

# PRESSURE TRANSDUCERS

# P-8300



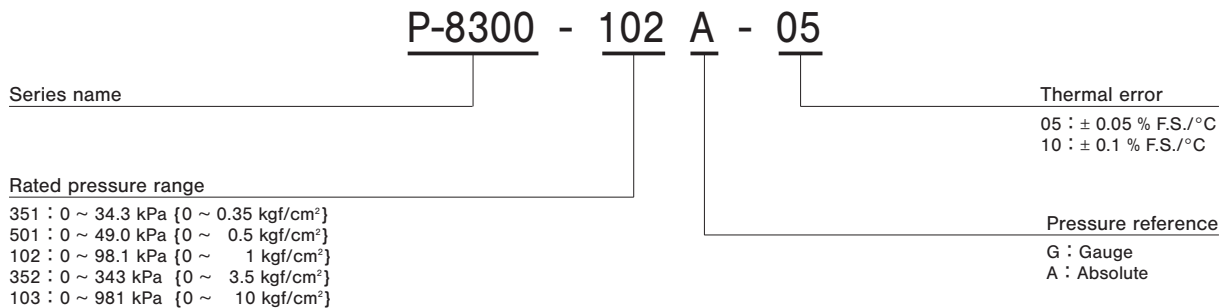
## FEATURES

- 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



## 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 <sup>2</sup> }	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 <sup>2</sup> }	98.1 {1}	196 {2}	686 {7}	1961 {20}	103 {1.05} (abs)	196 {2} (abs)
	Break-down pressure	kPa {kgf/cm <sup>2</sup> }	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	mV	± 5					
	Span voltage	mV	100 ± 50					
	Linearity/Hysteresis	%F.S.	± 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	Approx. 2					
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	Approx. 0.3	

### ENVIRONMENTAL CHARACTERISTICS

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

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

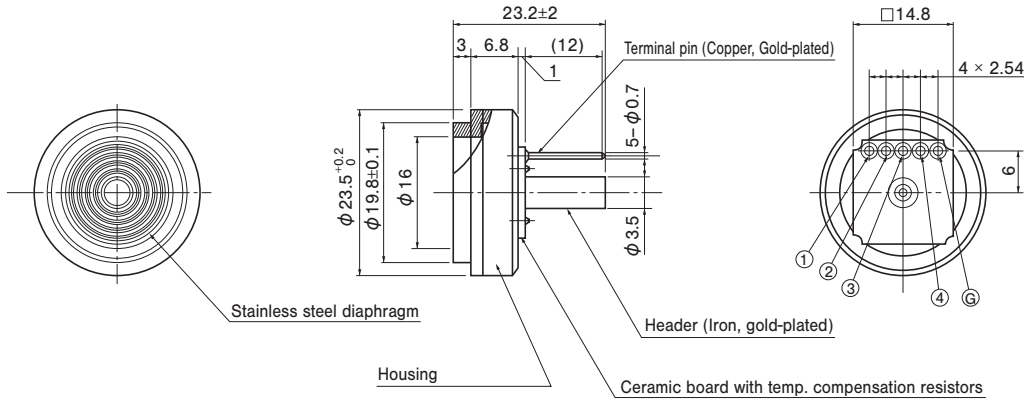
# P-8300

## PRESSURE TRANSDUCERS

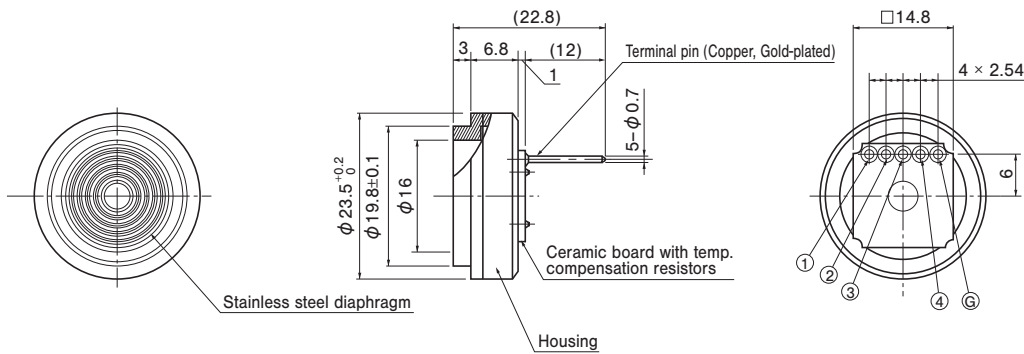
### OUTLINE DIMENSIONS

Unless otherwise specified, tolerance :  $\pm 0.5$  (Unit: mm)

#### P-8300 Gauge type



#### P-8300 Absolute type



P-8300

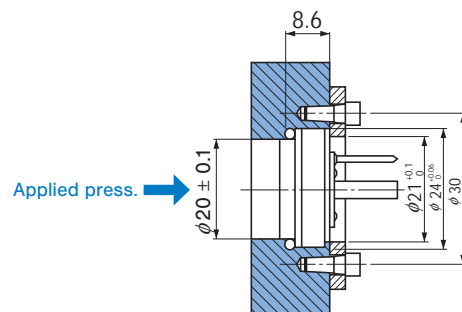
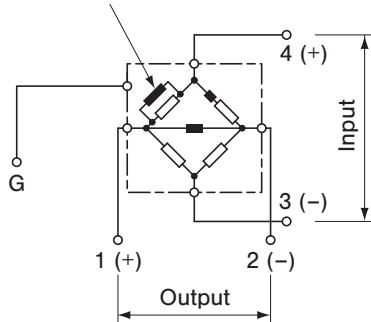
PIN	CONNECTION
1	Output ⊕
2	Output ⊖
3	Input ⊖
4	Input ⊕
G	Housing

⚠ 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 ( $\nabla\nabla\nabla$ ).