Discontinued
Last time buy: September 30, 2013

Panasonic
ideas for life

Pressure sensor
Built-in amplifier and compensating circuit

PS-A PRESSURE SENSOR
Direct water pressure detection type

New

RoHS compliant

FEATURES

1. **Not only air, now water pressure can be detected directly.**
   *For other media, please inquire.
2. **Linear output achieved for both positive and negative pressure.**
3. **Standalone type**
   One-touch connection using connector
4. **Low power consumption contributes to energy savings.**

TYPICAL APPLICATIONS

- **Water heaters (water level detection)**
- **Industrial water pressure monitoring**

ORDERING INFORMATION

ADPW [1] [1]

PS-A Direct water pressure detection type

Shape
1: Standalone type
Installation hole: 4.5mm dia., 40mm pitch
Pipe shape: 6mm dia., No 0-ring groove
Compatible plug: XMP-04V

Rated pressure
1: Negative pressure –19.6kPa
Positive pressure 49.0kPa
* Please inquire about pressure ranges.

RATING

1. Use conditions and Absolute maximum ratings

Item	ADPW11	Remarks
Type of pressure	Gauge pressure	
Pressure medium	Air and water	Note*1
Max. applied pressure	–90 to 350kPa	
Max. applied voltage	7.0 V	
Ambient temperature range	–10 to 80°C 14 to 176°F	
Storage temperature range	–20 to 85°C –4 to 185°F	

Note: *1. Please consult us for other pressure media.
* When the pressure medium is a liquid, the maximum pressure it can withstand may be exceeded due to shock pressure (water hammer), etc., caused by sudden changes in pressure. Please only use after sufficiently verifying in the actual environment under actual conditions.

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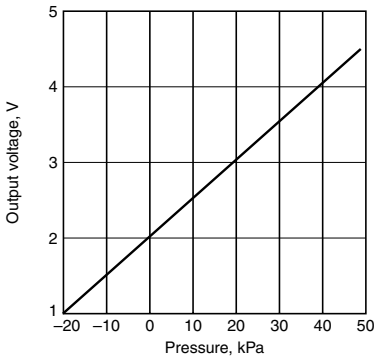
2. Electrical characteristics

Item	ADPW11	Remarks
Rated pressure	–19.6 to 49kPa	
	–2 to 5m	Converts to water level
Drive voltage	5.0±0.25V	
Power consumption	16mW (typ.)	Note*2 and *3
Offset voltage	2.0±0.06V	Note*2 and *3
Rated output voltage for positive pressure	4.5±0.12V	Note*2 and *3
Rated output voltage for negative pressure	1.0±0.084V	Note*2 and *3
Rated span voltage for positive pressure	2.5±0.06V	Note*2 and *3
Rated span voltage for negative pressure	1.0±0.024V	Note*2 and *3
Non linearity	±0.5%FS	Note*2, *3 and *5
Pressure hysteresis	±0.3%FS	Note*2, *3 and *5
Offset voltage temperature characteristics	30mV	Note*3 and *4
Sensitivity temperature characteristics	±2.0%FS	Note*3, *4 and *5
Output impedance	15Ω (typ.)	Note*2

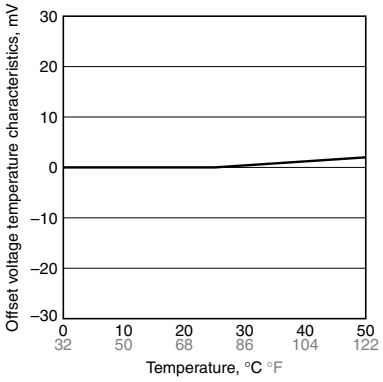
Notes: *2. Indicates output when temperature is 25°C 77°F.
*3. Indicates output when drive voltage is 5 V. Although output fluctuates due to fluctuations in the drive voltage, this is not included.
*4. Indicates from output value at 25°C 77°F and the change of output at 0 and 50°C 32 to 122°F.
*5. Full scale (FS) indicates 0 to 49 kPa.

REFERENCE DATA

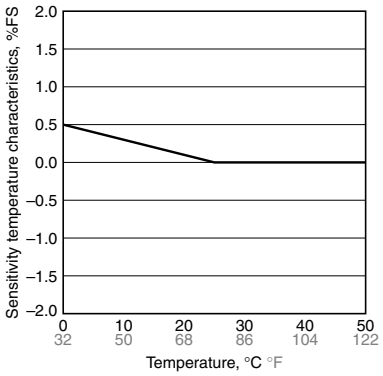
1.-(1) Output characteristics



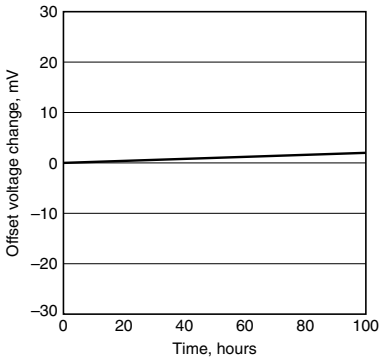
1.-(2) Offset voltage temperature characteristics

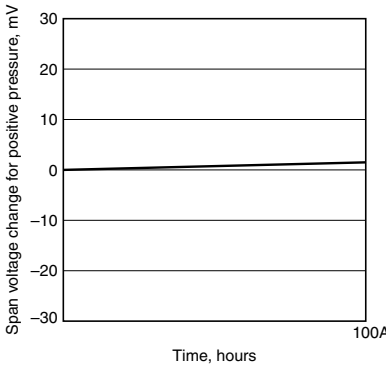


1.-(3) Sensitivity temperature characteristics



2. THB (high temperature high humidity bias test)
Within 85°C 185°F and 85% RH
5 V applied between No. 2 (VDD) and No. 3 (GND)
Applied pressure: 0kPa

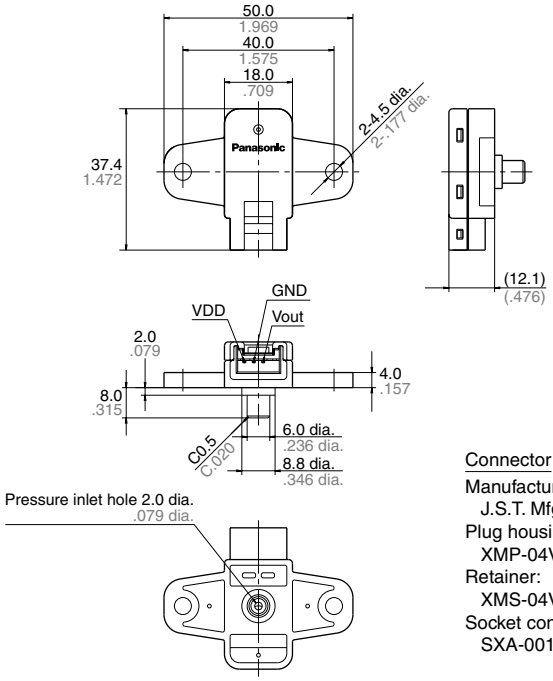




DIMENSIONS (mm inch)

The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e

CAD Data

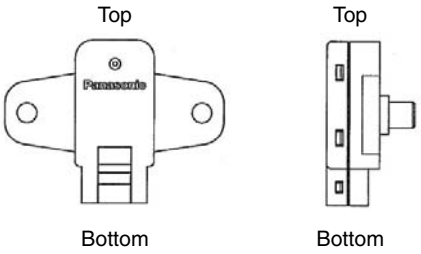


Connector
Manufacturing company:
J.S.T. Mfg. Co. Ltd.
Plug housing:
XMP-04V
Retainer:
XMS-04V
Socket contact:
SXA-001T-P0.6

NOTES

1. Installation direction

1) Influenced by the weight of the filled oil, the offset voltage will shift depending on the installation direction. This product should be installed in the recommended orientation shown below in order to achieve detection results it was designed for.



2) Air tightness may be compromised due to the case breaking or loosening if the screws are not tightened properly. Please make sure the proper torque is used when tightening the screws during sensor installation.

2. Environment

1) Please avoid using or storing the pressure sensor chip in a place exposed to corrosive gases (such as the gases given off by organic solvents, sulfurous acid gas, hydrogen sulfides, etc.) which will adversely affect the performance of the pressure sensor chip.
2) Avoid use in environments susceptible to condensation and freezing.
3) The connector on this product is not water proof. Please make sure there is no problem with the installation environment before installing.
4) When using with cable wiring, we recommend using shielded cables and keeping them as short as possible in order to prevent noise from leaking in.
5) Since the internal circuitry may be destroyed if an external surge voltages is supplied, provide an element which will absorb the surges.
6) Please note that noise entering the power supply may cause malfunction and breakdown.
7) Static electricity can damage this product. Please take sufficient cautions when handling.

3. Other handling precautions

1) Oil has been placed inside the pressure intake opening in order to protect the pressure sensor chip and sensor chip. Do not insert foreign objects, such as a needle, into the pressure intake opening. Doing so may cause damage to the sensor chip or cause oil to leak.
2) As a rule, please do not use this product if it has been dropped. If you still intend to use it, please verify functionality first.
3) Use an operating pressure which is within the rated pressure range. Using a pressure beyond this range may cause damage.
4) Avoid using the pressure sensor where it will be susceptible to ultrasonic or other high-frequency vibration.
5) To assure reliability, check the sensor under actual loading conditions. Avoid any situation that may adversely affect its performance.