



B3. Pressure Sensors

Pressure sensors are devices used in a variety of applications requiring precise and accurate pressure measurement of gases or liquids.

B4-1	Digital Display	PSQ Series	Dual Display Type Pressure Sensors
		PSAN Series	Display Type Pressure Sensors
		PSB Series	Display Type Pressure Sensors
B4-2	Non-Indicating	PSS Series	Compact Pressure Sensors
B4-3	Pressure Sensor Indicators	PSM Series	Pressure Sensor Indicators

Dual Display Type Pressure Sensors

PSQ Series



Features

- Pressure measurement of any gas, liquid or oil [fluid type] except substances which may corrode stainless steel 316L
- Dual display for simultaneous display of process value (PV) and setpoint value (SV)
- Secondary (SV) display: setpoint value, pressure unit, or display-OFF
- Switch between NPN and PNP open collector output via parameter configuration
- 3-color main (PV) display (RUN mode: green / red, parameter setting mode: orange)
- 12-segment LCD display capable of diverse alphanumeric characters
- Measurement range: -100.0 to 100.0 kPa / -100 to 1000 kPa
(Pneumatic type : compound pressure, Fluid type : sealed gauge pressure)
- Analog output: voltage (1 - 5 VDC $\equiv$), current (DC 4 - 20 mA)
- Copy parameter settings function
- External input: Auto-Shift, Remote, Hold (PSQ-□C□□U-□ models only)
- Forced output control mode for device testing and inspection
- Display resolution: 0.1 kPa / 1 kPa (by model)
- One-touch connector type for easy wiring and maintenance
- Password lock for parameter configuration settings

Specifications

Model	PSQ-C□□-□	PSQ-BC□□C□-□
Applicable medium	Pneumatic type (air, non-corrosive gas)	Fluid type (non-corrosive gas and fluid that do not corrode stainless steel 316L) Sealed gauge pressure ⁰¹⁾
Pressure type	Gauge pressure	
Rated pressure range	-100.0 to 100.0 kPa / -100 to 1,000 kPa model	
Display and setting pressure range	• Rated pressure range -100.0 to 100.0 kPa model: -101.3 to 110.0 kPa • Rated pressure range -100 to 1,000 kPa model: -101 to 1,100 kPa	
Display type	PV / SV display part: 12 segment LCD, 4digit	
Display accuracy	-10 to 0 °C: $\leq \pm 1\%$ F.S., 0 to 50 °C: $\leq \pm 0.5\%$ F.S.	
Min. display unit	• Rated pressure range -100.0 to 100.0 kPa model: 0.1 kPa • Rated pressure range -100 to 1,000 kPa model: 1 kPa	
Min. display interval	Different by pressure unit ⁰²⁾	
Max. pressure range	• Rated pressure range -100.0 to 100.0 kPa model: Rated pressure $\times 2$ • Rated pressure range -100 to 1,000 kPa model: Rated pressure $\times 1.5$	Rated pressure $\times 3$
Connection	Connector type	Cable type
Cable	$\varnothing$ 4 mm, 5 core, 2 m	$\varnothing$ 4 mm, 5 core, 3 m
Wire	AWG 24 (0.08 mm, 40 seam) insulator diameter: $\varnothing$ 1 mm	
Material	Front case: PC, back case: PBT+G15%, pressure port: SUS303	Front case: PC, back case: PA6, pressure port: SUS316L
Protection structure	IP40 (IEC standard)	IP65 (IEC standard)
Approval	CE  	
Unit weight (packaged)	$\approx$ 80 g ($\approx$ 165 g)	$\approx$ 125 g ($\approx$ 210 g)

01) The unit is sealed structure. It is based on atmospheric pressure 101.3kPa.

02) Refer to 'minimum display interval per pressure unit'.

Power supply	12 - 24 VDC $\equiv$ (ripple P-P: $\leq 10\%$)
Allowable voltage range	90 to 110% of rated voltage
Current consumption	≤ 50 mA (analog output model: ≤ 70 mA)
Control output	NPN or PNP open collector output
Load voltage	≤ 30 VDC $\equiv$
Load current	≤ 100 mA
Residual voltage	≤ 2 VDC $\equiv$
Hysteresis	Different by output operation mode (parameter) ⁰¹⁾
Repeat error	$\pm 0.2\%$ F.S. $\pm$ min. display interval
Response time	2.5 to 5,000 ms (parameter)
Protection circuit	Output short over current protection circuit
Insulation resistance	≥ 50 M Ω (500 VDC $\equiv$ megger)
Dielectric strength	1,000 VAC $\sim$ 50 / 60 Hz for 1 min
Vibration	1.5mm amplitude at frequency of 10 to 55Hz (for 1min) 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) Refer to 'Output operation mode'.

External input	Auto shift - Remote zero - Hold (parameter)
ON / OFF voltage input	ON voltage: ≤ 0.4 VDC $\equiv$, OFF voltage: 5-Vin or open, input impedance: ≈ 100 k Ω
Resolution	1 / 2,000
Option output	Analog voltage - Analog current output (parameter)
Analog voltage output	1 - 5 VDC $\equiv$ $\pm 2.5\%$ F.S., output impedance: ≈ 240 Ω
Analog current output	DC4 - 20 mA $\pm 2.5\%$ F.S., output impedance: ≈ 100 k Ω
Linearity	$\leq \pm 1\%$ F.S.
Resolution	1 / 2,000
Response time	50 ms



View product detail

Display Type

Pressure Sensors

PSAN Series



Features

- Pressure measurement of any gas, liquid or oil (except substances which may corrode stainless steel 304 / 316L)
- Auto shift function: with change in the original pressure, the external input adjusts the determined level to match the change in pressure (only available in models with auto shift / hold function)
- Hold function: hold current display value or control output
- Forced output control mode for device testing and maintenance
- One-touch connector type for easy wiring and maintenance
- Zero-point adjustment function, peak value monitoring function, chattering prevention function

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 spec.	AWG24 (0.08 mm, 40-core), insulator diameter: Ø 1 mm	
Material	Front case: PC Back case: (back port) PC / (bottom port) PBT+GF15% Pressure port: Brass-nickel plated	Front case: PC Back case: PA6 Pressure port: SUS304/SUS316L
Protection structure	Connector type: IP40 (IEC standard)	Connector type: IP40 (IEC standard) Cable type: IP65 (IEC standard)
Approval	CE ENEC	
Unit weight (packaged)	Back port: ≈ 80 g (≈ 165 g) Bottom port: ≈ 85 g (≈ 170 g)	Connector type: ≈ 88 g (≈ 173 g) Cable type: ≈ 90 g (≈ 167 g)



View product detail

Next Page ►

Power supply	12 - 24 VDC $\equiv$ (ripple P-P: $\leq$ 10%)
Allowable voltage range	90 to 110% of rated voltage
Current consumption	$\leq$ 50 mA ⁰¹⁾
Control output	NPN open collector output / PNP open collector output model
Load voltage	$\leq$ 30 VDC $\equiv$
Load current	$\leq$ 100 mA
Residual voltage	NPN: $\leq$ 1 VDC $\equiv$, PNP: $\leq$ 2 VDC $\equiv$
Hysteresis	According to output operation mode ⁰²⁾
Repeat error	$\pm$ 0.2% F.S. $\pm$ min display interval
Response time	2.5, 5, 100, 500, 1000 ms
Protection circuit	Output short over-current protection circuit
Insulation resistance	$\geq$ 50 M Ω (500 VDC $\equiv$ megger)
Dielectric strength	1,000 VAC $\sim$ 50 / 60 Hz for 1 min
Vibration	1.5 mm amplitude at frequency of 10 to 55Hz (for 1 min) 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: $\leq$ 75 mA

02) Refer to 'Output operation mode'. $\pm$ 1digit error may occur due to pressure unit operation.

Analog output	Voltage (1 - 5 VDC$\equiv$ $\pm$2% F.S)	Current (DC 4 - 20mA $\pm$2% F.S)
Output impedance	1 k Ω	-
Linearity	$\leq$ $\pm$ 1% F.S	$\leq$ $\pm$ 1% F.S
Zero-point	$\leq$ 1 VDC $\equiv$ $\pm$ 2% F.S.	$\leq$ DC 4 mA $\pm$ 2% F.S.
Span	$\leq$ 4 VDC $\equiv$ $\pm$ 2% F.S.	$\leq$ DC 16 mA $\pm$ 2% F.S.
Resolution	1/1000 or 1/2000 (different by pressure type and display unit)	
Response time	50 ms	70 ms

Display Type

Pressure Sensors

PSB Series



Features

- High accuracy digital pressure sensor
- Bright red LED display
(character height : 9.5 mm)
- High display resolution
: negative pressure 0.1 kPa /
standard pressure 0.1 kPa, 1 kPa /
- compound pressure 0.2 kPa
- Unit conversion function
- negative, compound pressure: kPa, kgf/cm²,
bar, psi, mmHg, mmH₂O, inHg
- standard pressure: kPa, kgf/cm², bar, psi
- Various output modes: hysteresis mode,
automatic sensitivity adjustment mode,
independent 2-point output mode,
window comparison output mode
- Chattering prevention function
(response time: 2.5 ms, 5 ms, 100 ms, 500 ms)
- Analog output (1 - 5 VDC≐) scale function
- Zero-point adjustment function
- Peak value and low value hold function
- Built-in reverse polarity protection circuit,
overcurrent protection circuit



View product detail

Specifications

Model	PSB-V01□□-□	PSB-01□□-□	PSB-1□□-□	PSB-C01□□-□
Pressure type	Gauge pressure			
Applicable medium	Air, Non-corrosive gas			
Pressure	Negative	Static		Compound
Min display interval	1-digit ⁰¹⁾	1-digit ⁰¹⁾		2-digit
Rated pressure range	0.0 to -101.3 kPa	0.0 to 100.0 kPa	0 to 1,000 kPa	-100.0 to 100.0 kPa
Display & setting pressure range	5.0 to -101.3 kPa	-5.0 to 110.0 kPa	-50 to 1,100 kPa	-101.2 to 110.0 kPa
Display type	7 segment LED, 3 ½ digit			
Display accuracy	-10 to 0 °C: ≤ ±2% F.S., 0 to 50 °C: ≤ ±1% F.S.			
Max. pressure	Rated pressure ×2	Rated pressure ×2	Rated pressure ×1.5	Rated pressure ×2
01) psi unit: 2-digit				
Connection type	Cable type / Connector type model			
Cable	・ Cable type: Ø 4 mm, 5-core, 2 m ・ Connector type: 5-core, 3 m			
Wire spec.	AWG 24 (0.08 mm, 40-core), insulator diameter: Ø 1 mm			
Material	Case, Pressure port, Cover: IXEF			
Guaranteed parameter write life	100,000 times			
Protection structure	IP40 (IEC standard)			
Approval	CE EAC			
Unit weight (packaged)	≈ 70 g (≈ 160 g)			
Power supply	12 - 24 VDC≡ ±10% (ripple P-P: ≤ 10%)			
Current consumption	≤ 50 mA			
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 VDCT			
Hysteresis	Negative / Static: 1-digit (psi unit: 2-digit) Compound: 2-digit ⁰¹⁾			
Repeat error	Negative / Static: ±0.2% F.S. ±1digit Compound: ±0.2% F.S.±2digits			
Response time	2.5, 5, 100, 500 ms			
Protection circuit	Output short over-current protection circuit			
Vibration	1.5 mm amplitude at frequency of 10 to 55 Hz (for 1 min) 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	35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation)			
01) Due to the pressure unit operation, ± 1digit errors may occur in the hysteresis.				
Analog output	Voltage (1 - 5 VDC≡ ±2% F.S)			
Output impedance	1 kΩ			
Linearity	≤ ±2% F.S			
Zero-point	≤ 1 VDC≡ ±2% F.S.			
Span	≤ 4 VDC≡ ±2% F.S.			
Resolution	1/200			

Compact Pressure Sensors

PSS Series



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 $\pm$),
current (DC 4 - 20 mA)
- Power supply: 12 - 24 VDC $\pm$ $\pm$ 10%

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)
Approval	CE ENEC
Unit weight (packaged)	$\approx$ 26 g ($\approx$ 60 g)
Power supply	12 - 24 VDC $\pm$ $\pm$ 10% (ripple P-P: $\leq$ 10%)
Current consumption	Voltage output model: $\leq$ 15 mA
Effect by power supply	$\leq \pm$ 0.3% F.S
Protection circuit	Reverse polarity protection circuit
Voltage output	1 - 5 VDC $\pm$ $\pm$ 2% F.S.
Linearity	$\leq \pm$ 1% F.S.
Output impedance	1 k Ω
Current output	DC 4 -20 mA $\pm$ 2% F.S.
Linearity	$\leq \pm$ 1% F.S.
Analog output temp. characteristic	$\leq \pm$ 2% F.S. (in 0 to 50 °C temperature range, at 25 °C)
Insulation resistance	$\geq$ 50 M Ω (500 VDC $\pm$ megger)
Dielectric strength	2,000 VAC $\sim$ 50/60 Hz for 1 min
Vibration	1.5 mm amplitude at frequency of 10 to 55 Hz (for 1 min) 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)

Model

Model name	Pressure	Rated pressure range	Expanded analog output range	Max. pressure range	Output	□: Pressure port
PSS-V01V-□	Negative	0.0 to -101.3 kPa	5.0 to -101.3 kPa	Rated pressure $\times$ 2	Voltage	R1/8: R1/8 (Standard) R04: Ø4 reducer R06: Ø6 reducer
PSS-V01A-□					Current	
PSS-01V-□	Static	0.0 to 100.0 kPa	-5.0 to 110.0 kPa	Rated pressure $\times$ 2	Voltage	
PSS-01A-□					Current	
PSS-1V-□					Voltage	
PSS-1A-□					Current	
PSS-C01V-□	Com-pound	-101.3 to 100.0 kPa	-101.3 to 110.0 kPa	Rated pressure $\times$ 2	Voltage	
PSS-C01A-□					Current	



View product detail

Pressure Sensor Indicators

PSM Series



Features

- Display 8 (PSM8) or 4 (PSM4) channels of pressure value from pressure sensors
- Input range: 1 - 5 VDC $\equiv$, DC 4 - 20 mA (by model)
- Pressure sensor model auto recognition (Autonics PSS Series pressure sensors)
- Set PV display color by control output type (red / green)
- Individual output indicators for each channel
- RS485 (Modbus RTU) communication support
- Refrigeration pressure control mode
- Easy wiring and connection with sensor connectors (CNE)
- Power supply: 12 - 24 VDC $\equiv$ $\pm$ 10%

Specifications

Model	PSM4-□□□	PSM8-□□□
Display pressure range	Refer to 'Rated Pressure and Max. Pressure Display Range'.	
Max. inputs	4	8
Sensor input	• 1 - 5 VDC $\equiv$ (Input impedance: $\approx$ 300 k Ω) • DC 4 - 20 mA model (Input impedance: $\approx$ 100 Ω)	
Sensor supply power	12 - 24 VDC $\equiv$, 40 mA per channel (1 - 4 ch max. current: $\leq$ 100 mA, 5 - 8 ch max. current: $\leq$ 100 mA)	
Display type	7 Segment LED 4 digit	
Display accuracy	$\pm$ 0.1% F.S. $\pm$ 2 digit (at 23 $\pm$ 5 $^{\circ}$ C)	
Control output and display temp. characteristic	-10 to 0 $^{\circ}$ C: $\pm$ 0.3% F.S. $\pm$ 2 digit 0 to 50 $^{\circ}$ C: $\pm$ 0.2% F.S. $\pm$ 2 digit (at 25 $^{\circ}$ C)	
Option input	Digital input 1	
Contact input	[L]: $\leq$ 0.2 V	
Solid state input	Residual voltage $\leq$ 1.0 V, Leakage current $\leq$ 0.1 mA	
Protection structure	Front: IP65, the others: IP30 (IEC standard)	
Approval	CE ENEC	
Unit weight (packaged)	$\approx$ 65 g ($\approx$ 108 g)	
Power supply	12 - 24 VDC $\equiv$ $\pm$ 10% (ripple P-P: $\leq$ 10%)	
Power consumption	$\leq$ 3 W	
Current consumption	$\leq$ 100 mA ⁰¹⁾	
Control output	NPN open collector output / PNP open collector output model	
Load voltage	$\leq$ 30 VDC $\equiv$	
Load current	$\leq$ 100 mA	
Residual voltage	NPN: $\leq$ 1 VDC $\equiv$, PNP: $\leq$ 2 VDC $\equiv$	
Hysteresis	Different by output operation mode ⁰²⁾	
Repeat error	$\pm$ 0.1% F.S. $\pm$ Min display interval	
Response time	• 4 CH model: 2.5, 100, 500, 1000 ms • 8 CH model: 5, 100, 500, 1000 ms	
RS485 comm.	Modbus RTU	
Protection circuit	Output short over-current protection circuit, power supply reverse connection protection circuit	
Insulation resistance	$\geq$ 100 M Ω (500 VDC $\equiv$ megger)	
Dielectric strength	Between power terminal and case: 1,000 VAC $\sim$ 50 / 60 Hz for 1 min Between power terminal and RS485 terminal: 500 VAC $\sim$ 50 / 60 Hz for 1 min	
Vibration	1.5 mm amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours	
Ambient temperature	-10 to 50 $^{\circ}$ C, storage: -20 to 60 $^{\circ}$ C (rated at no freezing or condensation)	
Ambient humidity	30 to 85%RH, storage: 30 to 85%RH (rated at no freezing or condensation)	
Comm. protocol	Modbus RTU	

01) Except sensor consumption current.

All output indicators ON: $\leq$ 120 mA / RS485 communication connection: 120 mA

02) Refer to output operation mode.



View product detail