

Submit to:	Specifications for customized product	Issued No. 8ZDFK-0044-1①	
Distribute to:	Pressure transducer Model PA-500-103G-04YA	Date of issue	Oct. 17, 2007
		Issued section	Design Dept. #1 Sensors Div.

1. Scope

This specification applies to the pressure transducer PA-500-103G-04YA.

Unless otherwise specified, all specifications are specified under the condition of ambient temperature

Ta=25±5°C, operating voltage Vopr=15V DC.


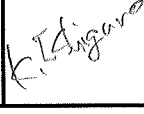
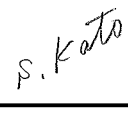
2. Specifications

2-1. General Specifications

Item	Symbol	Condition	Specification
Pressure reference			gauge
Rated pressure range	Pr		981kPa
Maximum pressure	Pmax	(Excessive pressure)	1961kPa
Break-down pressure	Pb		1962kPa minimum
Operating temp.range	Topr	Note1	-20~70°C
Compensated temp. range	Tcomp		-10~50°C
Operating humidity range	Hopr	No condensation	35~85%RH
Storage temp. range	Tstg	Atmospheric pressure, humidity 65%RH maximum	-20~80°C
Pressure medium		Non-corrosive	Gases and liquids
Insulation resistance		500V DC between electrical wirings and the case	100MΩ minimum
Dielectric strength		Between electrical wirings and the case. (Leakage current 1mA maximum)	500V AC, 1minute
Pressure port			R1/4 (PT1/4)
Net weight			Approx 85g
Dimension			Draw. No.4071-00135-01 ①

2-2. Power

Item	Symbol	Condition	Specification
Supply voltage	Vopr	Vopr=12~24V DC	15V±10%
Ripple content	Rr	Vopr=12~24V DC 50Hz	10%(P-P) maximum
Consumption current	Is	Vopr=15V Io=0mA	15mA maximum

				Remarks	Approved	Checked	Drawn
							
①	2007.10.17	S.Kato	Drawing number change				
	2006.11.8	S.Kato	First edition	Model PA-500	Relevant specifications		
Symbol	Date	Revised	Revision note				

2-3. Analog output

Item	Symbol	Condition	Specification
Output voltage	Vo	Pin=0~Pr	1~5V
Zero voltage	Vzero	Pin=0kPa Zo=1kΩTa=25°C	1±0.04V
Full voltage	Vfull	Pin=Pr Zo=1kΩTa=25°C	5±0.04V
Span voltage	Vspan	Vfull-Vzero	(4V)
Load resistance	Zo		0.5kΩ minimum
Linearity/Hysteresis	LIN/ HYS		±0.5%FS maximum
Thermal error	Zero	Z-TC Ta=-10~50□ (Reference temp.25°C)	±0.04%FS/°C
	Span	S-TC Ta=-10~50□ (Reference temp.25°C)	±0.04%FS/°C
General precision		LIN/HYS+TC	±2%FS
		LIN/HYS+TC+Long-term stability	±2.5%FS
Supply voltage effect	SV	Vopr±10%	±0.05V maximum

2-4.Environmental characteristics

Item	Test condition	Specification
Vibration	10~500Hz 1.5mm maximum/98.1m/s ² 3directions for 2hours each	Shall meet the specification 2-1~2-3. Note2
Shock	490m/s ² , 3directions for 3times each	
Pressure cycling	0~Pr 10 ⁶ cycles	Shall meet the specification 2-1~2-3.
Humidity	40°C 90~95%RH 240hours	

Note1: Please use it with there no condensation not freezing.

Note2: Changes in output voltages after the test are ±0.5%FS maximum respectively.

3. Other

A serial number of manufacturing is displayed on a case horizontal side of the main body.

4.Warranty

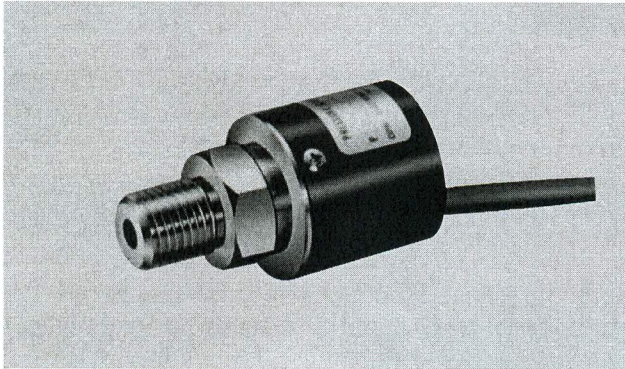
Nidec Copal Electronics warrants the products for the period of one year after the date of the customer's receipt.

Note

Model
PA-500Control No.
8ZDFK-0044-1①

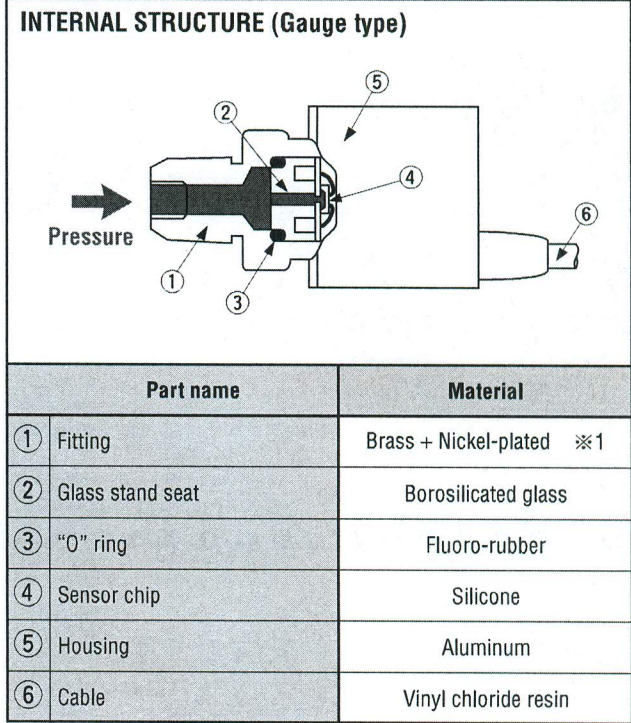
PRESSURE TRANSDUCERS WITH AMP.

PA-500



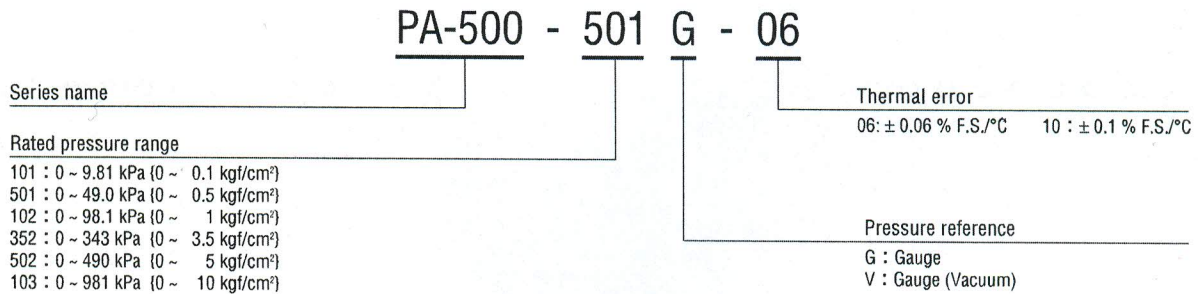
FEATURES

- High output gain by built-in hybrid electronic amp.
- Built-in temperature compensation function (0 ~ 50 °C)
- Pressure medium compatible with both liquid and gas pressures (Gauge)



※1 SUS 304 for 102V

MODEL NUMBER DESIGNATION



LIST OF MODEL NUMBERS

Pressure reference		Gauge						
Thermal error	Rated pressure range kPa (kgf/cm ²)	0 ~ 9.81 {0 ~ 0.1}	0 ~ 49.0 {0 ~ 0.5}	0 ~ 98.1 {0 ~ 1}	0 ~ 343 {0 ~ 3.5}	0 ~ 490 {0 ~ 5}	0 ~ 981 {0 ~ 10}	0 ~ -98.1 {0 ~ -1}
± 0.06 % F.S./°C			PA-500 -501G-06	PA-500 -102G-06	PA-500 -352G-06	PA-500 -502G-06	PA-500 -103G-06	PA-500 -102V-06
± 0.1 % F.S./°C		PA-500 -101G-10	PA-500 -501G-10	PA-500 -102G-10	PA-500 -352G-10	PA-500 -502G-10	PA-500 -103G-10	PA-500 -102V-10

☐ : Not available

※Verify the above model numbers when placing orders.

PA-500 PRESSURE TRANSDUCERS WITH AMP.

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-500							
		101G	501G	102G	352G	502G	103G	102V	
General specifications	Pressure reference	Gauge							
	Rated pressure range	kPa (kgf/cm ²)	9.81 {0.1}	49.0 {0.5}	98.1 {1}	343 {3.5}	490 {5}	981 {10}	- 98.1 {-1}
	Maximum pressure	kPa (kgf/cm ²)	19.6 {0.2}	98.1 {1}	196 {2}	686 {7}	981 {10}	1961 {20}	196 {2}
	Break-down pressure	kPa (kgf/cm ²)	49.0 {0.5}	245 {2.5}	490 {5}	1030 {10.5}	1471 {15}	2941 {30}	490 {5}
	Operating temp. range	°C	- 20 ~ 80						
	Compensated temp. range	°C	0 ~ 50						
	Operating humidity	%RH	35 ~ 85 (No condensation)						
	Storage temp.	°C	- 20 ~ 80 (Atmospheric pressure, humidity 65 %RH maximum)						
	Pressure medium		Non-corrosive gases / Non-corrosive liquids						
	Insulation resistance	MΩ minimum	100 (500 V DC)						
	Dielectric strength		500 V AC, 60 s (Leakage current 1 mA maximum)						
	Pressure port		R 1/4 (PT 1/4)					G 1/4 (PF 1/4)	
	Net weight	g	Approx. 85						
Power	Supply voltage	V DC	12 ~ 24 ± 10 %						
	Ripple content	maximum	10 % (P-P)						
	Consumption current	maximum	20 mA						
Analog output	Output voltage	V	1 ~ 5						
	Zero voltage	V	1 ± 0.04 (at 25 °C)						
	Span voltage	V	4 ± 0.04 (at 25 °C)						
	Output current	mA maximum	1 (Load resistance: 5 kΩ minimum)						
	Linearity/Hysteresis	%F.S.	± 0.5	± 0.3		± 0.5			
	Thermal error 0 ~ 50 °C (Reference temp.: 25 °C)	ZERO %F.S./°C	± 0.1	± 0.06/0.1					
		SPAN %F.S./°C	± 0.1	± 0.06/0.1					
	Supply voltage effect	V maximum	± 0.1						
Response	ms	Approx. 1							

PA-500 PRESSURE TRANSDUCERS WITH AMP.

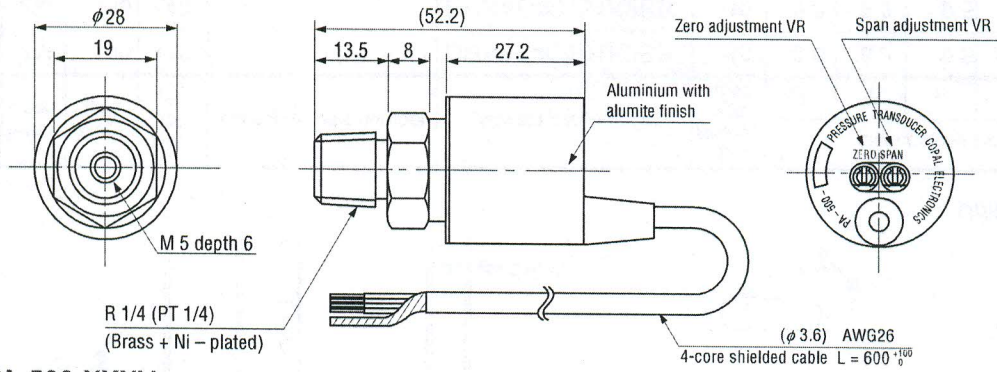
ENVIRONMENTAL CHARACTERISTICS

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	Zero 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.	

OUTLINE DIMENSIONS

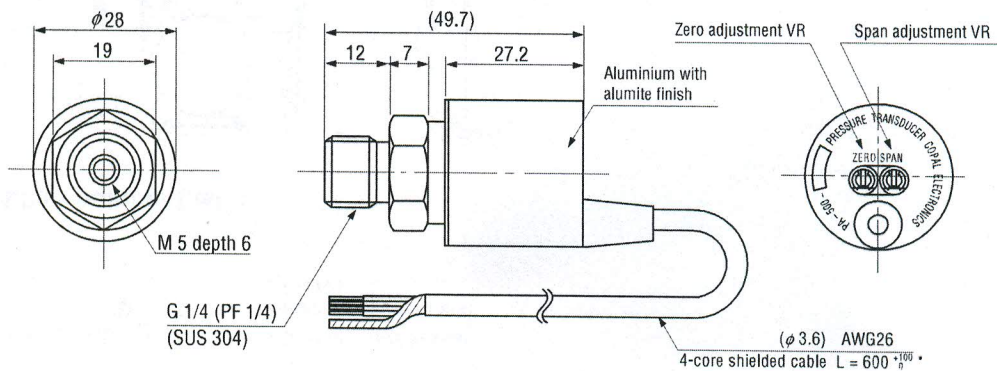
Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)

● PA-500-XXXG



Wire color	Connection
Red	Power ⊕
White	Output
Green	N.C.
Black	Common
Shield	Fitting

● PA-500-XXXV



INTERNAL ELECTRICAL SCHEMATICS

