Features

- 2 Stage Pilot Operation allows precise control of set points.
- 14 SCFM flow capacity in a small size unit.
- Low air consumption preserves air and other costly gases.
- Compact size permits installation where space is limited.
- Available in 1/8”, 1/4” and 3/8” port sizes.

Operating Principles

The Model 85D Multi-Stage Biasing Relay is a precision control combining the sensitivity of a precision pressure regulator with positive biasing capability. This compact, pilot-operated device offers unusually high output capacity with minimal air consumption, while providing excellent protection against supply or output pressure variations.

The versatile Model 85D is recommended for use in systems requiring precision pressure maintenance and instrument biasing, in dead end service and instrument panel supply applications.

The basic mathematical expression for the Model 85D is PO = PS + K where PO is output pressure, PS is signal pressure and K is the spring constant.
### Model 85D Multi-Stage Biassing Relay

#### Specifications

- **Maximum Supply Pressure**: 250 psig, [17.5 BAR], (1750 kPa)
- **Recommended Operating Supply Pressure**: 150 psig, [10 BAR], (1000 kPa)
- **Maximum Signal or Output Pressure**: 150 psig, [10 BAR], (1000 kPa)

#### Flow Capacity

14 SCFM (23.8 m³/HR) @ 100 psig, [7.0 BAR], (700 kPa)

#### Exhaust Capacity

2.5 SCFM (4.25 m³/HR) where downstream pressure is 5 psig, [,35 BAR], (35 kPa) above setpoint

#### Supply Pressure Effect

Less than 0.2 psig, [,014 BAR], (1.4 kPa) for 100 psig, [7.0 BAR], (700 kPa) change in supply pressure

#### Pressure Change Under Flow Conditions

Less than 0.1 psig, [,007 BAR], (0.7 kPa) from dead end service to 10 SCFM (17 m³/HR)

#### Air Consumption

Less than .1 SCFM (,17 m³/HR)

#### Ambient Temperature Limits

-40°F to +200°F, (-40°C to 93.3°C)

#### Materials of Construction

- **Body**: Aluminum
- **Trim**: Aluminum, Stainless Steel, Brass
- **Diaphragms**: Buna N and Dacron

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### Catalog Information

#### Catalog Number

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<thead>
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#### Pressure Range

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<th>[BAR]</th>
<th>(kPa)</th>
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<td>(0-150)</td>
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<td>[0.07-4]</td>
<td>(7-400)</td>
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#### Pipe Size

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<th>3/8” NPT</th>
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</table>

#### Options

- **Tapped Exhaust**: E
- **Bonnet Mounting**: P
- **Tamper Proof**: T
- **BSPT (Tapered)**: U

¹ 1/8” NPT Pipe Size only.
² 1/4” or 3/8” NPT Pipe Size only.

### Service Kit

A Service Kit is available for the Model 85D Multi-Stage Biassing Relay, refer to the Installation, Operation and Maintenance Instructions, IS-3000085D.