

# Digital Pressure Sensor

Advanced Function Type

# PSD



## SALIENT FEATURES

- ◆ 3 Color Display
- ◆ 2m Detachable Cable
- ◆ 7 Programmable Units
- ◆ Key lock, Display off Function
- ◆ NPN, PNP, 4-20mA & 1-5V outputs
- ◆ Wide measurement range -1~10 bar



## Model Number Legend

**PSD** -       -     
 1      2 3      4

### 1. Series

PSD

### 2. Type

V: Vacuum (0 ~ -1 bar)  
 P: Positive (-1 ~ 10 bar)  
 C: Compound (-1 ~ 1 bar)

### 3. Output

N2C: 2NPN + 4-20mA Analog Outputs  
 P2C: 2PNP + 4-20mA Analog Outputs  
 N2V: 2NPN + 1-5V Analog Outputs  
 P2V: 2PNP + 1-5V Analog Outputs

### 4. Connection

2M: 2m Detachable Cable

### Example:

PSD-VN2C-2M

PSD Series - Vacuum Pressure Type - 2NPN NO/NC & 4-20mA Outputs - 2m Cable

**NOTE:** Contact us for models not shown in catalogue.  
 Connector cables are sold separately; look in CC series catalogue for the same ([www.inno.sg/cc](http://www.inno.sg/cc)).

Proximity Sensors

Photoelectric Sensors

Measurement Sensors

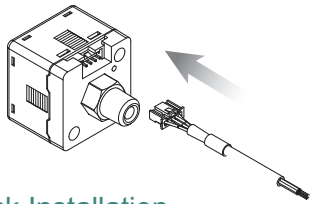
Vision & Safety Sensors

Control

Weighing

Automation

Components



### ◆ Quick Installation

The sensor has a Removable 2Mtr Cable which saves the installation time.



### ◆ Color Change Digital Display!

The PSD series pressure sensor has a 2 color display that can be configured to change color with the output status. i.e. Green <--> Red & Red <--> Green.



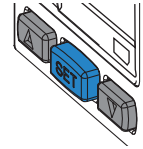
### ◆ Keylock & Output Indication

The sensor has a key lock function to prevent unauthorized change of set values. The keylock indication is displayed when enabled. The output indication icons 1, 2 for the 2 outputs are displayed either side of the Setting display if the output is on.



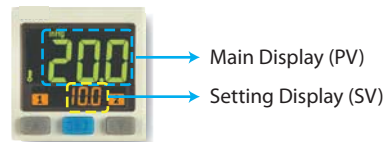
### ◆ Power Saving Mode

The PSD series operates in two modes. Normal mode and power saving mode. In the sleep mode the sensor continues to operate normally but the display is turned off. This reduces the power consumption of the unit by upto 30%.



### ◆ More user friendly buttons

The PSD series comes with raised rubber buttons that are clearly set apart, simple to operate and soft to touch. These buttons have a long life and is resistant to wear due to usage unlike the membrane keypads.



### ◆ Dual Display !!

The PSD series comes with a dual display. The larger Main Display is a 2 color display for display of the current Process Value (PV), the smaller Sub Display is one color (orange) for setting and Set Value (SV) display.



### ◆ Changeable Pressure Units

User selectable pressure units are provided in the digital display eliminating the need of a fixed pressure unit label. 7 user selectable pressure units are available.



### ◆ Stackable

The PSD sensor is stack mountable. Just one panel cut out is required for mounting as stackable displays; either horizontally or vertically. This saves space and labour during assembly.

# Ratings and Specifications

PSD

Type		Vacuum	Positive	Compound
*Models	2 NPN + 4-20mA	PSD-VN2C-2M	PSD-PN2C-2M	PSD-CN2C-2M
	2 NPN + 1-5V	PSD-VN2V-2M	PSD-PN2V-2M	PSD-CN2V-2M
	2 PNP + 4-20mA	PSD-VP2C-2M	PSD-PP2C-2M	PSD-CP2C-2M
	2 PNP + 1-5V	PSD-VP2V-2M	PSD-PP2V-2M	PSD-CP2V-2M
Pressure Type	Gauge Pressure			
Pressure Port Type	R1/8", M5			
Rated Pressure Range	0.0 ~ -101.3 kPa	0.000 ~ 1.000 MPa	-100.0 ~ 100.0 kPa	
Display Pressure Range	10.0 ~ -101.3 kPa	-0.100 ~ 1.000 MPa	-101.0 ~ 101.0 kPa	
Withstand Pressure	300 kPa	1.5 MPa	300 kPa	
Applicable Fluid	Air, Non- corrosive / Non- flammable gas			
Power Supply	12 to 24 VDC ±10%			
Current Consumption	≤ 40 mA at no load			
Connection	Removable 2 meter Cable			
Operating Mode	One Point Teach Mode; Hysteresis Mode; Window Mode			
Analog Output	Type	2 NPN or PNP open collector output (depending on model)		
	Rating	Load Voltage: max. 24 VDC; Load Current: max. 125mA; Residual Voltage: max. 1.5V		
	Hysteresis	Adjustable; Hysteresis value is adjustable within 1-8 digits for one point teach & window mode		
	Repeatability Error	max. ±0.2% F.S		
	Response time	≤ 2.5ms; selectable: 25ms, 100ms, 250ms, 500ms, 1000ms and 1500ms		
Control Output	Current Output	Output Current: 4~20mA ±2.5% F.S; Linearity: ±1% F.S; Max. Load Impedance: 600 Ω at 24V		
	Voltage Output	Output Voltage: 1~5V ±2.5% F.S; Linearity: ±1% F.S; Output Impedance: 1 kΩ		
Display	Process Value	PV: 3 digit - 2 Color (Red, Green) 7 segment display; SV: 3 digit - 1 Color (Orange) 7 segment display		
Output Indication	Output 1 & 2 orange indication in display			
Other Indication	7 user changeable pressure units, key lock indication, sleep mode indication			
Protection Circuits	Output Short Circuit Protection			
Withstand Voltage	1000 VAC (between lead and case) for 1 minute			
Insulation Resistance	50 MΩ min. ( at 500 VDC) between case and lead wire			
Shock Resistance	10G, 3 times each in direction of X, Y and Z			
Vibration Resistance	1.5mm amplitude at 10-50 Hz for 2 hours each in direction of X, Y and Z			
Ambient Temperature	Operation: 0° ~ 50°C; Storage: -10° ~ 60°C (non- freezing; non- condensing)			
Ambient Humidity	Operation: 35 ~ 85% RH; Storage: 35 ~ 85% RH (non- condensing)			
Protection Class	IP 40			
Weight	Cable type: approx. 80g			
Material	Housing: ABS; Front Case: PC			

Proximity Sensors

Photoelectric Sensors

Measurement Sensors

Vision & Safety Sensors

Control

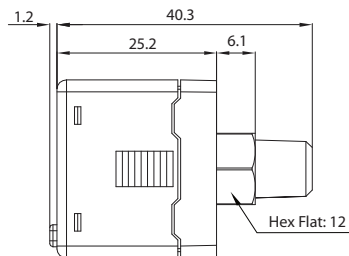
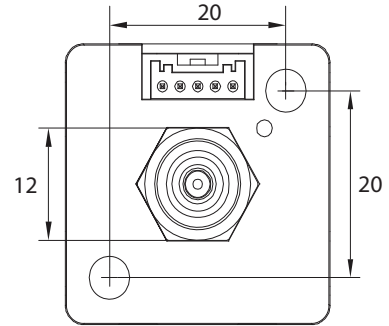
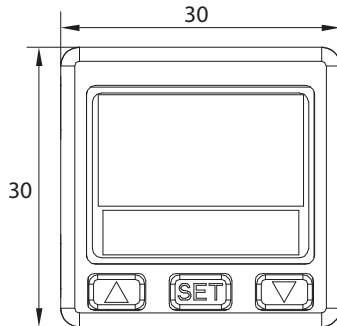
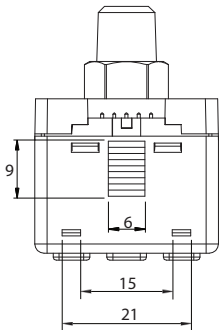
Weighing

Automation

Components

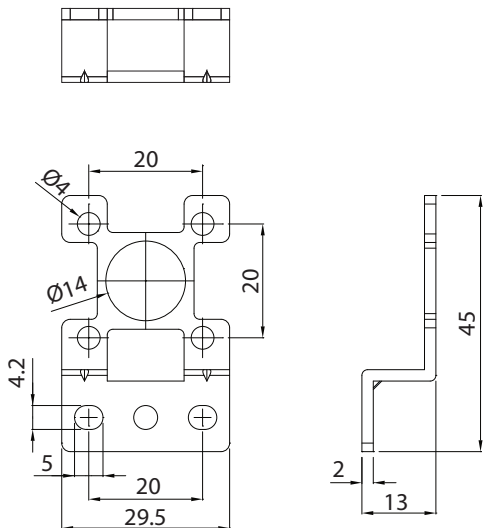
# Sensor Dimension Drawing

PSD



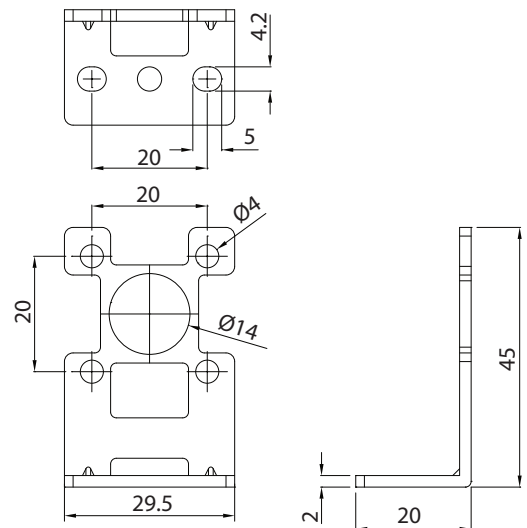
## Top Mounting Bracket

Ordering Code: BT-4



## Side Mounting Bracket

Ordering Code: BT-3



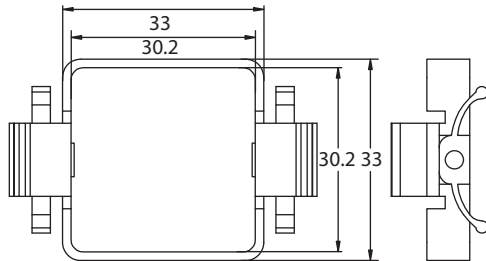
Note: Brackets are not provided along with the sensor and are to be ordered separately.

All dimensions are in mm

## Sensor Dimension Diagram

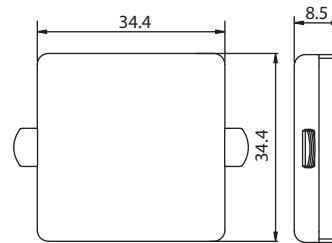
### Panel Adapter

Ordering Code: PA-5



### Protective Cover

Ordering Code: FPC-3



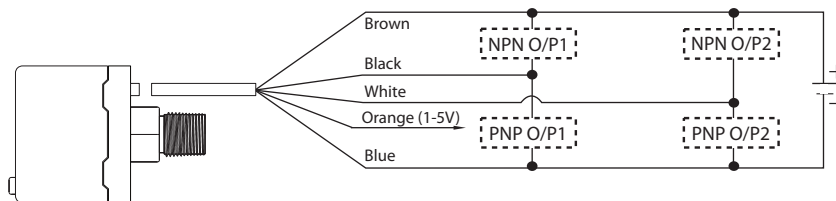
All dimensions are in mm

Note: Panel adapter and Protective covers are not supplied along with the product and are to be ordered separately. Panel adapter PA-3 & PA-4 are to be ordered together.

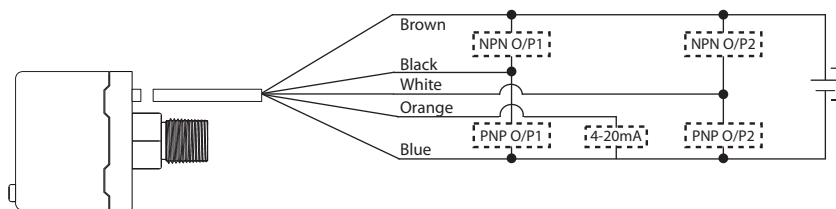
## Connection

### • Cable

#### ◆ 2 Digital + Analog Voltage Output



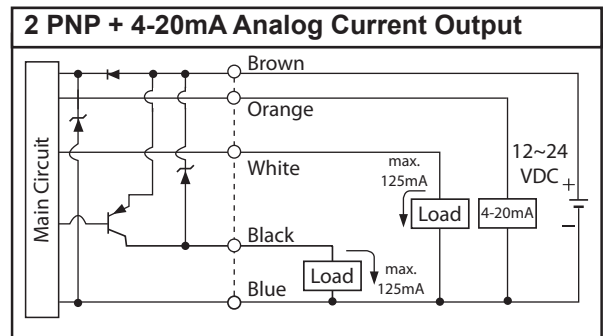
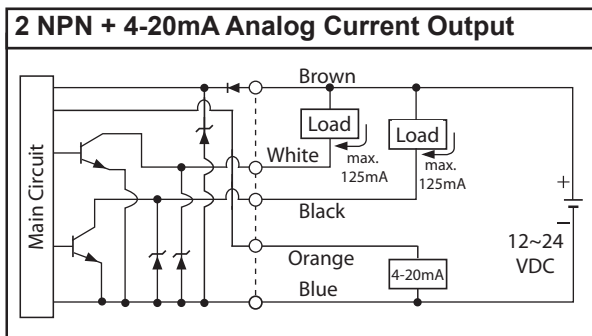
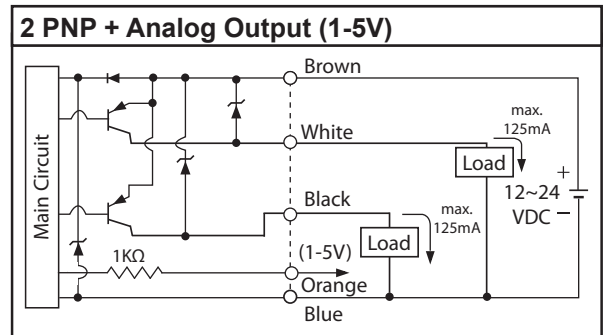
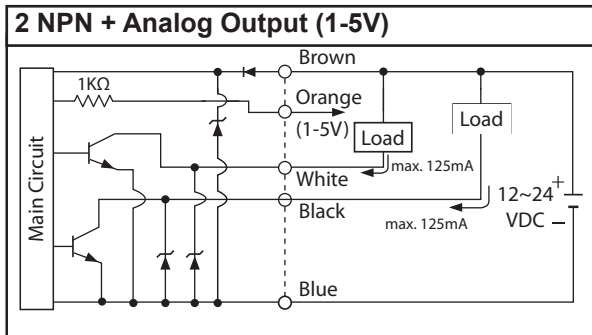
#### ◆ 2 Digital + 1 Analog Current Output



Brown	: DC 10~30V	Orange	: Analog Output
Blue	: 0V	White	: Control Output 2
Black	: Control Output 1		



Control Output Diagram



## Output Characteristics

### • Digital Output Type

#### ◆ Positive, Compound Pressure

#### ◆ Vacuum Pressure

One-Point Set Mode		One-Point Set Mode	
Normally Open	Normally Close	Normally Open	Normally Close
<p>ON OFF Positive Pressure</p>	<p>ON OFF Positive Pressure</p>	<p>ON OFF Vacuum Pressure</p>	<p>ON OFF Vacuum Pressure</p>
Hysteresis Mode		Hysteresis Mode	
Normally Open	Normally Close	Normally Open	Normally Close
<p>ON OFF Positive Pressure</p>	<p>ON OFF Positive Pressure</p>	<p>ON OFF Vacuum Pressure</p>	<p>ON OFF Vacuum Pressure</p>
Window Comparator Mode		Window Comparator Mode	
Normally Open	Normally Close	Normally Open	Normally Close
<p>ON OFF Positive Pressure</p>	<p>ON OFF Positive Pressure</p>	<p>ON OFF Vacuum Pressure</p>	<p>ON OFF Vacuum Pressure</p>

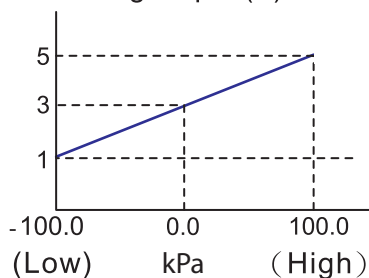
#### NOTE:

In case hysteresis is set at less than or equal to 2 digits, switch output may chatter if input pressure fluctuates near the set point. In Window Comparator mode, the difference between two set points must be greater than the fixed hysteresis or output may malfunction.

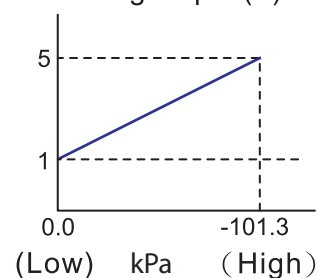
## Output Characteristics

### • Voltage Output Type

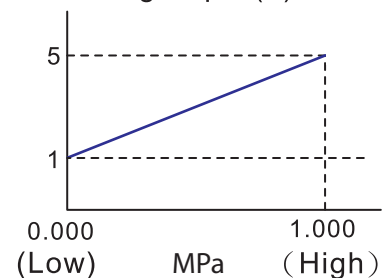
#### ◆ Compound Pressure Analog output (V)



#### ◆ Vacuum Pressure Analog output (V)



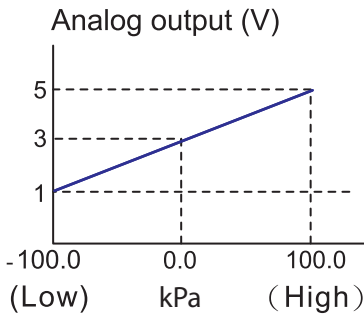
#### ◆ Positive Pressure Analog output (V)



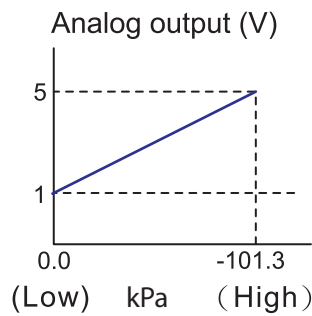
## Output Characteristics

### • Voltage Output Type

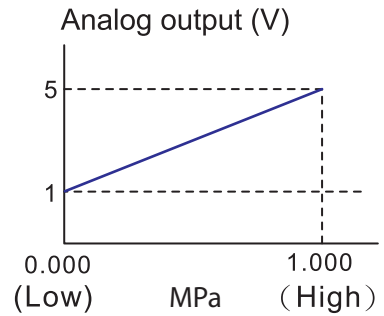
#### ◆ Compound Pressure



#### ◆ Vacuum Pressure

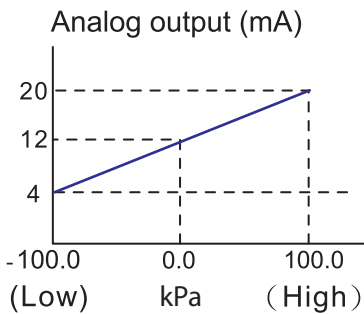


#### ◆ Positive Pressure

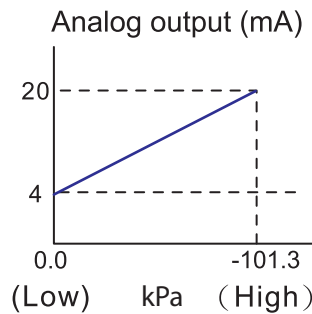


### • Current Output Type

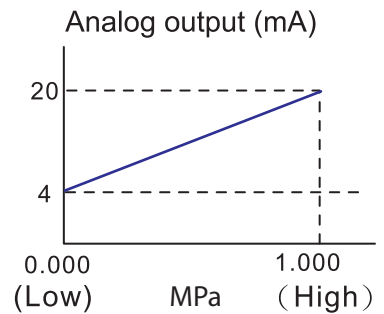
#### ◆ Compound Pressure



#### ◆ Vacuum Pressure

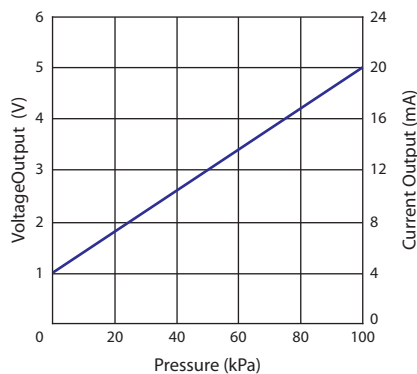


#### ◆ Positive Pressure

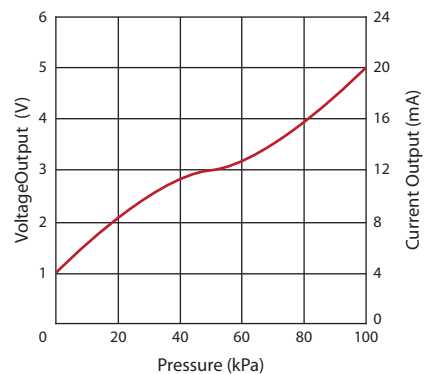


### • Analog Output Voltage( 0-5V) & Current( 4-20mA)

#### ◆ Pressure Characteristic



#### ◆ Linear Characteristic





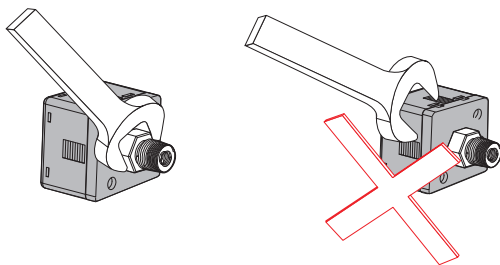
## Pressure Range

Type	Vaccum	Positive	Compound
Model	PSD-V□-□	PSD-P□-□	PSD-C□-□
1000 kPa			
100.0 kPa			
0			
-101.3 kPa			
<b>Rated Pressure Range</b>	0.0 ~ 101.3 kPa	0 ~ 1000 MPa	-100 ~ 100 kPa
<b>Setting Pressure Range</b>	10.0 ~ 101.3 kPa	100 ~ 1000 MPa	-101 ~ 101 kPa

## Mounting and Adjustments

### ◆ Installation Precautions

When mounting, always use the wrench on the metal nut before the pressure port. Do not use the wrench on the plastic body, it might damage the sensor.



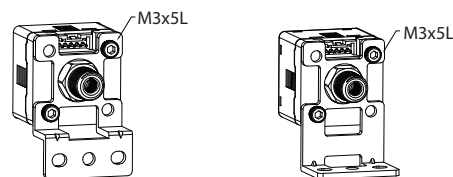
Over tightening may cause damage to the pressure port thread, mounting bracket and the sensor. Under tightening may result in leak. Apply the appropriate pressure to tighten the unit.

Apply pressure and power only after completion of all wiring, configuration and pressure pipe mounting. Inspect for signs of leak after installation.

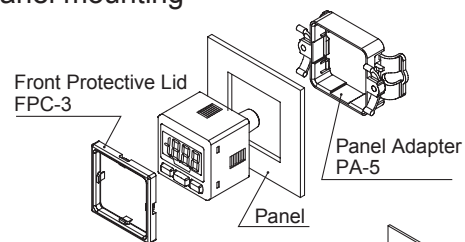
NOTE: Tightening torque of the wrench can be a maximum of 30 Nm only.

### ◆ Bracket Mounting

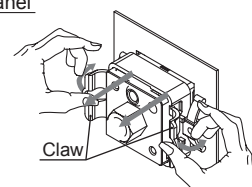
Mount the bracket to the body using two M3x5L mounting screws. Use any M3 screw to secure the bracket to the mounting surface. Tightening torque should be between 0.5- 0.7 Nm



### ◆ Panel mounting



To release the sensor from the panel, push the clips outward as shown in the picture, and pull the panel adapter towards you.



Exclusively Represented by:

Intech Systems Chennai Pvt Ltd  
S-2, Guindy Industrial Estate  
Chennai - 600 032. Ph: 4353 8888  
Email: [info@intechchennai.com](mailto:info@intechchennai.com)

[www.inno.sg](http://www.inno.sg)

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