

Nidec

Thin Film Semiconductor type
Pressure sensor

PA-930

Instruction Manual Ver.4.0

Thank you for purchasing NIDEC COMPONENTS CORP. Product.

In order to safely use this product, Please carefully read the instruction manual and keep it for future reference.

For inquires:

NIDEC COMPONENTS CORPORATION

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Important Information and Warnings

[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.

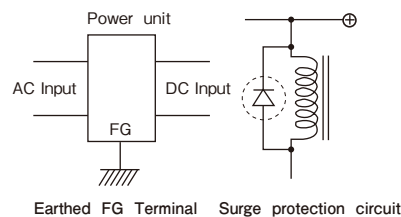


CAUTION ... This caution mark describes when there is a possibility that under may suffer from damage or physical damage may occur if the product is used improperly.



CAUTION

- This product is neither drip-proof nor dust-proof structure. Do not use it under the condition where water or oil drip, dust rises, or corrosion occurs.
 - Do not apply pressure over the maximum pressure.
 - Do not short circuit and/or mis-wire. It will result in internal circuit damage.
 - When handling the product, please hold the body of the product. Do not apply unnecessary force to the wire when holding the body of the product.
 - When installing the sensor to a piping, turn the sensor by using a wrench on the hexagonal part only. And make sure not to turn yourself when piping.
 - For gasket fitting (VC type), since the edge of the fitting is mirror polished, do not scratch the edge of the fitting.
 - When setting the Vzero output, do not apply over torque to the volume. The specified torque is 0.02N-m max.
- Please use a stable direct current power supply.
Also, if in case the power line for the sensor is connected with a relay or solenoid, please insert a varistor or diode to the power line. Refer to the picture on the right for details.
- When cleaning the product, use a neutralized detergent.
Do not use a solution such as thinner.



Piping

Please gently use a hexagonal wrench when piping.



Please do not turn the sensor by holding the main body and cables when installing the sensor to a piping.

Wiring

Please connect the wire accordingly to the chart below.

Color	Connection
Red	Power +
Black	Common
White	Analog output
Green	—
Shield	Case

Setting Vzero

The Vzero output can be adjusted by turning the Vzero volume. When adjusting the Vzero volume, make sure the pressure port is open to the atmosphere and the temp. at the pressure point is at stable condition.

※ Gauge type only.

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.

Part number designation

PA—930 — 102V — VC

Pressure Range	Fitting
102V:0~100kPa	VC:9/16-18UNF
102G:0~100kPa	R2:R1/4 (PT1/4)
102R:-100~100kPa	
302R:-100~300kPa	
103G:0~1000kPa	
102A:0~100kPa abs	
202A:0~200kPa abs	

Specifications

Pressure range	102V	102G	102R	302R	103G	102A	202A
Rated pressure range	0~100kPa	0~100kPa	-100~100kPa	-100~300kPa	0~1000kPa	0~100kPa abs	0~200kPa abs
Maximum pressure	200kPa	200kPa	200kPa	600kPa	1500kPa	300kPa abs	300kPa abs
Vzero voltage	1±0.04V	1±0.04V	3±0.04V	2±0.04V	1±0.04V	1±0.04V	1±0.04V
Vspan voltage	4±0.04V						
Pressure medium	Liquids/gases compatible with SUS316L, Nickel alloy						
Dielectric strength	125Vdc for 1 min.						
Operating temp. at pressure	0~150°C						
Compensated temp. at pressure port	100~150°C						
Atmosphere temp. (circuit)	0~50°C						
Storage temp.	-20~70°C (At atmospheric pressure, humidity below 65%)						
Operating humidity	35~85%RH (No condensation)						
Operating voltage	10.8~26.4Vdc (Includes ripple current)						
Current consumption	20mA maximum						
Linearity/Hysteresis	±0.5%F.S.						
Temp. thermal error (Vzero)	±0.10%F.S./°C (Standard: 100~150°C: 125°C at pressure port)					±0.30%F.S./°C	±0.20%F.S./°C
Temp. thermal error (Vspan)	±0.10%F.S./°C (Standard: 100~150°C: 125°C at pressure port)					±0.20%F.S./°C	±0.20%F.S./°C
Weight	Approx.100g					Approx.140g	

* Thermal conductance is different when measuring high vacuum due to change in density of pressure media.

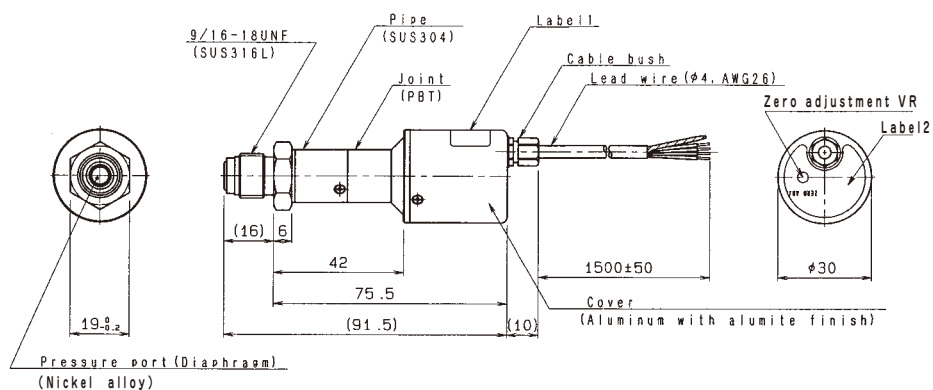
Therefore, the temperature at the pressure point may not reach its assumed temperature.

Especially under conditions with high temperature, the thermal error and the linearity/hysteresis may look as if it is out of specification.

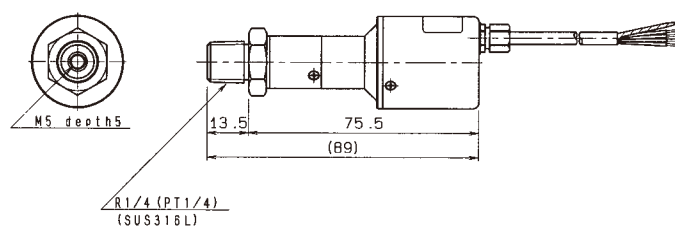
Outline dimensions (unit : mm)

Unless otherwise specified, tolerance±0.5mm

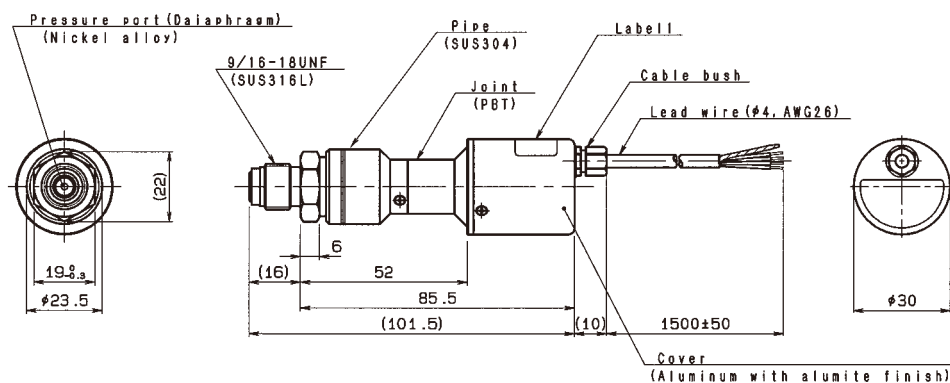
VC type(9/16-18UNF)



R2 type(R1/4)



XXXA-VC type(9/16-18UNF)



Internal circuit

