



**Air Preparation Products**  
**Regulators Products**

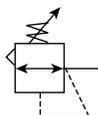
General	<a href="#">K2-K39</a>
Dial	<a href="#">K40-K47</a>
Pilot	<a href="#">K48-K61</a>
Proportional	<a href="#">K62-K87</a>
Precision	<a href="#">K88-K101</a>
Water	<a href="#">K102-K108</a>



**Miniature Regulators**

**14R Regulators - Miniature**

- Unbalanced poppet standard
- Solid control piston with lip seal for extended life
- Non-rising adjusting knob
- Compact design
- Very easy to service
- 1/8", 1/4" ports (NPT, BSPP, BSPT)



Port Size	Description	Part Number
1/8"	Without Gauge	<b>14R013FC</b>
1/8"	With Gauge	<b>14R018FC</b>
1/4"	Without Gauge	<b>14R113FC</b>
1/4"	With Gauge	<b>14R118FC</b>

NOTE: 1.218 Dia. (31 mm) hole required for panel mounting.

**Operating information**

Supply pressure (max):	0 to 300 psig (0 to 20.7 bar)
Secondary pressure ranges	
Standard	2 to 125 psig (0 to 8.6 bar)
Medium	1 to 60 psig (0 to 4.1 bar)
Medium	1 to 30 psig (0 to 2.1 bar)
Low	1 to 15 psig (0 to 1 bar)
Operating temperature:	32°F to 125°F (0°C to 52°C)
Low temperature	-4°F to 125°F (-20°C to 52°C)
Flow capacity†:	
High flow	1/8" 13 scfm (6.1 dm³/s, ANR)
	1/4" 15 scfm (7.1 dm³/s, ANR)
Gauge ports (2):	1/8 or 1/4 inch
Weight:	0.3 lb (0.14 kg)

† scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

**Ordering Information:**

**14R 1 13 F C**

Port Size		Port Type		Preset / Pressure Limited	
1/8 Inch Pipe, 1/8 Inch Gauge Port	0	Blank	NPT	Blank	None
1/4 Inch Pipe, 1/8 Inch Gauge Port	1	1	BSPP	XXX*	Preset Pressure
1/4 Inch Pipe, 1/4 Inch Gauge Port	B	2	BSPT	XXX*	Pressure Limited
1/8 Inch Pipe, No Gauge Port	C				
Manifold Mounting	M				

Pressure Range		Relief	
Yellow Knob	Black Knob	F	Relieving
Without Gauge		G	Non-Relieving
30 psig	10	H	Low Temp. Relieving
60 psig	11	J	Low Temp. Non-Relieving
15 psig	12		
125 psig	13		
With Gauge*			
30 psig	15		
60 psig	16		
15 psig	17		
125 psig	18		

Engineering Level		Options	
C	Current	Blank	No Options
		L†	Preset Non-Adjustable
		P†	Preset Adjustable
		S†	Pressure Limiter Max. Adjustable
		T†	Pressure Limiter Max. Non-Adjustable

\* Available preset / pressure limited range, 10 to 90 psig in 5 psig increments. For higher pressures, contact factory.  
(Example: 065 = 65 psig)

† Inlet pressure is 100 psig. For other pressures contact factory.

Spring Type by Preset / Limited Pressure:  
 For Preset / Limited Pressure 10 to 25 use 30 psi spring  
 For Preset / Limited Pressure 26 to 50 use 60 psi spring  
 For Preset / Limited Pressure 51 to 90 use 125 PSI Spring

Most popular.



## Miniature Regulators

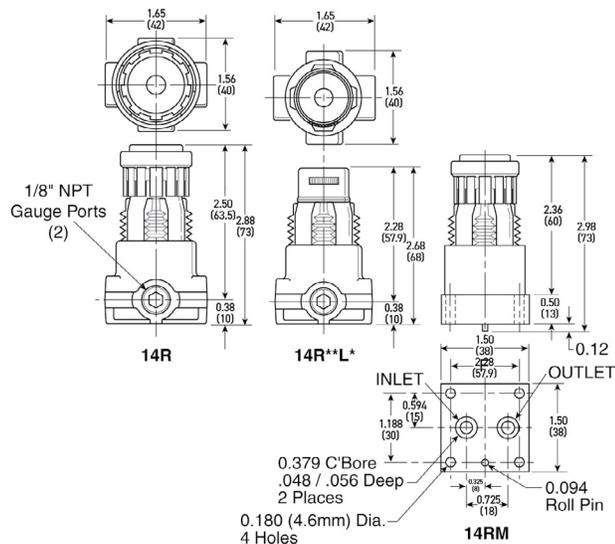
### Material Specifications

Adjusting nut	Brass
Adjusting stem & spring	Steel
Body	Zinc
Bonnet, seat, piston & valve poppet	Plastic
Seals	Nitrile

### Repair and Service Kits

Bonnet assembly kit	<b>L01369</b>
Bonnet tamperproof kit	<b>P01265</b>
30 psig gauge, 1/8" NPT (0 to 2.1 bar)	<b>K4515N18030</b>
60 psig gauge, 1/8" NPT (0 to 4.1 bar)	<b>K4515N18060</b>
160 psig gauge, 1/8" NPT (0 to 11.0 bar)	<b>K4515N18160</b>
60 psig gauge, 1/4" NPT (0 to 4.1 bar)	<b>K4520N14060</b>
160 psig gauge, 1/4" NPT (0 to 11.0 bar)	<b>K4520N14160</b>
Mounting bracket kit* (includes panel mount nut)	<b>PS417BP</b>
Plastic panel mount nuts*	<b>P78652</b>
Metal panel mount nuts*	<b>P01531</b>
Unbalanced non-relieving, poppet / piston kit	<b>PS428P</b>
Unbalanced relieving, poppet / piston kit	<b>PS426P</b>
1- 15 psig spring (yellow)	<b>P01176</b>
1- 30 psig spring (black)	<b>P01175</b>
1- 60 psig spring (white)	<b>P01174</b>
2- 125 psig spring (gold)	<b>P01173</b>

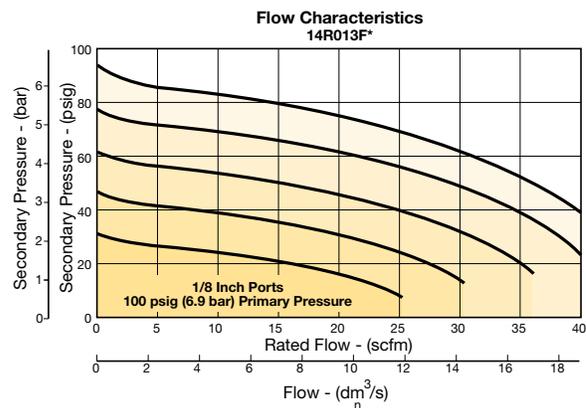
\* Tighten panel mount nut 2.8 to 3.4 Nm (25 to 30 in-lbs) of torque.



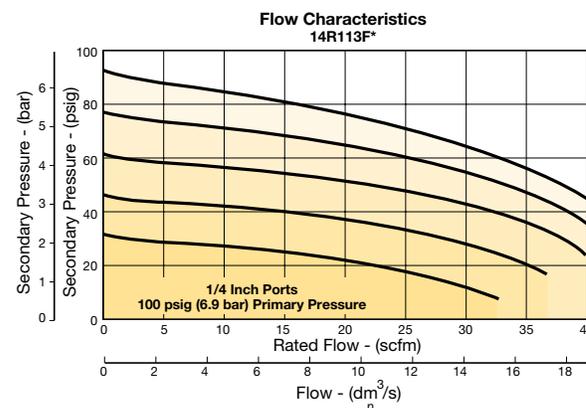
## Air Preparation Products 14R Series

### Flow Charts

#### 1/8" Ports



#### 1/4" Ports



### WARNING

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

### CAUTION:

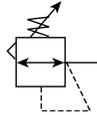
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



**Miniature Regulators**

**P3A-R Regulators - Miniature**

- Lightweight plastic body
- Non-rising adjusting knob
- Solid control piston with lip seal for extended life
- Unbalanced poppet standard
- Two full flow 1/8" gauge ports
- Reverse flow capability
- 1/8", 1/4" ports (NPT)



Port Size	Description	Part Number
1/4"	Without Gauge	<b>P3A-RN92YNNN</b>

NOTE: 1.218 Dia. (31 mm) hole required for panel mounting.

**Operating information**

Supply pressure (max):	120 psig (8.3 bar)	
Secondary pressure:	15 psig spring	
	15 psig spring	1 to 15 psig (0.07 to 1.0 bar)
	30 psig spring	6 to 30 psig (0.4 to 2.1 bar)
	60 psig spring	6 to 60 psig (0.4 to 4.1 bar)
	110 psig spring	6 to 110 psig (0.4 to 7.6 bar)
Operating temperature:	32°F to 125°F (0°C to 52°C)	
Flow capacity <sup>†</sup> :	1/8"	
	High flow	13 scfm (6.1 dm <sup>3</sup> /s, ANR)
		1/4"
		15 scfm (7.1 dm <sup>3</sup> /s, ANR)
Gauge ports (2):	1/8 inch	
Weight:	0.3 lb (0.14 kg)	

<sup>†</sup> scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

**Ordering Information:**

**P3A-RN 9 1 Y N N N**

<b>Port Type</b>	<b>Port Size</b>	<b>Relief</b>	<b>Pressure / Gauge</b>	<b>Option</b>	<b>Preset / Pressure Limited</b>
NPT Female	9	Non-Relieving, Black Knob	Without Gauge	N	Blank
	1/8 inch	Relieving, Black Knob	15 psig (0 to 1 bar)		XXX*
	1/4 inch	Non-Relieving, Yellow Knob	30 psig (0 to 2 bar)		XXX*
		Relieving, Yellow Knob	60 psig (0 to 4 bar)		
			120 psig (0 to 8 bar)		
			With Gauge		
			15 psig (0 to 1 bar)		
			30 psig (0 to 2 bar)		
			60 psig (0 to 4 bar)		
			120 psig (0 to 8 bar)		

\* Available preset / pressure limited range, 10 to 90 psig in 5 psig increments. For higher pressures, contact factory.  
(Example: 065 = 65 psig)

† Inlet pressure is 100 psig. For other pressures contact factory.

Most popular.

## Miniature Regulators

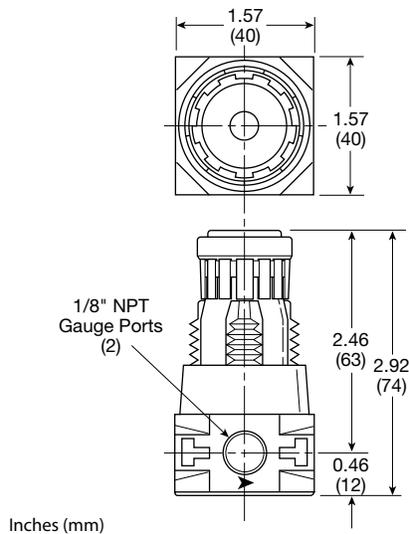
### Material Specifications

Adjusting nut	Brass
Adjusting stem & spring	Steel
Poppet return spring	Stainless Steel
Body	Plastic
Bonnet, seat & piston	Plastic
Seals	Nitrile
Valve poppet	Plastic & nitrile

### Repair and Service Kits

30 psig gauge, 1/8" NPT (0 to 2.1 bar)	<b>K4515N18030</b>
60 psig gauge, 1/8" NPT (0 to 4.1 bar)	<b>K4515N18060</b>
160 psig gauge, 1/8" NPT (0 to 11.0 bar)	<b>K4515N18160</b>
Mounting bracket kit* (includes panel mount nut)	<b>PS417BP</b>
Panel mount nut*	<b>P78652</b>
Unbalanced non-relieving, poppet / piston kit	<b>PS428P</b>
Unbalanced relieving, poppet / piston kit	<b>PS426P</b>
1- 15 psig Spring (yellow)	<b>P01176</b>
1-30 psig spring (black)	<b>P01175</b>
1-60 psig spring (white)	<b>P01174</b>
5- 110 psig spring (gold)	<b>P01173</b>

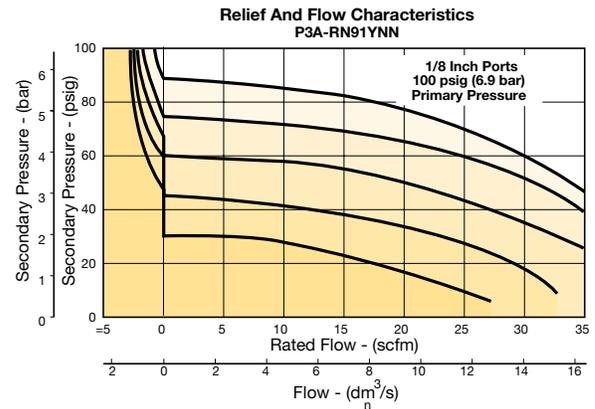
\* Tighten panel mount nut 2.8 to 3.4 Nm (25 to 30 in-lbs) of torque.



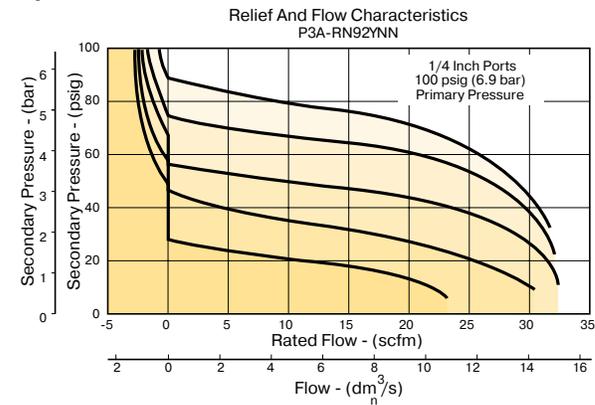
## Air Preparation Products P3A-R Series

### Flow Charts

#### 1/8" port



#### 1/4" port



### WARNING

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

### CAUTION:

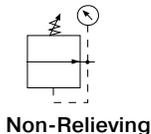
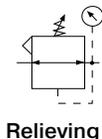
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



**Miniature Regulators**

**R34 Regulators - Miniature**

- Diaphragm operated for fast response
- Large diaphragm to valve area ratio for precise regulation and high flow capacity
- Balanced valve design for precise regulation
- Available in 2 or 4 port design
- Available with a manifold mount to minimize plumbing
- Suitable for low temperature applications
- Non-rising adjusting knob
- 1/8", 1/4" ports (NPT, BSPP)



**R344-02C**



**R342-0MC**

Port Size	Description	Part Number	
		Without Gauge	With Gauge
1/8"	Relieving, 0 to 30 psig	<b>R344-01A</b>	<b>R344-01AG</b>
1/8"	Relieving, 0 to 60 psig	<b>R344-01B</b>	<b>R344-01BG</b>
1/8"	Relieving, 0 to 125 psig	<b>R344-01C</b>	<b>R344-01CG</b>
1/4"	Relieving, 0 to 30 psig	<b>R344-02A</b>	<b>R344-02AG</b>
1/4"	Relieving, 0 to 60 psig	<b>R344-02B</b>	<b>R344-02BG</b>
1/4"	Relieving, 0 to 125 psig	<b>R344-02C</b>	<b>R344-02CG</b>
Manifold	Relieving, 0 to 30 psig	<b>R342-0MA</b>	-
Manifold	Relieving, 0 to 60 psig	<b>R342-0MB</b>	-
Manifold	Relieving, 0 to 125 psig	<b>R342-0MC</b>	-

**Operating information**

Supply pressure (max): 300 psig (0 to 20.7 bar)  
 Operating temperature: -40°F to 150°F (-40°C to 65.5°C)  
 Flow capacity<sup>1</sup>:  
     High flow 1/8" 17 scfm (8.0 dm<sup>3</sup>/s, ANR)  
                   1/4" 19 scfm (8.9 dm<sup>3</sup>/s, ANR)  
 Gauge ports (2): 1/8 inch  
 (no gauge port version available)  
 Weight: 0.25 lb (0.11 kg)

<sup>1</sup> scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

**Ordering Information:**

**R34 4 - 02 C G**

<b>Number of Ports</b>	<b>Preset</b>
2 Ports 2	Blank None
4 Ports 4*	XXX* Preset Pressure

\* Not available with manifold mount.

<b>Thread</b>	
NPT -	
BSPP G	

<b>Port</b>	
1/8 inch 01	
1/4 inch 02	
Manifold Mount 0M	

<b>Pressure Range</b>	
0 to 30 psi A	
0 to 60 psi B	
0 to 125 psi C	

<b>Options</b>	
Blank No Options	
L† Preset Non-Adjustable	
M† Preset Adjustable	

† Inlet pressure is 100 psig. For other pressures contact factory.

<b>Options</b>	
Blank No Option	
G Gauge	
K Non-Relieving Diaphragm	
N Unbalanced	
P Panel Mount Nut	
X64 Fluorocarbon Elastomers	

Most popular.

General

Dial

Pilot

Proportional

Precision

Water

K

Regulator Products



# Miniature Regulators

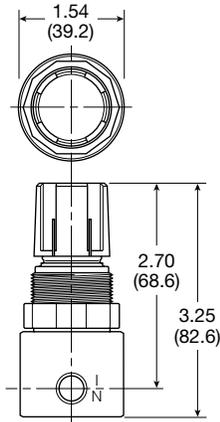
## Material Specifications

Body	Aluminum
Bonnet	Acetal
Diaphragm & seals	Nitrile
Valve assembly	Brass
Springs	Steel
Panel Nut	Acetal

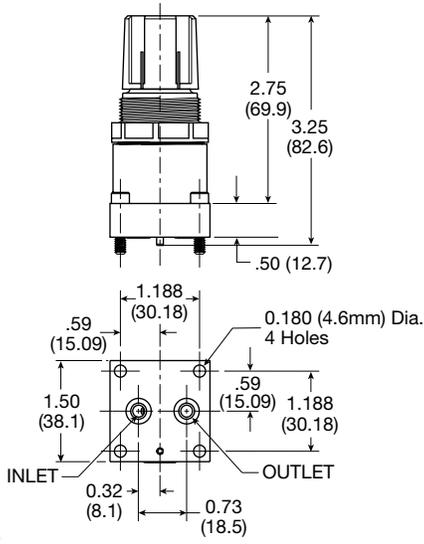
## Repair and Service Kits

Diaphragm assembly, non-relieving	<b>GRP-96-726</b>
Diaphragm assembly, relieving	<b>GRP-96-725</b>
0 to 30 psig (0 to 2.1 bar), spring, regulating	<b>GRP-95-111</b>
0 to 60 psig (0 to 4.1 bar) spring, regulating	<b>GRP-96-718</b>
0 to 125 psig (0 to 8.6 bar) spring, regulating	<b>GRP-96-717</b>
Panel mount nut, aluminum	<b>R05X51-A</b>
Panel mount nut, plastic	<b>R05X51-P</b>
Mounting bracket kit (includes panel mount nut)	<b>SA161X57</b>
1-1/2" Dial Face, 1/8 NPT, CBM, 0 to 60 psig (0 to 4.1 bar), gauge	<b>K4515N18060</b>
1-1/2" Dial Face, 1/8 NPT, CBM, 0 to 160 psig (0 to 11.0 bar), gauge	<b>K4515N18160</b>
Tamperproof knob kit	<b>P31KB00AT</b>

### R342 / R344



### R342-OMC

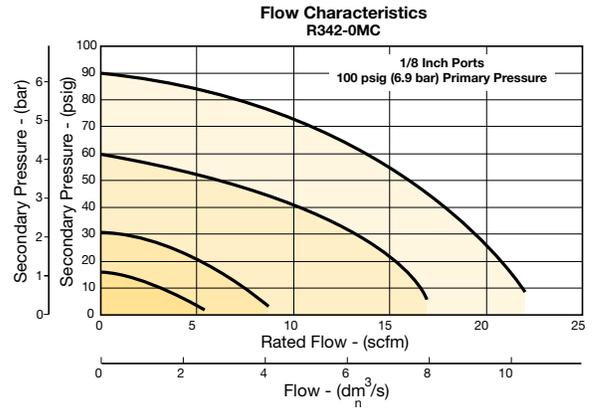


Inches (mm)

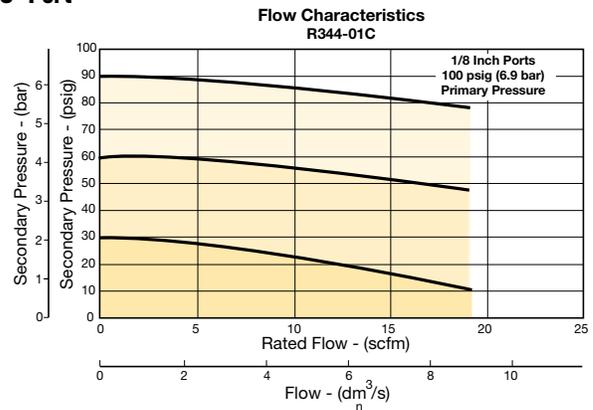
# Air Preparation Products R34 Series

## Flow Charts

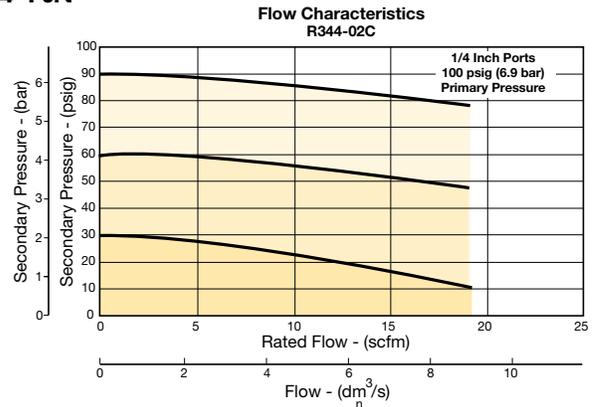
### 1/8" Manifold Mount



### 1/8" Port



### 1/4" Port



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

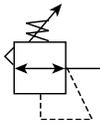
### CAUTION:

**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.

**Miniature Regulators**

**R25 Regulators - Miniature**

- Lightweight plastic body
- Unbalanced poppet standard
- Non-rising, push-to-lock adjusting knob
- Compact, 3.10 Inch (79 mm) high by 1.60 Inch (41 mm) wide
- Lightweight
- Diaphragm operated
- 1/8", 1/4" ports (NPT)



**Operating information**

Supply pressure (max):	Inlet 150 psig (10.0 bar)
Operating temperature:	40°F to 125°F (4°C to 52°C)
Gauge ports (2):	1/8 inch (can be used for full flow)
Weight:	0.25 lb (0.11 kg)

Port Size	Description	Part Number
1/8"	Relieving, 0- 125 Reduced Pressure, without Gauge	<b>R25-01C</b>
1/4"	Relieving, 0- 125 Reduced Pressure, without Gauge	<b>R25-02C</b>

NOTE: 1.250 Dia. (31.8 mm) hole required for panel mounting.

**Ordering Information:**

**R25 - 02 C**

<b>Type</b>	<b>Relief</b>
Buna Elastomers R25	Blank Relieving
	P Panel Mount Nut

<b>Port Size</b>	
1/8 inch 01	
1/4 inch 02	

<b>Pressure Range</b>
A 0 to 25 psig (0 to 2 bar)
B 0 to 60 psig (0 to 4 bar)
C 0 to 125 psig (0 to 125 (0 to 8 bar)

Most popular.



## Miniature Regulators

### Material Specifications

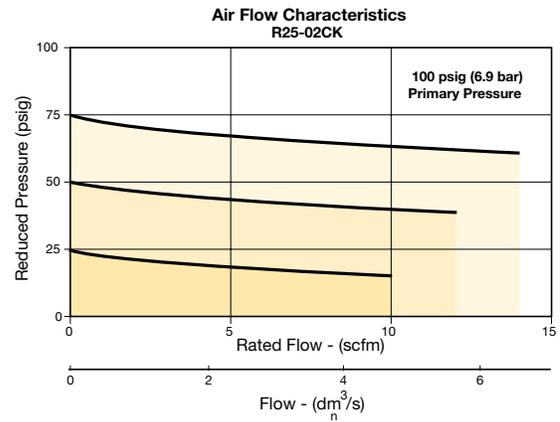
Adjusting screw	Steel
Body	Acetal
Bonnet and seat	Acetal
Diaphragm	Buna N
Seals	Buna N
Springs	Stainless steel
Valve poppet	Buna N

### Repair and Service Kits

Panel mount nut, plastic	<b>R05X51-P</b>
Panel mount nut, aluminum	<b>R05X51-A</b>
Mounting bracket and nut	<b>SA161X57</b>
Relieving (Buna)	<b>RKR25Y</b>
Non-Relieving (Buna)	<b>RKR25KY</b>
0-25 psig spring	<b>SPR-375-1</b>
0-60 psig spring	<b>SPR-376</b>
0-125 psig spring	<b>SPR-377</b>

## Air Preparation Products Regulator Products

### Flow Charts

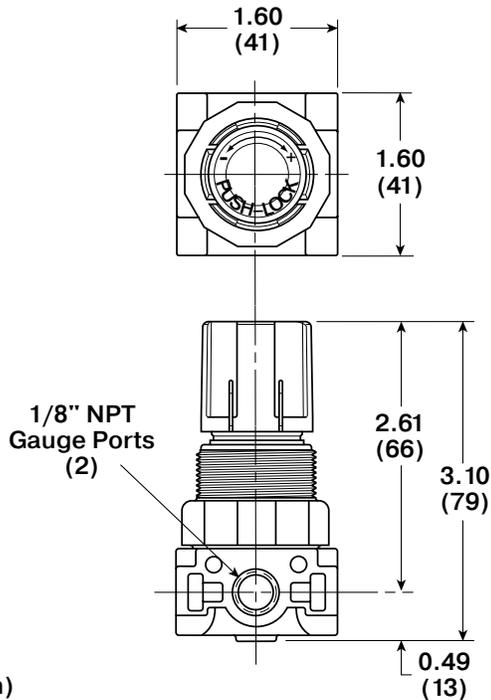


**⚠ WARNING**

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

### CAUTION:

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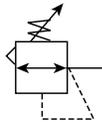
Inches (mm)



**Miniature Regulators**

**R45 Regulators - Miniature**

- Lightweight plastic body
- Unbalanced poppet standard
- Non-rising, push-to-lock adjusting knob
- Compact, 3.43 inch (87.1 mm) high by 2.06 inch (52.3 mm) wide
- Lightweight
- Diaphragm operated
- 1/4", 3/8" ports (NPT, BSPP)



**Operating information**

Supply pressure (max):	Inlet 150 psig (10.0 bar)
Operating temperature:	40°F to 125°F (4°C to 52°C)
Gauge ports (2):	1/4 inch (can be used for full flow)
Weight:	0.38 lb (0.17 kg)

Port Size	Description	Part Number
1/4"	Relieving, 0-125 Reduced Pressure, without Gauge	<b>R45-02C</b>
3/8"	Relieving, 0-125 Reduced Pressure, without Gauge	<b>R45-03C</b>

NOTE: 1.250 Dia. (31.8 mm) hole required for panel mounting.

**Ordering Information:**

<b>R45</b>		-	<b>02</b>	<b>C</b>	<b>Blank</b>
<b>Type</b>					<b>Relief</b>
Buna Elastomers					Relieving
R45					P Panel Mount Nut
		<b>Port Size</b>			<b>Pressure Range</b>
		1/4 inch	02	<b>A</b>	0 to 25 psig (0 to 2 bar)
		3/8 inch	03	<b>B</b>	0 to 60 psig (0 to 4 bar)
				<b>C</b>	0 to 125 psig (0 to 8 bar)

Most popular.



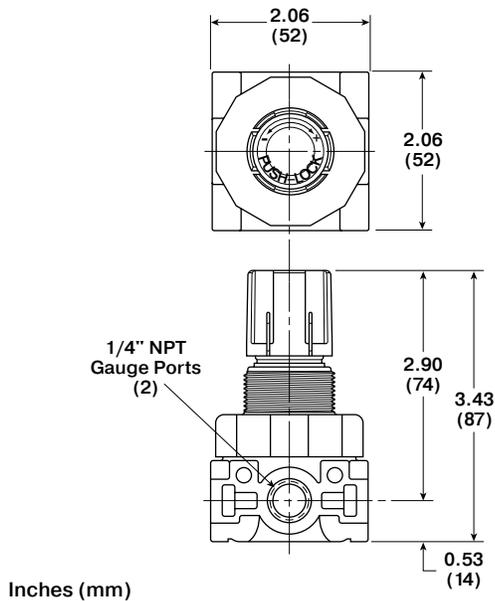
## Miniature Regulators

### Material Specifications

Adjusting screw	Steel
Body	Acetal
Bonnet and seat	Acetal
Diaphragm	Buna N
Seals	Buna N
Springs	Stainless steel
Valve Poppet	Buna N

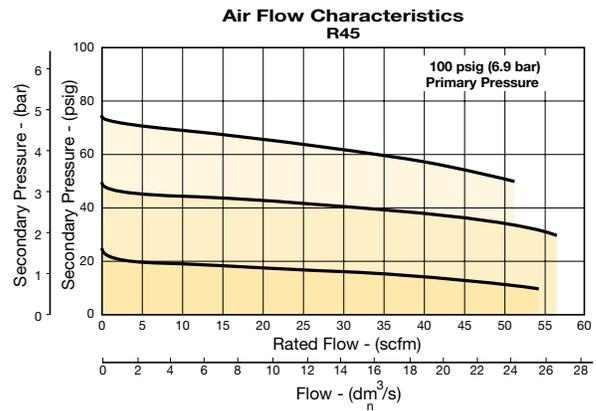
### Repair and Service Kits

Panel mount nut, plastic	<b>R05X51</b>
Panel mount nut, aluminum	<b>R05X51-A</b>
Mounting bracket and nut	<b>SA161X57</b>
Relieving	<b>RKR45Y</b>
Non-Relieving	<b>RKR45KY</b>
0-25 psig spring	<b>SPR-46</b>
0-60 psig spring	<b>SPR-47</b>
0-125 psig spring	<b>SPR-48</b>



## Air Preparation Products Regulator Products

### Flow Charts



### WARNING

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Do not exceed Maximum primary pressure rating.**

### CAUTION:

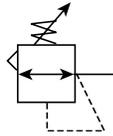
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**Economy Regulators**

**15R Regulators - Economy**

- Solid control piston with resilient seat for service-free operation
- Non-rising "locking" adjusting knob
- Compact, 3.30 inch (84 mm) high by 2.12 inch (54 mm) wide
- Easily serviced
- 1/4", 3/8" ports (NPT)



Port Size	Description	Part Number
1/4"	Without Gauge	<b>15R113FB</b>
1/4"	With Gauge	<b>15R118FB</b>
3/8"	Without Gauge	<b>15R213FB</b>
3/8"	With Gauge	<b>15R218FB</b>

NOTE: 1.218 Dia. (31 mm) hole required for panel mounting.

**Operating information**

Supply pressure (max):	0 to 250 psig (0 to 17.2 bar)	
Secondary pressure ranges	Standard	2 to 125 psig (0 to 8.6 bar)
	Medium	1 to 60 psig (0 to 4.1 bar)
	Medium	1 to 30 psig (0 to 1.7 bar)
	Low	1 to 15 psig (0 to 1 bar)
Operating temperature:	32°F to 125°F (0°C to 52°C)	
	Low temperature	-4°F to 125°F (-20°C to 52°C)
Flow capacity†:	High flow	1/4" 21 scfm (9.9 dm³/s, ANR)
		3/8" 28 scfm (13.2 dm³/s, ANR)
Gauge ports (2):	1/4 inch	
	(can be used at full flow)	
Weight:	0.5 lb (0.23 kg)	

† scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

**Ordering Information:**

<b>15R</b>	<b>1</b>	<b>13</b>	<b>F</b>	<b>B</b>
<b>Port Size</b>				<b>Engineering Level</b>
1/4 inch	1			<b>B</b> Current
3/8 inch	2			
		<b>Pressure Range</b>		<b>Relief</b>
		<b>Without Gauge</b>		<b>F</b> Relieving
		15 psig	12	<b>G</b> Non-Relieving
		30 psig	10	<b>H</b> Low Temp Relieving
		60 psig	11	<b>J</b> Low Temp Non-Relieving
		125 psig	13	
		<b>With Gauge</b>		
		15 psig	17	
		30 psig	15	
		60 psig	16	
		125 psig	18	

Most popular.



## Economy Regulators

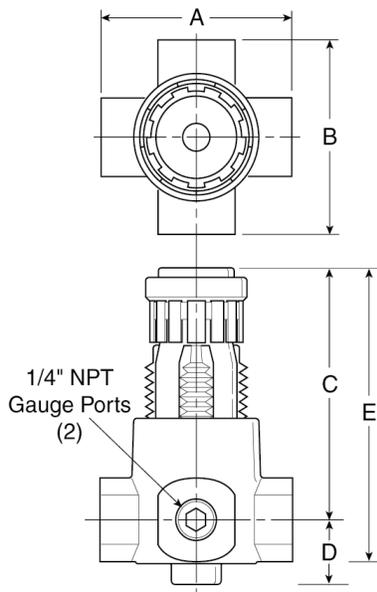
### Material Specifications

Adjusting nut	Brass
Adjusting stem & spring	Steel
Body	Zinc
Bonnet, seat, piston & valve poppet	Plastic
Seals	Nitrile

### Repair and Service Kits

Body Service Kit – Unbalanced	<b>PS424BP</b>
Bonnet Assembly Kit	<b>L01369</b>
30 psig, 1/8" NPT (0 to 2.1 bar) gauge	<b>K4515N18030</b>
60 psig, 1/8" NPT (0 to 4.1 bar) gauge	<b>K4515N18060</b>
160 psig, 1/8" NPT (0 to 11.0 bar) gauge	<b>K4515N18160</b>
60 psig, 1/4" NPT (0 to 4.1 bar) gauge	<b>K4520N14060</b>
160 psig, 1/4" NPT (0 to 11.0 bar) gauge	<b>K4520N14160</b>
Mounting bracket kit* (Includes panel mount nut)	<b>PS417BP</b>
Panel mount nuts*, plastic	<b>P78652</b>
Panel mount nuts*, metal	<b>P01531</b>
Poppet / piston kit, unbalanced, non-relieving	<b>PS428P</b>
Poppet / piston kit, unbalanced, relieving	<b>PS426P</b>
Seal, unbalanced	<b>PS454B</b>
1- 15 psig spring (yellow)	<b>P01176</b>
1-30 psig spring (black)	<b>P01175</b>
1-60 psig spring (white)	<b>P01174</b>
2- 125 psig spring (gold)	<b>P01173</b>

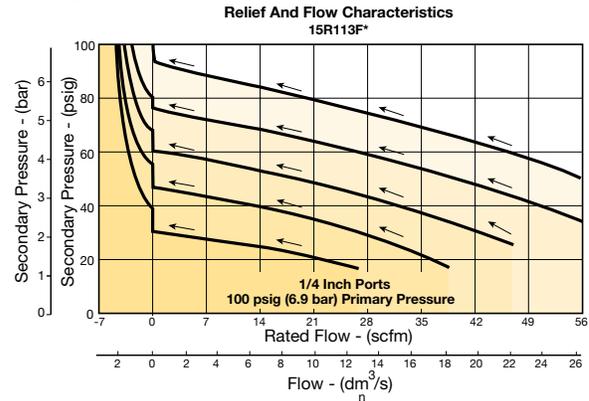
\* Tighten panel mount nut 2.8 to 3.4 Nm (25 to 30 in-lbs) of torque.



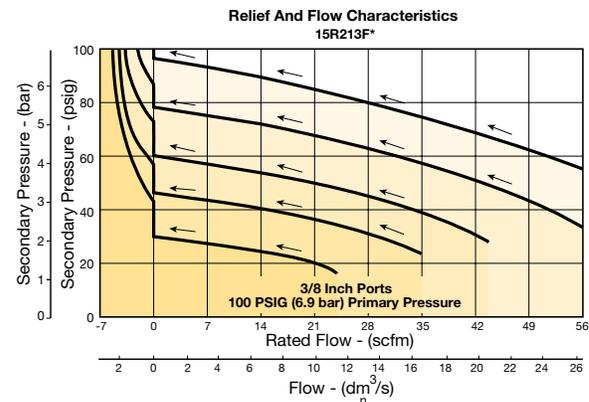
## Air Preparation Products Regulator Products

### Flow Charts

#### 1/4" Regulator



#### 3/8" Regulator



### WARNING

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

### CAUTION:

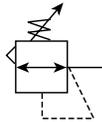
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



Semi-Precision Regulators

**27R Regulators - Semi-Precision**

- Fine adjustment sensitivity
- Good repeatability and minimal pressure drop
- High flow capacity
- Two 1/4" gauge ports
- Brass Poppet for long life
- Modular with 05 Series FRL
- Non-rising, removable knob
- Multiple porting options
- 1/4", 3/8" ports (NPT, BSPP, BSPT)



**Operating information**

Bleed rate:	0.033 scfm (0.016 dm <sup>3</sup> /s, ANR)
Effect of supply variation:	0.5 psig (0.04 bar) for 25 psig (1.7 bar) change P <sup>1</sup>
Relief capacity:	0.5 scfm (0.24 dm <sup>3</sup> /s, ANR) @ 5 psig (0.4 bar) increase P <sup>2</sup>
Flow capacity <sup>†</sup> :	28 scfm (13.2 dm <sup>3</sup> /s, ANR) @ 100 psig (6.9 bar) P <sup>1</sup> and 20 psig (1.4 bar) P <sup>2</sup>
Inlet pressure (max):	250 psig (17.2 bar)
Temperature rating:	32°F to 175°F (0°C to 80°C)
Relief flow:	5.0 scfm (2.4 dm <sup>3</sup> /s, ANR)
Repeatability:	± .5 psig (±0.034 bar)
Response:	510 ms The valve will open to full flow and fill a volume of 100 in <sup>3</sup>
Gauge ports (2):	1/4 inch
Weight:	1.0 lb (0.45 kg)

<sup>†</sup> scfm = Standard cubic feet per minute at 150 psig inlet, 90 psig no flow secondary setting and 5 psig pressure drop.

**Ordering Information:**

Port Size	Description	Part Number
1/4"	1- 15 psi w/out Gauge, Relieving	<b>27R112AD</b>
1/4"	0-60 psi w/out Gauge, Relieving	<b>27R114AD</b>
1/4"	2- 125 psi w/out Gauge, Relieving	<b>27R113AD</b>

NOTE: 1.53 Dia. (39 mm) hole required for panel mounting. Max panel thickness 1/4"

Most popular.



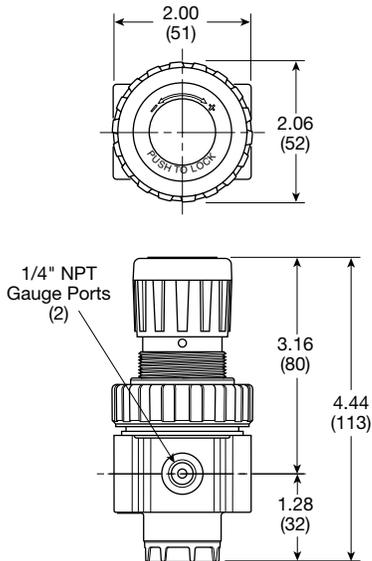
## Semi-Precision Regulators

### Material Specifications

Poppet	Brass
Bonnet	Plastic
Body	Zinc
Collar, knob	Plastic
Diaphragm	Nitrile
Bottom Cap	Plastic
Seals	Nitrile
Springs – poppet & control	Steel

### Repair and Service Kits

Bonnet assembly kit	<b>PS910P</b>
Control knob	<b>P0442001</b>
1-1/2" dial face 30 psig (0 to 2.1 bar), gauge	<b>K4515N14030</b>
1-1/2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4515N14060</b>
1-1/2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4515N14160</b>
1-1/2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4515N14300</b>
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
Mounting bracket kit	<b>PS963P</b>
Panel mount nut, metal	<b>PS964P</b>
Service kit	<b>PS907P</b>
1-30 psig spring	<b>P04427</b>
1-15 psig spring	<b>P04428</b>
0-60 psig spring	<b>P04426</b>
2-125 psig spring	<b>P04425</b>



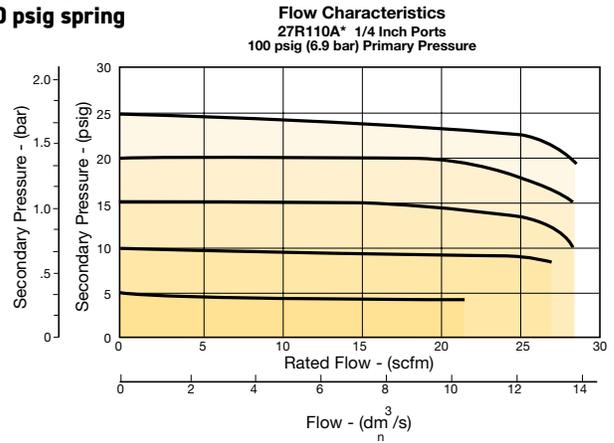
### WARNING

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

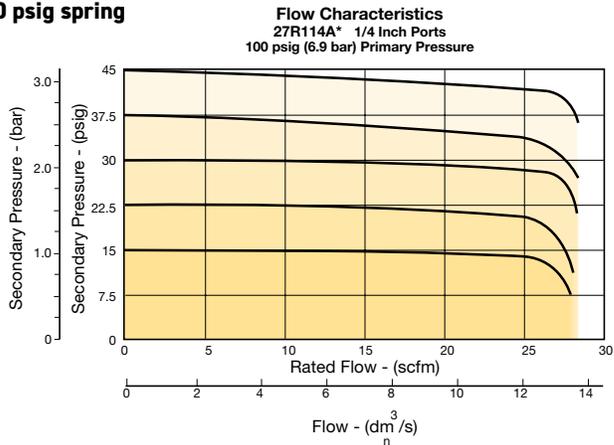
## Air Preparation Products Regulator Products

### Flow Charts

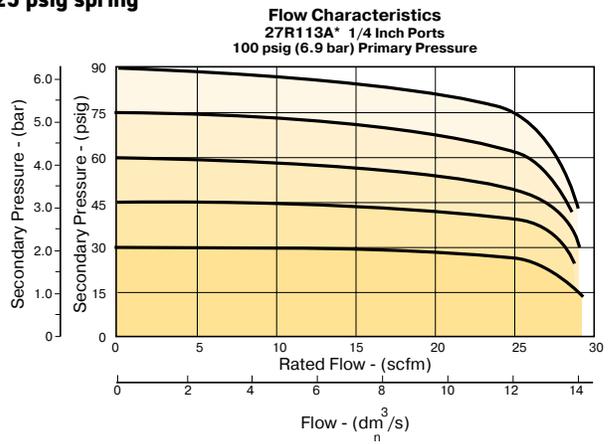
#### 1/4" Regulator 30 psig spring



#### 1/4" Regulator 60 psig spring



#### 1/4" Regulator 125 psig spring



### CAUTION:

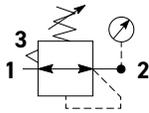
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



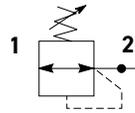
**Mini Regulators**

**P31 Regulators - Mini**

- Integral 1/4" ports (NPT, BSPP & BSPT)
- Robust but lightweight aluminum construction
- Secondary pressure ranges
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Relieving & non-relieving types
- Non-rising knob



Self relieving regulator with gauge



Non-relieving regulator

**Operating information**

Flow capacity*:	1/4	73 scfm (34 dm <sup>3</sup> /s, ANR)
Operating temperature†:		-4°F to 150°F (-20°C to 65.5°C)
Supply pressure (max):		300 psig (20 bar)
Adjusting range pressure:		30 psig (0-2 bar)
		60 psig (0-4 bar)
		125 psig (0-8 bar)
		232 psig (0-16 bar)
Weight:		0.37 lb (0.17 kg)

\* Inlet pressure 145 psig (10 bar). Secondary pressure 100 psig (6.9 bar) and 14.5 psig (1 bar) pressure drop. .  
† Units with square gauges: 5°F to 150°F (-15°C to 65.5°C)

Gauge supplied with every part. Gauge can be installed on the front or back of the regulator. If no gauge is installed, both seal screws must be installed.

Port Size	Description (Relieving)	Gauge	Part Number
1/4"	125 psig (8 bar)	Square	<b>P31RB92BN5P</b>

**Ordering Information:**

**P31RB 9 2 B N 5 P**

<b>Basic Series</b> Global Modular Mini Regulator <b>P31RB</b>	<b>Thread Type</b> BSPP 1 BSPT 2 NPT 9	<b>Port Size</b> 1/4 2	<b>Relief</b> Relieving B Non-Relieving N Reverse Flow - Relieving R	<b>Mounting</b> P Plastic Panel Mount Nut	<b>Adjustment Range</b> <b>With Square Gauge</b>															
					<table border="1"> <thead> <tr> <th>psig</th> <th>Bar</th> <th>MPa</th> </tr> </thead> <tbody> <tr> <td>1 = 30*</td> <td>V = 2*</td> <td>2 = 0.2*</td> </tr> <tr> <td>3 = 60</td> <td>S = 4</td> <td>4 = 0.4</td> </tr> <tr> <td>5 = 125</td> <td>T = 8</td> <td>6 = 0.8</td> </tr> <tr> <td>7 = 232</td> <td>W = 16</td> <td>8 = 1.6</td> </tr> </tbody> </table>	psig	Bar	MPa	1 = 30*	V = 2*	2 = 0.2*	3 = 60	S = 4	4 = 0.4	5 = 125	T = 8	6 = 0.8	7 = 232	W = 16	8 = 1.6
psig	Bar	MPa																		
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5 = 125	T = 8	6 = 0.8																		
7 = 232	W = 16	8 = 1.6																		
			<b>Adjustment</b> N Non-Rising Knob																	

\* Regulator comes with gauge respective to the adjustment range available.

Most popular.



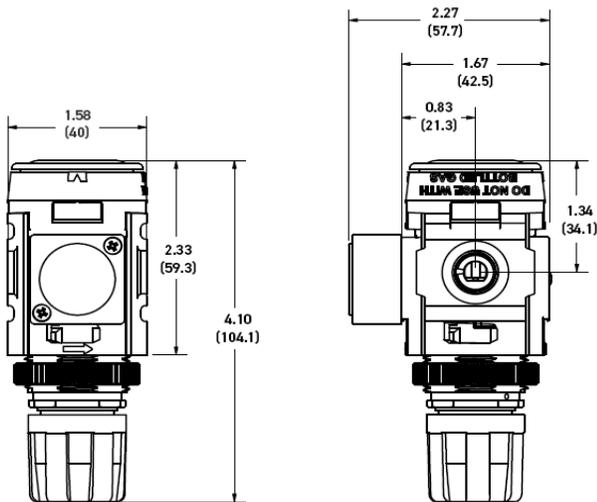
## Mini Regulators

### Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Bonnet	Glass-filled nylon
Diaphragm assembly	Stainless steel / Nitrile
Valve assembly	Acetal/ Nitrile
Springs	Steel
Seals	Nitrile
Panel nut	Acetal
Bottom Cap	Glass-filled nylon

### Repair and Service Kits

Panel mount nut - aluminum	<b>P31KA00MM</b>
Panel mount nut - plastic	<b>P31KA00MP</b>
Angle bracket (attaches via panel nut)	<b>P31KB00MR</b>
C-bracket (fits to body)	<b>P31KA00MW</b>
T-bracket with body connector	<b>P31KA00MT</b>
Body connector	<b>P31KA00CB</b>



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

### WARNING

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

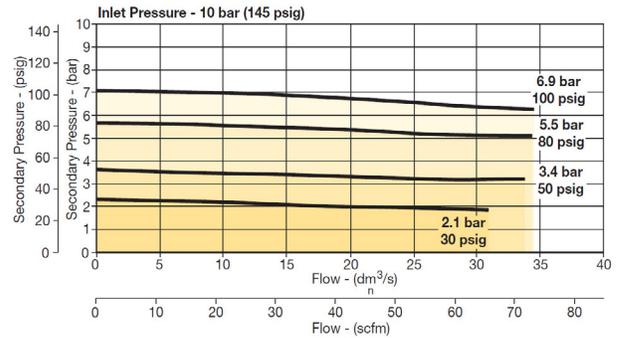
### CAUTION:

**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.

## Air Preparation Products Regulator Products

### Flow Charts

#### P31RB 1/4" Regulator



### Gauges (\*see note below)

Square flush mount gauge	0-060 psig	<b>P31KA060XB</b>
	0-160 psig	<b>P31KA160XB</b>
	0-290 psig	<b>P31KA290XB</b>
	0-4 bar	<b>P31KA04BXB</b>
	0-11 bar	<b>P31KA11BXB</b>
	0-20 bar	<b>P31KA20BXB</b>
	0-0.4 MPa	<b>P31KA04MXXB</b>
Square flush mount gauge	0-1.1 MPa	<b>P31KA11MXXB</b>
	0-2.0 MPa	<b>P31KA20MXXB</b>
	0-4 bar	<b>K4511SCR04B</b>
Square with adapter kit	0-11 bar	<b>K4511SCR11B</b>
	0-60 psig	<b>K4511SCR060</b>
	0-160 psig	<b>K4511SCR160</b>
	0-4 bar	<b>P6G-PR10040</b>
1.00" Round 1/8" center back mount	0-11 bar	<b>P6G-PR10110</b>
	0-60 psig	<b>P6G-PR90060</b>
	0-160 psig	<b>P6G-PR90160</b>
40mm Round 1/8" center back mount (not for use with common port regulators)	0-60 psig / 1-4 bar	<b>K4510N18060</b>
	0-160 psig / 0-11 bar	<b>K4510N18160</b>
	0-30 psig / 0-2 bar	<b>K4515N18030</b>
Regulator Products	0-60 psig / 0-4 bar	<b>K4515N18060</b>
	0-160 psig / 0-11 bar	<b>K4515N18160</b>

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

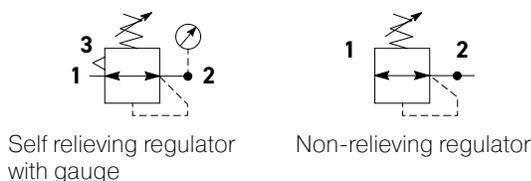
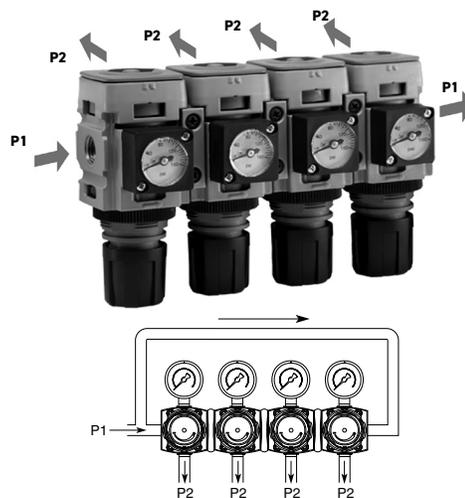
**\*For P31 Regulators with date code after November 2023 (4423 Date Code), please use these part numbers when ordering a replacement gauge.**



**Mini Common P1 Regulators**

**P31 Common P1 Regulators - Mini**

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



**Operating information**

Flow capacity\*: 1/4 64 scfm (31 dm<sup>3</sup>/s, ANR)  
 Operating temperature: -4°F to 150°F (-20°C to 65.5°C)  
 Supply pressure (max): 300 psig (20 bar)  
 Adjusting range pressure: 30 psig (0-2 bar)  
 60 psig (0-4 bar)  
 125 psig (0-8 bar)  
 232 psig (0-16 bar)  
 P1 port size (inlet/outlet) 1/4 NPT, BSPP, BSPT  
 P2 regulated ports (2 ea.) 1/8 NPT, BSPP, BSPT  
 Weight: 0.66 lb (0.30 kg)

\* Inlet pressure 145 psig (10 bar). Secondary pressure 91.3 psig (6.3 bar).  
 \* Gauge supplied with every part. Gauge can be installed on the front or back of the regulator. If no gauge is installed, both seal screws must be installed.

Port Size	Description (Relieving)	Gauge	Part Number
1/4"	125 psig (8 bar)	Square	<b>P31HB92BN5P</b>

**Ordering Information:**

**P31HB 9 2 B N 5 P**

<b>Basic Series</b>	<b>Thread type</b>	<b>Mounting</b>
Global Modular	BSPP 1	P Plastic Panel Mount Nut
Mini <b>P31HB</b>	BSPT 2	
Common Regulator	NPT 9	

<b>Port size †</b>	<b>Relief</b>
1/4 2	Relieving B
† Working port 1/8".	Non-Relieving N
	Reverse Flow-Relieving R

<b>Adjustment Range</b>	
<b>With Square Gauge</b>	
psig	bar
1 = 30*	V = 2*
3 = 60	S = 4
5 = 125	T = 8

\* Regulator comes with gauge respective to the adjustment range selected.

<b>Adjustment</b>
N Non-Rising Knob

Most popular.

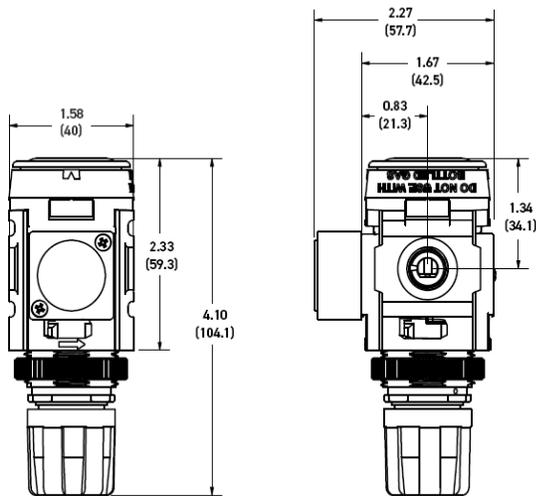
## Mini Common P1 Regulators

### Materials of Construction

Body	Aluminum
Adjustment knob	Acetal
Bonnet	Glass-filled Nylon
Diaphragm assembly	Stainless steel / Nitrile
Valve assembly	Acetal / Nitrile

### Repair and Service Kits

Panel mount nut - aluminum	<b>P31KA00MM</b>
Panel mount nut - plastic	<b>P31KA00MP</b>
Angle bracket (attaches via panel nut)	<b>P31KB00MR</b>
T-bracket with body connector	<b>P31KA00MT</b>
Body connector	<b>P31KA00CB</b>



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



### WARNING

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

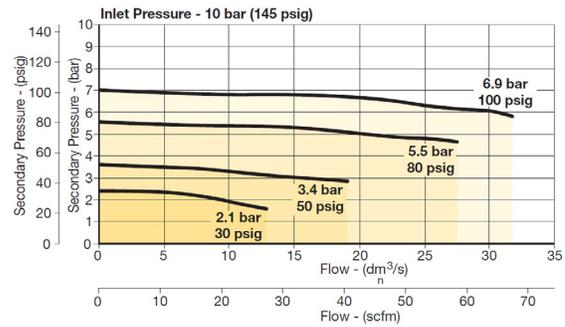
### CAUTION:

**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.

## Air Preparation Products Regulator Products

### Flow Charts

#### 1/4 Common Regulator



### Gauges (\*see note below)

Square flush mount gauge	0-160 psig	<b>P31KA060XB</b>
	0-160 psig	<b>P31KA160XB</b>
	0-290 psig	<b>P31KA290XB</b>
	0-4 bar	<b>P31KA04BXB</b>
	0-11 bar	<b>P31KA11BXB</b>
	0-20 bar	<b>P31KA20BXB</b>
	0-0.4 MPa	<b>P31KA04MXB</b>
	0-1.1 MPa	<b>P31KA11MXB</b>
	0-2.0 MPa	<b>P31KA20MXB</b>
Square flush mount gauge	0-4 bar	<b>K4511SCR04B</b>
	0-11 bar	<b>K4511SCR11B</b>
	0-60 psig	<b>K4511SCR060</b>
	0-160 psig	<b>K4511SCR160</b>
Square with adapter kit	0-4 bar	<b>P6G-PR10040</b>
	0-11 bar	<b>P6G-PR10110</b>
	0-60 psig	<b>P6G-PR90060</b>
	0-160 psig	<b>P6G-PR90160</b>

1.00" Round 1/8" center back mount	0-60 psig / 1-4 bar	<b>K4510N18060</b>
	0-160 psig / 0-11 bar	<b>K4510N18160</b>

40mm Round 1/8" center back mount (not for use with common port regulators)	0-30 psig / 0-2 bar	<b>K4515N18030</b>
	0-60 psig / 0-4 bar	<b>K4515N18060</b>
	0-160 psig / 0-11 bar	<b>K4515N18160</b>

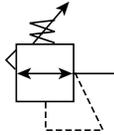
For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



**Economy Regulators**

**05R Regulators - Economy**

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Rolling diaphragm for extended life
- Removable non-rising knob for panel mounting and tamper resistance
- Easily serviced
- Reverse flow
- 1/4", 3/8" ports (NPT)



**Operating information**

Supply pressure (max): 0 to 300 psig (0 to 20.7 bar)  
For secondary pressure ranges see charts next page.

Operating temperature: 32°F to 175°F (0°C to 80°C)

Flow capacity<sup>1</sup>:  
High flow      1/4"      30 scfm ( 14.2 dm<sup>3</sup>/s, ANR)  
                         3/8"      40 scfm ( 18.9 dm<sup>3</sup>/s, ANR)

Gauge ports (2): 1/4 inch

Weight: 1.1 lb (0.49 kg)

<sup>1</sup> scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

**Ordering Information:**

Port Size	Description	Part Number
1/4"	2- 125 psi w/out Gauge, Relieving	<b>05R113AD</b>
1/4"	2-200 psi w/out Gauge, Relieving	<b>05R114AD</b>
3/8"	2- 125 psi w/out Gauge, Relieving	<b>05R213AD</b>
3/8"	2-200 psi w/out Gauge, Relieving	<b>05R214AD</b>

**NOTE: 1.53 Dia. (39 mm) hole required for panel mounting.**

Most popular.

General  
Dial  
Pilot  
Proportional  
Precision  
Water  
**K**  
Regulator Products



## Economy Regulators

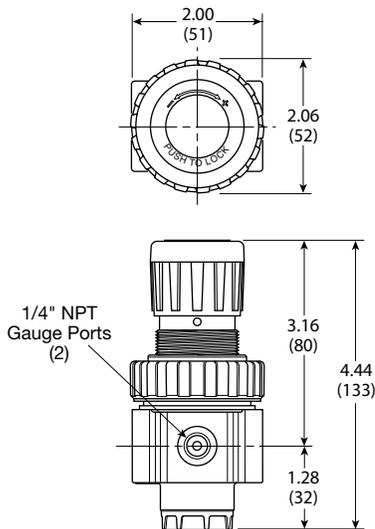
### Material Specifications

Adjusting stem	Brass
Bonnet	Plastic
Body	Zinc
Collar, Knob	Plastic
Diaphragm	Nitrile
Poppet & cap	Plastic
Seals	Nitrile
Springs – poppet & control	Steel

### Repair and Service Kits

#### Bonnet assembly kit **PS915P**

Control knob	<b>P04420</b>
1-1/2" dial face 30 psig (0 to 2.1 bar), gauge	<b>K4515N14030</b>
1-1/2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4515N14060</b>
1-1/2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4515N14160</b>
1-1/2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4515N14300</b>
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
Mounting bracket kit	<b>PS963P</b>
Panel mount nut – metal	<b>PS964P</b>
1-30 psig spring	<b>P04427</b>
1-60 psig spring	<b>P04426</b>
2-125 psig spring	<b>P04425</b>
2-200 psig spring	<b>P02934</b>
Relieving service kit	<b>PS908P</b>

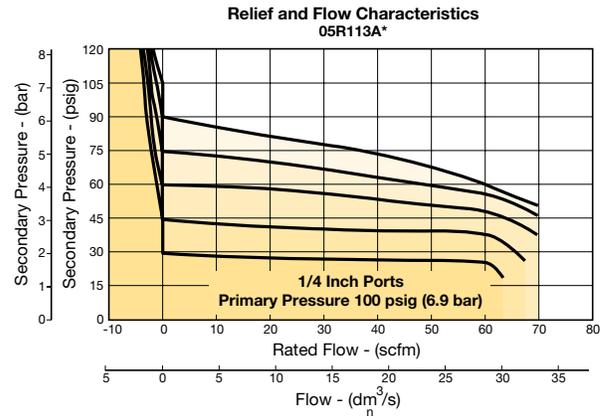


Inches (mm)

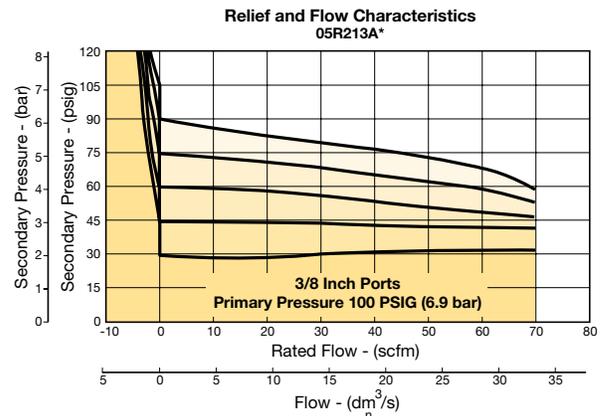
## Air Preparation Products Regulator Products

### Flow Charts

#### 1/4" Regulator



#### 3/8" Regulator



### WARNING

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

### CAUTION:

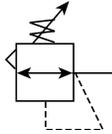
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



**Compact Regulators**

**06R Regulators - Compact**

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Rolling diaphragm for extended life
- Two high flow 1/4" gauge ports can be used as additional outlets
- Easily serviced
- Removable non-rising knob for panel mounting and tamper resistance
- 1/4", 3/8", 1/2" ports (NPT)



**Operating information**

Supply pressure (max):	250 psig (17.2 bar)	
Secondary pressure ranges:		
Standard	2 to 125 psig (0 to 8.6 bar)	
Low	1 to 60 psig (0 to 4.1 bar)	
High	5 to 250 psig (0.4 to 17.2 bar)	
Operating temperature:	32°F to 175°F (0°C to 80°C)	
Flow capacity†:		
High flow	1/4"	53 scfm (25 dm³/s, ANR)
	3/8"	60 scfm (28.3 dm³/s, ANR)
	1/2"	75 scfm (35.4 dm³/s, ANR)
Gauge ports (2):	1/4 inch (can be used as additional full flow 1/4 inch outlet ports)	
Weight:	1.6 lb (0.7 kg)	

† scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

**Ordering Information:**

Port Size	Description	Part Number
1/4"	2- 125 psi w/out Gauge, Relieving	<b>06R113AC</b>
1/4"	2- 125 psi with Gauge, Relieving	<b>06R118AC</b>
3/8"	2- 125 psi w/out Gauge, Relieving	<b>06R213AC</b>
3/8"	2- 125 psi with Gauge, Relieving	<b>06R218AC</b>
1/2"	2- 125 psi w/out Gauge, Relieving	<b>06R313AC</b>
1/2"	2- 125 psi with Gauge, Relieving	<b>06R318AC</b>
1/4"	5-250 psi w/out Gauge, Relieving	<b>06R115AC</b>
3/8"	5-250 psi w/out Gauge, Relieving	<b>06R215AC</b>
1/2"	5-250 psi w/out Gauge, Relieving	<b>06R315AC</b>

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

Most popular.



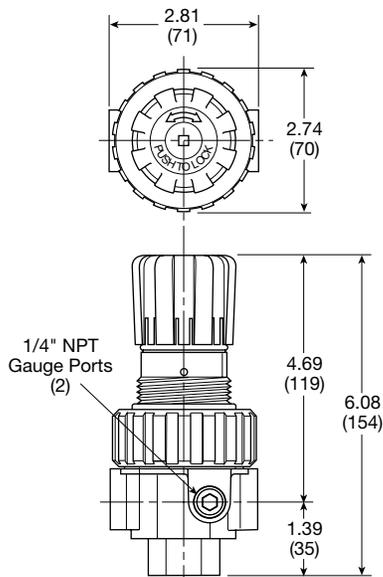
## Compact Regulators

### Material Specifications

Adjusting stem	Steel
Body	Zinc
Bonnet, piston stem, valve poppet & cap	Plastic
Collar, knob	Plastic
Diaphragm	Nitrile
Seals	Nitrile
Spring, poppet	Stainless
Spring, control	Steel

### Repair and Service Kits

Bonnet assembly kit	<b>PS715P</b>
Control knob	<b>P04069B</b>
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar) gauge	<b>K4517N14160D</b>
Mounting bracket kit (includes panel mount nut)	<b>PS707P</b>
Panel mount nut, plastic	<b>P04082</b>
Panel mount nut, metal	<b>P04079B</b>
Reverse flow service conversion kit, relieving	<b>PS708RP</b>
Relieving (includes poppet)	<b>PS708P</b>
Non-relieving (includes poppet)	<b>PS709P</b>
1-30 psig spring	<b>P01698</b>
1-60 psig spring	<b>P04062</b>
2-125 psig spring	<b>P04063</b>
5-250 psig spring	<b>P04064</b>
Tamperproof kit	<b>PS737P</b>

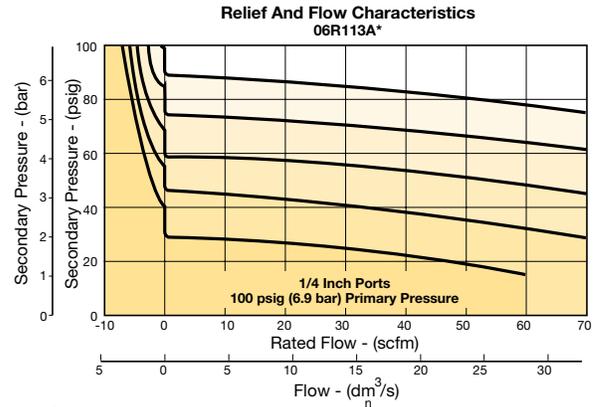


Inches (mm)

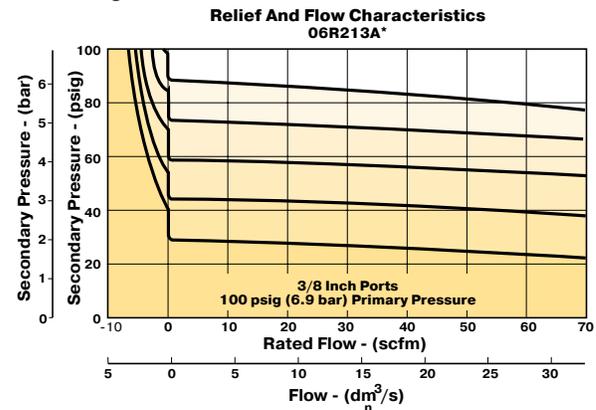
## Air Preparation Products Regulator Products

### Flow Charts

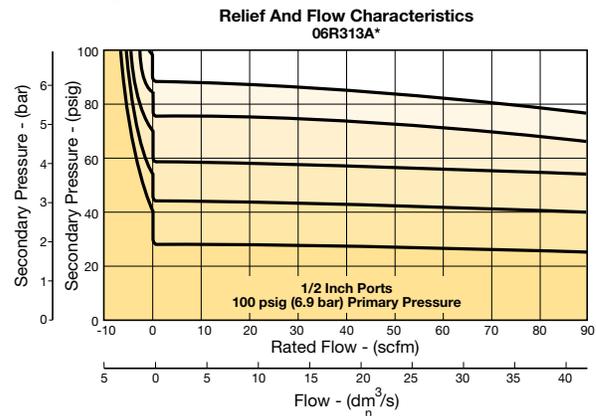
#### 06R 1/4" Regulator



#### 06R 3/8" Regulator



#### 06R 1/2" Regulator



### WARNING

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

### CAUTION:

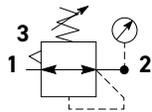
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



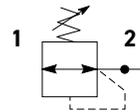
**Compact Regulators**

**P32 Regulators - Compact**

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



Self relieving regulator with gauge



Non-relieving regulator

Port Size	Description (Relieving)	Gauge	Part Number
1/4"	125 psig (8 bar)	None	<b>P32RB92BNNP</b>
1/4"	125 psig (8 bar)	Round	<b>P32RB92BNGP</b>
3/8"	125 psig (8 bar)	None	<b>P32RB93BNNP</b>
3/8"	125 psig (8 bar)	Round	<b>P32RB93BNGP</b>
1/2"	125 psig (8 bar)	None	<b>P32RB94BNNP</b>
1/2"	125 psig (8 bar)	Round	<b>P32RB94BNGP</b>

**Operating information**

Flow capacity*:	1/4	179 scfm (84 dm <sup>3</sup> /s, ANR)
	3/8, 1/2	201 scfm (94 dm <sup>3</sup> /s, ANR)
Operating temperature:	-13°F to 150°F (-25°C to 65.5°C)	
Supply pressure (max):	300 psig (20 bar)	
Adjusting range pressure:	30 psig (0-2 bar)	60 psig (0-4 bar)
	125 psig (0-8 bar)	250 psig (0-17 bar)
Gauge port (2 each)	1/4 NPT, BSPP, BSPT	
Weight:	1.24 lb (0.56 kg)	

\* Inlet pressure 145 psig (10 bar). Secondary pressure 80.0 psig (5.5 bar).

**Ordering Information:**

**P32RB 9 2 B N G P**

<b>Basic Series</b> Global Modular Compact Regulator <b>P32RB</b>	<b>Thread type</b> BSPP 1 BSPT 2 NPT 9	<b>Port Size</b> 1/4 2 3/8 3 1/2 4	<b>Relief</b> Relieving B Non-Relieving N	<b>Adjustment</b> N Non-Rising Knob	<b>Mounting</b> P Plastic Panel Mount Nut
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<b>Adjustment Range</b>	
<b>With Round Gauge</b>	
Z	30 psig; 2 bar; 0.2 MPa
M	60 psig; 4 bar; 0.4 MPa
G	125 psig; 8 bar; 0.8 MPa
J	250 psig; 17 bar; 1.7 MPa
<b>Without Gauge</b>	
Y	30 psig; 2 bar; 0.2 MPa
L	60 psig; 4 bar; 0.4 MPa
N	125 psig; 8 bar; 0.8 MPa
H	250 psig; 17 bar; 1.7 MPa

\* Regulator comes with gauge respective to the adjustment range selected.

Most popular.



## Compact Regulators

### Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Bonnet	Glass-filled nylon
Diaphragm assembly	Nitrile / Stainless steel
Valve assembly	Acetal / Nitrile
Springs	Steel, stainless steel
Seals	Nitrile
Panel nut	Acetal

### Repair and Service Kits

Panel mount nut - aluminum	<b>P32KA00MM</b>
Panel mount nut - plastic	<b>P32KA00MP</b>
Angle bracket (attaches via panel nut)	<b>P32KB00MR</b>
T-bracket with body connector	<b>P32KA00MT</b>
T-bracket	<b>P32KA00MB</b>
Body connector	<b>P32KA00CB</b>

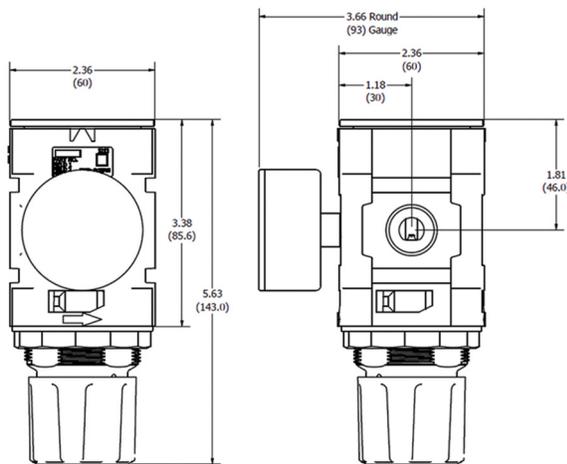


### WARNING

**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.



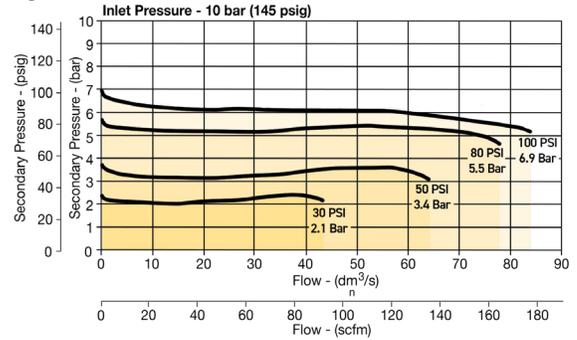
Inches (mm)

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

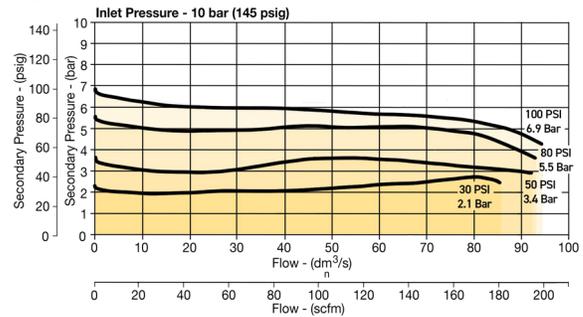
## Air Preparation Products Regulator Products

### Flow Charts

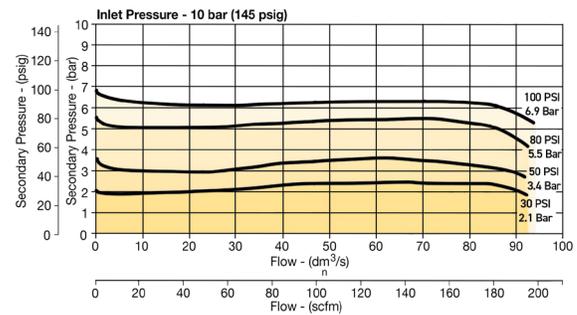
#### 1/4 Regulator



#### 3/8 Regulator



#### 1/2 Regulator



### Gauges

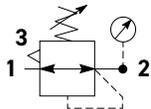
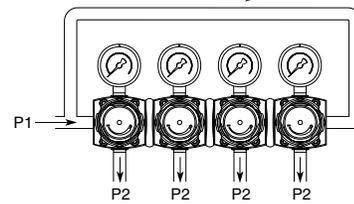
Square with adapter kit	0-4 bar	<b>P6G-PR10040</b>
	0-11 bar	<b>P6G-PR10110</b>
	0-60 psig	<b>P6G-PR90060</b>
	0-160 psig	<b>P6G-PR90160</b>
50mm (2") round 1/4" center back mount	0-30 psig / 0-2 bar	<b>K4520N14030</b>
	0-60 psig / 0-4 bar	<b>K4520N14060</b>
	0-160 psig / 0-11 bar	<b>K4520N14160</b>
	0-300 psig / 0-20 bar	<b>K4520N14300</b>

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

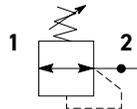


**P32 Common - P1 Regulator - Compact**

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



Self relieving regulator with gauge



Non-relieving regulator

Port Size	Description (Relieving)	Gauge	Part Number
1/4"	125 psig (8 bar)	None	<b>P32HB92BNNP</b>
3/8"	125 psig (8 bar)	None	<b>P32HB93BNNP</b>
1/2"	125 psig (8 bar)	None	<b>P32HB94BNNP</b>

**Operating information**

Flow capacity\*: 1/4, 3/8, 1/2 94 scfm (44 dm<sup>3</sup>/s, ANR)  
 Operating temperature: -25°C to 65.5°C (-13°F to 150°F)  
 Supply pressure (max): 300 psig (20 bar)  
 Adjusting range pressure: 0 to 30 psig (0 to 2 bar)  
 0 to 60 psig (0 to 4 bar)  
 0 to 125 psig (0 to 8 bar)  
 0 to 232 psig (0 to 16 bar)  
 Gauge port (2 each): 1/4 NPT, BSPP, BSPT  
 Weight: 1.21 lb (0.55 kg)  
 \* Inlet pressure 145 psig (10 bar). Secondary pressure 80.0 psig (5.5 bar) and 14.5 psig (1 bar) pressure drop.

**Ordering Information:**

**P32HB 9 2 B N N P**

<b>Basic Series</b> Global Modular Compact Regulator <b>P32HB</b>	<b>Thread Type</b> BSPP 1 BSPT 2 NPT 9	<b>Port Size †</b> 1/4 2 3/8 3 1/2 4 † Working port 1/4".	<b>Relief</b> Relieving B Non-Relieving N	<b>Adjustment</b> N Non-Rising Knob	<b>Mounting</b> P Plastic Panel Mount Nut
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Adjustment Range	
With Round Gauge	
Z	30 psig; 2 bar; 0.2 MPa
M	60 psig; 4 bar; 0.4 MPa
G	125 psig; 8 bar; 0.8 MPa
J	250 psig; 17 bar; 1.7 MPa
Without Gauge	
Y	30 psig; 2 bar; 0.2 MPa
L	60 psig; 4 bar; 0.4 MPa
N	125 psig; 8 bar; 0.8 MPa
H	250 psig; 17 bar; 1.7 MPa

\* Regulator comes with gauge respective to the adjustment range selected.

Most popular.

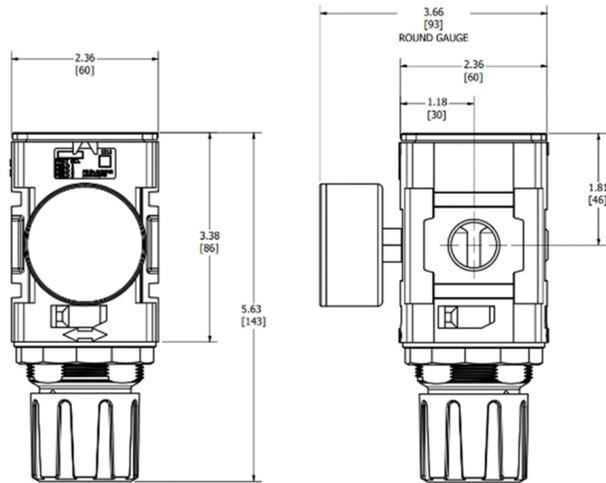
## Compact Common P1 Precision Regulator

### Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Bonnet	Glass-filled nylon
Diaphragm assembly	Nitrile / Stainless steel
Valve assembly	Acetal / nitrile
Springs	Steel, stainless steel
Seals	Nitrile
Panel nut	Acetal

### Repair and Service Kits

Panel mount nut - aluminum	<b>P32KA00MM</b>
Panel mount nut - plastic	<b>P32KA00MP</b>
Angle bracket (attaches via panel nut)	<b>P32KB00MR</b>
T-bracket with body connector	<b>P32KA00MT</b>
T-bracket	<b>P32KA00MB</b>
Body connector	<b>P32KA00CB</b>



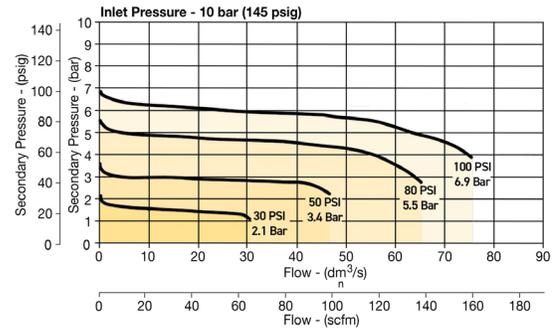
Inches (mm)

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

## Air Preparation Products Regulator Products

### Flow Charts

#### P32 Common Port Regulator



### 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.

### Gauges

Square with adapter kit	0-4 bar	<b>P6G-PR10040</b>
	0-11 bar	<b>P6G-PR10110</b>
	0-60 psig	<b>P6G-PR90060</b>
	0-160 psig	<b>P6G-PR90160</b>
50mm (2") round 1/4" center back mount	0-30 psig / 0-2 bar	<b>K4520N14030</b>
	0-60 psig / 0-4 bar	<b>K4520N14060</b>
	0-160 psig / 0-11 bar	<b>K4520N14160</b>
	0-300 psig / 0-20 bar	<b>K4520N14300</b>

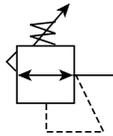
For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



Standard Regulators

**07R Regulators - Standard**

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Rolling diaphragm for extended life
- Two high flow 1/4" gauge ports can be used as additional outlets
- Easily serviced
- Removable non-rising knob for panel mounting and tamper resistance
- 1/4", 3/8", 1/2" ports (NPT)



**Operating information**

Supply pressure (max):	250 psig (17.2 bar)	
Secondary pressure ranges:		
Standard	2 to 125 psig (0 to 8.6 bar)	
Low	1 to 60 psig (0 to 4.1 bar)	
High	5 to 250 psig (0.4 to 17.2 bar)	
Operating temperature:	32°F to 175°F (0°C to 80°C)	
Flow capacity†:		
High flow	1/4"	53 scfm (25 dm³/s, ANR)
	3/8"	60 scfm (28.3 dm³/s, ANR)
	1/2"	75 scfm (35.4 dm³/s, ANR)
Gauge ports (2):	1/4 inch (can be used as additional full flow 1/4 inch outlet ports)	
Weight:	1.6 lb (0.7 kg)	

† scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

**Ordering Information:**

Port Size	Description	Part Number
1/4"	2-125 psi w/out Gauge, Relieving	<b>06R113AC</b>
1/4"	2-125 psi with Gauge, Relieving	<b>06R118AC</b>
3/8"	2-125 psi w/out Gauge, Relieving	<b>06R213AC</b>
3/8"	2-125 psi with Gauge, Relieving	<b>06R218AC</b>
1/2"	2-125 psi w/out Gauge, Relieving	<b>06R313AC</b>
1/2"	2-125 psi with Gauge, Relieving	<b>06R318AC</b>
1/4"	5-250 psi w/out Gauge, Relieving	<b>06R115AC</b>
3/8"	5-250 psi w/out Gauge, Relieving	<b>06R215AC</b>
1/2"	5-250 psi w/out Gauge, Relieving	<b>06R315AC</b>

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

Most popular.



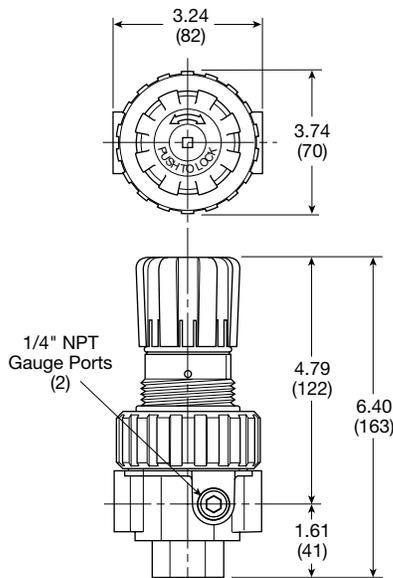
## Standard Regulators

### Material Specifications

Adjusting stem	Steel
Body	Zinc
Bonnet, piston stem, valve poppet & cap	Plastic
Collar, knob	Plastic
Diaphragm	Nitrile
Seals	Nitrile
Spring, poppet	Stainless
Spring, control	Steel

### Repair and Service Kits

Bonnet assembly kit	<b>PS715P</b>
Control knob	<b>P04069B</b>
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Mounting bracket kit (includes panel mount nut)	<b>PS807P</b>
Panel mount nut, plastic	<b>P04082</b>
Panel Mount nut, metal	<b>P04079B</b>
Reverse flow service conversion kit, relieving	<b>PS808RP</b>
Relieving (includes poppet)	<b>PS808P</b>
Non-relieving (includes poppet)	<b>PS809P</b>
1-30 psig spring	<b>P01698</b>
1-60 psig spring	<b>P04062</b>
2-125 psig spring	<b>P04063</b>
5-250 psig spring	<b>P04064</b>
Tamperproof kit	<b>PS737P</b>

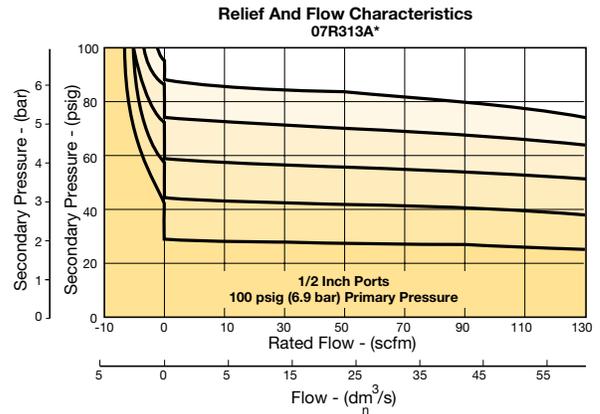


Inches (mm)

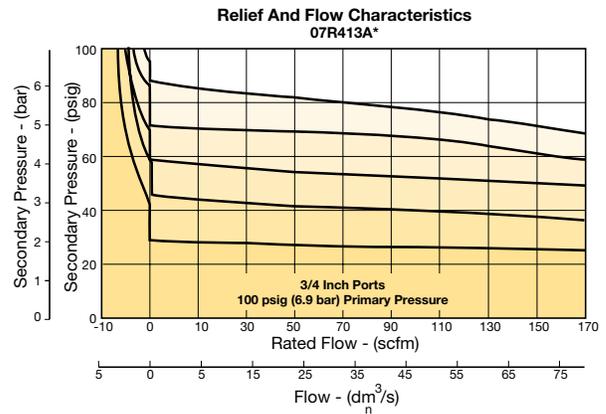
## Air Preparation Products Regulator Products

### Flow Charts

#### 1/2" Regulator



#### 3/4" Regulator



### WARNING

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

### CAUTION:

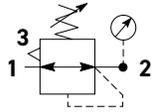
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



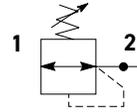
**Standard Regulators**

**P33 Regulators - Standard**

- Integral 1/2" or 3/4" ports (NPT, BSPP & BSPT)
- Robust but lightweight aluminum construction
- Secondary pressure ranges
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & non-relieving types
- Non-rising knob



Self relieving regulator with gauge



Non-relieving regulator

**Operating information**

Flow capacity\*:  
1/2, 3/4 233 scfm (110 dm<sup>3</sup>/s, ANR)

Operating temperature: -13°F to 150°F (-25°C to 65.5°C)

Supply pressure (max): 300 psig (20 bar)

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

Gauge port (2 each): 1/4 NPT, BSPP, BSPT

Weight: 1.61 lb (0.62 kg)

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

Port Size	Description (Relieving)	Gauge	Part Number
1/2"	125 psig (8 bar)	None	<b>P33RA94BNNP</b>
1/2"	125 psig (8 bar)	Round	<b>P33RA94BNGP</b>
3/4"	125 psig (8 bar)	None	<b>P33RA96BNNP</b>
3/4"	125 psig (8 bar)	Round	<b>P33RA96BNGP</b>

**Ordering Information:**

**P33RA 9 6 B N G P**

<b>Basic Series</b> Global Modular Standard Regulator <b>P33RA</b>	<b>Thread Type</b> BSPP 1 BSPT 2 NPT 9	<b>Port Size</b> 1/2 4 3/4 6	<b>Relief</b> Relieving <b>B</b> Non-Relieving <b>N</b> Reverse Flow-Relieving <b>R</b>	<b>Adjustment</b> Non-Rising Knob <b>N</b>	<b>Mounting</b> P Plastic Panel Mount Nut
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Adjustment Range	
With Round Gauge	
<b>Z</b>	30 psig; 2 bar; 0.2 MPa
<b>M</b>	60 psig; 4 bar; 0.4 MPa
<b>G</b>	125 psig; 8 bar; 0.8 MPa
<b>J</b>	250 psig; 17 bar; 1.7 MPa
Without Gauge	
<b>Y</b>	30 psig; 2 bar; 0.2 MPa
<b>L</b>	60 psig; 4 bar; 0.4 MPa
<b>N</b>	125 psig; 8 bar; 0.8 MPa
<b>H</b>	250 psig; 17 bar; 1.7 MPa

Most popular.



## Standard Regulators

### Material Specifications

Body	Aluminum
Adjustment knob	Acetal
Body cap	ABS
Bonnet	Glass-filled nylon
Diaphragm assembly	Nitrile / zinc
Valve assembly	Brass / nitrile
Springs	Steel, stainless steel
Seals	Nitrile
Panel nut	Acetal

### Repair and Service Kits

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

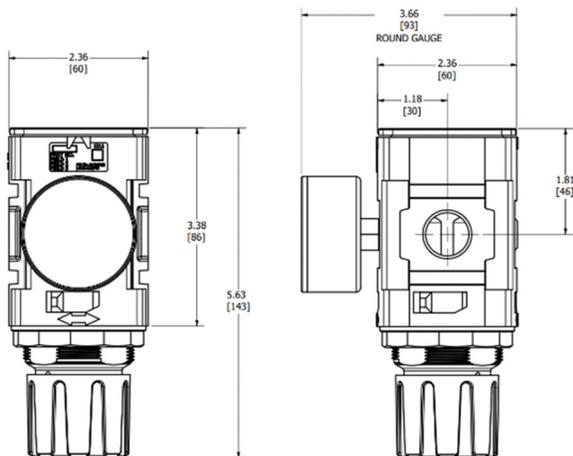


### WARNING

**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.

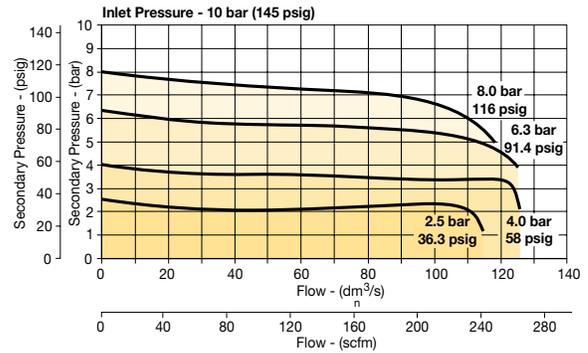


**NOTE:** 2.40 in. (61mm) hole required for panel nut mounting.

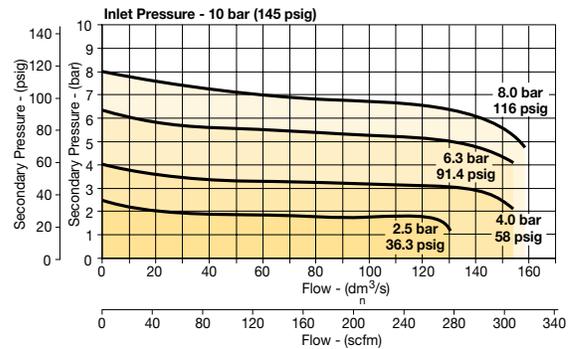
## Air Preparation Products Regulator Products

### Flow Charts

#### 1/2 Regulator



#### 3/4 Regulator



### Gauges

50mm (2") round	0-30 psig / 0-2 bar	<b>K4520N14030</b>
1/4" center back mount	0-60 psig / 0-4 bar	<b>K4520N14060</b>
	0-160 psig / 0-11 bar	<b>K4520N14160</b>
	0-300 psig / 0-20 bar	<b>K4520N14300</b>

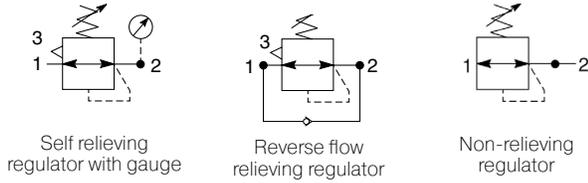
For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.



**Regulators**

**P3Y Regulators**

- Integral 3/4" or 1" ports (BSPP and NPT)
- Robust but lightweight aluminium construction
- Secondary pressure ranges 12 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus rolling diaphragm provides quick response and accurate pressure regulation
- Optional tamperproof regulator padlock
- Reverse flow / relieving option
- Low temperature -40°C (-40°F)



**Operating information**

Supply pressure (max)*:	254 psig (17.5 bar)
Operating temperature:	-40°F to 140°F (-40°C to 60°C)
Flow capacity†:	3/4" 380 scfm (179.3 dm³/s, ANR) 1" 550 scfm (259.6 dm³/s, ANR)
Fluid:	Compressed air
Gauge port (x2):	1/4"
Weight:	2.4 lb (1.08 kg)

† Inlet pressure 145 psig (10 bar) inlet pressure, 91.4 psig (6.3 bar) set pressure and 7.3 psig (0.5 bar) pressure drop.  
\* Air supply must be dry enough to avoid ice formation at temperatures below 35.6°F (2°C).

Port Size	Description	Part Number
3/4"	174 psig relieving	<b>P3YRA96BNEN</b>
3/4"	174 psig relieving + pressure gauge	<b>P3YRA96BNFN</b>
1"	174 psig relieving	<b>P3YRA98BNEN</b>
1"	174 psig relieving + pressure gauge	<b>P3YRA98BNFN</b>

**Ordering Information**

**P3YRA 9 6 B N E N**

Basic Series		Thread Type*		Port Size		Relief		Lockable		Adjustment Range	
Regulator	P3YRA	BSPP	1	3/4	6	B	Relieving	N	Standard	E	0 to 174 psi (0 to 12 bar), No Gauge
		NPT	9	1	8	R	Reverse Flow / Relieving	A†	Lockable	H	0 to 232 psi (0 to 16 bar), No Gauge
										F	0 to 174 psi (0 to 12 bar), Gauge
										J	0 to 232 psi (0 to 16 bar), Gauge

**Notes:**  
\* For 1-1/2" ported unit, please order P3YKA\*BCP port block kit separately.  
† Not field convertible.

Most popular.



## Regulators

### Material specifications

Body	Aluminium
Bonnet	Glass filled polyamide
Regulator cover	ABS
Control knob	Glass filled polyamide
Valve	Brass / NBR
Seals	Nitrile NBR
Screws	Steel / zinc plated

### Repair and Service Kits

Angle bracket + metal lock ring	<b>P3YKA00MS</b>
Panel mounting nut	<b>P3YKA00MM</b>
Diaphragm kit (relieving type)	<b>P3YKA00RR</b>
Diaphragm kit (non-relieving type)	<b>P3YKA00RN</b>
0 to 160 psig (0 to 10 bar), gauge 1/4" port	<b>K4520N14160</b>
0 to 300 psig (0 to 20 bar), gauge 1/4" port	<b>K4520N14300</b>

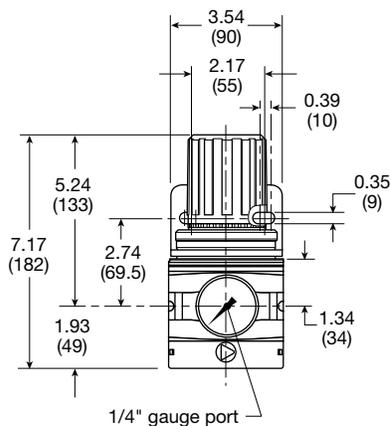


### WARNING

**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.

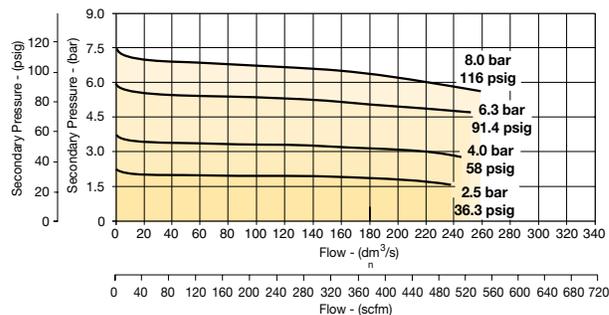


Inches (mm)

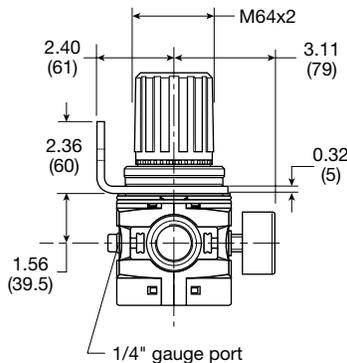
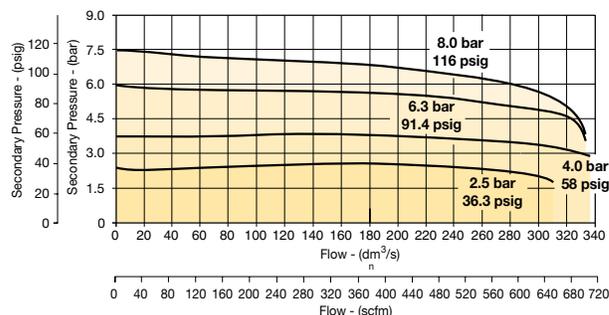
## Air Preparation Products Regulator Products

### Flow characteristics

#### (3/4") Regulator



#### (1") Regulator



General

Dial

Pilot

Proportional

Precision

Water

**K**

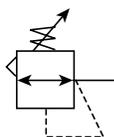
Regulator Products



**Hi-Flow Regulators**

**P3NR Regulators - Hi-Flow**

- Port blocks (PB) available to provide 1-1/2" port extension to 1" ported bodies
- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation
- Solid control piston for extended life
- 3/4", 1", 1-1/2" ports (NPT, BSPP)



Port Size	Description	Part Number
3/4"	Without Gauge	<b>P3NRA96BNN</b>
3/4"	With 160 Psi Gauge	<b>P3NRA96BNG</b>
1"	Without Gauge	<b>P3NRA98BNN</b>
1"	With 160 Psi Gauge	<b>P3NRA98BNG</b>
1-1/2" #	Without Gauge	<b>P3NRA9PBNN</b>
1-1/2" #	With 160 Psi Gauge	<b>P3NRA9PBNG</b>

# 1" port body with 1-1/2" port block.  
NOTE: 2.0 Dia. (51 mm) hole required for panel mounting.

**Operating information**

Supply pressure (max):	250 psig (17.2 bar)
Operating temperature:	32°F to 175°F (0°C to 80°C)
Flow capacity <sup>†</sup> :	
High flow	3/4" 200 scfm (94.4 dm <sup>3</sup> /s, ANR)
	1" 300 scfm (141.6 dm <sup>3</sup> /s, ANR)
	1-1/2" 300 scfm (141.6 dm <sup>3</sup> /s, ANR)
Gauge ports (2):	1/4 inch (can be used as additional full flow 1/4 inch outlet ports)
Weight:	3/4", 1" 4.2 lb (1.9 kg)
	1-1/2" # 5.3 lb (2.4 kg)

<sup>†</sup> scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

# 1" port body with 1-1/2" port block

**Ordering Information:**

<b>P3N</b>	<b>R</b>	<b>A</b>	<b>9</b>	<b>8</b>	<b>B</b>	<b>N</b>	<b>N</b>
<b>Engineering Level</b>		<b>Port Type</b>		<b>Port Size</b>		<b>Pressure Gauge</b>	
Current A		G Thread (BSPP) Female 1* NPT Female 9		3/4" (w/o port blocks) 6 1" (w/o port blocks) 8 1-1/2" Port Blocks (w/ 1" ported body) P		Without Gauge N 125 psi (0 to 8 bar) H 250 psi (0 to 17 bar) With Gauge G 125 psi (0 to 8 bar) J 250 psi (0 to 17 bar)	
		* 3/4 & 1 inch meets ISO 1179-1 standard.				<b>Adjustment</b>	
						N Non-Rising Knob	
						<b>Relief</b>	
						B Relieving	

Note: BSPP ported units supplied using NPT ported bodies and BSPP port block kits.

Most popular.

# Hi-Flow Regulators

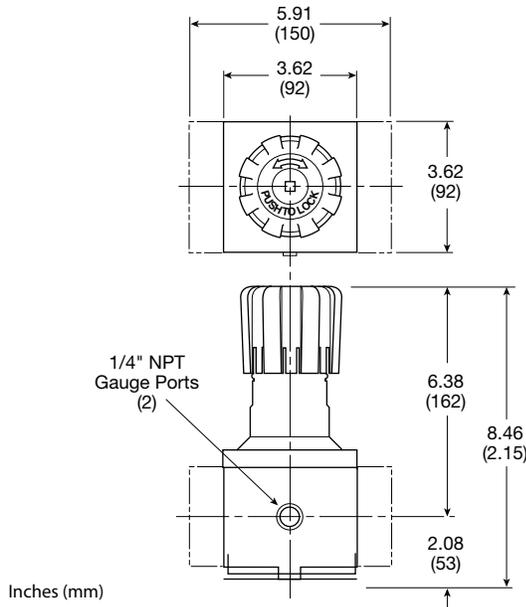
## Material Specifications

Adjusting stem	Steel
Body	Aluminum
Bonnet	Aluminum
Knob	Plastic
Piston	Plastic
Poppet assembly	Brass
Seals	Nitrile
Springs, poppet & control	Steel

## Repair and Service Kits

Control knob	<b>P3NKA00PN</b>
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Mounting bracket kit*	<b>P3NKA00MW</b>
Relieving	<b>P3NKA00RR</b>
Non-relieving	<b>P3NKA00RN</b>
1-60 psig spring	<b>C10A1304</b>
2-125 psig spring	<b>C10A1308</b>
5-250 psig spring	<b>C10A1317</b>

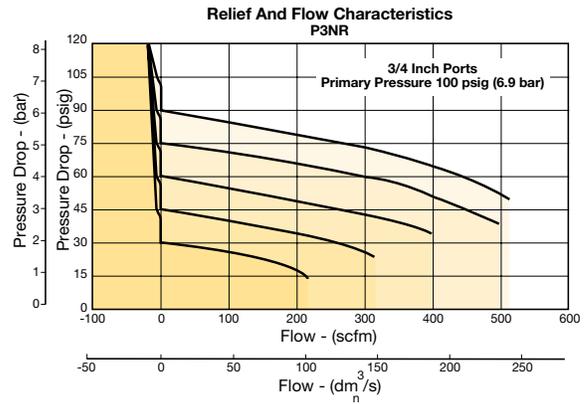
\* If 1-1/2 BSPP E02 fittings are required, use P3NKA00BMW.



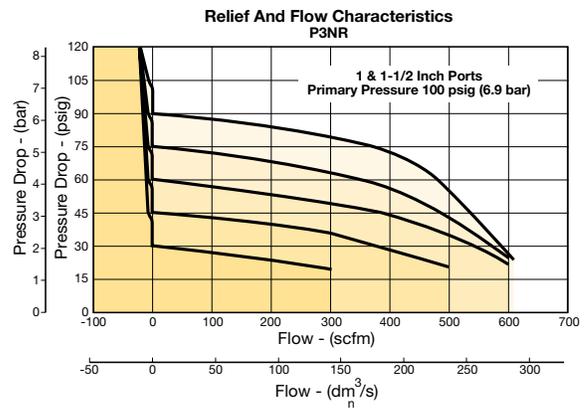
# Air Preparation Products Regulator Products

## Flow Charts

### 3/4" Regulator



### 1" & 1-1/2" Regulator



**⚠ WARNING**

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

### CAUTION:

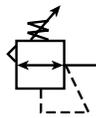
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



**Standard Regulators**

**R119 Regulators - Standard**

- High flow performance featuring rugged design for the most demanding applications
- Ideal for those installations calling for constant pressure with wide variation in flow
- Diaphragm operated design with balanced poppet design for quick and accurate regulation
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Heavy duty tee handle adjustment
- Reverse flow version available
- Panel mount version available
- 1/4", 3/8", 1/2" ports (NPT, BSPP)



Port Size	Description (0-125 psig reduced pressure)	Part Number
1/4"	Without Gauge, Relieving, NPT	<b>R119-02C</b>
1/4"	With Gauge, Relieving, NPT	<b>R119-02CG</b>
3/8"	Without Gauge, Relieving, NPT	<b>R119-03C</b>
3/8"	With Gauge, Relieving, NPT	<b>R119-03CG</b>
1/2"	Without Gauge, Relieving, NPT	<b>R119-04C</b>
1/2"	With Gauge, Relieving, NPT	<b>R119-04CG</b>

**Operating information**

Supply pressure (max):	300 psig (0 to 20.7 bar)	
Reduced pressure range:	2 to 125 psig (0.15 to 8.5 bar)	
Operating temperature:	40°F to 125°F (4.4°C to 52°C)	
Flow capacity†:		
High flow	1/4"	100 scfm (47.2 dm³/s, ANR)
	3/8"	110 scfm (51.9 dm³/s, ANR)
	1/2"	150 scfm (70.8 dm³/s, ANR)
Gauge ports (2):	1/4 inch	
Weight:	1/4"	1.8 lb (0.82 kg)
	3/8"	1.8 lb (0.82 kg)
	1/2"	3.2 lb (1.45 kg)

† scfm = Standard cubic feet per minute at 100 psig inlet, 75 psig no flow secondary setting and 20 psig pressure drop.

**Ordering Information:**

R119
-
02
C
 
/\*\*

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr><th style="background-color: #333; color: white;">Port Threads</th></tr> </thead> <tbody> <tr><td>NPT</td><td style="text-align: center;">-</td></tr> <tr><td>G BSPP</td><td style="text-align: center;">G</td></tr> </tbody> </table>	Port Threads	NPT	-	G BSPP	G	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr><th style="background-color: #333; color: white;">Port Size</th></tr> </thead> <tbody> <tr><td>1/4 inch</td><td style="text-align: center;">02</td></tr> <tr><td>3/8 inch</td><td style="text-align: center;">03</td></tr> <tr><td>1/2 inch</td><td style="text-align: center;">04</td></tr> </tbody> </table>	Port Size	1/4 inch	02	3/8 inch	03	1/2 inch	04	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr><th style="background-color: #333; color: white;">Reduced Pressure Range</th></tr> </thead> <tbody> <tr><td>0-25 psig</td><td style="text-align: center;">A</td></tr> <tr><td>0-60 psig</td><td style="text-align: center;">B</td></tr> <tr><td>0-125 psig</td><td style="text-align: center;">C</td></tr> <tr><td>0-250 psig</td><td style="text-align: center;">D</td></tr> </tbody> </table>	Reduced Pressure Range	0-25 psig	A	0-60 psig	B	0-125 psig	C	0-250 psig	D	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr><th style="background-color: #333; color: white;">Engineering Level</th></tr> </thead> <tbody> <tr><td>/**</td><td style="text-align: center;">Will Be Entered at Factory</td></tr> </tbody> </table>	Engineering Level	/**	Will Be Entered at Factory	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr><th style="background-color: #333; color: white;">Options</th></tr> </thead> <tbody> <tr><td>Blank</td><td style="text-align: center;">None</td></tr> <tr><td>G</td><td style="text-align: center;">Gauge</td></tr> <tr><td>K†</td><td style="text-align: center;">Non-Relieving</td></tr> <tr><td>X64**</td><td style="text-align: center;">Fluorocarbon O-Rings And Diaphragm</td></tr> <tr><td>X80*</td><td style="text-align: center;">Reverse Flow</td></tr> <tr><td>X7</td><td style="text-align: center;">Brass Bottom Plug</td></tr> </tbody> </table>	Options	Blank	None	G	Gauge	K†	Non-Relieving	X64**	Fluorocarbon O-Rings And Diaphragm	X80*	Reverse Flow	X7	Brass Bottom Plug
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\* Reverse flow for use downstream of control valves.  
 \*\* Brass bottom plug standard with X64 option.  
 † Not available with 250 psig spring.

  Most popular.



## Standard Regulators

### Material Specifications

Adjusting screw, springs	Steel
Body, spring cage	Zinc
Bottom plug	Nylon
Innervalve	Brass
Seals	Buna N

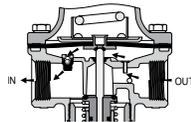
### Repair and Service Kits

2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Mounting bracket, 1/4", 3/8"	<b>SA15Y57</b>
Mounting bracket, 1/2"	<b>18A57</b>
Panel mount conversion kit, 1/4", 3/8"	<b>4202</b>
Panel mount conversion kit, 1/2"	<b>4204</b>
Non-relieving diaphragm, valve assembly (1/4", 3/8"; all psig)	<b>RK118Y</b>
Relieving diaphragm, valve assembly (1/4", 3/8"; all psig)	<b>RK119Y</b>
Non-Relieving diaphragm, valve assembly (1/2"; 25, 60, 125 psig)	<b>RK118A</b>
Relieving diaphragm, valve assembly (1/2"; 25, 60, 125 psig)	<b>RK119A</b>
Relieving diaphragm, valve assembly (1/2"; 250 psig)	<b>RK119A250</b>
Spring cage & T-handle kit (1/4 & 3/8)	<b>RKC119Y</b>
Spring cage & insert only kit (1/2)	<b>SAC18A3/BK</b>

For fluorocarbon repair kits, add X64 to kit number suffix.

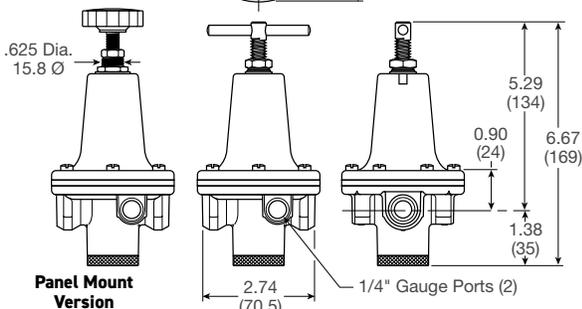
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**X80 Reverse Flow Option**

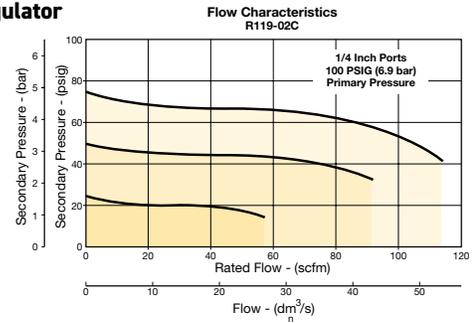
Inches (mm)



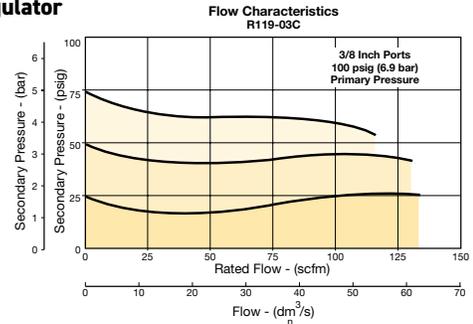
## Air Preparation Products Regulator Products

### Flow Charts

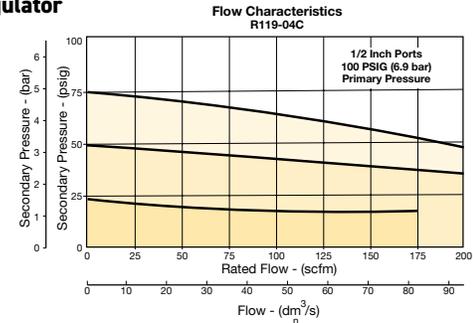
#### 1/4" Regulator



#### 3/8" Regulator



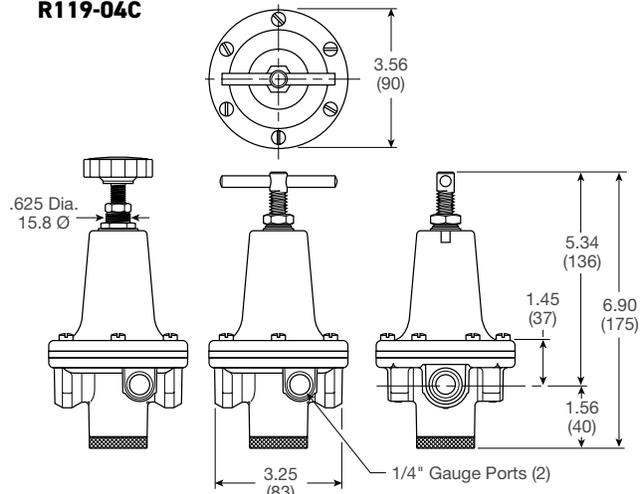
#### 1/2" Regulator



### WARNING

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

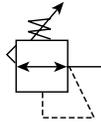
#### R119-04C



**Hi-Flow Regulators**

**R119 Regulators - Hi-Flow**

- High flow performance featuring rugged design for the most demanding applications
- Ideal for those installations calling for constant pressure with wide variation in flow
- Diaphragm operated design with balanced poppet design for quick and accurate regulation
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Heavy duty tee handle adjustment
- Reverse flow version available
- 3/4", 1", 1-1/2" ports (NPT, BSPP)



Port Size	Description (0-125 psig reduced pressure)	Part Number
3/4"	Without gauge, relieving, NPT	<b>R119-06C</b>
3/4"	With gauge, relieving, NPT	<b>R119-06CG</b>
1"	Without gauge, relieving, NPT	<b>R119-08C</b>
1"	With gauge, relieving, NPT	<b>R119-08CG</b>
1-1/2"	Without gauge, relieving, NPT	<b>R119-12C</b>
1-1/2"	With gauge, relieving, NPT	<b>R119-12CG</b>

**Operating information**

Supply pressure (max):	300 psig (0 to 20.7 bar)	
Reduced pressure range:	2 to 125 psig (0.15 to 8.5 bar)	
Operating temperature:	40°F to 125°F (4.4°C to 52°C)	
Flow capacity <sup>†</sup> :		
High flow	3/4"	300 scfm (141.6 dm <sup>3</sup> /s, ANR)
	1"	400 scfm (188.8 dm <sup>3</sup> /s, ANR)
	1-1/2"	500 scfm (236 dm <sup>3</sup> /s, ANR)
Gauge ports (2):	1/4 inch	
Weight:	3/4"	6.2 lb (2.81 kg)
	1"	6.2 lb (2.81 kg)
	1-1/2"	7.2 lb (3.27 kg)

<sup>†</sup> scfm = Standard cubic feet per minute at 100 psig inlet, 75 psig no flow secondary setting and 20 psig pressure drop.

**Ordering Information:**

**R119 - 06 C [ ] /\*\***

Port Threads	
NPT	-
G BSPP	G

Port Size	
3/4 inch	06
1 inch	08
1-1/2 inch	12

Reduced Pressure Range	
0-125 psig	C
0-250 psig	D

Engineering Level	
/**	Will Be Entered at Factory

Options	
Blank	None
G	Gauge
K	Non-Relieving
X64**	Fluorocarbon O-Rings and Diaphragm
X80*	Reverse Flow

\* Reverse flow for use downstream of control valves.  
\*\* Brass bottom plug standard with X64 option.

Most popular.



# Hi-Flow Regulators

## Material Specifications

Adjusting screw, springs	Steel
Body, spring cage	Zinc
Bottom plug	Nylon
Innervalve	Brass
Seals	Buna N

## Repair and Service Kits

2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Mounting bracket kit	<b>18B57</b>
Non-relieving diaphragm, valve assembly (3/4", 1")	<b>RK118B</b>
Non-relieving diaphragm, valve assembly (1-1/2")	<b>RK118D</b>
Relieving diaphragm, valve assembly (3/4", 1")	<b>RK119B</b>
Relieving diaphragm, valve assembly (1-1/2")	<b>RK119D</b>

For Fluorocarbon Repair Kits, add X64 to kit number suffix.

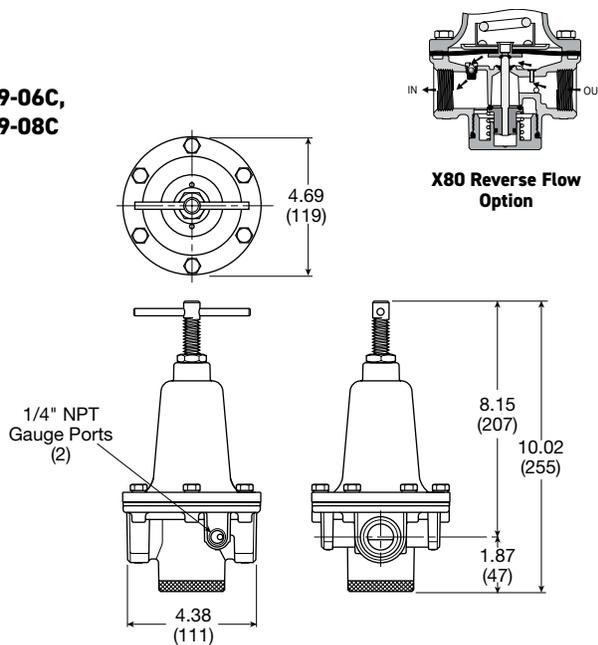
### WARNING

**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.

### R119-06C, R119-08C

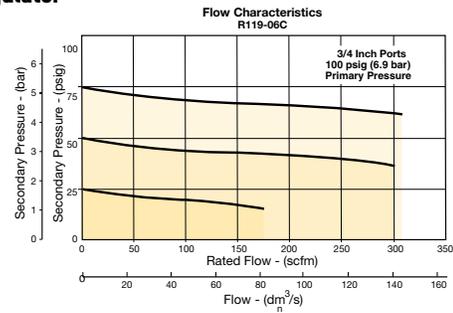


Inches (mm)

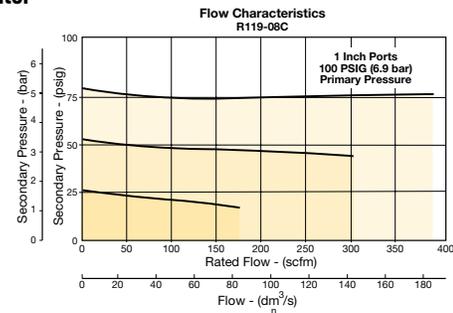
# Air Preparation Products Regulator Products

## Flow Charts

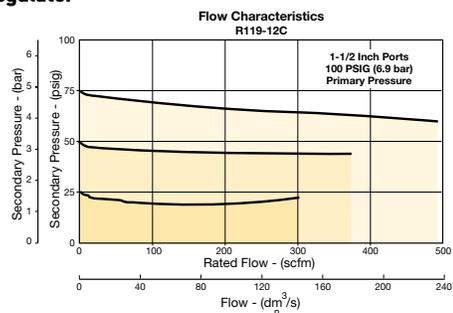
### 3/4" Regulator



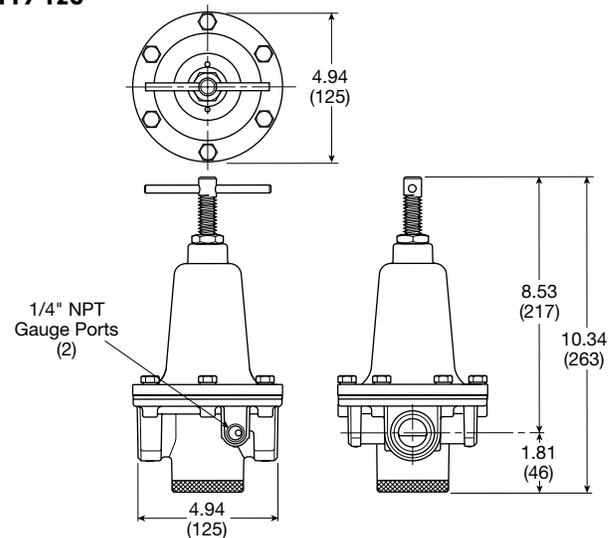
### 1" Regulator



### 1-1/2" Regulator



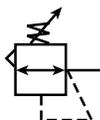
### R119-12C



**Semi-Precision Regulators**

**R216 Semi-Precision Regulators**

- High flow performance featuring rugged design for the most demanding applications
- Ideal for those installations calling for constant pressure with wide variation in flow
- Diaphragm operated with large surface area and aspirator for quick and precise regulation
- Heavy duty tee handle adjustment
- Panel mount version available
- 1/4", 3/8" ports (NPT BSPP)



Port Size	Description (Relieving Type)	Part Number
1/4"	Tee Handle, Without Gauge, NPT	<b>R216-02F</b>
1/4"	Hand Wheel Knob, Without Gauge, NPT	<b>R216-02FP</b>
3/8"	Tee Handle, Without Gauge, NPT	<b>R216-03F</b>
3/8"	Hand Wheel Knob, Without Gauge, NPT	<b>R216-03FP</b>

**Operating information**

Supply pressure:	300 psig (20.7 bar)
Reduced pressure range:	0.5 to 20 psig (0.03 to 1.4 bar)
Operating temperature:	40°F to 125°F (4.4°C to 52°C)
Flow capacity†:	40 scfm (19.3 dm³/s, ANR)
Gauge ports (1):	1/8 inch
Weight:	2.2 lb (100 kg)

† scfm = Standard cubic feet per minute at 100 psig inlet, 75 psig no flow secondary setting and 20 psig pressure drop.

**Ordering Information:**

**R216 - 02 F [ ] /\***

Port Threads	
NPT	-
BSPP	G

Pressure Range	
1/4 inch	02
3/8 inch	03

Reduced Pressure Range	
0 to 8 psig (0.6 bar)	E
0 to 20 psig (1.4 bar)	F
0 to 50 psig (3.4 bar)	H

Engineering Level	
Will Be Entered at Factory.	

Options	
K	Non-Relieving
P	Panel Mount with Nut

Most popular.



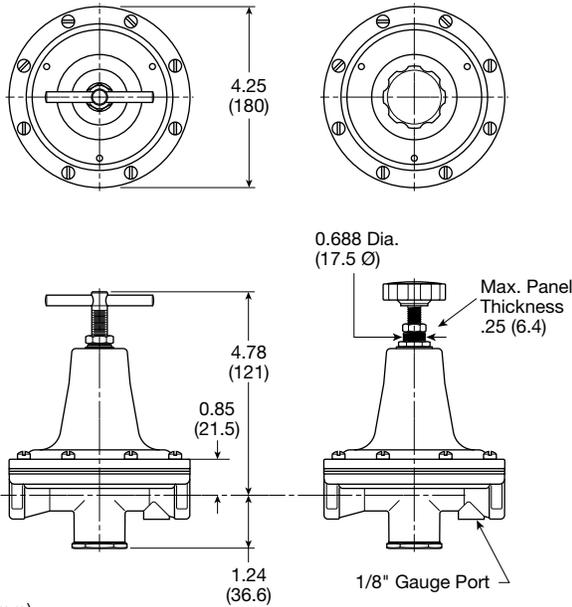
## Semi-Precision Regulators

### Material Specifications

Body, spring cage	Zinc
Bottom plug	Brass
Seals	Buna N

### Repair and Service Kits

Round plastic knob	<b>118Y51</b>
Panel mount conversion kit (Spring cage, knob, hardware)	<b>4206</b>
Non-relieving diaphragm, valve assembly (1/4", 3/8")	<b>RK216KY</b>
Relieving diaphragm, valve assembly (1/4", 3/8")	<b>RK216Y</b>

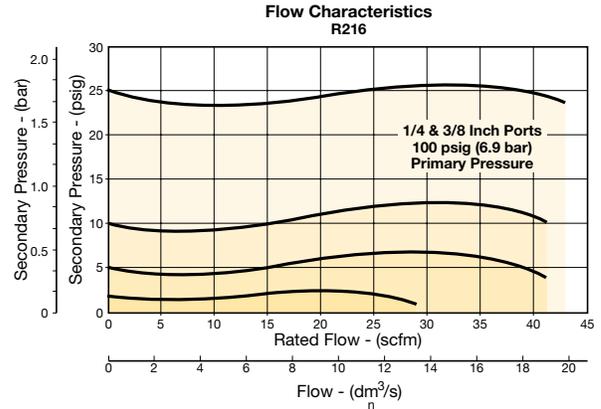


Inches (mm)

## Air Preparation Products Regulator Products

### Flow Charts

#### R216 1/4" & 3/8" Regulator



### WARNING

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

### CAUTION:

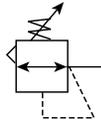
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



**Semi-Precision Regulators**

**51R Regulators - Relieving**

- Pressure reference indicating dial face
- Non-rising, pressure-adjustment dial
- Self-relieving
- Full pressure adjustment in less than one full turn
- Recommended for pilot-air applications
- Constant bleed, piston operated
- 1/4" port (NPT, BSPP)

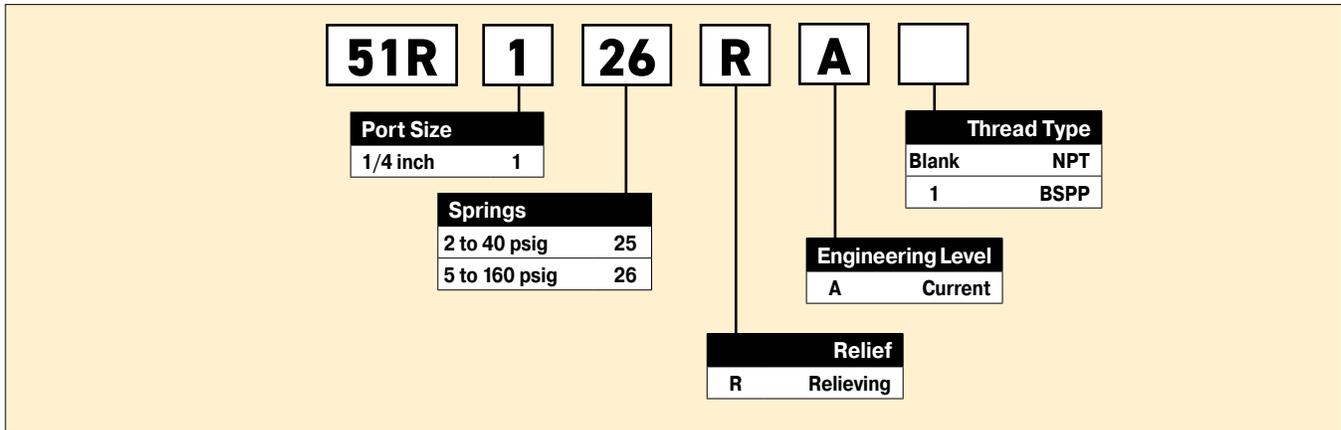


Port Size	Description	Part Number
1/4"	Standard Pressure 5 to 160 psig (0.34 to 11 bar)	<b>51R126RA</b>
1/4"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>51R125RA</b>

**Operating information**

Adjusting pressure range:	2 to 40 psig (0 to 2.8 bar) 5 to 160 psig (0 to 11.0 bar)
Bleed Rate:	0.05 scfm (0.02 dm <sup>3</sup> /s, ANR)
Operating temperature (max):	32°F to 150°F (0°C to 65.6°C)
Supply pressure (max):	300 psig (20.7)
Flow capacity <sup>†</sup> :	0.7 scfm (0.3 dm <sup>3</sup> /s, ANR)
Weight:	1.3 lb (0.5 kg)
<sup>†</sup> scfm = Inlet pressure 100 psig (6.9 bar) inlet. Secondary pressure 90 psig (6.2 bar).	

**Ordering Information:**



Most popular.



## Semi-Precision Regulators

### Material Specifications

Body	Zinc
Bonnet	Zinc / brass
Piston	Acetal
Seals	Nitrile
Springs	Steel
Valve assembly	Brass / nitrile / acetal

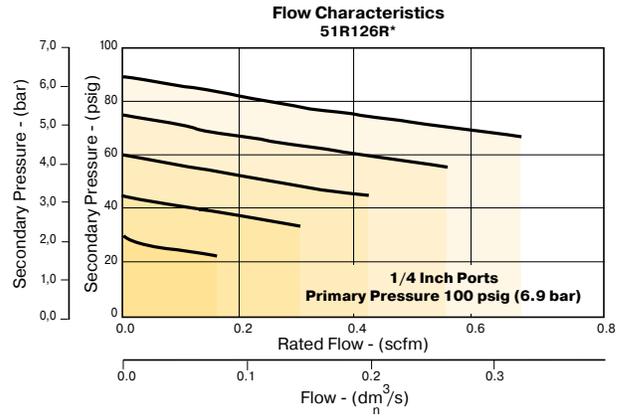
### Repair and Service Kits

Adjustment dial knob	<b>RRP-16-024</b>
O-ring, repair kit	<b>GRP-95-260</b>
Piston and bonnet repair kit	<b>RRP-95-765</b>
Spring, regulation, Belleville washer, 2 to 40 psig (2.8 bar)	<b>RRP-95-906</b>
Spring, regulation, Belleville washer, 5 to 160 psig (11.0 bar)	<b>RRP-95-905</b>
Tamper resistant kit	<b>RRP-95-585</b>
Valve, pilot with o-ring and valve spring	<b>RRP-96-934</b>

## Air Preparation Products Regulator Products

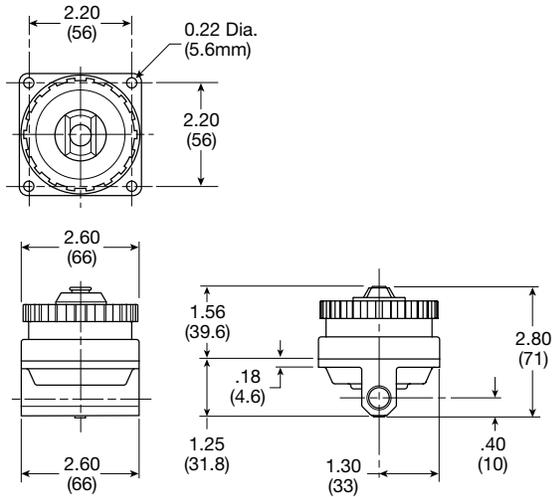
### Flow Charts

#### 51R 1/4" Regulator



### WARNING

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



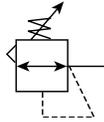
Inches (mm)



**Semi-Precision Regulators**

**52R Regulators - Relieving**

- Balanced poppet design
- Non-rising, pressure-adjusting dial
- High-relief flow (3/16" relief orifice)
- Two 1/4" gauge ports
- Constant bleed, piston operated
- 1/4", 3/8", 1/2", 3/4" ports (NPT, BSPP)



Port Size	Description	Part Number
1/4"	Standard Pressure 5 to 160 psig (0.34 to 11 bar)	<b>52R126RA</b>
1/4"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>52R125RA</b>
3/8"	Standard Pressure 5 to 160 psig (0.34 to 11 bar)	<b>52R226RA</b>
3/8"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>52R225RA</b>
1/2"	Standard Pressure 5 to 160 psig (0.34 to 11 bar)	<b>52R326RA</b>
1/2"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>52R325RA</b>
3/4"	Standard Pressure 5 to 160 psig (0.34 to 11 bar)	<b>52R426RA</b>
3/4"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>52R425RA</b>

**Operating information**

Adjusting pressure range:	2 to 40 psig (0 to 2.8 bar) 5 to 160 psig (0 to 11.0 bar)
Bleed Rate:	0.05 scfm (0.02 dm <sup>3</sup> /s, ANR)
Operating temperature (max):	32°F to 150°F (0°C to 65.6°C)
Supply pressure (max):	300 psig (20.7)
Flow capacity†:	1/4" 117 scfm (55.2 dm <sup>3</sup> /s, ANR) 3/8" 180 scfm (85 dm <sup>3</sup> /s, ANR) 1/2" 195 scfm (92 dm <sup>3</sup> /s, ANR) 3/4" 220 scfm (103.8 dm <sup>3</sup> /s, ANR)
Gauge ports:	Two ports 1/4" (can be used as additional high flow 1/4 inch outlet ports)
Weight:	2.3 lb (1.04 kg)
† scfm = Inlet pressure 100 psig (6.9 bar) inlet. Secondary pressure 90 psig (6.2 bar).	

**Ordering Information:**

**52R 1 26 R A**

Port Size	1	2	3	4
1/4 inch	1			
3/8 inch		2		
1/2 inch			3	
3/4 inch				4

Springs	25	26
2 to 40 psig	25	
5 to 160 psig		26

Thread Type	NPT	BSPP
Blank	NPT	
1		BSPP

Engineering Level	Current
A	Current

Relief	Relieving
R	Relieving

Most popular.



## Semi-Precision Regulators

### Material specifications

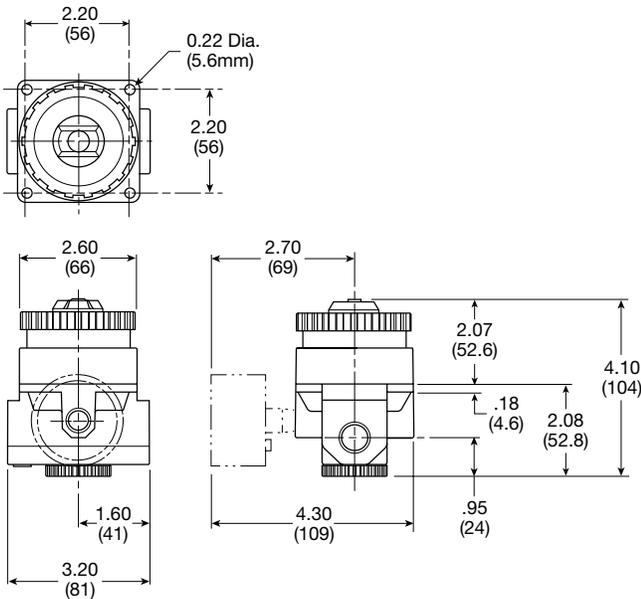
Body	Zinc
Bonnet	Zinc / brass
Piston	Acetal
Seals	Nitrile
Springs	Steel
Valve assembly	Brass / nitrile / acetal

### Repair and Service Kits

Adjustment dial knob	<b>RRP-16-024</b>
O-ring, repair kit	<b>GRP-95-260</b>
Piston bottom and o-ring seal	<b>RRP-95-192</b>
Pistons and bonnet repair kit	<b>RRP-95-766</b>
Spring, regulation, belleville washer – 2 to 40 psig range	<b>RRP-95-906</b>
Spring, regulation, belleville washer – 5 to 160 psig range	<b>RRP-95-905</b>
Tamper resistant kit	<b>RRP-95-585</b>
Valve, main with U-cup seal & bottom plug	<b>RRP-95-914</b>
Valve, main with U-cup seal	<b>RRP-95-151</b>
Valve, pilot with o-ring and valve spring	<b>RRP-96-934</b>

### WARNING

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

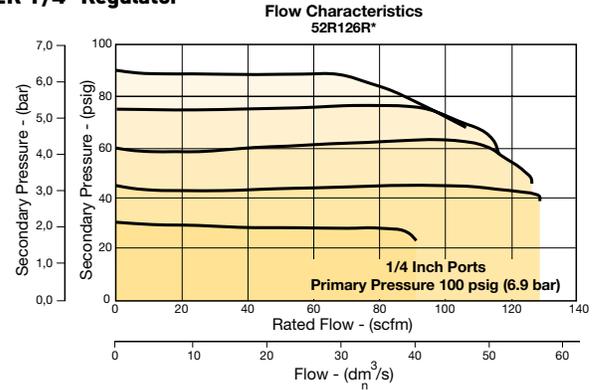


Inches (mm)

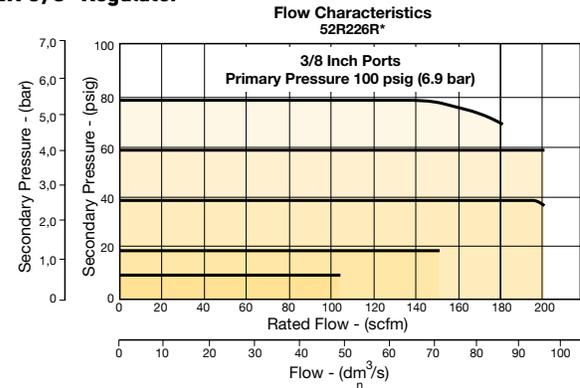
## Air Preparation Products Regulator Products

### Flow Charts

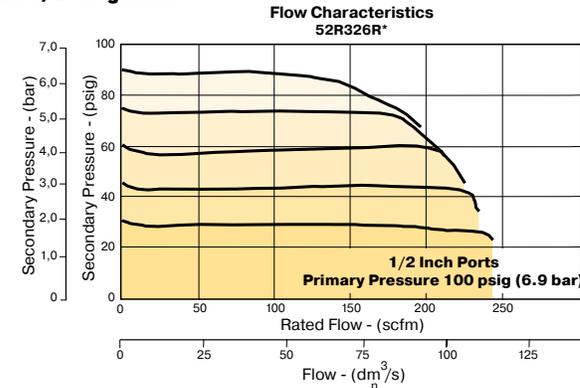
#### 52R 1/4" Regulator



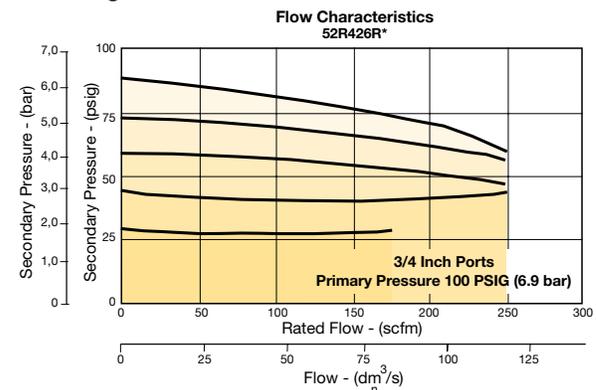
#### 52R 3/8" Regulator



#### 52R 1/2" Regulator



#### 52R 3/4" Regulator



General

Dial

Pilot

Proportional

Precision

Water

**K**

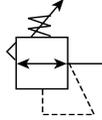
Regulator Products



**Semi-Precision Regulators**

**53R Regulators - Relieving**

- Balanced poppet design
- Non-rising, pressure-adjusting dial
- High-relief flow (3/16" relief orifice)
- Two 1/4" gauge ports
- Constant bleed, piston operated
- 3/4", 1", 1-1/4" ports (NPT, BSPP)



Port Size	Description	Part Number
3/4"	Standard pressure 5 to 160 psig (0.34 to 11 bar)	<b>53R426RA</b>
3/4"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>53R425RA</b>
1"	Standard pressure 5 to 160 psig (0.34 to 11 bar)	<b>53R526RA</b>
1"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>53R525RA</b>
1-1/4"	Standard Pressure 5 to 160 psig (0.34 to 11 bar)	<b>53R626RA</b>
1-1/4"	Low pressure 2 to 40 psig (0.14 to 3 bar)	<b>53R625RA</b>

**Operating information**

Adjusting pressure range:	2 to 40 psig (0 to 2.8 bar) 5 to 160 psig (0 to 11.0 bar)
Bleed Rate:	0.05 scfm (0.02 dm <sup>3</sup> /s, ANR)
Operating temperature (max):	32°F to 150°F (0°C to 65.6°C)
Supply pressure (max):	300 psig (20.7)
Flow capacity <sup>†</sup> :	3/4" 400 scfm (188.8 dm <sup>3</sup> /s, ANR) 1" 650 scfm (306.8 dm <sup>3</sup> /s, ANR) 1-1/4" 700 scfm (330.4 dm <sup>3</sup> /s, ANR)
Gauge ports:	Two ports 1/4" (can be used as additional high flow 1/4 inch outlet ports)
Weight:	2.3 lb (1.04 kg)

<sup>†</sup> scfm = Inlet pressure 100 psig (6.9 bar) inlet. Secondary pressure 80 psig (5.5 bar).

**Ordering Information:**

<b>53R</b>	<b>4</b>	<b>26</b>	<b>R</b>	<b>A</b>	<b>Blank</b>
<b>Port Size</b>					<b>Thread Type</b>
3/4 inch	4				Blank NPT
1 inch	5				1 BSPP
1-1/4 inch	6				
		<b>Springs</b>		<b>Engineering Level</b>	
		2 to 40 psig	25	A	Current
		5 to 160 psig	26		
				<b>Relief</b>	
			R	Relieving	

Most popular.



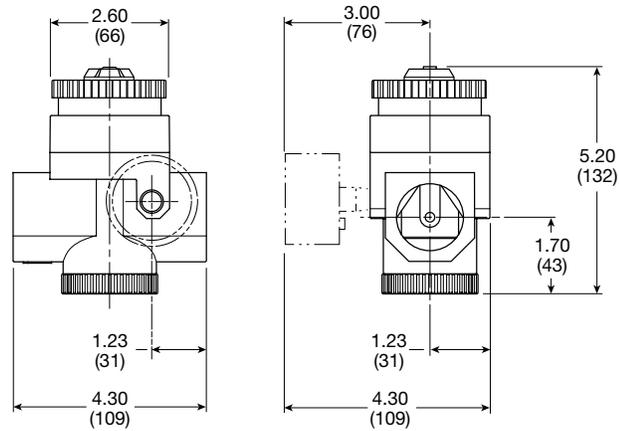
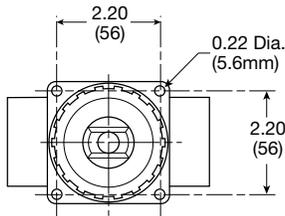
## Semi-Precision Regulators

### Material Specifications

Body	Zinc
Bonnet	Zinc / brass
Piston	Acetal
Seals	Nitrile
Springs	Steel
Valve assembly	Brass / nitrile / acetal

### Repair and Service Kits

Adjustment dial knob	<b>RRP-16-024</b>
O-ring, repair kit	<b>GRP-95-261</b>
Piston, bottom and o-ring seal	<b>RRP-95-192</b>
Pistons and bonnet repair kit	<b>RRP-95-766</b>
Spring, regulation, Belleville washer – 2 to 40 psig range	<b>RRP-95-906</b>
Spring, regulation, Belleville washer – 5 to 160 psig range	<b>RRP-95-905</b>
Tamper resistant kit	<b>RRP-95-585</b>
Valve, main with o-ring seal	<b>RRP-95-152</b>
Valve, pilot with o-ring and valve spring	<b>RRP-96-935</b>

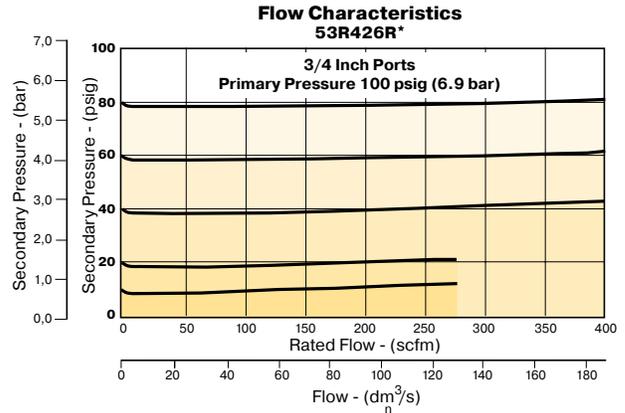


Inches (mm)

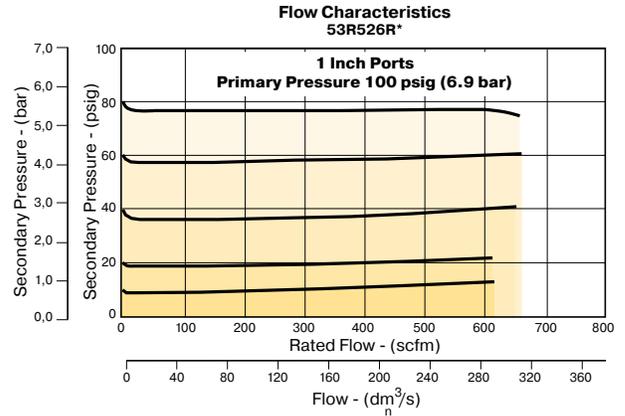
## Air Preparation Products Regulator Products

### Flow Charts

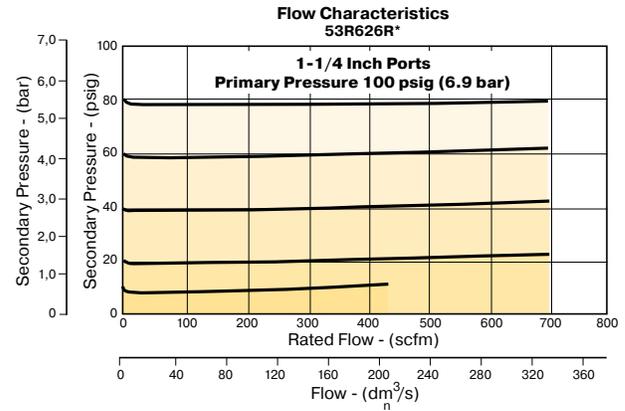
#### 53R 3/4" Regulator



#### 53R 1" Regulator



#### 53R 31-14" Regulator



### ⚠ WARNING

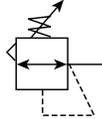
**Product rupture can cause serious injury.  
Do not connect regulator to bottled gas.  
Do not exceed Maximum primary pressure rating.**



**Semi-Precision Regulators**

**54R Regulators - Relieving**

- Balanced poppet design
- Non-rising, pressure-adjusting dial
- High-relief flow (3/16" relief orifice)
- Two 1/4" gauge ports
- Constant bleed, piston operated
- 1-1/2", 2" ports (NPT, BSPP)



Port Size	Description	Part Number
1-1/2"	Standard Pressure 5 to 160 psig (0.34 to 11 bar)	<b>54R726RA</b>
1-1/2"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>54R725RA</b>
2"	Standard Pressure 5 to 160 psig (0.34 to 11 bar)	<b>54R826RA</b>
2"	Low Pressure 2 to 40 psig (0.14 to 3 bar)	<b>54R825RA</b>

**Operating information**

Adjusting pressure range:	2 to 40 psig (0 to 2.8 bar) 5 to 160 psig (0 to 11.0 bar)
Bleed Rate:	0.05 scfm (0.02 dm <sup>3</sup> /s, ANR)
Operating temperature (max):	32°F to 150°F (0°C to 65.6°C)
Supply pressure (max):	300 psig (20.7)
Flow capacity <sup>†</sup> :	1-1/2" 1,600 scfm (755 dm <sup>3</sup> /s, ANR) 2" 1,600 scfm (755 dm <sup>3</sup> /s, ANR)
Gauge ports:	Two ports 1/4" (can be used as additional high flow 1/4 inch outlet ports)
Weight:	9 lb (4.1 kg)

<sup>†</sup> scfm = Inlet pressure 100 psig (6.9 bar) inlet. Secondary pressure 80 psig (5.5 bar).

**Ordering Information:**

<b>54R</b>	<b>7</b>	<b>26</b>	<b>R</b>	<b>A</b>	<b>Blank</b>
<b>Port Size</b>					<b>Thread Type</b>
1-1/2 inch	7				Blank NPT
2 inch	8				1 BSPP
	<b>Springs</b>			<b>Engineering Level</b>	
	2 to 40 psig	25		A	Current
	5 to 160 psig	26			
			<b>Relief</b>		
			R		
					Relieving

Most popular.



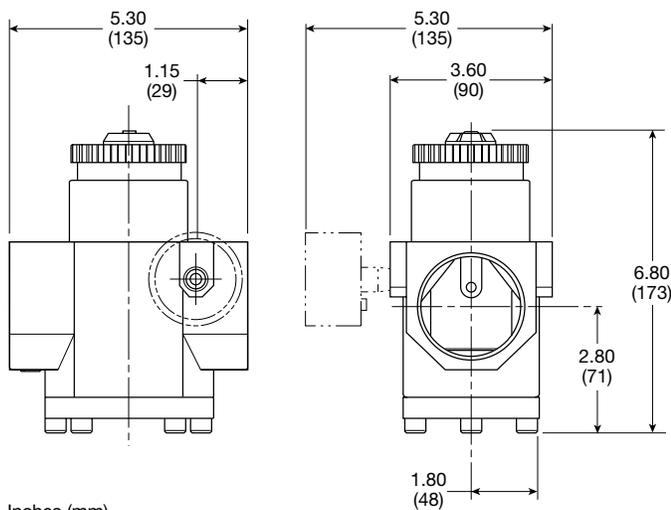
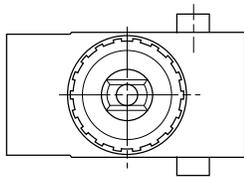
## Semi-Precision Regulators

### Material Specifications

Body	Zinc
Bonnet	Zinc / brass
Piston	Zinc
Seals	Nitrile
Springs	Steel
Valve assembly	Brass / nitrile / acetal

### Repair and Service Kits

Adjustment dial knob	<b>RRP-16-024</b>
O-ring, repair kit	<b>GRP-95-262</b>
Piston, bottom and o-ring seal	<b>RRP-95-192</b>
Pistons and bonnet repair kit	<b>RRP-95-766</b>
Spring, regulation, belleville washer – 2 to 40 psig range	<b>RRP-95-906</b>
Spring, regulation, belleville washer – 5 to 160 psig range	<b>RRP-95-905</b>
Spring, main valve	<b>RRP-95-024</b>
Tamper resistant kit	<b>RRP-95-585</b>
Valve, main with o-ring seal	<b>RRP-95-153</b>
Valve, pilot with o-ring and valve spring	<b>RRP-96-935</b>

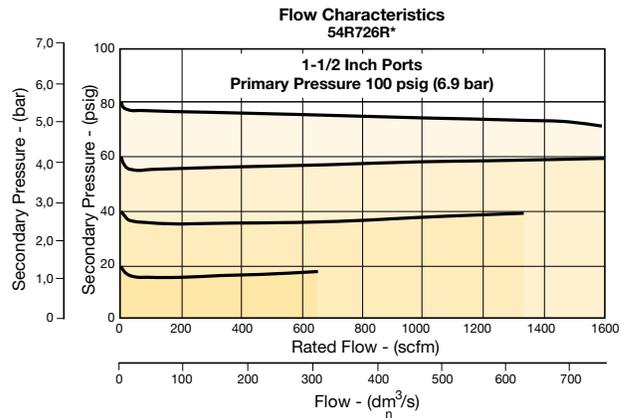


Inches (mm)

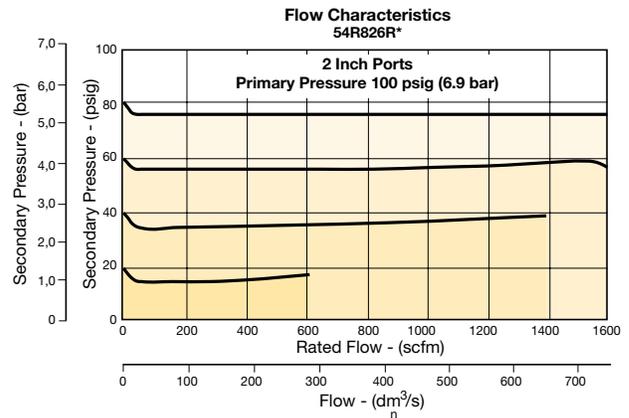
## Air Preparation Products Regulator Products

### Flow Charts

#### 54R 1-1/2" Regulator



#### 54R 2" Regulator



### WARNING

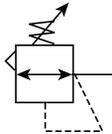
Product rupture can cause serious injury.  
Do not connect regulator to bottled gas.  
Do not exceed Maximum primary pressure rating.



Compact Pilot Controlled Regulators

**11R Pilot Controlled Regulator - Compact**

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Rolling diaphragm for extended life
- Two high flow 1/4" gauge ports can be used as additional outlets
- Easily serviced
- Removable non-rising knob for panel mounting and tamper resistance
- 1/4", 3/8", 1/2" ports (NPT)



**Operating information**

Supply pressure (max):	250 psig (17.2 bar)	
Secondary pressure ranges:		
Standard	2 to 125 psig (0 to 8.6 bar)	
Low	1 to 60 psig (0 to 4.1 bar)	
High	5 to 250 psig (0.4 to 17.2 bar)	
Operating temperature:	32°F to 175°F (0°C to 80°C)	
Flow capacity†:		
High flow	1/4"	53 scfm (25 dm³/s, ANR)
	3/8"	60 scfm (28.3 dm³/s, ANR)
	1/2"	75 scfm (35.4 dm³/s, ANR)
Gauge ports (2):	1/4 inch (can be used as additional full flow 1/4 inch outlet ports)	
Weight:	1.6 lb (0.7 kg)	

† scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

**Ordering Information:**

Port Size	Description	Part Number
1/4"	2- 125 psi w/out Gauge, Relieving	<b>06R113AC</b>
1/4"	2- 125 psi with Gauge, Relieving	<b>06R118AC</b>
3/8"	2- 125 psi w/out Gauge, Relieving	<b>06R213AC</b>
3/8"	2- 125 psi with Gauge, Relieving	<b>06R218AC</b>
1/2"	2- 125 psi w/out Gauge, Relieving	<b>06R313AC</b>
1/2"	2- 125 psi with Gauge, Relieving	<b>06R318AC</b>
1/4"	5-250 psi w/out Gauge, Relieving	<b>06R115AC</b>
3/8"	5-250 psi w/out Gauge, Relieving	<b>06R215AC</b>
1/2"	5-250 psi w/out Gauge, Relieving	<b>06R315AC</b>

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

Most popular.



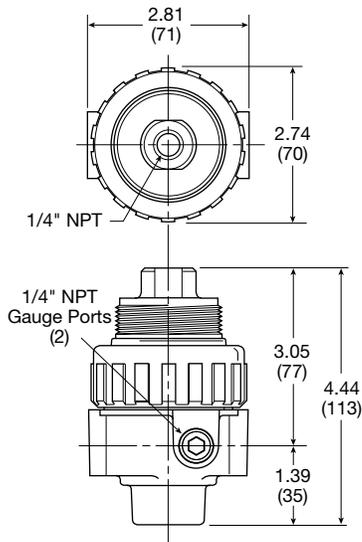
## Compact Pilot Controlled Regulators

### Material Specifications

Body & pilot cap	Zinc
Piston, valve poppet, & collar	Plastic
Seals	Nitrile
Springs	Steel

### Repair and Service Kits

Seat Insert kit	<b>PS713P</b>
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Mounting bracket kit (includes panel mount nut)	<b>PS707P</b>
Panel mount nut, plastic	<b>P04082</b>
Panel mount nut, metal	<b>P04079B</b>
Pilot conversion kit – relieving	<b>PS745P</b>
Non-Relieving	<b>PS747P</b>
Relieving	<b>PS749P</b>

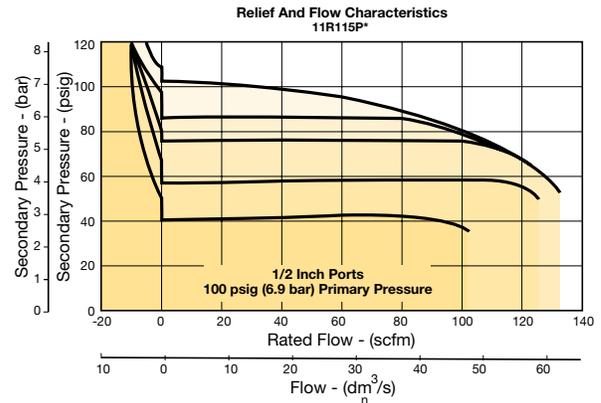


Inches (mm)

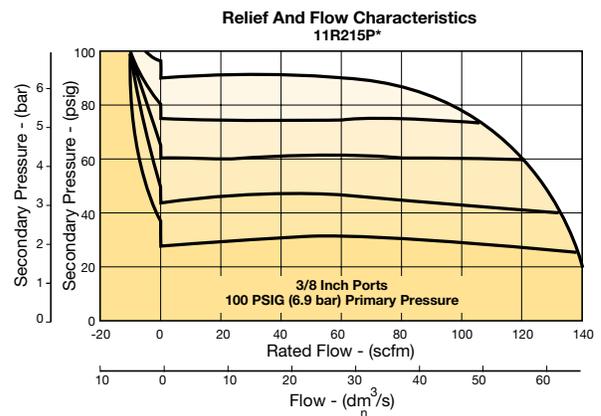
## Air Preparation Products Regulator Products

### Flow Charts

#### 1/2" Regulator



#### 3/8" Regulator



### WARNING

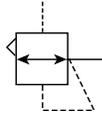
Product rupture can cause serious injury.  
Do not connect regulator to bottled gas.  
Do not exceed Maximum primary pressure rating.



Standard Pilot Controlled Regulators

**12R Pilot Controlled Regulator - Standard**

- Balanced poppet provides quick response and accurate pressure regulation
- Pilot controlled regulators can be mounted “out of reach” with pilot regulator installed in a convenient location
- Solid control piston for extended life
- Two full flow 1/4" gauge ports can be used as additional outlets
- Pilot port 1/4 Inch
- 1/2", 3/4" ports (NPT)



**Operating information**

Supply pressure (max):	0 to 250 psig (0 to 17.2 bar)	
Operating temperature:	32°F to 175°F (0°C to 80°C)	
Flow capacity <sup>†</sup> :		
High flow	1/2"	140 scfm (66 dm <sup>3</sup> /s, ANR)
	3/4"	140 scfm (66 dm <sup>3</sup> /s, ANR)
Gauge ports (2):	1/4 inch (can be used as additional full flow 1/4 inch outlet ports)	
Weight:	2.0 lb (0.91 kg)	
<sup>†</sup> scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.		

**Ordering Information:**

Port Size	Description	Part Number
1/2"	5-250 psi w/out Gauge, Relieving, Pilot Operated	<b>12R215PB</b>
3/4"	5-250 psi w/out Gauge, Relieving, Pilot Operated	<b>12R415PB</b>

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

Most popular.



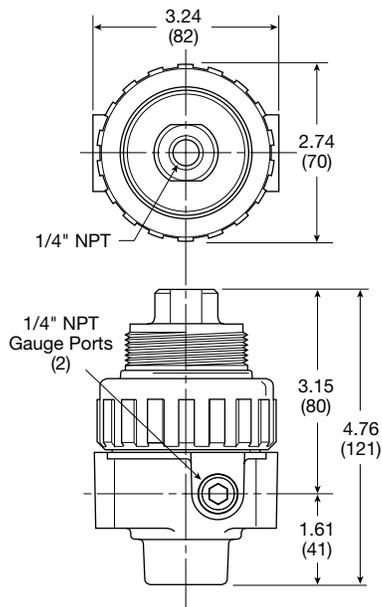
## Standard Pilot Controlled Regulators

### Material Specifications

Body & pilot cap	Zinc
Piston, valve poppet, & collar	Plastic
Seals	Nitrile
Springs	Steel

### Repair and Service Kits

Seat insert kit	<b>PS813P</b>
2" dial face 60 psig (0 to 4.1 bar)	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar)	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar)	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar)	<b>K4517N14160D</b>
Mounting bracket kit (includes panel mount nut)	<b>PS807P</b>
Panel mount nut, plastic	<b>P04082</b>
Panel mount nut, metal	<b>P04079B</b>
Pilot conversion kit – relieving	<b>PS745P</b>
Non-relieving	<b>PS847P</b>
Relieving	<b>PS849P</b>

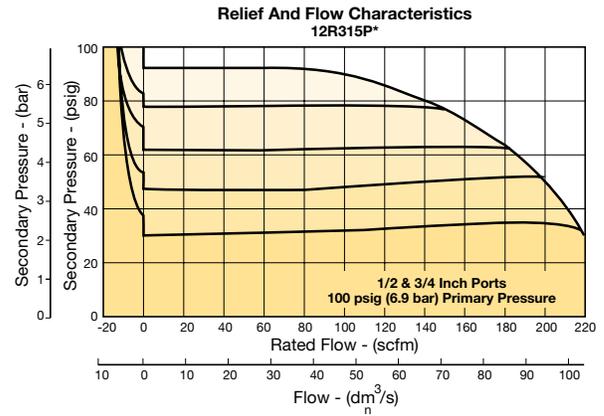


Inches (mm)

## Air Preparation Products Regulator Products

### Flow Charts

#### 1/2 and 3/4" Regulator



### WARNING

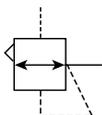
Product rupture can cause serious injury.  
Do not connect regulator to bottled gas.  
Do not exceed Maximum primary pressure rating.



**Hi-Flow Pilot Controlled Regulators**

**P3NR Pilot Controlled Regulator - Hi-Flow**

- Port blocks (PB) available to provide 1-1/2" port extension to 1" ported bodies
- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation
- Solid control piston for extended life
- 3/4", 1" 1-1/2" ports (NPT, BSPP)



Port Size	Description	Part Number
3/4"	Without Gauge	<b>P3NRA96BPP</b>
1"	Without Gauge	<b>P3NRA98BPP</b>
1-1/2"*	Without Gauge	<b>P3NRA9PBPP</b>

\* 1" port body with 1-1/2" port block.

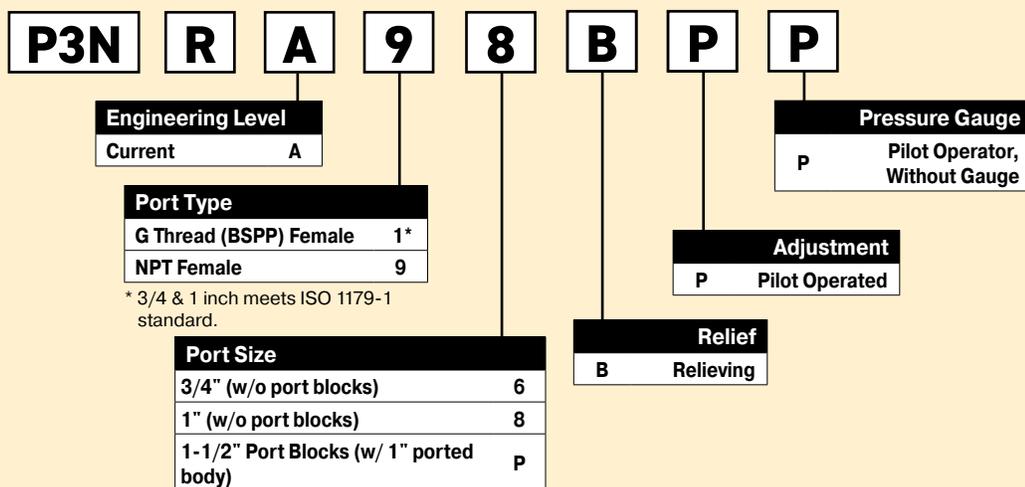
**Operating information**

Supply pressure (max):	250 psig (17.2 bar)	
Operating temperature:	32°F to 175°F (0°C to 80°C)	
Flow capacity†:		
High flow	3/4"	300 scfm (141.6 dm³/s, ANR)
	1"	300 scfm (141.6 dm³/s, ANR)
	1-1/2"	350 scfm (165.2 dm³/s, ANR)
Gauge ports (2):	1/4 inch	
Weight:	3/4", 1"	3.3 lb (1.5 kg)
	1-1/2" #	4.4 lb (2.0 kg)

† scfm = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

# 1" port body with 1-1/2 port block

**Ordering Information:**



Note: BSPP ported units supplied using NPT ported bodies and BSPP port block kits.

☐ Most popular.



## Hi-Flow Pilot Controlled Regulators

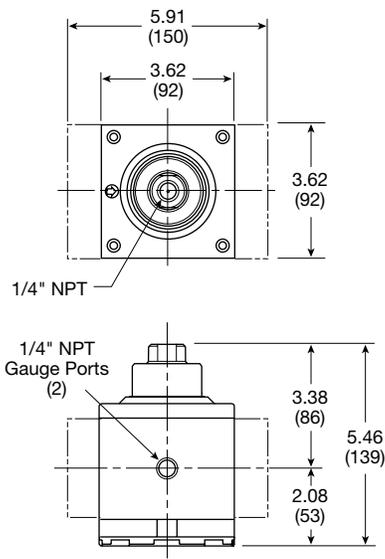
### Material Specifications

Adjusting stem	Steel
Body	Aluminum
Bonnet	Aluminum
Piston	Plastic
Poppet assembly	Brass
Seals	Nitrile
Springs – poppet	Steel

### Repair and Service Kits

2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Mounting bracket kit*	<b>P3NKA00MW</b>
Relieving	<b>P3NKA00PD</b>

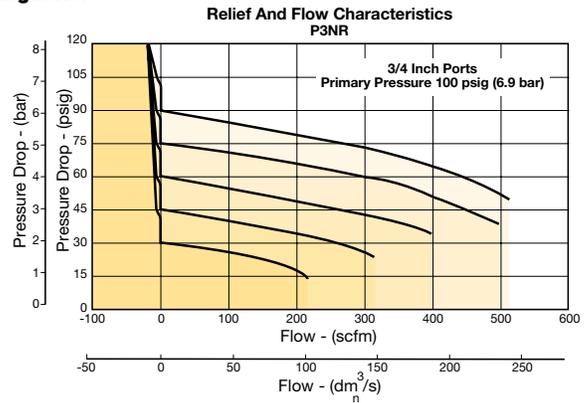
\* If 1-1/2 BSPP E02 fittings are required, use P3NKA0BMW.



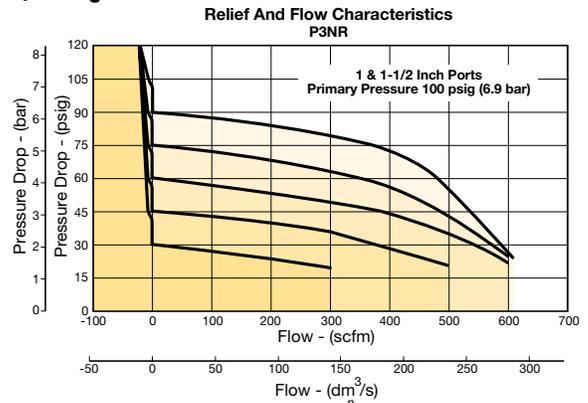
## Air Preparation Products Regulator Products

### Flow Charts

#### 3/4" Regulator



#### 1" & 1-1/2" Regulator



**WARNING**

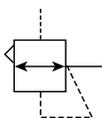
Product rupture can cause serious injury.  
Do not connect regulator to bottled gas.  
Do not exceed Maximum primary pressure rating.



**R119 Regulators**

**R119 - Pilot Operated Regulators**

- Adapted for control by a remote or distant small pilot regulator. Ideal for maximum capacity requirements in applications where units are not readily accessible
- High flow performance featuring rugged design for the most demanding applications
- Ideal for those installations calling for constant pressure with wide variation in flow
- Diaphragm operated design with balanced poppet and constant bleed pilot for quick and accurate regulation.
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Reverse flow available
- 1/4", 3/8", 1/2" ports (NPT, BSPP)



Port Size	Description (0-125 psig reduced pressure)	Part Number
1/4"	Without Gauge, Relieving, NPT	<b>R119-02J/M2</b>
3/8"	Without Gauge, Relieving, NPT	<b>R119-03J/M2</b>
1/2"	Without Gauge, Relieving, NPT	<b>R119-04J/M2</b>

**Operating information**

Supply pressure (max):	300 psig (0 to 20.7 bar)	
Air consumption:	Constant bleed from air pilot chamber: approx. 0.17 scfm (10 scfh)	
Operating temperature:	40°F to 125°F (4.4°C to 52°C)	
Pilot pressure:	1/4", 3/8" thread - 1/8" 1/2" thread - 1/4"	
Reduced pressure range:	Adjustable to within 5 to 7 psig (0.34 to 0.48 bar) of supply pressure	
Flow capacity†:		
High flow	1/4"	100 scfm (47.2 dm³/s, ANR)
	3/8"	110 scfm (51.9 dm³/s, ANR)
	1/2"	150 scfm (70.8 dm³/s, ANR)
Gauge ports (2):	1/4 inch	
Weight:	1/4"	1.6 lb (0.73 kg)
	3/8"	1.6 lb (0.73 kg)
	1/2"	2.6 lb (1.18 kg)

† scfm = Standard cubic feet per minute at 100 psig inlet, 75 psig no flow secondary setting and 20 psig pressure drop.

**Ordering Information:**

<b>R119</b>	<b>-</b>	<b>02</b>	<b>J</b>	<b>/**</b>
<b>Port Threads</b>				<b>Engineering Level</b>
NPT	-			/** Will Be Entered at Factory
BSPP	G			
		<b>Port Size</b>		<b>Options</b>
		1/4 inch	02	Blank
		3/8 inch	03	K
		1/2 inch	04	X64*
				X71
				X7
		<b>Reduced Pressure Range</b>		
		Air Pilot Operated	J	

\* Brass bottom plug standard with X64 option.

☐ Most popular.



# R119 Regulators

## Material Specifications

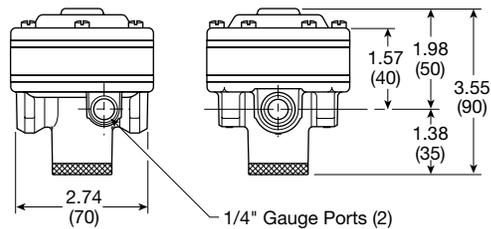
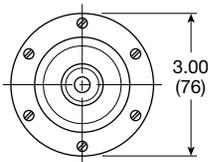
Body, ring, top plate	Zinc
Bottom plug	Nylon
Innervalve	Brass
Seals	Buna N

## Repair and Service Kits

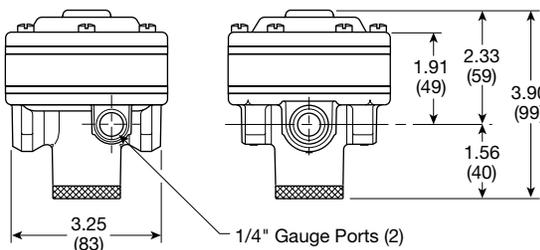
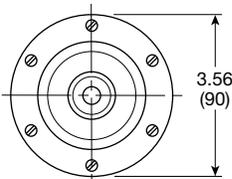
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Non-relieving diaphragm, valve assembly (1/2")	<b>RK118X20A</b>
Non-relieving diaphragm, valve assembly (1/4", 3/8")	<b>RK118X20Y</b>
Relieving diaphragm, valve assembly (1/2")	<b>RK119X20A</b>
Relieving diaphragm, valve assembly (1/4", 3/8")	<b>RK119X20Y</b>

For fluorocarbon repair kits, add X64 to kit number suffix.  
For non-bleed pilot repair kits, add X71 to kit number suffix.

### R119-02J, R119-03J



### R119-04J

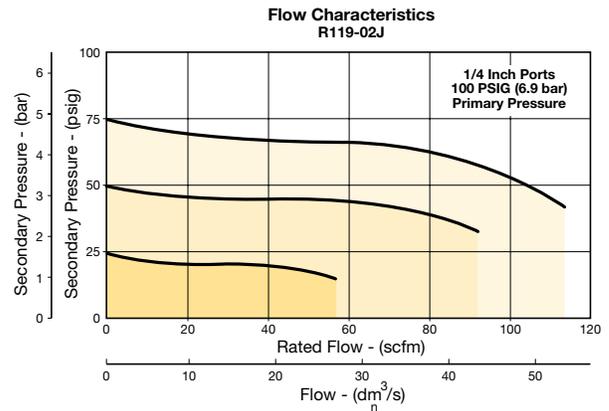


Inches (mm)

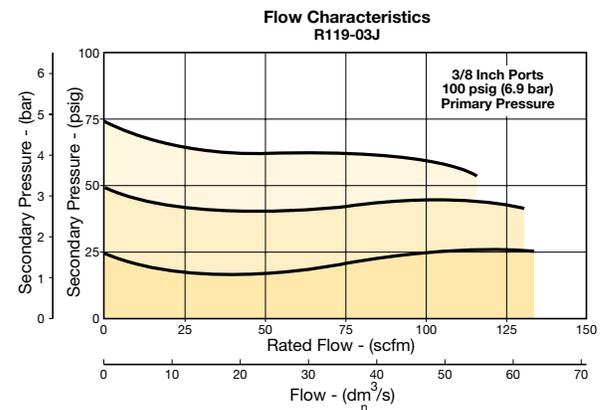
# Air Preparation Products Regulator Products

## Flow Charts

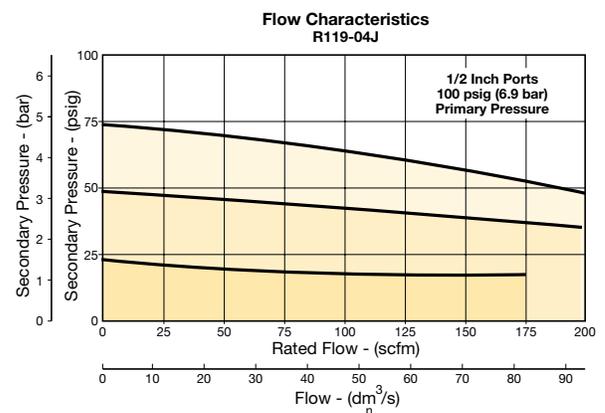
### 1/4" Regulator



### 3/8" Regulator



### 1/2" Regulator



**⚠ WARNING**

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

General

Dial

Pilot

Proportional

Precision

Water

**K**

Regulator Products

**Hi-Flow Regulators**

**R119 Pilot Operated Regulators - Hi-Flow**

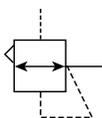
- Adapted for control by a remote or distant small pilot regulator. Ideal for maximum capacity requirements in applications where units are not readily accessible
- High flow performance featuring rugged design for the most demanding applications
- Ideal for those installations calling for constant pressure with wide variation in flow
- Diaphragm operated design with balanced poppet and constant bleed pilot for quick and accurate regulation
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Reverse flow version available
- 3/4", 1", 1-1/2" ports (NPT, BSPP)



**Operating information**

Supply pressure (max):	300 psig (0 to 20.7 bar)	
Air consumption:	Constant bleed from air pilot chamber: approx. 0.17 scfm (10 scfh)	
Operating temperature:	40°F to 125°F (4.4°C to 52°C)	
Reduced pressure range:	Adjustable to within 5 to 7 psig (0.34 to 0.48 bar) of supply pressure	
Flow capacity†:		
High flow	3/4"	300 scfm (141.6 dm³/s, ANR)
	1"	300 scfm (141.6 dm³/s, ANR)
	1-1/2"	500 scfm (236 dm³/s, ANR)
Gauge ports (2):	1/4 inch	
Weight:	3/4"	5.2 lb (2.36 kg)
	1"	5.2 lb (2.36 kg)
	1-1/2"	5.6 lb (2.54 kg)

† scfm = Standard cubic feet per minute at 100 psig inlet, 75 psig no flow secondary setting and 20 psig pressure drop.



Port Size	Description (0-125 psig reduced pressure)	Part Number
3/4"	Without gauge, relieving, NPT	<b>R119-06J/M2</b>
1"	Without gauge, relieving, NPT	<b>R119-08J/M2</b>
1-1/2"	Without gauge, relieving, NPT	<b>R119-12J/M2</b>

**Ordering Information:**

**R119 - 06 J [ ] /\*\***

<b>Port Threads</b>		<b>Engineering Level</b>
NPT	-	/** Will Be Entered at Factory
BSPP	G	
<b>Port Size</b>		<b>Options</b>
3/4 inch	06	Blank None
1 inch	08	K Non-Relieving
1-1/2 inch	12	X64* Fluorocarbon O-Rings and Diaphragm
		X71 Non-Bleed (for use with electronic controllers)
		X80 Reverse Flow
<b>Reduced Pressure Range</b>		
Air Pilot Operated	J	

\* Brass bottom plug standard with X64 option.

Most popular.

# Hi-Flow Regulators

## Material Specifications

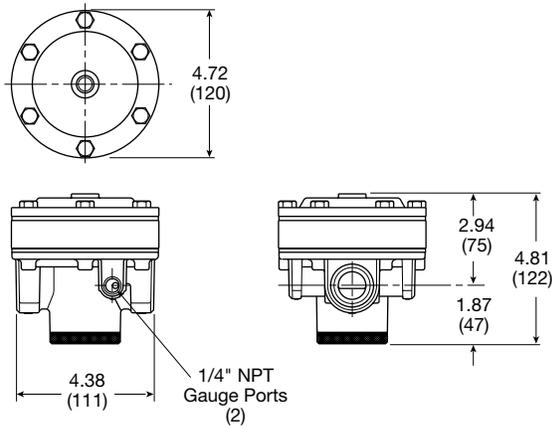
Body, ring, top plate	Zinc
Bottom plug, innervalve	Brass
Seals	Buna N

## Repair and Service Kits

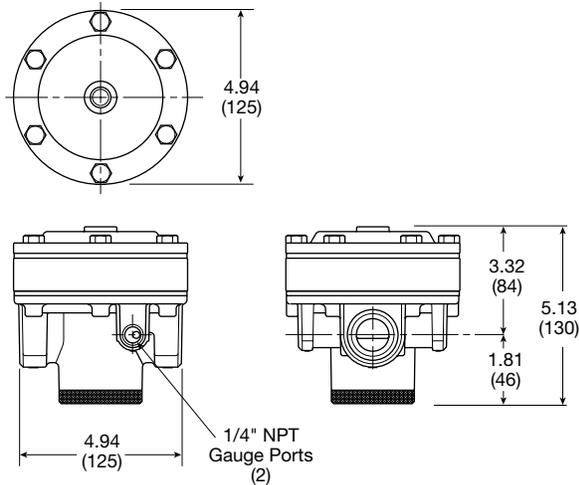
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Non-relieving diaphragm, valve assembly (3/4", 1")	<b>RK118X20B</b>
Non-relieving diaphragm, valve assembly (1-1/4", 1-1/2")	<b>RK118X20D</b>
Relieving diaphragm, valve assembly (3/4", 1")	<b>RK119X20B</b>
Relieving diaphragm, valve assembly (1-1/4", 1-1/2")	<b>RK119X20D</b>

For Fluorocarbon Repair Kits, add X64 to Kit Number suffix.

### R119-06J, R119-08J



### R119-12J

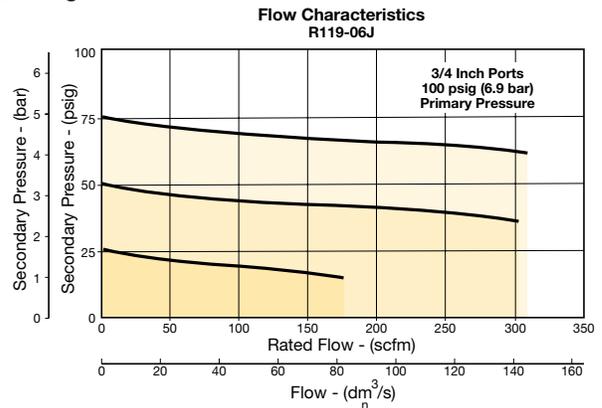


Inches (mm)

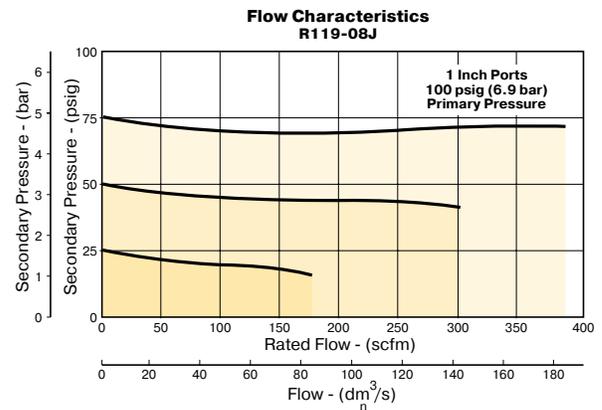
# Air Preparation Products Regulator Products

## Flow Charts

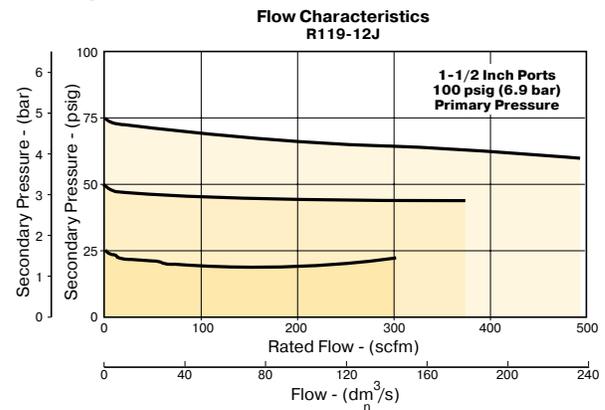
### 3/4" Regulator



### 1" Regulator



### 1-1/2" Regulator



## WARNING

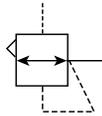
**Product rupture can cause serious injury.  
Do not connect regulator to bottled gas.  
Do not exceed Maximum primary pressure rating.**



**Hi-Flow Regulators**

**R119 Pilot Operated Regulators - Hi-Flow**

- Adapted for control by a remote or distant small pilot regulator. Ideal for maximum capacity requirements in applications where units are not readily accessible
- High flow performance featuring rugged design for the most demanding applications
- Ideal for those installations calling for constant pressure with wide variation in flow
- Piston operated design with balanced poppet and dual constant bleed for quick and accurate regulation
- 2" (NPT, BSPP)



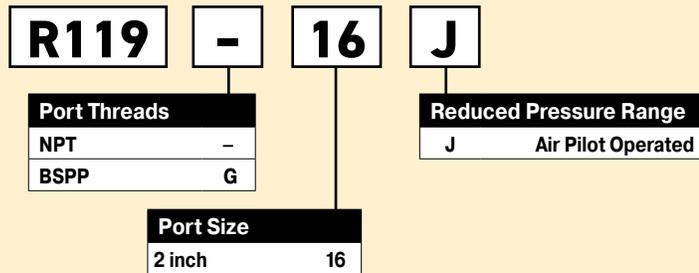
Port Size	Description (0-125 psig reduced pressure)	Part Number
2"	Without Gauge, Relieving, NPT	<b>R119-16J</b>

**Operating information**

Supply pressure (max):	300 psig (0 to 20.7 bar)
Air consumption:	
Constant bleed from	Air pilot chamber: approx. 0.17 scfm (10 scfh) Reduced pressure: approx. 0.17 scfm (10 scfh)
Operating temperature:	40°F to 120°F (4.4°C to 48.9°C)
Reduced pressure range:	Adjustable to within 5 to 7 psig (0.34 to 0.48 bar) of supply pressure
Flow capacity†:	
High flow	2" 1800 scfm (850 dm³/s, ANR)
Gauge ports (2):	
Can be used for full flow	1/4 inch
High pressure outlet for pilot	1/4 inch
Weight:	15 lb (6.8 kg)

† scfm = Standard cubic feet per minute at 100 psig inlet, 75 psig no flow secondary setting and 20 psig pressure drop.

**Ordering Information:**



NOTE: Non-relieving not available.

Most popular.



## Hi-Flow Regulators

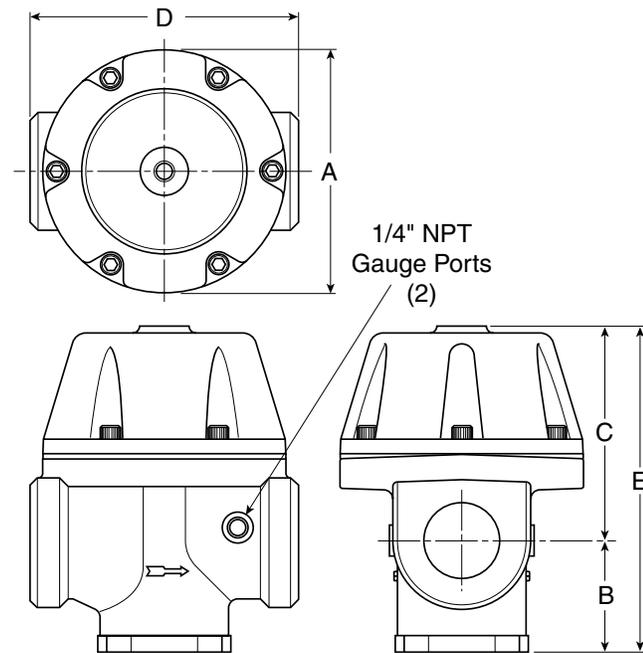
### Material Specifications

Body, piston	Aluminum
Seals	Buna N
Innervalve	Brass & stainless

### Repair and Service Kits

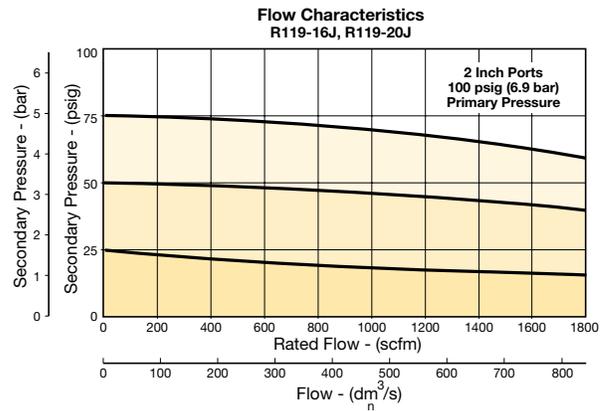
2" dial face 60 psig (0 to 4.1 bar), gauge	<b>K4520N14060</b>
2" dial face 160 psig (0 to 11.0 bar), gauge	<b>K4520N14160</b>
2" dial face 300 psig (0 to 20.7 bar), gauge	<b>K4520N14300</b>
1-3/4" digital round face 160 psig (0 to 11.0 bar), gauge	<b>K4517N14160D</b>
Piston type regulation (2")	<b>RK119G</b>

### R119-16J



## Air Preparation Products Regulator Products

### Flow Charts



### WARNING

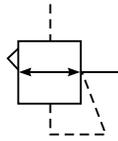
**Product rupture can cause serious injury.  
Do not connect regulator to bottled gas.  
Do not exceed Maximum primary pressure rating.**



**Pilot Operated Regulators**

**P3Y Pilot Operated Regulator**

- Integral 3/4" or 1" ports (BSPP & NPT)
- Pilot controlled regulators can be mounted "out of reach" with pilot regulator installed in a convenient location
- Constant pilot bleed control for accurate pressure control
- Balanced poppet provides quick response
- High flow



**Operating information**

Supply pressure (max):	254 psig (17.5 bar)
Operating temperature:	-40°F to 140°F (-40°C to 60°C)
Flow capacity†:	3/4" 550 scfm (259.6 dm³/s, ANR) 1" 550 scfm (259.6 dm³/s, ANR)
Fluid:	Compressed air
Weight:	2.6 lb (1.2 kg)
† Inlet pressure 145 psig (10 bar) inlet pressure, 91.4 psig (6.3 bar) set pressure and 7.3 psig (0.5 bar) pressure drop.	

Port Size	Description	Part Number
3/4"	Pilot Operated Regulator	<b>P3YRA96BPPN</b>
1"	Pilot Operated Regulator	<b>P3YRA98BPPN</b>

**Ordering Information**

P3YRA
|
9
|
6
|
BPPN

Basic Series	Thread Type*	Port Size										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #333; color: white; padding: 2px;">Pilot Operated Regulator</td> <td style="padding: 2px;"><b>P3YRA</b></td> </tr> </table>	Pilot Operated Regulator	<b>P3YRA</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #333; color: white; padding: 2px;">BSPP</td> <td style="padding: 2px; text-align: center;"><b>1</b></td> </tr> <tr> <td style="background-color: #333; color: white; padding: 2px;">NPT</td> <td style="padding: 2px; text-align: center;"><b>9</b></td> </tr> </table>	BSPP	<b>1</b>	NPT	<b>9</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #333; color: white; padding: 2px;">3/4</td> <td style="padding: 2px; text-align: center;"><b>6</b></td> </tr> <tr> <td style="background-color: #333; color: white; padding: 2px;">1</td> <td style="padding: 2px; text-align: center;"><b>8</b></td> </tr> </table>	3/4	<b>6</b>	1	<b>8</b>
Pilot Operated Regulator	<b>P3YRA</b>											
BSPP	<b>1</b>											
NPT	<b>9</b>											
3/4	<b>6</b>											
1	<b>8</b>											

**\* Note:**  
For 1-1/2" ported unit, please order P3YKA\*BCP port block kit separately.

Most popular.



## Pilot Operated Regulators

### Material specifications

Body	Aluminium
Body cover	ABS
Valve	Brass / NBR composite
Pilot valve booster	Aluminum
Seals	Nitrile NBR
Screws	Zinc plated steel



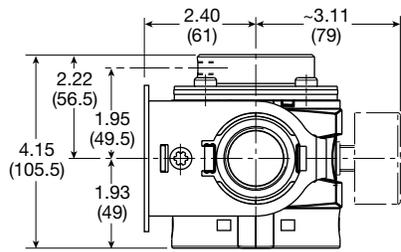
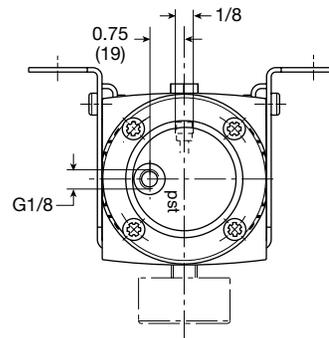
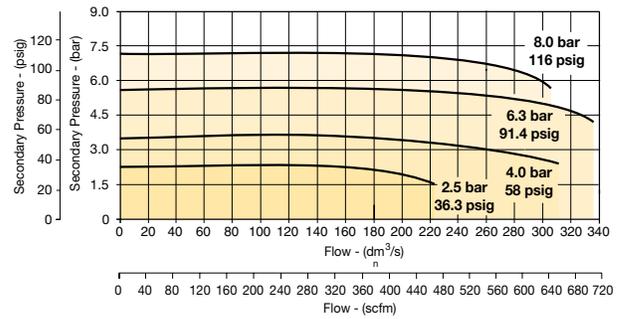
### WARNING

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

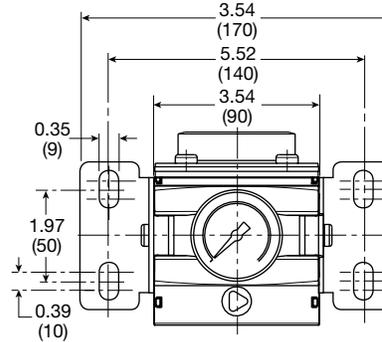
## Air Preparation Products Regulator Products

### Flow characteristics

#### 3/4" and 1" Pilot Regulator



Inches (mm)



General

Dial

Pilot

Proportional

Precision

Water

**K**

Regulator Products



**Proportional Regulators**

**P31P & P32P Proportional Regulators**

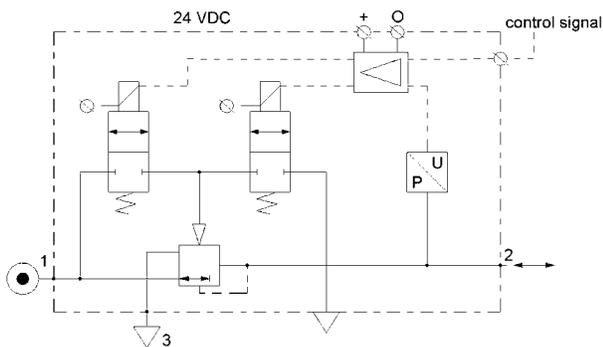
- Very fast response times
- Accurate output pressure
- Parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65



**P31P Series  
Bottom exhaust**



**P32P Series  
Bottom exhaust**



Port Size	Description	Part Number
1/4"	145 psig (0-10 bar), NC 0-10V	<b>P31PA92AD2VD1A</b>
1/2"	145 psig (0-10 bar), NC 0-10V	<b>P32PA92AD2VD1A</b>

**Operating information**

Flow capacity*:	P31P	40 scfm (19 dm <sup>3</sup> /s, ANR)
	P32P	120 scfm (57 dm <sup>3</sup> /s, ANR)
Temperature range:	32°F to 122°F (0°C to 50°C)	
Supply pressure (max):	2 bar unit	36.3 psig (2.5 bar)
	10 bar unit	152 psig (10.5 bar)
Operating pressure (min):	P2 pressure + 7.3 psig (0.5 bar)	
Working medium:	Compressed air or inert gasses, filtered to 40µ	
Pressure range:	0 to 30 psig (0 to 2 bar)	
	0 to 145 psig (0 to 10 bar)	
Weight:	P31P	0.64 lb (0.291 kg)
	P32P	1.42 lb (0.645 kg)

\* Inlet pressure 91.3 psig (6.3 bar), inlet pressure and 4.9 psig (0.34 bar) pressure drop.

**Ordering Information:**

**P31PA 9 2 A D 2 V D 1 A**

<b>Body Size</b>	<b>Thread Type</b>	<b>Power Supply</b>	<b>Control Signal</b>	<b>Input Connector</b>
Global Modular Mini (1/4") P31PA	BSPP 1	2 24 Volts	V 0-10V <sup>†</sup>	1 M12 (4-pin)
Global Modular Compact (1/2") P32PA	BSPT 2	<b>Pressure Range</b>	† Factory setting is 0-10 V control signal. 4-20 mA control signal available via parameter 4 on keypad.	<b>Output Signal</b>
	NPT 9	Z 0 - 29 psig (0 - 2 bar)		D Digital, PNP
<b>Port Size</b>		D 0 - 145 psig (0 - 10 bar)		P PNP or 0-10V
Global Modular Mini (1/4") 2				N NPN or 0-10V
Global Modular Compact (1/2") 4				M 4-20mA Fixed
<b>Version</b>				D) Digital PNP output only, no analog output selectable
Bottom Ported Exhaust (NC) A				P) Digital PNP and analogue 0-10V outputs selectable, by means of parameter 6. (Factory default 0-10V)
Bottom Ported Forced Exhaust (NO) <sup>†</sup> E				N) Digital NPN and analogue 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.

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

☐ Most popular.



# Proportional Regulators

## Technical Information

### Accuracy

+/- 1.0% of F.S.\*

\* Full scale (F.S.) - For 2 bar (29 psig) versions this will be 2 bar (29 psig), for the 10 bar (145 psig) version full scale will be 10 bar (145 psig).

### 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

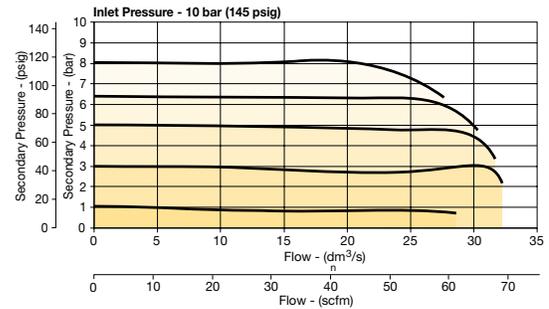
The electrical connections are as follows:

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

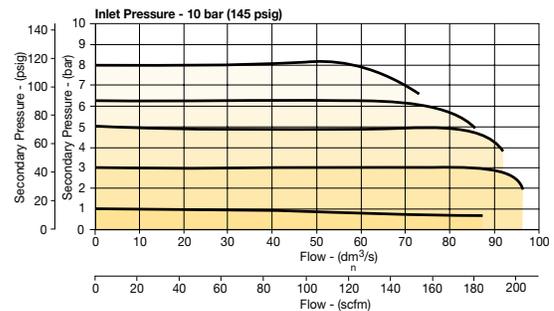
# Air Preparation Products Regulator Products

## Flow Charts

### P31P Regulator 1/4" Ports



### P32P Regulator 1/2" Ports



Degree of protection: IP65

### EU conformity

CE: standard

EMC: according to directive 89/336/EEC

This pressure regulator is in accordance with:

**EN 61000-6-1:2001**

**EN 61000-6-2:2001**

**EN 61000-6-3:2001**

**EN 61000-6-4:2001**

### Mounting position

Preferably vertical, with the cable gland on top.

### Materials: P31P & P32P

Magnet core	Steel
Solenoid valve poppet	FPM
Solenoid valve housing	Techno polymer
Regulator body (P31P & P32P versions)	Aluminum
Regulator top housing	Nylon
Valve head	Brass & NBR
Remaining seals	NBR



**Proportional Regulators**

**How to change parameters – How to Videos available at [www.pdnetools.com](http://www.pdnetools.com)**

Pressing the Accept key “acc” for more than 3 seconds, will activate parameter change mode. The user can then select the parameters by pressing up or down key (display will show Pxx). When parameter number is correct, pressing accept again will enter parameter number (display will show parameter value).

Pressing the up or down key will change the parameter itself (display will flash indicating parameter editing mode). Pressing the accept key will accept the new parameter value (all digits will flash whilst being accepted).

After releasing all keys, the next parameter number will be presented on the display (you may step to the next parameter). When no key is pressed, after 3 seconds the display will show the actual output pressure.

When the unit is initially powered up allow approximately 10 seconds for the unit to “boot-up” before changing parameter settings.

Only parameter numbers 0, 4, 6, 8, 9, 14, 18, 19, 20, 12, 13 and 21 are accessible to edit. All other parameters are fixed.

**Manual mode:**

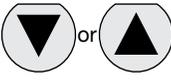
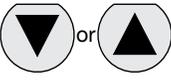
When keys DOWN and UP are pressed during startup, (connecting to the 24V power supply) manual mode is activated. This means that the user is able to in/decrease the output pressure of the regulator, by pressing the UP or DOWN key. During this action the display will blink, indicating that the manual mode is activated. After powering up again, the unit will revert back to normal mode.

**Back to Factory Setting**

After start up. (Power is on)

Entering this value in parameter 0 will store the calibrated factory data into the working parameters. (Default calibration data is used)

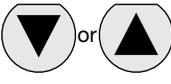
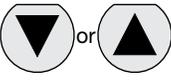
**Parameter Number 0 - Reset Back to Factory Settings**

Step	1	2	3	4	5	
 <b>Press</b>  3-6 seconds						
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 0.	Displays current parameter value.	Edits parameter. 3 = standard factory settings. If other than 3, use Up or Down Arrow and accept 3	Accepts and saves new parameter setting.	Sequences to next parameter.

**Set Control Signal**

The unit is factory set for 0-10 V control signal. If 4-20 mA control signal is required, change parameter 4.

**Parameter Number 4 - Set Control Signal in Volts or Milliamps**

Step	1	2	3	4	5	
 <b>Press</b>  3-6 seconds						
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 4.	Displays current parameter value. 1 = V 0 = mA	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

How to Videos at [www.pdnetools.com](http://www.pdnetools.com)

General

Dial

Pilot

Proportional

Precision

Water

K

Regulator Products



**Proportional Regulators**

**Set Output Signal**

Parameter 6 is used to set the type of output signal to your PLC.  
This parameter is used as follows:

**Output Signal option "0" = Digital Output - PNP**

- Factory set at "0" Non Adjustable

**Output Signal option "P" = Digital PNP or Analog 1-10V**

- Factory set at "1" for Analog Signal
- Convert to Digital PNP by changing parameter to "0" setting

**Output Signal option "N" = Digital NPN or Analog 1-10V**

- Factory set at "1" Analog Signal
- Convert to Digital NPN by changing parameter to "0"

**Output Signal option "M" = Analog 4-20 mA**

- Factory set at "2" Non Adjustable

General

Dial

Pilot

Proportional

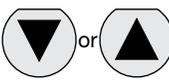
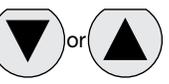
Precision

Water

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Regulator Products

**Parameter Number 6 - Set Output Signal**

Step	1	2	3	4	5	
 Press 3-6 seconds						
Until Display Reads			 Flashing Decimal	 Flashing Decimal (Value 0, 1 or 2)	 Flashing	
Description	Accesses changeable parameters.	Accesses parameter no. 6.	Displays current parameter value. 1 = m factory default for P3H with analog options	Edits parameter. 0 = digital (NPN or PNP) 1 = analog 0..10V 2 = analog 4..20 mA	Accepts and saves new parameter setting.	Sequences to next parameter.

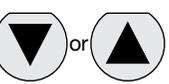
**Adjust Span Analog Output Signal**

Set value is a % of Full Analog range. As an example for a 0-10V output signal, the original factory setting of 100% will give you an adjustment of 0-10V. If you reset Parameter 8 to 50%, the new output range would be 0-5V or 50% of the full range.

In the event that the output signal is too low, in a certain application, you can adjust it by increasing Parameter 8 to a maximum value of 130% of scale.

Note that all values are nominal and that an actual measurement may be required to ensure signal strength.

**Parameter Number 8 - Adjust Span Analog Output Signal**

Step	1	2	3	4	5	
 Press 3-6 seconds						
Until Display Reads			 Flashing Decimal (For 2 bar versions value = 92)	 Flashing Decimal (Value between 0 and 130)	 Flashing	
Description	Accesses changeable parameters.	Accesses parameter no. 8.	Displays current parameter value.	Edits parameter.	Accepts and saves new parameter setting and implements the new analog signal span.	Sequences to next parameter.

How to Videos at [www.pdnetools.com](http://www.pdnetools.com)

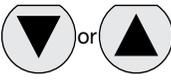
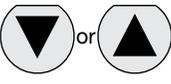


**Proportional Regulators**

**Adjust Digital Display**

If necessary, adjustments can be made to the digital display when using an external pressure sensor.

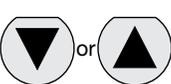
**Parameter Number 9 - Adjust Digital Display Value (Pressure Calibration)**

Step	1	2	3	4	5	
<b>Press</b> 	 3-6 seconds					
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 9.	Displays current digital display	Use up or down arrows and accept to adjust the display value if using an external pressure sensor.	Accepts and saves new parameter setting.	Sequences to next parameter.

**Set Pressure Scale**

Units with NPT port threads are supplied with a factory set psig pressure scale. Use parameter 14 to change scale to bar.

**Parameter Number 14 - Set Pressure Scale in psig or bar**

Step	1	2	3	4	5	
<b>Press</b> 	 3-6 seconds					
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 14.	Displays current parameter value. 1 = psig 0 = bar 2 = MPa	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

How to Videos at [www.pdnetools.com](http://www.pdnetools.com)

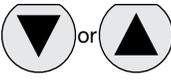
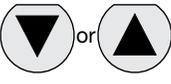


**Proportional Regulators**

**Preset Minimum Pressure**

If there is a need for a pre-set Minimum pressure, use parameter 18. (Note: preset pressure is affected by % P19.)

**Parameter Number 18 - Set Minimum Preset Pressure**

Step	1	2	3	4	5	
<b>Press</b> 	 3-6 seconds					
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal (value between 0 and 200)	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 18.	Displays current parameter value. Incremental value is: 2 bar unit: x 2 mbar x % P19 10 bar unit: x 10 mbar x % P19	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

**Set Pressure Correction**

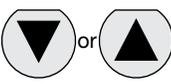
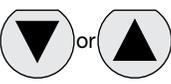
Pressure correction allows the user to set a Maximum pressure as a percentage of secondary pressure F.S.

**Example:** If F.S. is 10 bar, set parameter 19 to 50 for Maximum preset pressure of 5 bar.

Pressure correction also affects the Minimum preset pressure in parameter 18.

**Example:** If F.S. is 10 bar and parameter 18 is set to a value of 100 (1 bar), and parameter 19 is set to 50%, then the actual Minimum preset pressure seen is 0.5 bar.

**Parameter Number 19 - Set Maximum Preset Pressure**

Step	1	2	3	4	5	
<b>Press</b> 	 3-6 seconds					
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal (value between 0 and 100)	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 19.	Displays current parameter value. Incremental value is: % of F.S.	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

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General

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Pilot

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Precision

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Regulator Products

**Proportional Regulators**

**Behavior Control**

The regulation speed of the pressure regulator can be modified by means of one parameter. (P 20)  
The value in this parameter has a range from 0-5. A higher value indicates slower regulation speed, but will be more stable.

**Parameter Number 20 - Set Behavior Control**

Step	1	2	3	4	5	
<b>Press</b> 	 3-6 seconds	 or 		 or 		
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal (value between 0 and 5)	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 20.	Displays current parameter value.	Edits parameter 0 = custom set* 1 = fastest (narrow proportional band) 2 = fast 3 = normal 4 = slow 5 = slowest (proportional band is broad)	Accepts and saves new parameter setting.	Sequences to next parameter.

\* When the value 0 is entered, you are able to create your own custom settings true parameters 12, 13 and 21.

**Fine Settings  
Set Proportional Band**

Proportional band is used for setting the reaction sensitivity of the regulator. The displayed value is X 10 mbar and has a range between 50 (0.5 bar) and 250 (2.5 bar).

**Parameter Number 12 - Set Proportional Band (P20 Must be Set to 0)**

Step	1	2	3	4	5	
<b>Press</b> 	 3-6 seconds	 or 		 or 		
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal (value between 50 and 250)	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 12.	Displays current parameter value. Incremental value is: x 10 mbar	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

How to Videos at [www.pdnetools.com](http://www.pdnetools.com)

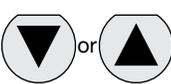
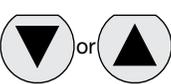


**Proportional Regulators**

**Set Deadband**

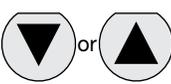
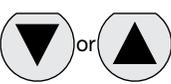
Deadband is the Minimum limit of accuracy at which the regulator is set for normal operation. The displayed value is X 10 mbar and has a range between 4 (40 mbar) and 40 (400 mbar).

**Parameter Number 13 - Set Deadband (P20 Must be Set to 0)**

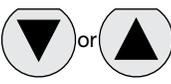
Step	1	2	3	4	5	
<b>Press</b> 	 3-6 seconds					
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal (value between 4 and 40)	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 13.	Displays current parameter value. Incremental value is x 10 mbar	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

**Proportional Effect**

**Parameter Number 21 - Set Proportional Effect (P20 Must be Set to 0)**

Step	1	2	3	4	5	
<b>Press</b> 	 3-6 seconds					
<b>Until Display Reads</b>			 Flashing Decimal	 Flashing Decimal (value between 5 and 100)	 Flashing	
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 21.	Displays current parameter value.	Edits parameter. 5 = fastest regulation 100 = slowest regulation.	Accepts and saves new parameter setting.	Sequences to next parameter.

**Parameter Number 39 - Displays Current Software Version**

Step	1	2	3
<b>Press</b> 	 3-6 seconds		
<b>Until Display Reads</b>			 Flashing Decimal
<b>Description</b>	Accesses changeable parameters.	Accesses parameter no. 39.	Displays current parameter value. XXX = current software version

How to Videos at [www.pdnetools.com](http://www.pdnetools.com)

General

Dial

Pilot

Proportional

Precision

Water

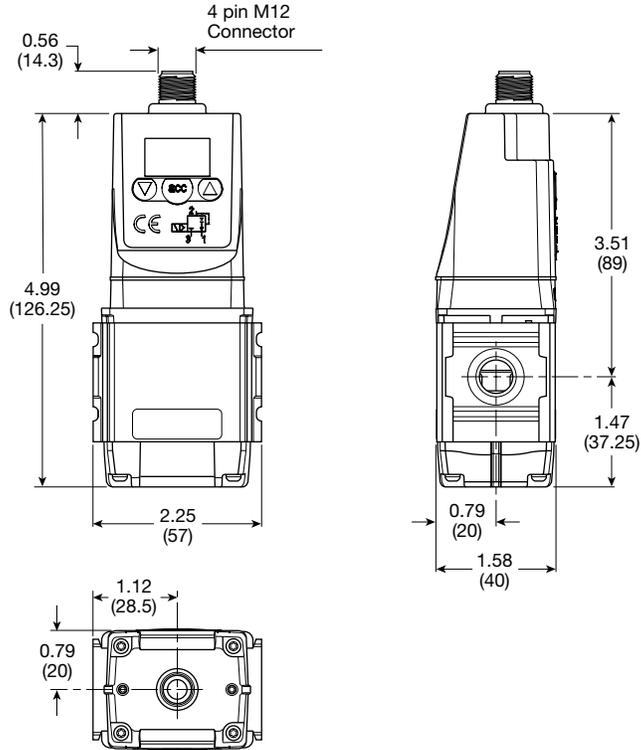
**K**

Regulator Products

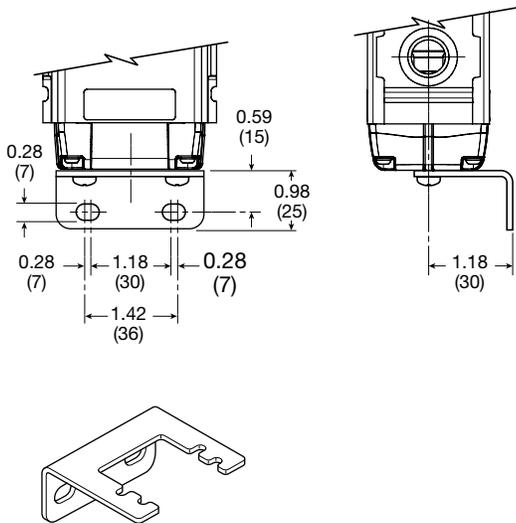
**Proportional Regulators**

**P31P**

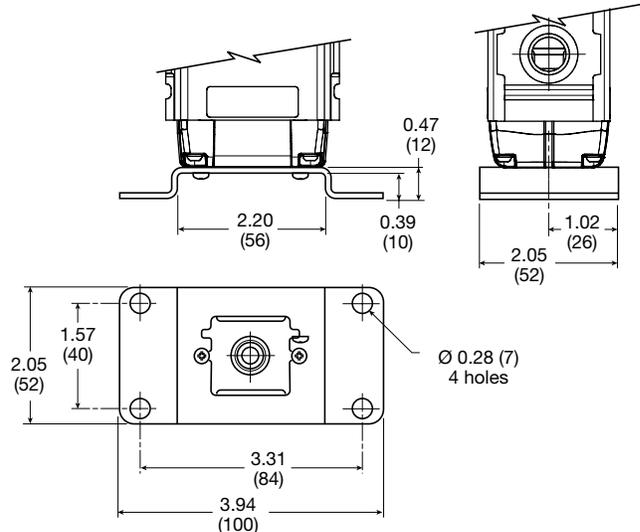
Dimensions inches (mm)



**L-Bracket  
P3HKA00ML**



**Foot Bracket  
P3HKA00MC**



**Cables**

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

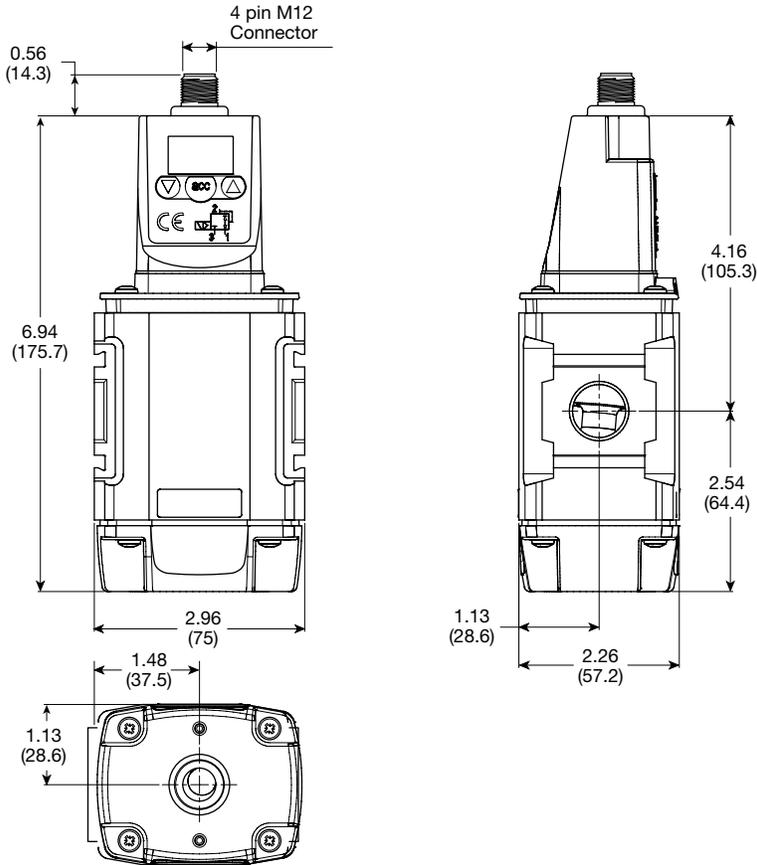
Most popular.

# Proportional Regulators

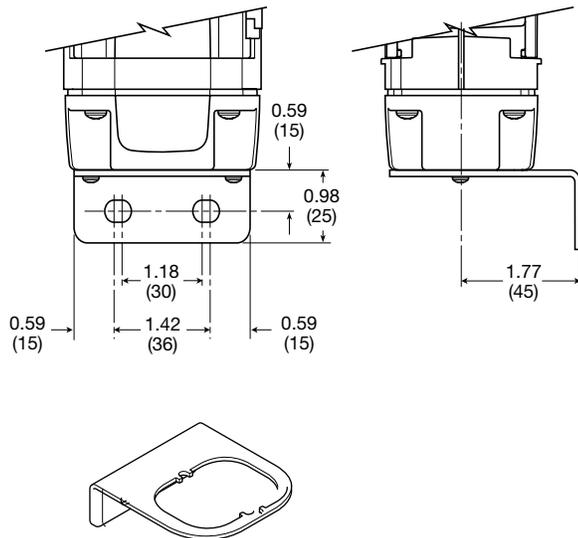
# Air Preparation Products Regulator Products

## P32P

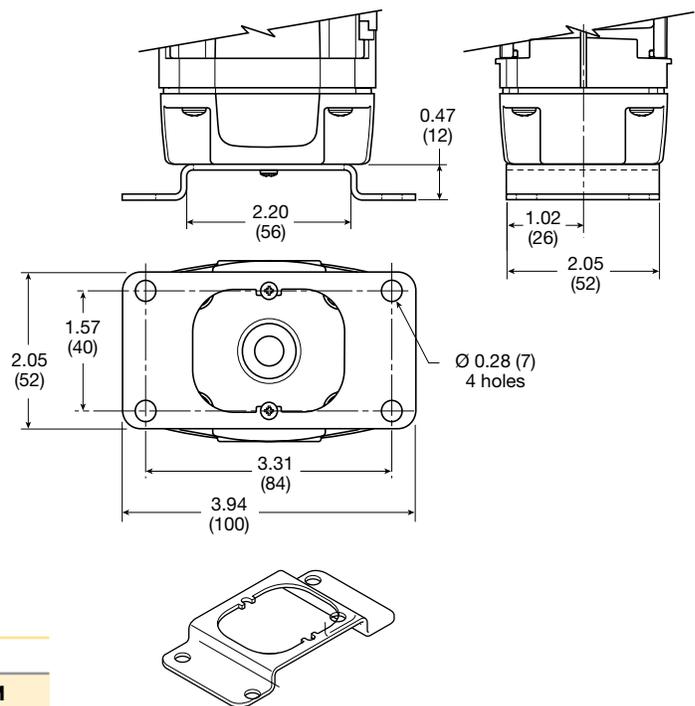
Dimensions inches (mm)



## L-Bracket P3KKA00ML



## Foot Bracket P3KKA00MC



## Cables

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

Most popular.

General

Dial

Pilot

Proportional

Precision

Water

**K**

Regulator Products

**Programmable Air Regulating Valve**

**PAR™-15 Programmable Air Regulating Valve**

PAR™-15 is a unique 3-Way, programmable, air regulating valve that functions as a precise, high-flow, multi-purpose regulator.

Signals from a computer, programmable controllers or from simple electrical switches, fed to the valve's four solenoids, control the division of a single inlet pressure into any one of fifteen equally spaced output pressures.

The valve's response is instant and repeatable, reducing the need for expensive feedback controls.

It goes far beyond the capabilities of conventional controls by providing a limitless range of application possibilities including cylinder pressure/stroke control, clamping, retracting, approach, flow, and impact.

PAR™-15 eliminates shock absorbers, increases tool life, saves air, and reduces workpiece damage.

- Full flow capacity for direct air device operation.
- Quick, full flow exhaust.
- Instantly repeatable response.
- Air saving design, close crossover, non-constant bleed.
- Wide range of discrete output pressures.
- Normally closed or normally open operators.
- Compatible with computers and programmable controllers with digital solid state relay outputs.
- Meets NEMA 4 standard (6-Pin option only).

**Life Expectancy**

Normal multi-million cycle life expectancy of these valves is based on the use of properly filtered air at room temperature.



**No Enclosure**



**NEMA 4 Enclosure - 6-Pin Connector**

**Operating information**

Pressure range:	
Inlet (max)	150 psig (1035 kPa)
Output (min)	6 psig (41 kPa)
Temperature range (ambient)†:	32°F to 140°F (0°C to 60°C)
Voltage range:	+10% to -10% of rating
Flow capacity:	
Inlet to outlet	275 scfm (129.8 dm³/s, ANR)
Outlet to exhaust	225 scfm (106.2 dm³/s, ANR)
Output response:	20 milliseconds
Weight:	
Without enclosure	6.3 lb (2.9 kg)
With 6-pin & cord	8.0 lb (3.6 kg)

**⚠ † Caution: If it is possible that the ambient temperature may fall below freezing, the media must be moisture free to prevent internal damage or unpredictable behavior.**

**Solenoid Operated – Normally Closed – Internal Pilot\***

Port Size			Solenoid Operated – Normally Closed – Internal Pilot*		
			No Enclosure	NEMA 4 Enclosure - 6-Pin Connector	
Body	Pilot	Voltage/Cycle	Quadrant 2 †	Quadrant 4 †	Quadrant 4 †
1/2"	1/8"	24V/60Hz	<b>W21540172B</b>	<b>W21542172B</b>	<b>W21544172B</b>
1/2"	1/8"	12VDC	<b>W21540175B</b>	<b>W21542175B</b>	<b>W21544175B</b>
1/2"	1/8"	24VDC	<b>W21540179B</b>	<b>W21542179B</b>	<b>W21544179B</b>
1/2"	1/8"	110/120V / 50/60Hz	<b>W21540183B</b>	<b>W21542183B</b>	<b>W21544183B</b>

\* Normally open and external pilot options also available.

† Theoretically Quadrant 1 is defined as the 6-Pin connector on the same face with the inlet port. Looking from the top down and rotating the enclosure clockwise 90° you get Quadrant 2 or 270° for Quadrant 4.

**Material Specifications**

Body, Bottom and Top Plates	Aluminum
Divider	Aluminum
Piston	Acetal
Poppet	Aluminum
Poppet guide	Aluminum
Poppet seal	Fluorocarbon
Seals	Nitrile
Spring	Stainless steel

Most popular.

**Lubrication**

Although the valve does not require lubrication for a normal service life, use of SAE 10 mineral base oil is recommended to extend component life. This should be supplied using a 1/2 inch full flow lubricator located upstream of the valve inlet port.

**CAUTION: DO NOT USE SYNTHETIC, RECONSTITUTED, OR OILS WITH AN ALCOHOL CONTENT.**

**Wiring**

Follow all national and local electrical codes.

General  
Dial  
Pilot  
Proportional  
Precision  
Water  
K  
Regulator Products



Ordering Information:

<b>W21</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>83</b>	<b>L</b>	<b>B</b>
<b>Basic Series</b> PAR™-15 Version 2.0 W21	<b>Actuation</b> Solenoid Operated 5	<b>Port Size / Thread Type</b> 1/2" NPT 4			<b>Voltage</b> 72 24V/60 Hz 75 12VDC 79 24VDC 83 120/110V 60/50 Hz	<b>Label / Temp Option</b> Blank Standard Temperatures	<b>Engineering Level</b> B Current
				<b>Solenoid Type / Pilot Source</b>			
				1 Normally Closed / Internal Pilot			
				3 Normally Closed / External Pilot			
				5 Normally Open / Internal Pilot			
				7 Normally Open / External Pilot			
<b>Enclosure / Connector Quadrant</b>							
No Enclosure	0	Nema 4 Enclosure with 6-pin Micro Connector at Quadrant 4, Cord Included				F	
Metal Enclosure with 7/8" Conduit Opening at Quadrant 2	1	Nema 4 Enclosure with 6-pin Micro Connector at Quadrant 2, No Cord				G	
Nema 4 Enclosure with 6-pin Mini Connector Quadrant 2, Cord Included	2	Nema 4 Enclosure with 6-pin Micro Connector at Quadrant 4, No Cord				H	
Metal Enclosure with 7/8" Conduit Opening at Quadrant 4	3	Lighted Enclosure with 6-pin Micro Connector at Quadrant 2, Cord Included				K*	
Nema 4 Enclosure with 6-pin Mini Connector Quadrant 4, Cord Included	4	Lighted Enclosure with 6-pin Micro Connector at Quadrant 2, No Cord				L*	
Nema 4 Enclosure with 6-pin Mini Connector Quadrant 2, No Cord	5	Lighted Enclosure with 6-pin Mini Connector at Quadrant 4, Cord Included				M*	
Nema 4 Enclosure with 6-pin Mini Connector Quadrant 4, No Cord	6	Lighted Enclosure with 6-pin Mini Connector at Quadrant 4, No Cord				N*	
Lighted Enclosure with 6-pin Mini Connector at Quadrant 2, Cord Included	B*	Lighted Enclosure with 6-pin Micro Connector at Quadrant 4, Cord Included				P*	
Lighted Enclosure with 6-pin Mini Connector at Quadrant 2, No Cord	C*	Lighted Enclosure with 6-pin Micro Connector at Quadrant 4, No Cord				Q*	
Nema 4 Enclosure with 6-pin Micro Connector at Quadrant 2, Cord Included	E						

Theoretically, Quadrant 1 is defined as the 6-Pin Connector on the same face with the inlet port. Looking from the top down and rotating the enclosure clockwise 90° you get Quadrant 2 or 270° for Quadrant 4.

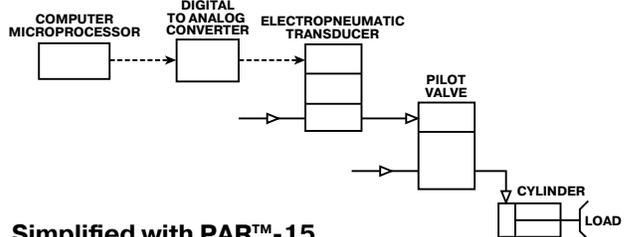
\* Available in 24VDC and 120VAC Only. Not NEMA 4 rated.

Electropneumatic System

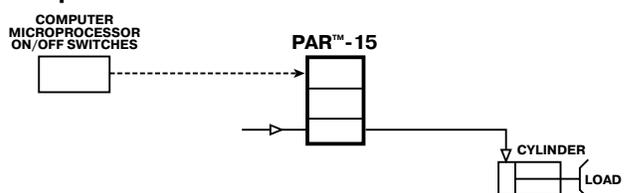
A conventional system is usually composed by several electronic and pneumatic components as shown on the schematic. The cylinder which is moving a load is operated with a pilot valve which receives the instructions from an electro-pneumatic transducer. The transducer converts electronic signals to pneumatic signals. These electronic signals are usually of an analog type, but controllers/computer microprocessors send digital signals as outputs, therefore, a digital to analog signal converter is required.

The simplified schematic with the PARTM-15 is reduced to fewer components since the PARTM-15 takes the place of the digital to analog converter, the electro-pneumatic transducer, and the pilot valve. The benefits being fewer components, and less maintenance and downtime.

Conventional

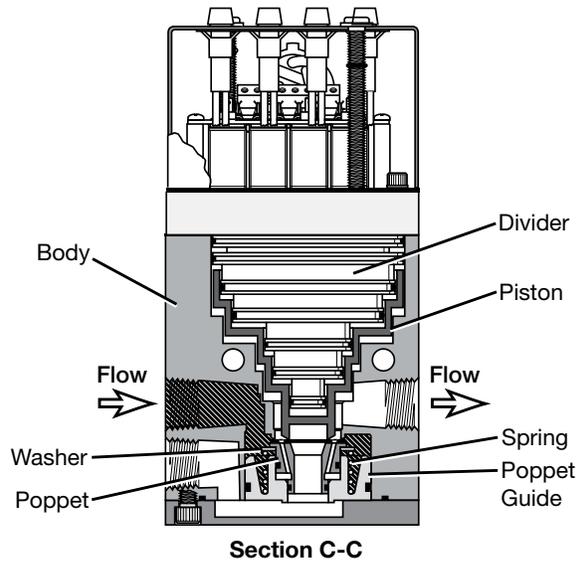
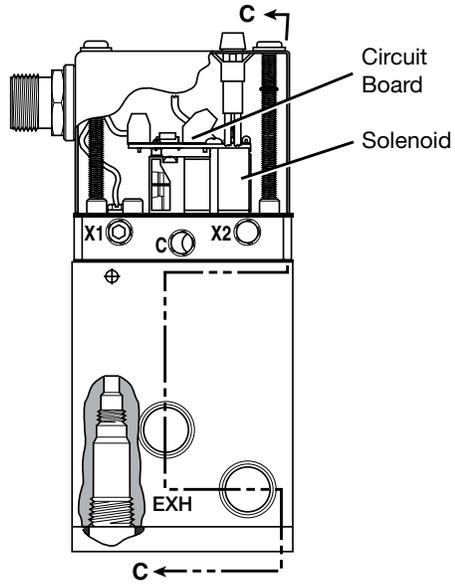


Simplified with PAR™-15



**Programmable Air Regulating Valve**

General
Dial
Pilot
Proportional
Precision
Water
<b>K</b>
Regulator Products



**Application**

Pneumatic systems operating under multiple pressures, and requiring almost instantaneous pressure changes are good application cases for the PAR™-15. Usually the more pressures needed for a particular operation, the easier it is to justify the valve, since it will take the place of several pneumatic regulators and selector valves.

Among the most common applications are brakes and clutches, painting, printing feeds and tension, robotics, and spot welding.

**Other Applications:**

- Air Chucks
- Air Cylinder Control
- Air Winches
- Blow Molding Control
- Contact Force Control
- Conveyor Control
- Die Cushioning
- Dynamic Braking
- Fuel Control
- Hopper Control
- Robot Gripper Control
- Valve Positioning
- Variable Clamping
- Variable Pressure Processing
- Torque Control
- Wire Tensioning

**Operation**

Four solenoids are controlled by on/off signals that selectively

divide any input pressure into any one of 15 equally spaced pressures plus zero. See the truth table.

Full flow exhaust permits instant reduction to any lower selected pressure or zero. High relief capacity quickly vents downstream overpressure. The output pressure will begin to change within 20 milliseconds after a change in the electrical input to one or more of the solenoids. However, the time which elapses until the output pressure reaches the new level will depend upon the volume of air, the size of the connection from the PAR™-15 valve and the magnitude of the pressure change.

A small regulator may be used to feed the external pilot port X1 on units with normally closed solenoid operators or X2 on units with normally open solenoid operators. The PAR™-15 valve will then divide this pressure independent of mainline supply pressure so long as the pilot regulator is set to a pressure below the mainline supply pressure. A regulated external supply will eliminate the effects of fluctuating mainline pressures. (NOTE: A regulator placed upstream of the inlet also eliminates the effects of fluctuating pressures).

The PAR™-15 is available with two types of output pressure regulation: increasing output and decreasing output. In the increasing output pressure regulation type, normally closed solenoid operators are used to divide the input pressure into 15 equal steps, ranging from 0 PSIG (all solenoid operators de-energized) to full line pressure (all solenoid operators energized). With the decreasing output pressure regulation type, normally open solenoid operators are used to divide the input pressure into 15 equal steps, but starting with full line pressure (all solenoid operators de-energized) and ending with 0 PSIG (all solenoid operators energized).



**Truth Table**

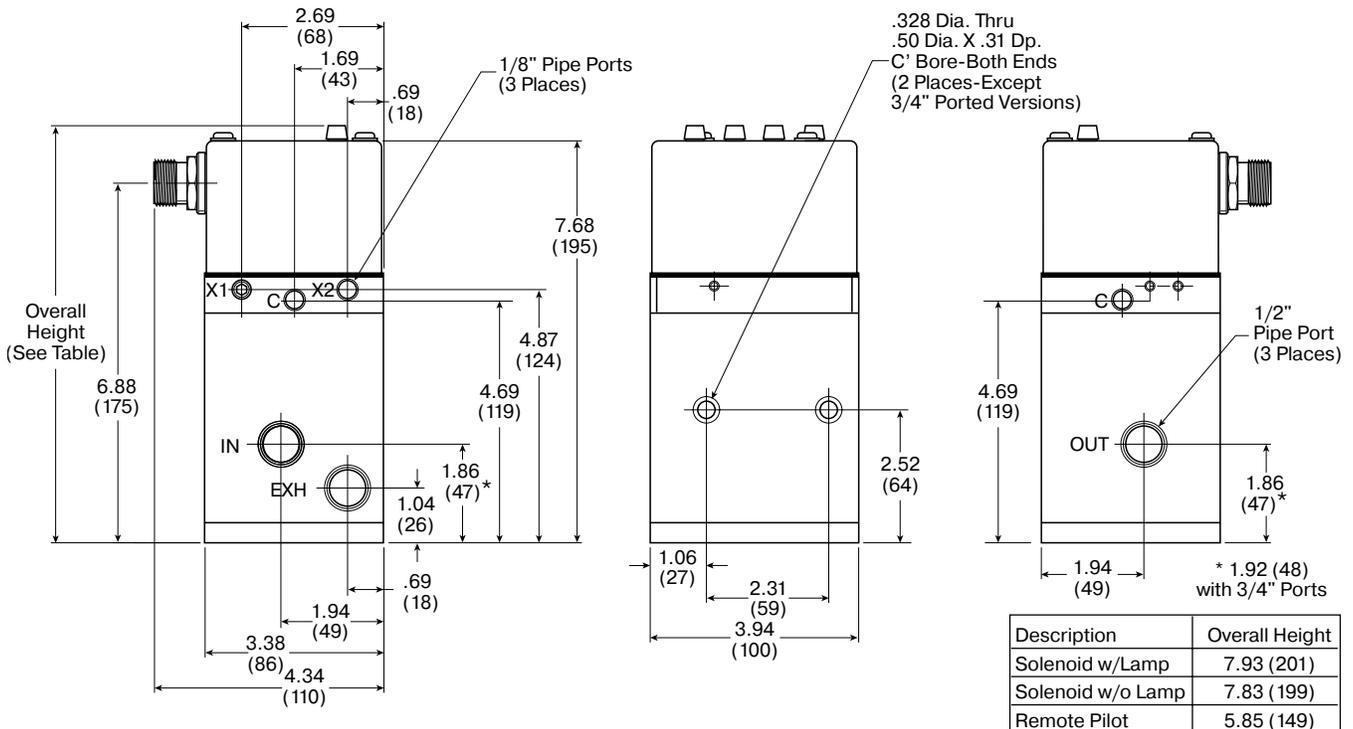
Normally Closed Valves / Solenoids	Normally Open Valves / Solenoids		PSIG Output@ 75 PSIG Inlet <sup>††</sup>	PSIG Output@ 90 PSIG Inlet
Binary Input * 8 4 2 1	Binary Input * 8 4 2 1	Proportion of Inlet Pressure		
Pin Number <sup>†</sup> 5 3 2 1	Pin Number <sup>†</sup> 5 3 2 1			
0000	1111	0	0	0
0001	1110	1/15	5	6
0010	1101	2/15	10	12
0011	1100	3/15	15	18
0100	1011	4/15	20	24
0101	1010	5/15	25	30
0110	1001	6/15	30	36
0111	1000	7/15	35	42
1000	0111	8/15	40	48
1001	0110	9/15	45	54
1010	0101	10/15	50	60
1011	0100	11/15	55	66
1100	0011	12/15	60	72
1101	0010	13/15	65	78
1110	0001	14/15	70	84
1111	0000	15/15	75	90

Table above illustrates available output pressures for inlet pressures of 75 PSIG and 90 PSIG. Inlet pressure may be any value between 15 and 150 PSIG. Output pressure increment will be 1/15 of inlet pressure.

\* 0 = Voltage "OFF"  
1 = Voltage "ON"

† Available only on units with 6-Pin connector.

†† Shaded output pressures shown are theoretical and are below the minimum operating range of the valve and should not be used. Please refer to the Engineering Specifications for minimum output.



**Programmable Air Regulating Valve**

**Narrow Band Control**

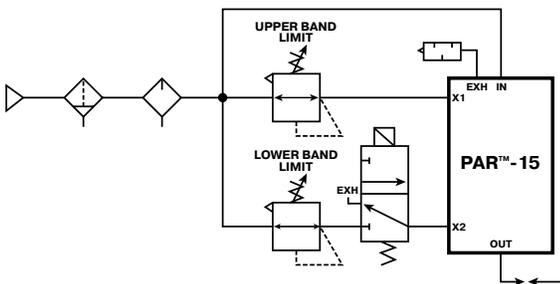
The PAR™-15 can also be used to provide a narrower band of output pressures with the lowest selected pressure greater than zero.

**EXAMPLE:**

Assume valve with normally closed solenoids. Customer desires to divide a range from 25 PSIG to 100 PSIG into 15 increments of 5 PSIG each. This is done by applying 100 PSIG to the external pilot supply port X1 and 25 PSIG to the pilot exhaust port X2.

Two 1/8 inch relieving regulators are required. The addition of one 3-Way normally closed solenoid operated valve allows the additional selection of 0 PSIG. These are connected as shown in the diagram. The relieving regulators set the upper and lower band limits. With a normally closed PAR™-15 valve, zero output pressure may be selected by simultaneously de-energizing the 3-Way valve and the PAR™-15 valve solenoids. With a normally open PAR™-15 valve, zero output pressure may be selected by simultaneously de-energizing the 3-Way valve and energizing the PAR™-15 valve solenoids.

**Narrow Band Control Diagram**



Note: For valves with normally open solenoids, reverse the X1 and X2 connections.

**Cascading**

Two PAR™-15's can also be used in conjunction to provide 240 steps (versus 15 steps from one valve), therefore more output pressures. See diagram.

Connect the outlet port marked OUT of the valve upstream to the 1/8" port marked C of the valve downstream. A port/pipe reducer(s) must be used to accomplish this task. If desired, a pressure gauge can be installed between these two points. A gauge isolator should be used to protect the gauge from pulsating pressures.

Connect the outlet port marked OUT of the valve downstream to the supply side of the system requiring multiple pressures. If desired, a pressure gauge can be installed downstream of the outlet port. A gauge isolator should be used to protect the gauge from pulsating pressures.

DO NOT PLUG THE 1/8" PORTS MARKED C AND X2 ON THE VALVE UPSTREAM AND X2 ON THE VALVE DOWNSTREAM.

Operation of the valves is the same as mentioned previously under the Operation section. See Cascading Truth Table for the proper input signal to each solenoid, and the resulting

proportion of inlet pressure for an output pressure.

A formula can be used to calculate the output pressure of the valve downstream.

$$\text{OUTPUT PRESSURE (PSIG)} = \frac{\text{LINE PRESSURE (PSIG)}}{15} \times \left( \frac{\text{BINARY INPUT UPSTREAM VALVE}}{16} + \frac{\text{BINARY INPUT DOWNSTREAM VALVE}}{16} \right)$$

**Where:**

**LINE PRESSURE** is the supply (pressure to both valves and it must be equal).

**BINARY INPUT UPSTREAM VALVE** is the binary number, a number from 0 to 15 depending on which solenoids are energized (normally closed solenoids) or de-energized (normally open solenoids) on the valve upstream.

**BINARY INPUT DOWNSTREAM VALVE** is the binary number, a number from 0 to 15 depending on which solenoids are energized (normally closed solenoids) or de-energized (normally open solenoids) on the valve downstream.

**EXAMPLE:**

Assume the line pressure is 120 PSIG, the valve upstream has inputs 1 & 2 energized, and the valve downstream has inputs 1 & 8 energized. Also, assume normally closed solenoids. What is the output pressure of the valve downstream?

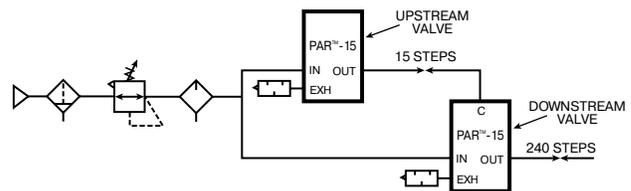
**SOLUTION:**

$$\begin{aligned} \text{BINARY INPUT VALVE UPSTREAM} &= 1 + 2 = 3 \\ \text{BINARY INPUT VALVE DOWNSTREAM} &= 1 + 8 = 9 \end{aligned}$$

$$\text{OUTPUT PRESSURE} = \frac{120}{15} \times \left( \frac{3}{16} + \frac{9}{16} \right) = 8 \times 9.1875 = 73.5 \text{ PSIG}$$

$$- (-)$$

**Cascade Diagram**



# Programmable Air Regulating Valve

# Air Preparation Products Regulator Products

## Truth Table

	Normally Closed Solenoids		Normally Open Solenoids					
	Down-Step Valve	Up-stream Valve	Down-stream Valve	Up-stream Valve	Down-stream Valve	Up-stream Valve		
	Binary Input*		Binary Input*		Proportion of Inlet Pressure +	Proportion of Inlet Pressure	PSIG Output @ 60 PSIG Inlet ††	PSIG Output @ 120 PSIG Inlet ††
	8 4 2 1	8 4 2 1	8 4 2 1	8 4 2 1				
	Pin Number †		Pin Number †					
	5 3 2 1	5 3 2 1	5 3 2 1	5 3 2 1				
0	0000	0000	1111	1111	0	0	0.00	0.00
1	0000	0001	1111	1110	0	1/240	0.25	0.50
2	0000	0010	1111	1101	0	2/240	0.50	1.00
3	0000	0011	1111	1100	0	3/240	0.75	1.50
4	0000	0100	1111	1011	0	4/240	1.00	2.00
5	0000	0101	1111	1010	0	5/240	1.25	2.50
6	0000	0110	1111	1001	0	6/240	1.50	3.00
7	0000	0111	1111	1000	0	7/240	1.75	3.50
8	0000	1000	1111	0111	0	8/240	2.00	4.00
9	0000	1001	1111	0110	0	9/240	2.25	4.50
10	0000	1010	1111	0101	0	10/240	2.50	5.00
11	0000	1011	1111	0100	0	11/240	2.75	5.50
12	0000	1100	1111	0011	0	12/240	3.00	6.00
13	0000	1101	1111	0010	0	13/240	3.25	6.50
14	0000	1110	1111	0001	0	14/240	3.50	7.00
15	0000	1111	1111	0000	0	15/240	3.75	7.50
16	0001	0000	1110	1111	1/15	0	4.00	8.00
17	0001	0001	1110	1110	1/15	1/240	4.25	8.50
18	0001	0010	1110	1101	1/15	2/240	4.50	9.00
19	0001	0011	1110	1100	1/15	3/240	4.75	9.50
20	0001	0100	1110	1011	1/15	4/240	5.00	10.00
21	0001	0101	1110	1010	1/15	5/240	5.25	10.50
22	0001	0110	1110	1001	1/15	6/240	5.50	11.00
23	0001	0111	1110	1000	1/15	7/240	5.75	11.50
24	0001	1000	0010	0111	13/15	0	53.00	106.00
212	0000	1111	0010	1011	13/15	4/240	53.00	106.00
213	0000	0000	0010	1010	13/15	5/240	53.25	106.50
214	0000	0000	0010	1001	13/15	6/240	53.50	107.00
215	0000	0000	0010	1000	13/15	7/240	53.75	107.50
216	0000	0000	0010	0111	13/15	8/240	54.00	108.00
217	0000	0000	0010	0110	13/15	9/240	54.25	108.50
218	0000	0000	0010	0101	13/15	10/240	54.50	109.00
219	0000	0000	0010	0100	0	11/240	54.75	109.50
220	0000	0000	0001	1011	0	12/240	55.00	110.00
230	1110	0110	0001	1010	14/15	0	57.00	113.00
231	1110	0111	0001	1001	14/15	7/240	57.75	115.50
232	1110	1000	0001	1000	14/15	8/240	58.00	116.00
233	1110	1001	0001	0111	14/15	9/240	58.25	116.50
234	1110	1010	0001	0110	14/15	10/240	58.50	117.00
235	1110	1011	0001	0101	14/15	11/240	58.75	117.50
236	1110	1100	0001	0100	14/15	12/240	59.00	118.00
237	1110	1101	0001	0010	14/15	13/240	59.25	118.50
238	1110	1110	0001	0001	14/15	14/240	59.50	119.00
239	1110	1111	0001	0000	14/15	15/240	59.75	119.50
240	1111	0000	0000	1111	15/15	0	60.00	120.00

Table above illustrates available output pressures for inlet pressures of 75 PSIG and 90 PSIG. Inlet pressure may be any value between 15 and 150 PSIG. Output Pressure increment will be 1/15 of inlet pressure.

\* 0 = Voltage "OFF"  
1 = Voltage "ON"

† Available only on units with 6-Pin connector.

†† Shaded output pressures shown are theoretical and are below the minimum operating range of the valve and should not be used. Please refer to the Engineering Specifications for minimum output.

Note: Full table appears in instruction sheet enclosed with the product.

General

Dial

Pilot

Proportional

Precision

Water

**K**

Regulator Products

## Programmable Air Regulating Valve

### Solenoid Kits & Electrical Data

#### Class F Solenoids

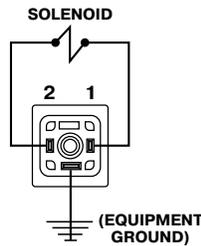
Voltage / Cycles	Solenoid Type*	Power Consumption (watts)	Holding Current (AMPS)	Part Number
12VDC	NC	1.2W	0.1	<b>PS2982B45P</b>
24VDC	NC	1.2W	0.05	<b>PS2982B49P</b>
120V/60Hz	NC	1.6VA	0.013	<b>PS2982B53P</b>
24V/60Hz	NC	1.6VA	0.066	<b>PS2982B42P</b>
24V/60Hz	NO	2.4VA	0.1	<b>PS3202B42P</b>
12VDC	NO	1.8W	0.15	<b>PS3202B45P</b>
24VDC	NO	1.8W	0.075	<b>PS3202B49P</b>
120V/60Hz	NO	2.4VA	0.02	<b>PS3202B53P</b>

\* NC = Normally Closed  
NO = Normally Open

#### Units with No Enclosure

Connect input and common signals to each one of the solenoids marked with the binary inputs 1, 2, 4 and 8, using the 3-Pin female connector kits shown in the catalog. Follow the installation instructions included with the 3-Pin female connector kits for the proper installation.

If you elect not to use the 3-Pin female connector kits, you may use three female spade connectors per solenoid and connect the wires as shown on the figure.



#### Units with Enclosure and Without 6-Pin Receptacle

Connect input and common signals to the terminal block on the circuit board labelled TB1. Connect each solenoid input (1, 2, 4, & 8) to the respective label on the circuit board. Connect each common to the input labelled C on the circuit board.

#### Units with Enclosure and 6-Pin Micro Receptacle

These units use the following brand names for 6-Pin micro connectors:

Brand name	Receptacle	Connector w/ 6 foot cord
Brad Harrison	7R6006A19A120	706000D02F060
Joy	5000127-41	5000127-2

Connection is made as shown in the chart below.

Pin	Wire color	Function
1	Red-White	Input 1
2	Red	Input 2
3	Green	Equipment Ground
4	Red-Yellow	Common
5	Red-Black	Input 8
6	Red-Blue	Input 4

Micro

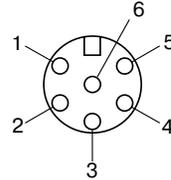
## Air Preparation Products Regulator Products

### Units with Enclosure and 6-Pin Mini Connector

These units use either one of the following brand names for 6-Pin mini connectors:

Brand Name	Receptacle	Connector w/ 6 Foot Cord
Brad Harrison	42605	42602
Joy	X8987-2	X8987-4

Connection is made as shown in the chart below.



Mini

Pin	Wire color	Function
1	Orange	Input 1
2	Blue	Input 2
3	Black	Input 4
4	White	Common
5	Red	Input 8
6	Green	Equipment Ground

### Units with Enclosure, 6-Pin Connector and Indicator Lamps

Each indicator lamp signals when the corresponding solenoid operator is actuated. Lamps that fail to light may need to be replaced or a check made to see if a connection has become loose.

Follow the service kit instructions included with the repair kits for proper installation of replacement lamps.

For units with DC solenoids and indicator lamps red wire is (+) positive white wire is (-) negative.

**⚠ Caution: DC solenoids with indicator lamps are polarity sensitive. Observe polarities indicated above.**

#### Available Lamps

Description	Part number
Lamp (120/60AC) with spring clip	<b>K352428B</b>
Lamp (24VDC) with spring clip	<b>K352429B</b>

#### 15mm 3-Pin DIN 43650C

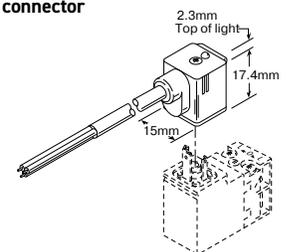
Description	Connector	Connector with 6' (2m) Cord
Unlighted	<b>PS2932BP</b>	<b>PS2932JBP</b>
Light – 12VAC or DC	<b>PS294675BP</b>	<b>PS2946J75BP*</b>
Light – 24VAC or DC	<b>PS294679BP</b>	<b>PS2946J79BP*</b>
Light – 110/120VAC	<b>PS294683BP</b>	<b>PS2946J83BP*</b>

\* LED with surge suppression.

Note: Max  $\phi$ 6.5mm cable size required for connector w/o 6' (2m) cord.

#### Engineering Data:

Conductors: 2 Poles Plus Ground  
Cable Range (Connector Only):  
4 to 6mm (0.16 to 0.24 Inch)  
Contact Spacing: 8mm



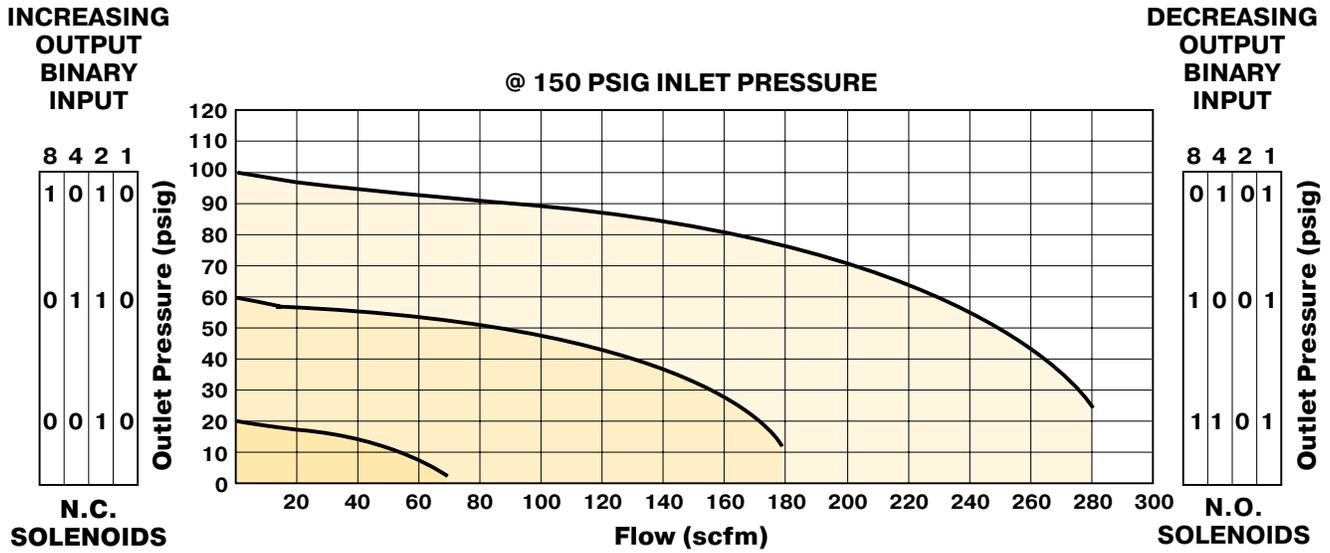
#### Service Kit

Piston, poppet assembly, all rubber seals and gaskets

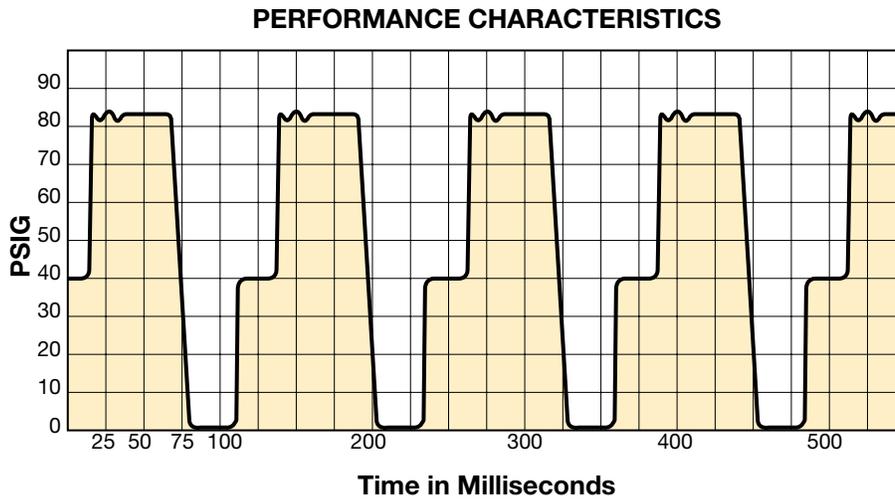
**K352413B**



Flow Characteristics



Typical Time Response



Actual test results show rapid response on a robot welding operation at a major U.S. automotive manufacturer.

**NOTE:** Although graph illustrates pressure dropping to 0 PSIG at the end of each cycle, the PAR™-15 valve can shift down to intermediate pressure steps, i.e. from 75 PSIG to 45 PSIG, without returning to 0 PSIG first.



Lucifer® EPP4 1/4", 1/2" & 1/2" HP



Part number	Pipe	Max inlet pressure bar (PSIG)	Pressure range bar (PSIG)	Control signal
<b>P4CN2001C001</b>	1/4 NPT	1 to 12 (15 to 174)	0 to 10 (0 to 145)	0 to 10 V **
<b>P4CN4001C001</b>	1/2 NPT	1 to 12 (15 to 174)	0 to 10 (0 to 145)	0 to 10 V **
<b>P4CG4201D003*†</b>	1/2 BSPP	1 to 21 (15 to 305)	0 to 20 (0 to 290)	0 to 10 V **

Notes: For thread type NPT use **N**, for BSPP use **G**.

\* HP (High Pressure).

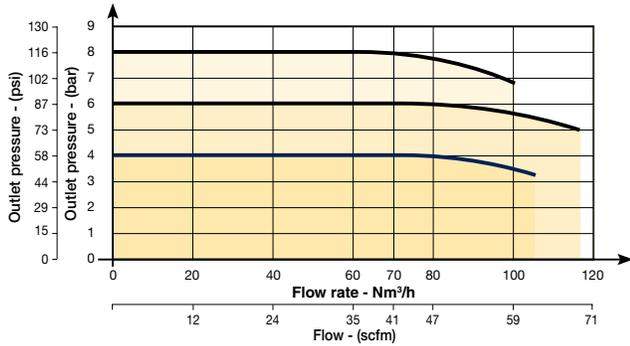
\*\* 4-20mA available via Calys software.

† Only available in BSPP.

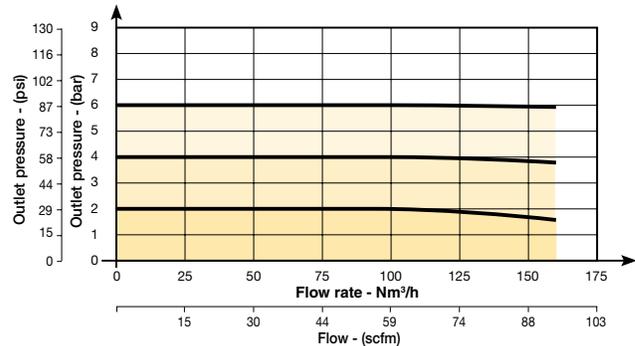
For other configurations not listed please consult factory. (Example: ATEX Series EX: II 3 D/G, O2 compatible, External Pilot, etc.)

Flow Curves

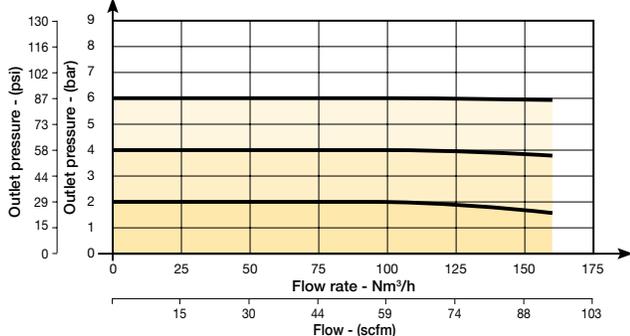
Flow Curve 1/4"



Flow Curve 1/2"



Flow Curve 1/2" HP



General

Dial

Pilot

Proportional

Precision

Water

K

Regulator Products



# Electronic Proportional Regulator

# Air Preparation Products Regulator Products

## Lucifer® EPP4 1/4" & 1/2"

### Technical Data

	EPP4 1/4"	EPP4 1/2"
<b>Fluids:</b>	Lubricated or non lubricated air and neutral gases - Recommended filtration: 40 µm or better	
<b>Temperature range:</b>	Ambient: 0°C to 50°C (32°F to 122°F) Fluid: 0°C to 50°C (32°F to 122°F)	
<b>Inlet pressure range:</b> The inlet pressure must always be at least 1 bar above the regulated pressure.	1 to 12 bar (14.5 to 174 PSIG)	1 to 12 bar (14.5 to 174 PSIG)
<b>Outlet pressure range:</b>	0.05 to 10 bar (.725 to 145 PSIG)	
<b>Hysteresis:</b>	± 50 mbar (.725 PSIG) (factory set up)	
<b>Air consumption at constant control signal:</b>	0	
<b>Supply voltage:</b>	24 V DC ± 15 % (Max. ripple 1 V)	
<b>Power consumption:</b>	Max. 2.8 W with 24 V DC and constant changes of the control signal < 1.5 W without change of control signal	
<b>Control signal:</b>	Analog 0 - 10 V Analog 4 - 20 mA field convertible	
<b>Outlet sensor signal:</b>	Analog 0 - 10 V Standard for 0 - 10 bar; Adjustable  Analog 4 - 20 mA Standard for 0 - 10 bar; Adjustable	Digital 0 - 24 V for alarm features: Adjustable pressure error (+/-) Adjustable delay ON Adjustable delay OFF Adjustable logic (+/-)
<b>Max. flow:</b>	70 m³/h (41 SCFM)	150 m³/h (88 SCFM)
<b>Indicative response time:</b>	With a volume of 330 cm³ (20.14 in³) at the outlet of the regulator	
Filling 2 to 4 bar (29 to 58 PSI):	50 msec	60 msec
Filling 2 to 8 bar (29 to 116 PSI):	100 msec	120 msec
Emptying 4 to 2 bar (29 to 116 PSI):	70 msec	90 msec
Emptying 8 to 2 bar (29 to 116 PSI):	130 msec	190 msec
<b>Safety position:</b>	In case of control signal failure or if it is less than 50 mV, the regulated pressure drops automatically to 0 bar (atmospheric pressure).  In case of voltage supply failure, the regulated pressure will be kept constant.	
<b>Electrical connection:</b>	M12 - 8 pin; male connector power supply/control signal M12 - 5 pin; male connector communication	
<b>Life expectancy:</b>	> 50 million changes of control signal steps	
<b>Mounting position:</b>	Indifferent (recommended position: upright; electronic part on top)	
<b>Resistance to vibrations:</b>	30 g in all directions	
<b>Degree of protection:</b>	IP65	
<b>Assembly:</b>	Silicone free	
<b>Electromagnetic compatibility: In accordance with:</b>	EN 61000-6-1: 2001 EN 61000-6-2: 2001 EN 61000-6-3: 2001 + A11 2004 edition (01/07/07) EN 61000-6-4: 2001	
<b>Installation and setting instructions:</b>	See Bulletin 408128, 408134 and appendix supplied with the product.	

**Note:** Parker reserves the right to change specifications without notification.



# Electronic Proportional Regulator

# Air Preparation Products Regulator Products

## Lucifer® EPP4 1/2" HP

### Technical Data

#### EPP4 1/2" HP

**Fluids:** Lubricated or non lubricated air and neutral gases - Recommended filtration: 50 µm

**Temperature range:** Ambient: 0°C to 50°C (32°F to 122°F)  
Fluid: 0°C to 50°C (32°F to 122°F)

**Inlet pressure range:** 1 to 21 bar (14.5 to 305 PSIG)  
The inlet pressure must always be at least 1 bar above the regulated pressure.

**Outlet pressure range:** 0.05 to 20 bar (.73 to 290 PSIG)

**Hysteresis:** ≤ 100 mbar (1.45 PSIG) if P inlet ≤ 10 bar (145 PSIG)  
≤ 200 mbar (2.90 PSIG) if P inlet > 10 bar (145 PSIG)

**Air consumption at constant control signal:** 0

**Supply voltage:** 24V DC ± 15%

**Power consumption:** Max. 6 W with 24 V DC and constant changes of the control signal < 2 W without change of control signal

**Control signal:** Analog 0 - 10 V  
Analog 4 - 20 mA field convertible

**Outlet sensor signal:** Analog 0 - 10 V  
Standard for 0 - 10 bar; Adjustable  
Analog 4 - 20 mA  
Standard for 0 - 10 bar; Adjustable

**Max. flow:** 150 m³/h (88 SCFM)

**Indicative response time:** With a volume of 330 cm³ (20.14 in³) at the outlet of the regulator

**Filling 2 to 8 bar (29 to 116 PSI):** 120 msec  
**Emptying 8 to 2 bar (116 to 29 PSI):** 190 msec

**Safety position:** In case of control signal failure or if it is less than 50 mV, the regulated pressure drops automatically to 0 bar atmospheric pressure (for pressure ranges from 0-10 bar, 100 mV for pressure range over 10 bar). In case of voltage supply failure, the regulated pressure will be kept constant.

**Electrical connection:** M12 - 8 pin; male connector power supply/control signal  
M12 - 5 pin; male connector communication

**Life expectancy:** > 20 Million changes of control signal steps

**Mounting position:** Indifferent (recommended position: upright; electronic part on top)

**Resistance to vibrations:** 30 g in all directions

**Degree of protection:** IP65

**Assembly:** Silicone free

**Electromagnetic compatibility:** EN 61000-6-1: 2001  
**In accordance with:** EN 61000-6-2: 2001  
EN 61000-6-3: 2001  
+ A11 2004 edition (01/07/07)  
EN 61000-6-4: 2001

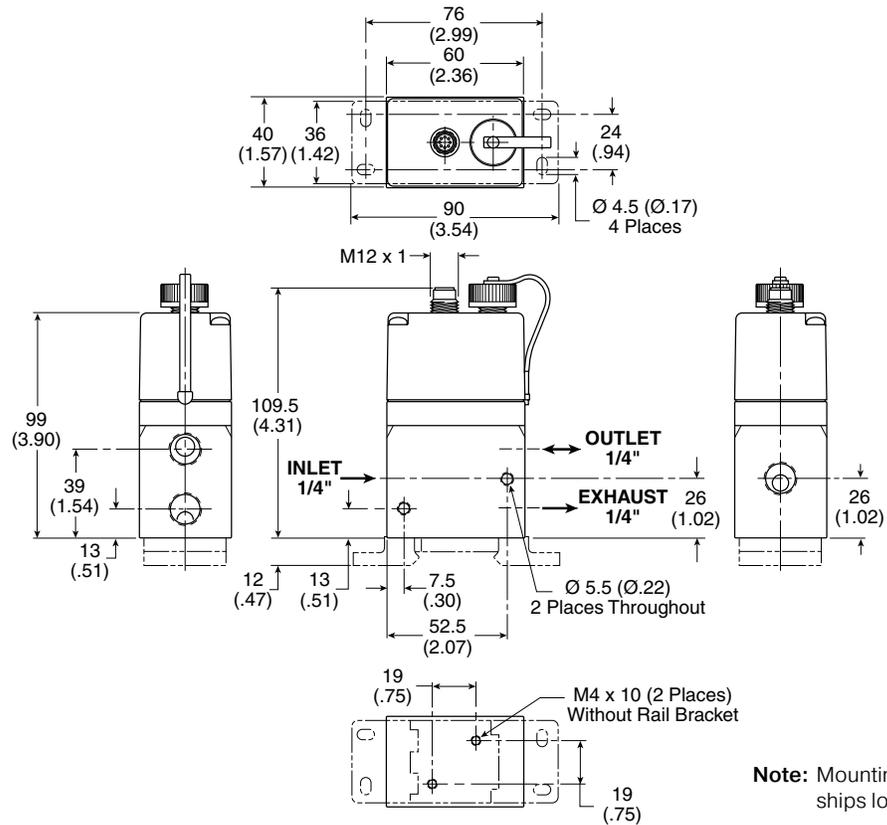
**Installation and setting instructions:** See Bulletin 408193 and appendix supplied with the product.

**Note:** Parker reserves the right to change specifications without notification.

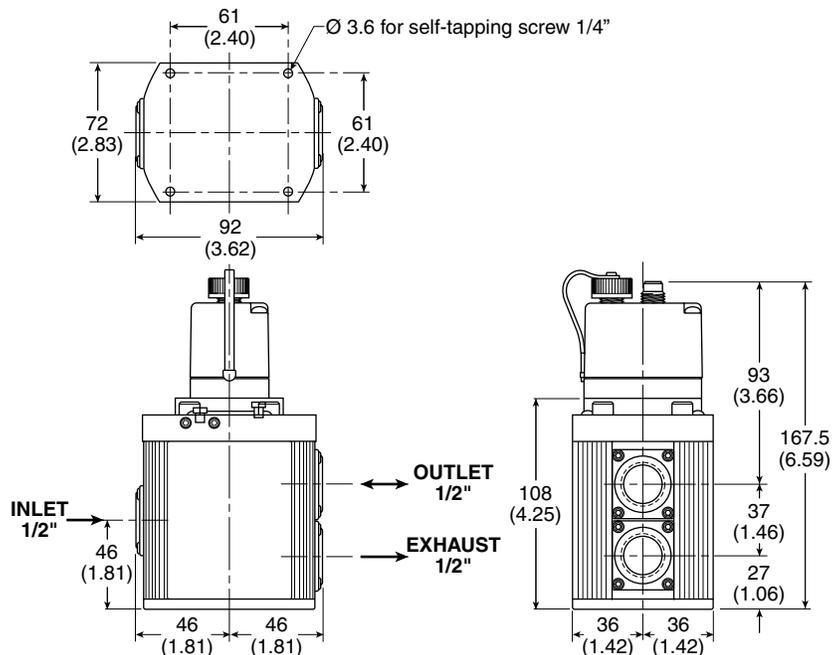


Lucifer® EPP4 1/4" & 1/2"

Dimensions EPP4 1/4"



Dimensions EPP4 1/2"



General

Dial

Pilot

Proportional

Precision

Water

K

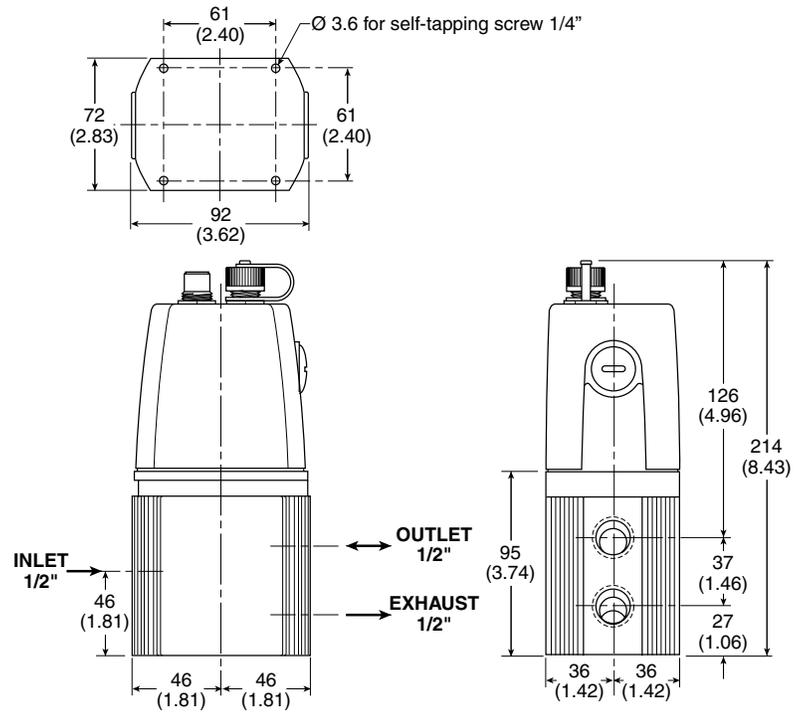
Regulator Products



Lucifer® EPP4 1/2" HP

Dimensions EPP4 1/2" HP

General
Dial
Pilot
Proportional
Precision
Water
<b>K</b>
Regulator Products





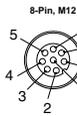
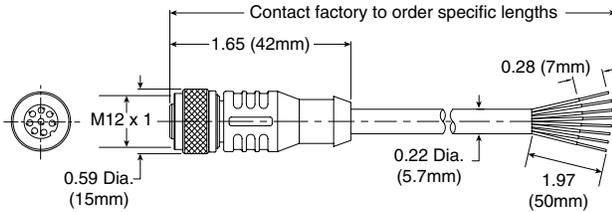
Lucifer® EPP4 Accessories

Power Supply / Control Signal and Communication Cables

EPP4 Cable

- 2m cable with molded straight M12-8 pole to flying lead

Part Number RKC8T-2



Cable Pin	Color
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red



EPP4 Cable

- 2m cable with molded straight M12-5 pole to USB

Part Number 496449



First M12 / 8 pole connector: power supply & control signal

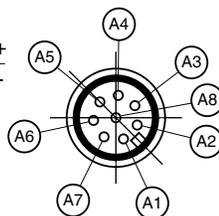
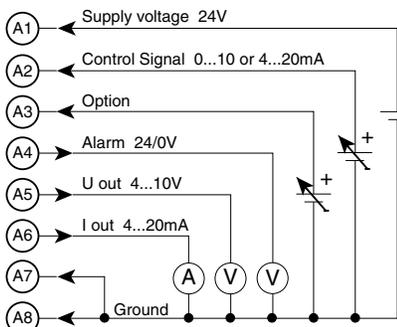
Electrical Connection (A)

Second M12 / 5 pole connector: remote display or PC communication

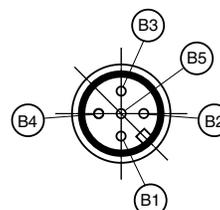
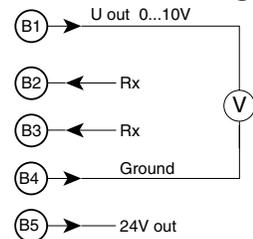
Electrical Connection (B)



Electrical Connection (A)



Electrical Connection (B)



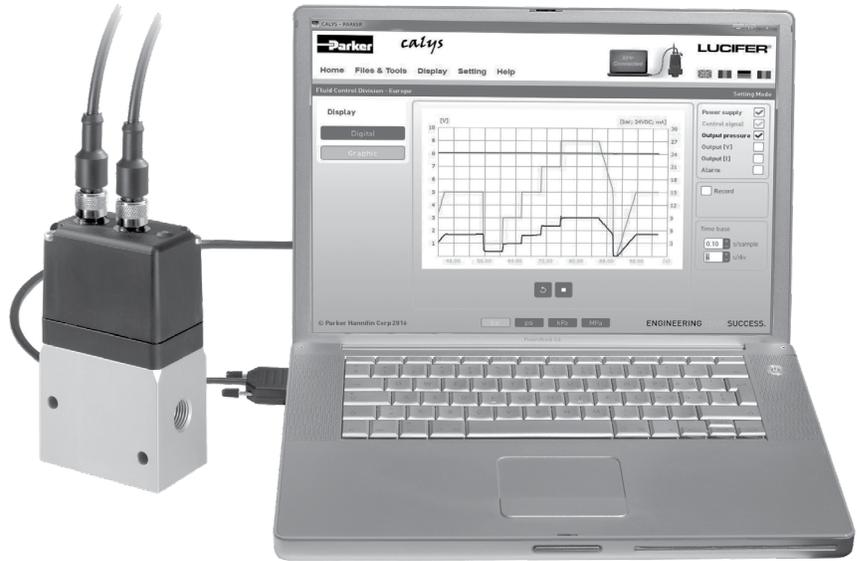
# Lucifer® EPP4 Accessories

## calys Software

Calys is developed to configure all the parameters of the EPP4. A specific cable is needed for the communication between the EPP4 and a PC.

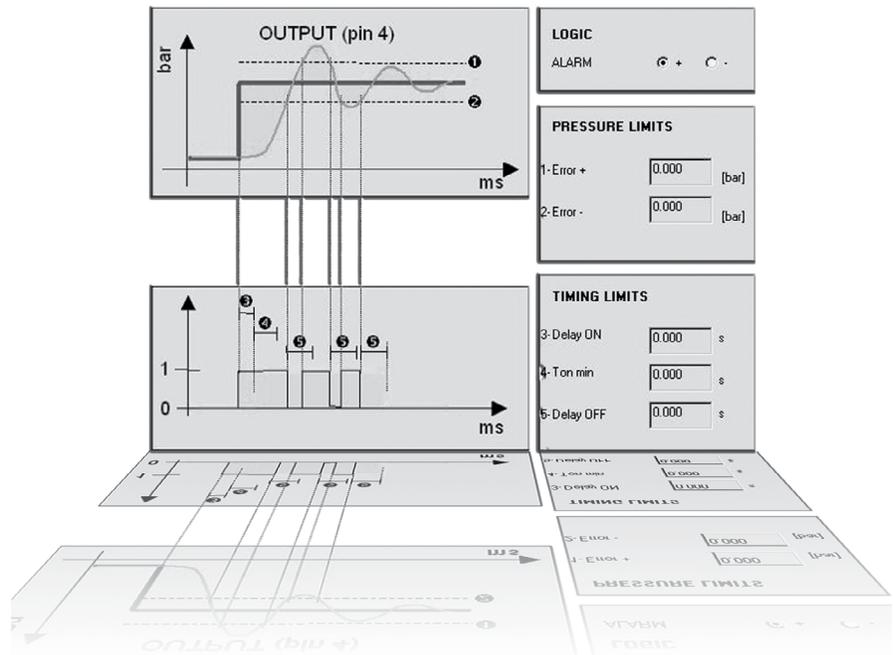
To download free Calys software click on [www.parker.com/fcde/support](http://www.parker.com/fcde/support)

- Calys offers many capabilities:
- Live monitoring (control signal, regulated pressure, supply voltage,...)
  - Recording of the main parameters (control signal, regulated pressure, supply voltage,...) in an Excel file
  - Free calibration for the inputs and outputs
  - Adjustable alarm (positive-negative, pressure limits, delays)
  - Configuration files are easy to duplicate
  - Complete and interactive help file
  - Data in 4 different pressure units
  - Menus in 4 languages (English, German, French and Italian)



Specific communication cable with M12, 5-pole to USB connection

Part Number 496449



General

Dial

Pilot

Proportional

Precision

Water

K

Regulator Products

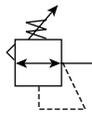
**Compact High Precision Regulator**

**P3RA302 High Precision Regulators**

The P3RA302 Regulator is designed for applications that require high capacity and accurate process control in a small package. A poppet valve which is balanced by utilizing a convoluted diaphragm, insures a constant output pressure even during wide supply pressure variations. Stability of regulated pressure is maintained under varying flow conditions through the use of an aspirator tube which adjusts the air supply in accordance with the flow velocity.



- Control sensitivity of .250" (.010 psig) (.64 cm) water column variation allows use in precision applications
- A compensating diaphragm lets the regulator remain unaffected by supply pressure changes
- An aspirator tube compensates downstream pressure droop under flow conditions
- A separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- Unit construction lets you service the regulator without removing it from the line
- 1/4" port (NPT)



**Operating information**

Supply pressure:	250 psig (17.2 bar), (1700 kPa) max
Ambient temperature:	-40°F to 200°F (-40°C to 93°C)
Sensitivity:	.250" (.010 psig) (.64 cm) water column
Flow capacity:	40 scfm (68 m <sup>3</sup> /HR) @ 100 psig (7.0 bar), (700 kPa) supply and 20 psig (1.5 bar), (150 kPa) setpoint
Exhaust capacity:	2.0 scfm (3.4 m <sup>3</sup> /HR) where downstream pressure is 5 psig (.35 bar), (35 kPa) above 20 psig (1.5 bar), (150 kPa) setpoint
Supply pressure effect:	Less than 0.2 psig, (.014 bar), (.14 kPa) for 100 psig, (7.0 bar), (700 kPa) change in supply pressure
Hazardous locations:	Acceptable for use in zones 1 and 2 for gas atmosphere: Groups IIA and IIB and zones 21 and 22 for dust atmospheres

Port Size	Description	Part Number
1/4"	0.5 to 30 psig	<b>P3RA30232</b>
1/4"	1 to 60 psig	<b>P3RA30242</b>
1/4"	2 to 100 psig	<b>P3RA30252</b>

**Ordering Information:**

**P3RA302** **4** **2**

Springs	
0.5 to 30 psig	3
1 to 60 psig	4
2 to 100 psig	5

Pipe Size	
1/4 inch	2

Options	
Blank	No Options
H	BSP
N	Non-Relieving

Note: Other Spring Ranges, Port Sizes, and Options Available. Please Consult Factory

Most popular.

# Compact High Precision Regulator

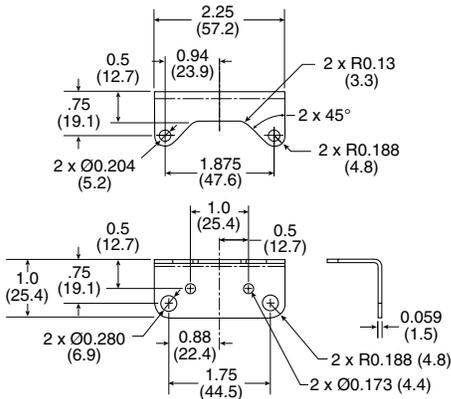
## Material Specifications

Body and housing	Aluminum
Diaphragms	Nitrile on dacron
Trim	Brass

## Repair and Service Kits

Nitrile, standard - 1/2 to 30, 1 to 60, & 2 to 100 psig	<b>PS16116-13</b>
Nitrile, non-relieving - 1/2 to 30, 1 to 60, & 2 to 100 psig	<b>PS16116-14</b>
Tamper Resistant Kit	<b>PS12163</b>
Mounting Bracket Kit	<b>PS21667-1</b>

## Mounting bracket

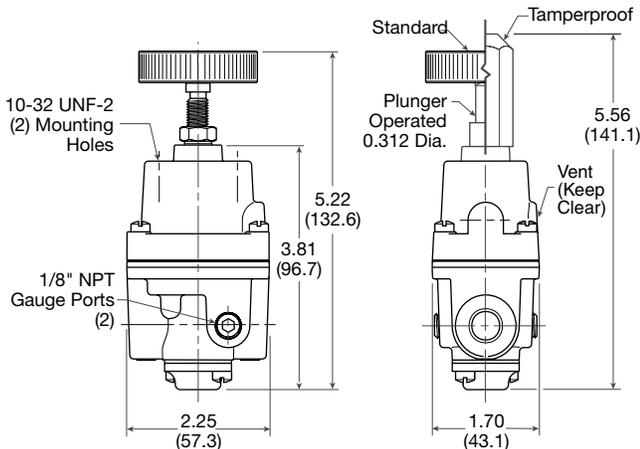


### WARNING

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.

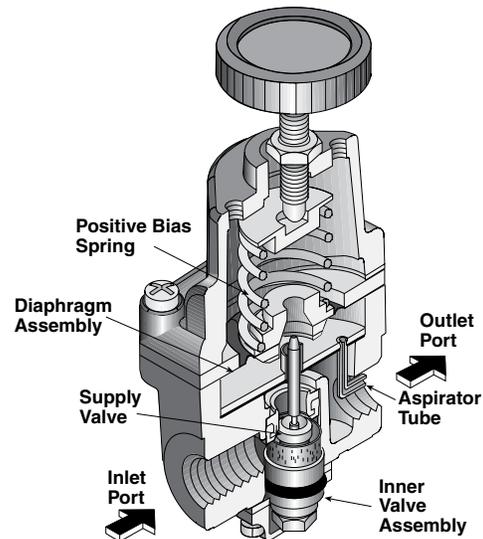
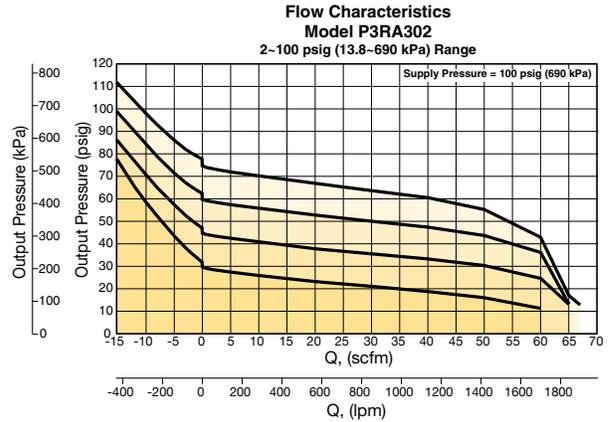


Inches (mm)

# Air Preparation Products Regulator Products

## Flow Charts

### P3RA302 1/4" Regulator



## Operating Principles

The P3RA302 Regulator uses the force balance principal to control the movement of the valve assembly which in turn controls the output pressure. When the regulator is adjusted for a specific set point, the downward force of the Positive Bias Spring causes the Diaphragm Assembly to move downward. The Supply Valve opens and allows air to pass to the Outlet Port. As the set point is reached, the downward force exerted by the Positive Bias spring is balanced by the upward force of the downstream pressure acting on the bottom of the Diaphragm Assembly. The resultant force moves the supply Valve upward to reduce the flow of air to the Outlet Port.

Outlet pressure is maintained as a result of balance between forces acting on the top and bottom of the Diaphragm Assembly.



General

Dial

Pilot

Proportional

Precision

Water

K

Regulator Products

**Standard High Precision Regulator**

**P3RA102 High Precision Regulators**

The P3RA102 Regulator is designed for applications that require high capacity and accurate process control. A poppet valve which is balanced by utilizing a rolling diaphragm, insures a constant output pressure even during wide supply pressure variations. Stability of regulated pressure is maintained under varying flow conditions through the use of an aspirator tube which adjusts the air supply in accordance with the flow velocity.

Control sensitivity of .125" (.005 psig) (.32 cm) water column allows use in precision processes

Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint

Optional check valve permits dumping of downstream pressure when supply is opened to atmosphere

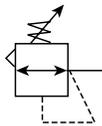
Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing

An aspirator tube compensates downstream pressure droop under flow conditions



**Operating information**

Supply pressure:	500 psig (35 bar), (3500 kPa) max
Ambient temperature:	-40°F to 200°F (-40°C to 93°C)
Sensitivity:	.125" (.005 psig) (.32 cm) water column
Flow capacity:	40 scfm (68 m <sup>3</sup> /HR) @ 100 psig (7.0 bar), (700 kPa) supply and 20 psig (1.5 bar), (150 kPa) setpoint
Exhaust capacity:	5.5 scfm (9.35 m <sup>3</sup> /HR) where downstream pressure is 5 psig (.35 bar), (35 kPa) above 20 psig (1.5 bar), (150 kPa) setpoint
Supply pressure effect:	Less than 0.1 psig (.007 bar), (.7 kPa) for 100 psig, (7.0 bar), (700 kPa) change in supply pressure
Hazardous locations:	Acceptable for use in zones 1 and 2 for gas atmosphere: Groups IIA and IIB and zones 21 and 22 for dust atmospheres



Port Size	Description	Part Number
1/4"	0.5 to 30 psig	<b>P3RA10232</b>
1/4"	1 to 60 psig	<b>P3RA10242</b>
1/4"	2 to 150 psig	<b>P3RA10262</b>

**Ordering Information:**

**P3RA102** **6** **2**  

Springs	
0.5 to 30 psig	3
1 to 60 psig	4
2 to 150 psig	6

Pipe Size	
1/4 inch	2

Options	
Blank	No Options
H	BSPP
N	Non-Relieving

Note: Other spring ranges, port sizes, and options available. Please consult factory

  Most popular.

# Standard High Precision Regulator

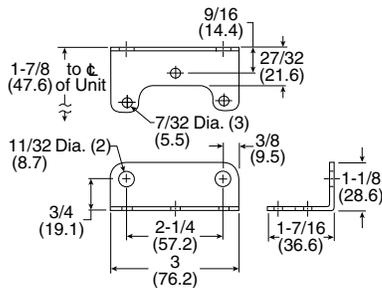
## Material Specifications

Body and housing	Aluminum
Diaphragms	Buna N on dacron (standard unit only)
Trim	zinc plated steel, brass

## Repair and Service Kits

0 to 200 psig, relieving	<b>PS12125-1</b>
0 to 200 psig, non-relieving	<b>PS12125-4</b>
Tamper resistant kit	<b>PS12165</b>
Mounting bracket kit, zinc plated steel	<b>PS09921</b>

## Mounting bracket

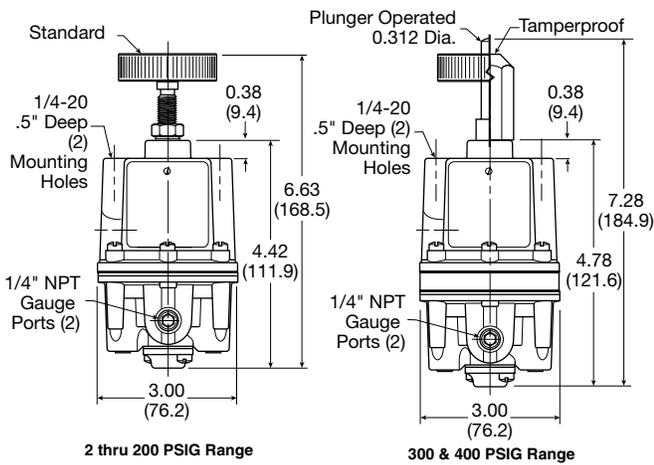


**WARNING**

**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.

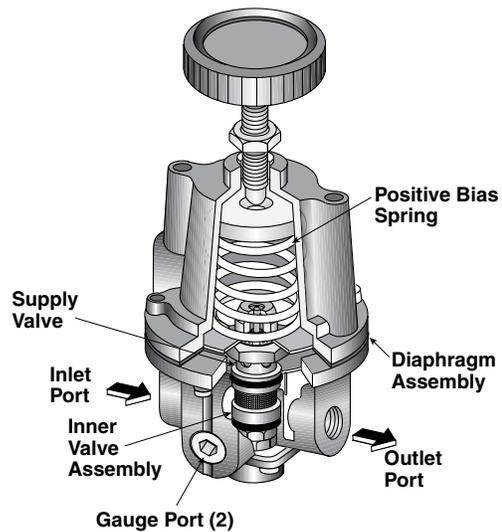
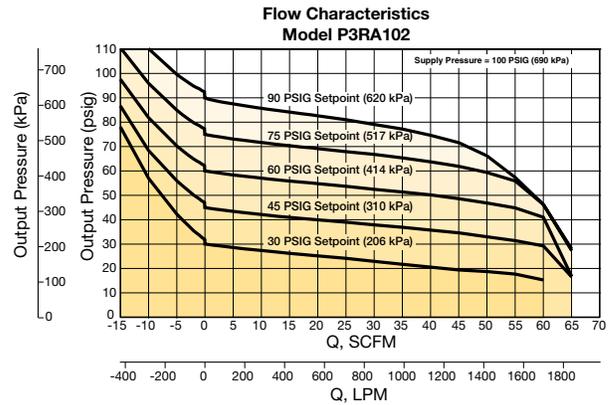


Inches (mm)

# Air Preparation Products Regulator Products

## Flow Charts

### P3RA102 1/4" Regulator



## Operating Principles

The P3RA102 Series regulator use the force balance principal to control the movement of the Valve Assembly that controls the output pressure. When the regulator is adjusted for a specific set point, the downward force of the Positive Bias Spring moves the Diaphragm Assembly downward. The Supply Valve opens and allows air to pass to the Outlet Port. As the set point is reached, the downward force exerted by the Positive Bias Spring is balanced by the force of the downstream pressure that acts on the Diaphragm Assembly. The resultant force moves the Supply Valve upward to reduce the flow of air to the Outlet Port.

Outlet pressure is maintained as a result of balance between forces acting on the top and bottom of the Diaphragm Assembly.

General

Dial

Pilot

Proportional

Precision

Water

K

Regulator Products

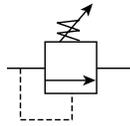
**High Precision Relief Valve**

**P3RA102BP High Precision Relief Valves**

The P3RA102BP is a high capacity relief valve that relieves excess pressure in a pneumatic system.

The P3RA102BP provides greater accuracy than standard relief valves over a narrow pressure range. The P3RA102BP is an excellent choice for a wide range of precision applications.

- Control sensitivity of .125" (.005 psig) (.32 cm) water column allows use in precision applications
- A separate control chamber and Aspirator Tube isolate the diaphragm from the main flow to eliminate hunting and buzzing
- Unit construction lets you service without removing it from the line
- Mounting bracket is available

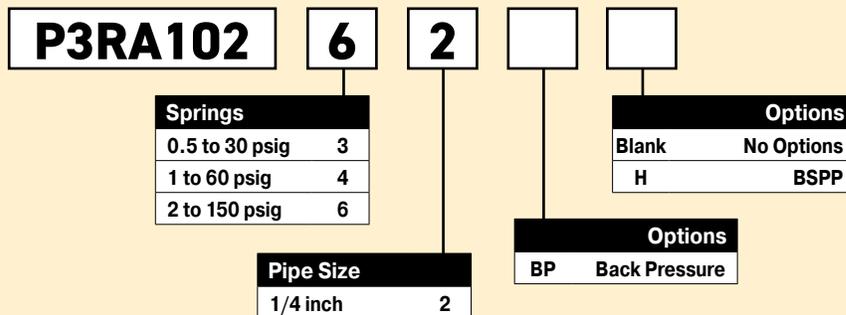


**Operating information**

Setpoint range	System pressure (maximum)
2 to 200 psig (0.15 to 14 bar) (15 to 1400 kPa)	300 psig (20.7 bar), (2100 kPa) max
300 to 400 psig (21 to 28 bar) (2100 to 2800 kPa)	500 psig (35 bar), (3500 kPa) max
Ambient temperature:	-40°F to 200°F (-40°C to 93°C)
Sensitivity:	.125" (.005 psig) (.32 cm) water column
Flow capacity:	40 scfm (68 m3/HR) @ 100 psig, (7.0 bar), (700 kPa) system pressure

Port Size	Description	Part Number
1/4"	0.5 to 30 psig	<b>P3RA10232BP</b>
1/4"	1 to 60 psig	<b>P3RA10242BP</b>
1/4"	2 to 150 psig	<b>P3RA10262BP</b>

**Ordering Information:**



Note: Other spring ranges, port sizes, and options available. Please consult factory

Most popular.



## High Precision Relief Valve

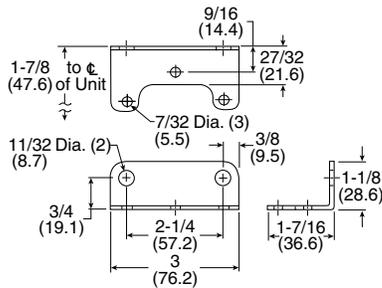
### Material Specifications

Body and housing	Aluminum
Trim	Zinc plated steel, brass
Nozzle	Nitrile on dacron

### Repair and Service Kits

0 to 200 psig, standard	<b>PS12127-1</b>
Tamper resistant kit	<b>PS12165</b>
Mounting bracket kit, zinc plated steel	<b>PS09921</b>

### Mounting bracket

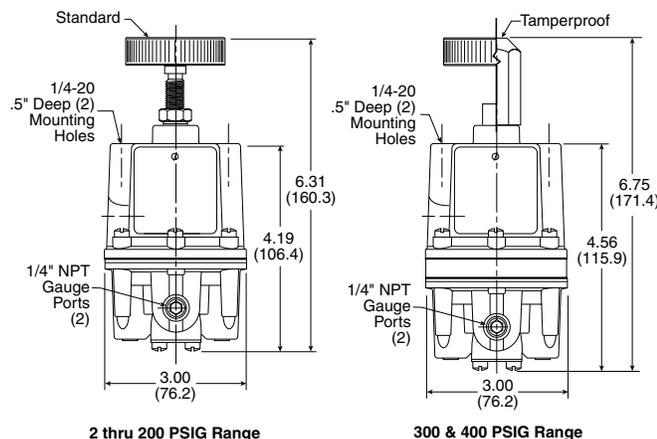


### WARNING

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

### CAUTION:

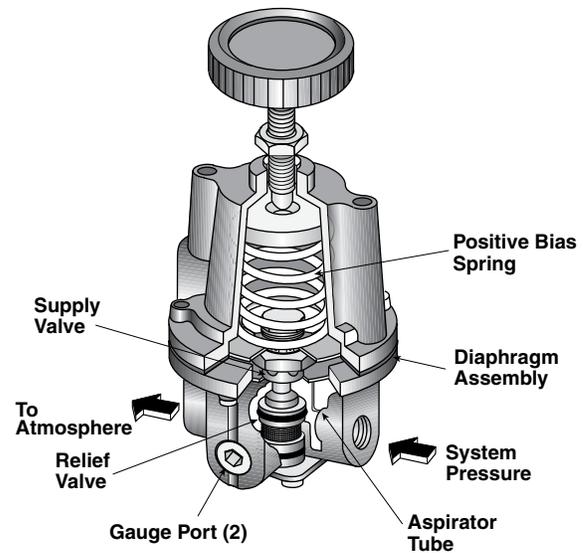
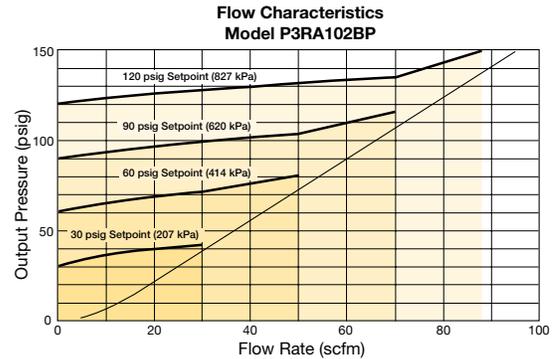
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



## Air Preparation Products Regulator Products

### Flow Charts

#### P3RA102BP 1/4" Regulator



### Operating Principles

The P3RA102BP Regulator uses the force balance principle to open the Relief Valve and vent system pressure when the set point is exceeded.

Downstream pressure is transmitted through the Aspirator Tube to the bottom of the Diaphragm Assembly. When you adjust the range screw for a specific set point, the Positive Bias Spring compresses and exerts a force on the top of the Diaphragm Assembly. As long as the pressure acting on the bottom of the Diaphragm Assembly produces a force less than the spring force acting on the top of the Diaphragm Assembly, the Relief Valve remains closed. When system pressure increases, the force on the bottom of the Diaphragm Assembly increases until it reaches the set point. When system pressure increases beyond the set point, the assembly moves upward, lifting the Relief Valve from its seat and vents the downstream air.

If downstream pressure decreases below the set point, the assembly moves downward closing the Relief Valve.



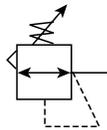
High Precision Vacuum Regulator

**P3RA171 High Precision Vacuum Regulator**

The P3RA171 is a high accuracy vacuum regulator that provides uniform vacuum regulation independent of vacuum supply changes and flow demand.

This unit has a diaphragm assembly with three springs to provide a more balanced loading of the diaphragm.

- Control sensitivity of .125" (.005 PSIG) (.32 cm) water column allows use in precision applications
- Balanced supply valve minimizes effects of vacuum variation
- Aspirator tube compensates for downstream pressure droop under flow conditions
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- Construction allows servicing without removing from the line

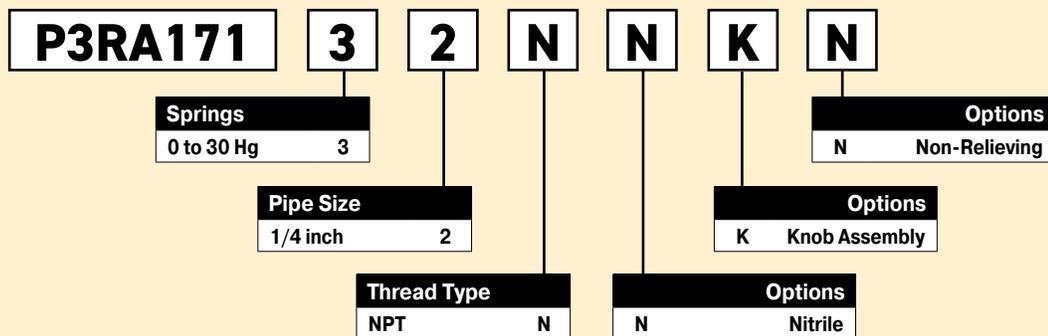


**Operating information**

Vacuum supply:	29.92 Hg (760 torr) max
Ambient temperature:	-40°F to 200°F (-40°C to 93°C)
Sensitivity:	.125" (.005 psig) (.32 cm) water column
Flow capacity:	3 scfm @ 650 torr supply, 250 torr setpoint
Vacuum supply effect:	Less than 1 torr for 100 torr (.04 Hg for 3.94 Hg) change in vacuum supply

Port Size	Description	Part Number
1/4"	0 to 30 Hg	<b>P3RA17132NNKN</b>

**Ordering Information:**



Note:  
Other spring ranges, port sizes, and options available. Please consult factory

Most popular.



# High Precision Vacuum Regulator

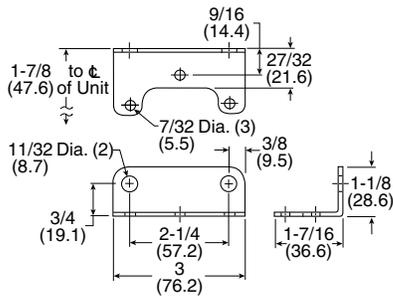
## Material Specifications

Body and housing	Aluminum
Trim	Zinc plated steel, brass
Elastomers	Nitrile

## Repair and Service Kits

Service kits – (includes diaphragm assy, valve assy, seat assy & gasket) 0-30" Hg, nitrile, non-relieving	<b>PS20966-9</b>
Tamper resistant kit	<b>PS20967-1</b>
Mounting bracket	<b>PS09921</b>

## Mounting bracket

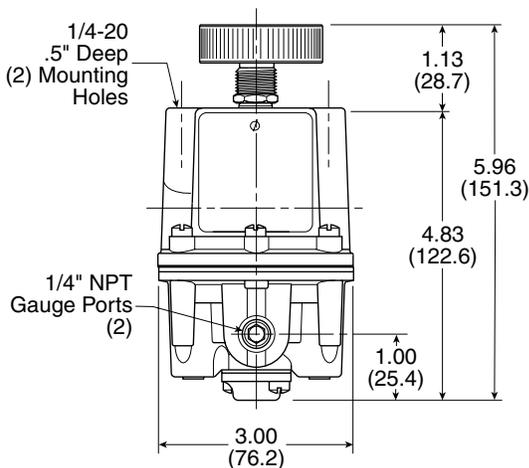


**WARNING**

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

## CAUTION:

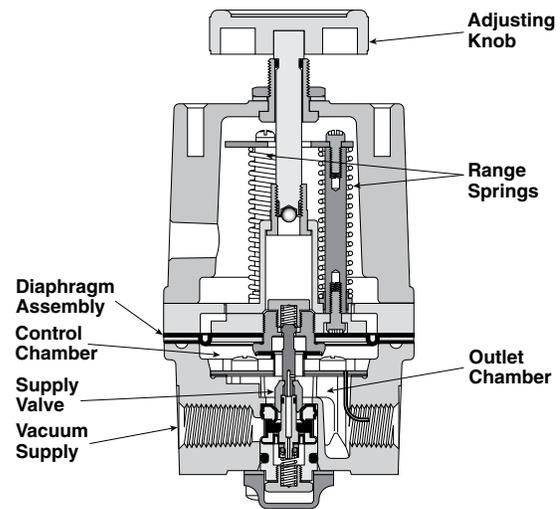
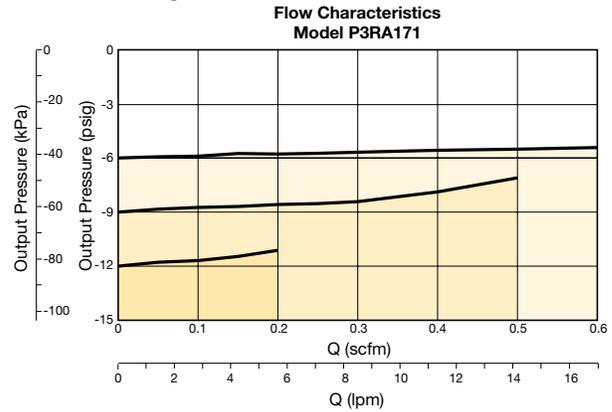
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



# Air Preparation Products Regulator Products

## Flow Charts

### P3RA171 1/4" Regulator



## Operating Principles

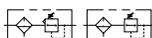
The Model P3RA171 Series vacuum regulator uses the force balance principle to control the movement of the Valve Assembly that controls output vacuum.

When the regulator is adjusted for a specific set point, the upward force of the Range Springs moves the Diaphragm Assembly upward. The Supply Valve opens and allows air to pass to the inlet port. As the set point is reached, the upward force exerted by the Range Springs is balanced by the force of the vacuum that pulls downward on the Diaphragm Assembly. The resultant force moves the Supply Valve downward to reduce the flow of air to the inlet port. Outlet vacuum is maintained as a result of balance between forces acting on the top and bottom of the Diaphragm Assembly.

**High Precision Filter / Regulator**

**P3EA632 Precision Filter / Regulators**

- The no-brass construction is well suited to harsh environments
- Internal and external epoxy finish for superior corrosion resistance
- Non-bleed design to reduce consumption
- Integral relief valve
- A gauge port provides convenient pressure gauge mounting
- The standard 5-micron filter minimizes internal contamination
- The filter dripwell contains a drain plug to easily drain trapped liquids
- Standard tapped exhaust
- Soft relief seat minimizes air loss



**Operating information**

Supply pressure: 250 psig (17.2 bar), (1700 kPa) max  
 Temperature range: -40°F to 160°F (-40°C to 71°C)  
 Sensitivity: 1.0" (.036 psig) (2.54 cm) water column  
 Flow capacity: 25 scfm (42.5 m<sup>3</sup>/HR) @ 100 psig (7 bar), (700 kPa) supply and 20 psig (1.5 bar), (150 kPa) setpoint  
 Exhaust capacity: 0.8 scfm (1.36 m<sup>3</sup>/HR) where downstream pressure is 5 psig, (.35 bar) (35 kPa) above 20 psig (1.5 bar), (150 kPa) setpoint (0.8 SCFM for 120 # unit)  
 Consumption: Undetectable  
 Supply pressure effect: Less than 1.25 psig (.09 bar), (9 kPa) change for 100 psig (7.0 bar), (700 kPa) change in supply pressure (1.90 psig for 120 # unit)

Port Size	Description	Part Number
1/4"	1 to 60 psig	<b>P3EA63242NS</b>
1/4"	2 to 120 psig	<b>P3EA63252NS</b>

**Ordering Information:**

**P3EA632** **5** **2** **N** **S** **Blank**

Springs	
0 to 60 psig	4
2 to 120 psig	5

Pipe Size	
1/4 inch	2

Thread Type	
NPT	N
BSPP	U

Adjustment	
S	Screw (std)
K	Knob
T	Tamperproof

Options	
Blank	None

Note: Other spring ranges, port sizes, and options available. Please consult factory

Most popular.

## High Precision Filter / Regulator

### Material Specifications

Body and housing	Epoxy coated Aluminum
Trim	Stainless steel, nickel plated steel
Elastomers	Nitrile

### Repair and Service Kits

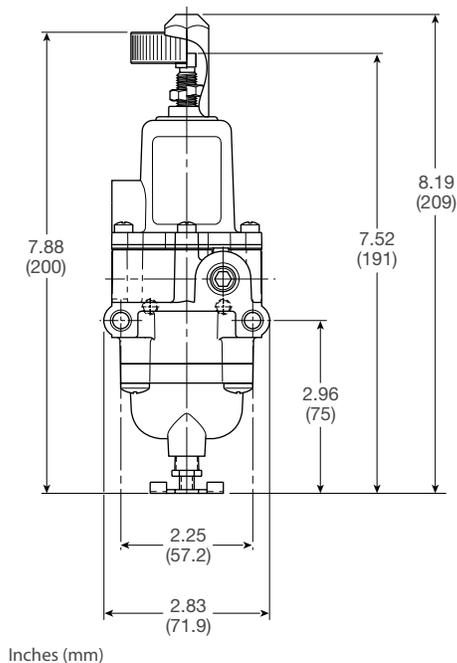
1 to 60, 2 to 120 psig	<b>PS19968-NR</b>
Tamper resistant kit	<b>PS12165</b>

### WARNING

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

### CAUTION:

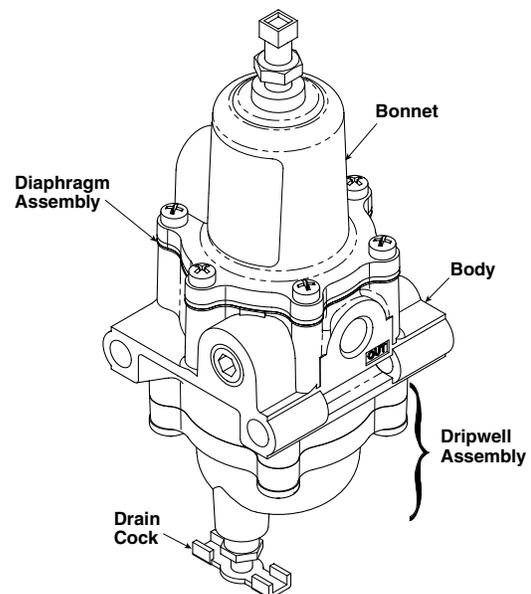
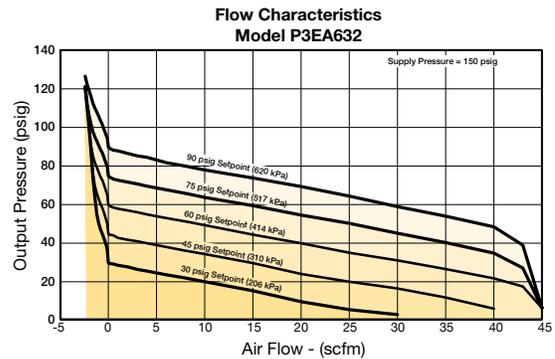
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and 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.



## Air Preparation Products Regulator Products

### Flow Charts

#### P3EA632 1/4" Filter / Regulator



### Operating Principles

When you turn the Adjustment Screw to a specific setpoint, the Spring exerts a downward force against the top of the Diaphragm Assembly. This downward force opens the Supply Valve. Output pressure flows through the Outlet Port and the passage to the Control Chamber where it creates an upward force on the bottom of the Diaphragm Assembly.

When the setpoint is reached, the force of the Spring that acts on the top of the Diaphragm Assembly balances with the force of output pressure that acts on the bottom of the Diaphragm Assembly and closes the Supply Valve.

When the output pressure increases above the setpoint, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Output pressure flows through the Exhaust Valve and out of the Exhaust Vent on the side of the unit until it reaches the setpoint.



## P3BA208 Precision Pneumatic Input Signal Amplifier

- The P3BA208 uses a pneumatic input signal to accurately control output pressure based on a predetermined ratio
- A balanced supply valve minimizes the effects of supply pressure variation
- An aspirator tube compensates downstream pressure droop under flowing conditions
- A separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- Unit construction allows servicing without removal
- Mounting bracket available

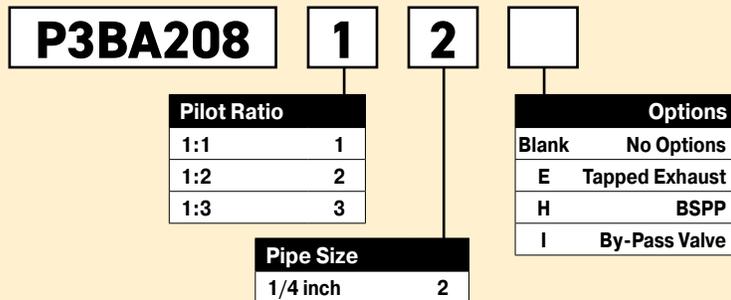


Port Size	Description	Part Number
1/4"	1:1 pilot ratio	<b>P3BA20812</b>
1/4"	1:2 pilot ratio	<b>P3BA20822</b>
1/4"	1:3 pilot ratio	<b>P3BA20823</b>

### Operating information

	Signal : Output 1:1	1:2	1:3
Output pressure, maximum:	150 psig (10 bar)	150 psig (10 bar)	150 psig (10 bar)
Supply pressure, maximum:	250 psig (17 bar)	250 psig (17 bar)	250 psig (17 bar)
Flow capacity – 100 psig (7 bar), supply 20 psig, (1.5 bar) output	45 scfm (76.5 m <sup>3</sup> /HR)	45 scfm (76.5 m <sup>3</sup> /HR)	45 scfm (76.5 m <sup>3</sup> /HR)
Exhaust capacity – Downstream pressure 5 psig (0.35 bar) above 20 psig (1.5 bar) setpoint	11 scfm (18.7 m <sup>3</sup> /HR)	11 scfm (18.7 m <sup>3</sup> /HR)	11 scfm (18.7 m <sup>3</sup> /HR)
Sensitivity, water column:	0.250" (0.64 cm)	0.500" (1.27 cm)	0.750" (1.9 cm)
Ratio accuracy – % of 100 psig (7 bar) output span % of output span with 100 psig (7 bar) input span	1.0 —	1.0 —	1.0 —
Supply pressure effect – for change of 100 psig (7 bar)	0.10 psig (.007 bar)	0.20 psig (.014 bar)	0.30 psig (.021 bar)
Ambient temperature:	-40°F to 200°F (-40°C to 93°C)	-40°F to 200°F (-40°C to 93°C)	-40°F to 200°F (-40°C to 93°C)

### Ordering Information:



Note:  
Other spring ranges, port sizes, and options available. Please consult factory

Most popular.



## Precision Pneumatic Input Signal Amplifier

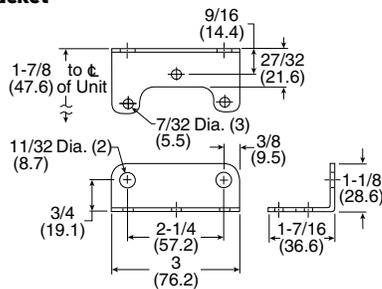
### Material Specifications

Body and housing	Aluminum
Diaphragm	Nitrile on dacron fabric
Trim	Zinc plated steel, brass

### Repair and Service Kits

Mounting bracket	<b>PS09921</b>
1:1 Ratio	<b>PS19513-11</b>
1:1 Ratio w/ by-pass valve	<b>PS19513-11I</b>
1:2 Ratio	<b>PS19513-12</b>
1:3 Ratio	<b>PS19513-13</b>

### Mounting bracket



### WARNING

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

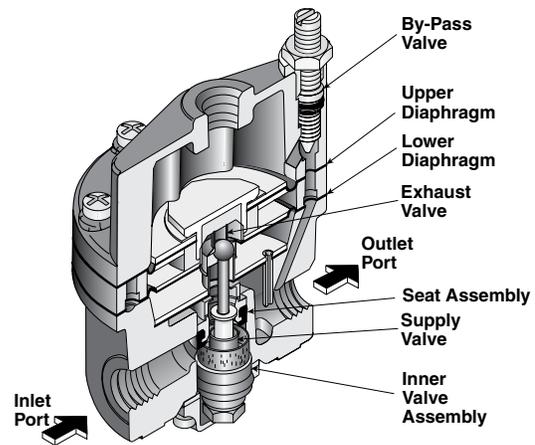
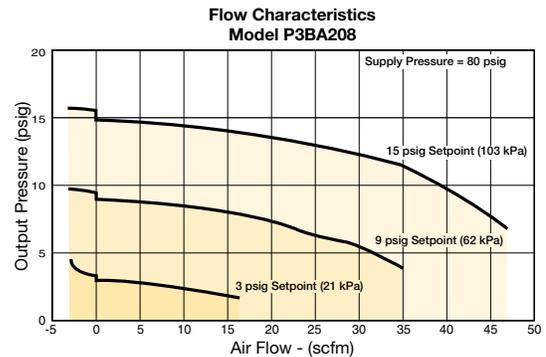
### CAUTION:

**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.

## Air Preparation Products Regulator Products

### Flow Charts

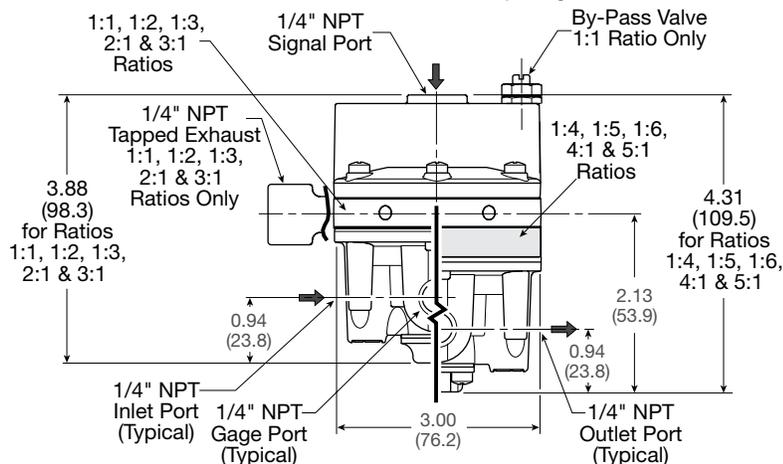
#### P3RA102BP 1/4" Input Signal Amplifier



### Operating Principles

The P3BA208 Input Signal Amplifier is a pneumatic device capable of high flow and exhaust capacity. This device uses a force balance system to control the movement of the supply and exhaust valves.

At set point, the force due to signal pressure that acts on the top of the Upper Diaphragm balances with the force due to output pressure acting on the bottom of the Lower Diaphragm.



## P3BA45 Precision Pneumatic Input Signal Amplifier

- Five signal to output ratios meet most control element requirements.
- Control sensitivity of water column allows use in precision applications.
- Large Supply and Exhaust Valves provide high forward and exhaust flows.
- Soft Supply and Exhaust Valve seats minimize air consumption.
- A balanced Supply Valve minimizes the effect of supply pressure variation.
- An Aspirator Tube compensates downstream pressure droop under flow conditions.
- A separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing.
- Unit construction lets you service the P3BA45 without removing it from the line.



Port Size	Description	Part Number
1/2"	1:1 pilot ratio	<b>P3BA4514A</b>
3/4"	1:1 pilot ratio	<b>P3BA4516A</b>

Operating information				
	Signal : Output	1:1	1:2	1:3
Output pressure, maximum:		150 psig (10 bar)	150 psig (10 bar)	150 psig (10 bar)
Supply pressure, maximum:		250 psig (17 bar)	250 psig (17 bar)	250 psig (17 bar)
Flow capacity – 100 psig (7 bar), supply 20 psig (1.5 bar) output		150 scfm (255 m <sup>3</sup> /HR)	150 scfm (255 m <sup>3</sup> /HR)	150 scfm (255 m <sup>3</sup> /HR)
Exhaust capacity – Downstream pressure 5 psig (.35 bar) above 20 psig (1.5 bar) setpoint		40 scfm (62.5 m <sup>3</sup> /HR)	40 scfm (62.5 m <sup>3</sup> /HR)	40 scfm (62.5 m <sup>3</sup> /HR)
Sensitivity, water column:		1.0" (2.54 cm)	2.0" (5.08 cm)	3.0" (7.62 cm)
Ratio Accuracy – % of 100 psig (7 bar) output span % of output span with 100 psig (7 bar) input span		3.0 —	3.0 —	3.0 —
Supply pressure effect – for change of 100 psig (7 bar)		0.10 psig (0.007 bar)	0.20 psig (0.014 bar)	0.30 psig (0.021 bar)
Ambient temperature:		-40°F to 200°F (-40°C to 93°C)	-40°F to 200°F (-40°C to 93°C)	-40°F to 200°F (-40°C to 93°C)
Hazardous locations:		Acceptable for use in zones 1 and 2 for gas atmospheres; Groups IIA and IIB and zones 21 and 22 for dust atmospheres.		

### Ordering Information:

P3BA45

1

4

A

Pilot Ratio	
1:1	1
1:2	2
1:3	3

Pipe Size	
1/2 inch	4
3/4 inch	6

Options	
Blank	No Options
E	Tapped Exhaust
H	BSPP
I	By-Pass Valve

Type	
A	45 Series

Note: Other spring ranges, port sizes, and options available. Please consult factory

Most popular.

## Precision Pneumatic Input Signal Amplifier

### Material Specifications

Body and housing	Aluminum
Diaphragm	Nitrile on dacron fabric
Trim	Zinc plated steel, brass

### Repair and Service Kits

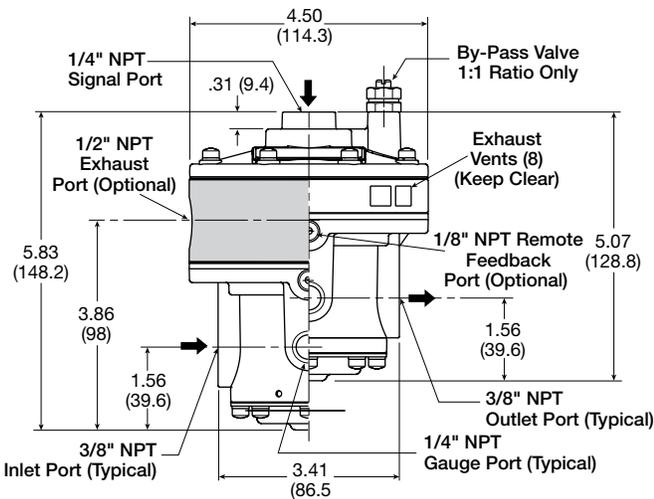
1:1 ratio	<b>PS19549-1</b>
1:1 ratio w/ tapped exhaust	<b>PS19549-1E</b>
1:3 ratio	<b>PS19549-3</b>
1:2 ratio	<b>PS19549-2</b>
1:1 w/ tapped exhaust, I option	<b>PS19549-20E</b>

### 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.

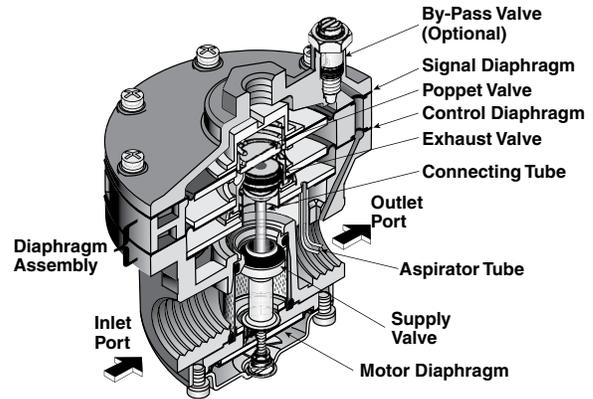
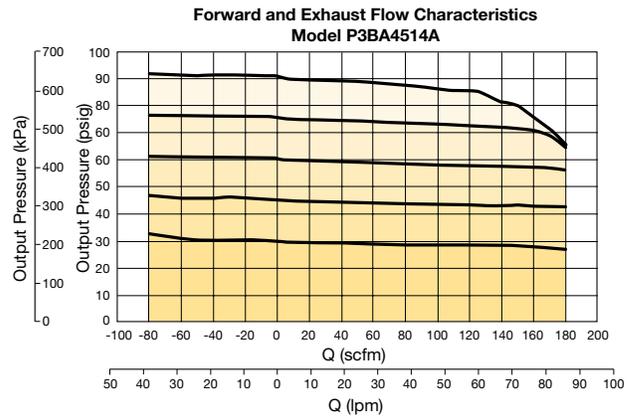


Inches (mm)

## Air Preparation Products Regulator Products

### Flow Charts

#### P3BA45 1/2" & 3/4" Input Signal Amplifier



### Operating Principles

When signal pressure on the top of the Signal Diaphragm creates a downward force on the Diaphragm Assembly, the Supply Valve opens. Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber to create an upward force on the bottom of the Control Diaphragm. When the setpoint is reached, the force of the signal pressure that acts on the top of the Signal Diaphragm balances with the force of the output pressure that acts on the bottom of the Control Diaphragm to close the Supply Valve.

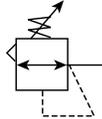
When the output pressure increases above the signal pressure, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Because the Poppet Valve is closed, pressure flows down the Connecting Tube to the bottom of the Motor Diaphragm. This pressure keeps the Supply Valve tightly closed while in the exhaust mode. The Poppet Valve opens and excess output pressure exhausts through the vent in the side of the unit until it reaches the setpoint.



**Miniature Water Regulators**

**20R Regulators - Miniature Water**

- Rugged brass body for water service
- Unbalanced poppet standard
- Diaphragm operated for fast response
- Non-rising adjusting knob
- Compact, 3.06 inch (77.79mm) high by 1.56 inch (36.69mm) wide.
- High Flow: 1.25 GPM
- 1/8", 1/4" ports (NPT, BSPP)



**Operating information**

Supply pressure (max):	0 to 300 psig (0 to 20.7 bar)
Secondary pressure ranges	
Standard	2 to 125 psig (0 to 8.6 bar)
Medium	1 to 60 psig (0 to 4.1 bar)
Medium	1 to 25 psig (0 to 1.7 bar)
Operating temperature:	32°F to 125°F (0°C to 52°C)
High flow:	1.25 GPM
Gauge ports (2):	1/8 inch
Weight:	0.5 lb (0.23 kg)

Port Size	Description	Part Number
1/8"	Without gauge	<b>20R013GC</b>
1/4"	Without gauge	<b>20R113GC</b>

NOTE: 1.25 Dia. (31.8 mm) hole required for panel mounting.

**Ordering Information:**

**20R 1 13 G C**

<b>Port Size</b>	<b>1</b>	<b>13</b>	<b>G</b>	<b>C</b>	<b>Port Type</b>
1/8 inch	0				Blank NPT
1/4 inch	1				1 BSPP
<b>Pressure Range</b>				<b>Engineering Level</b>	
25 psig	11			C	Current
125 psig	13				
60 psig	61			<b>Relief</b>	
			F	Relieving	
			G	Non-Relieving	

Most popular.



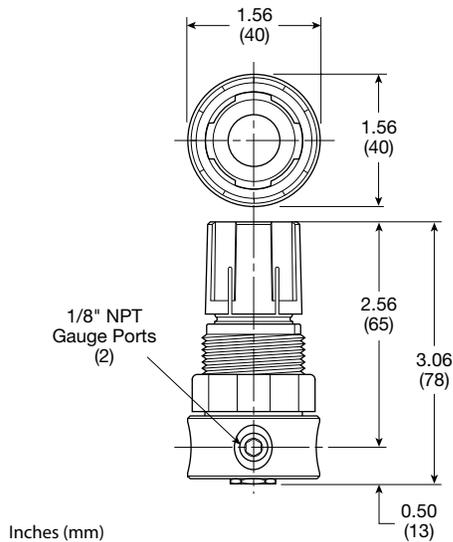
## Miniature Water Regulators

### Material Specifications

Adjusting nut & stem	Steel
Body, valve poppet, bottom plug, diaphragm button	Brass
Bonnet, knob	Plastic
Seals, diaphragm	Buna N
Springs	Steel

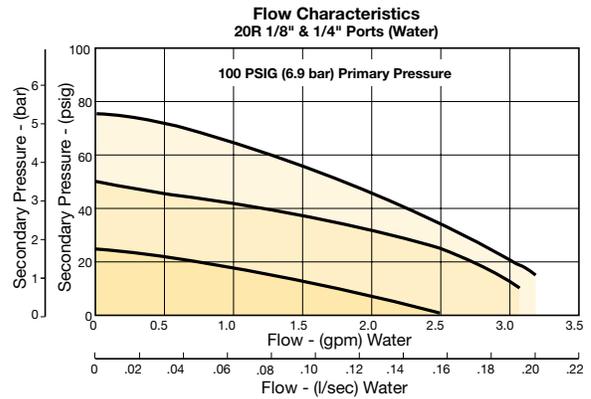
### Repair and Service Kits

Bonnet kit	<b>PCKR364Y</b>
Bonnet tamperproof kit	<b>PCKR364T</b>
Panel mount nut, aluminum	<b>R05X51-A</b>
Panel mount nut, plastic	<b>R05X51-P</b>
Mounting bracket kit	<b>SA161X57</b>
Relieving	<b>PRKR164Y</b>
Non-Relieving	<b>PRKR163Y</b>



## Air Preparation Products Regulator Products

### Flow Charts



### 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.

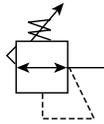


**Miniature Water Regulators**

**R24 Regulators - Miniature Water**

**Water service**

- Constructed with a combination of N.S.F. and F.D.A. compliant materials
- Lightweight plastic body
- Unbalanced poppet standard
- Non-rising, push-to-lock adjusting knob
- Compact, 3.10 Inch (79mm) high by 1.60 Inch (41mm) wide
- Lightweight
- Diaphragm operated
- 1/8", 1/4" ports (NPT)



Port Size	Description	Part Number
1/8"	Non-Relieving, 0-125 Reduced Pressure, Without Gauge	<b>R24-01CK</b>
1/4"	Non-Relieving, 0-125 Reduced Pressure, Without Gauge	<b>R24-02CK</b>

NOTE: 1.250 Dia. (31.8 mm) hole required for panel mounting.

**Operating information**

Supply pressure (max):	Inlet 150 psig (10.0 bar)
Operating temperature:	40°F to 125°F (4°C to 52°C)
Gauge ports (2):	1/8 inch (can be used for full flow)
Weight:	0.25 lb (0.11 kg)

**Ordering Information:**

**R24 - 02 C K**

<b>Type</b>	<b>Relief</b>
EPDM Elastomers R25	K Non-Relieving P Panel Mount Nut
<b>Port Size</b>	<b>Pressure Range</b>
1/8 inch 01 1/4 inch 02	A 0 to 25 psig (0 to 2 bar) B 0 to 60 psig (0 to 4 bar) C 0 to 125 psig (0 to 8 bar)

Most popular.



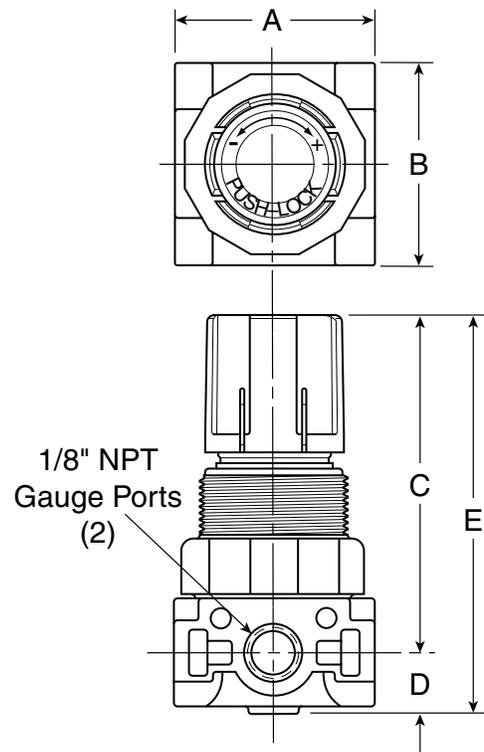
## Miniature Water Regulators

### Material Specifications

Adjusting screw	Steel
Body	Acetal
Bonnet and seat	Acetal
Diaphragm	EPDM
Seals	EPDM
Springs	Stainless steel
Valve poppet	EPDM

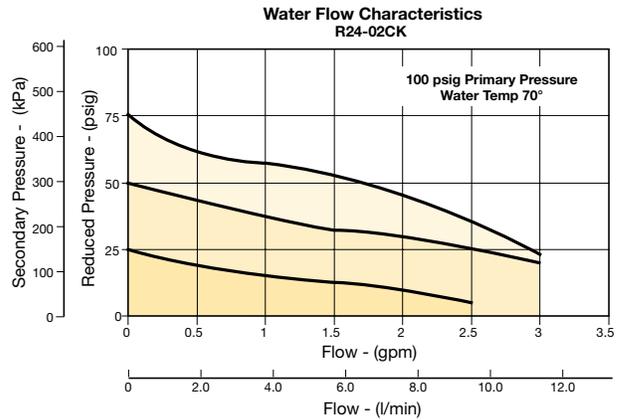
### Repair and Service Kits

Panel mount nut, plastic	<b>R05X51-P</b>
Mounting bracket and nut	<b>SA161X57</b>
Relieving (EPDM)	<b>RKR24Y</b>
Non-Relieving (EPDM)	<b>RKR24KY</b>
0-25 psig spring	<b>SPR-375-1</b>
0-60 psig spring	<b>SPR-376</b>
0-125 psig spring	<b>SPR-377</b>
Tamperproof kit	<b>CKR364T</b>



## Air Preparation Products Regulator Products

### Flow Charts



**⚠ 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.

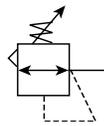


**Miniature Water Regulators**

**R46 Regulators - Miniature Water**

**Water service**

- Constructed with a combination of N.S.F. and F.D.A. compliant materials
- Lightweight plastic body
- Unbalanced poppet standard
- Non-rising, push-to-lock adjusting knob
- Compact, 3.43 inch (87.1mm) high by 2.06 inch (52.3mm) wide
- Lightweight
- Diaphragm operated
- 1/4", 3/8" ports (NPT)



**Operating information**

Supply pressure (max):	Inlet 150 psig (10.0 bar)
Operating temperature:	40°F to 125°F (4°C to 52°C)
Gauge ports (2):	1/4 inch (can be used for full flow)
Weight:	0.38 lb (0.17 kg)

Port Size	Description	Part Number
1/4"	Non-Relieving, 0-125 Reduced Pressure, Without Gauge	<b>R46-02CK</b>
3/8"	Non-Elieving, 0-125 Reduced Pressure, Without Gauge	<b>R46-03CK</b>

NOTE: 1.250 Dia. (31.8 mm) hole required for panel mounting.

**Ordering Information:**

**R46 - 02 C**

<b>Type</b> EPDM Elastomers R46	<b>Port Size</b> 1/4 inch 02 3/8 inch 03	<b>Relief</b> K Non-Relieving P Panel Mount Nut	<b>Pressure Range</b> A 0 to 25 psig (0 to 2 bar) B 0 to 60 psig (0 to 4 bar) C 0 to 125 psig (0 to 8 bar)
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Most popular.



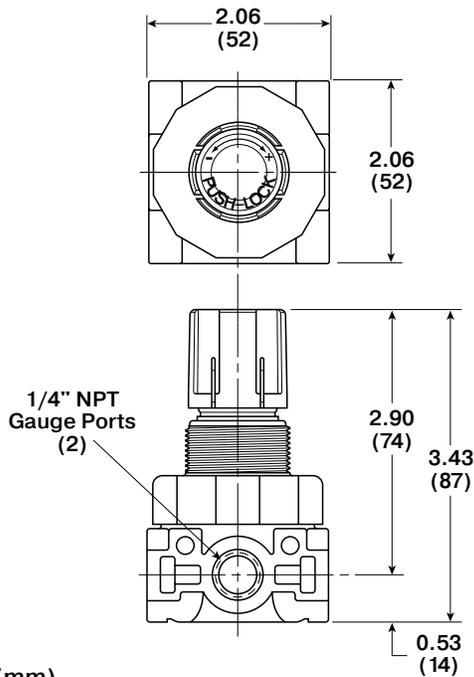
## Miniature Water Regulators

### Material Specifications

Adjusting screw	Steel
Body	Acetal
Bonnet and seat	Acetal
Diaphragm	EPDM
Seals	EPDM
Springs	Stainless steel
Valve Poppet	EPDM

### Repair and Service Kits

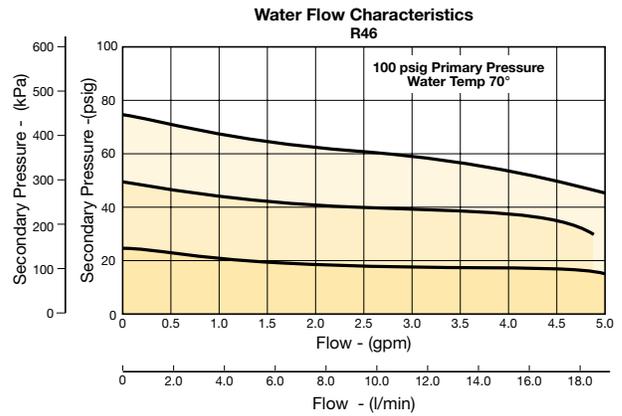
Panel mount nut, plastic	<b>R05X51-P</b>
Mounting bracket and nut	<b>SA161X57</b>
Relieving	<b>RKR45Y</b>
Non-Relieving	<b>RKR45KY</b>
0-25 psig spring	<b>SPR-46</b>
0-60 psig spring	<b>SPR-47</b>
0-125 psig spring	<b>SPR-48</b>



Inches (mm)

## Air Preparation Products Regulator Products

### Flow Charts



### WARNING

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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.



**K**

Regulator Products

