

THIN-FILM HIGH PRESSURE TRANSDUCER.

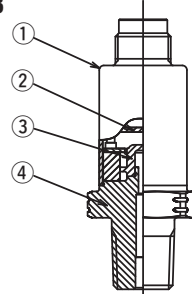
PA-960/PA-968



FEATURES

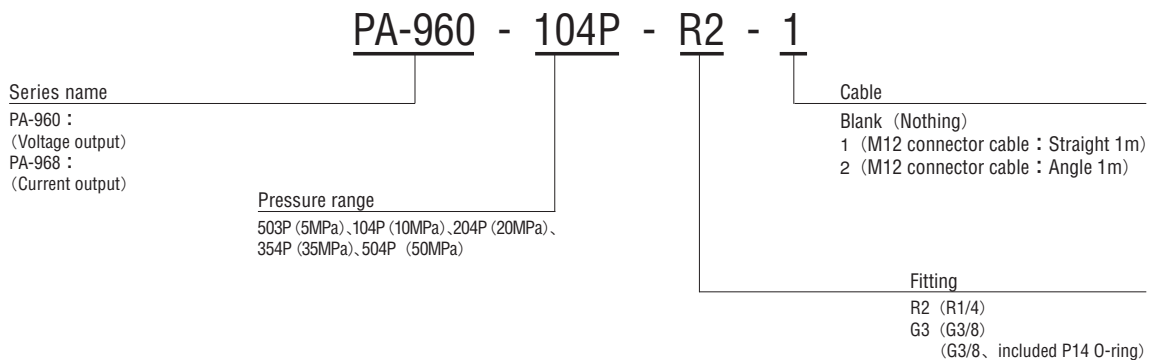
- Compact and lightweight
- To support maximum of 50 MPa(s).
- Digital coverage for a high accuracy
- Mounting by connector for an easy wiring
- High water proof structure comply with IP67(when mounting connector)
- CE Marking available

INTERNAL STRUCTURE PA-960/PA-968



	Part name	Material
①	Case	SUS 304
②	Board	—
③	Sensor module	17-4PH (Correspond to SUS630)
④	Fitting	17-4PH (Correspond to SUS630)

MODEL NUMBER DESIGNATION



※ Please refer to the LIST OF MODEL NUMBERS when placing orders.

PA-960/PA-968

PRESSURE TRANSDUCERS WITH AMP.

LIST OF MODEL NUMBERS

Series name (Reference)	Fitting	Cable	Pressure range				
			0 ~ 5MPa	0 ~ 10MPa	0 ~ 20MPa	0 ~ 35MPa	0 ~ 50MPa
PA-960 (Voltage output)	R1/4	Nothing	PA-960-503P-R2	PA-960-104P-R2	PA-960-204P-R2	PA-960-354P-R2	PA-960-504P-R2
		Straight	PA-960-503P-R2-1	PA-960-104P-R2-1	PA-960-204P-R2-1	PA-960-354P-R2-1	PA-960-504P-R2-1
		Angle	PA-960-503P-R2-2	PA-960-104P-R2-2	PA-960-204P-R2-2	PA-960-354P-R2-2	PA-960-504P-R2-2
	G3/8, included P14 O-ring	Nothing	PA-960-503P-G3	PA-960-104P-G3	PA-960-204P-G3	PA-960-354P-G3	PA-960-504P-G3
		Straight	PA-960-503P-G3-1	PA-960-104P-G3-1	PA-960-204P-G3-1	PA-960-354P-G3-1	PA-960-504P-G3-1
		Angle	PA-960-503P-G3-2	PA-960-104P-G3-2	PA-960-204P-G3-2	PA-960-354P-G3-2	PA-960-504P-G3-2
PA-968 (Current output)	R1/4	Nothing	PA-968-503P-R2	PA-968-104P-R2	PA-968-204P-R2	PA-968-354P-R2	PA-968-504P-R2
		Straight	PA-968-503P-R2-1	PA-968-104P-R2-1	PA-968-204P-R2-1	PA-968-354P-R2-1	PA-968-504P-R2-1
		Angle	PA-968-503P-R2-2	PA-968-104P-R2-2	PA-968-204P-R2-2	PA-968-354P-R2-2	PA-968-504P-R2-2
	G3/8, included P14 O-ring	Nothing	PA-968-503P-G3	PA-968-104P-G3	PA-968-204P-G3	PA-968-354P-G3	PA-968-504P-G3
		Straight	PA-968-503P-G3-1	PA-968-104P-G3-1	PA-968-204P-G3-1	PA-968-354P-G3-1	PA-968-504P-G3-1
		Angle	PA-968-503P-G3-2	PA-968-104P-G3-2	PA-968-204P-G3-2	PA-968-354P-G3-2	PA-968-504P-G3-2

※ Verify the above model numbers when placing orders.

STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of 25 ± 5 °C and excitation voltage of 12 V DC.

Item	Model number	PA-960/968					
		503P	104P	204P	354P	504P	
General specifications	Pressure reference	Gauge					
	Rated pressure range	MPa	5	10	20	35	50
	Maximum pressure	MPa	10	20	40	50	65
	Operating temp. range	°C	PA - 960 : - 20 ~ 85 PA - 968 : - 20 ~ 70				
	Compensated temp. range	°C	-20 ~ 70				
	Operating humidity	%RH	35 ~ 85 (No condensation)				
	Storage temp.	°C	- 20 ~ 70 (At atmospheric pressure, humidity below 65%RH)				
	Pressure medium		Gases/Liquids compatible with 17-4PH				
	Protection grade		IP67*				
	Net weight	g	Applx.60/Applx.130*				
Power	Supply voltage	10.8 ~ 30VDC (include ripple)					
	Consumption current	10mA Max. (No load) /PA-960					

*Including the attached cable

PA-960/PA-968

PRESSURE TRANSDUCERS WITH AMP.

STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of 25 ± 5 °C, excitation voltage of 12 V DC, and Rated pressure of Pin=0 ~ Pr.

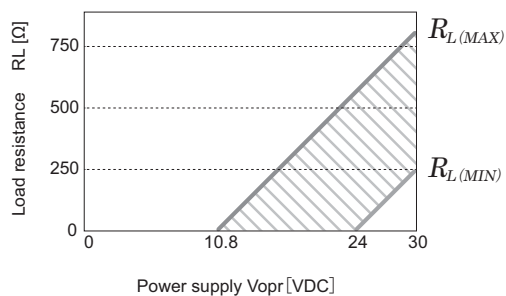
Item		Model number	PA-960	PA-968
Analog output	Output voltage/Current		1 ~ 5V	4 ~ 20mA
	Zero voltage/ Current		$1 \pm 0.05V$	$4 \pm 0.2mA$
	Span voltage/Current		$4 \pm 0.05V$	$16 \pm 0.2mA$
	Linearity	%F.S.	± 0.5	
	Hysteresis	%F.S.	± 0.1	± 0.2
	Thermal Error (- 20 ~ 70°C)	ZERO %F.S./°C	± 0.05	
		SPAN %F.S./°C	± 0.05	
	Load resistance		10kΩ 以上	500Ω max. (power supply : 24V) **
Response		2ms Max.		

** Please refer to the following table or expression to choose load resistance.

LOAD RESISTANCE

Please refer to the following table or expression to choose load resistance of current output type (PA-968).

Performance mapping



Expression of the load resistance

$$R_{L(MAX)} = \frac{V_{opr} - 10.8}{0.026}$$

$$R_{L(MIN)} = \frac{V_{opr} - 10.8}{0.026} - 507.7$$

ENVIRONMENTAL CHARACTERISTICS

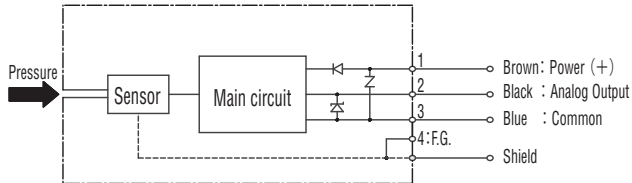
Test item	Test conditions ($T_a=25 \pm 5$ °C, Pin=0Mpa)	Permissible change
Vibration	10 ~ 500 Hz, 1.5 mm P-P, 3 directions for 2 hours each	Analog output (Zero voltage/current, Span voltage/ current): ± 2 %F.S., maximum each after test
Shock	490 m/s ² 3 directions for 3 times each	
Pressure cycling	10 ⁶ cycles 0 ~ Rated pressure	
Moisture resistance	40 °C, 90 ~ 95 %RH, 240 hrs.	
EMC	EMI : EN55011: 2007, A2 : 2007 Group 1, class B EMS : EN61326-1 : 2006/EN61326-2-3 : 2006 Table 2	Analog output (Zero voltage/current, Span voltage/ current): ± 5 %F.S., maximum each after test

PA-960/PA-968

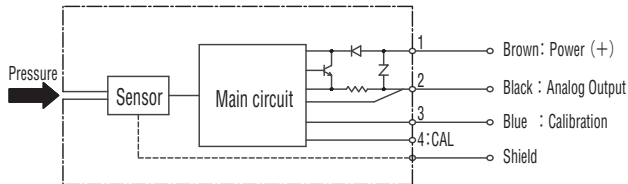
PRESSURE TRANSDUCERS WITH AMP.

INTERNAL CIRCUIT

PA-960

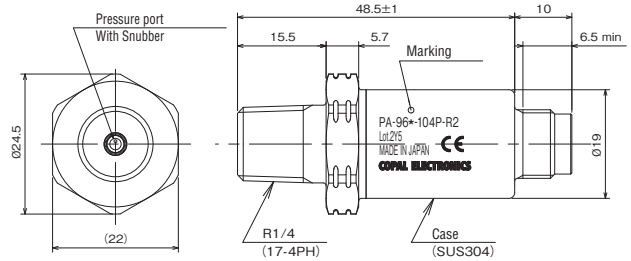


PA-968

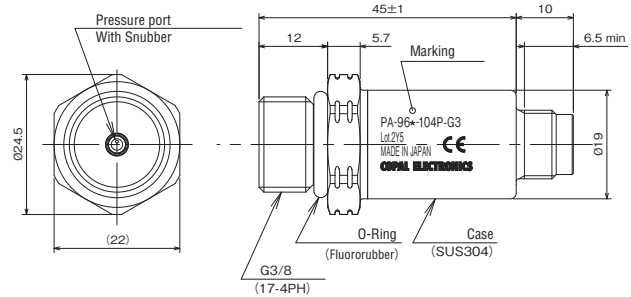


OUTLINE DIMENSIONS

Fitting R2 (R 1/4)



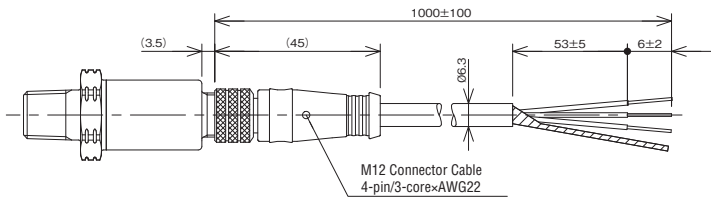
Fitting G3 (G 3/8)



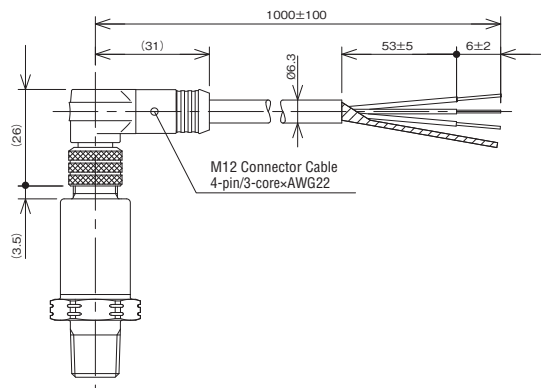
M12 ASSEMBLED CABLE

(Unit:mm)

Straight

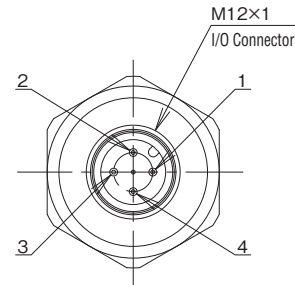


Angle



WIRING

Please wire according to the following table for M12 connector cable.



Pin No.	Connection	
	PA-960	PA-968
1	Power⊕	Power⊕
2	Analog output	Analog output
3	Common	CAL**
4	F.G.	CAL**

F.G:Frame ground

※Do not wire the CAL connection.
It may cause malfunction when voltage is applied.

**...Calibration