



# High Precision Regulators

*R210 / R220 / R230 Series*

*Catalogue no. PDE2542TCUK-ca*



# ARA<sup>®</sup>

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R210 / R220 High Precision Regulator

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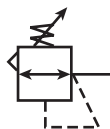
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# High Precision Regulators

## R210 / 220 High Precision Regulator



### Features

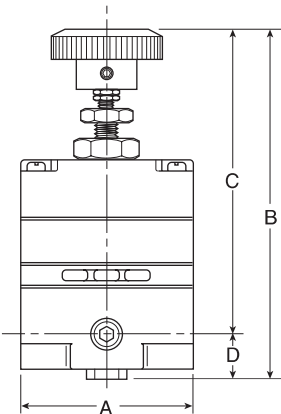
- Accurate Pressure Regulation. Controls Output Pressure to within 0.1% Accuracy.
- Multi-Stage Regulation for Maximum Control and Stability.
- Two Full Flow Gauge Ports.
- Super Sensitive Relief. Downstream Pressure Buildup, Down to 0.3m bar Above the Set Pressure, is Automatically Vented through Internal Relief Valve.
- R220 has High Exhaust Relief Capacity.

### Applications

The R210 and R220 regulators are well suited for any process that requires very precise regulation of air pressure in pipes and vessels. These regulators are often used, but not limited to the following applications:

- Air Gauging
- Gas Mixing
- Calibration Standards
- Air Hoists
- Web Tensioning
- Gate Actuators
- Roll Loading
- Valve Operators
- Cylinder Loading

R210 / R220 Regulator Dimensions		
A	B	C
52mm	110mm	97mm
D		
13.5mm		





**WARNING**

**Do not connect regulator to bottled gas.**

**Do not exceed maximum primary pressure rating.**

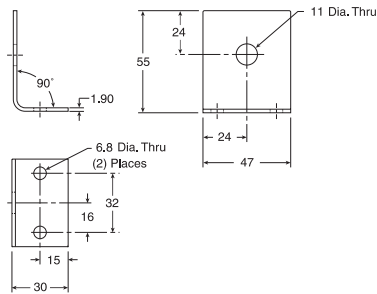
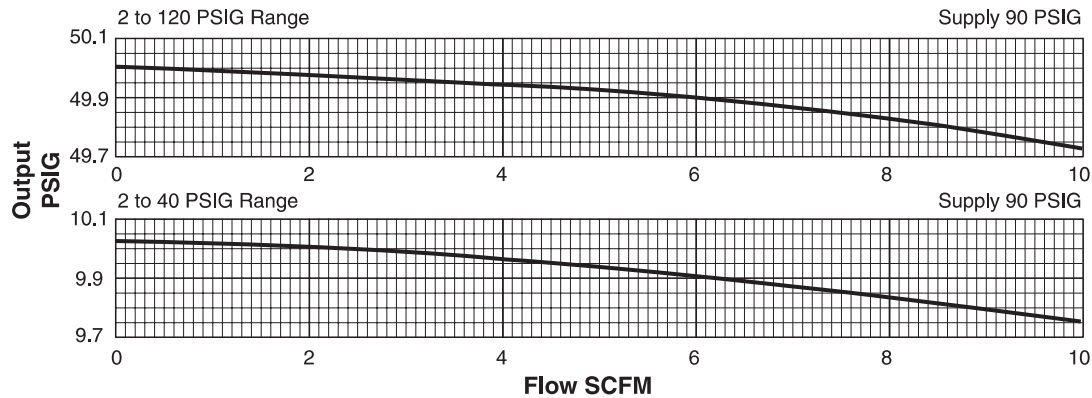
**Product rupture can cause serious injury.**

The R210 / R220 are high precision, multi-stage pressure regulators. This pressure controller provides the highest level of regulation accuracy and repeatability available and is ideal for applications that call for the utmost in control and maximum stability under variable operating conditions. A stainless steel measuring capsule is used as a sensing element to activate the high gain servo balanced control mechanism in which the main valve is controlled by a pilot valve. This allows for greater accuracy and eliminates many of the problems associated with conventional regulators using range springs and diaphragms.

## Ordering Information

		Reduced Pressure Range (Bar)		
Relieving		0.13 to 2.7	0.13 to 8.2	0.13 to 8.2 High Relief
In / Out Ports	1/4"	<b>R210G02A</b>	<b>R210G02C</b>	<b>R220G02C</b>

## Technical Information



Mounting Bracket: 446-707-045

## R210 / R220 Regulator Kits & Accessories

### Mounting Bracket Kits

Pipe Mounting .....	<b>SA200YW57</b>
Right Angle Mounting .....	<b>446-707-045</b>

### Service Kits

0.13 to 2.7 bar .....	<b>RKR210A</b>
0.13 to 8.2 bar .....	<b>RKR210C</b>
0.13 to 8.2 bar (High Relieving) .....	<b>RKR220C</b>

## Materials of Construction

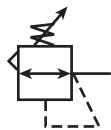
Adjusting Stem & Capsule .....	Stainless Steel
Body .....	Zinc
Control Knob .....	Plastic
Diaphragm(s) .....	Buna-N
Seals .....	Buna-N
Springs .....	Stainless Steel
Valve Poppet .....	Stainless Steel

## Specifications

Constant Bleed Rate .....	Less than 0.15m <sup>3</sup> /hr (Equals Bleed Rate plus other consumption)
Total Air Consumption .....	0.21m <sup>3</sup> /hr.
Effect of Supply Pressure Variation of 1.7 bar on outlet: .....	Less than 0.3m bar
Exhaust (Relief) Capacity At 0.34 bar above 1.38 bar Setpoint	
Standard Model .....	3.4m <sup>3</sup> /hr
High-Relief Model .....	17m <sup>3</sup> /hr
Flow Capacity At 9 bar Supply, 1.38 bar Outlet .....	25m <sup>3</sup> /hr
Gauge Ports .....	1/4"
(Can be used as additional full flow 1/4" outlet ports)	
Operating Pressure Range:	bar
PRIMARY – Maximum .....	10
SECONDARY – Spring Pressure	
2.7 bar      Minimum .....	0.14
Maximum .....	2.70
8.2 bar      Minimum .....	0.14
Maximum .....	8.2
Operating Temperature Range .....	-18°C * to 65°C
* Temperatures below 0°C require moisture free air.	
Repeatability / Sensitivity .....	0.3m bar Inches of Water Column = 1/8"
Weight .....	640g

# High Flow Precision Regulators

## R230 High Flow Precision Regulator



### Features

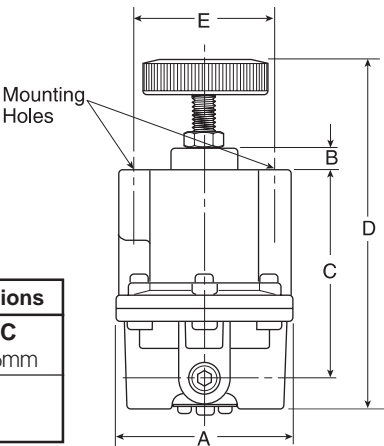
- Adjusting Knob.
- Diaphragm Design for Good Repeatability, Response and Sensitivity.
- Balanced Poppet.
- Two Full Flow Gauge Ports.
- Precise Regulation. Will Sense a Decrease in Downstream Pressure as Small as 1/4" of Water.
- High Fow Capacity. Flows of 37.8dm<sup>3</sup>/s Attainable with Minimal Drop.
- Stable Output. Dampening Action of Aspiration Tube makes Regulator Insensitive to Changes in Flow.
- On-line Maintenance. Can be Serviced Without Removal of Air Line.

### Applications

The R230 regulators are an ideal choice for any application that calls for accurately maintained output pressure under high flow conditions. This includes, but is not limited to such applications as:

Test Equipment

- Gas Mixing
- Valve Operators
- Positioning Cylinders
- Laboratory Equipment
- Web Tensioning
- Clutch & Brake Controls
- Roll Loading
- Test Panels
- Actuators



R230 Regulator Dimensions		
<b>A</b>	<b>B</b>	<b>C</b>
76mm	10mm	86mm
<b>D</b>	<b>E</b>	
154mm	57mm	



**WARNING**

**Do not connect regulator to bottled gas.**

**Do not exceed maximum primary pressure rating.**

**Product rupture can cause serious injury.**

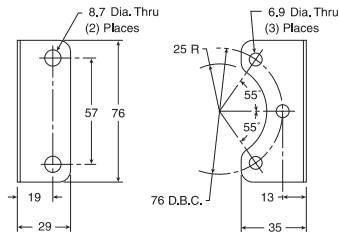
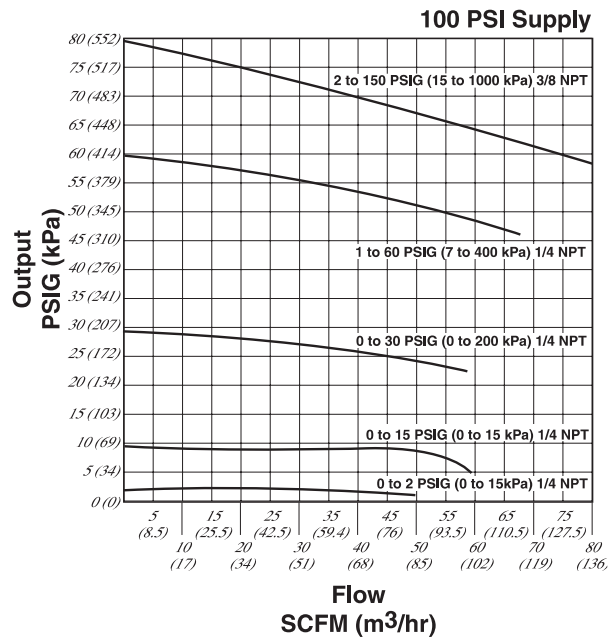
The R230 is designed for applications that require high flow capacity and accurate process control. A poppet valve which is balanced by utilizing a rolling diaphragm, insures a constant output pressure even during wide supply pressure variations. Stability of regulated pressure is maintained under varying flow conditions through the use of an aspirator tube which adjusts the air supply in accordance with the flow velocity.

## Ordering Information

		Reduced Pressure Range (Bar)			
Relieving		0 to 0.13	0 to 2	0 to 4	0 to 10
In / Out Ports	1/4"	<b>R230G02E</b>	<b>R230G02B</b>	<b>R230G02C</b>	<b>R230G02D</b>

# High Flow Precision Regulators

## Technical Information



Mounting Bracket: 446-707-025

## R230 Regulator Kits & Accessories

Mounting Bracket Kit ..... **446-707-025**

### Service Kits – Relieving

0 to 0.13 bar .....	<b>RKR230E</b>
0 to 2 bar .....	<b>RKR230B</b>
0 to 4 bar .....	<b>RKR230C</b>
0 to 10 bar .....	<b>RKR230D</b>

## Materials of Construction

Adjusting Stem & Spring .....	Steel
Biased Spring .....	Stainless Steel
Body, Bonnet .....	Aluminum
Control Knob .....	Plastic
Diaphragm .....	Buna-N Elastomer and Polyester Fabric
Seals .....	Buna-N
Valve Poppet .....	Brass
Valve Poppet Seat .....	Buna-N

## Specifications

Constant Bleed Rate .....	upto 0.35m³/h (Depending upon output pressure)
Gauge Ports .....	Two Ports 1/4" (Can be used as additional Full Flow 1/4 Inch Outlet Ports)
Effect of Supply Pressure Variation –	Less than 6mbar for 6.89 bar change
Exhaust (Relief) Capacity –	1.88 dm³/s with downstream pressure 0.3 bar above set pressure. Exhaust commences at 0.7m bar above set pressure.
Flow Capacity –	
At 6.89 bar Supply,	
5.5 bar Outlet .....	37.8 dm²/s
Operating Temperature Range –	-40°C to 71°C
Operating Pressure Range –	bar
PRIMARY – Maximum	17
Port Threads .....	1/4"
Exhaust (Relief) Capacity .....	1.88 dm³/s (Downstream pressure 0,3 bar above set pressure)
Repeatability / Sensitivity .....	6m bar Inches of Water Column = 1/4"
Response .....	250 ms The valve will open to full flow and fill a volume of 1250 cm³
Weight .....	740g

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