

Pressure Sensor Head DPH-100Series

MJE-DPH100 No.0081-76V

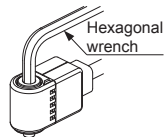
Thank you very much for purchasing Panasonic products. Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

1 OUTLINE

- This product is a pressure sensor head which can be connected to the pressure controller **DPC-100** series. It can also be used independently.

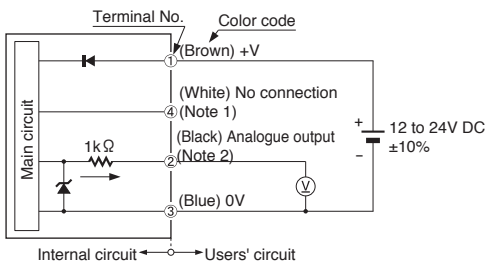
2 PIPING

- Use a hexagonal wrench to install this product. For the tightening torque, refer to the following diagram. If excessive tightening torque is applied, the pressure port of the pressure sensor head or the M5 male screw of the commercial coupling will get damaged. In case of R $\frac{1}{2}$ male screw type, wrap sealing tape around the coupler when connecting to prevent leaks.



Pressure port	Hexagonal wrench (bolt width)	Tightening torque
R $\frac{1}{2}$ male screw	5mm	9.8N·m or less
M3 male screw	3mm	0.8N·m or less
M5 male screw		1.5N·m or less

3 I/O CIRCUIT DIAGRAM (FOR INDEPENDENT USE OF PRESSURE SENSOR HEAD)



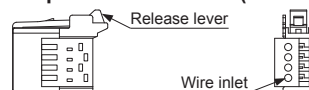
Notes: 1) The white wire (Terminal No. 4) is the signal wire for the pressure controller **DPC-100** series. In case the pressure sensor head is used independently, insulate the white wire and keep it open.
2) When the pressure sensor head is used independently, devices connected to the analogue output must have an input impedance set at 50kΩ or more.

! WARNING

- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

4 WIRE CONNECTION

- When using this product with the pressure controller **DPC-100** series, use the attached connector.
- Part description of connector (accessory)



<Terminal arrangement>

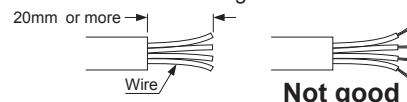
Terminal No.	Color code	Terminal name
1	Brown	+V
2	Black	Analogue output
3	Blue	0V
4	White	Model discrimination

- Applicable wire**
 - 0.1 to 0.5mm² (AWG 27 to 20)
- However, the diameter of the wire sheath should be ϕ 1.0 to ϕ 1.15mm.

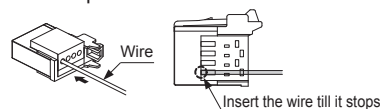
Wire connecting procedure

- Do not strip the wire sheath.
- Connect correctly after confirming the terminal arrangement of the device to which it is connected.

1. Process the cable as the figure below.

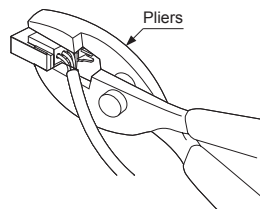


1. Insert the wires into the wire inlets of the connector till the wire tips touch the hole ends.

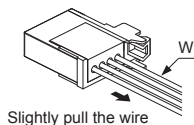


2. Hook-up the connector with pliers, etc.

- Make sure to hook-up by holding the pliers parallel to the connector from the direction shown in the figure right.
- Take care not to damage the wires with the pliers during hook-up.
- Take care that the wires are not pulled out during hook-up.



3. Slightly pull the wire to ensure that the wire is not loose.



Note: Do not reuse the connector which has been hooked-up once, as its performance cannot be guaranteed.
Please purchase the optional connector **CN-EP2** (5 pcs./set) or the recommended product.
<Recommended connector>
e-CON: 1473562-4 [Tyco Electronics AMP K.K.]

5 INDEPENDENT USE OF PRESSURE SENSOR HEAD

- When the pressure sensor head is used independently, prepare the cable end with a stripper, etc.
- Make sure to insulate the white wire (Terminal No. 4), and keep it open.
- Take care of the impedance of the connected device. Further, in case of cable extension, note that a voltage drop will occur depending on the cable resistance.

6 SPECIFICATIONS

<Model No.>

DPH-10 1-2-3-4

1... 1: Compound pressure type, 2: Positive pressure type, 3: Vacuum pressure type
2... None: R $\frac{1}{2}$ + M5 female screw, M3: M3 male screw, M5: M5 male screw
3... None: Normal cable, R: Flexible cable
4... None: 2m cable length, C5: 5m cable length

Item \ Type	Compound pressure type	Positive pressure type	Vacuum pressure type
Type of pressure	Gauge pressure		
Rated pressure range	-100 to +100kPa	0 to +1MPa	0 to -101kPa
Pressure withstandability	500kPa	1.5MPa	500kPa
Applicable fluid	Air / Non-corrosive gas		
Supply voltage	12 to 24V DC $\pm 10\%$ Ripple P-P 10% or less		
Current consumption	15mA or less		
Analogue output	Output voltage: 1 to 5V (at rated pressure range) Output impedance: Approx. 1k Ω		
Zero point	Within 3V $\pm 3\%$ F.S.	Within 1V $\pm 2.5\%$ F.S.	
Span	Within 4V $\pm 3.5\%$ F.S.		
Linearity	Within $\pm 0.5\%$ F.S.		
Overvoltage category	I		
Ambient temperature	0 to +50°C (No dew condensation) Storage: -10 to +60°C		
Ambient humidity	35 to 85% RH, Storage: 35 to 85% RH		
Pollution degree	2		
Temperature characteristics	Within $\pm 2\%$ F.S. (at +25°C reference)		
Material	Enclosure: PBT Pressure port: Stainless steel (SUS303) O-ring: NBR		
Cable	<Normal cable type> 0.2mm ² 4-core cabtyre cable <Flexible cable type> 0.2mm ² 4-core flexible cabtyre cable		
Weight (Note)	R $\frac{1}{2}$ + M5 female screw type: Approx. 10g M3 / M5 male screw type: Approx. 6g		
Accessory	Connector: 1 pc.		

Note: The weight with the cable removed.

7 CAUTIONS

This product is designed for use with air / non-corrosive gas. It cannot be used for liquid or corrosive and inflammable gases.

- This product has been developed / produced for industrial use only.
- This product is suitable for indoor use only.
- The operating altitude of this product is 2000m or less.
- Use within the rated pressure range.
- Do not apply pressure exceeding the pressure withstandability value. The diaphragm will get damaged and correct operation shall not be maintained.
- Make sure that the power supply is OFF while wiring.
- Take care that wrong wiring may burn or damage the sensor.
- Verify that the supply voltage variation is within the rating. If excessive voltage is applied, the product may get burnt or damaged.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this product, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- The analogue output is not incorporated with a short-circuit protection circuit. Do not directly connect a power supply or a capacitive load.
- Do not use during the initial transient time (approx. 50ms) after the power supply is switched ON.
- Extension up to total 10m, or less, is possible with 0.2mm², or more, cable.
- Make sure that stress by forcible bend or pulling is not applied to the cable joint.
- Do not run the wires together with high-voltage lines or power lines or put them in the same raceway. This can cause malfunction due to induction.
- Avoid dust, dirt, and steam.
- Take care that the product does not come in contact with water, oil, grease, or organic solvents such as thinner, etc.
- Do not insert wires, etc. into the pressure port. The diaphragm will get damaged and correct operation shall not be maintained.

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Panasonic Industrial Devices SUNX Co., Ltd. 2022

September, 2022

PRINTED IN JAPAN