A Solid Workhorse You Can Depend On For Consistent, Reliable Control

TRIAC Electro-Pneumatic Positioners (4-20 psi, linear and rotary type) are advanced control devices which provide unparalleled stability in difficult environments.

### Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>EPL Linear Type (lever feedback)</th>
<th>EPR Rotary Type (cam feedback)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
<td>Double</td>
</tr>
<tr>
<td>Input Signal</td>
<td></td>
<td></td>
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<tr>
<td>Input Resistance</td>
<td></td>
<td></td>
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<tr>
<td>Supply Air Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Stroke</td>
<td>10–80mm (NOTE 2)</td>
<td>60–100º (NOTE 3)</td>
</tr>
<tr>
<td>Air Piping Connection</td>
<td>1/4” NPT</td>
<td></td>
</tr>
<tr>
<td>Conduit Connection</td>
<td>1/2” NPT</td>
<td></td>
</tr>
<tr>
<td>Explosion-Proof Classification</td>
<td>Exmd II BT6, Exmd II C(H²)T6, IP66, Exia II BT6</td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>-4 –150ºF</td>
<td></td>
</tr>
<tr>
<td>Pressure Gauge</td>
<td>Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>Output Characteristics</td>
<td>Linear</td>
<td></td>
</tr>
<tr>
<td>Linearity</td>
<td>Within ±1.0% F.S.</td>
<td>Within ±1.5% F.S.</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Within 0.1% F.S.</td>
<td>Within 0.5% F.S.</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>Within 0.5% F.S.</td>
<td>Within 1.0% F.S.</td>
</tr>
<tr>
<td>Repeatability</td>
<td>Within ±0.5% F.S.</td>
<td></td>
</tr>
<tr>
<td>Air Consumption</td>
<td>.18 CFM @ 20 psi</td>
<td></td>
</tr>
<tr>
<td>Flow Capacity</td>
<td>2.83 CFM @ 20 psi</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Aluminum Diecast Body</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>6.5 lbs. with a terminal box</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**
1) 1/2 split range can be adjusted
2) Feedback lever for stroke 80–150mm is available (EPL)
3) Stroke can be adjusted to 0º–60º or 0º–100º (EPR)

### Features

- Easy maintenance
- Precise calibration with simple SPAN and ZERO adjustments
- Simple conversion to Direct Acting or Reverse Acting
- Split range control available by simple adjustments without changing parts
- Simple structure for feedback connection
- Corrosion-resistant aluminum diecast body
- Sensitive response for high performance
- Vibration resistant design
- Stainless steel gauges standard
- A restricted pilot valve orifice kit for small actuators included
- Optional built-in limit switches or 4-20 mA position transmitter for feedback
- Optional directly-mountable positioner
**Principles of Operation**

**EPL (Linear Operation)**
As the signal current from the controller increases, the plate spring of the torque motor works as a pivot. As the armature receives the rotary torque in the counter-clockwise direction, the counter-weight is pushed to the left, the clearance between the nozzle and the flapper will increase, and the nozzle back pressure will decrease. As a result, the exhaust valve of the pilot valve moves to the right, and the output pressure of OUT1 increases to move the actuator diaphragm. The valve stem goes up or down by the movement of the feedback lever, and the feedback spring lengthens or shortens by the movement of the feedback lever. The valve stem stays in the position where the spring force is balanced with the force generated by the input current in the torque motor. The compensation spring is for direct feedback of the motion of the exhaust valve and is connected to the counter-weight to enhance the stability of the loop. The zero point is adjusted by changing the zero adjustment spring tension.

**PPR (Rotary Operation)**
As the signal current from the controller increases, the plate spring of the torque motor works as a pivot. As the armature receives the rotary torque in the counter-clockwise direction, the counter-weight is pushed to the left, the clearance between the nozzle and the flapper will increase, and the nozzle back pressure will decrease. As a result, the exhaust valve of the pilot valve moves to the right, and the output pressure of OUT1 increases to move the actuator diaphragm. The movement of the actuator in turn rotates the feedback shaft, and the feedback spring lengthens or shortens by the movement of the feedback cam connected to the feedback shaft. The actuator stays in the position where the spring force is balanced with the force generated by the input current in the torque motor. The compensation spring is for direct feedback of the motion of the exhaust valve and is connected to the counter-weight to enhance the stability of the loop. The zero point is adjusted by changing the zero adjustment spring tension.

**Installation**

**EPL 1200 (Linear Type)**
1) Connect the feedback lever to the control valve stem at position where the angle between the valve stem and the feedback lever is 90° as shown to the right when the input signal is set to 12 psi (50%).
2) The stroke range for the best performance should be 3/8” – 3-1/4” and the operation angle of the feedback lever should be between minimum 10° and maximum 30° to carry out accuracy and linearity perfectly.

**EPR 1200 (Rotary Type)**
Mount the positioner to the actuator at position where the feedback lever is in perfect alignment with the rotary actuator output shaft. The spring pin of the feedback lever "A" should be placed in the orifice of the feedback lever "B". Be sure that linearity and hysteresis will suffer if these alignment and placement are not correct.
**Principles of Operation**

**Installation**

1. Connect the feedback lever to the control valve stem at position where the angle between the valve stem and the actuator diaphragm is 90º as shown to the right when the input signal is set to 12 psi (5% or 100%).

2. Mount the positioner to the actuator at position where the zero point is adjusted by changing the zero adjustment spring tension.

3. Ensure that the zero point is adjusted by changing the zero adjustment spring tension.

4. Connect the feedback lever to the control valve stem at position where the angle between the valve stem and the actuator diaphragm is 90º as shown to the right when the input signal is set to 12 psi (5% or 100%).

5. Mount the positioner to the actuator at position where the zero point is adjusted by changing the zero adjustment spring tension.

6. Connect the feedback lever to the control valve stem at position where the angle between the valve stem and the actuator diaphragm is 90º as shown to the right when the input signal is set to 12 psi (5% or 100%).

**How To Order**

- **EP**: Pneumatic
- **R**: Linear
- **1000**: 3–15 psi
- **LS**: 4–20 mA
- **XX**: (0) Limit Switches
- **XX**: No Transmitter
- **X**: Flat Indicator

**Example**

**EPR1000-LS-XX-X**

Electro-Pneumatic Rotary Positioner, 4–20 mA signal, with 2 SPDT Limit Switches and Flat Transmitter.
DIVISION OF

Electro-Pneumatic Positioner

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Input Signal

Input Resistance

Supply Air Pressure

Standard Stroke

Air Piping Connection

Conduit Connection

Explosion-Proof Classification

Ambient Temperature

Pressure Gauge

Output Characteristics

Linearity

Sensitivity

Hysteresis

Repeatability

Air Consumption

Flow Capacity

Material

Weight

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Accessories

Position Transmitter Kit

Rotary Type Mounting Brackets

Linear Type Mounting Brackets