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Remote Type
Pressure Sensors/ Pressure Sensor Monitors

Compact Pneumatic Pressure Sensor **PSE530** ▸P.3



Compact Pneumatic Pressure Sensor **PSE540** ▸P.6



Low Differential Pressure Sensor **PSE550** ▸P.9



Pressure Sensor for General Fluids **PSE560** ▸P.12



Pressure Sensor for General Fluids with connector **PSE570** ▸P.15

New



New

Multi-Channel Digital Pressure Sensor Monitor
PSE200 ▸P.18



2-Colour Display Digital Pressure Sensor Monitor
PSE300 ▸P.24



DIN rail/Terminal block type

3-Screen Display Sensor Monitor
PSE300AC ▸P.34





Series PSE

SMC

CAT.EUS100-56Cc-UK

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Series PSE Variations

		Pressure Sensors					Monitors		
		PSE530	PSE540	PSE550	PSE560	PSE570 (New)	PSE200	PSE300	PSE300AC (New)
		 P.3	 P.6	 P.9	 P.12	 P.15	 P.18	 P.24	 P.34
Basic Specifications	Fluid	Air			General fluids				
	Rated pressure range (Minimun display)								
	Repeatability	±1 % (F.S.)	±0.2 % (F.S.)	±0.3 % (F.S.)	±0.2 % (F.S.) or ±0.5 % (F.S.)		±0.1 % (F.S.)		
	Voltage	12 to 24 VDC							
	No. of outputs for switch						5 outputs	2 outputs	
	Output	1 to 5 V		1 to 5 V 4 to 20 mA			NPN or PNP	1 to 5 V 4 to 20 mA	Select from NPN or PNP
	Operating temp.	0 to 50 °C			-10 to 60 °C		0 to 50 °C		
Functions	Digital display						1-colour	2-colour	3-colour
	Enclosure	IP40			IP65		Front face IP65 Others IP40	IP40	IP65
	Wiring	Connector	Grommet			M12 Connector	Connector		M12 Connector
Connector	Connection threads	M reducer	M R, NPT reducer	Resin piping	R, NPT, Rc URJ, TSJ*	R			
	Standards	CE	CE, UL, CSA			CE	CE	CE, UL, CSA	CE, RoHS
	Wiring: e-con	●	●	●	●	●	●	●	
	Wiring: M12					●			●
	Wiring: Flexible cable		●	●					
	Mounting: Direct	●	●	●	●	●		●	
	Mounting: With bracket			●				●	
	Mounting: Panel mount						●	●	
	Mounting: DIN rail							●	

* URJ (VCR® fitting compliant), TSJ (Swagelok® fitting compliant)

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Pressure Sensors/*Series PSE5□□*

	Rated pressure range	PSE53□	PSE54□	PSE55□	PSE56□ (New)	PSE57□ (New)
						
Vacuum	-101 kPa to 0	PSE531	PSE541	—	PSE561	—
Compound pressure	-100 kPa to 100 kPa	PSE533	PSE543	—	PSE563	PSE573
Positive pressure	0 to 100 kPa	PSE532	—	—	—	—
	0 to 500 kPa	—	—	—	PSE564	PSE574
	0 to 1 MPa	PSE530	PSE540	—	PSE560	PSE570
	0 to 2 MPa	—	—	—	—	PSE575
	0 to 5 MPa	—	—	—	—	PSE576
	0 to 10 MPa	—	—	—	—	PSE577
Low differential pressure	0 to 2 kPa	—	—	PSE550	—	—

Pressure Sensor Monitors/*Series PSE200/300AC*

Applicable pressure sensor model					PSE200 Input/Output specifications	PSE300 (New) Input/Output specifications	PSE300AC (New) Input/Output specifications
PSE53□	PSE54□	PSE55□	PSE56□	PSE57□	 • NPN 5 outputs + auto-shift input • PNP 5 outputs + auto-shift input	 • NPN 2 outputs + 1–5 V outputs • NPN 2 outputs + 4–20 mA output • NPN 2 outputs + auto-shift input • PNP 2 outputs + 1–5 V outputs • PNP 2 outputs + 4–20 mA output • PNP 2 outputs + auto-shift input	 • Select from NPN or PNP open collector output • Voltage input: 1 to 5 VDC • Current input: 4 to 20 mA DC • 1 input, OUT1, OUT2
					Set/Display resolution		
PSE531	PSE541	—	PSE561	—	0.1 kPa	0.1 kPa	0.1 kPa
PSE533	PSE543	—	PSE563	PSE573	0.1 kPa	0.2 kPa	0.1 kPa
PSE532	—	—	—	—	0.1 kPa	0.1 kPa	0.1 kPa
—	—	—	PSE564	PSE574	—	1 kPa	1 kPa
PSE530	PSE540	—	PSE560	PSE570	0.001 MPa	0.001 MPa	0.001 MPa
—	—	PSE550	—	—	—	0.1 kPa	0.001 kPa
—	—	—	—	PSE575	—	—	0.001 MPa
—	—	—	—	PSE576	—	—	0.01 MPa
—	—	—	—	PSE577	—	—	0.01 MPa

Monitor Main Functions (For details, refer to pages 31 to 33 and 37 to 38.)

Keylock	Locks the keys from functioning.
Peak/Bottom values holding	Displays the maximum and minimum values being set and can keep those values on the display.
Auto-preset	Able to set the pressure automatically. In the case of suction verification, it memorises the pressure when adsorbed and released. By repeating several times, the optimum values are calculated automatically.
Auto-shift	Stable switch output is available even though the supply pressure may fluctuate. Automatically corrects the set value in accordance with the fluctuations in the supply pressure.
Display calibration	Able to adjust the displayed value (±5 %) and justify distribution of the values displayed on respective pressure switch.
Anti-chattering	Prevents malfunction due to sharp pressure fluctuations. The detection of momentary pressure fluctuation as abnormal pressure can be prevented by changing the setting of the response time.

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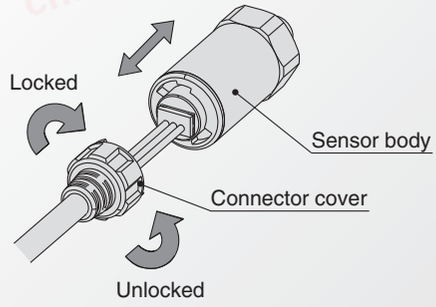


Compact Pneumatic Pressure Sensor

Series PSE530

Series	Rated pressure range				
	–100 kPa	0	100 kPa	500 kPa	1 MPa
PSE530		0			1 MPa
PSE531	–101 kPa		0		
PSE532		0		101 kPa	
PSE533	–101 kPa			101 kPa	

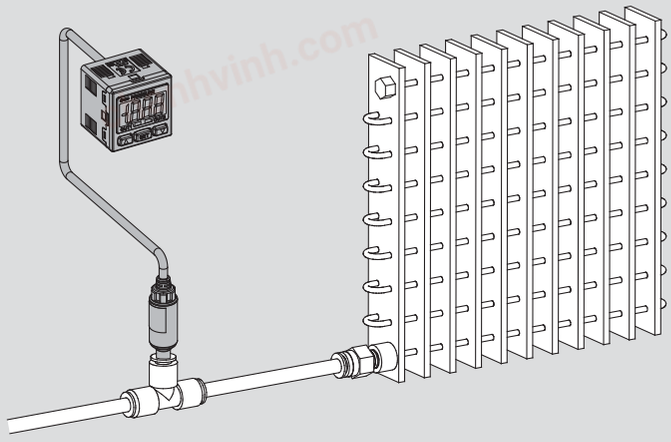
Connector type



Application example

Leak test of radiator

Series PSE532 + PSE300



Low pressure sensor (PSE532-☐) is used to detect minute differentiations.
Auto-shift function reduces influence of fluctuations in the supply pressure.

Applications

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Pressure Sensor
Series PSE530



How to Order

PSE53 0 – M5 – □

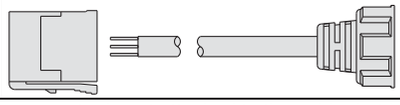
Sensor range

0	Positive pressure [0 to 1 MPa]
1	Vacuum [0 to –101 kPa]
2	Low pressure [0 to 101 kPa]
3	Compound pressure [–101 to 101 kPa]

Port size

M5	M5 x 0.8
R06	Ø 6 reducer
R07	1/4 inch reducer

Option

—	None
L	Sensor cable (3 m) 
C2L	Connector for pressure sensor controller (1 pc.) + Sensor cable (3 m) 

Note) The connector is not attached to the cable, but is included with the shipment.

Option/Part No.

When only optional parts are required, order using the part numbers listed below.

Description	Part no.	Note
Connector for pressure sensor controller	ZS-28-C	1 pc. per set
Sensor cable	ZS-26-F	Cable length: 3 m
Connector for pressure sensor controller + Sensor cable	ZS-26-J	Cable length: 3 m The connector is not attached to the cable at the time of shipment.

For Pressure Switch Precautions and Specific Product Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website.

Specifications

Model		**PSE530** [Positive pressure]	**PSE531** [Vacuum]	**PSE532** [Low pressure]	**PSE533** [Compound pressure]
Rated pressure range		0 to 1 MPa	0 to –101 kPa	0 to 101 kPa	–101 to 101 kPa
Extension analogue output range		–0.1 to 0 MPa	10.1 to 0 kPa	–10.1 to 0 kPa	—
Proof pressure		1.5 MPa	500 kPa		
Applicable fluid		Air/Non-corrosive gas/Non-flammable gas			
Power supply voltage		12 to 24 VDC ±10 %, Ripple (p-p) 10 % or less (with reverse connection protection)			
Current consumption		15 mA or less (with no load)			
Output specifications		Analogue output 1 to 5 V (within rated pressure range), 0.6 to 1 V (within extension analogue output range), Output impedance: Approx. 1 kΩ			
Accuracy (Ambient temperature at 25 °C)		±2 % F.S. (within rated pressure range), ±5 % F.S. (within extension analogue output range)			
Linearity		±1 % F.S.			
Repeatability		±1 % F.S.			
Power supply voltage effect		±1 % F.S. based on the analogue output at 18 V ranging from 12 to 24 VDC			
Environment	**Enclosure**	IP40			
	Temperature range	Operating: 0 to 50 °C; Stored: –10 to 70 °C (No freezing or condensation)			
	Withstand voltage	1000 VAC (in 50 / 60 Hz) for 1 minute between terminals and housing			
	Insulation resistance	5 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing			
Temperature characteristics		±2 % F.S. (25 °C reference)			
Sensor cable/Option		Halogen-free heavy-duty cable, 3 cores, Ø 2.7, 3 m, Conductor area: 0.15 mm², Insulator O.D.: 0.8 mm			
Standards		CE, RoHS			

Piping Specifications

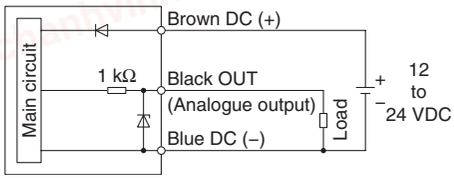
Model		**M5**	**R06**	**R07**
Port size		M5 x 0.8 male thread	Ø 6 reducer type	1/4 inch reducer type
Materials of parts in contact with fluid		Pressure sensor: Silicon, O-ring: NBR		
		Body: Stainless steel 304	Body: PBT	
Weight	**With sensor cable (3 m)**	41 g	38 g	
	Without sensor cable	7 g	3.8 g	

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Series PSE530

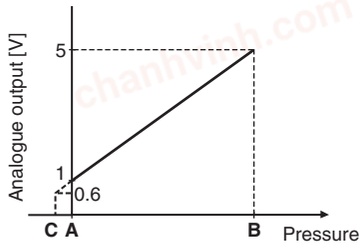
Internal Circuit and Wiring Example

PSE53□
Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ



Analogue Output

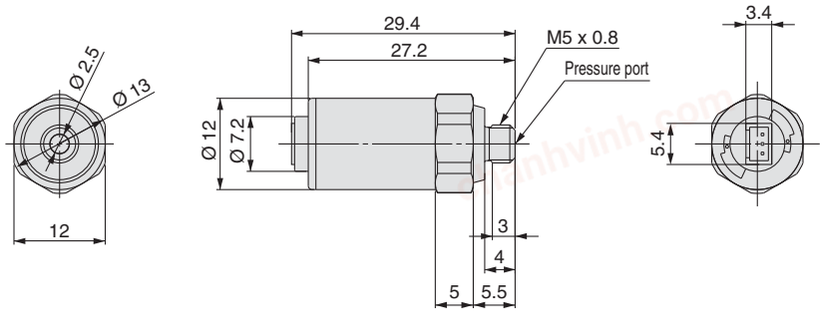
1 to 5 VDC



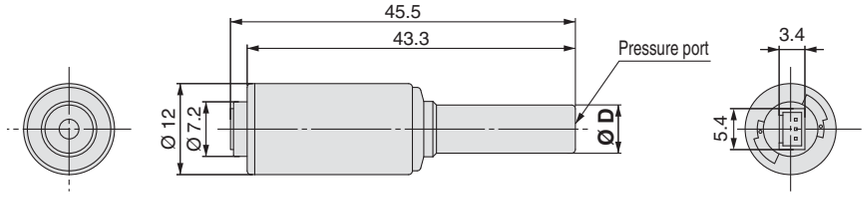
Range	Rated pressure range	A	B	C
For vacuum	0 to –101 kPa	0	–101 kPa	10.1 kPa
For compound pressure	–101 kPa to 101 kPa	–101 kPa	101 kPa	—
For low pressure	0 to 101 kPa	0	101 kPa	–10.1 kPa
For positive pressure	0 to 1 MPa	0	1 MPa	–0.1 MPa

Dimensions

PSE53□-M5



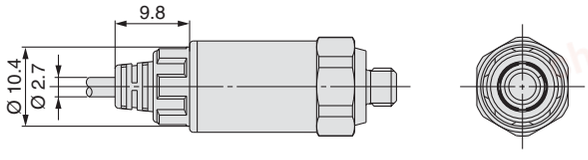
PSE53□-$^{R06}_{R07}$



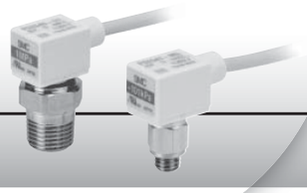
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Model	Applicable fitting size (**D**)
PSE53□-R06	6
PSE53□-R07	1/4"

With sensor cable



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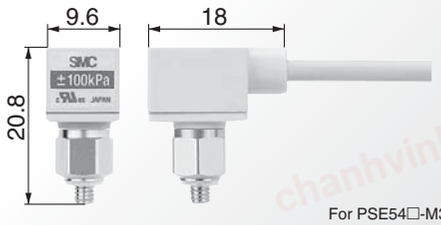


Compact Pneumatic Pressure Sensor

Series PSE540

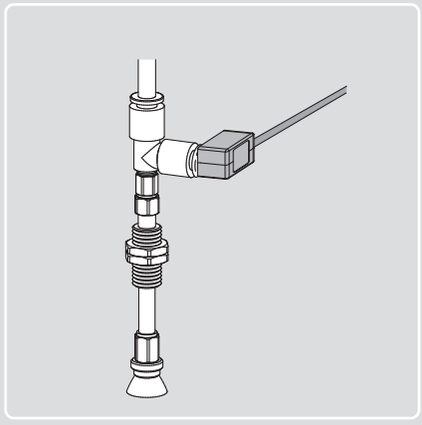
Series	Rated pressure range
	–100 kPa / 0 / 100 kPa / 500 kPa / 1 MPa
PSE540	0 … 1 MPa
PSE541	–101 kPa … 0
PSE543	–100 kPa … 100 kPa

· **Weight: 2.9 g**
· **Head size: 9.6 x 20.8 x 18 mm**

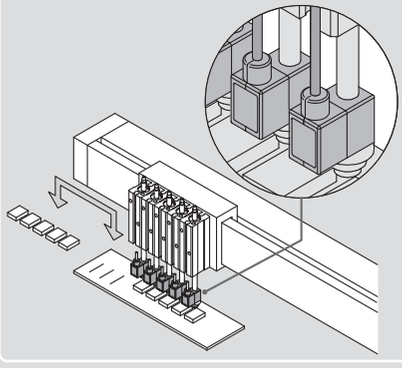


For PSE54□-M3

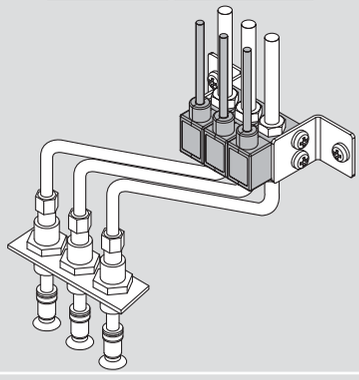
Application examples



Pads can be directly mounted.



Manifolding is possible.

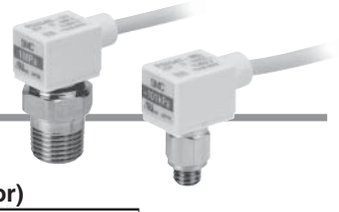


Applications

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Compact Pneumatic Pressure Sensor

Series PSE540



How to Order

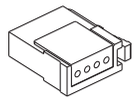
Sensor range

0	Positive pressure [0 to 1 MPa]
1	Negative pressure [0 to –101 kPa]
3	Compound pressure [–100 to 100 kPa]

Accuracy

—	±2 % F.S.
A	±1 % F.S.

Option (Connector)

—	None
C2	Connector for pressure sensor controller (1 pc.) 

PSE54 [1] [ ] – [M3] – [ ]

Port size

M3	M3 x 0.5	
M5	M5 x 0.8	
01	R 1/8 (with M5 female thread)	
N01	NPT 1/8 (with M5 female thread)	
R04	Ø 4 reducer	
R06	Ø 6 reducer	

IM5	M5 female thread, through type	
IM5H	M5 female thread, through type (with mounting hole)	

Note) The connector is not attached to the cable, but is included with the shipment.

Option/Part No.

Description	Part no.	Note
Connector for pressure sensor controller	ZS-28-C	1 pc.

For Pressure Switch Precautions and Specific Product Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website.

Specifications

Model		PSE540	PSE541	PSE543
Rated pressure range		0 to 1 MPa	0 to –101 kPa	–100 to 100 kPa
Extension analogue output range		–0.1 to 0 MPa	10.1 to 0 kPa	—
Proof pressure		1.5 MPa	500 kPa	
Applicable fluid		Air/Non-corrosive gas/Non-flammable gas		
Power supply voltage		12 to 24 VDC ±10 %, Ripple (p-p) 10 % or less (with reverse connection protection)		
Current consumption		15 mA or less		
Output specifications		Analogue output 1 to 5 V (within rated pressure range), 0.6 to 1 V (within extension analogue output range), Output impedance: Approx. 1 kΩ		
Accuracy (Ambient temperature at 25 °C)		PSE54□: ±2 % F.S. (within rated pressure range), ±5 % F.S. (within extension analogue output range) PSE54□A: ±1 % F.S. (within rated pressure range), ±3 % F.S. (within extension analogue output range)		
Linearity		±0.7 % F.S. or less	±0.4 % F.S.	
Repeatability		±0.2 % F.S.		
Power supply voltage effect		±0.8 % F.S.		
Environment	**Enclosure**	IP40		
	Operating temperature range	Operating: 0 to 50 °C, Stored: –20 to 70 °C (No freezing or condensation)		
	Operating humidity range	Operating/Stored: 35 to 85 % RH (No condensation)		
	Withstand voltage	1000 VAC (in 50 / 60 Hz) for 1 minute between terminals and housing		
	Insulation resistance	50 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing		
Temperature characteristics		±2 % F.S. (25 °C reference)		
Sensor cable		Oilproof heavy-duty vinyl cable (ellipse), 3 cores, 2.7 x 3.2, 3 m, Conductor area: 0.15 mm², Insulator O.D.: 0.9 mm		
Standards		CE, UL/CSA (E216656), RoHS		

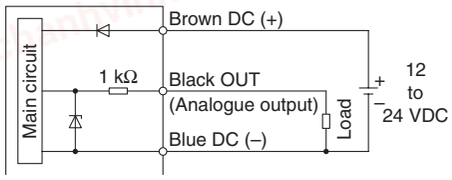
Piping Specifications

Model		M3	M5	01	N01	R04	R06	IM5	IM5H
Port size		M3 x 0.5	M5 x 0.8	R 1/8 M5 x 0.8	NPT 1/8 M5 x 0.8	Ø 4 reducer	Ø 6 reducer	M5 female thread, through type	M5 female thread, through type (with mounting hole)
Material	**Case**	Resin case: PBT Fitting: Stainless steel 303		Resin case: PBT Fitting: C3604BD		PBT		Resin case: PBT Fitting: A6063S-T5	
	Pressure sensing section	Pressure sensor: Silicon, O-ring: NBR							
Weight	**With sensor cable**	42.4 g	42.7 g	49.3 g		41.4 g	41.6 g	43.3 g	44.1 g
	Without sensor cable	2.9 g	3.2 g	9.8 g		1.9 g	2.1 g	3.8 g	4.6 g

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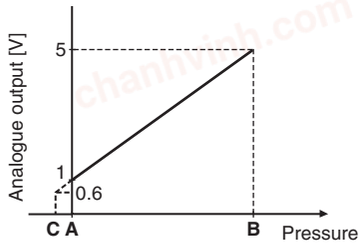
Internal Circuit and Wiring Example

PSE54□
Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ



Analogue Output

1 to 5 VDC

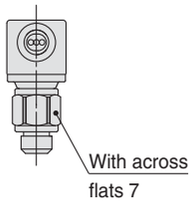


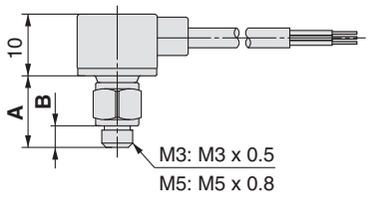
Range	Rated pressure range	A	B	C
For vacuum	0 to –101 kPa	0	–101 kPa	10.1 kPa
For compound pressure	–100 kPa to 100 kPa	–100 kPa	100 kPa	—
For positive pressure	0 to 1 MPa	0	1 MPa	–0.1 MPa

Dimensions

PSE54□-M3 M5







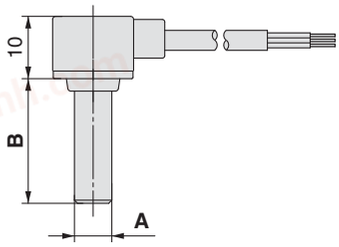
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	PSE54□-M3	PSE54□-M5
A	10.8	11.5
B	3	3.5

PSE54□-R04 R06



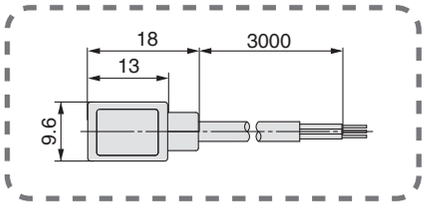




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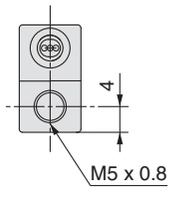
	PSE54□-R04	PSE54□-R06
A	Ø 4	Ø 6
B	18	20

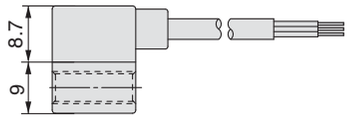
Common Dimensions



PSE54□-IM5

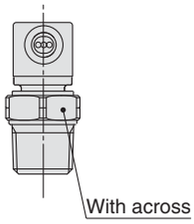


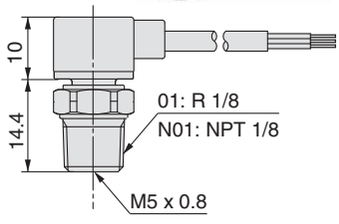




PSE54□-01 N01

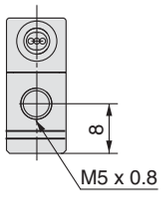


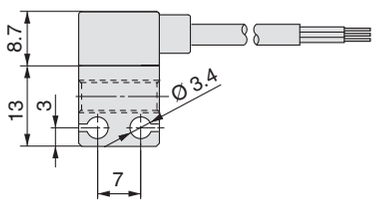




PSE54□-IM5H







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Low Differential Pressure Sensor

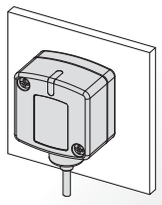
Series PSE550

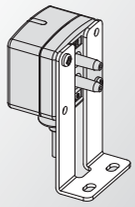
Series	Rated pressure range
	0 — 1 kPa — 2 kPa
PSE550	0 — 2 kPa

Power LED status indicator



2 mounting types


Mounting directly

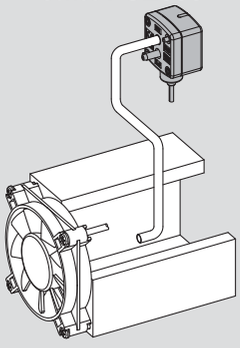

Mounting with bracket

Accuracy
±1% F.S.

Proof pressure
65 kPa

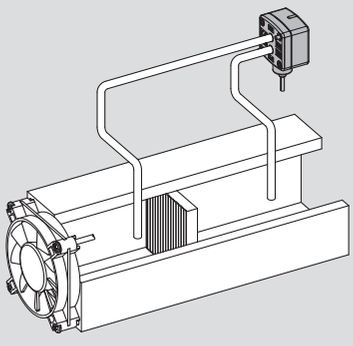
Application examples

Flow control
Series PSE550



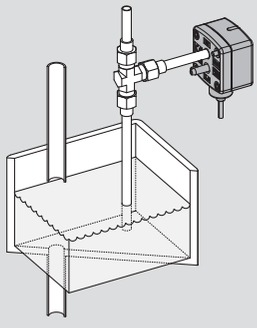
Can control air flow by monitoring the flow rate inside the duct.

Filter clogging monitoring
Series PSE550



Can control filtration and replacement periods by monitoring the clogging of the filter.

Liquid level detection
Series PSE550



Can detect the liquid level through changes in the purge pressure.

Applications

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Low Differential Pressure Sensor

Series PSE550



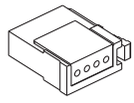
How to Order

PSE550 – □ – □ □

Output specifications

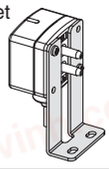
—	Voltage output type 1 to 5 V
28	Current output type 4 to 20 mA

Option 2 (Connector)

—	None
C2	Connector for pressure sensor controller (1 pc.) 

Note 1) Current output type cannot be connected to the PSE 200 series.
Note 2) The connector is not attached to the cable, but is included with the shipment.

Option 1 (Bracket)

—	None
A	Bracket 

Note) The bracket is not attached to the product, but is included with the shipment.

Option/Part No.

Description	Part no.	Note
Bracket	ZS-30-A	With M3 x 5L (2 pcs.)
Connector for pressure sensor controller	ZS-28-C	1 pc.

For Pressure Switch Precautions and Specific Product Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website.

Specifications

Model		PSE550	PSE550-28
Rated differential pressure range		0 to 2 kPa	
Operating pressure range		–50 to 50 kPa Note)	
Extension analogue output range		–0.2 to 0 kPa	—
Proof pressure		65 kPa	
Applicable fluid		Air/Non-corrosive gas/Non-flammable gas	
Power supply voltage		12 to 24 VDC ±10 %, Ripple (p-p) 10 % or less (with reverse connection protection)	
Current consumption		15 mA or less	—
Output specifications		Analogue output: 1 to 5 VDC (within rated differential pressure range) 0.6 to 1 VDC (within extension analogue output range) Output impedance: Approx. 1 kΩ	Analogue output: 4 to 20 mA DC (within rated differential pressure range) Maximum load impedance: 500 Ω or less (at 24 VDC) 100 Ω or less (at 12 VDC)
Accuracy (Operating temperature at 25 °C)		±1 % F.S. (within rated differential pressure range), ±3 % F.S. (within extension analogue output range)	
Linearity		±0.5 % F.S.	
Repeatability		±0.3 % F.S.	
Indicator light		Orange light is turned on. (When energised)	
Environment	**Enclosure**	IP40	
	Operating temperature range	Operating: 0 to 50 °C, Stored: –20 to 70 °C (No freezing or condensation)	
	Operating humidity range	Operating/Stored: 35 to 85 % RH (No condensation)	
	Withstand voltage	1000 VAC (in 50 / 60 Hz) for 1 minute between terminals and housing	
	Insulation resistance	50 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing	
Temperature characteristics		±3 % F.S. (25 °C reference)	
Port size		Ø 4.8 (Ø 4.4 in the end) resin piping (Applicable to I.D. Ø 4 air tubing)	
Materials of parts in contact with fluid		Resin pipe: Nylon, Piston area of sensor: Silicon	
Sensor cable		Oilproof heavy-duty vinyl cable (ellipse), 3 cores, 2.7 x 3.2, 3 m Conductor area: 0.15 mm², Insulator O.D.: 0.9 mm	Oilproof heavy-duty vinyl cable (ellipse), 2 cores, 2.7 x 3.2, 3 m Conductor area: 0.15 mm², Insulator O.D.: 0.9 mm
Weight	**With sensor cable**	75 g	
	Without sensor cable	35 g	
Standards		CE, UL/CSA (E216656), RoHS	

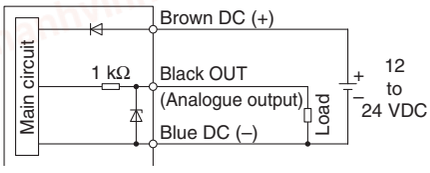
Note) Can detect differential pressure from 0 to 2 kPa within the range of –50 to 50 kPa.

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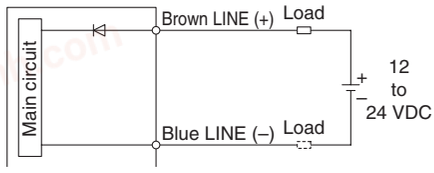
Series PSE550

Internal Circuit and Wiring Example

PSE550
Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ



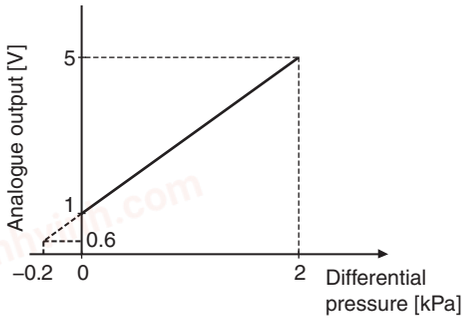
PSE550-28
Current output type
4 to 20 mA
Allowable load impedance
500 Ω or less (at 24 VDC)
100 Ω or less (at 12 VDC)



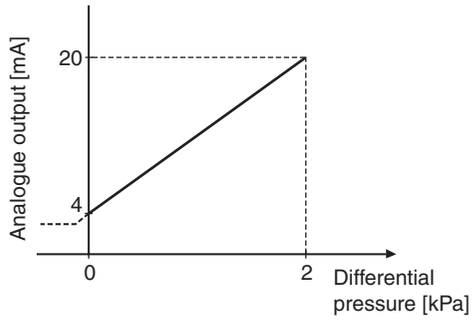
* Install the load either on the LINE (+) or LINE (–) side.

Analogue Output

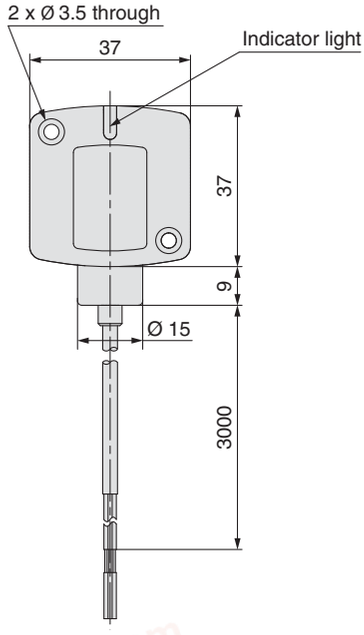
1 to 5 VDC

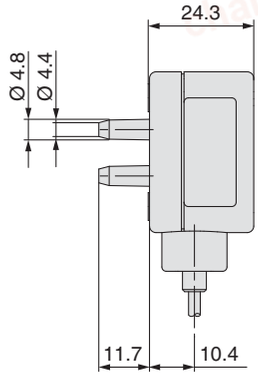


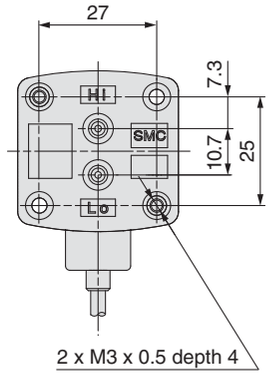
4 to 20 mA DC



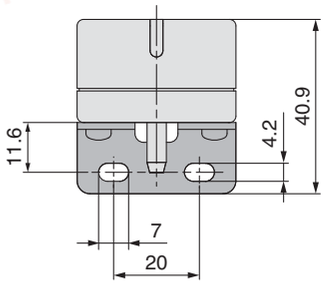
Dimensions



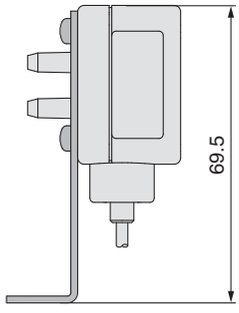


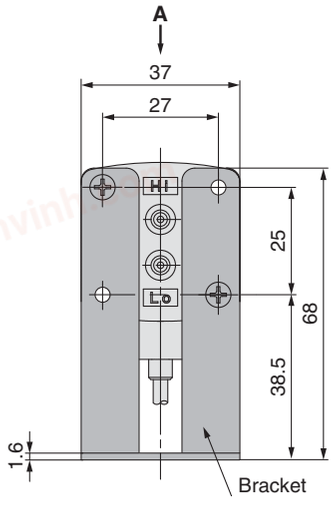


With bracket

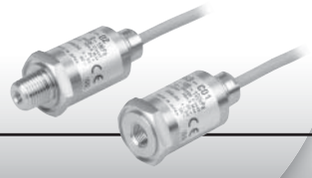


A View





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Pressure Sensor For General Fluids

Series PSE560

Series	Rated pressure range
	−100 kPa / 0 / 100 kPa / 500 kPa / 1 MPa
PSE560	0 … 1 MPa
PSE561	−101 kPa … 0
PSE563	−100 kPa … 100 kPa
PSE564	0 … 500 kPa

Applicable fluids example

- Argon
- Air-containing drainage
- Refrigerant
- Nitrogen
- Hydraulic oil
- Silicone oil
- Water
- Carbon dioxide
- Lubricant
- Fluorocarbon
- Air

Material of parts in contact with fluid: Stainless steel 316L

IP65

Copper-free Fluorine-free

Oil-free (Single diaphragm construction)

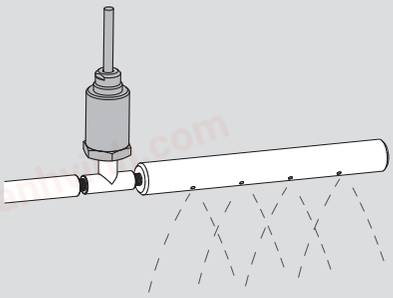
Variations

Port type	Thread type	Special fitting type for semiconductors
Port size	R 1/8, R 1/4, Rc 1/8, NPT 1/8, NPT 1/4	URJ 1/4, TSJ 1/4*
Leakage	1 x 10^{-5} Pa·m^3/s	1 x 10^{-10} Pa·m^3/s
Analogue output	1 to 5 V voltage output	
	4 to 20 mA current output	

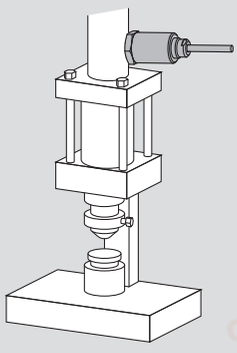
* For URJ1/4, TSJ1/4, refer to “Glossary of Terms/Technical Information” on SMC website or refer to www.smc.eu website

Application examples

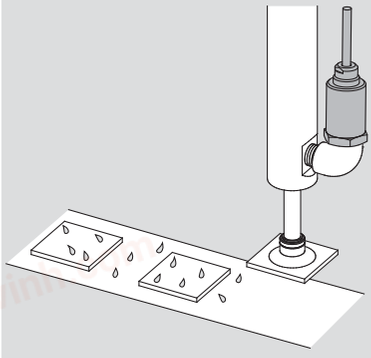
Cleaning lines



Check for working pressure for hydraulic cylinders



Suction verification of workpieces containing moisture



Note: When vacuum is released, take precautions to avoid water collision with inertia force. (An adapter with restrictor (ZS-31-X175) is available to prevent water collision with rush inertia.) (Refer to “NOTE” on the Operation Manual at SMC website for details.)

Applications

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Pressure Sensor For General Fluids

Series PSE560

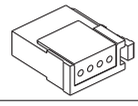


How to Order

Sensor range

0	Positive pressure [0 to 1 MPa]
1	Vacuum [0 to –101 kPa]
3	Compound pressure [–100 to 100 kPa]
4	Positive pressure [0 to 500 kPa]

Option (Connector)

—	None
C2	Connector for pressure sensor controller (1 pc.) 

Note 1) Current output type cannot be connected to the PSE200 series.
Note 2) The connector is not attached to the cable, but is included with the shipment.

PSE56 0 – 01 – □ – □

Port size

01	R 1/8 (with M5 female thread)
02	R 1/4 (with M5 female thread)
C01	Rc 1/8
N01	NPT 1/8 (with M5 female thread)
N02	NPT 1/4 (with M5 female thread)
A2	URJ 1/4
B2	TSJ 1/4

Output specifications

—	Voltage output type 1 to 5 V
28	Current output type 4 to 20 mA

Option/Part No.

Description	Part no.	Note
Connector for pressure sensor controller	ZS-28-C	1 pc.
Adapter with restrictor Rc 1/4	ZS-31-X175	1 pc.
Adapter with restrictor NPT 1/4	ZS-31-X186	1 pc.
Adapter with restrictor Rc 1/8	ZS-31-X188	1 pc.
Adapter with restrictor NPT 1/8	ZS-31-X189	1 pc.

For Pressure Switch Precautions and Specific Product Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website.

Specifications

Model	**PSE560** (Positive pressure)	**PSE561** (Vacuum)	**PSE563** (Compound pressure)	**PSE564** (Positive pressure)
Rated pressure range	0 to 1 MPa	0 to –101 kPa	–100 to 100 kPa	0 to 500 kPa
Extension analogue output range	–0.1 to 0 MPa	10.1 to 0 kPa	—	–50 to 0 kPa
Proof pressure	1.5 MPa	500 kPa	500 kPa	750 kPa

Model		**PSE56□-□**	**PSE56□-□-28**
Applicable fluid		Liquid or gas that will not corrode or attack stainless steel 316L	
Power supply voltage		12 to 24 VDC ±10 %, Ripple (p-p) 10 % or less (with reverse connection protection)	
Current consumption		10 mA or less	—
Output specifications		Analogue output: 1 to 5 V (within rated pressure range) 0.6 to 1 V (within extension analogue output range) Output impedance: Approx. 1 kΩ	Analogue output: 4 to 20 mA DC (within rated pressure range) Maximum load impedance: 500 Ω or less (at 24 VDC) 100 Ω or less (at 12 VDC)
Accuracy (Ambient temperature at 25 °C)		±1 % F.S. (within rated pressure range), ±3 % F.S. (within extension analogue output range)	
Linearity		±0.5 % F.S.	
Repeatability		±0.2 % F.S.	
Power supply voltage effect		±0.3 % F.S.	
Environment	**Enclosure**	IP65	
	Operating temperature range	Operating: –10 to 60 °C, Stored: –20 to 70 °C (No freezing or condensation)	
	Operating humidity range	Operating/Stored: 35 to 85 % RH (No condensation)	
	Withstand voltage	250 VAC for 1 minute between terminals and housing	
	Insulation resistance	50 MΩ or more (50 VDC measured via megohmmeter) between terminals and housing	
Temperature characteristics		±2 % F.S. (0 to 50 °C: 25 °C reference), ±3 % F.S. (–10 to 60 °C: 25 °C reference)	
Sensor cable		PSE56□-□: Oilproof heavy-duty vinyl cable with air tubing, 3 cores, Ø 5.1, 3 m, Conductor area: 0.2 mm², Insulator O.D.: 1.12 mm PSE56□-□-28: Oilproof heavy-duty vinyl cable with air tubing, 2 cores, Ø 5.1, 3 m, Conductor area: 0.2 mm², Insulator O.D.: 1.12 mm	
Standards		CE, UL/CSA (E216656), RoHS	

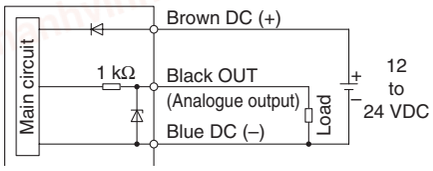
Piping Specifications

Model		**01**	**02**	**N01**	**N02**	**C01**	**A2**	**B2**
Port size		R 1/8 M5 x 0.8	R 1/4 M5 x 0.8	NPT 1/8 M5 x 0.8	NPT 1/4 M5 x 0.8	Rc 1/8	URJ 1/4	TSJ 1/4
Material		Case: C3604 + Nickel plating, Piping port/Pressure sensor: Stainless steel 316L						
Weight	**With sensor cable**	193 g	200 g	194 g	201 g	187 g	203 g	193 g
	Without sensor cable	101 g	108 g	102 g	109 g	95 g	111 g	101 g

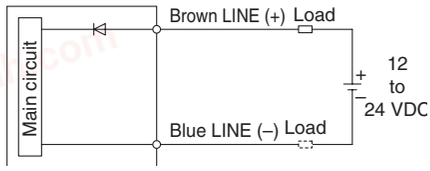
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Internal Circuit and Wiring Example

PSE56□-□
Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ



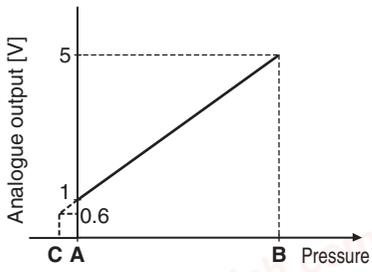
PSE56□-□-28
Current output type
4 to 20 mA
Allowable load impedance
500 Ω or less (at 24 VDC)
100 Ω or less (at 12 VDC)



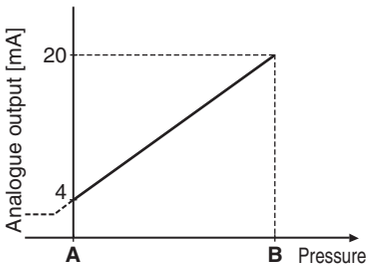
∗ Install the load either on the LINE (+) or LINE (–) side.

Analogue Output

1 to 5 VDC



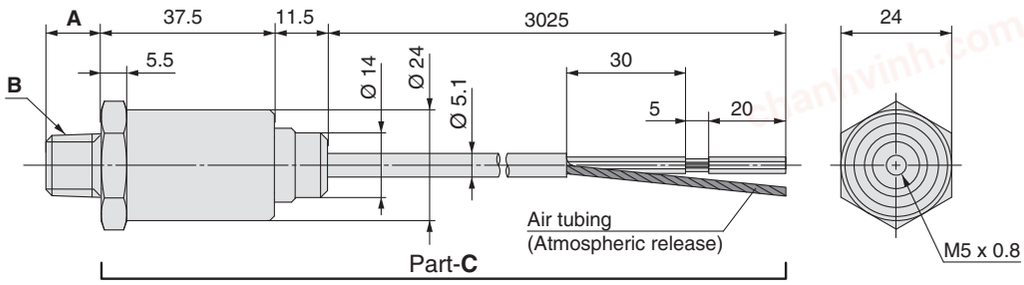
4 to 20 mA DC



Range	Rated pressure range	A	B	C
For vacuum	0 to −101 kPa	0	−101 kPa	10.1 kPa
For compound pressure	−100 kPa to 100 kPa	−100 kPa	100 kPa	—
For positive pressure	0 to 1 MPa	0	1 MPa	−0.1 MPa
	0 to 500 kPa	0	500 kPa	−50 kPa

Dimensions

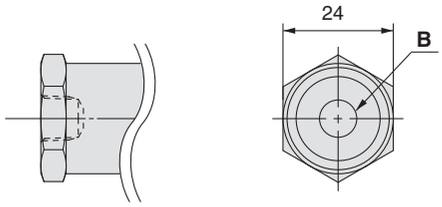
PSE56□-$^{01}_{02}$, PSE56□-$^{N01}_{N02}$



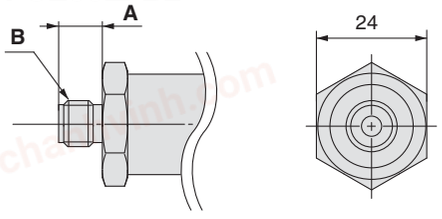
∗ The dimensions of part C are common to all PSE56□ models.

Be sure to release the air in the air tubing of the cable to the atmosphere. If the air tubing is restricted, or left in environments where it is exposed to water or oil, it cannot be detected normally.

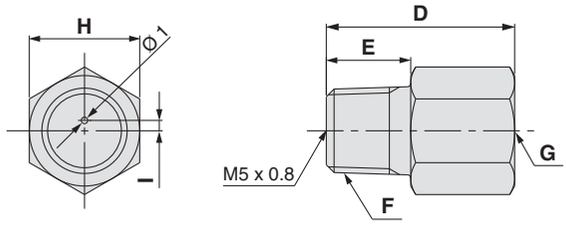
PSE56□-C01



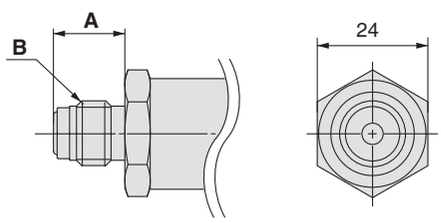
PSE56□-B2



Adapter with restrictor
ZS-31-X□□□



PSE56□-A2



[mm]

Model	A	B
PSE56□-01	8.2	R 1/8
PSE56□-02	12	R 1/4
PSE56□-N01	9.2	NPT 1/8
PSE56□-N02	12.2	NPT 1/4
PSE56□-C01	—	Rc 1/8
PSE56□-A2	15.5	URJ 1/4
PSE56□-B2	9.5	TSJ 1/4

[mm]

Part no.	D	E	F	G	H	I
ZS-31-X188	20	9	R 1/8	Rc 1/8	14	1.5
ZS-31-X189	20	9	NPT 1/8	NPT 1/8	14	1.5
ZS-31-X175	29	13	R 1/4	Rc 1/4	17	1.6
ZS-31-X186	29	13	NPT 1/4	NPT 1/4	17	1.6

Note) If it is predicted that the pressure, such as the water hammer or surge pressure fluctuates rapidly, refer to the Precautions stated in the Operation Manual at SMC website (http://www.smcworld.com).

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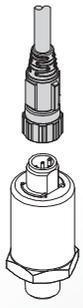


Pressure Sensor For General Fluids

Series PSE570

Series	Rated pressure range
	-100 kPa, 0, 100 kPa, 500 kPa, 1 MPa, 2 MPa, 5 MPa, 10 MPa
PSE570	0 – 1 MPa
PSE573	−100 kPa – 100 kPa
PSE574	0 – 500 kPa
PSE575	0 – 2 MPa
PSE576	0 – 5 MPa
PSE577	0 – 10 MPa

Adopted M12 connector.



■ Materials of parts in contact with fluid

Piping port*	C3604 + Nickel plating
Pressure sensor*	Al_2O_3 (Alumina 96 %)
O-ring	FKM + Grease

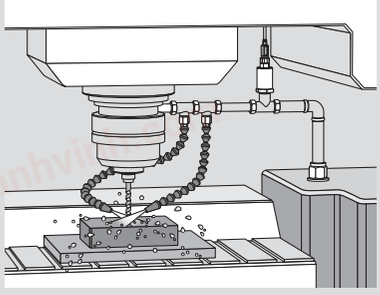
* Stainless steel 316L is used for the PSE560.
For details, refer to page 12.

Withstand voltage **500 VAC**
<Twice as compared with the PSE560>

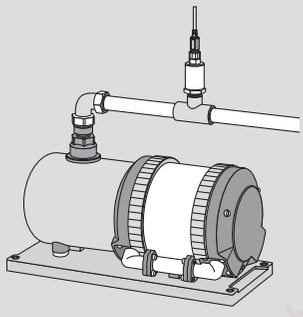
IP65

Application examples

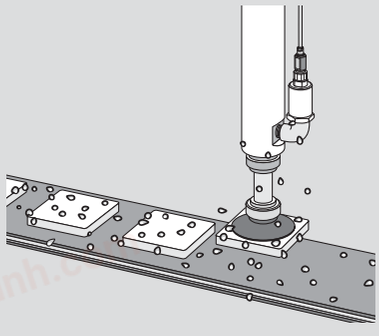
Liquid coolant pressure control



Discharge pressure control for compressor



Suction verification of workpieces containing moisture



Note: When vacuum is released, take precautions to avoid water collision with inertia force. (An adapter with restrictor (ZS-31-X175) is available to prevent water collision with rush inertia.) (Refer to “NOTE” on the Operation Manual at SMC website for details.)

Applications

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Pressure Sensor For General Fluids

Series PSE57□



How to Order

PSE57 □ – 01 – □ □

Sensor range

0	Positive pressure [0 to 1 MPa]
3	Compound pressure [-100 to 100 kPa]
4	Positive pressure [0 to 500 kPa]
5	Positive pressure [0 to 2 MPa]
6	Positive pressure [0 to 5 MPa]
7	Positive pressure [0 to 10 MPa]

Option (Lead wire)

—	Lead wire and M12 connector (3 m), Straight
L	Lead wire and M12 connector (3 m), Right angle
N	None

∗ See page 39 for connection to the PSE300AC.

Output specifications

—	Voltage output type 1 to 5 V
28	Current output type 4 to 20 mA

Port size

Symbol	Port size	Model					
		PSE570	PSE573	PSE574	PSE575	PSE576	PSE577
01	R 1/8 (with M5 female thread)	●	●	●	—	—	—
02	R 1/4 (with M5 female thread)	●	●	●	●	●	●

Option/Part No.

Description	Part no.	Note
Lead wire and M12 connector (3 m), Straight	ZS-37-A	1 pc.
Connector for pressure sensor controller	ZS-28-CA-4	1 pc.
Adapter with restrictor Rc 1/4	ZS-31-X175	1 pc.
Adapter with restrictor Rc 1/8	ZS-31-X188	1 pc.

For pressure switch precautions and specific product precautions, refer to the "Operation Manual" on the SMC website.

Specifications

Model		PSE570	PSE573	PSE574	PSE575	PSE576	PSE577
Fluid	Applicable fluid	Gas or liquid that will not corrode materials of parts in contact with fluid					
Pressure	Rated pressure range	0 to 1 MPa	-100 to 100 kPa	0 to 500 kPa	0 to 2 MPa	0 to 5 MPa	0 to 10 MPa
	Proof pressure	3.0 MPa	600 kPa	1.5 MPa	5.0 MPa	12.5 MPa	30 MPa
Electrical	Power supply voltage	12 to 24 VDC ±10 % with 10 % voltage ripple or less					
	Current consumption	10 mA or less					
	Protection	Reverse connection protection					
Accuracy	Analogue output accuracy (Ambient temperature at 25 °C)	±1.0 % F.S.			±2.5 % F.S.		
	Linearity	±0.5 % F.S.					
	Repeatability (Ambient temperature at 25 °C)	±0.2 % F.S.			±0.5 % F.S.		
	Temperature characteristics (25 °C reference)	±2 %F.S. (0 to 50 °C) ±3 %F.S. (-10 to 60 °C)	±3 % F.S. (0 to 50 °C) ±4 % F.S. (-10 to 60 °C)		±5 % F.S. (-10 to 60 °C)		
Environment	Enclosure	IP65					
	Withstand voltage	500 VAC for 1 minute between terminals and housing					
	Insulation resistance	100 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing					
	Operating temperature range	Operating: -10 to 60 °C, Stored: -20 to 70 °C (No freezing or condensation)					
	Operating humidity range	Operating/Stored: 35 to 85% RH (No condensation)					
Standards		CE, RoHS					
Materials of parts in contact with fluid		Piping port: C3604 + Nickel plating, Pressure sensor: Al_2O_3 (Alumina 96 %), O-ring: FKM + Grease			Piping port: C3604 + Nickel plating, Pressure sensor: Al_2O_3 (Alumina 96 %), Square ring: FKM		

Model		PSE57□-□	PSE57□-□-28
Analogue output	Output	Voltage output: 1 to 5 V	Current output: 4 to 20 mA
	Impedance	Output impedance: Approx. 1 kΩ	Maximum load impedance: 500 Ω or less (at 24 VDC) 100 Ω or less (at 12 VDC)

Piping Specifications

Part no.		PSE570/573/574-01	PSE570/573/574-02	PSE575/576/577-02
Port size		R 1/8 M5 x 0.8	R 1/4 M5 x 0.8	R 1/4 M5 x 0.8
Materials of parts in contact with fluid		Piping port: C3604 + Nickel plating Pressure sensor: Al_2O_3 (Alumina 96%) O-ring: FKM + Grease		Piping port: C3604 + Nickel plating Pressure sensor: Al_2O_3 (Alumina 96%) Square ring: FKM
Weight	Without lead wire and M12 connector	88 g	95 g	103 g
	With lead wire and M12 connector	175 g	182 g	191 g

Cable Specifications

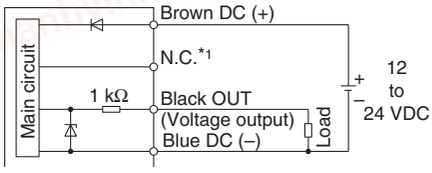
Conductor	Nominal cross section	AWG23
	Outside diameter	0.72 mm
Insulator	Material	Cross-linked vinyl chloride
	Outside diameter	1.14 mm
	Colour	Brown, Blue, Black, White
Sheath	Material	Oil resistant vinyl chloride
Finished O.D.		Ø 4
Length		3 m

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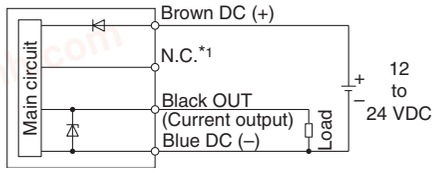
Series PSE570

Internal Circuit and Wiring Example

PSE57□-□
Voltage output type
1 to 5 V
Output impedance
Approx. 1 kΩ



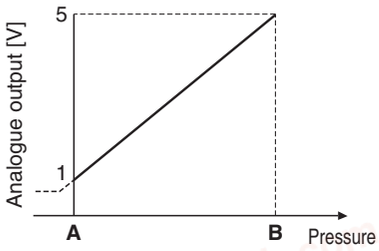
PSE57□-□-28
Current output type
4 to 20 mA
Allowable load impedance
500 Ω or less (at 24 VDC)
100 Ω or less (at 12 VDC)



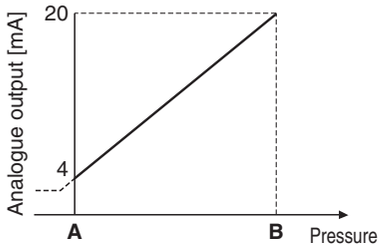
*1 The unconnected terminals are used in SMC, so please do not connect them.

Analogue Output

1 to 5 VDC

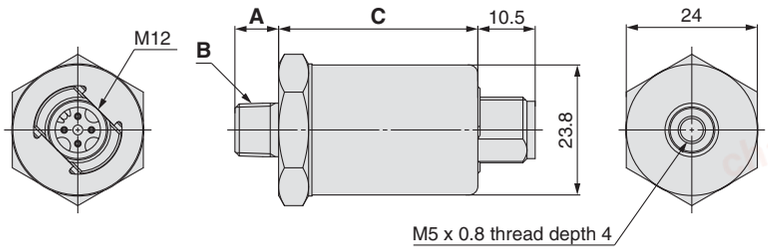


4 to 20 mA DC



Model	Rated pressure range	A	B
PSE570	0 to 1 MPa	0 MPa	1 MPa
PSE573	-100 to 100 kPa	-100 kPa	100 kPa
PSE574	0 to 500 kPa	0 kPa	500 kPa
PSE575	0 to 2 MPa	0 MPa	2 MPa
PSE576	0 to 5 MPa	0 MPa	5 MPa
PSE577	0 to 10 MPa	0 MPa	10 MPa

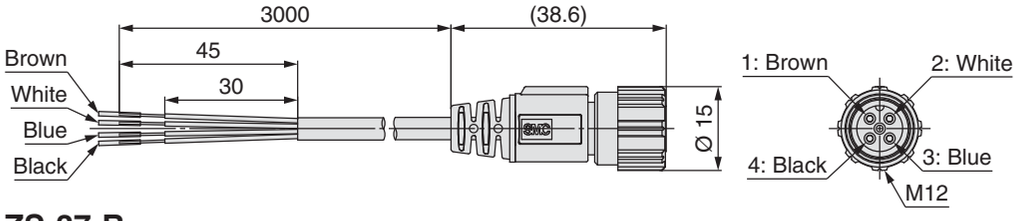
Dimensions



[mm]

Part no.	A	B	C
PSE570/573/574-01	8	R 1/8	36.5
PSE570/573/574-02	12	R 1/4	36.5
PSE575/576/577-02	12	R 1/4	39.7

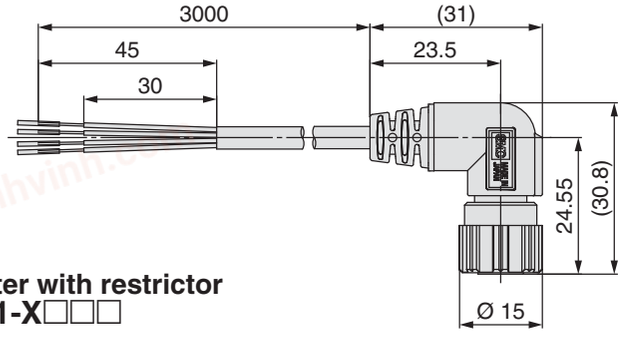
Lead wire and M12 connector
ZS-37-A



Pin no.	Lead wire colour	Description
1	Brown	DC (+)
2	White	N.C.*1
3	Blue	DC (–)
4	Black	OUT1

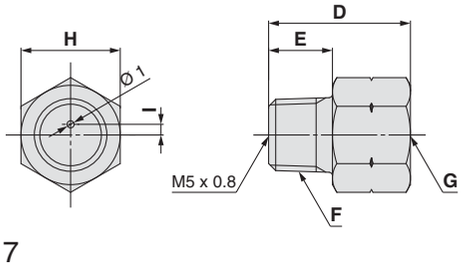
*1 The unconnected terminals are used in SMC, so please do not connect them.

ZS-37-B



Part no.	Description
ZS-37-A	Straight type 3 m
ZS-37-B	Right angle type 3 m

Adapter with restrictor
ZS-31-X□□□



[mm]

Part no.	D	E	F	G	H	I
ZS-31-X188	20	9	R 1/8	Rc 1/8	14	1.5
ZS-31-X175	29	13	R 1/4	Rc 1/4	17	1.6

* If it is expected that the pressure, such as the water hammer or surge pressure will fluctuate rapidly, refer to the Precautions in the Operation Manual on the SMC website (http://www.smc.eu).

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Multi-Channel Digital Pressure Sensor Monitor

Series PSE200

CE

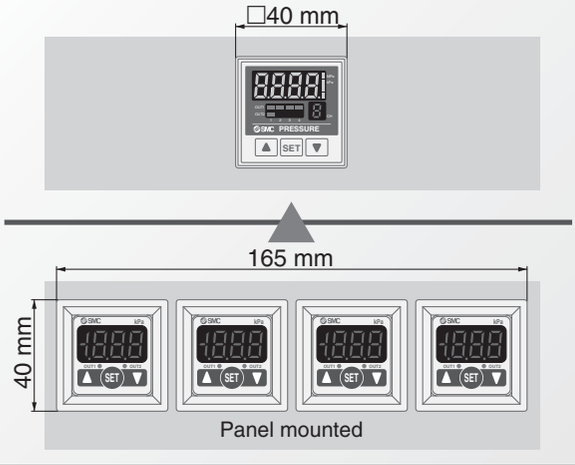
RoHS

Applicable sensors					Rated pressure range	Set/Display resolution
PSE53□	PSE54□	PSE55□	PSE56□	PSE57□	–100 kPa 0 100 kPa 1 MPa	
PSE531	**PSE541**	—	**PSE561**	—	-101 kPa 0	**0.1 kPa**
PSE533	**PSE543**	—	**PSE563**	**PSE573**	-101 kPa 101 kPa	**0.1 kPa**
PSE530	**PSE540**	—	**PSE560**	**PSE570**	0 1 MPa	**0.001 MPa**
PSE532		—		—	0 101 kPa	**0.1 kPa**

A single controller monitors up to 4 pressure sensors.

- Sensor input: 4 inputs
- Switch output: 5 outputs (2 outputs for 1ch, 1 output for 2 to 4ch)

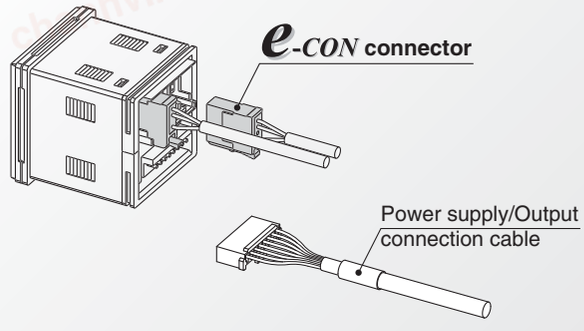
76 % reduction in installation space (Compared with the panel mounted ZSE40/ISE40)



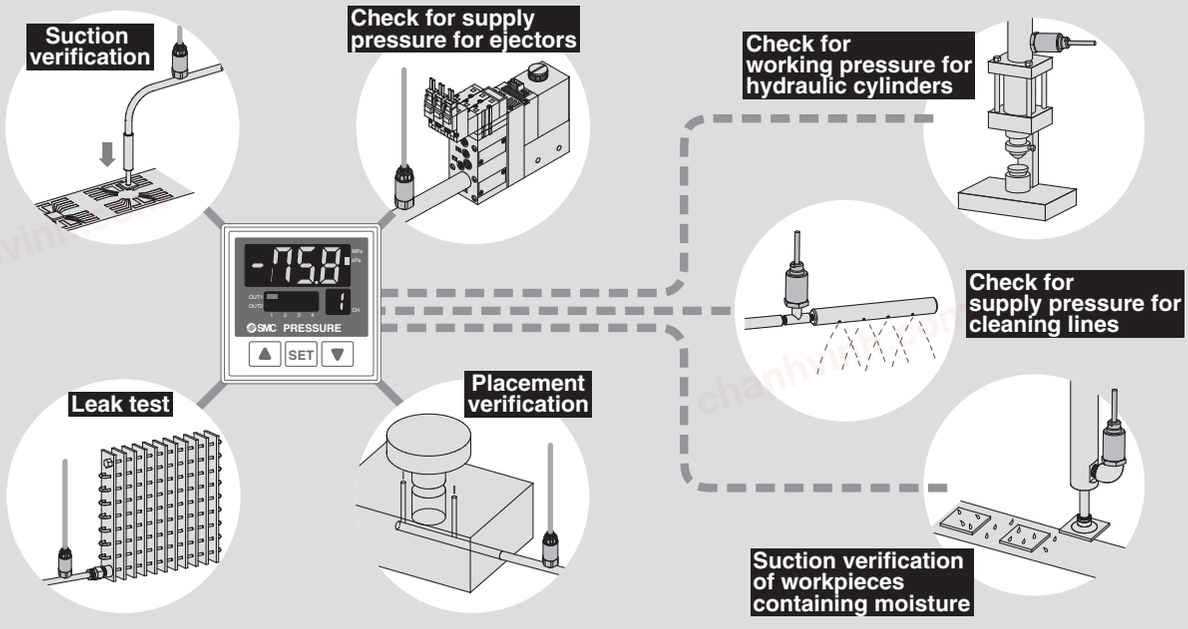
Functions

- Auto-shift function
- Auto-preset function
- Auto-identification function
- Copy function
- Channel scan function
- Zero-clear function
- Keylock function
- Peak/Bottom values holding/ display function
- Display unit switching function
- Display calibration function
- Anti-chattering function

Connector type



A single controller monitors various applications.



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Multi-Channel Monitor
Series PSE200



How to Order

PSE20 0 – M □ □

Input/Output specifications

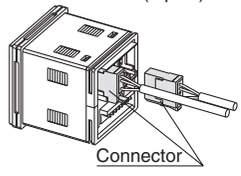
0	NPN 5 outputs + Auto-shift input
1	PNP 5 outputs + Auto-shift input

Unit specifications

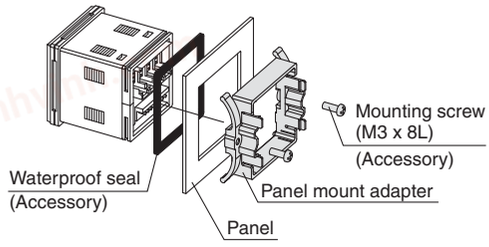
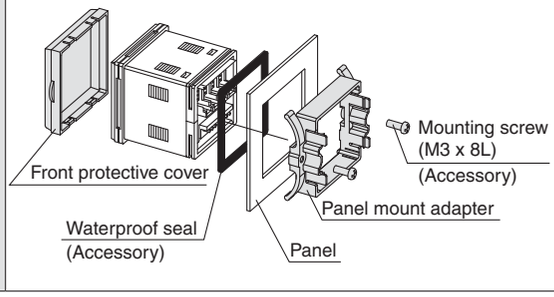
—	With display unit switching function
M	Fixed SI unit Note 1)

Note 1) Fixed unit
For vacuum, low pressure and compound pressure: kPa
For positive pressure: MPa

Option 2

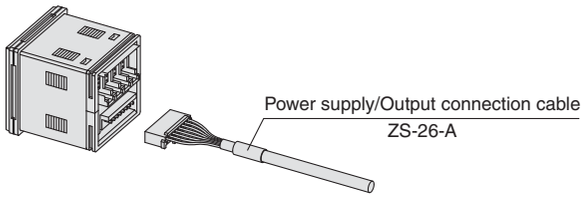
—	None
4C	Sensor connector (4 pcs.) 

Option 1

—	None
A	Panel mount adapter 
B	Front protective cover + Panel mount adapter 

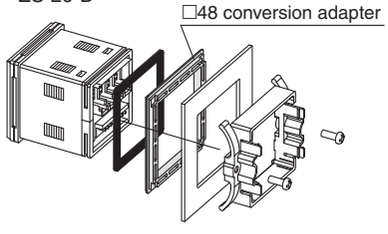
Accessory: Power supply/Output connection cable (2 m)

Included with the controller.



Option/Part No.

When only optional parts are required, order with the part numbers listed below.

Description	Part no.	Note
Panel mount adapter	ZS-26-B	Waterproof seal, mounting screws M3 x 8L (2 pcs.) included
Front protective cover + Panel mount adapter	ZS-26-C	Waterproof seal, mounting screws M3 x 8L (2 pcs.) included
□48 conversion adapter ∗ This adapter is used to mount the PSE200 series on the panel fitting of the PSE100 series.	ZS-26-D  Order panel mount adapter separately.	
Front protective cover	ZS-26-01	
Sensor connector	ZS-28-C (1 pc. per set)	

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Specifications

For Pressure Switch Precautions and Specific Product Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website.

Model		PSE200	PSE201
Power supply voltage		12 to 24 VDC ±10 %, Ripple (p-p) 10 % or less (with reverse connection protection)	
Current consumption		55 mA or less (Current consumption for sensor is not included.)	
Power supply voltage for sensor		[Power supply voltage] –1.5 V	
Power supply current for sensor Note 1)		Maximum 40 mA (100 mA maximum for the total power supply current when 4 sensors are input.)	
Sensor input		1 to 5 VDC (Input impedance: Approx. 800 kΩ)	
	Number of inputs	4 inputs	
	Input protection	With excess voltage protection (Up to 26.4 V)	
Switch output		NPN open collector output: 5 outputs (Sensor input CH1: 2 outputs, CH2 to 4: 1 output)	PNP open collector output: 5 outputs (Sensor input CH1: 2 outputs, CH2 to 4: 1 output)
	Maximum load current	80 mA	
	Maximum load voltage	30 V	—
	Residual voltage	1 V or less (with load current of 80 mA)	
	Response time	5 ms or less (Response time selections with anti-chattering function: 20 ms, 160 ms, 640 ms)	
	Short circuit protection	With short circuit protection	
Repeatability		±0.1 % F.S. ±1 digit	
Hysteresis	**Hysteresis mode**	Adjustable (can be set from 0)	
	Window comparator mode	Fixed (3 digits)	
Display		For measured value display: 4-digit, 7-segment indicator, Display colour: Orange (Sampling frequency: 4 times/sec) For channel display: 1-digit, 7-segment indicator, Display colour: Red	
Display accuracy (Operating temperature at 25 °C)		±0.5 % F.S. ±1 digit	
Indicator light		Red (Lights up when output is turned ON.)	
Auto-shift input		Non-voltage input (Reed or Solid state), Input 10 ms or more, Independently controllable auto-shift function ON/OFF	
Auto-identification function		With auto-identification function Note 2)	
Environment	**Enclosure**	Front face: IP65 (when panel-mounted), Others: IP40 Note 3)	
	Ambient temperature range	Operating: 0 to 50 °C, Stored: –10 to 60 °C (No freezing or condensation)	
	Ambient humidity range	Operating/Stored: 35 to 85 % RH (No condensation)	
Temperature characteristics		±0.5 % F.S. (25 °C reference)	
Connection		Power supply/Output connection: 8P connector, Sensor connection: e-con connector	
Material		Housing: PBT; Display: Transparent nylon; Back rubber cover: CR	
Weight		Approx. 60 g (Excluding power supply/output cable)	
Power supply/Output connection cable		Heat resistant heavy-duty cable, 8 cores, Ø 4.8, 2 m, Conductor area: 0.15 mm², Insulator O.D.: 0.9 mm	
Standards		CE, RoHS	

Note 1) If the Vcc and 0 V side of the sensor input connector are short circuited, the inside of the controller will be damaged.
Note 2) Auto-identification function comes with "the PSE53□ series" pressure sensor only. Other SMC series (PSE540, 560, 570) are not equipped with this function.
Note 3) IP40 when using the □48 conversion adapter.

Applicable Pressure Sensor

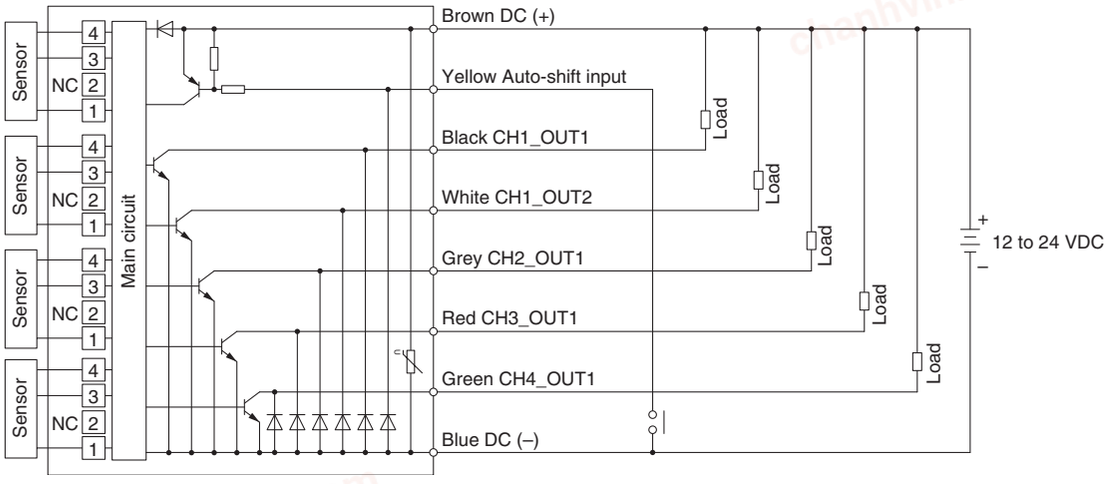
Applicable sensor					Rated pressure range				Set/Display resolution
PSE53□	**PSE54□**	**PSE55□**	**PSE56□**	**PSE57□**	–100 kPa	0	100 kPa	1 MPa	
PSE531	**PSE541**	–	**PSE561**	–	**–101 kPa**	**0**			**0.1 kPa**
PSE533	**PSE543**	–	**PSE563**	**PSE573**	**–101 kPa**		**101 kPa**		**0.1 kPa**
PSE530	**PSE540**	–	**PSE560**	**PSE570**		**0**		**1 MPa**	**0.001 MPa**
PSE532		–		–		**0**	**101 kPa**		**0.1 kPa**

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Internal Circuit and Wiring Example

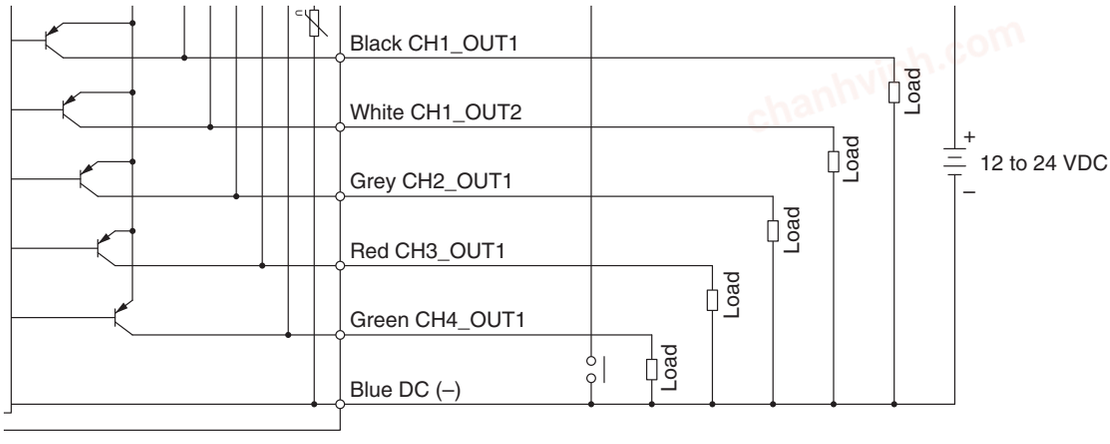
PSE200-(M)☐

· NPN open collector 5 outputs + Auto-shift 1 input



PSE201-(M)☐

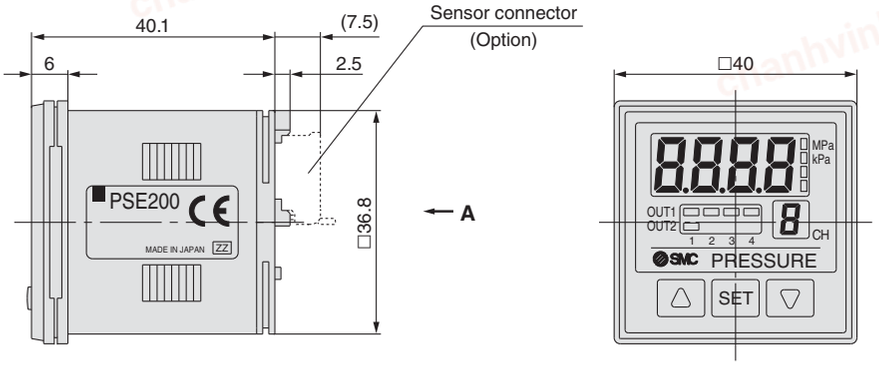
· PNP open collector 5 outputs + Auto-shift 1 input



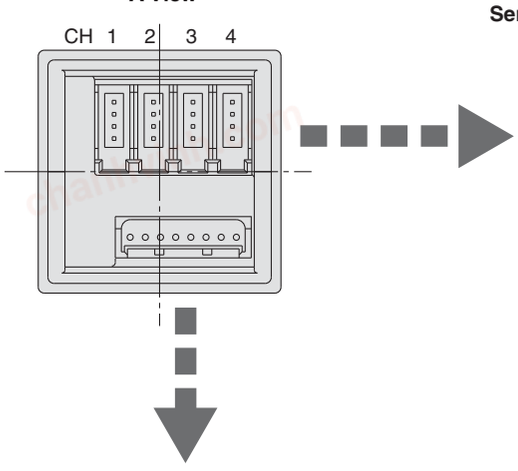
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Dimensions

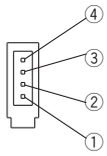
PSE200/201



A View

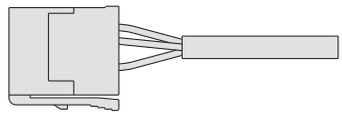


Sensor connector (4P x 4)

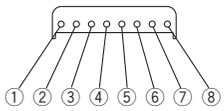


PIN no.	Terminal
①	DC (+)
②	N.C.
③	DC (–)
④	IN (1 to 5 V)

Connector (Option)

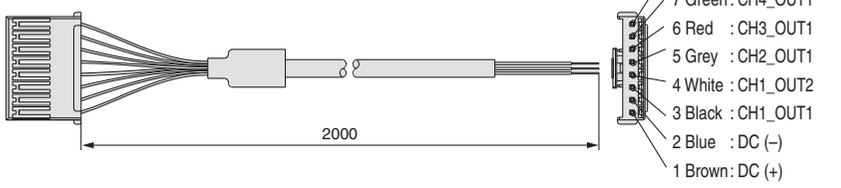


Power supply/Output connector (8P)



PIN no.	Terminal
①	DC (+)
②	DC (–)
③	CH1_OUT1
④	CH1_OUT2
⑤	CH2_OUT1
⑥	CH3_OUT1
⑦	CH4_OUT1
⑧	Auto-shift input

Power supply/Output connection cable (Accessory)

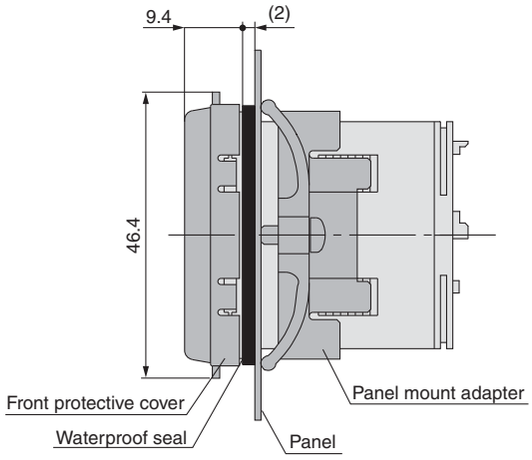


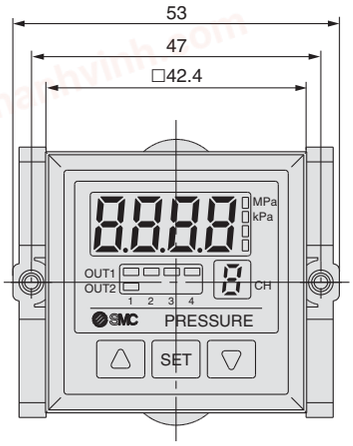
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Series PSE200

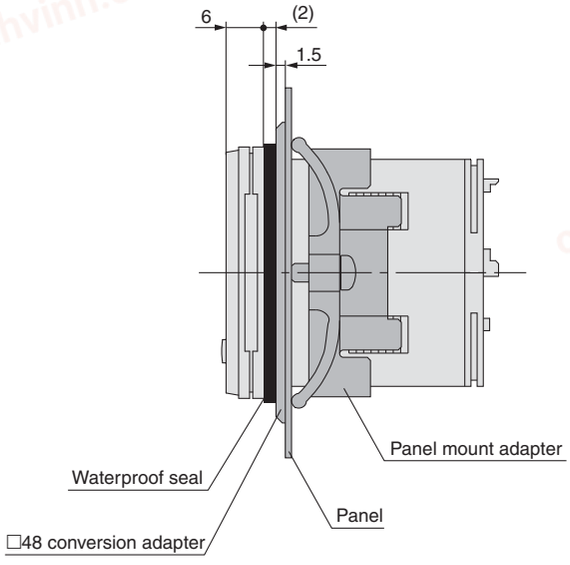
Dimensions

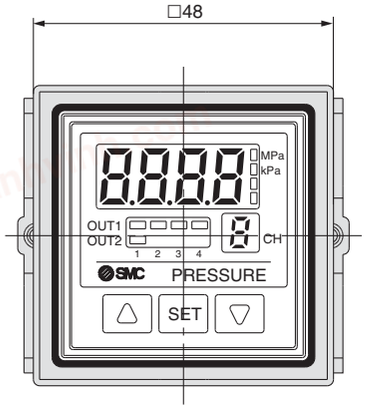
Front protective cover + Panel mount adapter

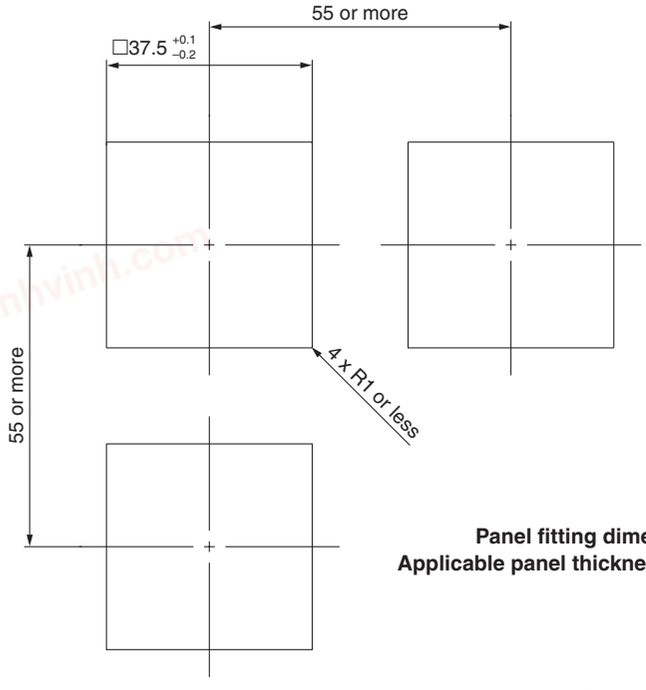




□48 conversion adapter + Panel mount adapter







Panel fitting dimensions
Applicable panel thickness: 0.5 to 8 mm

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2-Colour Display Digital Pressure Sensor Monitor

Series PSE300

Applicable sensors					Rated pressure range	Set/Display resolution
PSE53□	PSE54□	PSE55□	PSE56□	PSE57□	–100 kPa 0 100 kPa 500 kPa 1 MPa	
PSE531	PSE541	—	PSE561	—	–101 kPa to 0	0.1 kPa
PSE533	PSE543	—	PSE563	PSE573	–100 kPa to 100 kPa	0.2 kPa
PSE530	PSE540	—	PSE560	PSE570	0 to 1 MPa	0.001 MPa
PSE532	—	—	—	—	0 to 100 kPa	0.1 kPa
—	—	—	PSE564	PSE574	0 to 500 kPa	1 kPa
—	—	PSE550	—	—	0 to 2 kPa	0.01 kPa

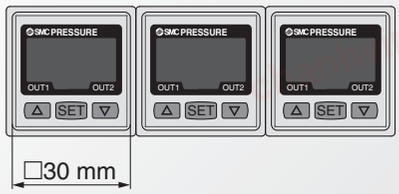
2-colour display (Red/Green)

Possible to set 4 patterns of display colour.

Pattern	ON	OFF
①	Red	Green
②	Green	Red
③	Red	Red
④	Green	Green

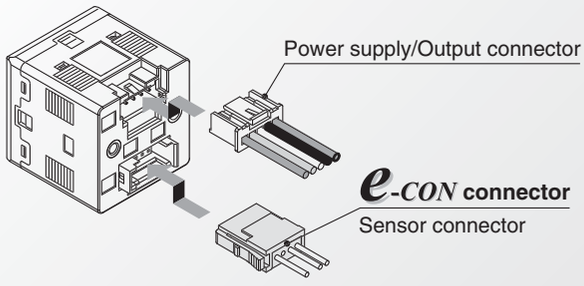
Can be mounted in close proximity with each other either horizontally or vertically.

Possible to reduce panel fitting labour.



Response time
1 ms

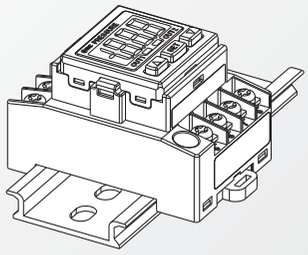
Connector type



Functions

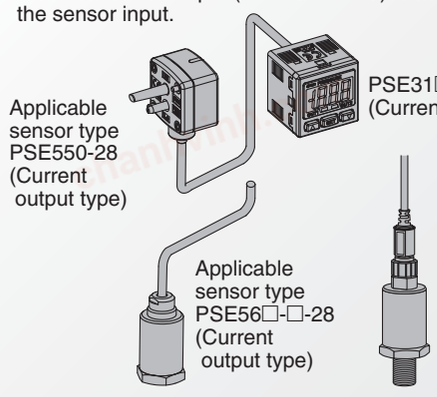
- Auto-shift function
- Auto-preset function
- Display calibration function
- Peak/Bottom values holding/display function
- Keylock function
- Zero-clear function
- Error indication function
- Display unit switching function
- Anti-chattering function

DIN rail/Terminal block type



Current input type

Electrical current input (4 to 20 mA DC) is added to the sensor input.



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Pressure Sensor Monitor
Series PSE300

How to Order



DIN rail/Terminal block type PSE3 0 0 T – M □

Connector type PSE3 0 0 – M □ □ □



Input specifications

0	Voltage input
1	Current input

Input/Output specifications

0	NPN 2 outputs + 1-5 V output
1	NPN 2 outputs + 4-20 mA output
2	NPN 2 outputs + Auto-shift input
3	PNP 2 outputs + 1-5 V output
4	PNP 2 outputs + 4-20 mA output
5	PNP 2 outputs + Auto-shift input

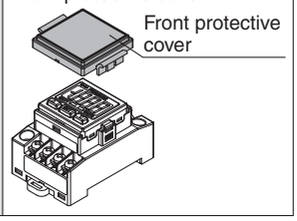
Unit specifications

—	With display unit switching function
M	Fixed SI unit Note 1)

Note 1) Fixed unit
For vacuum, low pressure, low differential pressure and compound pressure: kPa
For positive pressure: MPa (For 1 MPa)
kPa (For 500 kPa)

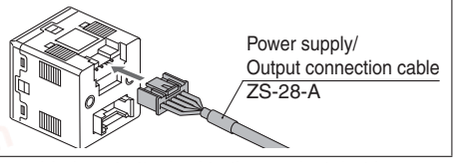
Option

—	None
E	Front protective cover



Option 1

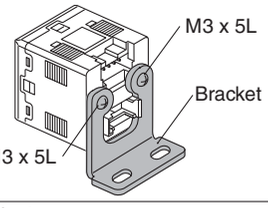
—	None
L	Power supply/Output connection cable

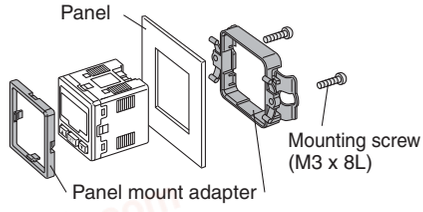


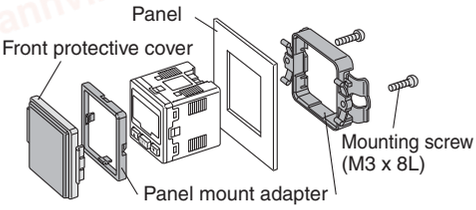
Note) The cable is not attached to the product, but is included with the shipment.

Option 2

—	None
A	Bracket
B	Panel mount adapter
D	Panel mount adapter + Front protective cover



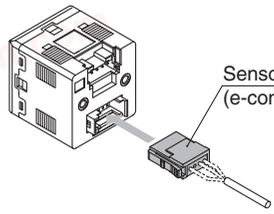




Note) These options are not attached to products, but are included with the shipment.

Option 3

—	None
C	Sensor connector



Note) The connector is not attached to the cable, but is included with the shipment.

Order DIN rail separately. Refer to page 30.

Option/Part No.

Description	Part no.	Note
Power supply/Output connection cable (2 m)	ZS-28-A	
Bracket	ZS-28-B	With M3 x 5L (2 pcs.)
Sensor connector	ZS-28-C	1 pc.
Panel mount adapter	ZS-27-C	With M3 x 8L (2 pcs.)
Panel mount adapter + Front protective cover	ZS-27-D	With M3 x 8L (2 pcs.)
Front protective cover	ZS-27-01	1 pc.

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Specifications

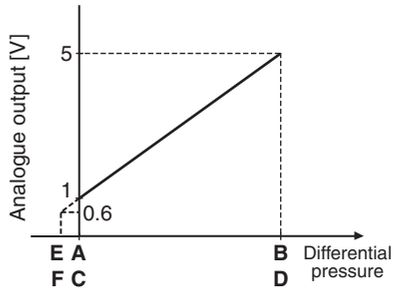
For Pressure Switch Precautions and Specific Product Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website.

Model			PSE3□□				
Applicable pressure sensor			PSE533 PSE543 PSE563 PSE573	PSE531 PSE541 PSE561	PSE532	PSE530 PSE540 PSE560 PSE570	PSE564 PSE574	PSE550
Display/Set pressure (differential pressure) range			–101 to 101 kPa	10 to –101 kPa	–10 to 100 kPa	–0.1 to 1 MPa	–50 to 500 kPa	–0.2 to 2 kPa
Display/Set resolution			0.2 kPa	0.1 kPa	0.1 kPa	0.001 MPa	1 kPa	0.01 kPa
Pressure range Note 1)			For compound pressure	For vacuum	For low pressure	For positive pressure		For low differential pressure
Rated pressure (differential pressure) range			–100 to 100 kPa	0 to –101 kPa	0 to 100 kPa	0 to 1 MPa	0 to 500 kPa	0 to 2 kPa
Extension analogue output range Note 2)			—	10.1 to 0 kPa	–10 to 0 kPa	–0.1 to 0 MPa	–50 to 0 kPa	–0.2 to 0 kPa
Power supply voltage			12 to 24 VDC ±10 %, Ripple (p-p) 10 % or less (with reverse connection protection)					
Current consumption			50 mA or less (Current consumption for sensor is not included.)					
Sensor input			PSE30□: Voltage input 1 to 5 VDC (Input impedance: 1 MΩ) PSE31□: Current input 4 to 20 mA DC (Input impedance: 100 Ω)					
	Number of inputs		1 input					
	Input protection		With excess voltage protection (Up to 26.4 V)					
Hysteresis			Hysteresis mode: Variable, Window comparator mode: Variable					
Switch output			NPN or PNP open collector output: 2 outputs					
	Maximum load current		80 mA					
	Maximum load voltage		30 VDC (at NPN output)					
	Residual voltage		1 V or less (with load current of 80 mA)					
	Output protection		With short circuit protection					
Response time			1 ms or less					
	Anti-chattering function		Response time settings for anti-chattering function: 20 ms, 160 ms, 640 ms, 1280 ms					
Repeatability			±0.1 % F.S.					
Analogue output	**Voltage output** Note 2)		Output voltage: 1 to 5 V (within rated pressure (differential pressure) range), 0.6 to 1 V (within extension analogue output range) Output impedance: Approx. 1 kΩ, Linearity: ±0.2 % F.S. (Not including sensor accuracy), Response speed: 150 ms or less					
	Accuracy (To display value) (25 °C)		±0.6 % F.S.				±1.0 % F.S.	±1.5 % F.S.
	Current output Note 2)		Output current: 4 to 20 mA (within rated pressure (differential pressure) range), 2.4 to 4 mA (within extension analogue output range) Maximum load impedance: 300 Ω (at 12 VDC), 600 Ω (at 24 VDC), Minimum load impedance: 50 Ω Linearity: ±0.2 % F.S. (Not including sensor accuracy), Response time: 150 ms or less					
	Accuracy (To display value) (25 °C)		±1.0 % F.S.				±1.5 % F.S.	±2.0 % F.S.
Display accuracy (Ambient temperature at 25 °C)			±0.5 % F.S. ±2 digits	±0.5 % F.S. ±1 digit				
Display			3 + 1/2 digit, 7 segment indicator, 2-colour display (Red/Green), Sampling frequency: 5 times/sec					
Indicator light			OUT1: Lights up when turned ON (Green), OUT2: Lights up when turned ON (Red)					
Auto-shift input Note 2)			Non-voltage input (Reed or Solid state), Low level input: 5 ms or more, Low level: 0.4 V or less					
Environment	**Enclosure**		IP40					
	Operating temperature range		Operating: 0 to 50 °C, Stored: –10 to 60 °C (No freezing or condensation)					
	Operating humidity range		Operating/Stored: 35 to 85 % RH (No condensation)					
	Withstand voltage		1000 VAC for 1 minute between terminals and housing					
	Insulation resistance		50 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing					
Temperature characteristics			±0.5 % F.S. (25 °C reference)					
Connection			PSE3□□: Power supply/Output connection: 5P connector, Sensor connection: 4P connector PSE3□□T: Terminal block					
Material			Front case: PBT, Rear case: PBT (PSE3□□), Modified PPE (PSE3□□T)					
Weight	With power supply/Output connection cable		PSE3□□: 85 g					
	Without power supply/Output connection cable		PSE3□□: 30 g, PSE3□□T: 50 g					
Power supply/Output connection cable			Oilproof heavy-duty vinyl cable, 5 cores, Ø 4.1, 2 m, Conductor area: 0.2 mm² Insulator O.D.: 1.12 mm					
Standards			CE, UL/CSA (E216656), RoHS					

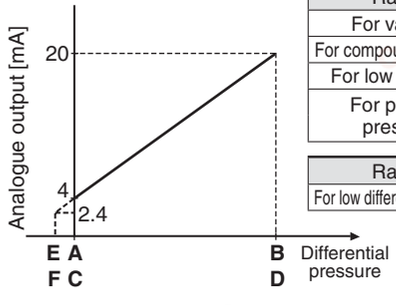
Note 1) Pressure range can be selected during initial setting.
Note 2) Auto-shift function is not available when analogue output option is selected.
Also, analogue output option is not available when auto-shift function is selected.
Extension analogue output is not available for the PSE570 series.
Note 3) The following units can be selected with display unit switching function:
For vacuum & compound pressure: kPa·kgf/cm²·bar·psi·mmHg·inHg
For positive pressure & low pressure: MPa·kPa·kgf/cm²·bar·psi
For low differential pressure: kPa·mmH₂O

Analogue Output

1 to 5 VDC



4 to 20 mA DC



Range	Rated pressure range	A	B	E
For vacuum	0 to –101 kPa	0	–101 kPa	10.1 kPa
For compound pressure	–100 kPa to 100 kPa	–100 kPa	100 kPa	—
For low pressure	0 to 100 kPa	0	100 kPa	–10 kPa
For positive pressure	0 to 1 MPa	0	1 MPa	–0.1 MPa
	0 to 500 kPa	0	500 kPa	–50 kPa

Range	Rated pressure range	C	D	F
For low differential pressure	0 to 2 kPa	0	2 kPa	–0.2 kPa

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Series PSE300

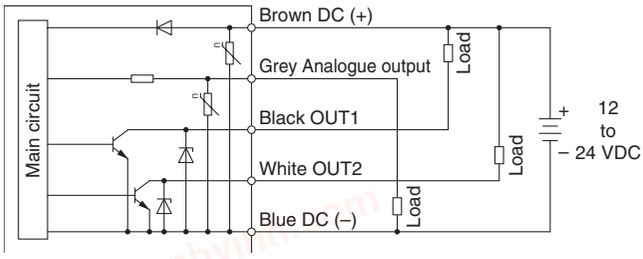
Internal Circuit and Wiring Example

PSE3□□ (T) – □□□□

- **Input/Output specification**
- **Input specification**

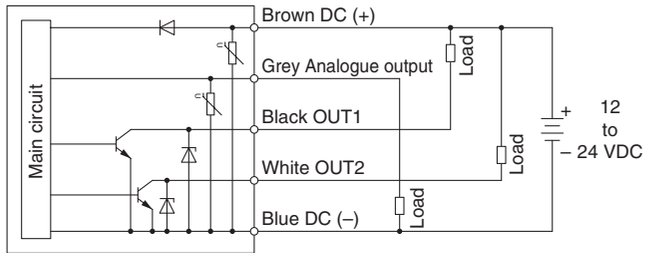
PSE3□0(T)

NPN (2 outputs) + Analogue voltage output



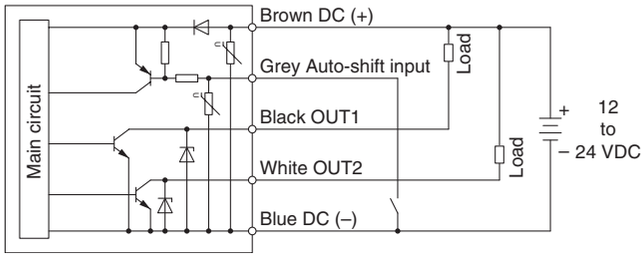
PSE3□1(T)

NPN (2 outputs) + Analogue current output



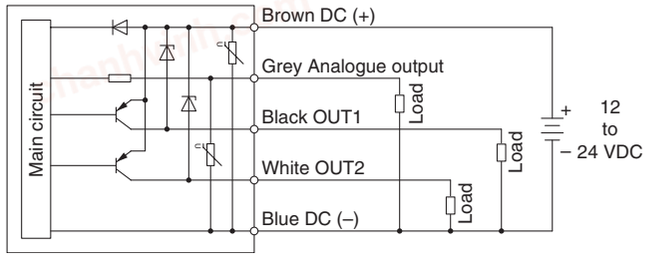
PSE3□2(T)

NPN (2 outputs) + Auto-shift 1 input



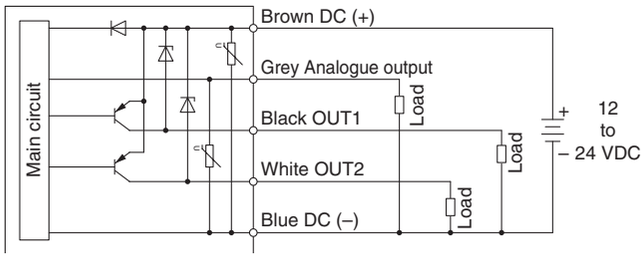
PSE3□3(T)

PNP (2 outputs) + Analogue voltage output



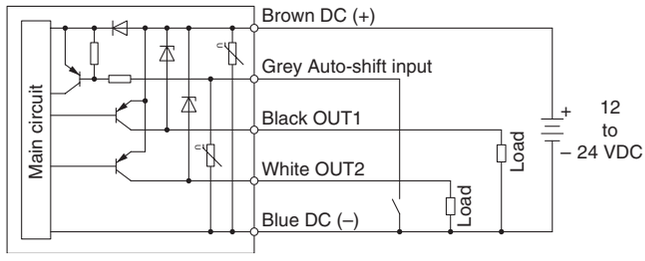
PSE3□4(T)

PNP (2 outputs) + Analogue current output



PSE3□5(T)

PNP (2 outputs) + Auto-shift 1 input



Connector for Sensor Connection

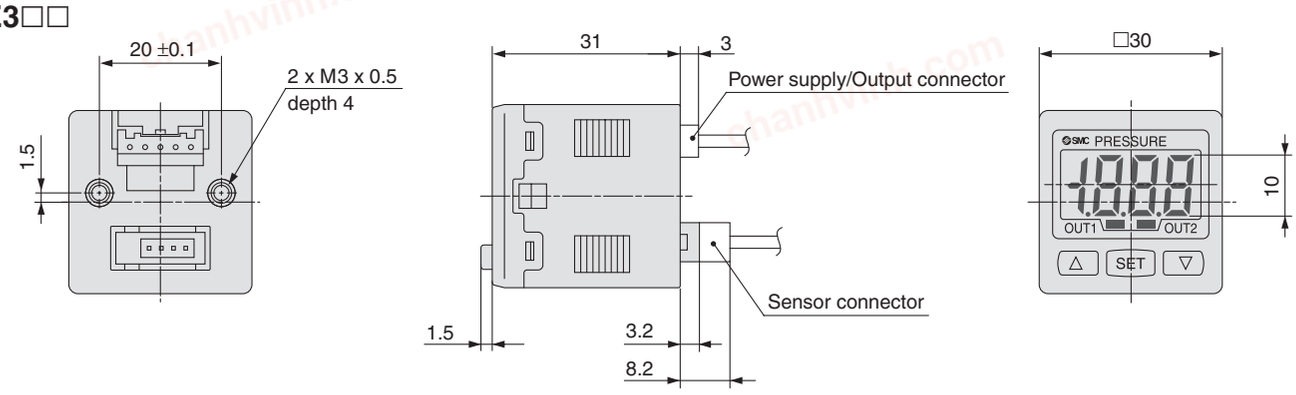
PIN no.	Terminal		
	PSE30□ (Voltage input)	**PSE31□** (Current input)	
		Pressure sensor 2-wire type	Pressure sensor 3-wire type
1	DC (+) (Brown)	DC (+) (Brown)	DC (+) (Brown)
2	N.C.	N.C.	N.C.
3	DC (–) (Blue)	N.C.	DC (–) (Blue)
4	IN (1 to 5 V) (Black)	IN (4 to 20 mA) (Blue)	IN (4 to 20 mA) (Black)

Note: The colours in ( ) indicate the wire colour of the PSE5□□ series.

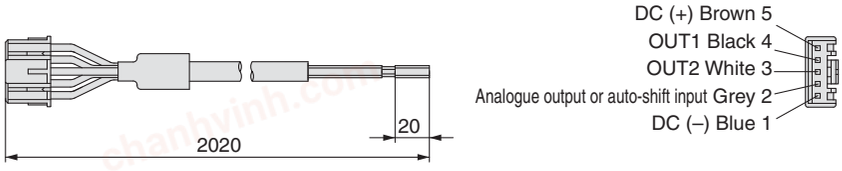
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Dimensions

PSE3□□

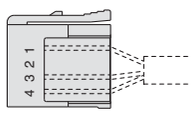


Power supply/Output connection cable (ZS-28-A)



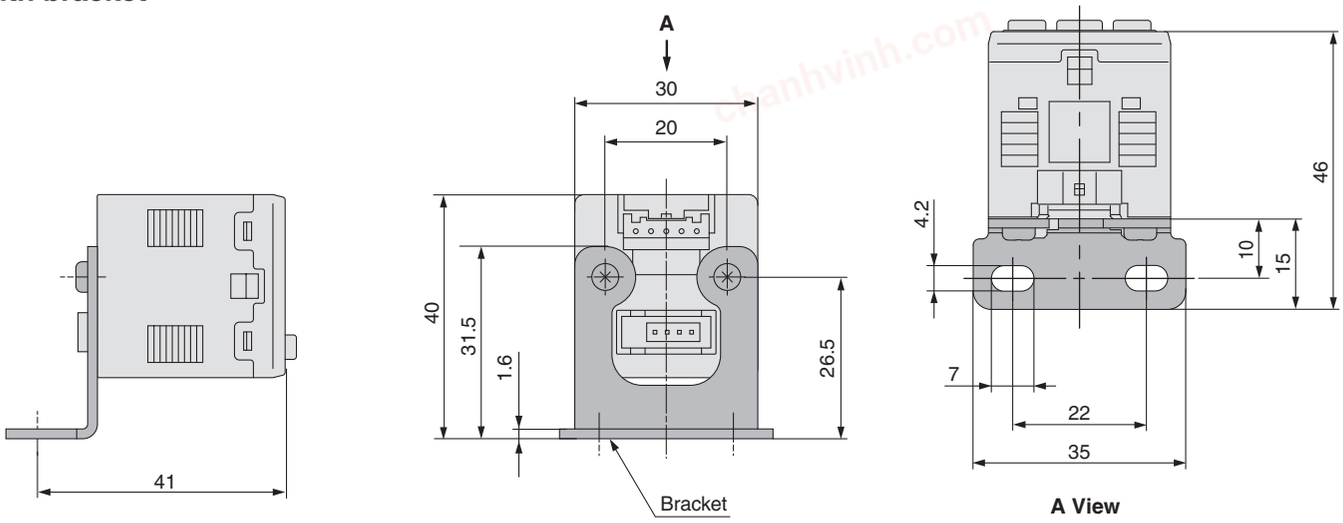
Sensor connector

PIN no.	Terminal	
	PSE30□	PSE31□
1	DC(+)(Brown)	DC(+)(Brown)
2	N.C.	N.C.
3	DC(–)(Blue)	N.C.
4	IN (1 to 5 V) (Black)	IN (4 to 20 mA) (Blue)

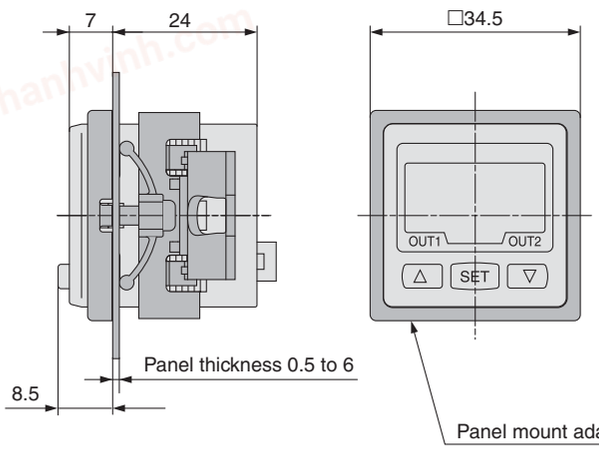


Note: The colours in ( ) indicate the wire colour of the PSE5□□ series.

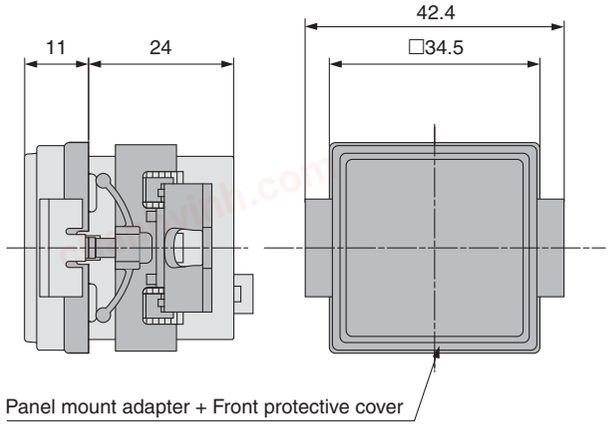
With bracket



With panel mount adapter



With panel mount adapter + Front protective cover



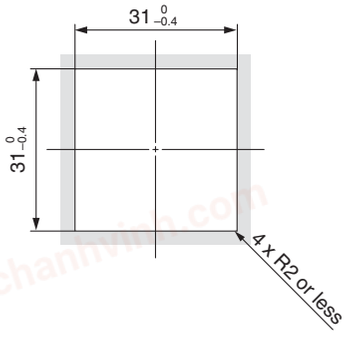
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Series PSE300

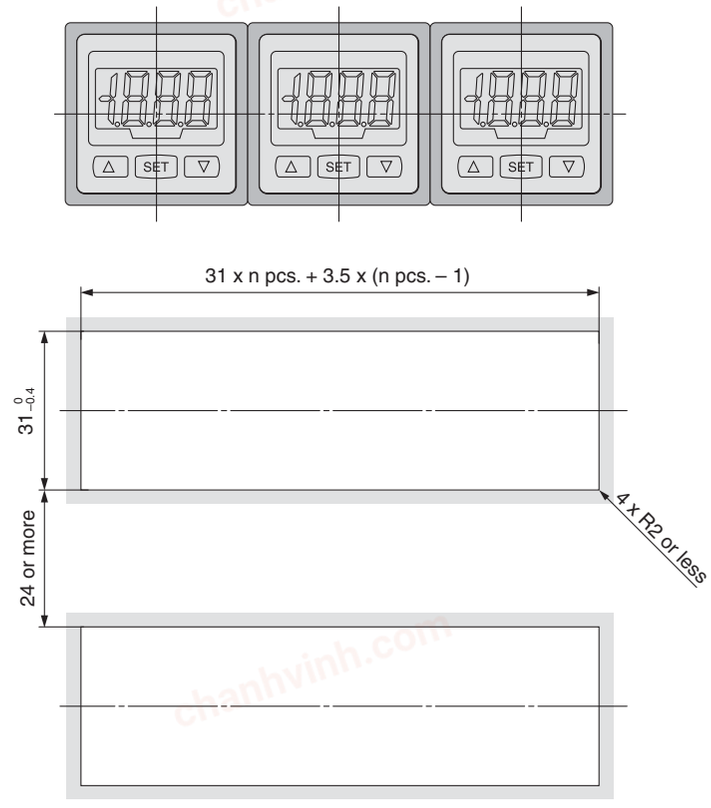
Dimensions

Panel fitting dimensions

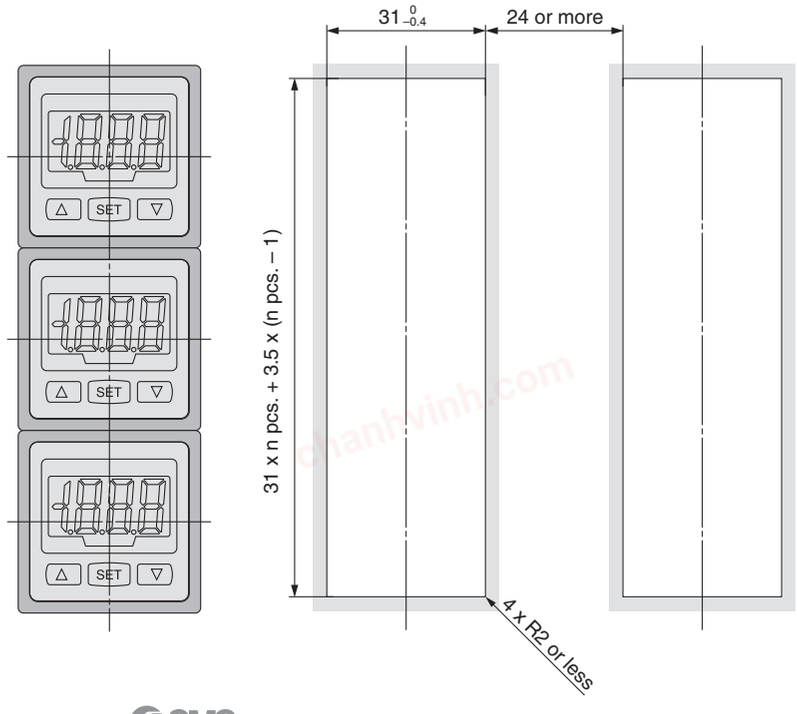
Mount of single unit



Horizontal stacking mount of multiple units (n pcs.)



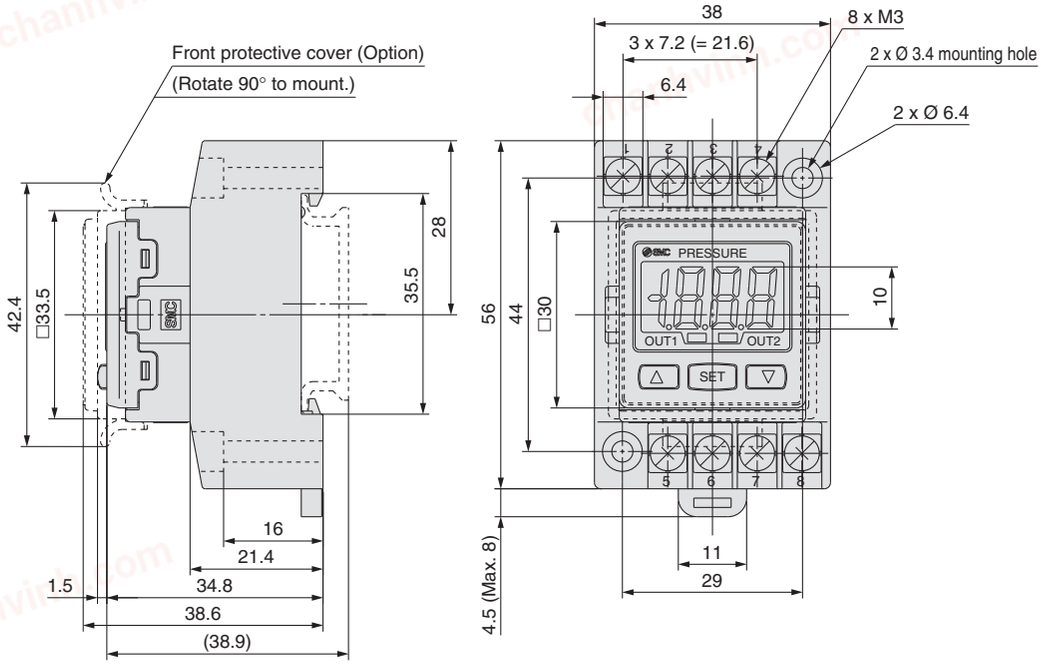
Vertical stacking mount of multiple units (n pcs.)



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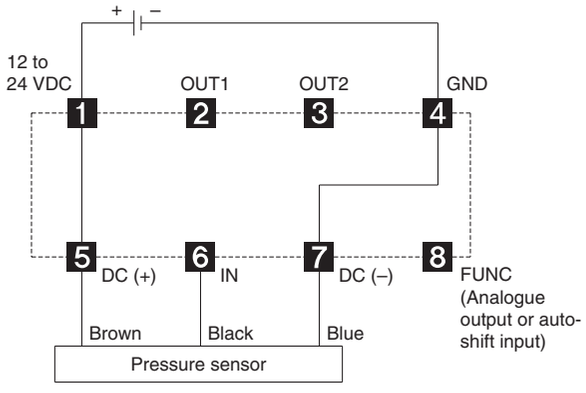
Dimensions

PSE3□□T

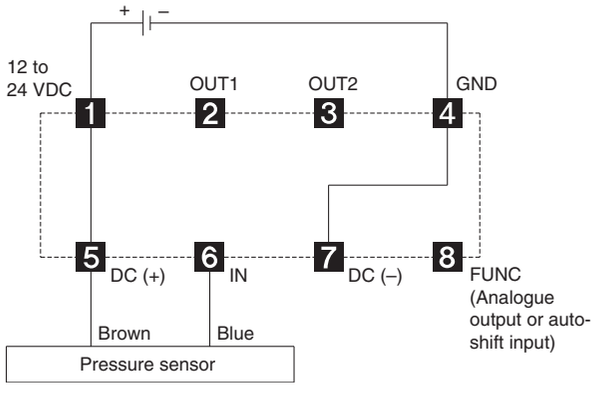


Connections

PSE3□□T
(Voltage input, Current input: Pressure sensor 3-wire type)

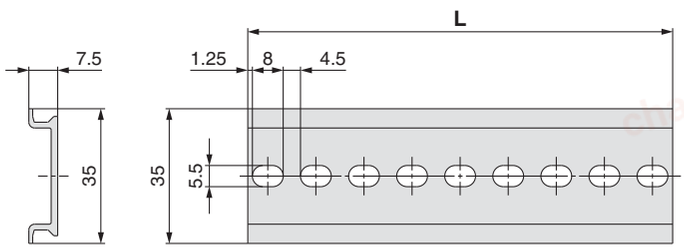


PSE31□T
(Current input: Pressure sensor 2-wire type)



DIN Rail

ISA-5-□



Part no.	L
ISA-5-1	73.0
ISA-5-2	135.5
ISA-5-3	173.0
ISA-5-4	210.5
ISA-5-5	248.0
ISA-5-6	285.5
ISA-5-7	323.0

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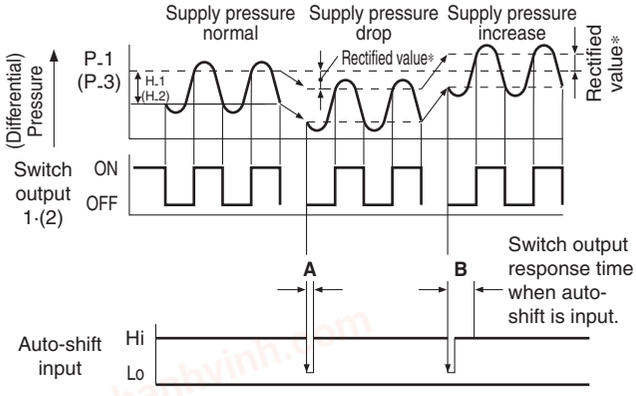
Series PSE200/300

Function Details

A Auto-shift function

When there are large fluctuations in the supply pressure, the switch may fail to operate correctly. The auto-shift function compensates such supply pressure fluctuations. It measures the (differential) pressure at the time of auto-shift signal input and uses it as the reference (differential) pressure to correct the set value on the switch.

Set value correction by auto-shift function



	A Auto-shift input time	B Switch output response time at time of auto-shift input
PSE200	10 ms or more	15 ms or less
PSE300	5 ms or more	10 ms or less

∗ **Rectified value**

When the auto-shift is selected, “ooo” will be displayed for approximately 1 second, and the pressure value at that point will be saved as a rectified value “C_5” (for CH1 of PSE200 and PSE300) or “C_3” (for CH2 to 4 for PSE200). Based on the saved rectified values (Note), the set value “P_1” to “P_4” (for PSE200) or “P_1”, “H_1”, “P_3”, “H_2” (for PSE300) will likewise be rectified.

Note) When an output is reversed, “n_1” to “n_4” (for PSE200) or “n_1”, “H_1”, “n_3”, “H_2” (for PSE300) will be rectified.

Settable Range for Auto-Shift Input

PSE200	Set pressure (differential pressure) range	Settable range
Compound pressure	–101.0 to 101.0 kPa	–101.0 to 101.0 kPa
Vacuum	10.0 to –101.0 kPa	101.0 to –101.0 kPa
Low pressure	–10.0 to 101.0 kPa	–100.0 to 101.0 kPa
Positive pressure	–0.1 to 1.000 MPa	–1.000 to 1.000 MPa
	—	—
Low differential pressure	—	—

PSE300	Set pressure (differential pressure) range	Settable range
Compound pressure	–101.0 to 101.0 kPa	–101.0 to 101.0 kPa
Vacuum	10.0 to –101.0 kPa	101.0 to –101.0 kPa
Low pressure	–10 to 100.0 kPa	–100.0 to 100.0 kPa
Positive pressure	–0.1 to 1.000 MPa	–1.000 to 1.000 MPa
	–50 to 500 kPa	–500 to 500 kPa
Low differential pressure	–0.2 to 2.00 kPa	–2.00 to 2.00 kPa

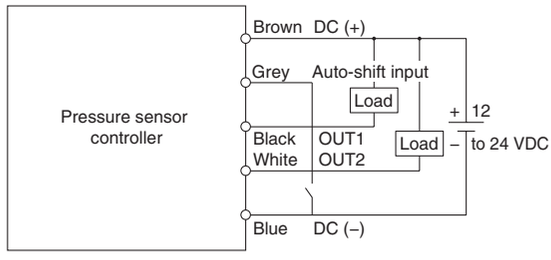
Auto-shift zero (PSE300 series only)

The basic function of auto-shift zero is the same as the function for auto-shift. Also, it corrects values on the display, based on a pressure value of 0, when the auto-shift is selected.

Auto-shift circuit

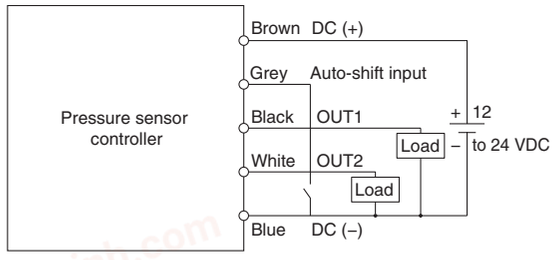
PSE3□2

NPN open collector output: 2 outputs



PSE3□5

PNP open collector output: 2 outputs

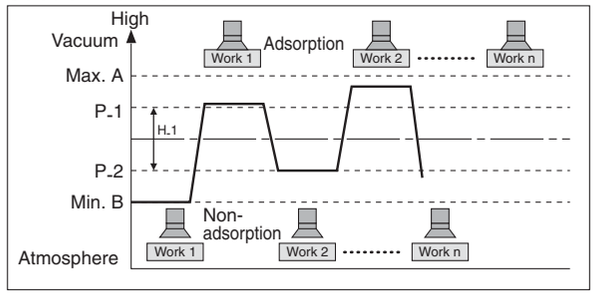


Note) The colours in the circuit diagram indicate the colour of the lead wire when it is connected to the power supply/output connection cable (ZS-28-A).

B Auto-preset function

Auto-preset function, when selected in the initial setting, calculates and stores the set-value from the measured (differential) pressure. The optimum set-value is determined automatically by repeating vacuum and break with the target workpiece several times.

Suction Verification



Formula for Obtaining the Set Value

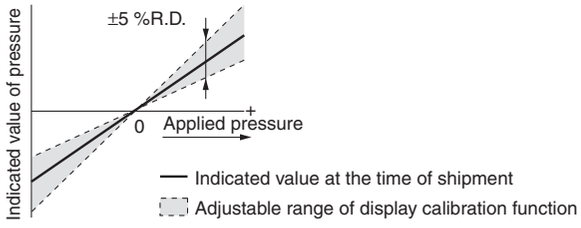
	P_1 or P_3	P_2(H_1) or P_4(H_2)
PSE200	P_1(P_3)=A-(A-B)/4	P_2(P_4)=B+(A-B)/4
PSE300		H_1(H_2)=(A-B)/2

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Function Details

C Display calibration function

Fine adjustment of the indicated value of the pressure sensor can be made within the range of ±5 % of the read value.
(The scattering of the indicated value can be eliminated.)



Note) When the display calibration function is used, the set pressure value may change ±1 digit.

D Peak/Bottom values holding/display function

This function constantly detects and updates the maximum and minimum values and allows to hold the display value.
For PSE300, when the △▽ are simultaneously pressed for 1 second or longer, while "holding", the hold value will be reset.

E Keylock function

Prevents operation errors such as accidentally changing setting values.

F Zero-clear function

This function clears and resets the zero value on the display of measured (differential) pressure within ±7 % F.S. of the factory adjusted value.

G Error indication function

Error name	Error code		Description
	PSE200	PSE300	
Overcurrent error	Er 1	Er1	Load current of 80 mA or more is applied to the switch output (OUT1).
	Er 2	Er2	Load current of 80 mA or more is applied to the switch output (OUT2).
Residual pressure error	Er 3	Er3	Pressure applied during the zero reset operation exceeds ±7 % F.S. ∗ After displaying the error code for 3 seconds, the switch automatically returns to the measuring mode. Due to individual product differences, the setting range varies ±4 digits.
Applied pressure error	- - -	HHH	Supply pressure exceeds the maximum set (differential) pressure or upper limit of the display pressure.
	- - - -	LLL	A sensor may be disconnected or mis-wired. Or, supply pressure is below the minimum set (differential) pressure or lower limit of the display pressure.
Auto-shift error		or	The value measured at the time of auto-shift input is outside the set (differential) pressure range. ∗ After displaying the error code for one second, the switch returns to the measuring mode.
System error	Er 5	Er4	Internal data error
	Er 6	Er6	Internal data error
	Er 7	Er7	Internal data error
	Er 8	Er8	Internal data error

H Copy function (PSE200 series only)

Information that can be copied includes the following: ① Pressure set values, ② Range settings, ③ Display units, ④ Output modes, ⑤ Response times.

- When CH1 is copied to CH2, CH3, and CH4, information of OUT1 in CH1 will be copied.
- When CH2, CH3, or CH4 is copied to CH1, information of OUT1 in CH2, CH3, or CH4 will be copied only to OUT1 in CH1.

Note) When the copy function is used, the regulating pressure value of the copied channel may change ±1 digit.

I Auto-identification function (PSE200 series only)

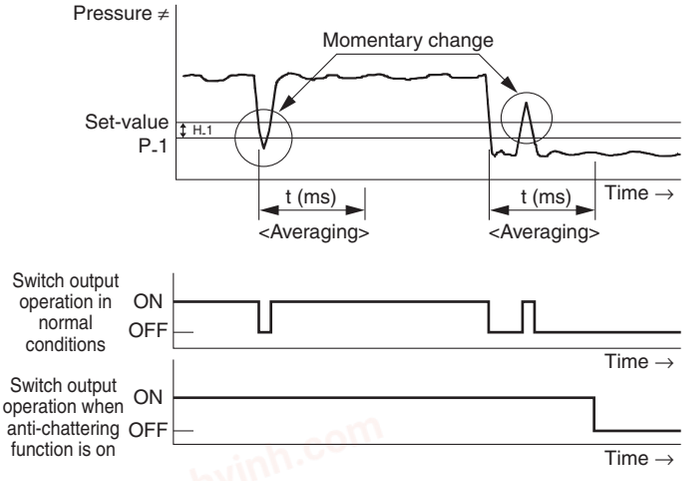
This function automatically identifies the pressure range of the pressure sensor that is connected to the multi-channel pressure sensor controller, thus eliminating the need of having to reset the range again after replacing the sensor. This function will be activated either when "Aon" is set in the auto-identification mode or when the power is turned back on in that condition. However, this function only works in conjunction with specific pressure sensors (SMC PSE53□ series). When other pressure sensors are used, this function will not work. When using other types of pressure sensors, first set the auto-identification mode to "AoF", and then proceed to setting the range. Turning the power back on while in the "Aon" setting can cause a malfunction.

J Anti-chattering function

A large bore cylinder or ejector consumes a large volume of air in operation and may experience a temporary drop in the supply pressure. This function prevents detection of such temporary drops in the supply pressure as an error.

	Available response time settings
PSE200	20 ms, 160 ms, 640 ms
PSE300	20 ms, 160 ms, 640 ms, 1280 ms

<Principle>
This function averages pressure values measured during the response time set by the user and then compares the average pressure value with the pressure set point value to output the result on the switch.



K Channel selection function (PSE200 series only)

Pressure value for the selected channel is displayed.

L Channel scan function (PSE200 series only)

Pressure values for each channel are displayed by turns at 2-second intervals.

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Function Details

M Display unit switching function

Display units can be switched with this function.
Units that can be displayed vary depending on the range of the pressure sensors connected to the controller.

PSE200

Pressure range		For compound pressure	For vacuum	For low pressure	For positive pressure
Applicable pressure sensor		**PSE533 PSE543 PSE563 PSE573**	**PSE531 PSE541 PSE561**	**PSE532**	**PSE530 PSE540 PSE560 PSE570**
Set pressure (differential pressure) range		–101 to 101 kPa	10 to –101 kPa	–10 to 101 kPa	–0.1 to 1 MPa
PA	kPa	0.1	0.1	0.1	—
	MPa	—	—	—	0.001
GF	kgf/cm²	0.001	0.001	0.001	0.01
bAr	bar	0.001	0.001	0.001	0.01
PSI	psi	0.02	0.01	0.01	0.1
inH	inHg	0.1	0.1	—	—
mmH	mmHg	1	1	—	—

PSE300

Pressure range		For compound pressure	For vacuum	For low pressure	For positive pressure		For low differential pressure
Applicable pressure sensor		**PSE533 PSE543 PSE563 PSE573**	**PSE531 PSE541 PSE561**	**PSE532**	**PSE530 PSE540 PSE560 PSE570**	**PSE564 PSE574**	**PSE550**
Set pressure (differential pressure) range		–101 to 101 kPa	10 to –101 kPa	–10 to 100 kPa	–0.1 to 1 MPa	–50 to 500 kPa	–0.2 to 2.00 kPa
PA	kPa	0.2	0.1	0.1	—	1	0.01
	MPa	—	—	—	0.001	—	—
GF	kgf/cm²	0.002	0.001	0.001	0.01	0.01	—
bAr	bar	0.002	0.001	0.001	0.01	0.01	—
PSI	psi	0.05	0.02	0.02	0.2	0.1	—
inH	inHg	0.1	0.1	—	—	—	—
mmH	mmHg	2	1	—	—	—	1 mmH₂O

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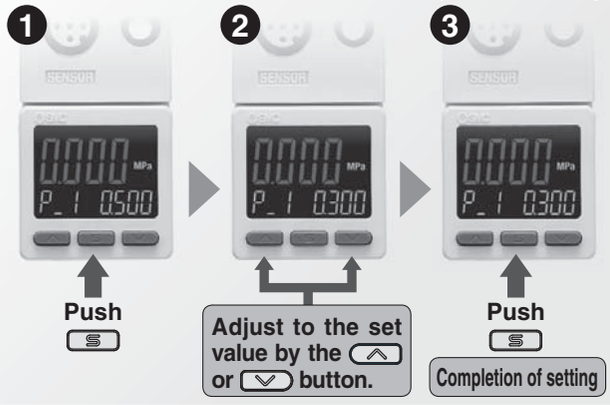
3-Screen Display Sensor Monitor

Series PSE300AC

Applicable sensors					Rated pressure range	Set/Display resolution
PSE53□	PSE54□	PSE55□	PSE56□	PSE57□	-100 kPa 0 100 kPa 500 kPa 1 MPa 2 MPa 5 MPa 10 MPa	
PSE531	PSE541	—	PSE561	—	-101 kPa to 0	0.1 kPa
PSE533	PSE543	—	PSE563	PSE573	-100 kPa to 100 kPa	0.1 kPa
PSE532	—	—	—	—	0 to 100 kPa	0.1 kPa
—	—	—	PSE564	PSE574	0 to 500 kPa	1 kPa
PSE530	PSE540	—	PSE560	PSE570	0 to 1 MPa	0.001 MPa
—	—	PSE550	—	—	0 to 2 kPa	0.001 kPa
—	—	—	—	PSE575	0 to 2 MPa	0.001 MPa
—	—	—	—	PSE576	0 to 5 MPa	0.1 MPa
—	—	—	—	PSE577	0 to 10 MPa	0.1 MPa

Simple 3 Step Setting

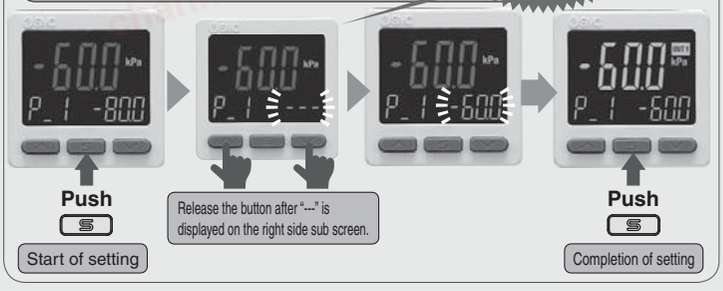
When S button is pressed, and the set value (P_1) is being displayed, the set value (threshold value) can be set.
When S button is pressed, and the hysteresis (H_1) is being displayed, the hysteresis can be set.



With a snapshot function for set value reading

Pressing the ∧ and ∨ buttons for a minimum of 1 second will make the set value (threshold value) the same as the current pressure value.

Snap shot function



Easy Screen Switching

Setting is possible while checking the measured value.

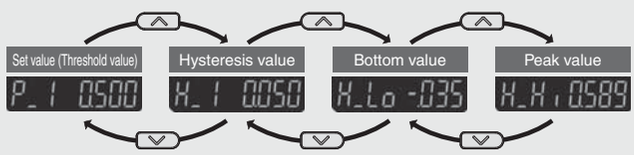
Main screen
Measured value (Current pressure value)

Sub screen/Left side
Label (Display item)

Sub screen/Right side
Set value (Threshold value)



The sub screen can be switched by pressing up/down buttons.

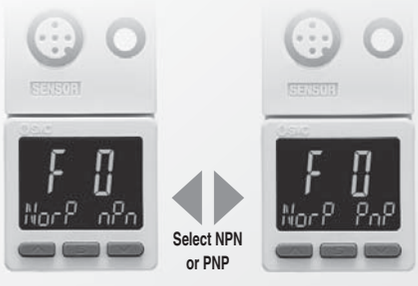


∗ One arbitrary display mode can be added by setting the function.

Response time 1 ms

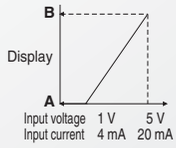
NPN/PNP Switch Function

Reduced number of stock items.



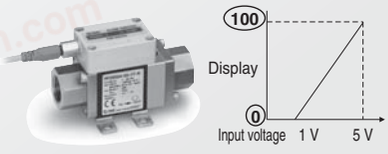
Input Range Selection (for Pressure/ Flow rate)

Sensor input range can be set to required value and displayed.
(Voltage input: 1 to 5 V/Current input: 4 to 20 mA)
Pressure switch/Flow switch can be displayed.



A is displayed for 1 V (or 4 mA).
B is displayed for 5 V (or 20 mA).
The range can be set as required.

For Digital Flow Switch for Water/PF3W511



	A	B
PF3W504	0	4
PF3W520	0	16
PF3W540	0	40
PF3W511	0	100

Set A and B to the values shown in the table above.

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3-Screen Display Sensor Monitor
Series PSE300AC



How to Order

PSE3 0 0AC – AB – M –

Input specification

0	Voltage input
1	Current input

Output specification

AB	2 output type (NPN or PNP switching type)

Option (Power supply/output lead wire)

—	Straight lead wire
L	Right angle lead wire
N	None

Unit specification

—	With unit selection function*1
M	SI unit only*2
P	With unit selection function (Initial value psi)*1

*1 Under the new Measurement Act, sales of switches with the unit selection function have not been allowed for use in Japan.
*2 Fixed unit: Pa, kPa, MPa

Options/Part Nos.

Description	Part no.	Note
Power supply/ output lead wire	ZS-31-B	Straight (5 m) 1 pc.
	ZS-31-C	Right angle (5 m) 1 pc.
Assembly type connector	PCA-1557743	1 pc.

For pressure switch precautions and specific product precautions, refer to the "Operation Manual" on the SMC website.

Specifications

M12 Connector Type

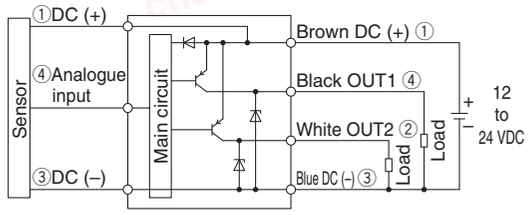
Series		PSE300AC								
Applicable SMC pressure sensor		PSE550	PSE531/PSE541 PSE561	PSE533/PSE543 PSE563/PSE573	PSE532	PSE564 PSE574	PSE530/PSE540 PSE560/PSE570	PSE575	PSE576	PSE577
Rated pressure range		0 to 2 kPa	0 to -101 kPa	-100 to 100 kPa	0 to 100 kPa	0 to 500 kPa	0 to 1 MPa	0 to 2 MPa	0 to 5 MPa	0 to 10 MPa
Display/Set pressure range		-0.2 to 2.1 kPa	10 to -105 kPa	-105 to 105 kPa	-10 to 105 kPa	-50 to 525 kPa	-0.105 to 1.05 MPa	-0.105 to 2.1 MPa	-0.1 to 5.25 MPa	-0.1 to 10.5 MPa
Display/Smallest settable increment		0.001 kPa	0.1 kPa	0.1 kPa	0.1 kPa	1 kPa	0.001 MPa	0.001 MPa	0.01 MPa	0.01 MPa
Electrical	Power supply voltage	12 to 24 VDC (±10 %) with 10 % voltage ripple or less								
	Current consumption	25 mA or less								
	Protection	Reverse connection protection								
Accuracy	Display accuracy	±0.5 % F.S. ±Min. display unit (Ambient temperature at 25 °C)								
	Repeatability	±0.1 % F.S. ±Min. display unit (Ambient temperature at 25 °C)								
	Temperature characteristics	±0.5 % F.S. (Ambient temperature of 0 to 50 °C, 25 °C reference)								
Switch output	Output type	Select from NPN or PNP open collector output.								
	Output mode	Select from hysteresis mode, window comparator mode, error output or switch output OFF.								
	Switch operation	Select from normal output or reverse output.								
	Max. load current	20 mA								
	Max. applied voltage (NPN only)	30 VDC								
	Internal voltage drop (Residual voltage)	1 V or less (with load current of 20 mA)								
	Delay time *1	1 ms or less (with anti-chattering function: 20, 100, 500, 1000, 2000, 5000 ms)								
	Hysteresis	Variable from 0*2								
	Protection	Over current protection								
Sensor input	Input type	Voltage input: 1 to 5 VDC (Input impedance: 1 MΩ), Current input: 4 to 20 mA DC (Input impedance: 51 Ω)								
	Number of inputs	1 input								
	Connection method	M12-4 pin connector								
	Protection	Over voltage protection (up to a voltage of 26.4 VDC)								
Display	Unit *3	MPa, kPa, Pa, kgf/cm^2, bar, mbar, psi, inHg, mmHg, mmH$_2$O								
	Display type	LCD								
	Number of screens	3-screen display (Main screen, Sub screen x 2)								
	Display colour	1) Main screen: Red/Green, 2) Sub screen: Orange								
	Number of display digits	1) Main screen: 4-digit (7-segment), 2) Sub screen: 4-digit (Upper 1-digit 11-segment, 7-segment for other)								
	Indicator light	Lights up when switch output is turned ON. OUT1/OUT2: Orange								
Digital filter *4		0, 10, 50, 100, 500, 1000, 5000 ms								
Environment	Enclosure	IP65								
	Withstand voltage	1000 VAC for 1 minute between terminals and housing								
	Insulation resistance	50 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing								
	Operating temperature range	Operating: 0 to 50 °C, Stored: -10 to 60 °C (No freezing or condensation)								
	Operating humidity range	Operating/Stored: 35 to 85 % RH (No condensation)								
Standards		CE, RoHS								
Weight		55.4 g (without power supply or output lead wires)								

*1 Value without digital filter (at 0 ms)
*2 If the applied pressure fluctuates around the set value, the hysteresis must be set to a value more than the amount of fluctuation, or chattering will occur.
*3 This setting is only available for models with the unit selection function. Only MPa, kPa or Pa is available for models without this function.
*4 The response time indicates when the set value is 90 % in relation to the step input.

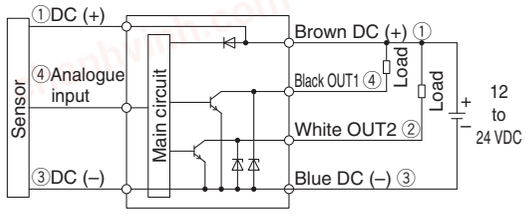
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Internal Circuits and Wiring Examples

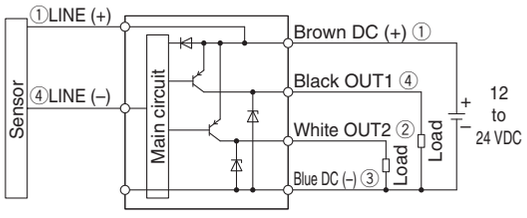
Setting of PNP open collector 2 outputs: Pressure sensor 3-wire type



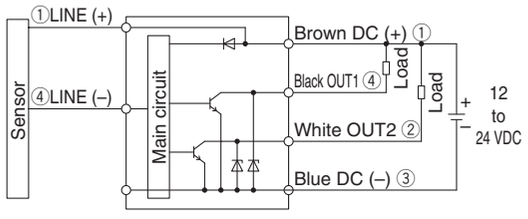
Setting of NPN open collector 2 outputs: Pressure sensor 3-wire type



Setting of PNP open collector 2 outputs: Pressure sensor 2-wire type



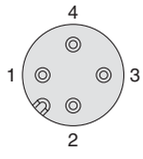
Setting of NPN open collector 2 outputs: Pressure sensor 2-wire type



* The output type can be changed in the function selection mode.
* Numbers in the figures show the connector pin layout.

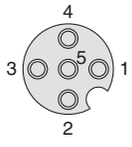
Dimensions

Power supply/output connector pin no.

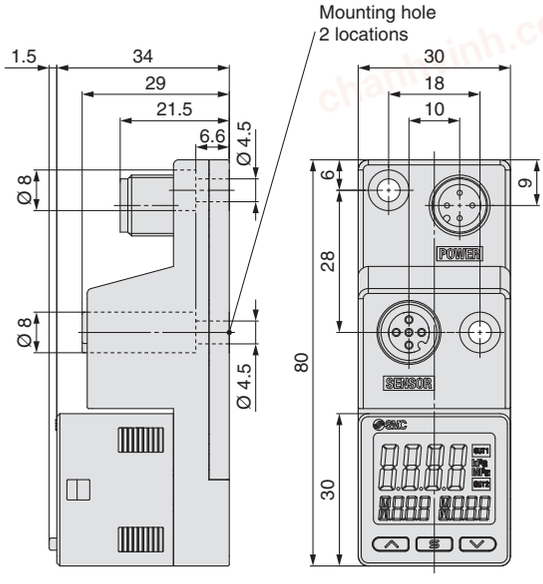


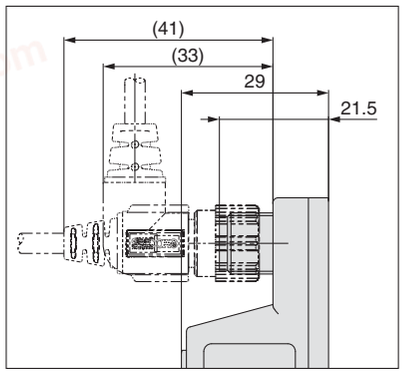
Pin no.	Description
1	DC (+)
2	OUT2
3	DC (–)
4	OUT1

Sensor connector pin no.



Pin no.	Description
1	DC (+)
2	N.C.
3	DC (–)
4	Sensor input (1 to 5 V, 4 to 20 mA)
5	N.C.

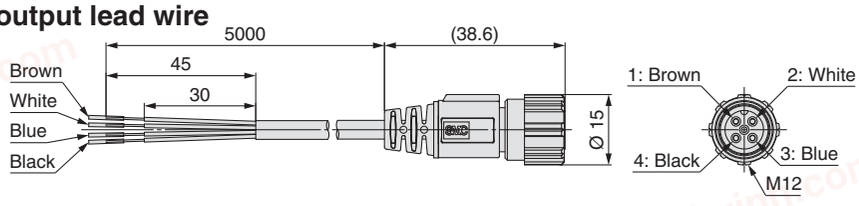




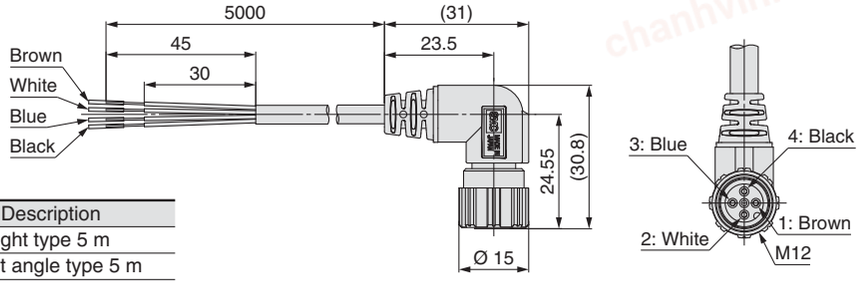
For power supply/output lead wire

Power supply/output lead wire

ZS-31-B



ZS-31-C



Pin no.	Lead wire colour	Description
1	Brown	DC (+)
2	White	OUT2
3	Blue	DC (–)
4	Black	OUT1

Part no.	Description
ZS-31-B	Straight type 5 m
ZS-31-C	Right angle type 5 m

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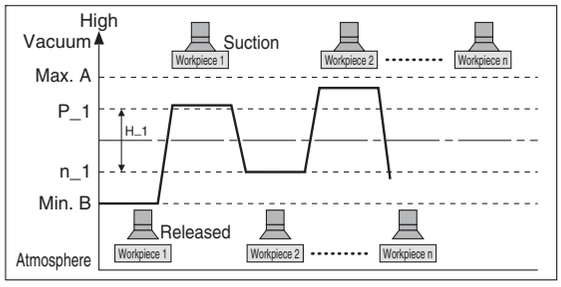
Series PSE300AC

Function Details

A Auto-preset function (F4)

Auto-preset function, when selected in the initial setting, calculates and stores the set value from the measured pressure. For example, if this function is used for suction verification, the optimum set value is determined automatically by repeating vacuum and break with the target workpiece several times.

Suction Verification

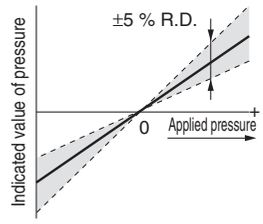


Formula for Obtaining the Set Value

P_1 or P_2	H_1 or H_2
P_1 (P_2) = A – (A-B)/4	H_1 (H_2) = |(A-B)/2|
n_1 (n_2) = B + (A-B)/4	

B Display value fine adjustment function (F6)

Fine adjustment of the indicated value of the pressure sensor can be made within the range of ±5 % of the read value. (The scattering of the indicated value can be eliminated.)



Note) When the display value fine adjustment function is used, the set pressure value may change ±1 digit.

C Peak/Bottom value indication function

This function constantly detects and updates the maximum (minimum) pressure when the power is supplied, and allows to hold the maximum (minimum) pressure value.

The held value is maintained even if the power supply is cut.
When the [S] [V] buttons are simultaneously pressed for 1 second or longer, while “holding”, the held value will be reset.

D Keylock function

Prevents operation errors such as accidentally changing setting values.

E Zero-clear function

This function clears and resets the zero value on the display of measured pressure.
The indicated value can be adjusted within ±7 % F.S. of the pressure when ex-factory. (±3.5 % F.S. for compound pressure)

F Error indication function

This function is to display error location and content when a problem or error has occurred.

Error name	Error code	Description	Action
Over current error	Er 1 oC1 / Er 2 oC2	Load current of 20 mA or more is applied to the switch output.	Turn the power off and remove the cause of the over current. Then supply the power again.
Residual pressure error	Er 3 zEro	During zero-clear operation, pressure over ±7 % F.S. (±3.5 % F.S. for compound pressure) is present. Note that the mode is returned to measurement mode automatically 1 second later. The zero clear range varies by ±1 % F.S. due to variation between individual products.	Perform zero-clear operation again after restoring the applied pressure to an atmospheric pressure condition.
Applied pressure error	HHH	Supply pressure exceeds the maximum set pressure.	Reset applied pressure to a level within the set pressure range.
	LLL	Supply pressure is below the minimum set pressure.	
System error	Er 0 / Er 7 / Er 4 / Er 8 / Er 6 / Er 9	Internal data error	Turn off the power supply and then turn on it again. If the failure cannot be solved, please contact SMC for investigation.

If the error cannot be reset after the above measures are taken, or errors other than above are displayed, please contact SMC.

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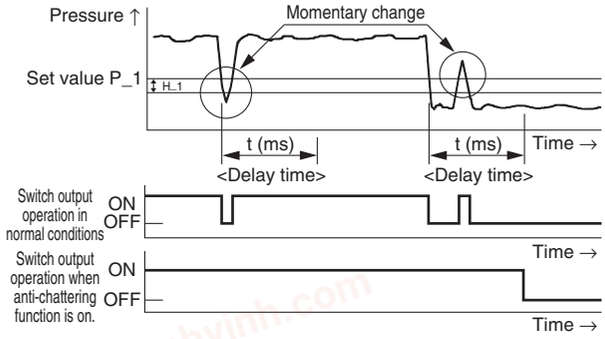
Function Details

G Anti-chattering function (Simple setting mode or F1)

A large bore cylinder or ejector consumes a large volume of air in operation and may experience a temporary drop in the supply pressure. This function prevents detection of such temporary drops in the supply pressure as an error by changing the delay time setting.

Available delay time settings
1 ms or less, 20 ms, 100 ms, 500 ms, 1000 ms, 2000 ms, 5000 ms

<Principle>
This function averages pressure values measured during the response time set by the user and then compares the average pressure value with the pressure set point value to output the result on the switch.



H Unit selection function (F0)

Display units can be switched with this function.

Applicable SMC pressure sensor	Rated pressure range	MPA MPa*1	kPA kPa	PA Pa	kGF kgf/cm²	bAr bar	mbAr mbar	PSI psi	inCH inHg	mmHG mmHg	mmH2O mmH₂O
PSE550	0 to 2 kPa		0.001	1			0.01	0.001			0.1
PSE531 PSE541 PSE561	0 to −101 kPa	0.001	0.1		0.001	0.001		0.01	0.1	1	
PSE533 PSE543 PSE563 PSE573	−100 to 100 kPa	0.001	0.1		0.001	0.001		0.02	0.1	1	
PSE532	0 to 100 kPa	0.001	0.1		0.001	0.001		0.01			
PSE564 PSE574	0 to 500 kPa	0.001	1		0.01	0.01		0.1			
PSE530 PSE540 PSE560 PSE570	0 to 1 MPa	0.001	1		0.01	0.01		0.1			
PSE575	0 to 2 MPa	0.001	1		0.01	0.01		0.2			
PSE576	0 to 5 MPa	0.01			0.1	0.1		1			
PSE577	0 to 10 MPa	0.01			0.1	0.1		1			

*1 The PSE5□1 (vacuum pressure), PSE5□2 (low pressure), and PSE5□3 (compound pressure) will have different setting and display resolution when the unit is set to MPa.

I Power saving mode (F80)

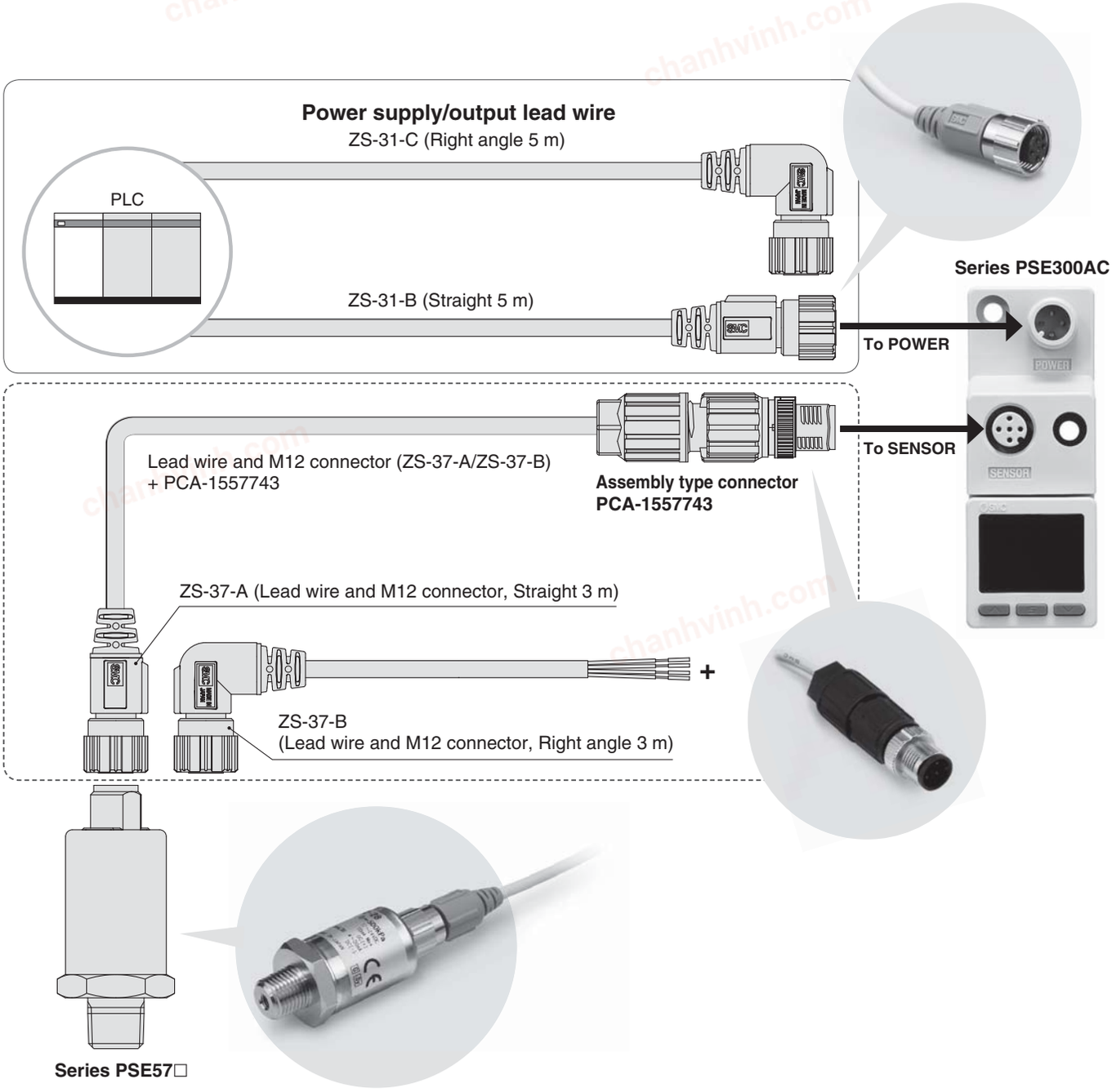
Power saving mode can be selected.
It shifts to the power saving mode without button operation for 30 seconds.
It is set to the normal mode (Power saving mode is OFF.) when ex-factory.
(During power saving mode, [ECo] will flash in the sub screen and the operation light is ON (only when the switch is ON).)

J Setting of secret code (F81)

Users can select whether a secret code must be entered to release key lock.
At the time of shipment from the factory, it is set such that the secret code is not required.

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Options / Connection Examples



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⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

⚠ Caution: **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning: **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Danger : **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, wichever is first.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

***2) Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

⚠ Caution

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

⚠ Safety Instructions Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

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