Series 12
Back Pressure Regulator

Typical Applications
- Calibration equipment
- Gas and liquid sampling
- Purge and carrier gases
- Component testing
- Industrial controls
- Cryogenic dewars

Features and Benefits
- 316L Diaphragm
- Multiple Cv options
- 2 year factory warranty
The Neon 12 Series is a compact, lightweight, and high purity back pressure regulator. Our sensitive, long life, 316L stainless steel diaphragms and a Cv of 0.30 affords steady upstream control of pressure from low to moderate flow applications even with fluctuating flow conditions. It can be used for both gas and liquid applications.

The large diaphragm provides sensitive throttling action making the Series 12 a superior choice over a relief valve.

We offer a wide variety of body materials, porting options, and connections to meet your specific needs while minimizing the internal unswept volume of the regulator. Regulators can be supplied with options such as installed pressure gauges and valves.

### Specifications

For questions about this product, please contact Neon Controls.

#### Operating Parameters
- **Pressure rating per criteria of CGA E-4; ASME B31; ASME BPVC**
- **Maximum Set Pressure**
  - 1000 psig / 69 Bar
- **Maximum Outlet Pressure**
  - 10, 25, 50, 100, 250, 500, 750, 1000 psig
  - 70, 175, 345, 690, 1725, 3450, 5170, 6895 kPa
  - 1, 2, 3.5, 7, 17.5, 35, 52, 69 Bar
- **Design Proof Pressure**
  - 150% of rated pressure
- **Leakage**
  - **Internal**: Bubble tight
  - **External**: Designed to meet < 2 x 10^{-8} atm/cc He
- **Operating Temperature**
  - -40°F to 500°F / -40°C to 260°C
  - *(See Chart B)*
- **Flow Capacity**
  - 0.30, 0.46

#### Wetted Materials
- **Body**
  - Brass, 316L Stainless Steel, Monel, Hastelloy C, Titanium, Electroless Nickel Plated Brass
- **Actuator**
  - EPDM, PCTFE, Peek, Kalrez, Tefzel *(standard)*, Viton
- **Seal**
  - Teflon, Viton
- **Diaphragm**
  - 316L Stainless Steel with Tefzel Sealing Ring
- **Spring Housing**
  - 316L Stainless Steel, Electroless Nickel Plated Aluminum, Black Anodized Aluminum

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Subject to change without notice.
**Series 12 Brass**

**NEON SERIES 12**
Flow Curves Nitrogen at 72°F

![Flow Curves Diagram](chart-a)

<table>
<thead>
<tr>
<th>Set point in PSIG</th>
<th>6.5</th>
<th>6.6</th>
<th>6.7</th>
<th>6.8</th>
<th>7</th>
<th>7.1</th>
<th>7.2</th>
<th>7.3</th>
<th>7.4</th>
<th>7.5</th>
<th>7.6</th>
<th>7.7</th>
<th>7.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow is SCFH</td>
<td>0</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

**Standard Porting Configuration**
(Chart A)

1. A – 1/8”
2. B – 1/4”
3. C – 3/8”

Many other porting configurations available

**Pressure and Temperature Table**

<table>
<thead>
<tr>
<th>Seat Material</th>
<th>Max Temperature °F</th>
<th>Max Control Range @ Max Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEFZEL</td>
<td>150°F</td>
<td>1000 PSI</td>
</tr>
<tr>
<td>PCTFE (KEL-F)</td>
<td>150°F</td>
<td>1000 PSI</td>
</tr>
<tr>
<td>EPDM</td>
<td>250°F</td>
<td>250 PSI</td>
</tr>
<tr>
<td>VITON</td>
<td>250°F</td>
<td>250 PSI</td>
</tr>
<tr>
<td>KALREZ</td>
<td>300°F</td>
<td>250 PSI</td>
</tr>
<tr>
<td>PEEK</td>
<td>500°F</td>
<td>1000 PSI</td>
</tr>
</tbody>
</table>

Max temperature rating is for media only

Shipping Weight: 1.9 pounds
Warranty

Precision Instrumentation warrants each Neon regulator to be free from defects in materials and workmanship for two years after manufacture date.

In the unlikely event that a Neon regulator is defective in workmanship or materials, Precision Instrumentation will, at its discretion, repair or replace the regulator free of charge.

The selling distributor must process all warranty claims. If the original purchaser suspects a defect in a Neon regulator, the regulator, together with proof of purchase, must be returned to the selling distributor for evaluation and disposition.

This warranty applies only under conditions of use for which each regulator is designed and does not cover cosmetic damage or damage due to misuse, abuse, neglect, accident, improper installation, or acts of God. This warranty does not extend to or apply to any regulator that has been repaired or altered by any party other than Precision Instrumentation or its authorized distributors.

This warranty is in lieu of and excludes all other warranties, expressed or implied, including the warranties of merchantability and fitness for a particular purpose. Precision Instrumentation will not be liable for any special or consequential damages, or for any loss, damage or expense directly or indirectly arising from use of or inability to use any regulator, either separately or in combination with any other equipment or material, or from any other case.

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