

Compact Pressure Sensors



PSS Series PRODUCT MANUAL

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Rated pressure range
 - negative pressure (0 kPa to -101.3 kPa)
 - positive pressure (0 kPa to 100.0 kPa / 0 kPa to 1000 kPa)
 - compound pressure (-101.3 kPa to 100 kPa)
- Compact size: W 11.8 mm × H 29.3 mm × L 24.8 mm (with pressure port)
- Analog output: voltage (1 - 5 VDC \Rightarrow), current (DC 4 - 20 mA)
- Power supply: 12 - 24 VDC \Rightarrow \pm 10%

Safety Considerations

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

\triangle 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.

\triangle 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.

Cautions during Use

- Follow instructions in 'Cautions during Use'.
Otherwise, it may cause unexpected accidents.
- 12 - 24 VDC \Rightarrow 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.
- 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

Model

Model name	Pressure	Rated pressure range	Expanded analog output range	Max. pressure range	Output	□: Pressure port
PSS-V01V-□ PSS-V01A-□	Negative	0.0 to -101.3 kPa	5.0 to -101.3 kPa	Rated pressure × 2	Voltage Current	R1/8: R1/8 (Standard) R04: Ø4 reducer R06: Ø6 reducer
PSS-01V-□ PSS-01A-□	Static	0.0 to 100.0 kPa	5.0 to 110.0 kPa	Rated pressure × 2	Voltage Current	
PSS-1V-□ PSS-1A-□	Static	0 to 1,000 kPa	-50 to 1,100 kPa	Rated pressure × 1.5	Voltage Current	
PSS-C01V-□ PSS-C01A-□		Compound	-101.3 to 100.0 kPa	-101.3 to 110.0 kPa	Rated pressure × 2	

Specifications

Series	PSS series
Applicable medium	Air, Non-corrosive gas
Pressure type	Negative, Static, Compound
Rated pressure range	Refer to 'Model'.
Cable	Ø 3 mm, 4-core, 3 m
Wire	AWG28 (0.08 mm, 19-core) insulator diameter: Ø 0.88 mm
Material	• R1/8 pressure port - Front/Rear case: PBT, Pressure port: Nickel plated brass • Reducer pressure port - Front/Rear case and pressure port: PBT
Protection structure	IP40 (IEC standard)
Certification	CE
Unit weight (packaged)	≈ 26 g (≈ 60 g)

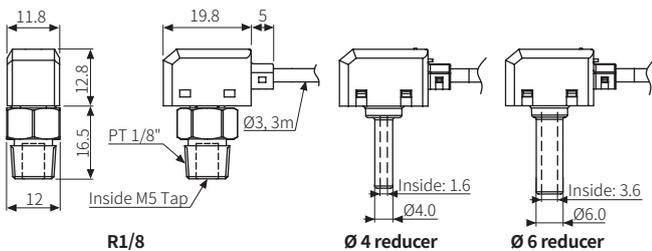
Power supply	12 - 24 VDC ≐ ±10% (ripple P-P: ≤ 10%)
Current consumption	Voltage output model: ≤ 15 mA
Effect by power supply	≤ ±0.3% F.S.
Protection circuit	Reverse polarity protection circuit
Voltage output	1 - 5 VDC ≐ ±2% F.S.
Linearity	≤ ±1% F.S.
Output impedance	1 kΩ
Current output	DC 4 - 20 mA ±2% 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)

Sold Separately

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

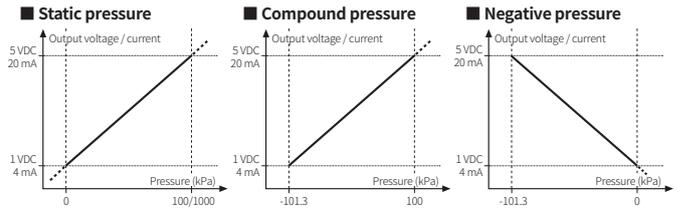
Dimensions

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



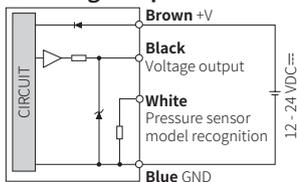
Analog Output by Input Pressure Range

The analog output follows the rated pressure range, and the extended analog output range value outside the rated pressure range is not linear.

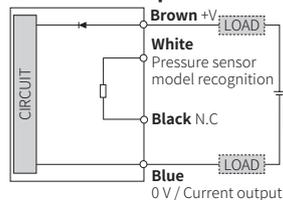


Connections

Voltage output



Current output



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