gauge</th> <th colspan="2">With round gauge</th> </tr> <tr> <th>psig</th> <th>bar</th> <th>Z</th> <th>2 bar; 30 psig; 0.2 MPa</th> </tr> </thead> <tbody> <tr> <td>1 = 30*</td> <td>V = 2*</td> <td>M</td> <td>4 bar; 60 psig; 0.4 MPa</td> </tr> <tr> <td>3 = 60</td> <td>S = 4</td> <td>G</td> <td>8 bar; 125 psig; 0.8 MPa</td> </tr> <tr> <td>5 = 125</td> <td>T = 8</td> <td>J§†</td> <td>17 bar; 250 psig; 1.7 MPa</td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>Without gauge</b></td> </tr> <tr> <td></td> <td></td> <td>Y</td> <td>2 bar; 30 psig; 0.2 MPa</td> </tr> <tr> <td></td> <td></td> <td>L</td> <td>4 bar; 60 psig; 0.4 MPa</td> </tr> <tr> <td></td> <td></td> <td>N</td> <td>8 bar; 125 psig; 0.8 MPa</td> </tr> <tr> <td></td> <td></td> <td>H§†</td> <td>17 bar; 250 psig; 1.7 MPa</td> </tr> </tbody> </table>			P31 & P32 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§†	17 bar; 250 psig; 1.7 MPa	<b>Without gauge</b>						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	§ Not available with poly bowl with bowl guard. ‡ Not available with P31 Series.		
P31 & P32 with square gauge		With round gauge																																																				
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<b>E</b>
Air Preparation Products
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Bulk Liquid Separators

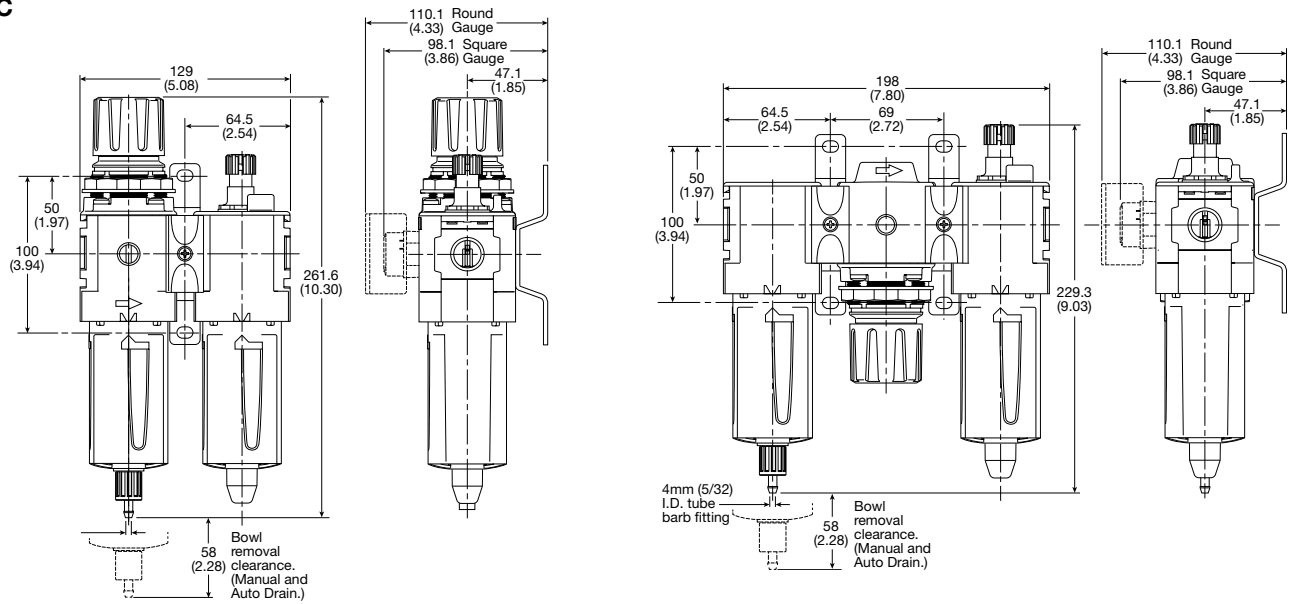


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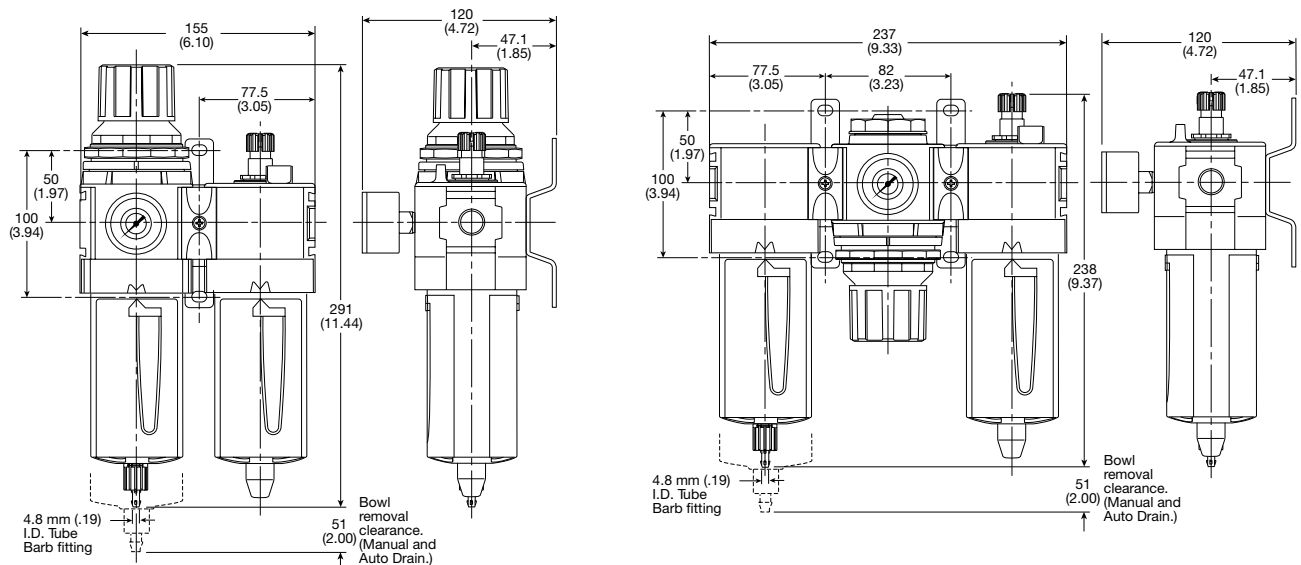
**P31C**



**P32C**



**P33C**



## Global Modular Electronic Proportional Regulators

- 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
- P31P flows to 19 dm<sup>3</sup>/s (40 SCFM)
- P32P flows to 57 dm<sup>3</sup>/s (120 SCFM)



**P31PA Series**  
Bottom exhaust



**P32PA Series**  
Bottom exhaust

### Ordering information

<b>P31P</b>	<b>A</b>	<b>9</b>	<b>2</b>	<b>A</b>	<b>D</b>	<b>2</b>	<b>V</b>	<b>D</b>	<b>1</b>	
-------------	----------	----------	----------	----------	----------	----------	----------	----------	----------	--

Body size	<b>P31P</b>
Global modular mini (1/4")	
Global modular compact (1/2")	<b>P32P</b>

Engr level	<b>A</b>
Current	

Thread type	<b>1</b>
BSPP	
BSPT	<b>2</b>
NPT	<b>9</b>

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

Version	<b>A</b>
Bottom ported exhaust (NC)	
Bottom ported forced exhaust (NO) <sup>†</sup>	<b>E</b>

Power supply	<b>2</b>
24 volts	

Control signal	<b>V</b>
0-10V <sup>‡</sup>	

<sup>‡</sup> Factory setting is 0-10 V control signal. 4-20 mA control signal available via parameter 4 on keypad.

Pressure range	<b>Z</b>
0 - 2 bar (0-29 PSIG)	
<b>D</b>	
0 - 10 bar (0-145 PSIG)	

Input Connector	<b>1</b>
M12 (4-pin)	

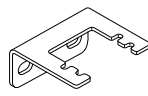
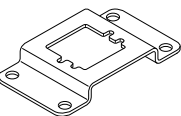
Output signal	<b>D</b>
Digital, PNP	
<b>P</b>	
PNP or 0-10V	
<b>N</b>	
NPN or 0-10V	
<b>M</b>	
4-20mA fixed	

D) Digital PNP output only, no analog output selectable  
 P) Digital PNP and analogue 0-10V outputs selectable, by means of parameter 6. (Factory default 0-10V)  
 N) Digital NPN and analog 0-10 V outputs selectable by means of parameter 6. (Factory default 0-10V)  
 M) Analog 4-20mA output only.  
 Note: On all analog outputs the F.S. value can be adjusted by means of parameter 8.

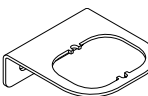
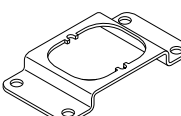
<sup>†</sup> When the supply voltage is lost the unit will automatically exhaust the regulated pressure to 0 bar (atmospheric pressure)

**Bold items are most common.**

### P31P mounting brackets

	Description	Part number
	L-bracket mounting kit	<b>P3HKA00ML</b>
	Foot bracket mounting kit	<b>P3HKA00MC</b>

### P32P mounting brackets

	Description	Part number
	L-bracket mounting kit	<b>P3KKA00ML</b>
	Foot bracket mounting kit	<b>P3KKA00MC</b>

### Cables

Part number	Description
<b>CB-M12-4P-2M</b>	2 mtr. cable with moulded straight M12x1 connector

 Most popular.

For Flow Curve Charts please see page E39.



**U**  
**Air Preparation Products**  
**Global**  
**Prep-Air II**  
**Miniature**  
**P3N**  
**General Industrial**  
**Stainless Steel**  
**Precision / Proportional**  
**Bulk Liquid Separators**

### 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)

#### 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%

#### 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

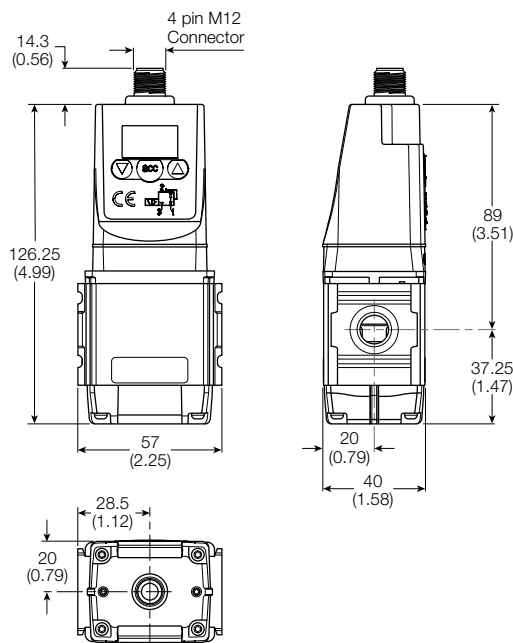
The electrical connections are as follows:

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

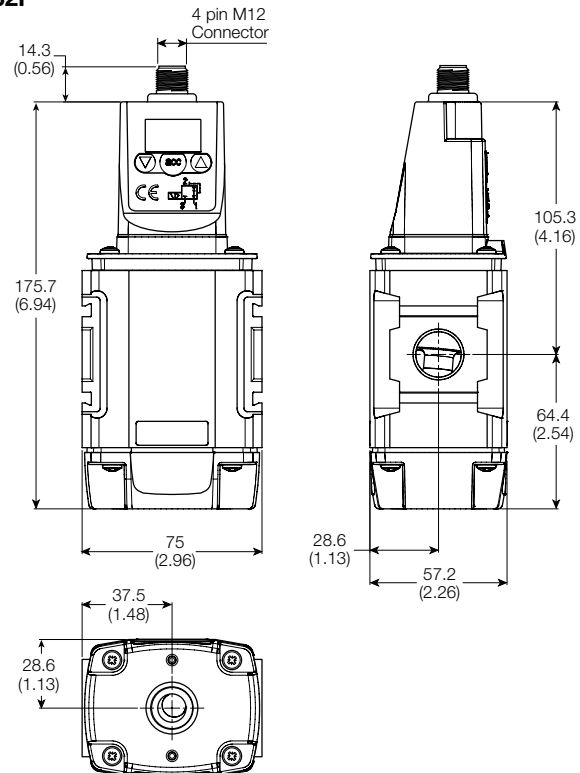
**⚠ WARNING**

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

#### P31P



#### P32P



## Global Modular Soft Start / Dump Valves

- Modular design with 1/4" or 1/2" integral ports (NPT, BSPP & BSPT)
- 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



**P31TA Series shown  
Bottom exhaust**



**P32TA Series shown  
Bottom exhaust**

### Operating information

Operating pressure (max):	Solenoid	10 bar (150 PSIG)
	Air pilot	17 bar (250 PSIG)
Operating pressure (min):		3 bar (44 PSIG)
Operating temperature (max):	Solenoid	50°C (122°F)
	Air pilot	80°C (176°F)
Flow Capacity*:	P31 Series	17 dm <sup>3</sup> /s (36 SCFM)
	P32 Series	48 dm <sup>3</sup> /s (97 SCFM)

\*Inlet pressure 6.3 bar (91.3 PSIG), pressure drop 1 bar (14.5 PSIG).  
 For Flow Curve Charts please see page E39.

### Ordering information

**P31T A 9 2 S G N C 2CN**

Body size	Engr level	Actuator interface	Solenoid voltage
Combined soft start / dump valve (1/4") P31T	Current A	0 Internal Pilot	2CN 24VDC non locking manual override
Combined soft start / dump valve (1/2") P32T		G 15mm solenoid (P31 only)	3GN 120VAC non locking manual override
Dump valve (1/4") P31D		C 30mm solenoid	1FN 120VAC non locking manual override (P31 series only)
Dump valve (1/2") P32D		P* Threaded air pilot	
Soft start P31S			
Soft start P32S			

\* Only available on P31SA & P32SA Dump Valves.

Thread type	Pilot type	Solenoid type
BSPP 1	P External air pilot	C 15mm (P31 series only)
BSPT 2	S Solenoid pilot	A 30mm CNOMO coil (P32 only)
NPT 9	Y* Internal air pilot	D 30mm CNOMO coil (M12 connection) (P32 only)

\* Only available on P31SA & P32SA Dump Valves.

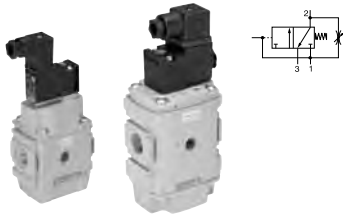
Port size
Global modular mini (1/4") 2
Global modular compact (1/2") 4

**Note:**  
 P32 unit used for both P32 & P33 series  
 Bold items are most common.



Air Preparation Products

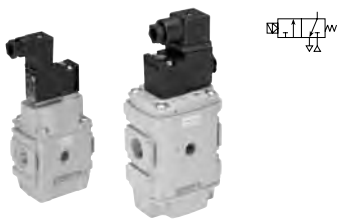
**Combined soft start / Dump valves (P31T / P32T)**



Port size	Description	Part number
1/4"	120VAC Solenoid & cable plug	<b>P31TA92SGNC1FN</b>
1/4"	24VDC Solenoid & cable plug	<b>P31TA92SGNC2CN</b>
1/4"	External air pilot operated	<b>P31TA92PPN</b>
1/2"	120VAC 30mm coil & cable plug included	<b>P32TA94SCNA3GN</b>
1/2"	24VDC 30mm coil & cable plug included	<b>P32TA94SCNA2CN</b>
1/2"	External air pilot operated	<b>P32TA94PPN</b>

**Note:** Includes exhaust silencer. Flow with 6.3 bar (91.3 PSIG) inlet and 1 bar (14.5 PSIG) pressure drop.

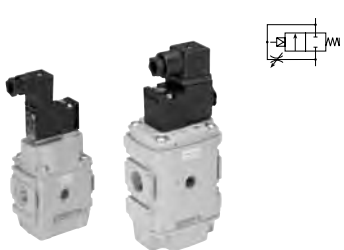
**Dump valves (P31D / P32D)**



Port size	Description	Part number
1/4"	120VAC Solenoid & cable plug	<b>P31DA92SGNC1FN</b>
1/4"	24VDC Solenoid & cable plug	<b>P31DA92SGNC2CN</b>
1/4"	External air pilot operated	<b>P31DA92PPN</b>
1/2"	120VAC 30mm coil & cable plug included	<b>P32DA94SCNA3GN</b>
1/2"	24VDC 30mm coil & cable plug included	<b>P32DA94SCNA2CN</b>
1/2"	External air pilot operated	<b>P32DA94PPN</b>

**Note:** Includes exhaust silencer.

**Soft starts (P31S / P32S)**

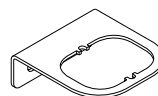


Port size	Description	Part number
1/4"	120VAC Solenoid & cable plug	<b>P31SA92SGNC1FN</b>
1/4"	24VDC Solenoid & cable plug	<b>P31SA92SGNC2CN</b>
1/4"	Internal air pilot operated	<b>P31SA92Y0N</b>
1/4"	External air pilot operated	<b>P31SA92PPN</b>
1/2"	120VAC 30mm coil & cable plug included	<b>P32SA94SCNA3GN</b>
1/2"	Internal air pilot operated	<b>P32SA92Y0N</b>
1/2"	24VDC 30mm coil & cable plug included	<b>P32SA94SCNA2CN</b>
1/2"	External air pilot operated	<b>P32SA94PPN</b>

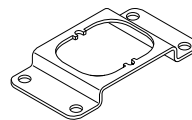
**Material specifications**

Body	Aluminum
Body cover	Polyester
Seals	Nitrile NBR

**P31P mounting brackets**



L-bracket



Foot bracket

Description	Part number
L-bracket mounting kit	<b>P3HKA00ML</b>
Foot bracket mounting kit	<b>P3HKA00MC</b>

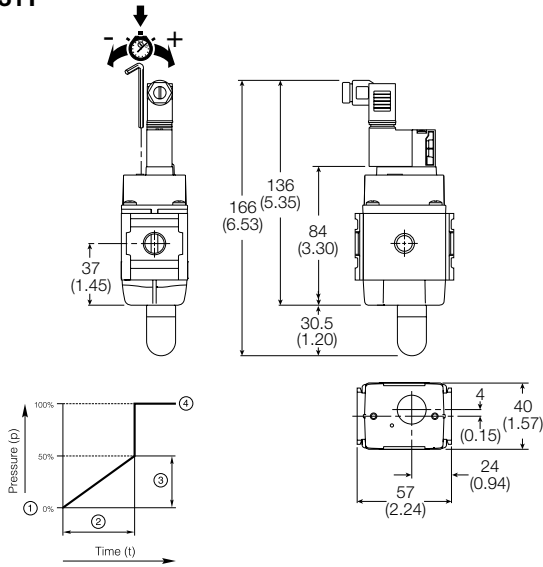
Most popular.

**Note:** For solenoid operators and cable plugs (connectors) see pages E28 to E29.

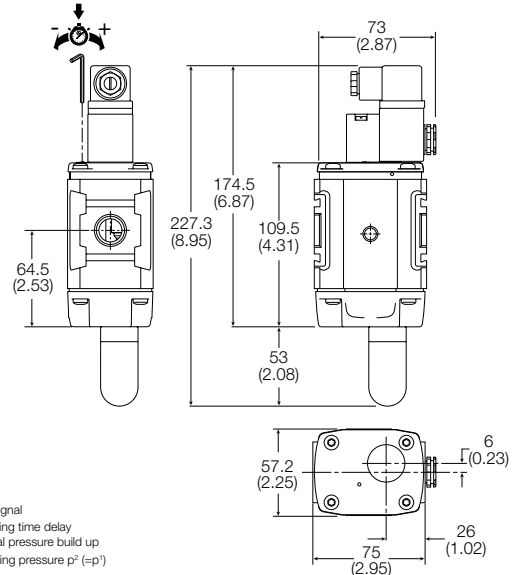




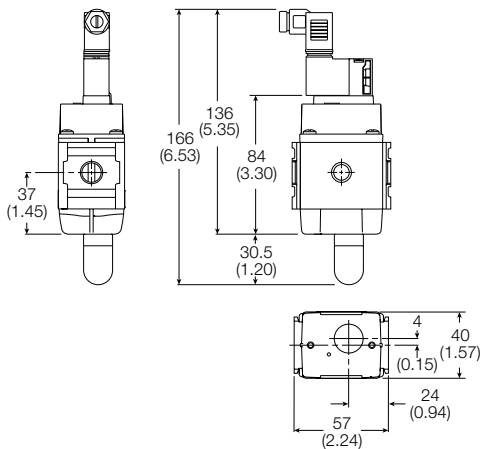
**P31T**



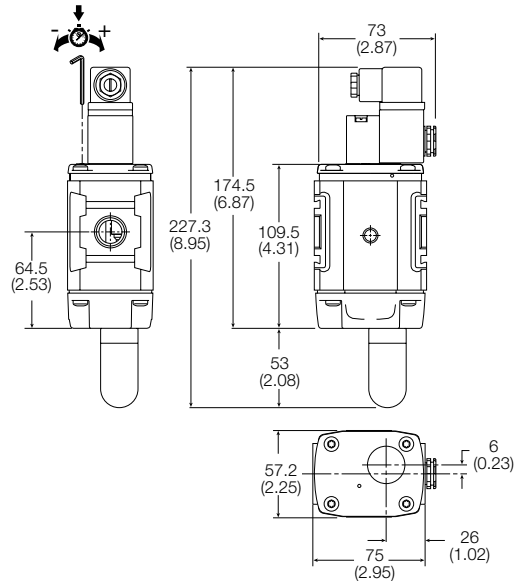
**P32T**



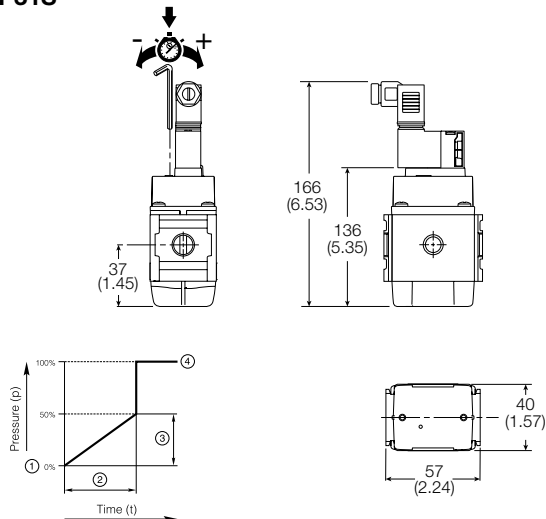
**P31D**



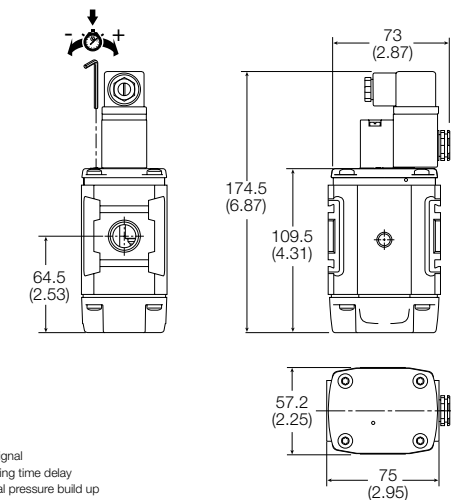
**P32D**



**P31S**



**P32S**



**E**

**Air Preparation Products**

**Global**

**Prep-Air II**

**Miniature**

**P3N**

**General Industrial**

**Stainless Steel**

**Precision / Proportional**

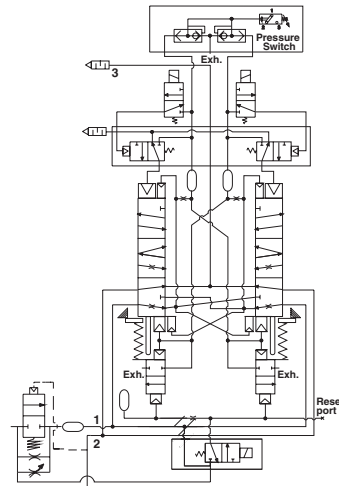
**Bulk Liquid Separators**

## Redundant Safety Exhaust Valves

- Proven control reliable technology with integrated soft start
- Soft start application of air to the system when energized; can be adjusted for slower or faster buildup of system pressure
- Rapid exhaust of downstream air when de-energized to remove stored energy and allow safe access
- Memory, monitoring, and air flow control functions are integrated into two identical valve elements. Valves lock-out if asynchronous movement of valve elements occurs during actuation or de-actuation, resulting in a residual outlet pressure of less than 1% of supply.
- Reset can only be accomplished by the integrated electrical (solenoid) reset. Cannot be reset by removing and re-applying supply pressure.
- Basic 3/2 normally closed valve function: Dirt tolerant, wear compensating poppet design for quick response and high flow capacity.
- LED indicators of main solenoid operation, reset solenoid operation, and status indicator condition.
- Optional transducer for monitoring of downstream pressure in the system.
- Dual exhaust silencers included.
- Not for use with clutch / brake applications.
- For use in conjunction with a safety relay or safety PLC

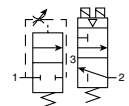


### P33T Schematic



### Options:

<b>P33TA</b>	<b>9</b>	<b>6 R</b>	<b>G 4</b>	<b>F</b>	<b>2CN</b>
<b>Body size</b> Standard P33T	<b>Port size</b> 3/4" 6	<b>Operator</b> 15mm Solenoid G	<b>Solenoid</b> Dual M12 connector without transducer F Triple M12 connector with transducer G	<b>Voltage</b> 24VDC with manual override 2CN	
<b>Thread type</b> BSPP 1 NPT 9	<b>Type</b> Solenoid pilot + gauge R	<b>Mounting</b> Cat 4 w/bracket 4			



### Redundant Safety Exhaust Valves

Port size			Cv		Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number*
Inlet	Outlet	Transducer	1 to 2	2 to 3					
3/4	3/4	w/o transducer	3.7	8.5	273.8 (10.78)	136.0 (5.35)	147.6 (581)	7.3 (16.1)	<b>P33TA96RG4F2CN</b>
3/4	3/4	w/ transducer	3.7	8.5	273.8 (10.78)	136.0 (5.35)	147.6 (581)	7.4 (16.3)	<b>P33TA96RG4G2CN</b>

\* NPT port threads. For BSPP threads, replace "9" in the part number with a "1".



**Parker Pneumatic**

**Redundant Safety Exhaust Valves**

**Technical data**

Pilot solenoids .....According to VDE 0580  
 Enclosure rating..... According to DIN 400 50 IP 65  
 Connector socket..... According to DIN 43650 Form A  
 three solenoids, rated for continuous duty

Standard voltages .....24VDC

Power consumption (each solenoid):  
 for primary and reset solenoids ..... 1.2 watts on DC

Enclosure rating.....IP65, IEC 60529

Electrical connection..... M12, 5-pin

Ambient temperature ..... 15°F to 122°F (-10°C to 50°C)

Media temperature .....40°F to 175°F (4°C to 80°C)

Flow media ..... Compressed air, filtered to minimum 40 micron

Inlet pressure .....30 to 150 psig (2 to 10 bar)

Pressure switch rating  
 (Status indicator) ..... 5 amps at 30 volts DC.

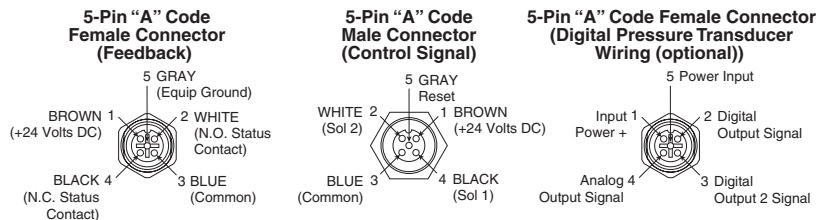
Monitoring..... Dynamically, cyclically, internally during each  
 actuating and de-actuating movement.  
 Monitoring function has memory and requires  
 an overt act to reset unit after lockout.

Mounting orientation ..... Vertically with pilot solenoids on top

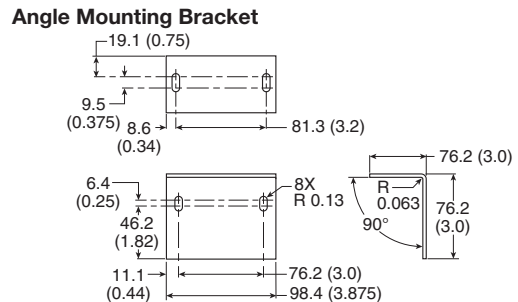
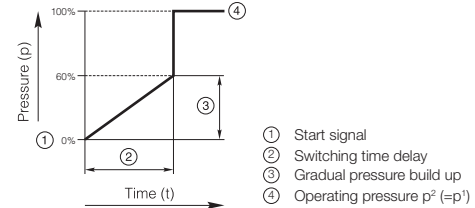
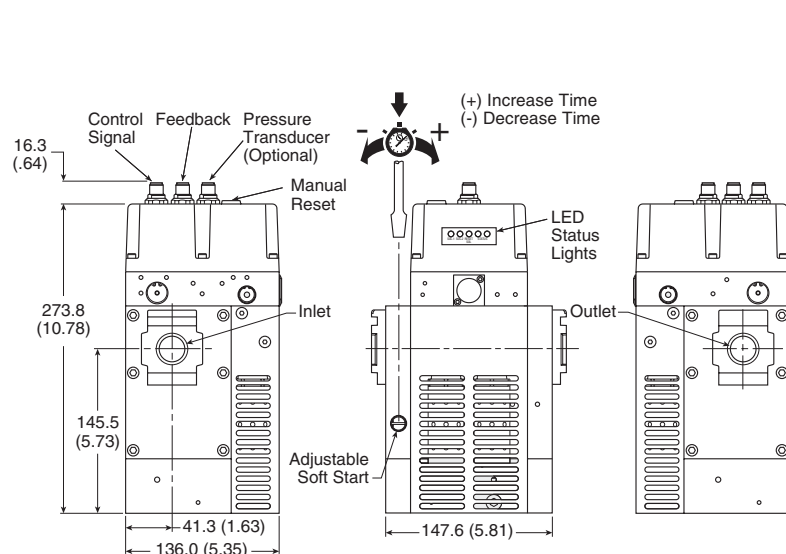
Port threads ..... 3/4 NPT, 3/4 BSPP

Control reliable ..... Category 4 (Cat 4); performance  
 Level e (PLe) in accordance with Machine Directive -  
 EN ISO 13849-1 (Certification pending)

**Valve wiring**



**Dimensions mm (inches)**



**Note:** Mounting bracket and installation screws included and required to install unit in the system.

**Service kits**

Description	P33T
Black grill	1834C05-001
Body connector	P32KA00CB
Cables	
M12, 5-pin female to flying lead cable, TPE; 2 m (6.6 ft)	RKC 4.5-2/S1587
M12, 5-pin male to flying lead cable, TPE; 2 m (6.6 ft)	RSC 4.5-2/S1587
Port block kit	
1/2 NPT	P32KA94CP
3/4 NPT	P32KA96CP
1/2 BSPP	P32KA14CP
3/4 BSPP	P32KA16CP
1/2 BSPT	P32KA24CP
3/4 BSPT	P32KA26CP
Pressure switch	1227A30-001
Pressure transducer (Optional)	1232H30-001
T-bracket w/ body connector	P32KA00MT
T-bracket (Fits to body connector or port block)	P32KA00MB
Silencer(s) 3/4"	5500A5013
Solenoid (Main & reset)	1527B7916-001
Square flush mounting gauge kit 0-160 psig	K4511SCR160



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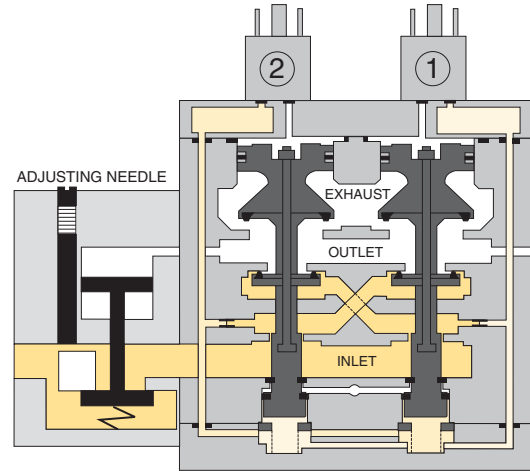
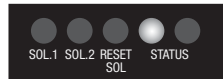
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**Valve de-actuated (ready-to-run):**

The flow of inlet air pressure to the inlet chamber of the main valve internals is restricted by a fixed orifice and an adjustable flow control as well as an air piloted 2-way normally closed poppet valve. The flow of inlet air pressure into the crossover passages is restricted by the size of the passage between the stem and the valve body opening. Flow is sufficient to quickly pressurize pilot supply / timing chambers 1 and 2. The inlet poppets prevent air flow from crossover passages into the outlet chamber. Air pressure acting on the inlet poppets and return pistons securely hold the valve elements in the closed position. (Reset adapter omitted for clarity.)

The green "Status" LED will be illuminated indicating the valve is operational.

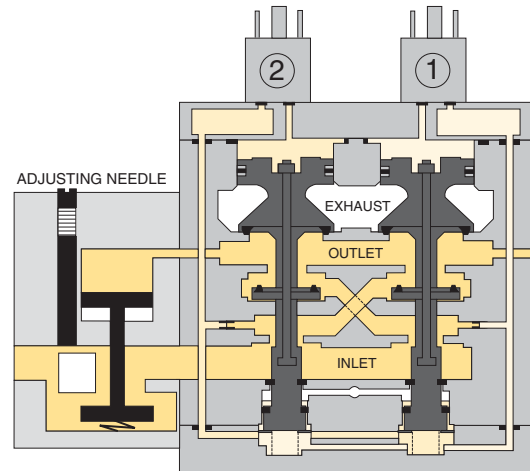
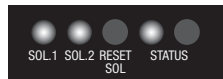


**Valve actuated:**

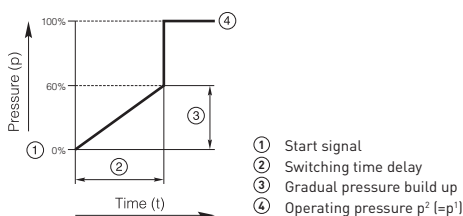
Energizing the pilot valves simultaneously applies pressure to both pistons, forcing the internal parts to move to their actuated (open) position, where inlet air flow to crossover passages is fully open, inlet poppets are fully open and exhaust poppets are fully closed. The outlet is then pressurized at a rate allowed by the fixed orifice and the adjusted flow control. Once the air pressure in the outlet chamber reaches approximately 60% of inlet pressure, the air piloted 2-way normally closed poppet valve opens fully and the pressure in the inlet, crossovers, outlet, and timing chambers are quickly equalized. The adjustable flow control will control the time it takes for the outlet air pressure to reach approximately 60% of inlet pressure.

De-energizing the pilots quickly causes the valve elements to return to the ready-to-run position.

Solenoid 1, Solenoid 2 and the green "Status" LED's will be illuminated indicating the valve is operating properly.



**Soft start function:**

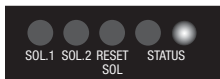


**Valve fault and lock-out:**

Whenever the valve elements operate in a sufficiently asynchronous manner, either on actuation or de-actuation, the valve will move to a locked-out position. In the locked-out position, one crossover and its related timing chamber will be exhausted, and the other crossover and its related timing chamber will be fully pressurized. The valve element (side 2) that is partially actuated has pilot air available to fully actuate it, but no air pressure on the return piston to fully de-actuate the valve element.

Air pressure in the crossover acts on the differential of side 2 stem diameters creating a latching force. Side 1 is in a fully closed position, and has no pilot air available to actuate, but has full pressure on the inlet poppet and return piston to hold the element in the fully closed position. Inlet air flow on side 1 into its crossover is restricted, and flows through the open inlet poppet on side 2, through the outlet into the exhaust port, and from the exhaust port to atmosphere. Residual pressure in the outlet is less than 1% of inlet pressure. The return springs are limited in travel, and can only return the valve elements to the intermediate (locked-out) position. Sufficient air pressure acting on the return pistons is needed to return the valve elements to a fully closed position.

The red "Status" LED will be illuminated indicating the valve in fault and lock-out must be reset



**Valve reset (electrical or manual):**

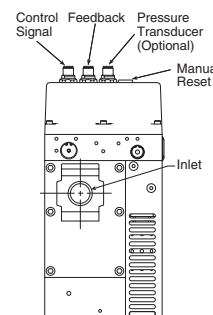
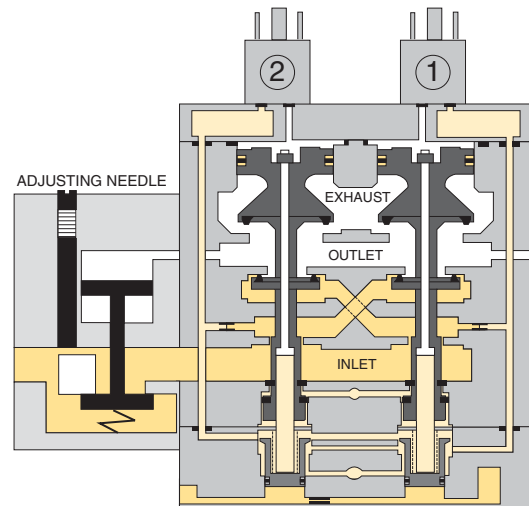
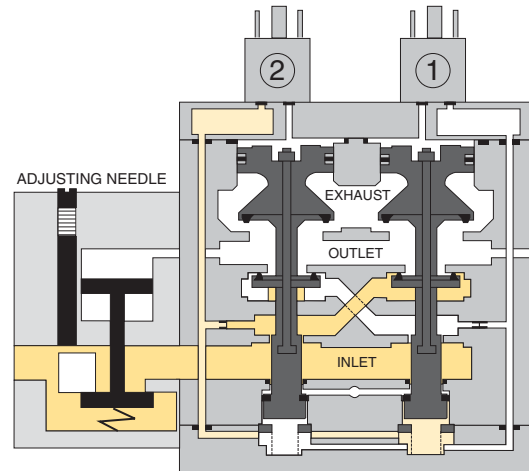
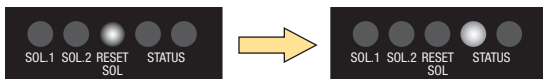
The reset procedure is as follows:

- Remove the electrical signals to the main coils
- Ensure there is air supplied to the valve
- Energize the reset solenoid for a minimum of 200 ms
- Allow a 200 ms delay after de-energizing the reset solenoid and re-energizing the main solenoids

The valve will remain in the locked-out position, even if the inlet air supply is removed and re-applied.

A remote reset signal must be applied to reset the valve. A momentary, remote electrical signal must be applied to the reset solenoid to apply pressure to the reset pistons in the valve. Actuation of the reset piston physically pushes the main valve elements to their closed position. Inlet air fully pressurizes the crossovers and holds the inlet poppets on seat. Actuation of the reset piston opens the reset poppet, thereby, immediately exhausting pilot supply air, thus, preventing valve operation during reset (Reset adapter added to illustration.). De-actuation of reset pistons causes the reset poppets to close and pilot supply to fully pressurize. Reset adapter pressure is applied by a 3/2 normally closed solenoid, or a manual push button mounted on the reset adapter in the top valve cover.

The green "Status" LED will be illuminated once the valve is reset.



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## Global Modular Solenoid Operators

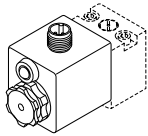
### Solenoid Operators - CNOMO

#### Technical data - Solenoid operators, coil combinations

	NC Normal Operator with 22 x 30 standard coil	NC Normal Operator with 30 x 30 standard coil
Working pressure	0 to 10 bar	0 to 10 bar
Ambient temperature	-10°C to 60°C *	-10°C to 60°C *
Power (DC)	4.8W	2.7W
Power (AC)	8.5VA	4.9VA
Voltage tolerance	+/-10%	+/-10%
Duty cycle	100%	100%
Insulation class	F	F
Electric connection	B Industrial	DIN 43650A
Protection	IP65	IP65
Approval		UL/CSA
Working media	All neutral media such as compressed air	

\* Limited to 50°C if use with 100% duty cycle

#### Solenoid Coils with M12 Connection



Voltage	Order code	Weight (Kg)
Direct current		
24VDC	<b>P2FC6449</b>	0.065

### 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

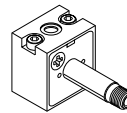
#### Pilot Valve

Body:	Polyamide
Armature tube:	Brass
Plunger & core:	Corrosion resistant Cr-Ni steel
Seals:	Fluorocarbon
Screws:	Stainless steel

#### Coil

Encapsulation material:	Thermoplastic as standard Duroplast for M12 connection
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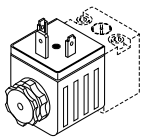
### Spare Base Solenoid Pilot Operator CNOMO NC



Description	Order code non-lock manual override	Weight (Kg)
Standard Duty	<b>P2FP23N4B</b>	0.065
No Override	<b>P2FP23N4A</b>	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.

### Solenoid Coils with DIN A or Industrial B Connection



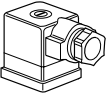
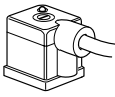
Voltage	22mm x 30mm Order code B industrial standard	Weight (Kg)	30mm x 30mm Order code DIN 43650A standard	Weight (Kg)
Direct current				
24VDC	<b>P2FCB449</b>	0.093	<b>P2FCA449</b>	0.105
Alternative current				
110V 50Hz, 120V 60Hz	<b>P2FCB453</b>	0.093	<b>P2FCA453</b>	0.105

Most popular.

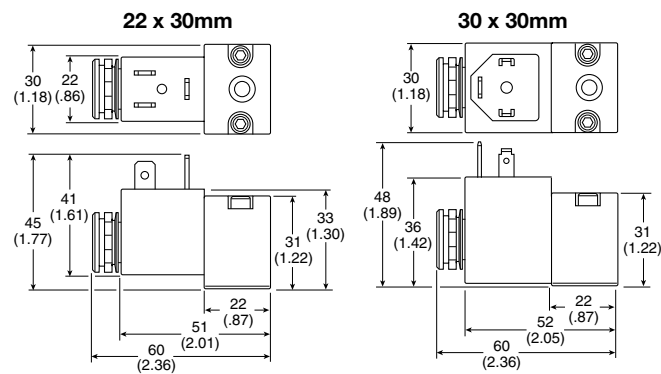




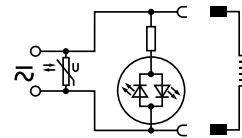
**Solenoid Connectors / Cable Plugs EN175301-803**

	Description	Order code 22mm Form B Industrial	Order code 30mm Form A DIN 43650A
 <p>With standard screw</p>	Standard IP65 without flying lead	<b>PS2429BP</b>	<b>PS2028BP</b>
	With LED and protection 24VAC/DC	<b>PS243079BP</b>	<b>PS203279BP</b>
	With LED and protection 110VAC	<b>PS243083BP</b>	<b>PS203283BP</b>
 <p>With cable</p>	Standard with 2m cable IP65	<b>PS2429JBP</b>	<b>PS2028JCP</b>
	24VAC/DC, 2m cable LED and protection IP65	<b>PS2430J79BP</b>	<b>PS2032J79CP</b>
	110VAC/DC, 2m cable LED and protection IP65	<b>PS2430J83BP</b>	<b>PS2032J83CP</b>

**Solenoid coil dimensions mm (inches)**



**Electrical schematics**

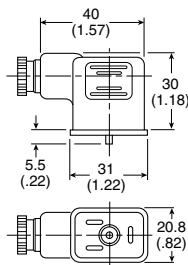


<b>PS243079BP</b>	<b>PS203279BP</b>
<b>PS2430J79BP</b>	<b>PS2032J79CP</b>
<b>PS243083BP</b>	<b>PS203283BP</b>
<b>PS2430J83BP</b>	<b>PS2032J83CP</b>
<b>PS294679BP</b>	<b>PS294683BP</b>
<b>PS2946J79BP</b>	<b>PS2946J83BP</b>

**Cable plug dimensions mm (inches)**

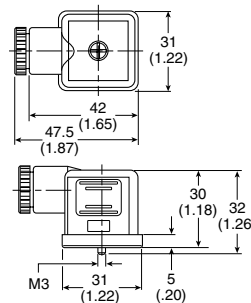
22mm Form B Industrial  
Cable plugs

**PS2429BP**



30mm DIN 43650A  
Cable plugs

**PS2028BP**



 Most popular.













## Global Modular Accessories

### Safety Lockout Valves

	Model type	Port size	Thread type	Flow dm <sup>3</sup> /s (SCFM)	Part number Flow from left to right	Part number Flow from right to left
	P31	1/4"	NPT	47.2 (100)	<b>P31VA92LSAN</b>	
	P32	1/4"	NPT	66.5 (141)	<b>P32VA92LSAN</b>	<b>P32VA92LSBN</b>
		3/8"	NPT	101.9 (216)	<b>P32VA93LSAN</b>	<b>P32VA93LSBN</b>
		1/2"	NPT	128.4 (272)	<b>P32VA94LSAN</b>	<b>P32VA94LSBN</b>
	P33	1/2"	NPT	136.9 (290)	<b>P33VA94LSAN</b>	<b>P33VA94LSBN</b>
		3/4"	NPT	141.6 (300)	<b>P33VA96LSAN</b>	<b>P33VA96LSBN</b>




For thread type: BSPP 1, BSPT 2, NPT 9

### Modular Ball Valve

	Model type	Port size	Exhaust port	Thread type	Flow dm <sup>3</sup> /s (SCFM)	Part number Flow from left to right
	P31	1/4"	1/4"	NPT	20 (42.4)	<b>P31VB92LBNN</b>
	P32	3/8"	1/4"	NPT	90 (190.7)	<b>P32VB93LBNN</b>
		1/2"	1/4"	NPT	122 (258.5)	<b>P32VB94LBNN</b>
	P33	1/2"	1/2"	NPT	265 (561.5)	<b>P33VB94LBNN</b>
		3/4"	1/2"	NPT	320 (678)	<b>P33VB96LBNN</b>

For thread type: BSPP 1, BSPT 2, NPT 9

### Manifold Blocks

	Model type	In / Out port size	Auxiliary port size top	Auxiliary port size bottom	Thread type	Part number
	P31	1/4"	1/4"	1/4"	NPT	<b>P31MA92022N</b>
	P32	1/2"	1/4"	1/2"	NPT	<b>P32MA94024N</b>
	P33	3/4"	1/4"	1/2"	NPT	<b>P33MA96024N</b>

For thread type: BSPP 1, BSPT 2, NPT 9







 Most popular.





**Parker Pneumatic**

**Global Modular Accessories**





**P31 Series Accessories**

Description	Port size	Part number
 C-bracket (Fits to filter and lubricator body)	—	<b>P31KA00MW</b>
 T-bracket w/ body connector	—	<b>P31KA00MT</b>
 Body connector	—	<b>P31KA00CB</b>
 Port block kit	1/8 NPT	<b>P31KA91CP</b>
	1/4 NPT	<b>P31KA92CP</b>
	3/8 NPT	<b>P31KA93CP</b>
	1/8 BSPP	<b>P31KA11CP</b>
	1/4 BSPP	<b>P31KA12CP</b>
	3/8 BSPP	<b>P31KA13CP</b>
	1/8 BSPT	<b>P31KA21CP</b>
	1/4 BSPT	<b>P31KA22CP</b>
	3/8 BSPT	<b>P31KA23CP</b>
	 Port block kit with T-bracket	1/8 NPT
1/4 NPT		<b>P31KA92CN</b>
3/8 NPT		<b>P31KA93CN</b>
1/8 BSPP		<b>P31KA11CN</b>
1/4 BSPP		<b>P31KA12CN</b>
3/8 BSPP		<b>P31KA13CN</b>
1/8 BSPT		<b>P31KA21CN</b>
 Angle bracket (Fits to regulator and filter / regulator body)	—	<b>P31KA00MR</b>



**P32 Series Accessories**

Description	Part number
 Angle bracket (Fits to regulator and filter / regulator body)	<b>P32KA00MR</b>
 L-bracket (Fits to filter and lubricator body)	<b>P32KA00ML</b>

**P32 & P33 Series Accessories**

Description	Port size	Part number
 T-bracket with body connector	—	<b>P32KA00MT</b>
 Body connector	—	<b>P32KA00CB</b>
 Port block kit	1/4 NPT	<b>P32KA92CP</b>
	3/8 NPT	<b>P32KA93CP</b>
	1/2 NPT	<b>P32KA94CP</b>
	3/4 NPT	<b>P32KA96CP</b>
	1/4 BSPP	<b>P32KA12CP</b>
	3/8 BSPP	<b>P32KA13CP</b>
	1/2 BSPP	<b>P32KA14CP</b>
	3/4 BSPP	<b>P32KA16CP</b>
	1/4 BSPT	<b>P32KA22CP</b>
	3/8 BSPT	<b>P32KA23CP</b>
 T-bracket (fits to body connector or port block)	1/2 BSPT	<b>P32KA24CP</b>
	3/4 BSPT	<b>P32KA26CP</b>
	—	<b>P32KA00MB</b>

**P33 Series Accessories**

Description	Part number
 Angle bracket (Fits to regulator and filter / regulator body)	<b>P33KA00MR</b>
 L-bracket (Fits to filter and lubricator body)	<b>P33KA00ML</b>

**PPS1 Pressure Switch**

Thread size	Part number
1/4 NPT	<b>PPS1-1C3-RHM</b>
1/8 NPT	<b>PPS1-2C3-RHM</b>
1/4" NPT	<b>PPS1-1C3-RWL</b>
1/8" NPT	<b>PPS1-2C3-RWL</b>

 Most popular.



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

Precision / Proportional

Bulk Liquid Separators








**Service Kits**

	Description	P31	P32	P33
Air Preparation Products	Panel mount (plastic)	<b>P31KA00MP</b>	<b>P32KA00MP</b>	<b>P33KA00MP</b>
	Panel mount nut (aluminum)	<b>P31KA00MM</b>	<b>P32KA00MM</b>	<b>P33KA00MM</b>
Global	5µ element kit	<b>P31KA00ESE</b>	<b>P32KA00ESE</b>	<b>P33KA00ESE</b>
	1µ element kit	<b>P31KA00ES9</b>	<b>P32KA00ES9</b>	<b>P33KA00ES9</b>
Prep-Air II	0.01µ element kit	<b>P31KA00ESC</b>	<b>P32KA00ESC</b>	<b>P33KA00ESC</b>
	Adsorber element kit	<b>P31KA00ESA</b>	<b>P32KA00ESA</b>	<b>P33KA00ESA</b>
Miniature	Auto drain kit		<b>P32KA00DA</b>	<b>P32KA00DA</b>
	Differential pressure indicator kit	<b>P31KA00RQ</b>	<b>P32KA00RQ</b>	<b>P32KA00RQ</b>
P3N	Fill plug kit	<b>P31KA00PL</b>	<b>P32KA00PL</b>	<b>P32KA00PL</b>
	Drip control assembly kit	<b>P32KA00PG</b>	<b>P32KA00PG</b>	<b>P32KA00PG</b>
General Industrial	Plastic bowl w/ bowl guard & manual drain	<b>P31KA00BGM</b>	<b>P32KA00BGM</b>	<b>P33KA00BGM</b>
		<b>P31KA00BGB</b>		
Stainless Steel	Plastic bowl w/ bowl guard & pulse drain		<b>P32KA00BGA</b>	<b>P33KA00BGA</b>
		<b>P31KA00BGN</b>	<b>P32KA00BGN</b>	<b>P33KA00BGN</b>
Precision / Proportional	Metal bowl w/o sight gauge & manual drain	<b>P31KA00BMM</b>	<b>P32KA00BMM</b>	<b>P33KA00BMM</b>
		<b>P31KA00BMB</b>		
Bulk Liquid Separators	Metal bowl w/o sight gauge & pulse drain		<b>P32KA00BMA</b>	<b>P33KA00BMA</b>
		<b>P31KA00BMN</b>		
Bulk Liquid Separators	Metal bowl w/ sight gauge & manual drain		<b>P32KA00BSM</b>	<b>P33KA00BSM</b>
			<b>P32KA00BSA</b>	<b>P33KA00BSA</b>
Bulk Liquid Separators	Metal bowl w/ sight gauge & auto drain		<b>P32KA00BSN</b>	<b>P33KA00BSN</b>
		<b>P31KA00BSN</b>		

Most popular.



**Service Kits**

Port size	Description	P31	P32	P33
	Regulator - relieving repair kit	<b>P31KA00RB</b>	<b>P32KA00RB</b>	<b>P33KA00RB</b>
	Regulator - non relieving repair kit	<b>P31KA00RC</b>	<b>P32KA00RC</b>	<b>P33KA00RC</b>
	Regulator - main adjusting spring 0-2 bar (0-30 PSIG) kit	<b>P31KA00PR</b>	<b>P32KA00PR</b>	<b>P33KA00PR</b>
	Regulator - main adjusting spring 0-4.1 bar (0-60 PSIG) kit	<b>P31KA00PS</b>	<b>P32KA00PS</b>	<b>P33KA00PS</b>
	Regulator - main adjusting spring 0-8.6 bar (0-125 PSIG) kit	<b>P31KA00PT</b>	<b>P32KA00PT</b>	<b>P33KA00PT</b>
	Regulator - main adjusting spring 0-17 bar (0-250 PSIG) kit		<b>P32KA00PV</b>	<b>P33KA00PV</b>
	Square flush mount gauge kit	0-4 bar <b>K4511SCR04B</b>		
		0-11 bar <b>K4511SCR11B</b>		
		0-60 PSIG <b>K4511SCR060</b>		
		0-160 PSIG <b>K4511SCR160</b>		
	1.00" round gauge	0-60 PSIG / 0-4.1 bar <b>K4510N18060</b>		
	1.00" gauge	0-160 PSIG / 0-10 bar <b>K4510N18160</b>		
	40mm round gauge	0-30 PSIG / 0-2 bar <b>K4515N18030</b>		
	(Not for use with common port regulators)	0-60 PSIG / 0-4.1 bar <b>K4515N18060</b>		
		0-160 PSIG / 0-10 bar <b>K4515N18160</b>		
	50mm round gauge	0-30 PSIG / 0-2 bar	<b>K4520N14030</b>	<b>K4520N14030</b>
		0-60 PSIG / 0-4.1 bar	<b>K4520N14060</b>	<b>K4520N14060</b>
		0-160 PSIG / 0-10 bar	<b>K4520N14160</b>	<b>K4520N14160</b>
		0-300 PSIG / 0-20 bar	<b>K4520N14300</b>	<b>K4520N14300</b>
	44mm (1-3/4") digital round	0-160 PSIG / 0-11 bar / 0-1.1 MPa	<b>K4517N14160D</b>	<b>K4517N14160D</b>
	Body connector o-ring (spares kit) (pack of 10)	<b>P31KA00CY</b>	<b>P32KA00CY</b>	<b>P33KA00CY</b>
	Tamperproof knob kit	<b>P31KB00AT</b>	<b>P32KB00AT</b>	



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

Precision / Proportional

Bulk Liquid Separators

 Most popular.

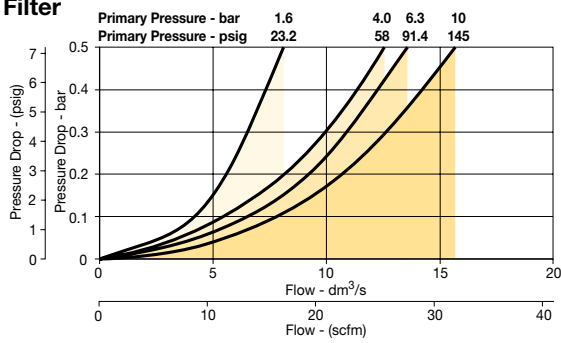




## Global FRL Flow Charts

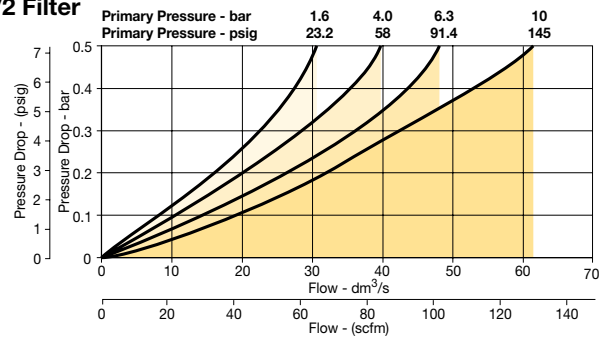
### Mini Particulate Filter - P31

#### 1/4 Filter

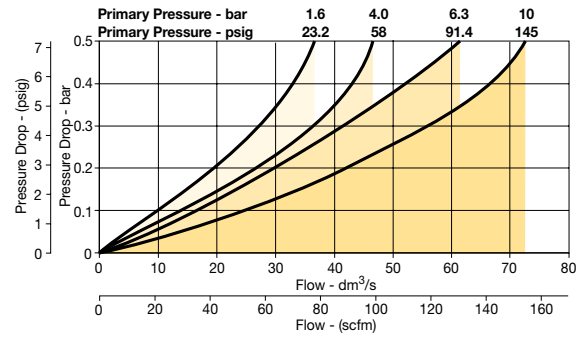


### Standard Particulate Filter - P33

#### 1/2 Filter

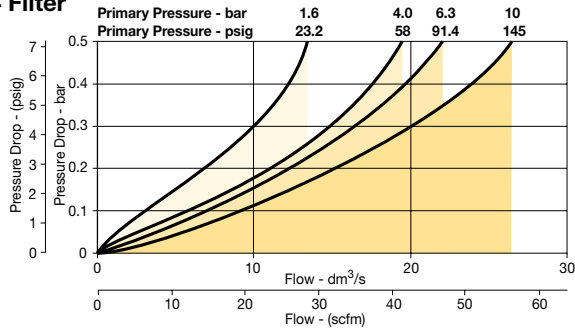


#### 3/4 Filter

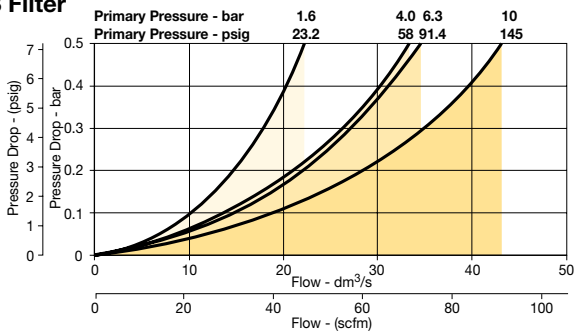


### Compact Particulate Filter - P32

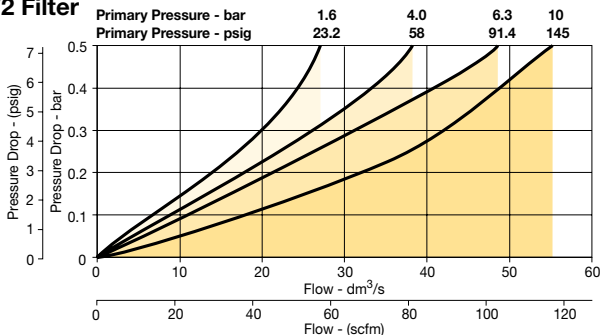
#### 1/4 Filter



#### 3/8 Filter



#### 1/2 Filter



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

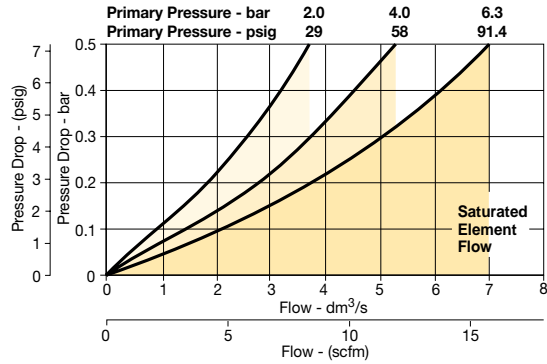
Precision / Proportional

Bulk Liquid Separators

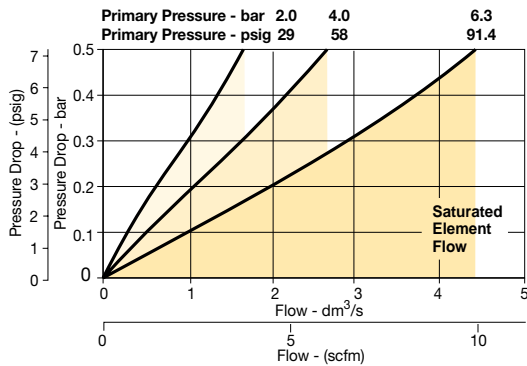


**Mini Coalescing and Adsorber Filters - P31**

**P31 - 1.0 micron flow**

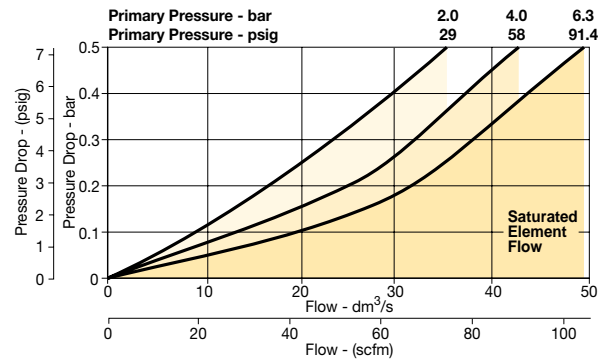


**P31 - 0.01 micron flow**

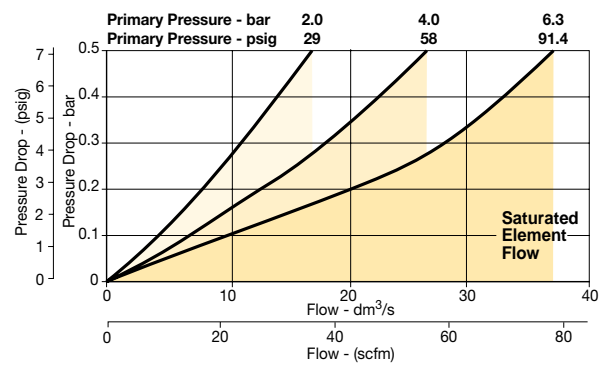


**Standard Coalescing and Adsorber Filter - P33**

**P33 - 1.0 micron flow**

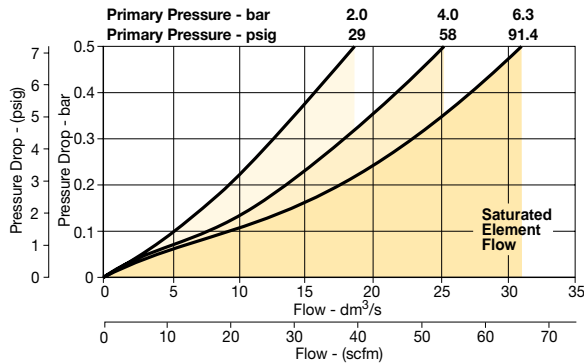


**P33 - 0.01 micron flow**

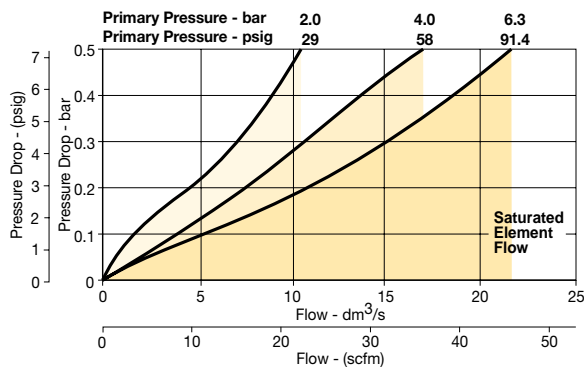


**Compact Coalescing and Adsorber Filter - P32**

**P32 - 1.0 micron flow**



**P32 - 0.01 micron flow**



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

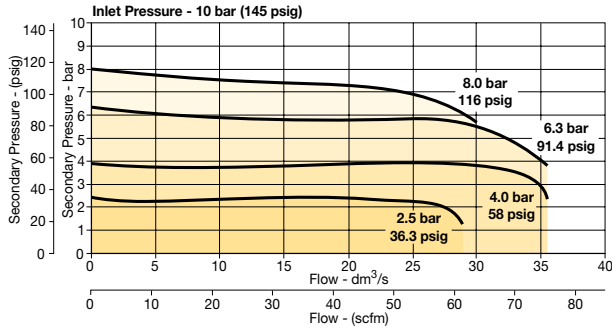
Precision / Proportional

Bulk Liquid Separators



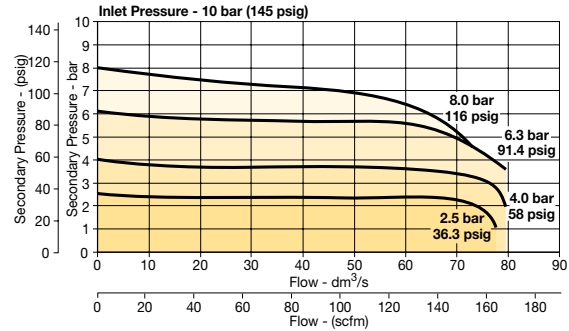
**Mini Regulator - P31**

**1/4 Regulator**



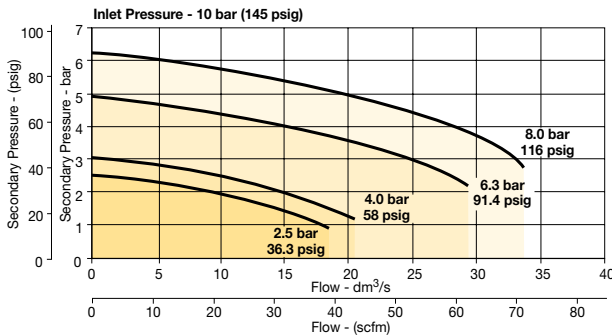
**Compact Regulator - P32**

**1/2 Regulator**



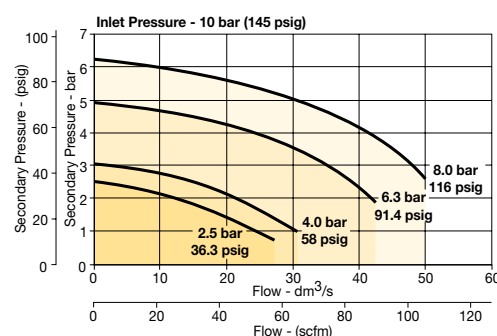
**Mini Common - P1 Regulator - P31**

**1/4 Common Regulator**



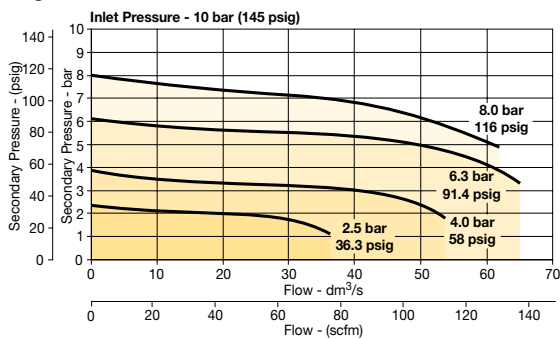
**Compact Common - P1 Regulator - P32**

**1/4, 3/8 or 1/2 Common Regulator**



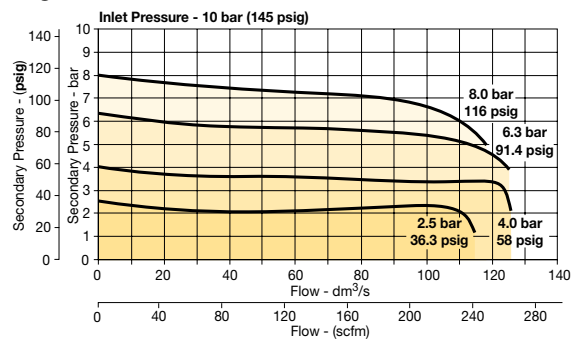
**Compact Regulator - P32**

**1/4 Regulator**

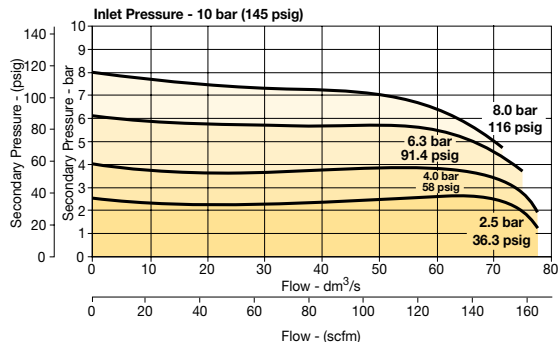


**Standard Regulator - P33**

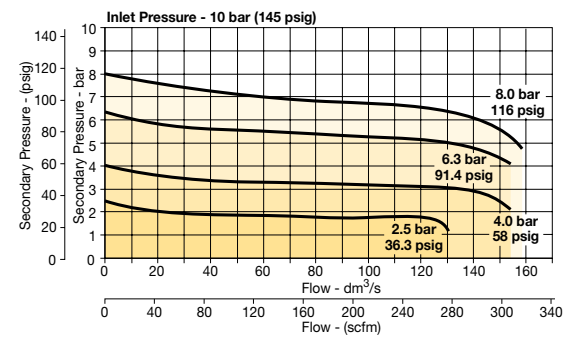
**1/2 Regulator**



**3/8 Regulator**



**3/4 Regulator**

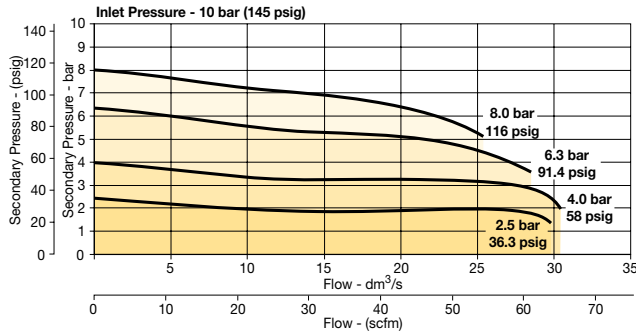


P
Air Preparation Products
Global
Prep-Air II
Miniature
P3N
Industrial
Stainless Steel
Precision / Proportional
Bulk Liquid Separators



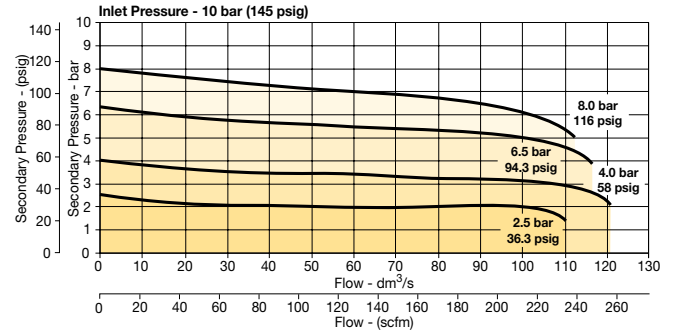
**Mini Filter / Regulator - P31**

**1/4 Filter/Regulator**



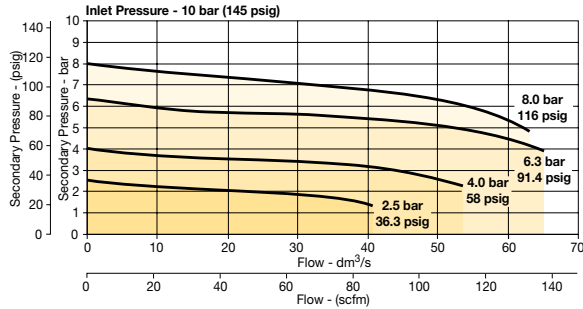
**Standard Filter / Regulator - P33**

**1/2 Filter/Regulator**

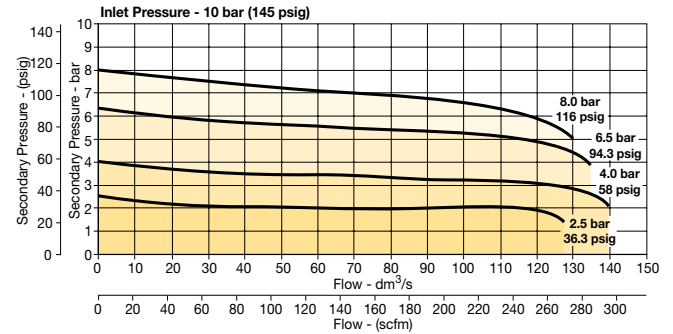


**Compact Filter / Regulator - P32**

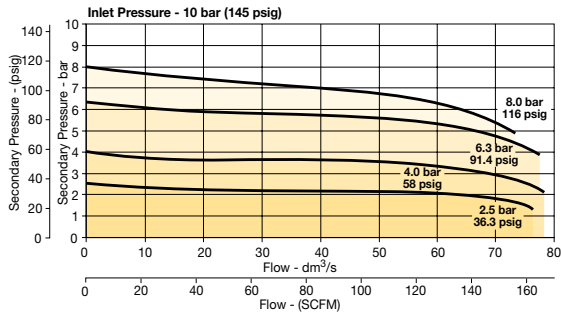
**1/4 Filter/Regulator**



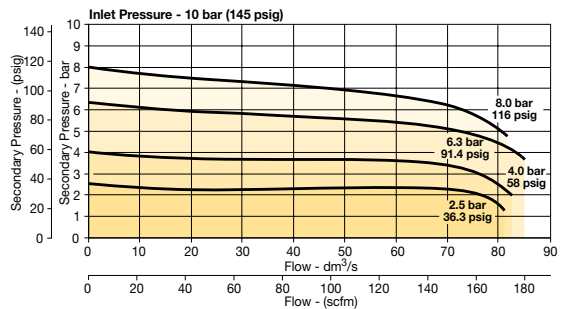
**3/4 Filter/Regulator**



**3/8 Filter/Regulator**



**1/2 Filter/Regulator**



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

Precision / Proportional

Bulk Liquid Separators





Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

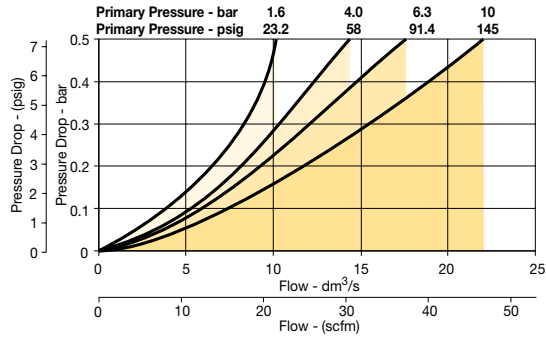
Stainless Steel

Precision / Proportional

Bulk Liquid Separators

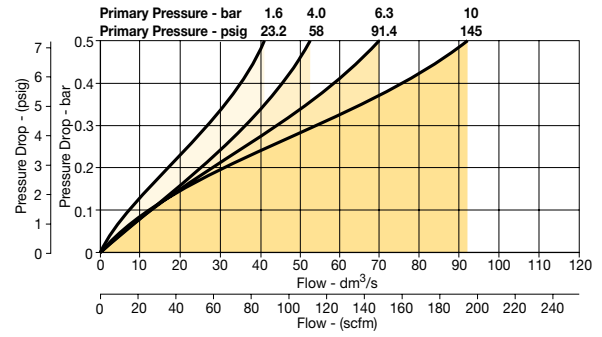
### Mini Lubricator - P31

#### 1/4 Lubricator

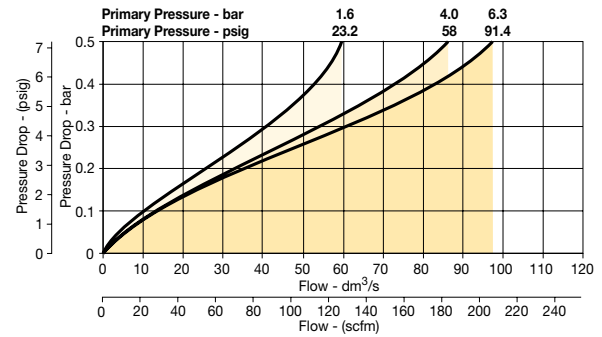


### Standard Lubricator - P33

#### 1/2 Lubricator

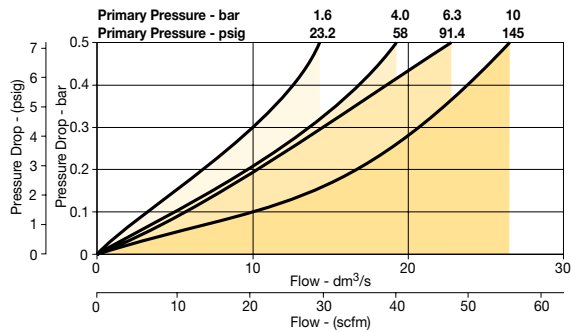


#### 3/4 Lubricator

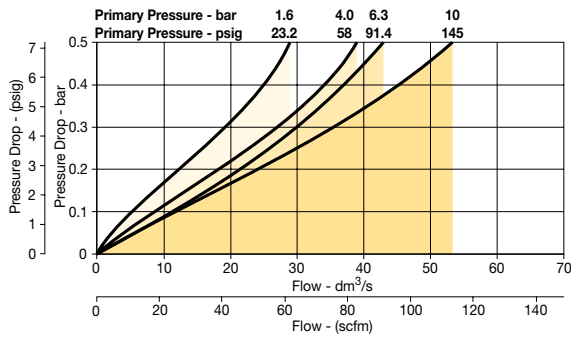


### Compact Lubricator - P32

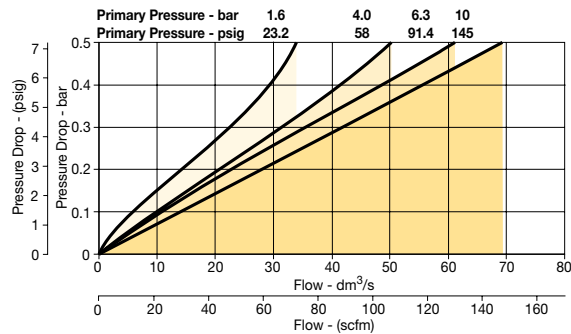
#### 1/4 Lubricator



#### 3/8 Lubricator

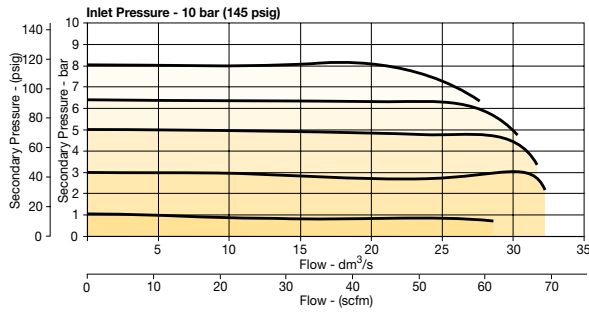


#### 1/2 Lubricator

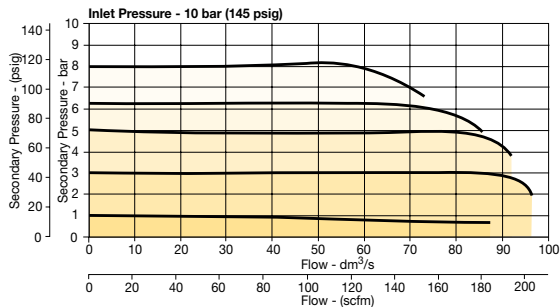


## Proportional Regulators

### P31P Regulator 1/4" Ports

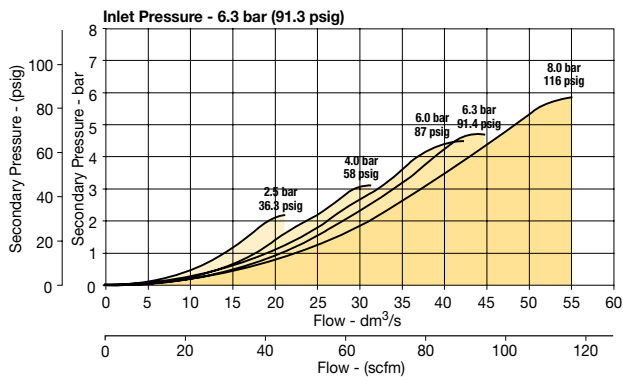


### P32P Regulator 1/2" Ports

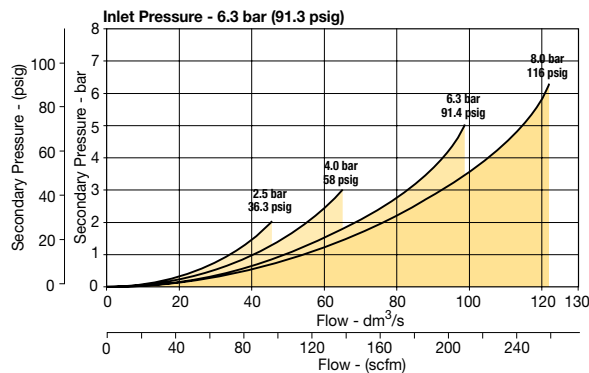


## Combined Soft Start / Dump Valve

### 1/4 Soft Start & Dump Valve

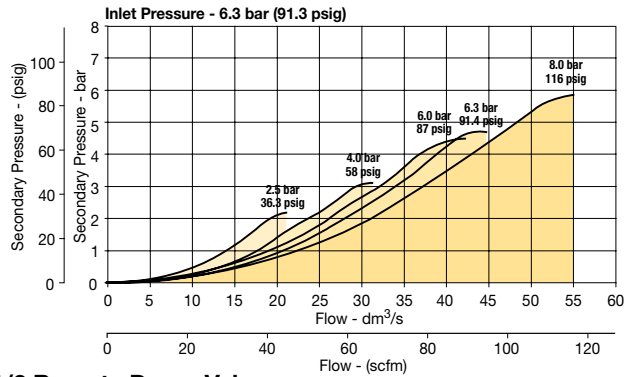


### 1/2 Soft Start & Dump Valve

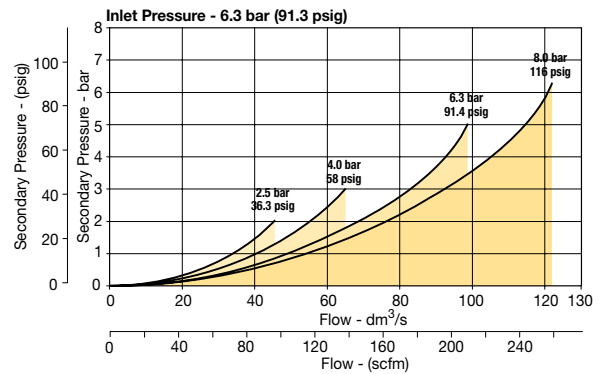


## Dump Valve

### 1/4 Remote Dump Valve

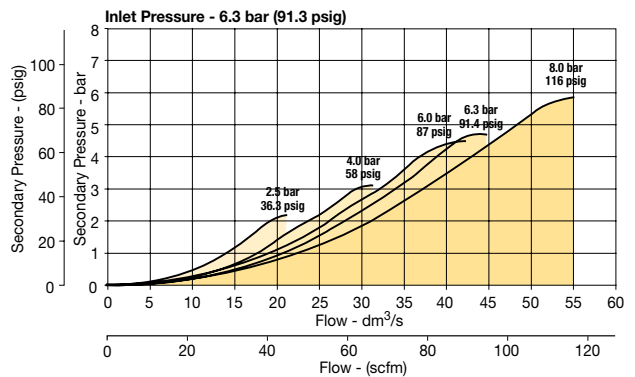


### 1/2 Remote Dump Valve

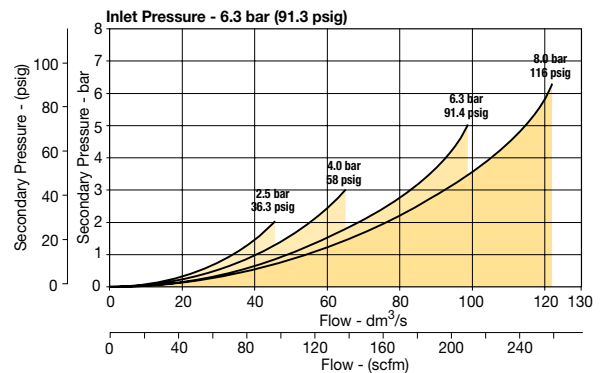


## Soft Start Valve

### 1/4 Soft Start Valve



### 1/2 Soft Start Valve



Air Preparation Products

Global

Prep-Air II

Miniature

P3N

General Industrial

Stainless Steel

Precision / Proportional

Bulk Liquid Separators