

PPE Series



Overview

Pressure switch PPE Series is the trimmer setting type semiconductor pressure switch developed for pneumatic/vacuum systems. Usage is flexible due to compact shape and three types of piping connection (R1/8, ø6 plug, ø6 push-in fitting).

Features

- Semiconductor pressure sensor
Semiconductor sensor used for pressure detection, high precision and high reliability are achieved.
- 2-wire
In 2-wire types, wiring man-hour is reduced, and both PLC input formats (source and sink) can be used.
- High proof pressure
Proof pressure of negative pressure (V01) is as high as 0.6 MPa, so the product can withstand to vacuum break by pressurization.
- Reverse connection/overcurrent protection circuit integrated
A protection circuit for improper wire connection (reverse connection, load short circuit) is integrated.
- Wide port size
R1/8
ø6 plug
ø6 push-in fitting

Specifications

Model No.	Vacuum	For positive pressure	
	PPE-V01-□ ^{*1}	PPE-P01-□ ^{*1}	PPE-P10-□ ^{*1}
Descriptions			
Rated pressure	-101.3kPa to 0	0 to 100 kPa	0 to 1 MPa
Tag plate color ^{*2}	Red	Green	Blue
Pressure sensitive element	Diffusion semiconductor pressure sensor		
Applicable fluid	Air/non-corrosive gas		
Proof pressure	0.6 MPa	0.3 MPa	1.5 MPa
Repeatability	±1% F.S.		
Hysteresis	3% F.S. or less		
Temperature characteristics	±3% F.S.		
Load voltage	10 to 30 VDC		
Load current	5 to 50 mA		
Internal voltage drop	4 V or less		
Leakage current	1 mA or less		
Indicator lamp	Yellow LED ON when lit		
Lead wire length	Standard 3 m (oil resistant vinyl cabtyre cable 2-conductor 0.15 mm ² insulator outer diameter ø1.0)		
Operating ambient temperature	0°C to 50°C (no freezing)		
Vibration resistance	10 to 55 Hz compound amplitude 1.5 mm 4 hours per X, Y, Z direction		
Degree of protection	IEC standards IP65 or equivalent		
Piping method	R1/8, ø6 plug, ø6 push-in fitting		
Weight	PPE-□-6/-H6-B: approx. 37 g, PPE-□-H6: approx. 42 g		

*1: □ parts form will be in accordance with piping section shape. (Refer to how to order)

*2: Tag plate color is changed per pressure range. (To prevent improper use)

How to order

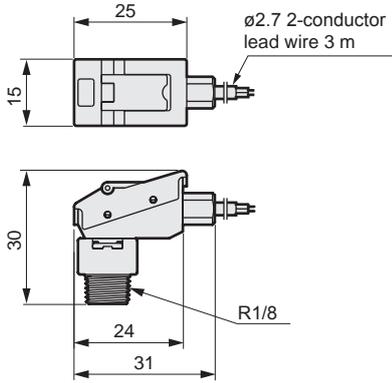


Code	Content
A Pressure range	
V01	-101.3 to 0 kPa
P01	0 to 101 kPa
P10	0 to 1 MPa
B Piping shape	
6	R1/8
H6-B	ø6 mm plug
H6	Inline of push-in fitting for ø6 (2 pcs.)
C Clean room specifications	
Structure/treatment	
P70	Dust generation treatment
P80	Oil-prohibited

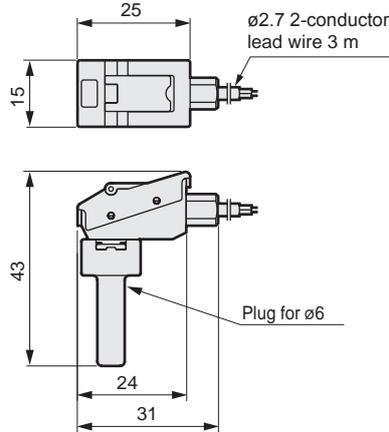
Dimensions



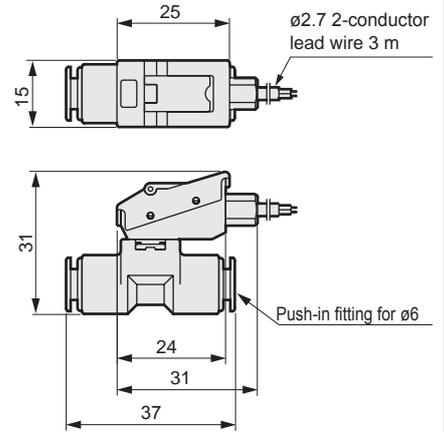
● PPE-□-6



● PPE-□-H6-B



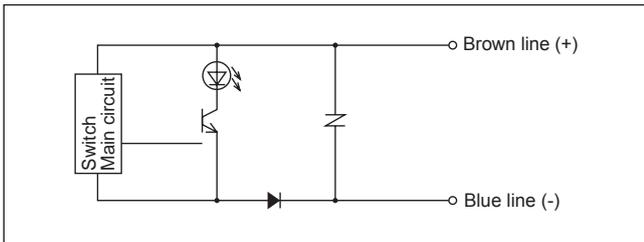
● PPE-□-H6



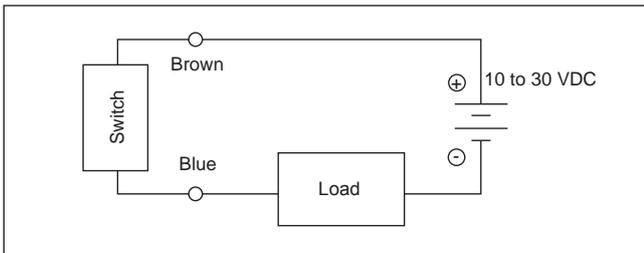
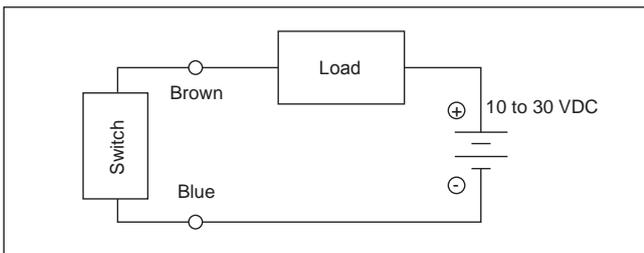
Refer to Precaution PPE Series on pages 1038 to 1039 for each component.

Internal circuit / connection method

● Internal circuit diagram

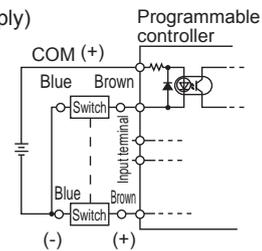


● Connecting the lead wire

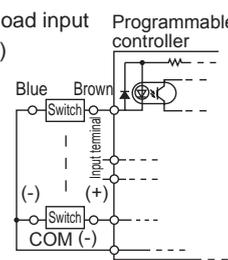


● Connection to programmable controller (sequencer)

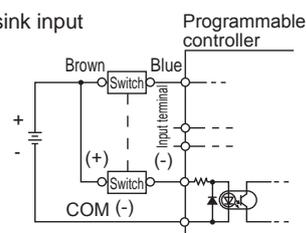
● Connection to source load input (external power supply)



● Connection to source load input (internal power supply)



● Connection to sink input



SCPD3

SCM

SSD2

MDC2

SMG

LCM

LCR

LCG

LCX

STM

STG

STR2

MRL2

GRC

Cylinder
Switch

MN3E

MN4E

4GA/B

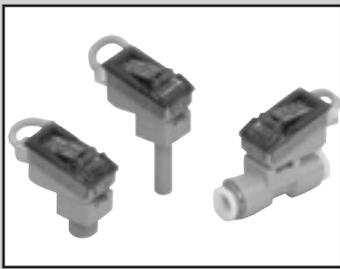
M4GA/B

MN4GA/B

F.R.(module
unit)Clean
F.RPrecision
RPress gauge
Diff. press gaugeElectro-
pneumatic RSpeed
controllerAuxiliary
valveFitting/
tubeClean
air unitPressure
sensorFlow rate
sensorValve for
air blow

Ending

SCPD3
SCM
SSD2
MDC2
SMG
LCM
LCR
LCG
LCX
STM
STG
STR2
MRL2
GRC
Cylinder switch
MN3E
MN4E
4GA/B
M4GA/B
MN4GA/B
F.R (module unit)
Clean F.R
Precision R
Press gauge
Diff. press gauge
Electro-pneumatic R
Speed controller
Auxiliary valve
Fitting/tube
Clean air unit
Pressure sensor
Flow rate sensor
Valve for air blow
Ending



Compact electronic pressure sensor
Analog output

PPE-□A Series

JIS symbol



Overview

Pressure sensor PPE-A Series is semiconductor pressure sensor developed for pneumatic and vacuum systems. Output promotional to impressed pressure: 1 to 5 V (analog output). Usage is flexible due to compact shape and three types of piping connection (R1/8, ø6 plug, ø6 push-in fitting).

Features

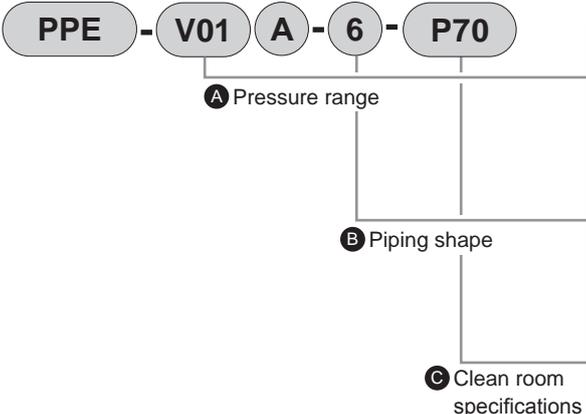
- Semiconductor pressure sensor: Used semiconductor sensor pressure detection, high precision and high reliability are realized.
- Analog output: Analog output proportional to impressed voltage (1 to 5 V).
- Power supply indicator lamp: When power is energized, green LED lights to show operational status.
- Integrating protection circuit to prevent power supply reverse connection / load short circuit
A protection circuit for improper wire connection (power supply reverse connection, load short circuit) is integrated.
- Wide port size: R1/8, ø6 plug, ø6 push-in fitting

Specifications

Model No.	For Vacuum		For positive pressure	
	PPE-V01A-□*1	PPE-P01A-□*1	PPE-P10A-□*1	
Descriptions				
Rated pressure	0 to 100 kPa	0 to 100 kPa	0 to 1 MPa	
Tag plate line color *2	Red	Green	Blue	
Pressure sensitive element	Diffusion type semiconductor pressure sensor			
Applicable fluid	Air/non-corrosive gas			
Proof pressure	0.3 MPa	0.3 MPa	1.5 MPa	
Accuracy	±1% F.S. or less			
Linearity	±0.3% F.S. or less			
Analog output	1 to 5 V (output impedance 1 kΩ)			
Power supply voltage	12 to 24 VDC ±10% (ripple rate 1% or less)			
Current consumption	10 mA or less			
Indicator lamp	Green LED lit when power supply is energized			
Lead wire length	Standard 3 m (oil resistant vinyl cabtyre cable 3-conductor 0.15 mm ² insulator outer diameter ø1.0)			
Protection circuit	Prevention of power supply reverse connection/load short circuit			
Ambient temperature	0°C to 50°C (no freezing)			
Temperature characteristics	±0.12% F.S./°C or less			
Insulation resistance	20 MΩ and over at 500 VDC megger			
Withstand voltage	1000 VAC for 1 minute			
Vibration resistance	10 to 55 Hz compound amplitude 1.5 mm 4 hours per X, Y, Z direction			
Degree of protection	IEC standards IP65 or equivalent			
Piping method	R1/8, ø6 plug, ø6 push-in fitting			
Weight	PPE-□-6/-H6-B: approx. 37 g, PPE-□-H6: approx. 42 g			

*1: □ parts form will be in accordance with piping section shape. (Refer to how to order)
*2: Tag plate line color is changed per pressure range. (To prevent improper use)

How to order

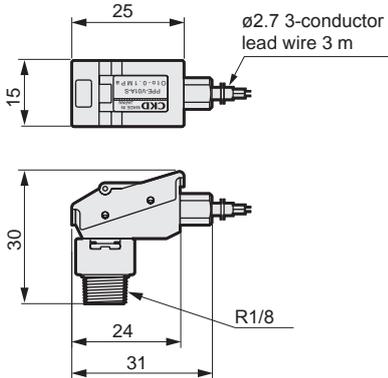


Code	Content
A Pressure range	
V01	0 to -100 kPa
P01	0 to 100 kPa
P10	0 to 1 MPa
B Piping shape	
6	R1/8
H6-B	ø6 mm plug
H6	Inline of push-in fitting for ø6 (2 pcs.)
C Clean room specifications	
Structure/treatment	
P70	Dust generation treatment
P80	Oil-prohibited

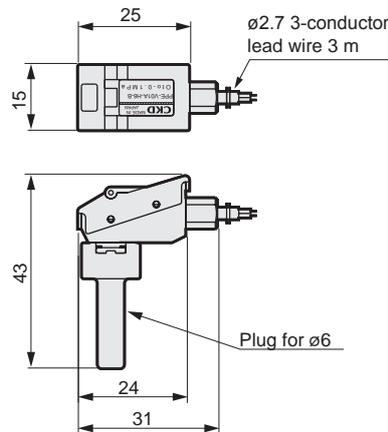
Dimensions



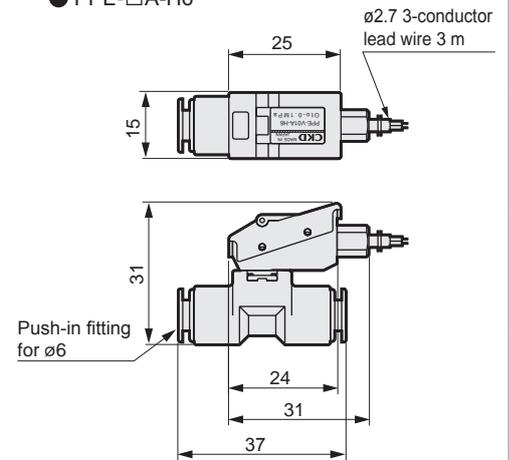
● PPE-□A-6



● PPE-□A-H6-B

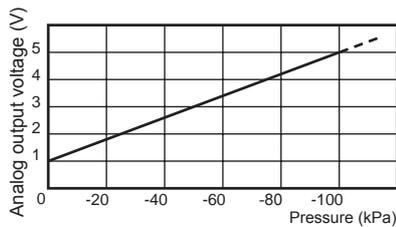


● PPE-□A-H6

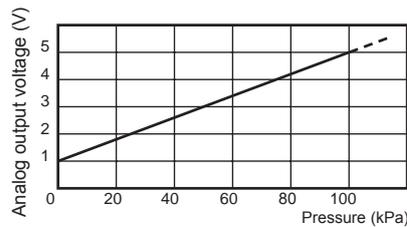


Analog output voltage - pressure characteristics

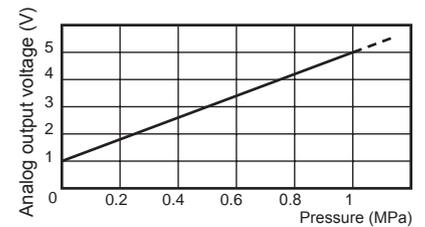
● PPE-V01A-□



● PPE-P01A-□



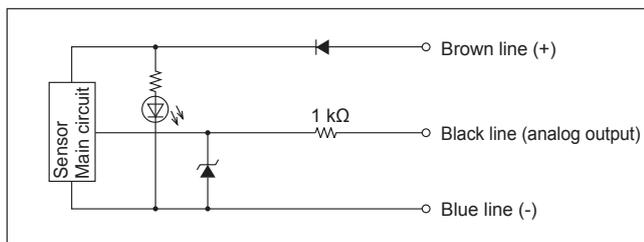
● PPE-P10A-□



Internal circuit / connection method

[Circuit diagram and connection method]

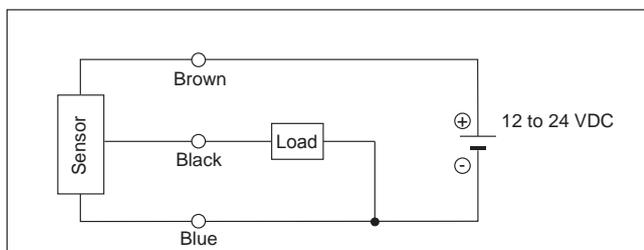
● Internal circuit diagram



● Lead wire color and descriptions

Line color	Descriptions
Brown	Power supply 12 to 24 VDC
Black	Analog output (1 to 5 V)
Blue	0 V (GND)

● Connecting the lead wire



⚠ Caution

- Analog output accuracy is also affected by self exoergic at energized other than temperature characteristics. Provide enough standby time (5 minutes and over after energizing) before use.
- Refer to Safety precautions PPE-*A Series on pages 1040 to 1041 for details.

SCPD3

SCM

SSD2

MDC2

SMG

LCM

LCR

LCG

LCX

STM

STG

STR2

MRL2

GRC

Cylinder Switch

MN3E

MN4E

4GA/B

M4GA/B

MN4GA/B

F.R.(module unit)

Clean F.R

Precision R

Press gauge

Diff. press gauge

Electro-pneumatic R

Speed controller

Auxiliary valve

Fitting/ tube

Clean air unit

Pressure sensor

Flow rate sensor

Valve for air blow

Ending