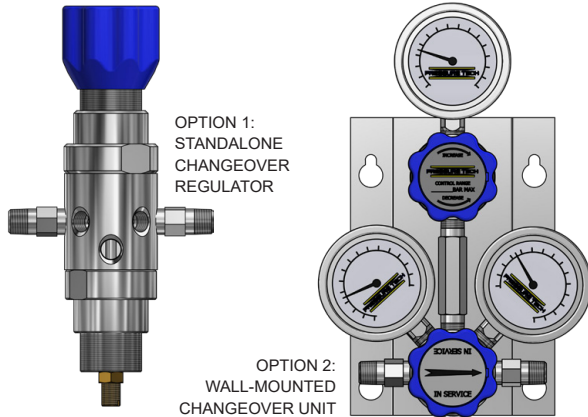


# ACU310 Datasheet

AUTO-CHANGEOVER REGULATOR / UNIT



Gas  
  Liquid  
  Diaphragm  
  Piston  
  Self-Venting  
  Non-Venting  
 Max Inlet: 300 bar (4,350 psi)  
 Max Outlet: 20 bar (290 psi)  
 Cv 0.06



## INTRODUCING THE ACU310...

The ACU310 is available in two configurations:

**Option 1:** A standalone changeover regulator comprising of two pressure regulators within one regulator body. This allows the continual supply of gas between two bottles due to the differential pressure setting of the two regulators. This will lead to a change in the outlet pressure as the changeover between the primary and secondary supply takes place.

**Option 2:** A compact wall-mounted changeover unit that provides a steady outlet pressure from a second-stage pressure regulator as the first-stage changeover regulator controls the pressure from the primary and secondary gas cylinders.

Check valves are fitted as standard to both options to prevent gas from escaping whilst bottles are replaced. Ancillary equipment such as pressure gauges and relief valves can also be added.

## STANDARD MATERIALS OF CONSTRUCTION

| PART            | MATERIALS  |
|-----------------|--|
| Body and Bonnet | ASTM A479 316/316L Stainless Steel (UNS S31600/S31603) |
| Main Valve Pin  | ASTM A479 316/316L Stainless Steel                     |
| Soft Seat       | PCTFE (Kel-F)<br>PEEK™** (450G)                        |
| Valve Spring    | Inconel® X750 (UNS N07750)                             |
| Diaphragm       | Inconel® X750  |
| Handwheel       | Nylon  |
| O-Rings         | FKM/FPM (Viton)  |
| Loading Spring  | ASTM A240 301 Stainless Steel (UNS S30100)             |
| Filter          | 40 Microns   |

## SPECIFICATION

|                           |                                  |
|---------------------------|----------------------------------|
| Max. Rated Inlet Pressure | 300 bar (4,350 psi)*             |
| Outlet Ranges             | Up to 20 bar (290 psi)**         |
| Design Proof Pressure     | 150% max. working pressure       |
| Seat Leakage              | In accordance with ANSI/FCI 70-3 |
| Weight                    | 3.6kg (7.9lbs)                   |

*Note:* Pressure regulator rating may be limited by connection type, Cv and/or seat material. Contact the office for specific pressure or temperature requirements.

\*\* PEEK™ seat only available if ACU310 is supplied as Option 1.

## FEATURES AND BENEFITS

### 1 INCONEL® X750 DIAPHRAGM

For ultimate strength and reliability.

### 2 USER FRIENDLY DESIGN

Simple half turn operation with easy-to-read indication.

### 3 SECOND STAGE REGULATOR

To prevent fluctuations in supply pressure.

### 4 0.01% DECAYING PRESSURE EFFECT

Stable outlet pressure under varying inlet conditions.

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PAGE:  
1 OF 4

# ACU310 Datasheet

AUTO-CHANGEOVER REGULATOR / UNIT

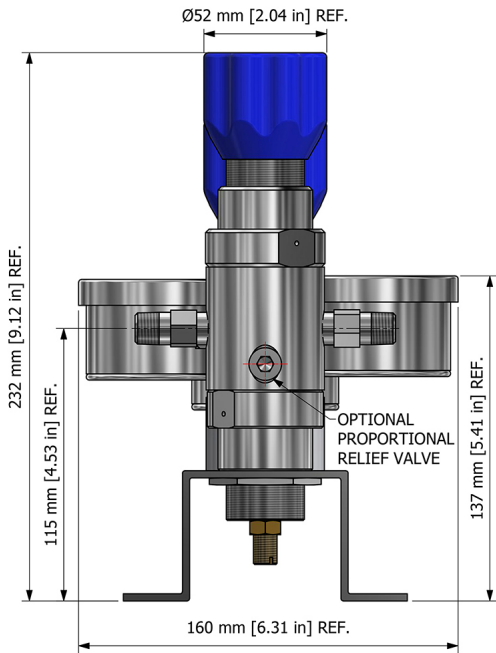
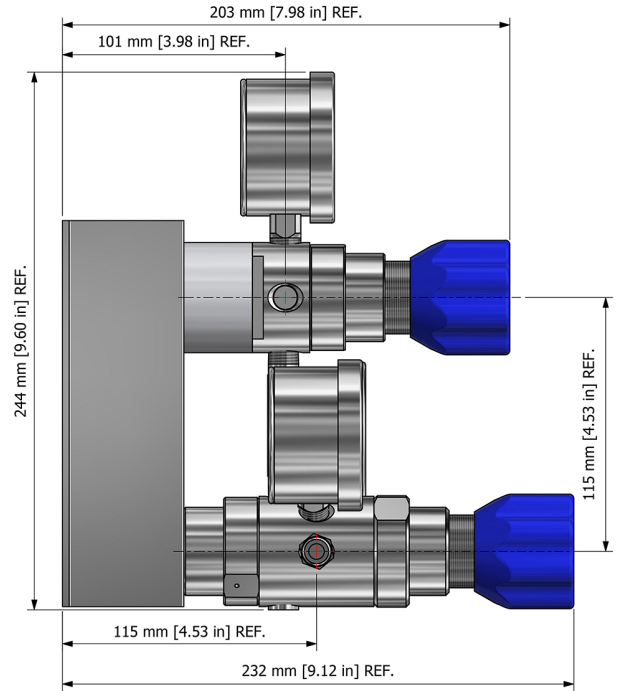
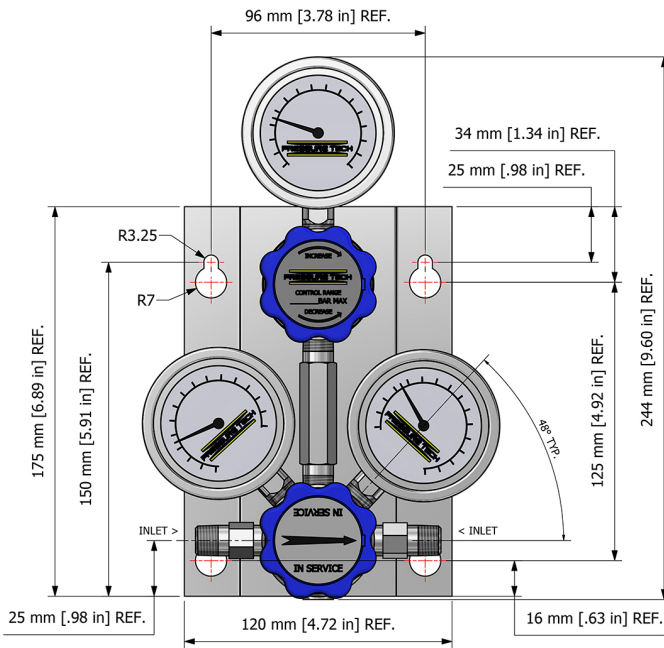


Gas    Liquid   |    Diaphragm    Piston   |    Self-Venting    Non-Venting   |   Max Inlet: 300 bar (4,350 psi)   |   Max Outlet: 20 bar (290 psi)   |   Cv 0.06

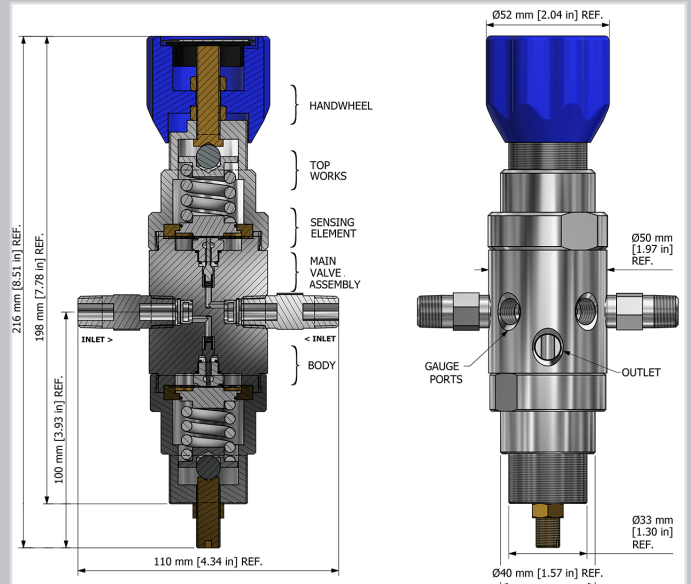
## DRAWINGS AND INSTALLATION DIMENSIONS

Dimensions shown for 1/4" NPT option and standard configurations only - please contact the office for other options.

OPTION 2: WALL-MOUNTED CHANGEOVER UNIT



OPTION 1: STANDALONE CHANGEOVER REGULATOR



Note: All gauge ports are 1/4" NPT as standard.

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PAGE:  
2 OF 4

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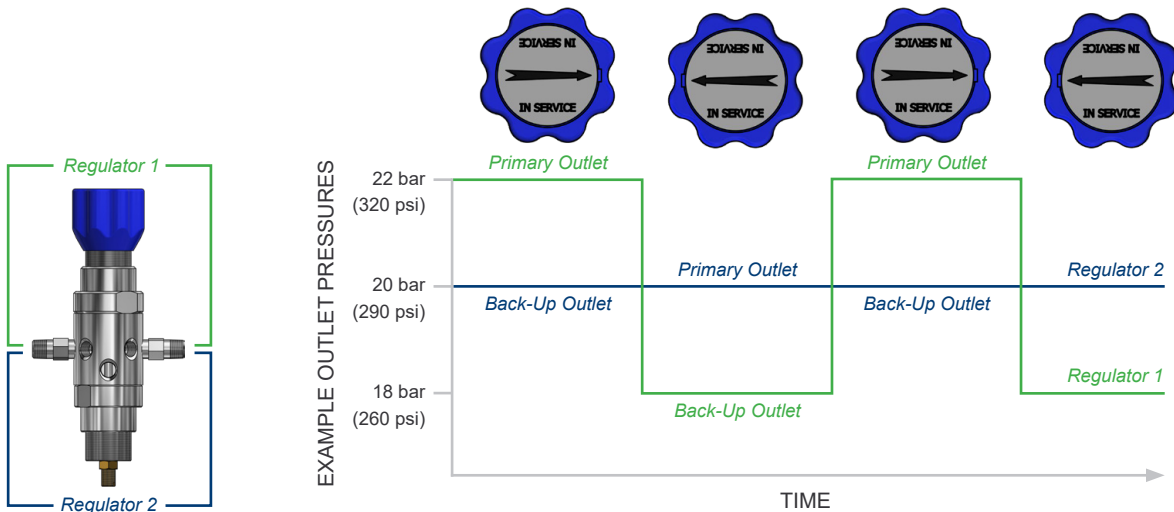
## PRINCIPLES OF OPERATION

Changeover pressure regulators operate by using two pressure regulators (within the same body) with differing outlet pressures supplying into a common outlet port. Whilst the primary regulator provides a higher pressure than the secondary regulator, the latter will remain closed and prevent any gas from the gas cylinder (connected to the inlet port) from being supplied to the process. This secondary regulator will only start to open when the pressure from the primary supply drops below the setpoint pressure.

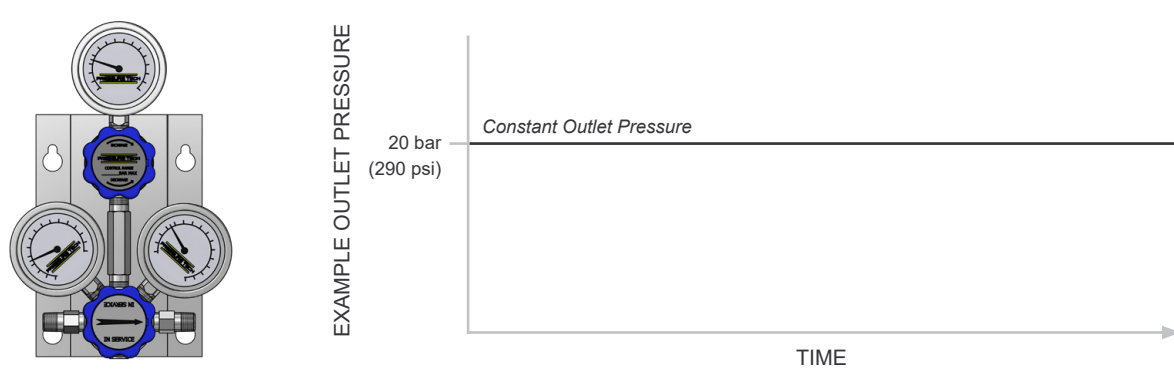
A 180° handwheel turn resets the outlet pressure so that the roles of the primary and secondary regulators are reversed - the depleted gas cylinder can then be replaced. This mode of operation means there is always a variance in the outlet pressure, typically 5-6 bar (72-85 psi), when the ACU310 is used in isolation.

A second-stage pressure regulator (shown on option 2) ensures a steady outlet pressure to the process whilst the ACU310 ensures a constant supply from two banks of gas cylinders.

### OPTION 1: STANDALONE CHANGEOVER REGULATOR



### OPTION 2: WALL-MOUNTED CHANGEOVER UNIT



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PAGE: 3 OF 4

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 Cv 0.06

## FLOW CURVE

Please contact the office for further information.

## ORDERING INFORMATION

To build a Pressure Tech part number, simply combine the characters identified below in sequence:

| ACU310 - 2 - S - 20 - P - N - N - XXX  |   |
|--|---|
| <b>REGULATOR MODEL/SERIES</b><br>ACU310 – Auto-Changeover Unit   | <b>MODIFICATIONS*</b><br>Contact the office for information.                                |
| <b>REGULATOR OPTION</b><br>1 – Standalone Changeover Regulator<br>2 – Wall-Mounted Changeover Unit   | <b>RELIEF VALVE</b><br>N – No relief valve<br>R – Fitted with relief valve                  |
| <b>BODY MATERIAL**</b><br>S – ASTM A479 316/316L Stainless Steel   | <b>GAUGE OPTION</b><br>N – No gauges (standard gauge ports included)<br>G – Gauges included |
| <b>CONTROL PRESSURE</b><br>02 – Up to 2 bar (29 psi)<br>04 – Up to 4 bar (58 psi)<br>10 – Up to 10 bar (145 psi)<br>20 – Up to 20 bar (290 psi) - Regulator<br>Option 1 Only**** | <b>SEAT MATERIAL**</b><br>K – PCTFE<br>P – PEEK™***   |

| OPTIONAL EXTRAS  |               |                           |
|------------------|---------------|---------------------------|
|                  | PART NUMBER   | DESCRIPTION               |
| Service Kit      | SRK-ACU310... | Various options available |
| Panel Mount Ring | PT-C-024      | -                         |

*Note:* Ancillary equipment also available

**TRADEMARKS:** Inconel® is a registered trademark of Inco Alloys International  
PEEK™ is a trademark of Victrex PLC

\* Where applicable  
\*\* Other materials/connections may be available  
\*\*\* PEEK™ seat only available for ACU310 option 1 - Standalone Changeover Regulator)  
\*\*\*\* Optional higher changeover pressure available on request

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PAGE:  
4 OF 4