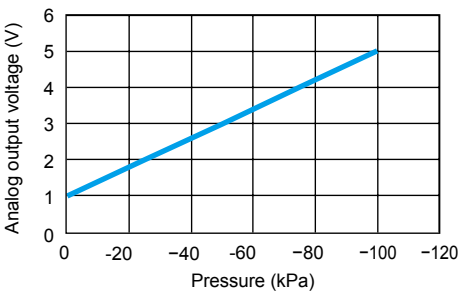
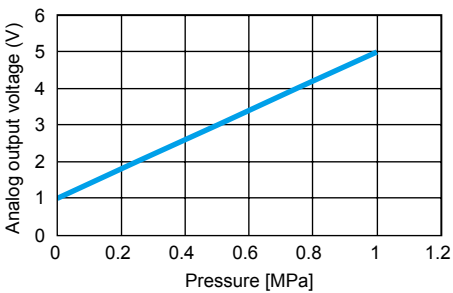


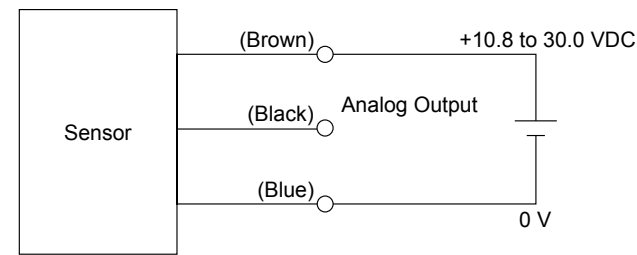
Analog output voltage - pressure characteristics

●PPEV-P10A

●PPEV-V01A



Circuit diagram and wiring method



Lead wire color and content

Line color	Description
Brown	Power supply (10.8 to 30.0 VDC)
Black	Analog output (1 to 5 V)
Blue	GND (0V)

Note: The impedance of the analog output is 10 Ω. When connecting a load resistor, use 10 kΩ and over.

Output value = $(1 - \frac{R_0}{R_0 + R_x}) \times 100\%$

Output value = $(1 - \frac{10}{10+10000}) \times 100\% = 99.9\%$



Output value error
Approx. 0.1%

Pressure sensor impedance: R₀= 10 Ω
Load internal impedance: R_x=10 kΩ



Pneumatic components (electronic pressure switch and sensor)

Safety Precautions

Be sure to read this section before use.

For general pneumatic components precautions, refer to Intro 17 for details.

Product-specific cautions: Compact electronic pressure sensor PPEV-/A Series

During Design and Selection

WARNING

■ Use this product in accordance with specifications.
Use for applications, or at load currents, voltages, temperatures, impacts or sites excluded from the specifications could result in damage or malfunctions.

■ Do not use oxygen, corrosive or combustible gas, or toxic fluid for this product.

■ Never use this product in an explosive gas atmosphere.
The pressure switch does not have an explosive-proof structure. Never use in an explosive gas atmosphere as explosions or fires could result.

■ Avoid installing this product in a sealed control box or indoors.

If the fluid should leak due to any trouble, the pressure in the sealed chamber could change and recreate a hazardous state. Use this product in the control box having safety device to control internal pressure, or indoors with no pressure differential from the outsidePlease.

■ Power supply voltage
Do not use this product at levels exceeding the power supply voltage. If voltage exceeding this range or AC power supply (100 VAC) is applied, the controller could rupture or burn.

■ DC power not insulated from the AC primary side may damage the product and power, possibly leading to electric shock. Do not use the product in this case.

■ Load short-circuit
Do not short-circuit the load. Failure to observe this could result in rupture or burning.

■ Incorrect wiring
Avoid incorrect wiring such as mistaken power source polarities, etc. Failure to observe this could result in rupture or burning.

CAUTION

■ Applicable fluid
When using applicable fluid other than air; nitrogen gas, etc., oxygen deficiency could be caused. Observe the following instructions.

- Use in well ventilated locations.
- Ventilate the work area when nitrogen gas is being used.
- Inspect nitrogen gas piping regularly to avoid leaks.
- Non-corrosive gas means substances such as nitrogen or carbon dioxide contained in air and inert gases such as argon or neon.
- When using this product for compressed air containing water or oil, use the PPD3-S (stainless steel diaphragm sensor specifications) with increased corrosion resistance.

■ If this product is used for vacuum suction confirmation, care must be taken for following matters.

When applying positive pressure for vacuum burst onto the product, check that it does not exceed the specified proof pressure.

Working environment

- Avoid use in locations subject to vibration or shock of 100 m/s² or more.
- Check the temperature of fluid being measured and the environmental temperature in piping.
- When using a type that does not have the corresponding degree of protection, do not use for applications in which water or oil could be applied.

■ Determine the setting, taking error caused by accuracy limitations and temperature characteristics into consideration.

■ Take care when using this product for an interlock circuit.

When using the pressure switch for an interlock signal requiring high reliability, provide a double interlock by installing a mechanical protection function or a switch (sensor) other than a pressure switch as a safeguard against breakdown. Regularly inspect and confirm that the interlock activates correctly.

■ Response time is affected by working pressure and load volume. If reproducibility with stable response time is required, install a regulator in the proceeding stage.

■ Take the following countermeasures to prevent malfunction caused by noise.

- Insert a line filter in the AC power supply line.
- Do not share power with an inverter or components causing motor noise, etc.
- Use a surge suppressor such as a CR or diode on the inductive load (solenoid valve, relay, etc.) and remove noise from the source.
- When using a components (switching regulator, inverter motor, etc.) that could generate noise near the sensor, be sure to ground the components frame ground (F.G.) terminal.
- Separate wiring to the sensors from strong magnetic fields.
- Connect wiring to sensors with a shield wire.
- Ground the shield wire on the power supply side.

■ Care must be taken for protection of body and lead wire.

- Do not bump or drop the body, or apply excessive bending or tensile strength to the lead wire. This may lead to disconnection.
- Connect and wire bend-resistant material, such as robot wire material, for movable sections.

- Avoid connecting the output for a relay contact, operation switch, or other components output in parallel with the PLC to the product's output, or short-circuiting the input terminal of the PLC to which this product is connected with the power supply cable's negative side to test the input device. This product's output circuit could be damaged.
- When releasing the secondary control pressure, such as air blowing, into the atmosphere, the pressure could fluctuate depending on the piping and flow conditions. Test with actual working conditions, or contact CKD.

- Components When selecting dryer, air filter, oil mist filter or regulator, select a device with a flow rate higher than that used by proportional pressure controls.
- CE-compliance working conditions
The standard for the immunity for industrial environments applied to CE conforming product is EN61000-6-2, but the following requirements must be satisfied in order to conform to this standard.
Conditions
 - The evaluation of this product is performed by using a cable that has a power supply line and a signal line paired to assess the product's performance.
 - This product is not equipped with surge protection. Implement surge protection measures on the system side.

MEMO

For precautions during mounting, installation, adjustment, use and maintenance, refer to the CKD Components Product Site (<https://www.ckd.co.jp/kiki/en/>) → "Model No.→ [Instruction Manual](#)