

Series 10-PSE560

Remote type pressure sensor

How to Order

● Clean series

10-PSE56 **0** **01** **□** **□**

Sensor range

0	For positive pressure (0 to 1MPa)
1	For vacuum pressure (0 to -101kPa)
3	For compound pressure (-100 to 100kPa)
4	For positive pressure (0 to 500kPa)

Port size

01	R1/8 (with M5 female thread)
02	R1/4 (with M5 female thread)
C01	Rc1/8
N01	NPT1/8 (with M5 female thread)
N02	NPT1/4 (with M5 female thread)
A2	URJ1/4
B2	TSJ1/4

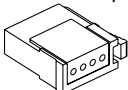
Output specifications

Nil	1 to 5V voltage output type
28	4 to 20mA current output type

Option (Connector)

Nil	
C2	Connector for pressure sensor monitor 1 pc.

Without connector



Note 1) Current output type cannot be connected to PSE20□ and PSE30□.
Note 2) 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 monitor	10-ZS-28-C	1 pc.

Specifications

Conforms to CE marking and UL(CSA) standards.

Model	10-PSE560	10-PSE561	10-PSE563	10-PSE564
Rated pressure range	0 to 1MPa	0 to -101kPa	-100 to 100kPa	0 to 500kPa
Proof pressure	1.5MPa	500kPa	500kPa	750kPa

Model	10-PSE56□-□	10-PSE56□-□-28
Fluid	Fluid or gas that will not corrode stainless steel SUS 316L.	
Power supply voltage	12 to 24VDC, Ripple (p-p) 10% or less (with power supply polarity protection)	
Current consumption	10mA or less	
Output specifications	Analog output 1 to 5 V (Within rated pressure range) Output impedance: Approx. 1kΩ	Analog output 4 to 20mA Allowable load impedance: 500Ω or less (at 24VDC) 100Ω or less (at 12VDC)
Accuracy (Ambient temperature 25°C)	±1%F.S. or less	
Linearity	±0.5%F.S. or less	
Repeatability	±0.2%F.S. or less	
Power supply voltage effect	±0.3%F.S. or less	
Environment resistance	Enclosure	IP65
	Operating temperature range	Operating: -10 to 60°C, Stored: -20 to 70°C (with no condensation or freezing)
	Operating humidity range	Operating and stored: 35 to 85% RH (with no condensation)
	Withstand voltage	250 VAC for 1 min. between live parts and case
	Insulation resistance	50MΩ or more (measured by 50VDC mega meter) between live parts and case.
	Vibration resistance	10 to 150Hz, at whichever is smaller of 1.5mm amplitude or 20m/s ² acceleration, in X, Y and Z directions, for 2 hours each (de-energized)
	Impact resistance	500m/s ² , in X, Y and Z directions, 3 times each (de-energized)
Temperature characteristics		±2%F.S. or less (0 to 50°C : based on 25°C) ±3%F.S. or less (-10 to 60°C: based on 25°C)
Particle generation grade (Refer to front matters 13 to 22 for details.)		Grade 2

Piping specifications

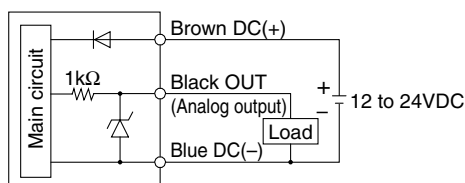
Part no.	01	02	N01	N02	C01	A2	B2
Port size	R1/8 M5 x 0.8	R1/4 M5 x 0.8	NPT1/8 M5 x 0.8	NPT1/4 M5 x 0.8	Rc1/8	URJ1/4	TSJ1/4
Material	Case: C3604 + Nickel-plated, Piping port and pressure sensor: stainless steel SUS 316L						
Sensor cable	10-PSE56□-□: Oil proof 3-wire vinyl cabtire cable with air tube (0.2mm ²) 10-PSE56□-□-28: Oil proof 2-wire vinyl cabtire cable with air tube (0.2mm ²)						
Weight	Sensor cable included	193g	200g	194g	201g	187g	203g
	Sensor cable not included	101g	108g	102g	109g	95g	101g

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

Internal circuit

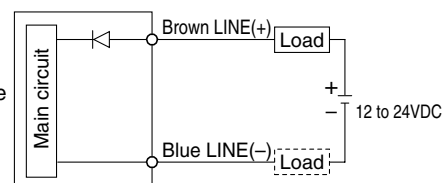
10-PSE56□-□

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



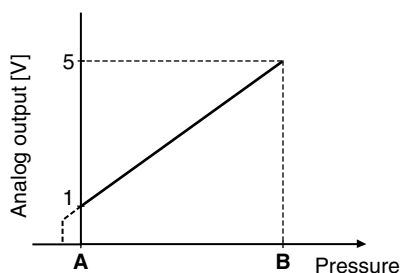
10-PSE56□-□-28

Current output type
4 to 20mA
Allowable load impedance
500Ω or less (at 24VDC)
100Ω or less (at 12VDC)

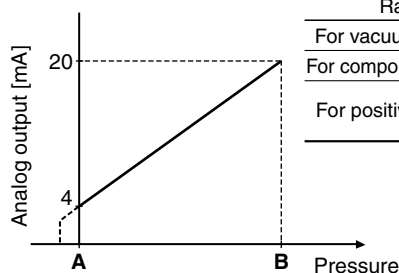


* Install the load either on the LINE (+) or LINE (-) side.

1 to 5 VDC



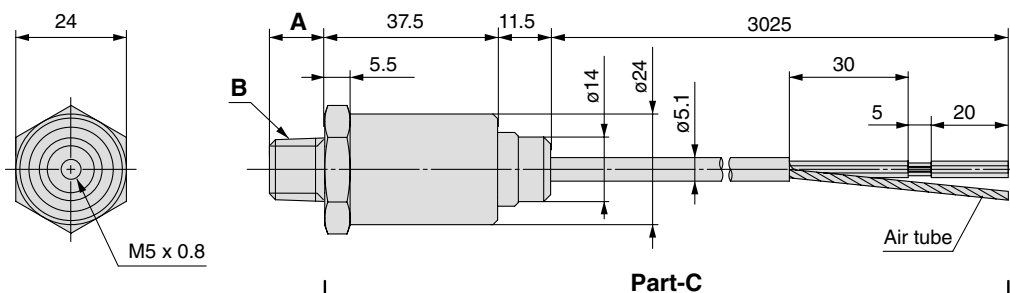
4 to 20 mA DC



Range	Rated pressure range	A	B
For vacuum pressure	0 to -101kPa	0	-101kPa
For compound pressure	-100kPa to 100kPa	-100kPa	100kPa
For positive pressure	0 to 1MPa	0	1MPa
	0 to 500kPa	0	500kPa

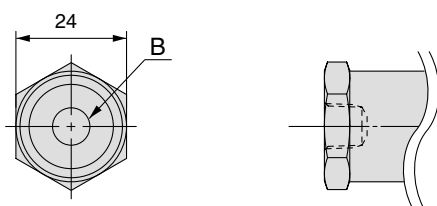
Dimensions

10-PSE56□-01 / 10-PSE56□-N01 02 / 10-PSE56□-N02

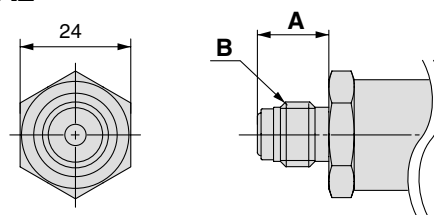


* Dimensions and size of part C are all common.

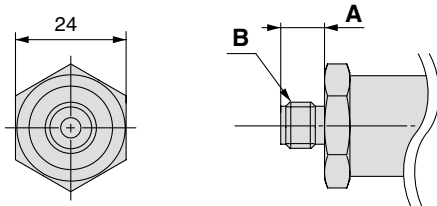
10-PSE56□-C01



10-PSE56□-A2



10-PSE56□-B2



Part no.	A	B
10-PSE56□-01	8.2	R1/8
10-PSE56□-02	12	R1/4
10-PSE56□-N01	9.2	NPT1/8
10-PSE56□-N02	12.2	NPT1/4
10-PSE56□-C01	—	Rc1/8
10-PSE56□-A2	15.5	URJ1/4
10-PSE56□-B2	9.5	TSJ1/4



Specific Product Precautions 1

Be sure to read before handling.

Pressure sensor

Handling

Warning

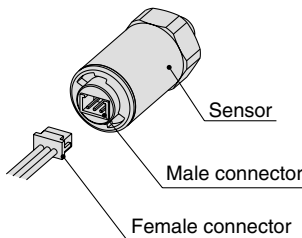
1. Do not drop, bump or apply excessive impacts (10-PSE530 and 540: 980m/s², 10-PSE560: 500m/s², PSE550: 300m/s²) while handling. Although the body of the sensor may not be damaged, the inside of the sensor could be damaged and lead to a malfunction.
2. The tensile strength of the cord is 23N for 10-PSE530 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)

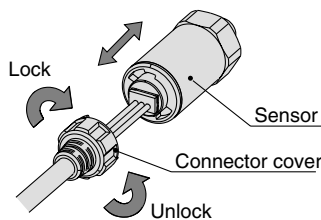
1. Do not exceed the screw-in torque of 3.5 N·m when installing piping. Exceeding this value may cause malfunction of the sensor.

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.

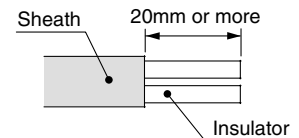


Wiring

Caution

1. Connecting sensor cable and connector

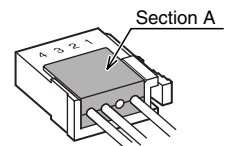
- Cut the sensor cable as illustrated to the right.
- Referring to the table below, insert each lead wire of the cable at the position marked with a number corresponding to the color of the lead wire.



- 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.

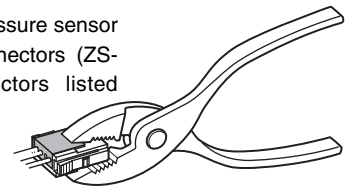
Connector no.	Wire core color
1	Brown (DC (+))
2	Unconnected
3	Blue (DC (-))
4	Black (OUT: 1 to 5V)

- 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.)

