Compact Pressure Sensors

PSS Series

INSTRUCTION MANUAL

TCD240013AA

Autonics

Thank you for choosing our Autonics product.
Read and understand the instruction manual and manual thoroughly before using the product.
For your safety, read and follow the below safety considerations before using.
For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.
Keep this instruction manual in a place where you can find easily.
The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.
Follow Autonics website for the latest information.

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in personal injury, economic loss or fire.
02. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.
Failure to follow this instruction may result in explosion or fire.
03. Install on a device panel or to a pressure port directly to use.
Failure to follow this instruction may result in fire.
04. Do not connect, repair, or inspect the unit while connected to a power source.
Failure to follow this instruction may result in fire.
05. Check 'Connections' before wiring.
Failure to follow this instruction may result in fire.
06. Do not disassemble or modify the unit.
Failure to follow this instruction may result in fire or electric shock.

⚠ Caution Failure to follow instructions may result in injury or product damage.

01. Use the unit within the rated specifications.
Failure to follow this instruction may result in fire or product damage.
02. Use a dry cloth to clean the unit, and do not use water or organic solvent.
Failure to follow this instruction may result in fire.
03. This product is designed to detect the pressure of noncorrosive gas. Do not use for corrosive gas.
Failure to follow this instruction may result in product damage.
04. Keep the product away from metal chip, dust, and wire residue which flow into the unit.
Failure to follow this instruction may result in fire or product damage.
05. In case of reducer pressure port model, do not allow rotation, twist, pull, moment load, vibration, impact, etc. to be applied to the one-touch fitting after coupling.
Failure to follow this instruction may result in pressure port damage or poor tightening.
06. In case of M3 screw pressure port model, make sure the O-Ring is inserted before installation. After fastening the product by hand, use a spanner (8 mm wide) to secure it within 90°.
If great force is applied when tightening, the pressure sensor may be damaged.
If it is not fully tightened, pressure leakage may occur.

Cautions during Use

- Follow instructions in 'Cautions during Use'.
  Otherwise, it may cause unexpected accidents.
- 12 - 24 VDC⎓ power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Use the product, 3 sec after supplying power.
- When using switching mode power supply, frame ground (F.G.) terminal of power supply should be grounded.
- Wire as short as possible and keep away from high voltage lines or power lines, to prevent inductive noise.
- Do NOT pull the cable with a tensile strenth of 30 N. It may result in fire due to the broken wire.
- This unit may be used in the following environments.
  - Indoors (in the environment condition rated in 'Specifications')
  - Altitude max. 2,000 m
  - Pollution degree 3
  - Installation category II

Ordering Information

This is only for reference, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics website.

PSS - ❶ ❷ - ❸

❶ Pressure type and range

Model name	Pressure	Rated pressure range
01	Static	0.0 to 100.0 kPa
1		0 to 1,000 kPa
V01	Negative	0.0 to -101.3 kPa
C01	Compound	-101.3 to 100.0 kPa

❷ Output
V: Voltage (1 - 5 VDC)
A: Current (DC 4 - 20 mA)

❸ Pressure port
R1/8: R1/8 (Standard)
R04: Ø4 reducer
R06: Ø6 reducer
M3: M3 screw

Product Components

- Product
- Instruction manual

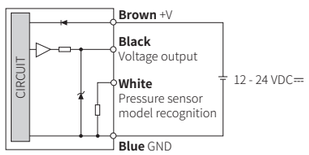
Sold Separately

- Sensor connector plug: CNE-P04-□
- Pressure sensor indicators: PSM Series

Connections

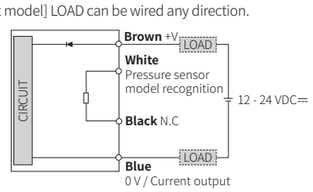
- There is no over current protection circuit. If the control output terminals are shorted or supplied over the rated specification, it may result in product damage.
- Allowable load impedance:
  (12 VDC⎓ power) ≤ 100 Ω / (24 VDC⎓ power) ≤ 500 Ω
- Pressure sensor model recognition: Available only connecting with Autonics Pressure sensor indicators PSM Series

■ Voltage output



■ Current output

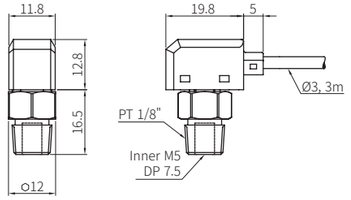
- [Current output model] LOAD can be wired any direction.



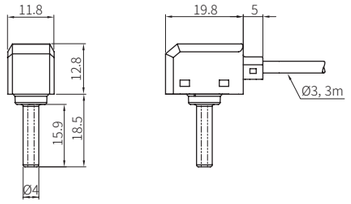
Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.

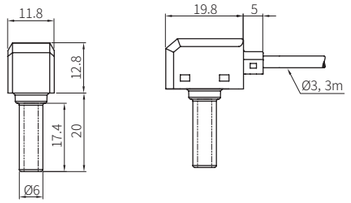
■ R1/8 (Standard) pressure port model



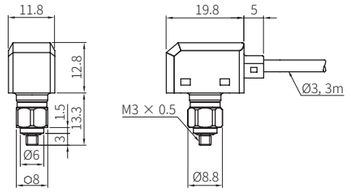
■ Ø 4 reducer pressure port model



■ Ø 6 reducer pressure port model



■ M3 screw pressure port model



Specifications

Model	PSS-V01□-□	PSS-01□-□	PSS-1□-□	PSS-C01□-□
Applicable medium	Air, Non-corrosive gas			
Pressure type	Negative	Static		Compound
Rated pressure range	0.0 to -101.3 kPa	0.0 to 100.0 kPa	0 to 1,000 kPa	-101.3 to 100.0 kPa
Expanded analog output range	5.0 to -101.3 kPa	-5.0 to 110.0 kPa	-50 to 1,100 kPa	-101.3 to 110.0 kPa
Max. pressure range	Rated pressure × 2	Rated pressure × 2	Rated pressure × 1.5	Rated pressure × 2
Cable	Ø 3 mm, 4-core, 3 m			
Wire	AWG28 (0.08 mm, 19-core) insulator diameter: Ø 0.88 mm			
Protection structure	IP40 (IEC standard)			
Certification	CE UK CA			

Model	PSS-□□-R1/8	PSS-□□- R04	PSS-□□- R06	PSS-□□-M3
Pressure port	R1/8 (Standard)	R04 reducer	R06 reducer	M3 screw
Material	Front/Rear case: PBT, Pressure port: Nickel plated brass	Front/Rear case and pressure port: PBT		Front/Rear case: PBT, Pressure port: STS 303
Unit weight (packaged)	≈ 50 g (≈ 110 g)	≈ 45 g (≈ 105g)		

Power supply	12 - 24 VDC⎓ ±10% (ripple P-P: ≤ 10%)
Current consumption	Voltage output model: ≤ 15 mA
Effect by power supply	≤ ±0.3% F.S
Protection circuit	Reverse polarity protection circuit
Voltage output	1 - 5 VDC⎓ ±2% F.S.
Linearity	≤ ±1% F.S.
Output impedance	1 kΩ
Current output	DC 4 -20 mA ±2% F.S.
Linearity	≤ ±1% F.S.
Analog output temp. characteristic	≤ ±2% F.S. (in 0 to 50 °C temperature range, at 25 °C)
Insulation resistance	≥ 50 MΩ (500 VDC⎓ megger)
Dielectric strength	Between the charging part and the case: 2,000 VAC~ 50/60 Hz for 1 min
Vibration	1.5 mm amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 2 hours
Ambient temperature	0 to 50 °C, storage: -10 to 60 °C (no freezing or condensation)
Ambient humidity	35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation)

18, Bansong-ro 513Beon-gil, Haeundae-gu, Busan, Republic of Korea, 48002
www.autonics.com | +82-2-2048-1577 | sales@autonics.com

Autonics