

Current-to-Pneumatic positioner    Current-to-Pneumatic Converter

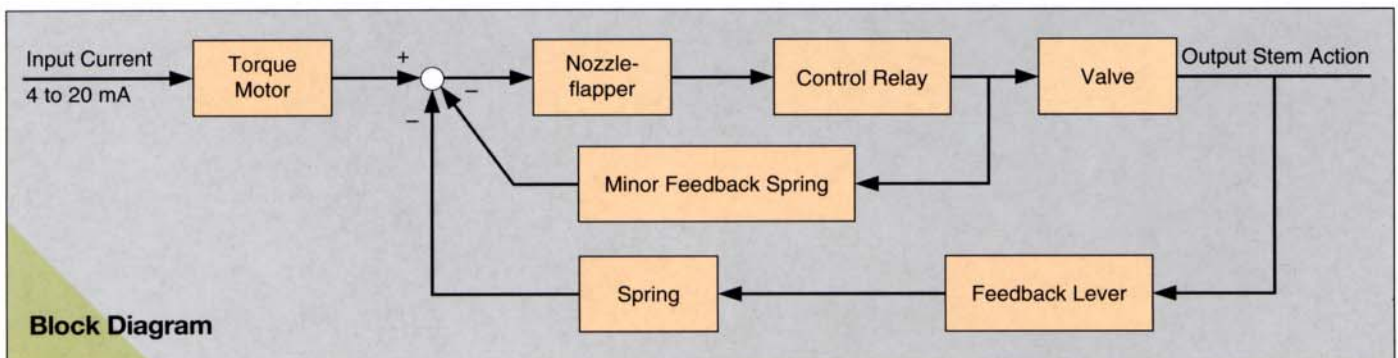
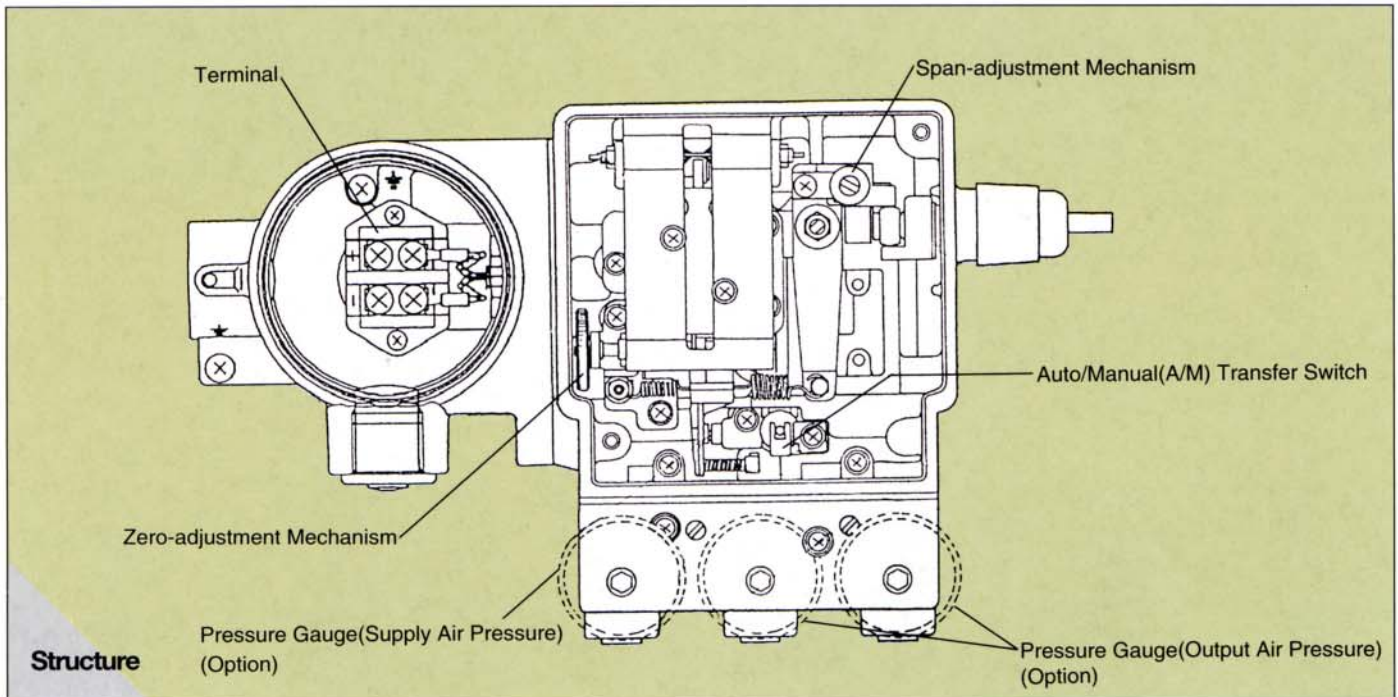
# VP200    PK200



# Model VP200 Current-to-Pneumatic Positioner

This positioner provides the high-speed response of the next bigger actuator and a design allowing wide use.

## VP200



### Features

#### ① A design applicable to all kinds of valves

Single acting diaphragm, single/double acting cylinder

#### ② High-speed response corresponding to the next bigger actuator

1 sec or less (Test Conditions)

- Diaphragm actuator diameter : 240mm
- Stroke: 15mm

#### ③ Energy-saving design for economic efficiency

Air consumption: 5 NI/min (when supply air pressure: 140kPa)  
Output capacity : 160 NI/min (when supply air pressure: 140kPa)

#### ④ Easy access from one side

### Principle

A current signal of 4 to 20 mA is entered to the VP200 current-to-pneumatic positioner from the electronic controller as a manipulated signal.

This input signal drives the torque motor, which generates a torque proportional to the current signal.

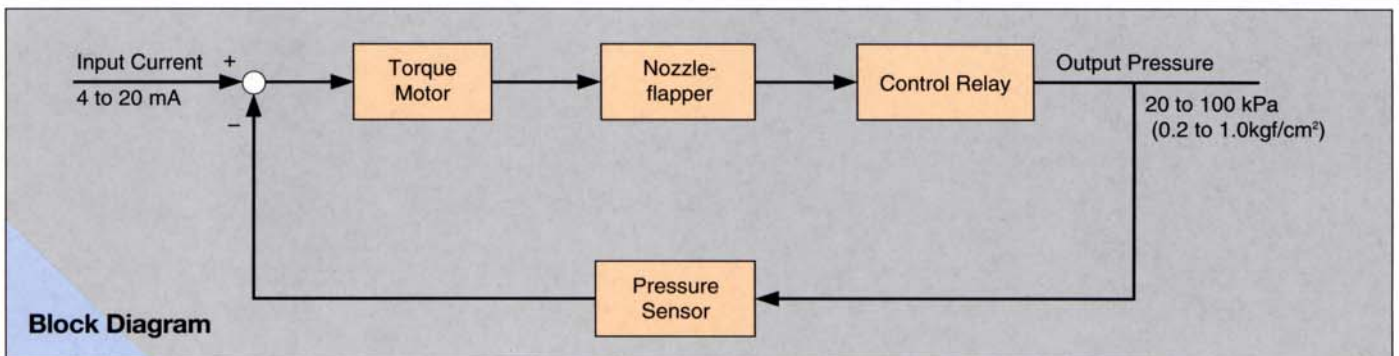
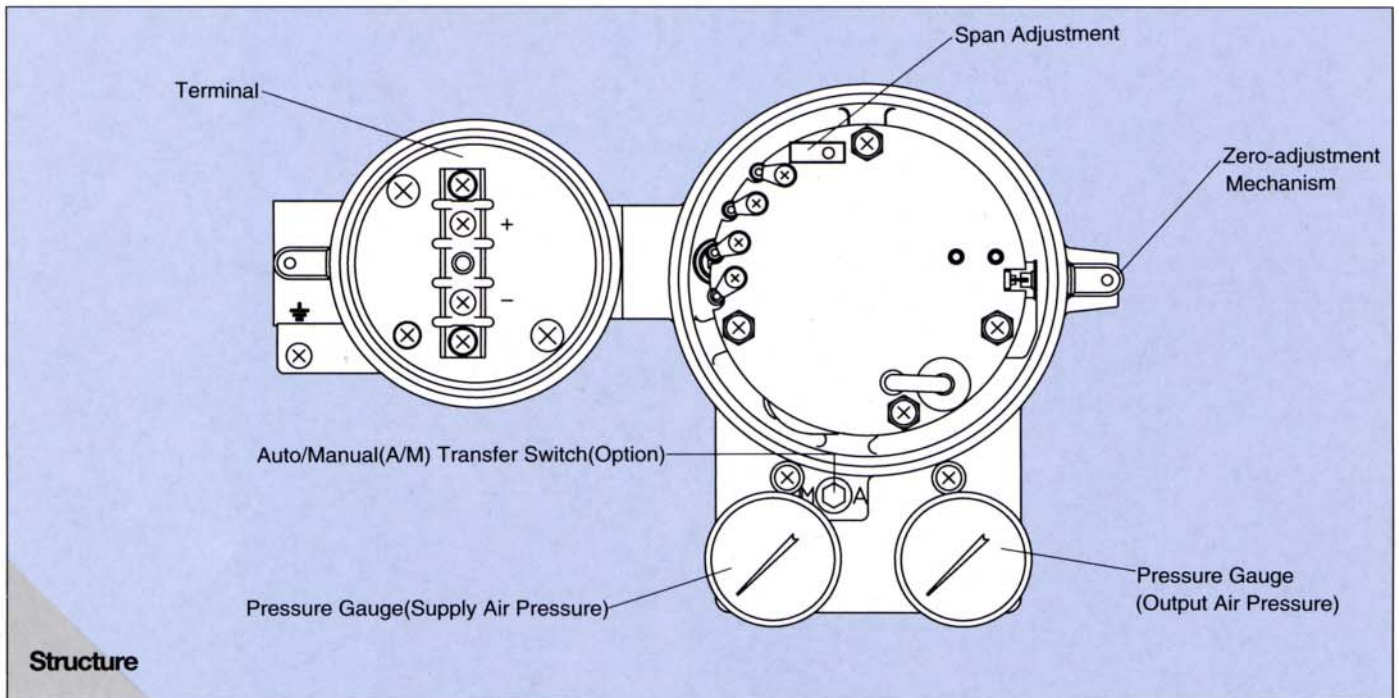
The current signal is transformed to a pneumatic signal in the torque motor and nozzle-flapper mechanism. This pneumatic signal is amplified by the control relay and transformed to the output air pressure.

The VP200 outputs the above air pressure to the actuator of the control valve as a manipulated pressure, by which the stem of the control valve causes displacement. The VP200 has a valve-stem-position feedback mechanism. A series of these actions makes it possible to obtain a displacement of the control valve proportional to the input signal.

# Model PK200 Current-To-Pneumatic Converter

This converter provides a linearity of  $\pm 0.2\%$  and an energysaving design for economic efficiency.

## PK200



### Features

① **Electronic feedback control with high accuracy and high reliability**

Linearity:  $\pm 0.2\%$

② **Energy-saving design for economic efficiency**

Air consumption: 4NI/min(at supply air pressure: 140kPa)  
Output capacity: 110NI/min(at supply air pressure: 140kPa)

③ **Easy access from one side**

④ **A design adjustable to changes in the environment**

On-site adjustment is possible for an output other than 20 to 100kPa.

Zero-adjustment range :  $\pm 10\%$  of span

Span-adjustment range: 100 to 125% of span

### Principle

A current signal of 4 to 20 mA is entered to the PK200 current-to-pneumatic converter from the electronic controller as a manipulated signal. This signal is entered to the torque motor through the electric circuit and transformed to a pneumatic signal in the torque motor and nozzle-flapper mechanism. This pneumatic signal is amplified by the control relay and transformed to the output air pressure.

The output air pressure is transformed to an electronic signal in the pressure sensor. This electronic signal goes back to the electronic circuit as feedback, where it is compared with the manipulated signal and corrected to have the output air pressure in equilibrium with the input signal.

A series of these actions makes it possible to obtain an output air pressure proportional to the input signal.

# ■ Specifications

## VP200



<b>Input Signals</b>	4 to 20mA DC or 10 to 50mA DC
<b>Input/Output Action</b>	Output increases or decreases as input increases. (Selectable via direct/reverse switching function)
<b>Valve-stem travel range</b>	10 to 100mm(0.4 to 4in)
<b>Linearity</b>	±1.0%(for Diaphragm Actuator, Single Acting Cylinder) ±1.5%(for Double Acting Cylinder)
<b>Hysteresis</b>	Less than 1.0%(for Diaphragm Actuator, Single Acting Cylinder) Less than 1.5%(for Double Acting Cylinder)

## PK200



<b>Input Signal</b>	4 to 20mA DC or 10 to 50mA DC
<b>Output Signal</b>	20 to 100kPa(3 to 15 psi, 0.2 to 1.0 bar) 40 to 200kPa(6 to 30 psi, 0.4 to 2.0 bar)
<b>Accuracy</b>	±0.5%
<b>Linearity</b>	±0.2%
<b>Hysteresis</b>	Less than 0.2%
<b>Repeatability</b>	0.1%

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