Automation Valve Accessories
Pneumatic-Pneumatic Positioner

Linear & Rotary Type

A Solid Workhorse You Can Depend ON For Consistent, Rliable Control
Modentic Pneumatic-Pneumatic Positioner (3-15psi) of Linear & Rotary Type
are advanced contro devices which provide unparalleled stability in difficult environments

FEATURES

• Easy maintenance
• Simple zero and span adjustment
• 1/2” spilt range by simple adjustment without changing parts
• Reversible operating direction
• Simple structure for feedback connection
• Corrosion-resistant materials
• Easy to attach small diaphragm actuators
• Sensitive and correct response for high performance
• Economical energy saving
• Stable operation. Orifice with filter is available
• Optional visual dome indicator

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>PPL</th>
<th>PPR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Linear Type (lever feedback)</td>
<td>Single</td>
<td>Double</td>
</tr>
<tr>
<td></td>
<td>Rotary Type (cam feedback)</td>
<td>Single</td>
<td>Double</td>
</tr>
<tr>
<td>Input Signal</td>
<td>0.2<del>1.0kgf/cm² (3</del>15psi)(Note.1)</td>
<td>Max. 7.0kgf/cm² (100psi)</td>
<td></td>
</tr>
<tr>
<td>Supply Air Pressure</td>
<td></td>
<td>PT 1/4 (NPT 1/4)</td>
<td></td>
</tr>
<tr>
<td>Standard Stroke</td>
<td>10~80mm(Note.2)</td>
<td>60~100˚ (Note 3)</td>
<td></td>
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<tr>
<td>Air Piping Connection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>-20~70˚c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Gauge</td>
<td>Stainless Steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Characteristics</td>
<td>Linear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linearity</td>
<td>Within 1.0%F.S</td>
<td>Within 1.5%F.S</td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Within 0.1%F.S</td>
<td>Within 0.5%F.S</td>
<td></td>
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<tr>
<td>Hysteresis</td>
<td>Within 0.5%F.S</td>
<td>Within 1.0%F.S</td>
<td></td>
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<tr>
<td>Repeatability</td>
<td>Within 0.5%F.S</td>
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<tr>
<td>Air Consumption</td>
<td>5LPM (Sup. 1.4kgf/cm²)</td>
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<tr>
<td>Flow Capacity</td>
<td>80LPM (Sup. 1.4kgf/cm²)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Aluminium Diecast Body</td>
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<tr>
<td>Weight</td>
<td>2.1kg</td>
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</table>

Note:
1. 1/2 Spilt range adjustment is available
2. Additional Option: 80~150mm
3. Stroke adjustment (Rotary type): 0~60˚, 0~100˚

http://www.modentic.com.tw/
**Linear Type Backlash**

1. Attach at position where a valve stem and a feedback lever shaft build up the right angle as shown in the right picture when 50% (9psi) of the input signal is applied.
2. The stroke range for performance is 10 to 80mm and the operating angle of feedback lever should be between minimum 10˚ and maximum 30˚ to carry out accuracy and linearity.

**Rotary Type**

Concerning exchangeability of actuators, we have equipped with the mounting bracket for users in accordance with ISO standard as shown in the right picture.

Attach at position at which a feedback lever “A” should be exactly inserted into the hole of the feedback lever “B” to connect with each other.

1. Concentric: the spring pin of the feedback lever “A” should be exactly inserted into the hole of the feedback lever “B” to connect with each other.
2. Take note that it causes the characteristics for linearity, so hysteresis

**INSTALLATION**

**Linear Type (PPL)**

**Rotary Type (PPR)**


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**PRINCIPLES OF OPERATION**

**Series: PPL (Linear Operation)**

1. As the input signal (3-15psi) from a manual operator increases, pressure of the bellows inside of the signal capsule increases and the flapper revolves around the pivot of the plate spring counter-clockwise.
2. The gap between a flapper and a nozzle widens at this moment and back pressure of the nozzle decreases. So the exhaust valve in the pilot valve moves right and the inlet valve A opens the port.
3. Pressure of output 1 increases. So an actuator diaphragm moves a stem downwards.
4. With these movements as above, a feedback lever extends the feedback spring and the control valve operates by position where is balanced with the input signal supplied.
5. A compensation spring makes up for the movement of the exhaust valve and makes the loop stable.
6. The zero point should be adjusted by tension of the zero adjustment spring.

**Series: PPR (Rotary Operation)**

1. As the input signal (3-15psi) from a controller or a manual operator increases, pressure of the bellows inside of the signal capsule increases and the flapper revolves around the pivot of the plate spring counter-clockwise.
2. The gap between a flapper and a nozzle widens at this moment and back pressure of the nozzle decreases. So the exhaust valve in the pilot valve moves right and the inlet valve A opens the port.
3. Pressure of output 1 increases, while pressure of Output 2 decreases. So a cylinder actuator rotates.
4. With these movements as above, a feedback cam extends the feedback spring and a cylinder actuator operates by position where is balanced with the input signal supplied.
5. A compensation spring makes up for the movement of the exhaust valve and makes the loop stable.
6. The zero point should be adjusted by tension of the zero adjustment spring.

**AIR PIPING**

**PPL-Linear Type**

<table>
<thead>
<tr>
<th>Direct Acting (DA)</th>
<th>Reverse Acting (RA)</th>
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<tr>
<td>![Diagram DA]</td>
<td>![Diagram RA]</td>
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</tbody>
</table>

PPR-Rotary Type

**Direct Acting (DA)**

- Increasing input signal, actuator stem rotates to close valve.
- Output 1 is plugged.

**Reverse Acting (RA)**

- Increasing input signal, actuator stem rotates to open valve.
- Output 2 is plugged.

**DIMENSIONS**

PPL-Linear Type

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