

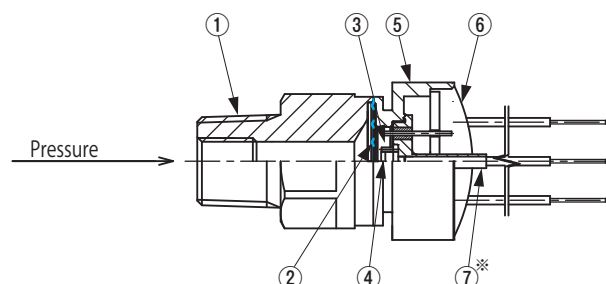
Ultra-miniature pressure sensors **P-7100**



FEATURES

- Suitable for installing inside the narrow space of the equipment thanks to its small size and light weight outline dimensions $\phi 17 \times 18.7\text{mm}$, Net weight: Approx 19 g (M5 type)
- High reliability (SUS316L diaphragm, oil-filled) by using double diaphragm structure
- Supply voltage and analog output is $5 \pm 0.5\text{V}$ and the $0.5 \sim 4.5\text{V}$ (ratiometric output)
- High accuracy by using a digital compensation circuit employing the COB (chip on board) mounting
- Variety pressure range: $0 \sim 100\text{kPa}$, $-100 \sim 100\text{kPa}$, $0 \sim 1\text{MPa}$, $0 \sim 133.3\text{kPa abs}$

INTERNAL STRUCTURE



	Part name	Material
①	Fitting	SUS304
②	Stainless steel diaphragm	SUS316L
③	Sealed liquid	Silicone oil
④	Sensor chip	Silicon
⑤	Housing	SUS 304
⑥	Resin compound	Epoxy resin
⑦	Vent hole	Iron + gold-plated

※⑦ is applicable to gauge type only.

MODEL NUMBER DESIGNATION

P-7100 - 102 G - R1

Series name

Rated pressure range

102G : $0 \sim 100\text{kPa}$
 103G : $0 \sim 1.0\text{MPa}$
 102R : $-100 \sim 100\text{kPa}$
 132A : $0 \sim 133.3\text{kPa abs}$

Fitting

R1 : R1/8
 M5 : Female

Pressure reference

G : Gauge (Positive)
 R : Gauge (Compound)
 A : Absolute

LIST OF MODEL NUMBERS

Fitting	Rated pressure range			
	102G	102R	103G	132A
R1/8	P-7100-102G-R1	P-7100-102R-R1	P-7100-103G-R1	P-7100-132A-R1
M5	P-7100-102G-M5	P-7100-102R-M5	P-7100-103G-M5	P-7100-132A-M5

※ Verify the above model numbers when placing orders.

P-7100

PRESSURE TRANSDUCERS

STANDARD SPECIFICATIONS

Item		Model number	P-7100				
			102G	103G	102R	132A	
General specifications	Pressure reference		Gauge			Absolute	
	Rated pressure range		0 ~ 100kPa	0 ~ 1.0MPa	-100 ~ 100kPa	0 ~ 133.3kPa abs	
	Maximum pressure		200kPa	2.0MPa	200kPa	200kPa abs	
	Break-down pressure		300kPa	3.0MPa	300kPa	300kPa abs	
	Operating temp.range °C		- 20 ~ 70				
	Compensated temp. range °C		0 ~ 50				
	Operating humidity range %RH		35 ~ 85 (No condensation)				
	Storage temp. range °C		- 20 ~ 80 (Atmospheric pressure, humidity 65 %RH maximum)				
	Media		Corrosive gases/liquids compatible with SUS316L and SUS304				
	Insulation resistance MΩ minimum		100 (500V DC)				
	Dielectric strength		500V AC 60 s (Leakage current 1mA maximum)				
	Sealed liquid		Silicone oil				
	Pressure port		R1/8, M5 (SUS304)				
	Net weight g		R1 : Approx.22, M5 : Approx.19				
	Voltage	Operating voltage V DC		5±0.5			
Current consumption mA Maximum		3					
Analog output	Output voltage ※ V		0.5 ~ 4.5				
	Output limit		16.5mV ~ 95% Vopr				
	Zero voltage ※ V		0.5±0.04		2.5±0.04	0.5±0.1	
	Span voltage ※ V		4.0±0.04			4.0±0.1	
	Output current mA Maximum		1 (Load resistance 5kΩ minimum)				
	Linearity / Hysteresis %F.S.		±0.5				
	Thermal error (Reference temp.25°C)	Zero	%F.S./°C	±0.05			±0.06
		Span	%F.S./°C	±0.05			±0.06
	Response time ms		Approx.2				
	Gravitational (From horizontal position to vertical position) %F.S.		±0.3	±0.05	±0.3	±0.3	

※ Output voltage is proportional to the operating voltage.(ratiometric output) The resolving power of the analog output is 11 Bits (about 0.002V/0.05%F.S).

ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions	Permissible change
Vibration	10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s ² , 3 directions for 2 hours each	Analog output (Vzero, Vspan) ± 1 %F.S. maximum each after test
Shock	490 m/s ² , 3 directions for 3 times each	
Pressure cycling	10 ⁶ cycles 0 ~ Rated pressure	
Moisture resistance	40 °C, 90 ~ 95 %RH, 240 hrs.	

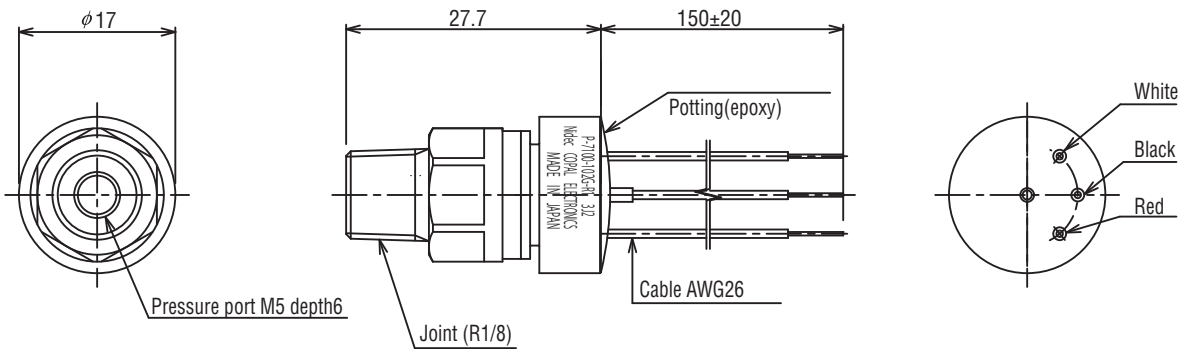
P-7100

PRESSURE TRANSDUCERS

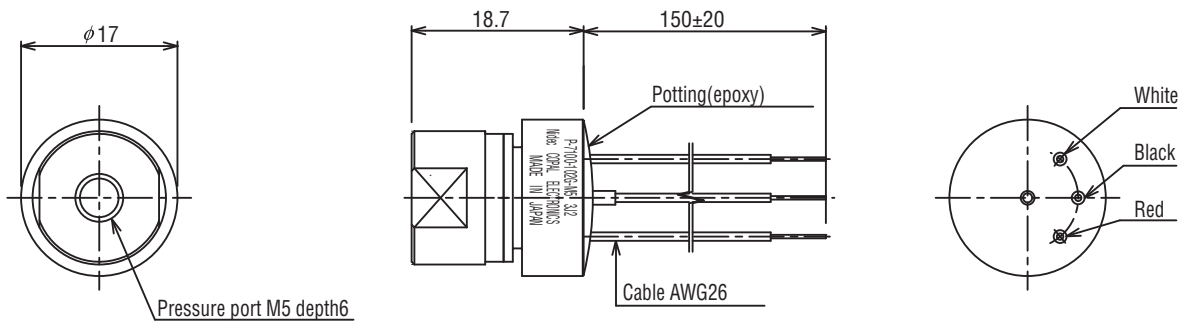
OUTLINE DIMENSIONS

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

● P-7100-102G-R1



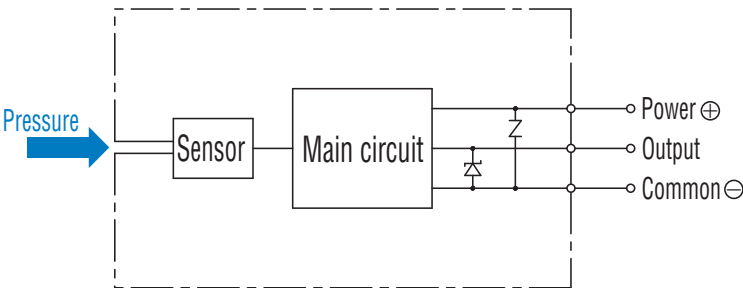
● P-7100-102G-M5



※ Product with 1.5m cable is also available as customized product.

Wire color	Connection
Red	Power $\oplus$
White	Output
Black	Common

INTERNAL ELECTRICAL SCHEMATICS



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Nidec:

[P-7100-102G-M5](#) [P-7100-102G-R1](#) [P-7100-102R-M5](#) [P-7100-102R-R1](#) [P-7100-103G-M5](#) [P-7100-103G-R1](#) [P-7100-132A-M5](#) [P-7100-132A-R1](#)