Nidec

Pressure transducer with amp

PA-100

INSTRUCTION MANUAL Ver.3.0

Thank you very much for purchasing our products.
In order to derive its desired characteristics and utilize it with high reliability, please read this manual thoroughly and understand the contents before operation.
And please keep this manual and read again when necessary.

For more detailed information please ask for the nearest distributor or the following sales center.

NIDEC COMPONENTS CORPORATION

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1. Cautions in Handling

【CAUTION】

These products (pressure sensors, pressure switches, pressure gauges, pressure indicators, leakage sensors, etc.) are designed and manufactured as general industrial parts. Therefore, a person with sufficient knowledge and experience shall confirm the conditions and environments described in the catalog, specifications, and instruction manual of each product, check the suitability of the product for the machine, device, or system which you use, and ensure safety before use.
These products are not intended to be used for applications particularly requiring high reliability (These include, but are not limited to, nuclear power control, aerospace and military purposes).
The details of warranty shall be as per the descriptions in this document and we shall not be liable for any damage on you resulting from the use of any equipment or device (including control systems) which is not in accordance with this document (hereinafter referred to as "use in violation"). In the case where you resell our products, we shall not be liable for any damage on a third party resulting from use in violation by the third party, and even if we make payment to the third party in connection with such use in violation regardless of the name by which such payment may be called, we may demand the whole amount thereof from you.

⚠ **Caution** : This indicates the precaution in handling and/or the risk in misusing.

⚠ Caution

◇This product is not of waterproof and is not suitable for use in damp environments. To clean it of dipping is not suitable either.
◇Never insert any foreign matter except the specified media into the pressure port, as this may cause malfunction.
◇Never apply any unnecessary force to the pressure port, as this may malfunction.
◇Never apply pressure exceeding the maximum pressure, as this may alter the performance characteristics or cause malfunction.
◇Soldering condition is on 350℃, 3sec. and no dipping. Over heating will cause the performance characteristic deterioration or malfunction.
◇Be sure to connect output terminals correctly. Wrong connection will cause damage of unit.
◇Never apply voltage exceeding the specified, as this may cause malfunction.

◆Please supply a stable power source, otherwise may cause an unstable output.
◆Supplied pressure to S type should be A-port pressure≧ B-port pressure. Wrong piping will cause malfunction.

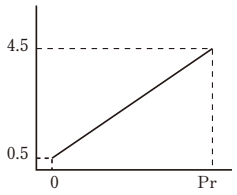
2. Model number designation

※Please make sure your purchased model number before use.

PA−100	−□□□D	−□
⇓	⇓	⇓
Series name	Pressure range 100：1kPa 200：2kPa 500：5kPa	Output S type：0.5～4.5V/0～Pr* W type：2.5±2.0V/0±Pr* ※ Pr indicates the rated press.

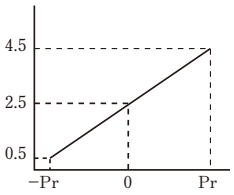
3. Output

Output voltage : V 〈S type〉



Differential (A-port)−(B-port)
A-port pressure≧ B-port pressure

Output voltage : V 〈W type〉



Differential(A-port)−(B-port)

4. How to Set

(1) Keep the body and fit on PC board so as not to make a gap.
(2) Solder the terminal pins on condition of 350℃, 3sec.
(3) Connect the output terminals correctly.
(4) Pipe the pressure ports up to the body. The gap may cause air leak.

※Recommended tube ; 2.0～2.5mmI. D., 7mm O.D. max ., made of silicon

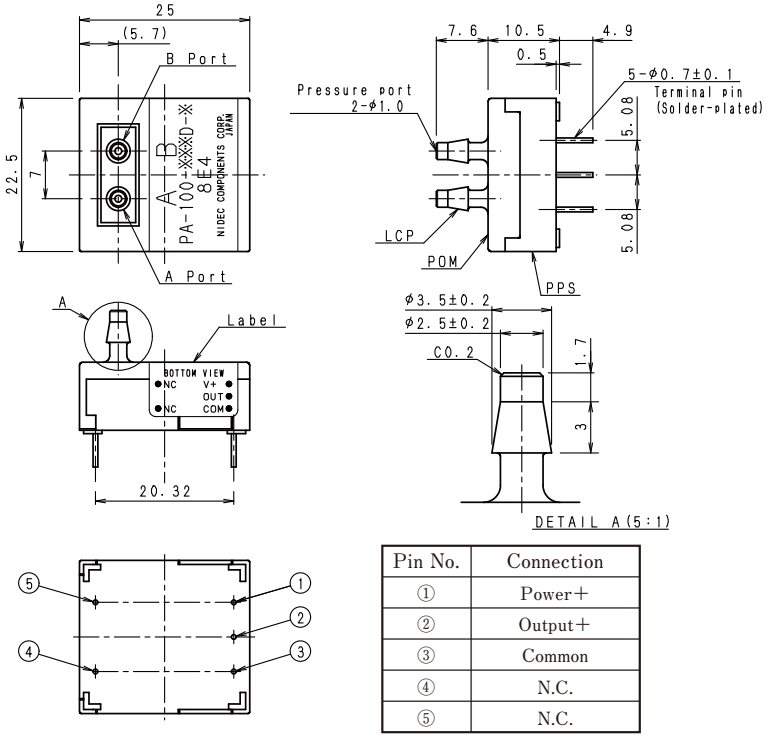
5. Specifications

Pressure range		100	200	500
Pressure reference		Differential		
Rated pressure		1kPa	2kPa	5kPa
Max. pressure		5kPa	10kPa	25kPa
Broken-down pressure		50kPa		
Operating temperature		−20～70℃		
Compensated temp.		0～50℃		
Operating humidity		35～85％RH		
Storage temperature		−20～80℃		
Media		Non-corrosive gases		
Net weight		Approx. 7g		
Supply voltage		4.5～5.5V DC		
Dissipation		5mA max.		
Output voltage (S type)	Zero	0.5±0.08V (Supply voltage = 5V) ＊1		
	Span	4.0±0.08V (Supply voltage = 5V) ＊1		
Output voltage (W type)	Zero	2.5±0.08V (Supply voltage = 5V) ＊1		
	Span	2.0±0.08V (Supply voltage = 5V) ＊1		
Linearity / Hysteresis		±0.5%FS		
Thermal error (0～50℃)	Zero	±5%FS	±3%FS	±2%FS
	Span	±2%FS		
Response		Approx. 5msec		
Output current		0.5mA max. (Load resistance 10kΩmin.)		
Gravitational effect		±2%FS ＊2	±1%FS ＊2	±0.4%FS ＊2

＊1 : Output voltage is in proportion to supply voltage.
＊2 : On condition that the pressure port turns from up to down.

6. Outline dimensions (Unit : mm)

Unspecified tolerance : ± 0.5mm



Pin No.	Connection
①	Power+
②	Output+
③	Common
④	N.C.
⑤	N.C.

7. Warranty and Disclaimer

1) The warranty period of these products is one year after delivery to a designated place. The warranty mentioned here is limited to the warranty of a delivered product itself, and it does not cover consumables such as batteries. Each product has its own specifications such as durability (pressure cycles). Therefore, check with each service office.
2) If a failure or damage of the product occurs during the warranty period, for which we are responsible, we will promptly replace or repair the product free of charge. The warranty mentioned here means the warranty of the product itself and does not cover any damage induced by a failure of the product.
3) The warranty does not cover when any of the following items is applicable:
   - The failure is caused by conditions, environments, or handling not described in the catalogue and agreed specifications and other documents.
   - The product has been modified, adjusted, or repaired by a person/company other than our company after delivery.
   - The failure cannot be foreseen by the scientific and technological knowledge at the time of delivery.
   - The failure is caused by force majeure such as disasters.