

Display Type Pressure Sensors

PSAN Series
INSTRUCTION MANUAL

TCD210185AF

Autonics

Thank you for choosing our Autonics product.

Be sure to read and fully understand the instruction manual and other manuals before using the product.

For your safety, read and follow the safety precautions, warnings, cautions, and handling instructions listed in the instruction manual, other manuals, and the Autonics website.

Keep this document in a location where it can be easily accessed.



Visit the Autonics website (www.autonics.com or QR code) for the latest information. Manuals, CAD files, certifications, software, etc. are available. The dimensions, specifications, certifications, etc. are subject to change without notice for product improvement. Certain models may be discontinued without notice.

Safety Precautions

- ‘Safety Precautions’ are provided to ensure safe and proper use of the product and to prevent accidents or hazards. Please make sure to follow them carefully.
- ⚠ symbol indicates a caution, warning of potential hazards under certain conditions.

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

- 01. Fail-safe device must be installed when using the product in applications that may cause serious injuries or property loss. (E.g. nuclear control systems, medical equipment, ships, vehicles, railroads, aircraft, combustion devices, safety devices, security systems, disaster prevention devices, etc.)**
Failure to do so may result in personal injury, property loss or fire.
- 02. Do not use or store the product in environments containing flammable, explosive, or corrosive gases, or in places exposed to high humidity, direct sunlight, radiant heat, vibration, shock, or salt.**
Failure to do so may result in explosion or fire.
- 03. Install on a device panel or to a pressure port directly to use.**
Failure to do so may result in fire.
- 04. Do not connect, repair, or inspect the product while connected to a power source.**
Failure to do so may result in fire.
- 05. Check the connection diagram before wiring.**
Failure to do so may result in fire.
- 06. Do not disassemble or modify the product without authorization.**
Failure to do so may result in fire or electric shock.

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

- 01. Use the product within its rated specifications and performance limits.**
Failure to do so may result in fire or product damage.
- 02. Use a dry cloth to clean the product. Do not use water or organic solvents.**
Failure to do so may result in fire.
- 03. This product is designed to detect the pressure of noncorrosive medium. Do not use for corrosive medium.**
Failure to do so may result in product damage.
- 04. Prevent metal, dust, wiring debris, and other foreign material from entering the product.**
Failure to do so may result in fire or product damage.

Cautions During Use

- Make sure to follow the instructions in ‘Cautions During Use’.
Failure to do so may result in unexpected accidents.
- Power input should be supplied from an isolated and limited voltage/current source, or from a Class 2 or SELV power supply.
- Wait at least 3 seconds after applying power before using the product.
- When supplying power with an SMPS, ground the F.G. terminal and connect a noise suppression capacitor between the 0 V and F.G. terminals.
- To prevent surges and inductive noise, separate the wiring from high-voltage and power lines, and keep wiring lengths as short as possible.
- This product may be used in the following environmental conditions.
 - Indoors (within rated environmental performance specifications)
 - Altitude: up to 2,000 m
 - Pollution Degree 3
 - Installation Category II

Ordering Information

For reference only. The actual product does not support all combinations. To check all supported models, please refer to the Autonics website.

P S A N - ① ② ③ ④ ⑤ - ⑥

① Medium / Port fitting position No mark: Pneumatic type (gas) / Rear D: Pneumatic type (gas) / Bottom B: Fluid type (liquid, gas) / Rear L: Fluid type (liquid, gas) / Bottom			④ Control output No mark: NPN open collector output P: PNP open collector output		
② Pressure type and Range			⑤ Option input / output V: Voltage output A: Current output H: External input		
	Pressure	Rated range	⑥ Pressure port		
			Medium Port	Pneumatic	Fluid
01	Static	0.0 to 100.0 kPa	R1/8	○	○
1		0 to 1,000 kPa	Rc1/8	○	-
V01	Negative	0.0 to -101.3 kPa	NPT1/8	○	○
C01	Compound	-101.3 to 100.0 kPa	7/16-20UNF	-	○
			9/16-18UNF	-	○

- ③ Wiring**
No mark: Cable type (fluid type)
C: Connector type

Product Components

- Product
- Instruction manual
- Unit sticker
- Connector type: Bracket A / B, Connector wiring (PSO-C01)
- Cable type: Bracket C

Sold Separately

- Front cover (PSO-P01), Panel bracket (PSO-B02 / B03)
- Pneumatic type: M5 gender (PSO-Z01)

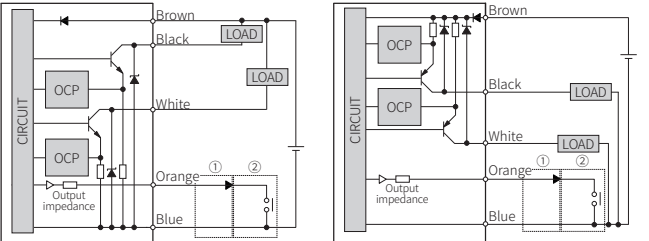
Unit Description

-
- 1. Pressure range (sticker)**
 - 2. Display (red)**
Run mode: Displays PV (present value), SV (setting value)
 - 3. Output indicator (OUT1: red , OUT2: green)**
Turns ON with the corresponding control output.
 - 4. [M] key**
Enter parameter group, select item and return to run mode.
 - 5. [▼] , [▲] key**
Set preset of output operation mode, run the mode or change parameters.

Connections

Color	Function
Brown	+V
Blue	0 V
Black	OUT 1
White	OUT 2
Orange	Option input / output

- NPN Open Collector Output ■ PNP Open Collector Output

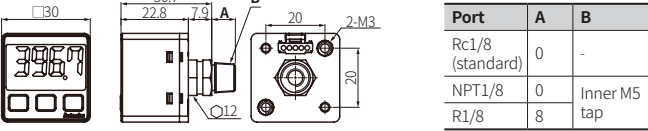


- ①: Voltage / current output option model, ②: External input option model
- OCP: overcurrent protection circuit
- Short circuit protection circuit not present. Do not connect directly to power or capacitive loads.
- If the control output terminal is short-circuited or supplied with a current exceeding the rated current, the protection circuit will prevent the normal control signal from being output.
- Pay attention to the input impedance of the connected device when using analog voltage output. Be careful of voltage drops due to the resistance of the wiring when extending the wiring.

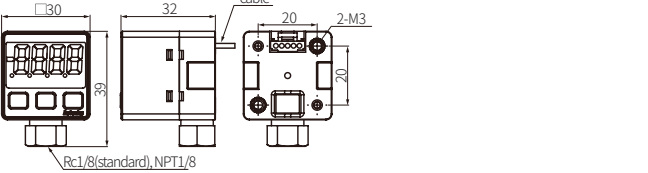
Dimensions

- Unit: mm (Refer to the CAD files from the Autonics website for exact dimensions)

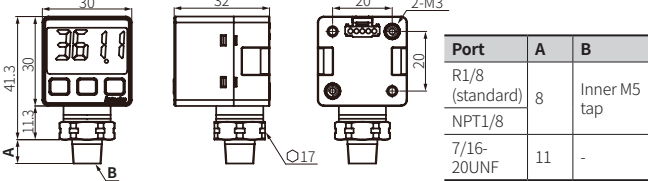
■ Pneumatic Type, Rear Port, Connector Type



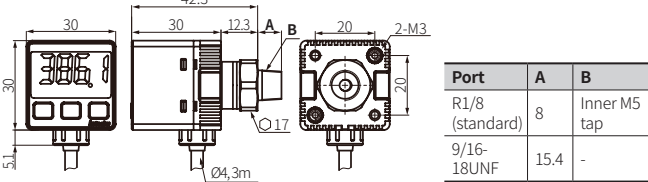
■ Pneumatic Type, Bottom Port, Connector Type



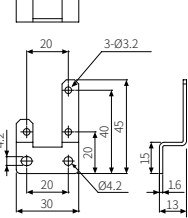
■ Fluid Type, Bottom Port, Connector Type



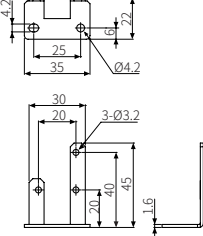
■ Fluid Type, Rear Port, Cable Type



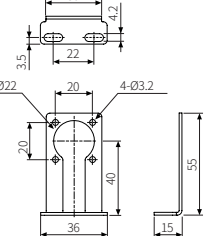
■ Bracket A



■ Bracket B

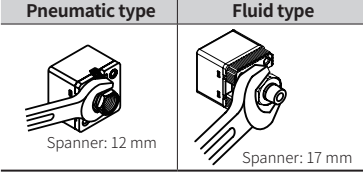


■ Bracket C



Installation

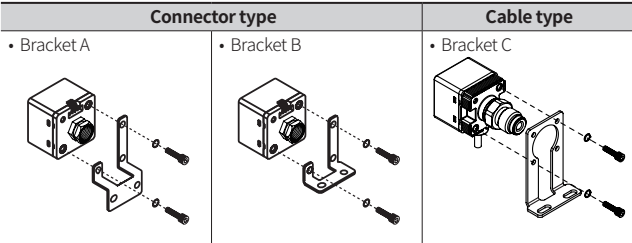
■ One-Touch Fitting



Use the spanner on the metal part so that large force is not applied to the unit body.
(Tightening torque: ≤ 10 N m, otherwise may cause malfunction.)

■ Bracket

Use spring washers and hexagon wrench bolts (tightening torque: ≤ 3 N m) to install a selected bracket suitable for the usage environment.



■ Wiring

- Do not pull the wiring with a force of more than 30 N.

Specifications

Model	PSAN-□V01C□□-□	PSAN-□01C□□-□	PSAN-□1□□□-□	PSAN-□C01□□□-□
Pressure type	Pneumatic type model: Gauge pressure Fluid type model: Gauge pressure ⁰¹⁾ or sealed gauge pressure ⁰²⁾			
Pressure	Negative	Static		Compound
Min. display unit	0.1 kPa	0.1 kPa	1 kPa	0.1 kPa
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
Display & setting pressure range	5.0 to -101.3 kPa	-5.0 to 110.0 kPa	-101.3 to 1,100 kPa	-101.3 to 110.0 kPa
Display type	7-Segment LED, 4 ½ digit			
Display accuracy	-10 to 0 °C: ≤ ± 1% F.S., 0 to 50 °C: ≤ ± 0.5% F.S.			
Max. pressure	Rated pressure × 2	Rated pressure × 2	• Pneumatic type: Rated pressure × 1.5 • Fluid type: Rated pressure × 2	Rated pressure × 2

01) Only for static pressure, rated pressure range 100.0 kPa model
02) The unit is sealed structure. It is based on atmospheric pressure 101.3 kPa.

Applicable medium	Pneumatic type (air, non-corrosive gas)	Fluid type (non-corrosive gas and fluid that do not corrode stainless steel 316L)
Connection type	Connector type	Cable type / connector type
Cable	Ø 4 mm, 5-core, 2 m	Connector type: Ø 4 mm, 5-core, 2 m Cable type: Ø 4 mm, 5-core, 3 m
Wire specification	AWG24 (0.08 mm, 40-core), insulator diameter: Ø 1 mm	
Material	Front case: PC Back case: (rear port) PC / (bottom port) PBT+GF15% Pressure port: Brass-nickel plated	Front case: PC Back case: PA6 Pressure port: SUS304/SUS316L
Protection rating	Connector type: IP40 (IEC standard)	Connector type: IP40 (IEC standard) Cable type: IP65 (IEC standard)
Certification	CE, ENEC, RoHS	
Unit weight (packaged)	Rear port: ≈ 80 g (≈ 165 g) Bottom port: ≈ 85 g (≈ 170 g)	Connector type: ≈ 88 g (≈ 173 g) Cable type: ≈ 90 g (≈ 167 g)

Power supply	12 - 24 VDC≡ (ripple P-P: ≤ 10%)
Allowable voltage range	90 to 110% of rated voltage
Current consumption	≤ 50 mA ⁰¹⁾
Control output	NPN open collector output / PNP open collector output model
Load voltage	≤ 30 VDC≡
Load current	≤ 100 mA
Residual voltage	NPN: ≤ 1 VDC≡, PNP: ≤ 2 VDC≡
Hysteresis	According to output operation mode ⁰²⁾
Repeat error	± 0.2% F.S. ± min display interval
Response time	2.5, 5, 100, 500, 1000 ms
Protection circuit	Output short over-current protection circuit
Insulation resistance	≥ 50 MΩ (500 VDC≡ megger)
Dielectric strength	Between the charging part and the case: 1,000 VAC~ 50 / 60 Hz for 1 min
Vibration resistance	1.5 mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 2 hours
Ambient temperature	-10 to 50 °C, Storage: -20 to 60 °C (no freezing or condensation)
Ambient humidity	30 to 80%RH, Storage: 30 to 80%RH (no freezing or condensation)

01) Current output: ≤ 75 mA
02) Refer to 'Output Operation Mode'. ± 1 digit error may occur due to pressure unit operation.

Analog output	Voltage (1 - 5 VDC≡ ± 2% F.S)	Current (DC 4 - 20mA ± 2% F.S)
Output impedance	1 kΩ	-
Linearity	≤ ± 1% F.S	≤ ± 1% F.S
Zero-point	≤ 1 VDC≡ ± 2% F.S.	≤ DC 4 mA ± 2% F.S.
Span	≤ 4 VDC≡ ± 2% F.S.	≤ DC 16 mA ± 2% F.S.
Resolution	1/1000 or 1/2000 (different by pressure type and display unit)	
Response time	50 ms	70 ms

Minimum Display Interval

Pressure	Negative	Static	Compound	
Min display interval	0.1 kPa	0.1 kPa	1 kPa	0.1 kPa
Resolution	1/1000	1/2000	1/1000	1/2000
Display unit	1/1000	1/2000	1/1000	1/2000
MPa	-	-	0.001	-
kPa	0.1	-	0.1	-
kgf/cm²	0.001	-	0.01	-
bar	0.001	-	0.01	-
psi	-	0.01	0.1	-
mmHg	-	0.4		
inHg	-	0.02		
mmH₂O ⁰¹⁾	0.1	-		

01) Multiply display value by 100.

