Overview

LP11 self-operated (inlet/outlet) pressure control valve is composed of the control valve, actuator and a spring used for pressure setting.

It is suitable for controlling after–valve pressure in the pipes of non–corrosive liquids, gases and steams. When the after–valve pressure rises, the control valve is closed.

The main features are as follows:
1. It has the pressure balancing function with high sensitivity.
2. Low noise, reliable performance, free of maintenance.
3. The standard modular design is adopted.
4. Various combined controls can be carried out through the assemblies.

Working Principle

A. Self–Operated Inlet Pressure Regulating Valve

After throttling by the plug and seat, the before–valve pressure P1 of the process medium is changed into the after–valve pressure P2. Through the control pipeline, P1 is input to the upper diaphragm chamber of the actuator and acts on the top disc. The acting force produced balances the reacting force of the spring, determining relative positions of the plug and seat and controlling the before–valve pressure. When the before–valve pressure P1 increases, the acting force of P1 that acts on the top disc will increase accordingly. At the time, the acting force on the top disc is higher than the reacting force of the spring to make the plug move away from the seat, until the acting force on the top disc balances the reacting force of the spring. At the time, the flow area between the plug and seat is increased, the flow resistance becomes lower and P1 is reduced to the set value. Likewise, when the before–valve pressure P2 decreases, the acting direction is reverse to the above. This is the working principle during the control of before–valve pressure.

When it is necessary to change the set value of before–valve pressure P1, please adjust the adjusting nut.
B. Self-Operated Outlet Pressure Regulating Valve

After throttling by the plug and seat, the before-valve pressure P1 of the process medium is changed into the after-valve pressure P2. Through the control pipeline, P2 is input to the lower diaphragm chamber of the actuator and acts on the top disc. The acting force produced balances the reacting force of the spring, determining relative positions of the plug and seat and controlling the after-valve pressure. When the after-valve pressure P2 increases, the acting force of P2 that acts on the top disc will increase accordingly. At the time, the acting force on the top disc is higher than the reacting force of the spring to make the plug close towards the seat, until the acting force on the top disc balances the reacting force of the spring. At the time, the flow area between the plug and seat is reduced, the flow resistance becomes higher and P2 is reduced to the set value. Likewise, when the after-valve pressure P2 decreases, the acting direction is reverse to the above. This is the working principle during the control of after-valve pressure.

When it is necessary to change the set value of after-valve pressure P2, please adjust the adjusting nut.

For the difference between the pressure regulating valve and control valve:
Specifications

Kv ≥ 3.2

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<tr>
<th>PN</th>
<th>1.6, 2.5, 4.0, 6.4, 10, 15</th>
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Pressure setting range
- 10-60, 20-120, 80-250, 200-500, 450-1000, 800-1600, 1000-2200, 2000-2800

Pressure balance devices
- Bellows
- Cage

Allowable differential pressure (MPa)
- PN1.6: 1.6, 1.5, 1.2, 1.0
- PN2.5-PN15: 2.0 (Single) / 3.5 (Double), 1.5, 1.2, 1.0

Medium temperature
- Gas ≤ 80°C, Liquid ≤ 140°C, With tank ≤ 350°C

Charactertics
- Quick opening

Connection

Signal interface
- M14 x 1.5

Action
- Inlet control (K type), Outlet control (B type)

Reducing ratio
- 10:1-1.25:1

Kv ≥ 3.4

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| KV  | 0.01 | 0.03 | 0.09 | 0.14 | 0.21 | 0.34 | 0.54 | 0.85 | 1.4  | 2.1  | 3.4  |

Dimensions and Weight

Exploded View

- Diaphragm
- Diaphragm chamber
- Guide stem
- Stem
- Setting spring
- Bellows
- Body
- Core
- Seat
## LPI11—Self-Operated Pressure Control Valve

### Pressure-adjusting range

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### Weight(KG)

| 26  | 37  | 43  | 70  | 90  | 110 | 130 | 146 | 182 | 200 | 260 |

### Pressure pipe thread interface

- M14 x 1.5

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**Installation Drawing**

- Control the liquid pressure
- Control the gas pressure
- Control the steam pressure