

Minute Differential Pressure Transducer



*TEDS installation not possible.

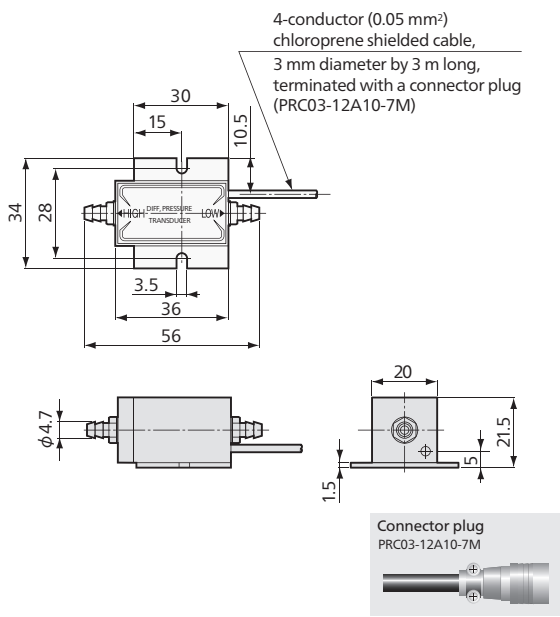
For wind pressure measurement

- High frequency response
- Highly accurate
- High sensitivity
- Noise resistant
- Compact & lightweight

PDS-A series pressure transducers have diffusional semiconductor strain gages on a silicone diaphragm. PDS-A transducers detect pressures as resistance variation and then convert this variation to electrical signals. These signals are indicated by Kyowa's signal conditioners.

(Note 1) Use the transducer with general air
(Note 2) If water or any other liquid enters the low side, the transducer gets out of order.

■ Dimensions



Specifications

Performance	
Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.5\%$ RO (25GA: Within $\pm 0.7\%$ RO)
Hysteresis	Within $\pm 0.3\%$ RO
Rated Output	13 to 23 mV (10GA: 7 to 23 mV)
Rated Output Accuracy	$\pm 1.0\%$ RO (50GA: $\pm 1.5\%$ RO) (70GA: $\pm 2.0\%$ RO)

Environmental Characteristics	
Safe Temperature	-20 to 70°C
Safe Humidity	20 to 85% (At 0 to 50°C)
Compensated Temperature	0 to 50°C
Temperature Effect on Zero	Within $\pm 0.08\%$ RO/°C (10GA: Within $\pm 0.1\%$ RO/°C)
Temperature Effect on Output	Within $\pm 0.08\%$ /°C (10GA: Within $\pm 0.1\%$ /°C)
Pressure Medium	General air (Non-corrosive gas)

Electrical Characteristics	
Initial Unbalance	Within ± 10 mV
Bridge Output Resistance	2 to 6 kΩ
Power Supply	10 VDC (9.5 to 15 V), 5 mA or less (Bridge power supply of signal conditioner may be used.)
Cable	4-conductor (0.05 mm ²) chloroprene shielded cable, 3 mm diameter by 3 m long, terminated with a connector plug PRC03-12A10-7M (Shield wire is not connected to the case.)

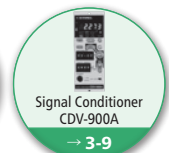
Mechanical Properties	
Safe Overloads	300% (10GA: 600%)
Maximum Line Pressure	100 kPa
Natural Frequencies	Approx. 1.7 kHz
Weight	Approx. 40 g (Excluding cable)
Posture Effect	Zero drift: Within $\pm 0.3\%$ RO (10GA: Within $\pm 0.8\%$ RO) when inclined by 90° referring to horizontal condition
Internal Volume	High side: Approx. 0.2×10^{-6} m ³ (0.2 ml) Low side: Approx. 1×10^{-6} m ³ (1 ml)
Pressure Connection	4.7 mm diameter barb fitting

Models	Rated Capacity
PDS-10GA	1 kPa
PDS-25GA	2.5 kPa
PDS-50GA	5 kPa
PDS-70GA	7 kPa

To Ensure Safe Usage

- Avoid dew condensation or freeze, because these transducers are designed for general indoor use.
 - If using as a gage pressure meter, apply pressure to the HIGH side, and open the LOW side to the atmosphere.
 - For atmospheric observation, prepare piping to prevent rainwater from entering the pressure inlet.
 - Instrumentation amplifier WGA-710C with built-in bridge power supply of 10 VDC is available for PDS-A series. In the case of WGA-710C, connection cable N-70 is required.
 - Use a series type power supply.
- *If dimensions of the pressure connection are desired to change, contact us.

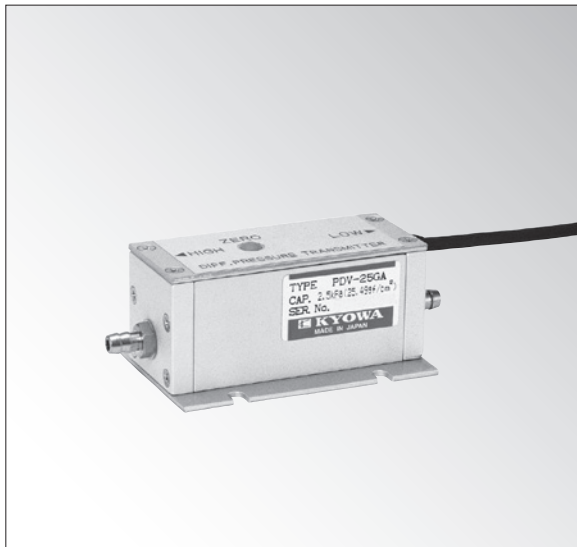
●Dynamic measurement



PDV-A

- For wind pressure measurement
- 1 to 7 kPa

Minute Differential Pressure Transducer



For wind pressure measurement Built-in amplifier

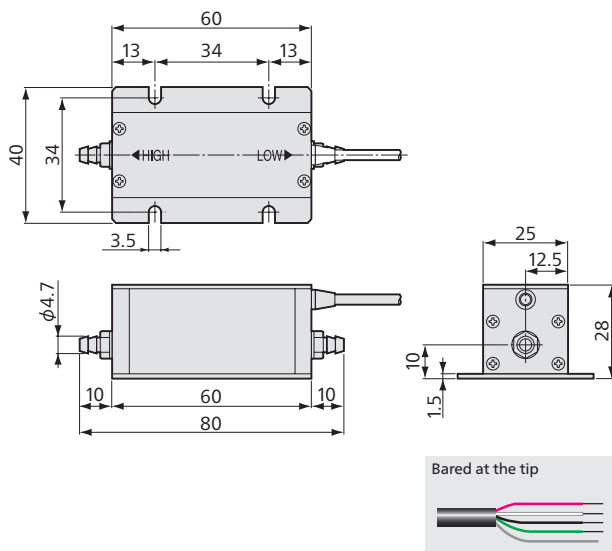
- High frequency response
- Highly accurate
- High sensitivity
- Noise resistant
- Voltage output of ± 5 V
- Compact & lightweight

PDV-A series pressure transducers have diffusional semiconductor strain gages on a silicone diaphragm. PDV-A transducers detect pressures as resistance variation and then amplify this signal by built-in amplifier.

(Note 1) Use the transducer with general air.

(Note 2) If water or any other liquid enters the low-pressure line the transducer gets out of order.

■ Dimensions



Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.5\%$ RO (25GA: Within $\pm 0.7\%$ RO)
Hysteresis	Within $\pm 0.3\%$ RO
Rated Output	5 V
Rated Output Accuracy	$\pm 1.0\%$ RO (50GA: $\pm 1.5\%$ RO) (70GA: $\pm 2.0\%$ RO)

Environmental Characteristics

Safe Temperature	-20 to 70°C
Safe Humidity	20 to 85% (At 0 to 50°C)
Compensated Temperature	0 to 50°C
Temperature Effect on Zero	Within $\pm 0.08\%$ RO/°C (10GA: Within $\pm 0.1\%$ RO/°C)
Temperature Effect on Output	Within $\pm 0.08\%$ /°C (10GA: Within $\pm 0.1\%$ /°C)
Pressure Medium	General air (Non-corrosive gas)

Electrical Characteristics

Load Resistance	5 k Ω or more
Power Supply	12 VDC (11 to 15 V), 30 mA or less
Cable	4-conductor (0.05 mm ²) chloroprene shielded cable, 3 mm diameter by 3 m long, bared at the tip

Mechanical Properties

Safe Overloads	300% (10GA: 600%)
Maximum Line Pressure	100 kPa
Natural Frequencies	Approx. 1.7 kHz
Weight	Approx. 100 g (Excluding cable)
Posture Effect	Zero drift: Within $\pm 0.3\%$ RO (10GA: Within $\pm 0.8\%$ RO) when inclined by 90° referring to horizontal condition
Internal Volume	High side: Approx. 0.2×10^{-6} m ³ (0.2 ml) Low side: Approx. 1×10^{-6} m ³ (1 ml)
Pressure Connection	4.7 mm diameter barb fitting

Models	Rated Capacity
PDV-10GA	1 kPa
PDV-25GA	2.5 kPa
PDV-50GA	5 kPa
PDV-70GA	7 kPa

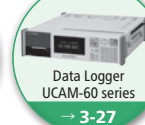
To Ensure Safe Usage

- Avoid dew condensation or freeze, because these transducers are designed for general indoor use.
 - When using for a pressure meter, apply pressure to the high side and open the low side to the atmosphere.
 - For atmospheric observation, prepare piping to prevent rainwater from entering the pressure inlet.
- *If dimensions of the pressure connection are desired to change, contact us.

● Static measurement

● Dynamic measurement

PDV-A
Recommended
products for
combination



Pressure Transducers

Outline

General

High temp.
Low temp.

Absolute pressure
High pressure

Pressure transmitter

Differential pressure

Distributed pressure

Differential Pressure Transducer



*TEDS-installed models are available. Inquiries are welcome.

Wide line pressure margin and highly accurate

PD-A series pressure transducers allow slight differential pressure to be accurately measured. They are suitable for long-term measurements and measurements requiring high accuracy. Furthermore, they are for not only differential pressure measurement but also indication and control of automation systems based on characteristics of differential pressure sensor like flow rate measurement.

Note: Copper alloy is used for sensing element. Avoid measuring corrosive liquid or gas.

Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.3\%$ RO
Hysteresis	Within $\pm 0.2\%$ RO
Rated Output	1.5 mV/V $\pm 1\%$

Environmental Characteristics

Safe Temperature	-10 to 70°C
Compensated Temperature	0 to 60°C
Temperature Effect on Zero	Within $\pm 0.01\%$ RO/°C (100GA: Within $\pm 0.05\%$ RO/°C)
Temperature Effect on Output	Within $\pm 0.03\%$ /°C (100GA: Within $\pm 0.5\%$ /°C)

Electrical Characteristics

Safe Excitation	15 V AC or DC
Recommended Excitation	1 to 10 V AC or DC
Input Resistance	350 Ω $\pm 0.5\%$
Output Resistance	350 Ω $\pm 0.5\%$
Cable	4-conductor (0.3 mm ²) chloroprene shielded cable, 7.6 mm diameter by 5 m long, terminated with a connector plug PRC03-12A10-7M (Shield wire is connected to the case.)

Mechanical Properties

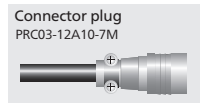
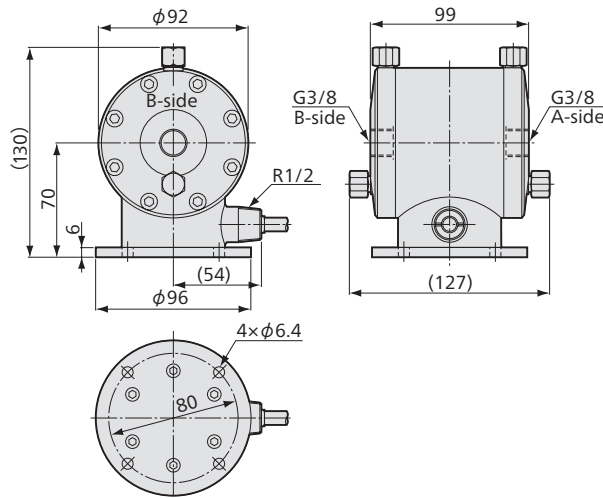
Safe Overloads	Differential Pressure 200% (100, 200GA) 150% (500GA, 1KA) 125% (2KA)
Natural Frequencies	See table below.
Maximum Line Pressure	2.94 MPa
Weight	Approx. 5 kg (Excluding cable)

*To use for gas, contact us.

When A side is a high pressure, plus output.
When B side is a high pressure, minus output.
(For A-side and B-side, see the dimension below.)

Models	Rated Capacity	Natural Frequencies (Approx.)
PD-100GA	10 kPa	60 Hz
PD-200GA	20 kPa	110 Hz
PD-500GA	50 kPa	230 Hz
PD-1KA	100 kPa	400 Hz
PD-2KA	200 kPa	700 Hz

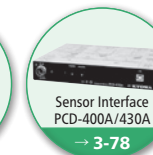
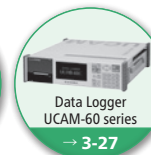
Dimensions



● Physical quantity indication

● Static measurement

● Dynamic measurement



PDU-A

- Max. line pressure: 30 MPa
- 50 kPa to 2 MPa

Stainless Steel Differential Pressure Transducer



*TEDS-installed models are available. Inquiries are welcome.

Corrosion resistant Built-in variable damping mechanism

- Overload protection mechanism

Note: Copper alloy is used for sensing element. Avoid measuring corrosive liquid or gas.

Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.2\%$ RO (50KP to 500KP) Within $\pm 0.25\%$ RO (1, 2 MP)
Hysteresis	Within $\pm 0.2\%$ RO (50KP to 500KP) Within $\pm 0.25\%$ RO (1, 2 MP)
Repeatability	0.1% RO or less
Rated Output	1.5 mV/V $\pm 0.5\%$

Environmental Characteristics

Safe Temperature	-30 to 90°C
Compensated Temperature	-20 to 80°C
Temperature Effect on Zero	Within $\pm 0.01\%$ RO/°C (50KP, 100KP: Within $\pm 0.02\%$ RO/°C)
Temperature Effect on Output	Within $\pm 0.01\%$ /°C (50KP, 100KP: Within $\pm 0.02\%$ /°C)

Electrical Characteristics

Safe Excitation	15 V AC or DC
Recommended Excitation	1 to 10 V AC or DC
Input Resistance	350 Ω $\pm 1\%$
Output Resistance	350 Ω $\pm 1\%$
Cable	4-conductor (0.3 mm ²) chloroprene shielded cable, 7.6 mm diameter by 5 m long, terminated with a connector plug PRC03-12A10-7M (Shield wire is connected to the case.)

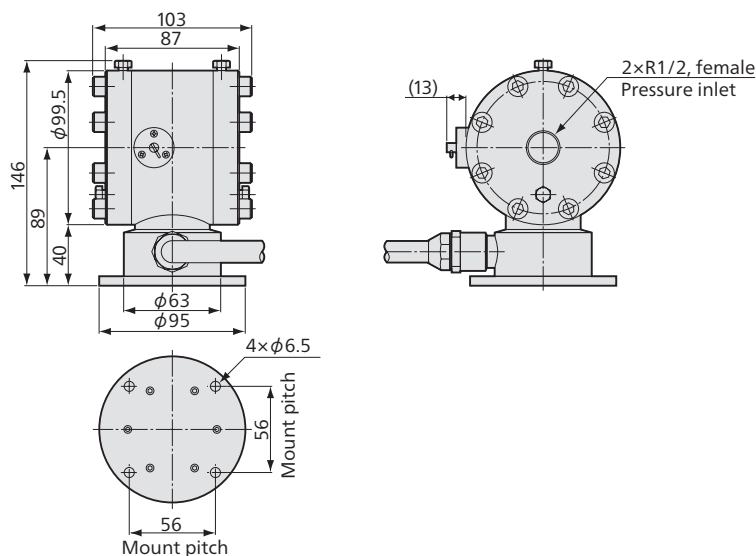
Mechanical Properties

Safe Overloads	150% (If an overload of 30 MPa is applied to either high or low pressure side, the transducer is not damaged.)
Maximum Line Pressure	30 MPa
Weight	Approx. 6 kg (Excluding cable)

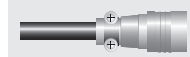
*To use for gases, contact us.

Models	Rated Capacity
PDU-A-50KP	50 kPa
PDU-A-100KP	100 kPa
PDU-A-200KP	200 kPa
PDU-A-500KP	500 kPa
PDU-A-1MP	1 MPa
PDU-A-2MP	2 MPa

Dimensions



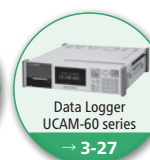
Connector plug
PRC03-12A10-7M



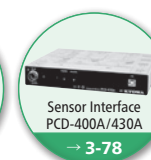
- Physical quantity indication



- Static measurement



- Dynamic measurement



Pressure Transducers

Outline

General

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