



# High Precision Regulators

R210 / R220 / R230 Series

Catalogue no. PDE2542TCUK-ca





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## R210 / R220 High Precision Regulator

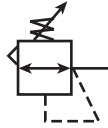
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## R230 High Flow Precision Regulator

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# High Precision Regulators

## R210 / 220 High Precision Regulator



### Features

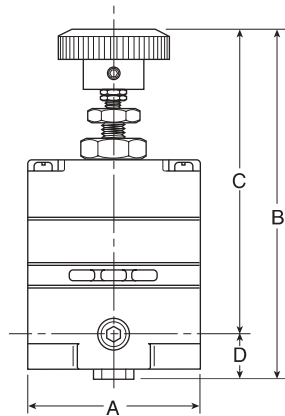
- Accurate Pressure Regulation. Controls Output Pressure to within 0.1% Accuracy.
- Multi-Stage Regulation for Maximum Control and Stability.
- Two Full Flow Gauge Ports.
- Super Sensitive Relief. Downstream Pressure Buildup, Down to 0.3m bar Above the Set Pressure, is Automatically Vented through Internal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

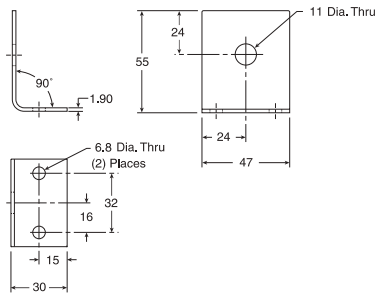
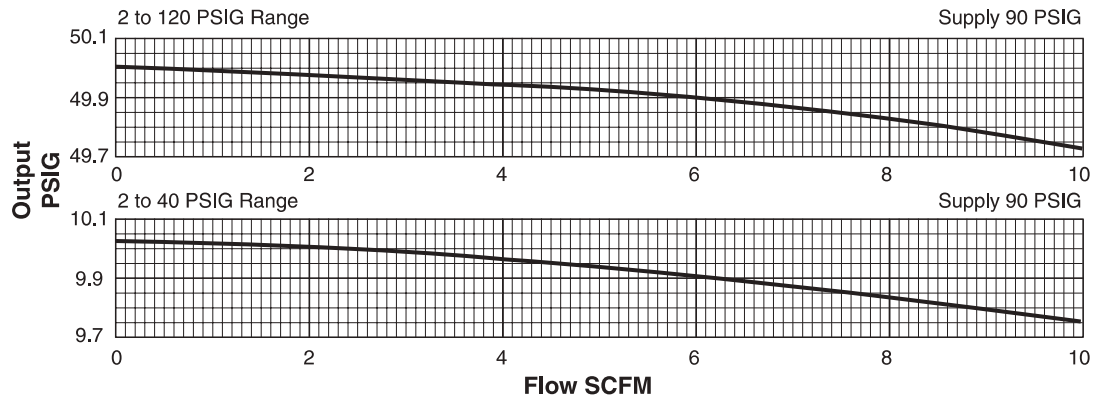
**Product rupture can cause serious injury.**

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 ..... **SA200YW57**
- Right Angle Mounting ..... **446-707-045**

### Service Kits

- 0.13 to 2.7 bar ..... **RKR210A**
- 0.13 to 8.2 bar ..... **RKR210C**
- 0.13 to 8.2 bar (High Relieving) ..... **RKR220C**

## Materials of Construction

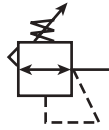
- Adjusting Stem & Capsule ..... Stainless Steel
- Body ..... Zinc
- Control Knob ..... Plastic
- Diaphragm(s) ..... Buna-N
- Seals ..... Buna-N
- Springs ..... Stainless Steel
- Valve Poppet ..... Stainless Steel

## 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

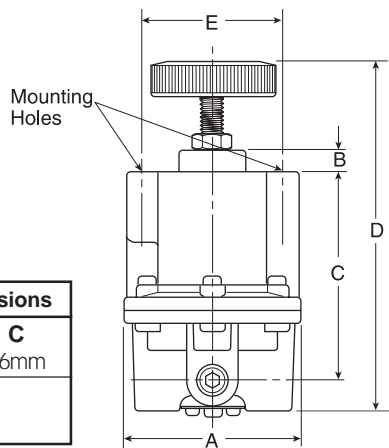
- Adjusting Knob.
- Diaphragm Design for Good Repeatability, Response and Sensitivity.
- Balanced Poppet.
- Two Full Flow Gauge Ports.
- Precise Regulation. Will Sense a Decrease in Downstream Pressure as Small as 1/4" of Water.
- High Flow Capacity. Flows of 37.8dm<sup>3</sup>/s Attainable with Minimal 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.**

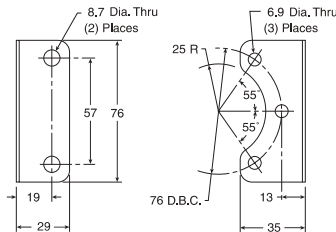
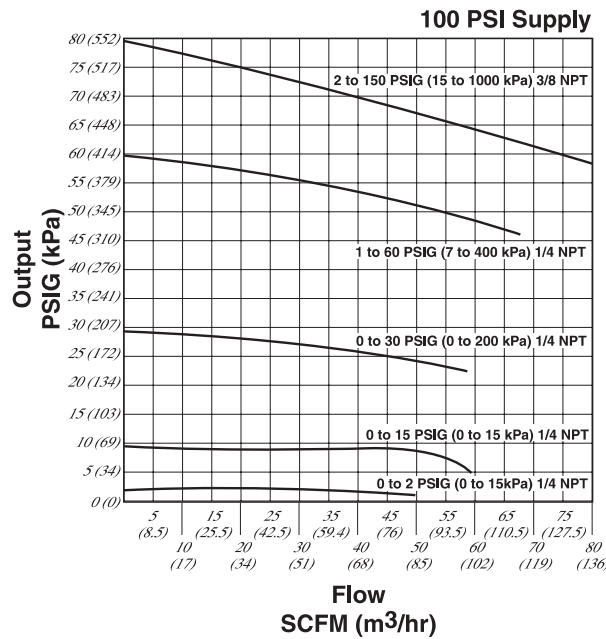
The R230 is designed for applications that require high flow capacity and accurate process control. A poppet valve which is balanced by utilizing a rolling diaphragm, insures a constant output pressure even during wide supply pressure variations. Stability of regulated pressure is maintained under varying 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 ..... **RKR230E**
- 0 to 2 bar ..... **RKR230B**
- 0 to 4 bar ..... **RKR230C**
- 0 to 10 bar ..... **RKR230D**

## 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 0.35m<sup>3</sup>/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 dm<sup>3</sup>/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 dm<sup>3</sup>/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 dm<sup>3</sup>/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 cm<sup>3</sup>
- Weight ..... 740g

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