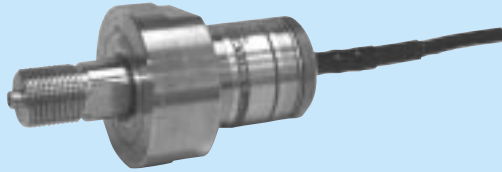


PHB-A

High/Low-Temperature Pressure Transducers

● -196 to 210°C ● 1 to 50 MPa



- TEDS-installed versions can be manufactured. Inquiries are welcome.

PHB-A series is designed for pressure measurement at low to high temperatures. The pressure sensing surface is stainless steel diaphragm and for increased reliability, inert gas is filled in. Suitable for pressure measurement of LPG/LNG tanks and gas or steam turbines.

Features

- Usable at both high and low temperatures
- Corrosion resistant
- Hermetically-sealed structure with inert gas filled in
- Highly reliable

Specifications

Performance

Rated Capacity: See table below.
Nonlinearity: Within $\pm 0.4\%$ RO
Hysteresis: Within $\pm 0.4\%$ RO
Rated Output: 2.2 mV/V (4400 $\mu\text{m}/\text{m}$) $\pm 15\%$

Environmental Characteristics

Safe Temperature Range: -196 to 210°C
Compensated Temperature Range: -196 to 200°C
Temperature Effect on Zero Balance: Within $\pm 0.03\%$ RO/°C
Temperature Effect on Output:
 Within $\pm 0.035\%$ /°C (PHB-A-1MP)
 Within $\pm 0.03\%$ /°C (PHB-A-2 to 50MP)

Electrical Characteristics

Safe Excitation Voltage: 15 VAC or DC
Recommended Excitation Voltage: 1 to 10 VAC or DC
Input Resistance: 350 $\Omega \pm 2\%$
Output Resistance: 350 $\Omega \pm 2\%$
Cable: 4-conductor (0.3 mm²) fluoroplastic shielded cable, 5 mm diameter by 3 m long, terminated with connector plug (Shield wire is connected to mainframe.)

Mechanical Properties

Safe Overload Rating: 120%
Natural Frequency: See table below.

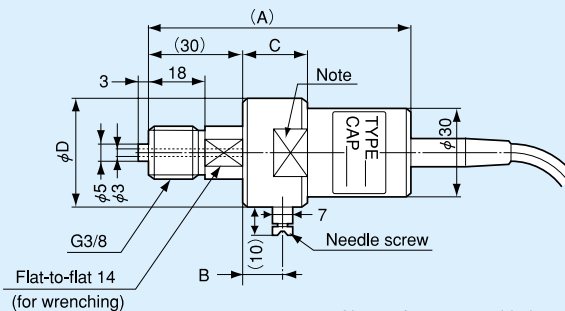
Material

Case: SUS metallic finish
Liquid-contacting part: SUS 630
Weight: Approx. 530 g (including cable)
Mounting Screw: G3/8, male

Standard Accessories Gasket (mild copper)

- Do not use PHB-A-20MP to PHB-A-50MP for endurance/fatigue tests.
- Avoid using for a long-term measurement of gas pressure if much importance is attached to the stability of output in a minute range. For such application, we can manufacture models with no air vent.

Dimensions

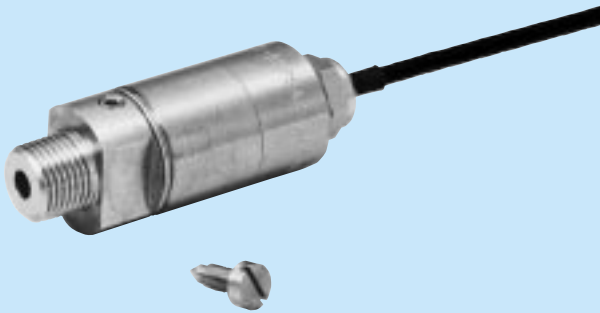


Note: 2 flats are provided only for PHB-A-30 and 50MP. Do not apply the wrench to the flats.

Model	Rated Capacity	A	B	C	ϕD	Natural Frequency (Approx.)
PHB-A-1MP	1 MPa	81	10	16	36	8 kHz
PHB-A-2MP	2 MPa					13 kHz
PHB-A-5MP	5 MPa					21 kHz
PHB-A-10MP	10 MPa	85	13	20	36	29 kHz
PHB-A-20MP	20 MPa					40 kHz
PHB-A-30MP	30 MPa					45 kHz
PHB-A-50MP	50 MPa	85	13	20	46	50 kHz

PHF-S-SA2 Small-Sized High-Temp. Pressure Transducers

● Vibration Resistance: 490.3 m/s² ● 2 to 20 MPa



PHF-S-SA2 series is small-sized strain-gage pressure transducers usable at up to 150°C. Especially suitable for pressure measurement in limited space. (Patented)

Features

- Compact and lightweight
- Usable at up to 150°C
- High vibration resistance: 490.3 m/s² (50 G)
- Highly stable

Specifications

Performance

Rated Capacity: See table below.

Nonlinearity:

Within ±0.4% RO (PHF-S-2MPSA2)

Within ±0.3% RO (PHF-S-5 to 20MSA2)

Hysteresis: Within ±0.2% RO

Rated Output: 2 mV/V (4000 μm/m)

Environmental Characteristics

Safe Temperature Range: -40 to 170°C

Compensated Temperature Range: -40 to 150°C

Temperature Effect on Zero Balance: Within ±0.008% RO/°C

Temperature Effect on Output: Within ±0.01%/°C

Electrical Characteristics

Safe Excitation Voltage: 10 VAC or DC

Recommended Excitation Voltage: 1 to 5 VAC or DC

Input Resistance: 350 Ω ±2%

Output Resistance: 350 Ω ±2%

Cable: 4-conductor (0.09 mm²) fluoroplastic shielded cable, 3 mm diameter by 4 m long, terminated with connector plug

Mechanical Properties

Safe Overload Rating: 150%

Natural Frequency: See table below.

Material: SUS 630 (liquid-contacting part)

Weight: Approx. 50 g

Mounting Screw: R1/8, male

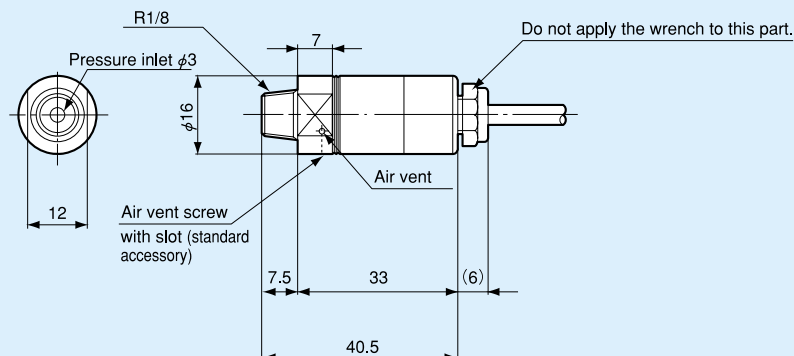
Standard Accessories

Air vent screw with slot

Hexgon wrench for air vent screw (M3)

Model	Rated Capacity	Natural Frequency (Approx.)
PHF-S-2MPSA2	2 MPa	25 kHz
PHF-S-5MPSA2	5 MPa	50 kHz
PHF-S-10MPSA2	10 MPa	70 kHz
PHF-S-20MPSA2	20 MPa	100 kHz

Dimensions



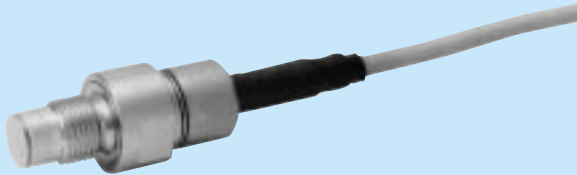
PHC-B

Flush Diaphragm Type High-Temperature Pressure Transducers

● Excellent Heat Resistance ● 2 to 20 MPa



NEW



- TEDS-installed versions can be manufactured. Inquiries are welcome.

To enable pressure measurement at high temperature, PHC-B series pressure transducers adopt thin-film strain gage formed by sputtering.

The sensing part is the flush diaphragm which detects pressure directly on a flat surface without introducing the pressure medium into the transducer, thereby enabling pressure measurement without missing minute, momentary pressure changes. In addition, the flush diaphragm makes these transducers suitable for measuring not only liquid or gas pressure but also pressure of highly viscous medium.

The small-sized design and flexible cable make them easy to use even in limited space.

Features

- Safe temperature range from -30 to 240°C
- Heat-resistant sputter gage used
- Flush diaphragm ensuring high frequency response
- Compact design and flexible cable ensuring ease of use

Specifications

Performance

Rated Capacity: See table below.
 Nonlinearity: Within $\pm 0.5\%$ RO
 Hysteresis: Within $\pm 0.3\%$ RO
 Repeatability: 0.2% RO or less
 Rated Output: 0.6 mV/V (1200 $\mu\text{m}/\text{m}$) or more

Environmental Characteristics

Safe Temperature Range: -30 to 240°C (200°C with cable)
 Compensated Temperature Range: 23 to 230°C
 Temperature Effect on Zero Balance: Within $\pm 0.03\%$ RO/ $^{\circ}\text{C}$
 Temperature Effect on Output: Within $\pm 0.03\%$ / $^{\circ}\text{C}$

Electrical Characteristics

Safe Excitation Voltage: 12 VAC or DC
 Recommended Excitation Voltage: 1 to 10 VAC or DC
 Input Resistance: 380 to 650 Ω
 Output Resistance: 380 to 650 Ω
 Cable: 4-conductor (0.08 mm²) fluoroplastic shielded cable, 3.1 mm diameter by 3 m long, terminated with connector plug (Shield wire is not connected to mainframe.)

Mechanical Properties

Safe Overload Rating: 150%
 Natural Frequency: See table below.

Material

Case: SUS metallic finish
 Liquid-contacting part: SUS 630
 Weight: Approx. 115 g (including cable)
 Mounting Screw: G1/8, male

Standard Accessories Gasket (mild copper)

Model	Rated Capacity	Natural Frequency (Approx.)
PHC-B-2MP	2 MPa	45 kHz
PHC-B-5MP	5 MPa	75 kHz
PHC-B-10MP	10 MPa	85 kHz
PHC-B-20MP	20 MPa	85 kHz

To Ensure Safe Usage

High-carrier-based dynamic strain amplifier DPM-602, 603, 612, 613, 712 or 713 may not satisfy the specified rated output in some rare case. Request us to calibrate the transducer in combination with the strain amplifier. Or, if possible, use dynamic strain amplifier DPM-601, 611 or 711 or signal conditioner CDV-700A.

Dimensions

