Panasonic **INSTRUCTION MANUAL**

Pressure Sensor Head

DPH-L100 Sereis | For liquid / gas

MJE-DPHL100 No.0091-90V

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.

⚠ WARNING

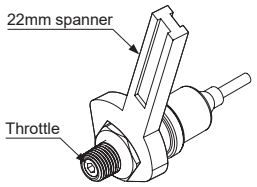
- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

1 OUTLINE

- This product is a pressure sensor head which can be connected to the pressure controller **DPC-L100** series. It can also be used independently.

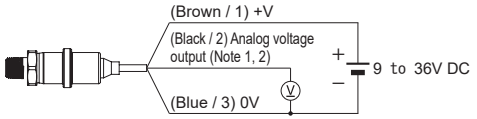
2 PIPING

- In case connecting a ferrule to the pressure port, set 22mm wrench to the hexangular part of the ferrule and tighten it.
  Also, use leak prevent seal on the male thread to avoid leak and connect.



Note: Do not remove the throttle.

3 WIRING DIAGRAM (FOR INDEPENDENT USE OF PRESSURE SENSOR HEAD)



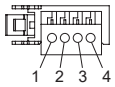
Notes: 1) When the pressure sensor head is used independently, devices connected to the analogue output must have an input impedance set at 10kΩ or more.
2) The analogue output is not incorporated with a short-circuit protection circuit. Do not directly connect a power supply or a capacitive load.
3) The pressure port and internal circuit are connected by capacitor. Thus, do not apply exceeding electric voltage more than the specified withstanding voltage value between the pressure port and wire.
4) Transparent tube on the cable is not used. Cut the transparent tube from base.

4 WIRE CONNECTION

- When using this product with the pressure controller **DPC-L100** series, use the attached connector.

- **Connector (attached) description**

<Terminal arrangement>



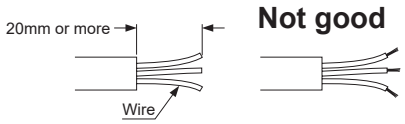
Terminal No.	Color code	Terminal name
1	Brown	+V
2	Black	Analogue output
3	Blue	0V
4	–	Not used

- **Applicable wire**
  - 0.1 to 0.5mm^2 (AWG27 to 20)
    However, the diameter of the wire sheath should be ø1.0 to ø1.15mm.

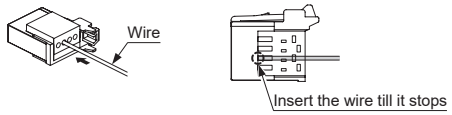
Wire connecting procedure

- Do not strip the wire sheath.
- Connect correctly after confirming the terminal arrangement of the device to which it is connected.
- Transparent tube on the cable is not used. Cut the transparent tube from base.

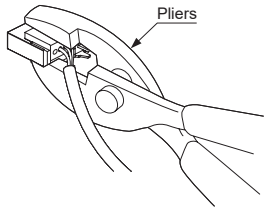
1. Process the cable as the figure below.



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

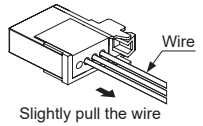


3. Hook-up the connector with pliers, etc.
- Make sure to hook-up by holding the pliers parallel to the connector from the direction shown in the figure below.
- Take care not to damage the wires with the pliers during hook-up.
- Take care that the wires are not pulled out during hook-up.



4. 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.
Purchase the optional connector **CN-EP2** (5 pcs./set) or the recommended product.
e-CON: 1473562-4
[Tyco Electronics Japan G.K.]



5 INDEPENDENT USE OF PRESSURE SENSOR HEAD

- When the pressure sensor head is used independently, prepare the cable end with a stripper, etc.
- 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

<Individual specifications>

Type	DPH-L113V	DPH-L113	DPH-L133
Rated pressure range	-0.1 to 1MPa	0 to 1MPa	0 to 3.5MPa
Pressure withstandability	2MPa		7MPa
Analogue output	•Output voltage: 1 to 5V DC •Output impedance: Approx. 10Ω or less		
Total accuracy (Note1)	±1.0% F.S. (+23 ±2°C) ±2.0% F.S. (-20 to +70°C)		
Ambient temperature	-20°C to +70°C (No dew condensation allowed.) Storage: -30°C to +70°C		
Medium temperature	-20 to +70°C		

Type	DPH-L114 (Note 2)	DPH-L154 (Note 2)
Rated pressure range	0 to 10MPa	0 to 50MPa
Pressure withstandability	20MPa	75MPa
Analogue output	• Output voltage: 1 to 5V DC • Output impedance: Approx. 10Ω or less	
Total accuracy (Note 1)	±1.0% F.S. (+23 ±2°C) ±2.0% F.S. (-20 to +125°C)	
Ambient temperature	-20 to +80°C (Pressure port: -20 to +125°C) (no dew condensation allowed.) Storage: -30 to +100°C (Note 3)	
Medium temperature	-20 to +125°C	

<Common specifications>

Type of pressure	Shield gauge pressure (Note 4)
Applicable fluid	Liquid or gas which adapt material of pressure receiving part
Supply voltage	9 to 36V DC (Note 5)
Current consumption	20mA or less
Response time	1ms or less
Protection	IP67 (IEC)
Ambient humidity	35 to 85% RH, Storage: 35 to 85%RH
Withstanding voltage	1 minuets with AC150V (all live part and between cases)
Pressure port	R1/4 male thread (Including throttle)
Material	Diaphragm: Stainless steel (SUS630) Pressure port: Stainless steel (SUS304) Throttle: Stainless steel (SUSXM7)
Cable	0.2mm^2 3-core heat-resistant PVC cable 2m
Weight	Approx. 100g
accessory	e-CON: 1 pc.

Notes: 1) Total accuracy includes zero point, span, and linearity.
2) Oil is used to inspect for **DPH-L114** and **DPH-L154**, so it may remain on the pressure receiving part.
3) Ambient temperature for e-CON (accessory) is -20 to +75°C. (Storage: -30 to +75°C.)
4) Inside of the sensor is hermetically-sealed. In factory setting, the standard for atmospheric pressure is 1,013hpa.
5) 9 to 32V DC when using e-CON (accessory).

7 CAUTIONS

This product is designed for liquid / gas. It cannot be used for corrosive liquid or gas and inflammable gases which do not match with material of pressured parts.

- This product has been developed / produced for industrial use only.
- 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.
- Verify that the supply voltage variation is within the rating. If excessive voltage is applied, the product may get burnt or damaged.
- Take care that wrong wiring may burn or damage the sensor.
- 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.
- 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 0.2mm^2, or more, conductor area 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.
- 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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