

PRESSURE TRANSDUCERS

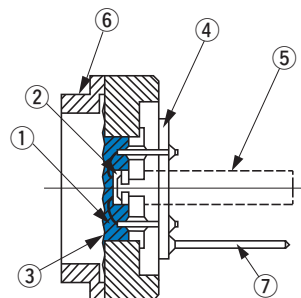
P-8300



FEATURES

- Double diaphragm structure
- Two pressure references to choose from Gauge and Absolute
- Built-in temperature compensation function (0 ~ 50 °C)

INTERNAL STRUCTURE



Part name		Material
①	Sealed liquid	Silicone oil
②	Sensor chip	Silicone
③	Stainless steel diaphragm	SUS 316L
④	Compensation resistor board	Ceramic
⑤	Vent hole (Gauge type only)	Iron+gold-plated
⑥	Pressure port	SUS 316L
⑦	Terminal pin	Copper+gold-plated

MODEL NUMBER DESIGNATION

P-8300 - 102 A - 05

Series name

Rated pressure range

351 : 0 ~ 34.3 kPa {0 ~ 0.35 kgf/cm²}
 501 : 0 ~ 49.0 kPa {0 ~ 0.5 kgf/cm²}
 102 : 0 ~ 98.1 kPa {0 ~ 1 kgf/cm²}
 352 : 0 ~ 343 kPa {0 ~ 3.5 kgf/cm²}
 103 : 0 ~ 981 kPa {0 ~ 10 kgf/cm²}

Thermal error

05 : ± 0.05 % F.S./°C
 10 : ± 0.1 % F.S./°C

Pressure reference

G : Gauge
 A : Absolute

LIST OF MODEL NUMBERS

Pressure reference		Gauge				Absolute	
Thermal error	Rated pressure range	0 ~ 49.0 {0 ~ 0.5}	0 ~ 98.1 {0 ~ 1}	0 ~ 343 {0 ~ 3.5}	0 ~ 981 {0 ~ 10}	0 ~ 34.3 {0 ~ 0.35}	0 ~ 98.1 {0 ~ 1}
± 0.05 % F.S./°C		P-8300-501G-05	P-8300-102G-05	P-8300-352G-05	P-8300-103G-05	P-8300-351A-05	P-8300-102A-05
± 0.1 % F.S./°C		P-8300-501G-10	P-8300-102G-10	P-8300-352G-10	P-8300-103G-10	P-8300-351A-10	P-8300-102A-10

※ Verify the above model numbers when placing orders.

P-8300

PRESSURE TRANSDUCERS

STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of 25±5 °C and excitation current of 1.5 mA DC.

Item		Model number	P-8300					
			501G	102G	352G	103G	351A	102A
General specifications	Pressure reference		Gauge				Absolute	
	Rated pressure range	kPa {kgf/cm ² }	49.0 {0.5}	98.1 {1}	343 {3.5}	981 {10}	34.3 {0.35} (abs)	98.1 {1} (abs)
	Maximum pressure	kPa {kgf/cm ² }	98.1 {1}	196 {2}	686 {7}	1961 {20}	103 {1.05} (abs)	196 {2} (abs)
	Break-down pressure	kPa {kgf/cm ² }	147 {1.5}	294 {3}	1030 {10.5}	2942 {30}	147 {1.5} (abs)	294 {3} (abs)
	Operating temp. range	°C	-20 ~ 70					
	Compensated temp. range	°C	0 ~ 50					
	Operating humidity	%RH	35 ~ 85 (No condensation)					
	Storage temp.	°C	-20 ~ 70 (Atmospheric pressure, humidity 65 %RH maximum)					
	Bridge resistance	Ω	4700 ± 30 %					
	Pressure medium		Corrosive gases/liquids compatible with SUS316L					
	Insulation resistance	MΩ minimum	100 (500 V DC)					
	Dielectric strength		500 V AC, 60 s (Leakage current 1 mA maximum)					
	Sealed liquid		Silicone oil					
	Net weight	g	Approx. 20					
	Power	Excitation current	mA DC	1.5 (Constant current)				
Analog output	Offset voltage		± 5					
	Span voltage		100 ± 50					
	Linearity/Hysteresis		± 0.3		± 0.5			
	Thermal error (Reference temp.: 25 °C)	ZERO %F.S./°C	± 0.05/0.10					
		SPAN %F.S./°C	± 0.05/0.10					
	Response		ms					
	Gravitational effect (From vertical position to horizontal position)		%F.S. max.	Approx. 0.5	Approx. 0.3	Approx. 0.1	Approx. 0.05	Approx. 0.5

ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions (At 25 ± 5 °C)	Permissible change
Vibration	10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s ² , 3 directions for 2 hours each	Offset voltage/Span voltage: ± 1 %F.S. maximum each
Shock	981 m/s ² , 3 directions for 3 times each	
Pressure cycling	0 ~ Rated pressure, 10 ⁶ cycles	
Moisture resistance	40 °C, 90 ~ 95 %RH, 240 hrs.	

※ P-8300 series can be operated at the vacuum pressure.

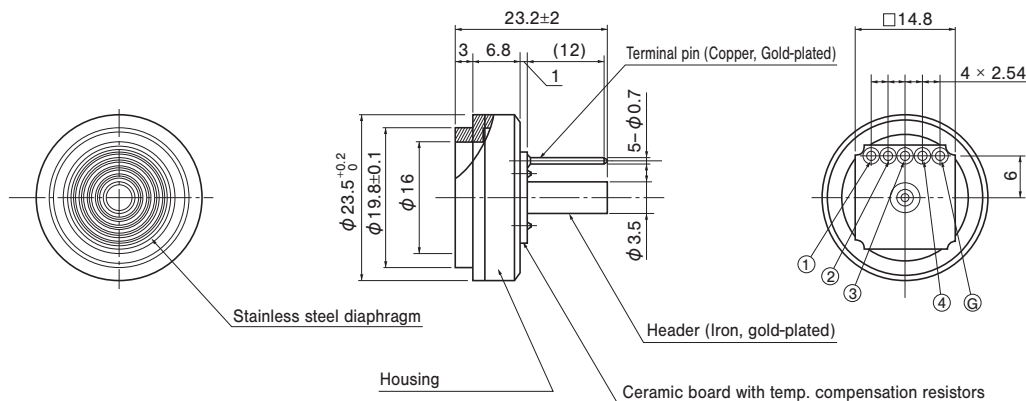
P-8300

PRESSURE TRANSDUCERS

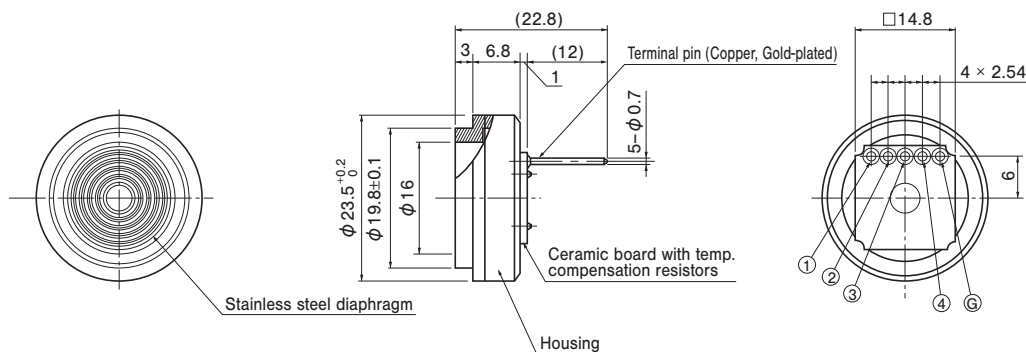
OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)

● P-8300 Gauge type



● P-8300 Absolute type



P-8300

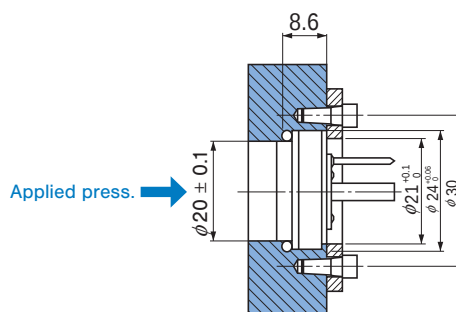
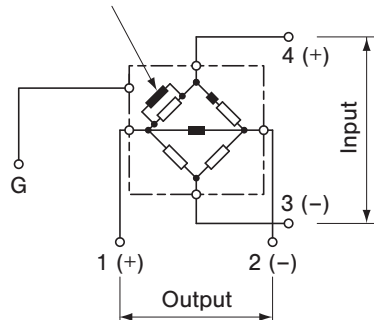
PIN	CONNECTION
1	Output ⊕
2	Output ⊖
3	Input ⊖
4	Input ⊕
G	Housing

⚠ Extra care should be taken with the diaphragm part. Do not touch the diaphragm directly to avoid damaging the diaphragm.

INTERNAL ELECTRICAL SCHEMATICS

INSTALLATION EXAMPLES (Unit: mm)

Thick film resistors for temp. compensation



- An "O" ring P20 (conforms to JIS B 2401 Material : Fluoro-rubber) is provided as accessory. Make the mounting bore diameters $\phi 24^{+0.06}_0$ and $\phi 20 \pm 0.1$, and the surface-roughness as 6.3 S ($\nabla \nabla \nabla$).

Mouser Electronics

Authorized Distributor

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Nidec:

[P-8300-102A-05](#) [P-8300-102A-10](#) [P-8300-102G-05](#) [P-8300-102G-10](#) [P-8300-103G-05](#) [P-8300-103G-10](#) [P-8305-101G](#) [P-8300-351A-05](#) [P-8300-351A-10](#) [P-8300-352G-05](#) [P-8300-352G-10](#) [P-8300-501G-05](#) [P-8300-501G-10](#)