

# Pressure Sensor Operation Manual PSE530 Series



Thank you for purchasing the SMC PSE530 Series Pressure Sensor. Please read this manual carefully before operating pressure sensor and understand pressure sensor, its capabilities and limitations. Please keep this manual handy for future reference.

## SMC Corporation

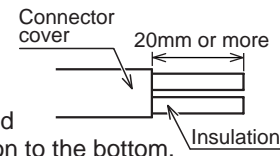
URL <http://www.smcworld.com>



## Installation (addendum information)

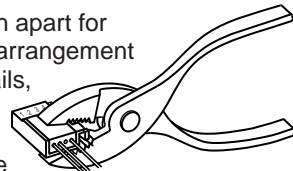
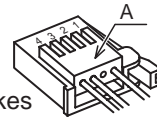
### Attaching the connector to the lead wire

- Sensor wire is stripped as shown in the right figure.
- The insulation of the corresponding color shown in the following table is put into the pin of the number stamped on the connector for sensor connection to the bottom.



Pin No.	Color of Insulation
1	Brown (DC (+))
2	N.C.
3	Blue (DC (-))
4	Black (IN:1 to 5VDC)

- It checks that the above-mentioned preparation work has been performed correctly, and A part shown in right figure is pushed by hand and makes temporary connection.
- A part center is straightly pushed in by tools, such as pliers.
- Re-use cannot be performed once it connects the connector for sensor connection completely.
- A sensor connector cannot be taken apart for reuse once it is crimped. If the wire arrangement is incorrect or if the wire insertion fails, use a new sensor connector.
- When connecting the connector to PSE200/PSE300 series, please use the connector for Sensor Lead Wire (ZS-28-C) or *e-con* as below.



Maker	Model No.
(c)Sumitomo 3M	37104-3101-000FL
Tyco Electronics AMP	3-1473562-4
OMRON	XN2A-1430

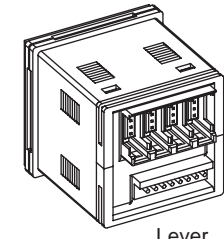
- Please contact with each connector maker about *e-con* catalogue.

## Connector

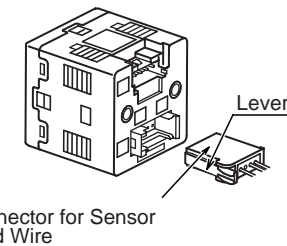
### Connector Connecting/Disconnecting

- When connecting the connector, insert it straight onto the pin holding the lever and connector body between fingers and lock the connector by pushing the lever claw into the square groove in the housing until connector clicks.
- When disconnecting the connector, push down the lever by thumb to disengage the lever claw from the square groove. Then pull the connector straight out.

### PSE200 Series



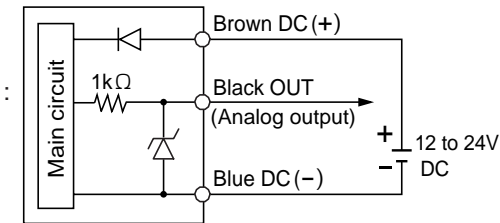
### PSE300 Series



## Example of Internal Circuit and Wiring

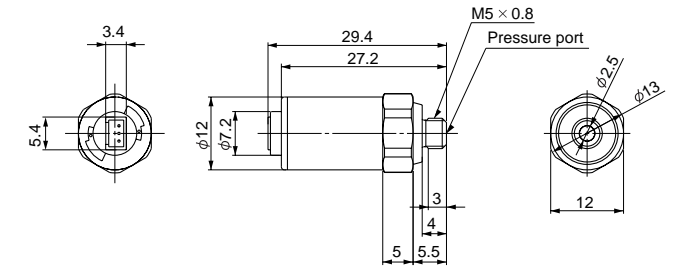
### Output Specification

Voltage output :  
1 to 5V  
Output impedance :  
Approx. 1kΩ

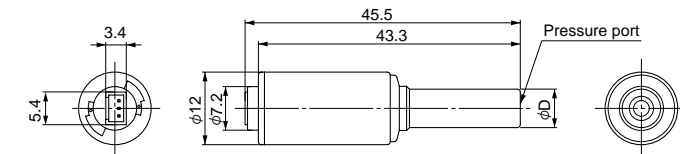


## Outline with Dimensions (in mm)

### PSE53□-M5

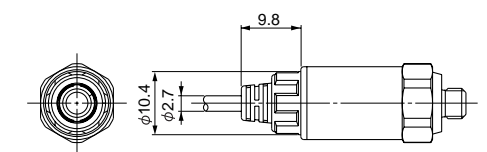


### PSE53□-R06 R07



Model No.	Applicable port size(D)
PSE53□-R06	6mm
PSE53□-R07	1/4inch

When connect cable for sensor



## SAFETY

The Pressure Sensor and this manual contain essential information for the protection of users and others from possible injury and property damage and to ensure correct handling. Please check that you fully understand the definition of the following messages (signs) before going on to read the text, and always follow the instructions.

### IMPORTANT MESSAGES

Read this manual and follow its instructions. Signal words such as WARNING and NOTE will be followed by important safety information that must be carefully reviewed.

### WARNING

Indicates a potentially hazardous situation which could result in death or serious injury if you do not follow instructions.

### WARNING

**Do not disassemble, remodel (including change of printed circuit board) or repair.**

An injury or failure can result.

**Do not operate beyond specification range.**

Fire, malfunction or sensor damage can result.

**Do not operate in a combustible gas or explosive gas atmosphere.**

Fire or an explosion can result.

This pressure sensor is not an explosion proof type.

## OPERATOR

- This operation manual has been written for those who have knowledge of machinery and apparatus that use pneumatic equipment and have full knowledge of assembly, operation and maintenance of such equipment.
- Please read this operation manual carefully and understand it before assembling, operating or providing maintenance service to the pressure sensor.

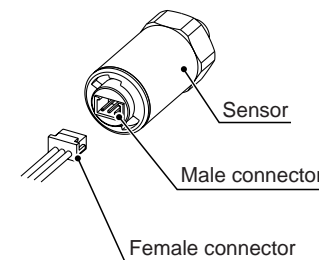
## NOTE

**Follow the instructions given below when handling your pressure sensor. Otherwise, the sensor may be damaged or may fail, thereby resulting in malfunction.**

- Do not drop it, bring it into collision with other objects or apply excessive shock (980m/s<sup>2</sup> or more).
- Do not pull the lead wire with force nor lift the main unit by holding the lead wire. (Pulling strength less than 23N)
- Do not insert wire nor other article into the pressure port.
- Perform wiring and cable correctly.
- Do not perform wire or cable while power is on.
- Do not wire with the same circuit of power line or high-voltage line.
- Connect Terminal FG to the ground when using a switching regulator obtained on the commercial market.
- Keeping from water and dust, set an air tube to the safety area.

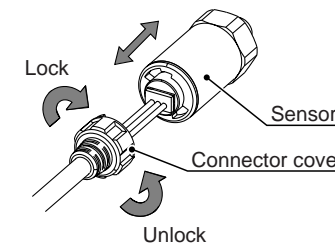
## How to connect the cable for sensor.(Optional)

Pick with fingers the female connector of cable for sensor. Insert it paying attention of connector direction.



Cable for sensor have connector cover in order to prevent fall of female connector. Paying attention for connector cover direction, install on the sensor, rotate clockwise, and lock it.

To remove cable for sensor, rotate the connector cover anti-clockwise, release lock, and remove connector cover. After removing connector cover, pick with female connector with fingers and pull out.



## Specification

Model No.	PSE530-※	PSE531-※	PSE532-※	PSE533-※
Rated pressure range	0 to 101MPa	0 to -101kPa	0 to 101kPa	-101 to 101kPa
Withstand pressure	1.5MPa	500kPa		
Fluid	Air, Non-corrosive gases, Incombustible gases			
Power supply	12 to 24VDC, ripple(p-p)10% or less (Protection against inverse connection)			
Current consumption	15mA or less			
Analog output	Voltage: 1 to 5V±2%F.S. or less (Rated pressure range) Linearity : ±1%F.S. or less Output impedance : Approx.1kΩ			
Repeatability	±1%F.S. or less			
Effect form power supply	±1%F.S. or less with standard of analog output at 18V in the range of 12 to 24VDC			
Temperature Characteristic	±2%F.S. or less (25°C reference)			
Environment	Enclosure	IP40		
	Ambiebt temperature	Operation : 0 to 50°C, Storage :-10 to 70°C (No condensation, No freezing)		
	Withstand voltage	1000VAC, 50/60Hz, 1minute (Between lead block and case)		
	Insulation resistance	5MΩ or more 500VDC (Between lead block and case)		
	Vibration proof	10 to 500Hz smaller one 1.5mm or 98m/s <sup>2</sup> double amplitude, 2 hours each in direction of X, Y and Z		
Impact proof	980m/s <sup>2</sup> 3times each in directions of X, Y and Z respectively			
Standard	CE MARKING			
Cable	Halogen free heavy insulation cable, φ2.7, 0.15mm <sup>2</sup> , 3wire, 3m			

### Piping Specification

Model No.	M5	R06	R07
Port size	M5×0.8	φ6 Reducer	1/4inch Reducer
Material	Sensor pressure sensing part : Silicon O-ring : NBR		
	Body : SUS303		Body : PBT
Weight	With cable(3m)	41g	38g
	Excluding cable	7g	3.8g