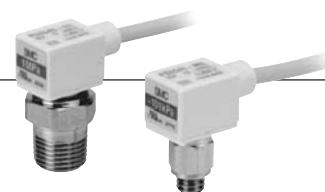


Series 10-PSE540

Remote type pressure sensor

How to Order

Pressure sensing range		Accuracy	
0	Positive pressure [0 to 1 MPa]	Nil	±2% F.S.
1	Vacuum [0 to -101 kPa]	A	±1% F.S.
3	Compound pressure [-100 to 100 kPa]		



10-PSE54 1 M3

• Clean series

• Option (connector)

Port size		
M3	M3 x 0.5	
M5	M5 x 0.8	
01	R 1/8 (with M5 female thread)	
N01	NPT 1/8 (with M5 female thread)	
R04	ø4 reducer	
R06	ø6 reducer	

IM5	M5 female thread, through type	
IM5H	M5 female thread, through type (with mounting hole)	

Nil	C2
Without connector	Connector for pressure sensor controller 1 pc.

Note) At the factory, the connector is not connected to the cable, but packed together with it for shipment.

Option/Part No.

Description	Part no.	Note
Connector for pressure sensor controller	10-ZS-28-C	1 pc.

Specifications

Conforms to CE marking and UL (CSA) standards.

Model		10-PSE540	10-PSE541	10-PSE543
Rated pressure range		0 to 1MPa	0 to −101kPa	−100 to 100kPa
Proof pressure		1.5MPa	500kPa	
Fluid		Air, Non-corrosive gas, Non-flammable gas		
Power supply voltage		12 to 24 VDC, Ripple (p-p) 10% or less (With power supply polarity protection)		
Current consumption		15mA or less (at no load)		
Output specification		Analog output 1 to 5 V, Output impedance: Approx. 1kΩ		
Accuracy (Ambient temperature of 25°C)		10-PSE54□: ±2% F.S. or less 10-PSE54□A: ±1% F.S. or less		
Linearity		±0.7% F.S. or less	±0.4% F.S. or less	
Repeatability		±0.2% F.S. or less		
Power supply voltage effect		±0.8% F.S. or less		
Environmental resistance	Enclosure	IP40		
	Operating temperature range	Operating: 0 to 50°C, Stored: −20 to 70°C (No freezing and condensation)		
	Operating humidity range	Operating/Stored: 35 to 85% RH (No condensation)		
	Withstand voltage	1000 VAC, 50/60Hz for 1 minute between live parts and case		
	Insulation resistance	50MΩ between live parts and case (measured by 500VDC megameter)		
	Vibration resistance	10 to 500Hz at whichever is smaller of 1.5mm amplitude or 98m/s ² acceleration, in X, Y, Z directions, for 2 hours each (De-energized)		
	Impact resistance	980m/s ² in X, Y, Z directions, 3 times each (De-energized)		
Temperature characteristics		±2% F.S. or less (based on 25°C)		
Particle generation grade (Refer to front matter pages 13 to 22 for details.)		Grade 2		

Piping specifications

Model		M3	M5	1	N01	R04	R06	IM5	IM5H
Port size		M3 x 0.5	M5 x 0.8	R 1/8 M5 x 0.8	NPT 1/8 M5 x 0.8	ø4 plug-in reducer	ø6 plug-in reducer	M5 female thread, through type	M5 female thread, through type with mounting hole
Material	Case	Resin case: PBT Fitting: Stainless steel 303		Resin case: PBT Fitting: C3604BD		PBT		Resin case: PBT Fitting: A6063S-T5	
	Pressure sensing section	Pressure sensor: Silicon, O-ring: FKM							
Sensor cable		3-wire oval cable (0.15mm²)							
Weight	With sensor cable	42.4g	42.7g	49.3g		41.4g	41.6g	43.3g	44.1g
	Without sensor cable	2.9g	3.2g	9.8g		1.9g	2.1g	3.8g	4.6g

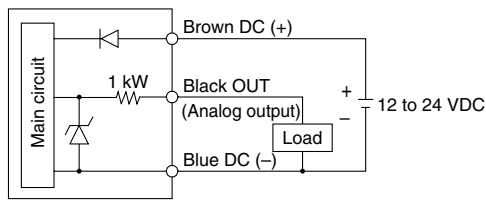
Caution

This product is blown with air and double packed in a Class M3.5 (ISO Class 5) clean room.

Internal circuit

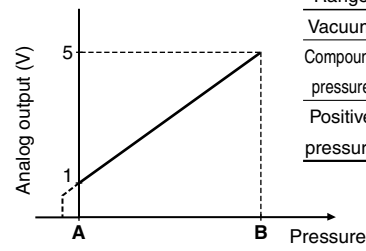
10-PSE54□

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



Analog output

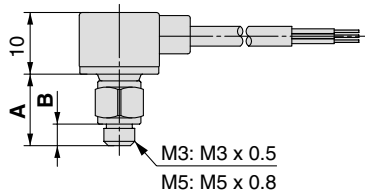
1 to 5 VDC



Range	Rated pressure range	A	B
Vacuum	0 to -101kPa	0	-101kPa
Compound pressure	-100kPa to 100kPa	-100kPa	100kPa
Positive pressure	0 to 1MPa	0	1MPa

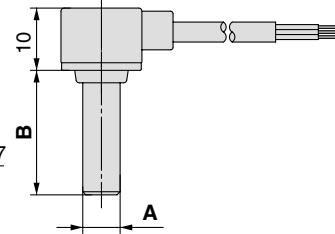
Dimensions

10-PSE54□-M3 M5



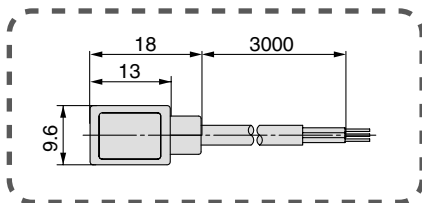
	10-PSE54□-M3	10-PSE54□-M5
A	10.8	11.5
B	3	3.5

10-PSE54□-R04 R06

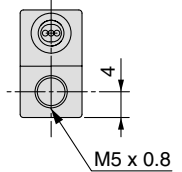
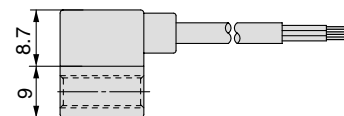


	10-PSE54□-R04	10-PSE54□-R06
A	ø4	ø6
B	18	20

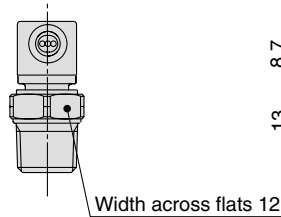
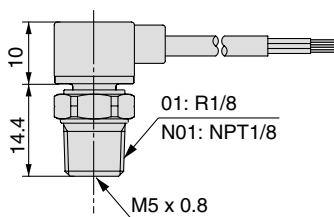
Common dimensions



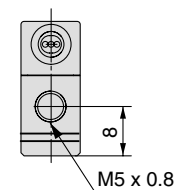
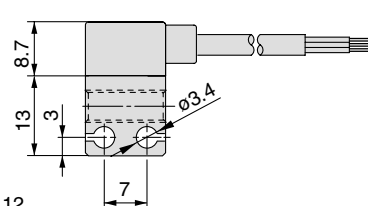
10-PSE54□-IM5



10-PSE54□-01 N01



10-PSE54□-IM5H





Specific Product Precautions 1

Be sure to read before handling.

Pressure sensor

Handling

Warning

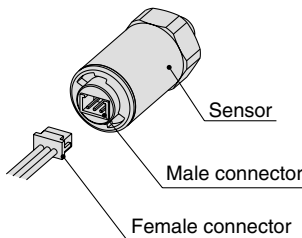
1. Do not drop, bump or apply excessive impacts (10-PSE530 and 540: 980m/s², 10-PSE560: 500m/s², PSE550: 300m/s²) while handling. Although the body of the sensor may not be damaged, the inside of the sensor could be damaged and lead to a malfunction.
2. The tensile strength of the cord is 23N for 10-PSE530 and not more than 50N for 10-PSE540, 550, and 560. If the applied force exceeds this specification, the sensor will be damaged.
3. Do not use pressure sensors with corrosive and/or inflammable gases or liquids.

(10-PSE530)

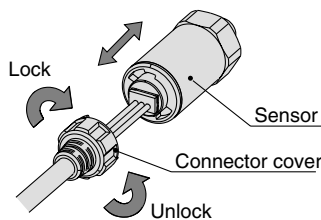
1. Do not exceed the screw-in torque of 3.5 N·m when installing piping. Exceeding this value may cause malfunction of the sensor.

2. Connecting the sensor cable (optional)

Hold the female connector of the sensor cable with your fingers and carefully insert it into the connector.



A connector cover is provided as part of the cable assembly. It is designed to keep the female connector from slipping out of the sensor. To lock the connector cover in place, first make sure it is facing in the right direction as you slip it over the female connector, then lock it to the sensor body by turning it clockwise. To remove the cover, first unlock it by turning it counterclockwise, then pull back on it. To remove the female connector, grab it with your fingers and pull back on it. Do not pull on the cable.



(10-PSE540/550)

1. Care should be taken when stripping the outer cable covering as the insulator may be accidentally torn or damaged if incorrectly stripped.

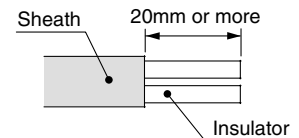


Wiring

Caution

1. Connecting sensor cable and connector

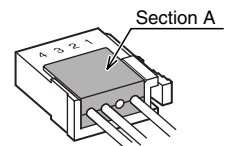
- Cut the sensor cable as illustrated to the right.
- Referring to the table below, insert each lead wire of the cable at the position marked with a number corresponding to the color of the lead wire.



- Confirm that the numbers on the connector match the colors of the wires and that the wires are inserted to the bottom. Press Part A by hand for temporary fixing.

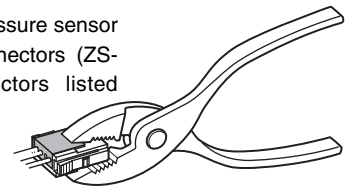
Connector no.	Wire core color
1	Brown (DC (+))
2	Unconnected
3	Blue (DC (-))
4	Black (OUT: 1 to 5V)

- Press in the central part of Part A vertically with a tool such as pliers.



- 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.

- For connection to SMC pressure sensor monitors, use sensor connectors (ZS-28-C□) or e-con connectors listed below.



Sensor series	Sumitomo 3M	Tyco Electronics AMP K.K.	Omron Corporation
10-PSE53□	37104-3101-000FL	3-1473562-4	XN2A-1430
10-PSE54□	37104-3101-000FL	1-1473562-4	XN2A-1430
10-PSE55□	37104-3101-000FL	1-1473562-4	XN2A-1430
10-PSE56□	37104-3101-000FL	1473562-4	XN2A-1430

- For detailed information about e-con connectors, please consult the manufacturers of the respective connectors.

Air cylinder

Rotary actuator

Air gripper

Directional control valve

Flow control equipment

Filter, Pressure control equipment

Fittings & Tubing

Air preparation equipment

Pressure switch

Clean gas filter



Specific Product Precautions

Be sure to read before handling.

Pressure source

Warning

(10-PSE560)

1. Use of toxic, corrosive or flammable gases

Do not use **toxic or corrosive gases** with the sensors.

2. Fluid

The fluid contact (wetted) areas are SUS316L (pressure sensor, fittings). Use fluid that will not corrode the materials.

(For corrosiveness of fluid, consult with the manufacturer of the fluid.)

(10-PSE56□-A₂-B₂ only)

Helium leakage test

Helium leakage test is conducted on the welding parts. Use a ferrule (Swagelok®) by Crawford Fitting Co. as the TSJ fittings, and packing, ground, etc. (VCR® fittings) by Cajon as the URJ fittings. If a ferrule, packing or ground by other manufacturers are to be used, conduct helium leakage test before using them.

Piping connection

Caution

(10-PSE550)

- Cut the air tubing vertically.
- Carefully hold the air tubing and slowly push it into the resin pipe, ensuring that it is inserted by more than 8mm. For your information, the pull strength is approx. 25 N when inserted by more than 8mm.
- Insert the low pressure tubing into “Lo” pipe, and the high pressure tubing into “Hi” pipe.
- When the air tubing of the brand other than SMC is to be used, its ID accuracy is required to be $\phi 4 \pm 0.3\text{mm}$.
- Air tubing should be inserted surely into the pipe so that it will not come off. (Pull strength is about 25N in 8mm insertion.)

