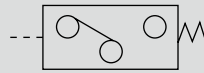
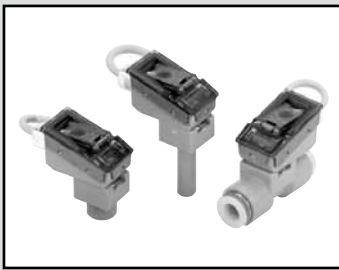


Compact electronic pressure switch (pressure switch)

PPE Series



- F.R.L
- F (Filtr)
- R (Reg)
- L (Lub)
- PresSW
- Shutoff
- SlowStart
- FimResistFR
- Oil-Prohr
- MedPresFR
- No Cu/PTFE FRL
- Outdrs FR
- F.R.L (Related)
- CompFRL
- LgFRL
- PrecsR
- VacFR
- Clean FR
- ElecPneur
- AirBoost
- SpdContr
- Silncr
- CheckV/other
- Jnt/tube
- AirUnt
- PrecsCompn
- Mech/ElecPresSw
- ContactSW
- AirSens
- PresSW Cool
- AirFloSens/Contr
- WaterRtSens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending

Overview

Pressure switch PPE Series is trimmer setting semiconductor pressure switch developed for pneumatic/vacuum systems. Usage is flexible due to compact shape and three types of piping connection (R1/8, φ6 plug, φ6 push-in fitting).

Features

- Semiconductor pressure sensor
Used semiconductor sensor pressure detection, high precision and high reliability are achieved.
- 2-wire
In 2-wire, wiring man-hours are 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 vacuum burst 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
φ6 plug
φ6 Push-in fitting

Specifications

Model No.	Vacuum		Positive pressure	
	PPE-V01- ^{*1} □	PPE-P01- ^{*1} □	PPE-P10- ^{*1} □	
Descriptions				
Rated pressure	-101.3 (≈-15 psi) to 0 kPa (≈0 psi)	0 (≈0 psi) to 100 kPa (≈15 psi)	0 (≈0 psi) to 1 MPa (≈150 psi)	
Plate color ^{*2}	Red	Green	Blue	
Pressure sensitive element	Diffusion semiconductor pressure sensor			
Applicable fluid	Air/non-corrosive gas			
Proof pressure	0.6 MPa (≈87 psi, 6 bar)	0.3 MPa (≈44 psi, 3 bar)	1.5 MPa (≈220 psi, 15 bar)	
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 lit when ON			
Lead wire length	Standard 3 m (oil resistant vinyl cabtyre cable 2-conductor 0.15 mm ² insulator outer diameter φ1.0)			
Operating ambient temperature range	0 (32°F) to 50°C (122°F) (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, φ6 plug, φ6 push-in fitting			
Weight	PPE-□-6/-H6-B: Approx. 37 g, PPE-□-H6: Approx. 42 g			

*1: □ section is matched to piping section. (Refer to How to order)
 *2: Name plate color is changed by pressure range. (To prevent improper use when intermixed)

Clean-room specifications (Catalog No. CB-033SA)

- Anti-dust generation structure for use in cleanrooms

PPE- - **P70**
 PPE- - **P80**

How to order

PPE - **V01** - **6**

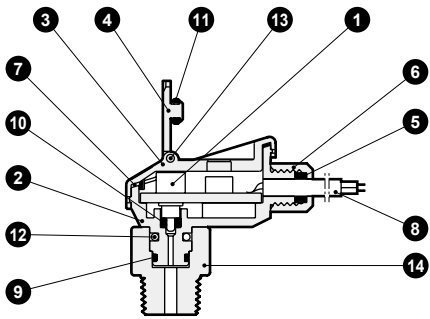
A Pressure range

B Piping shape

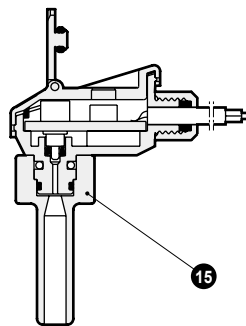
Code	Content
A Pressure range	
V01	-101.3 to 0 kPa
P01	0 to 101 kPa
P10	0 to 1 MPa
B Piping shape	
6	R1/8
H6-B	φ6 mm plug
H6	In-line of push-in fitting for φ6 (2 pcs.)

Internal structure and parts list

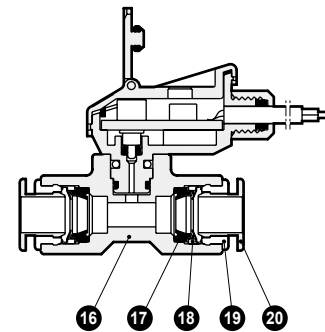
● PPE-□-6



● PPE-□-H6-B



● PPE-□-H6



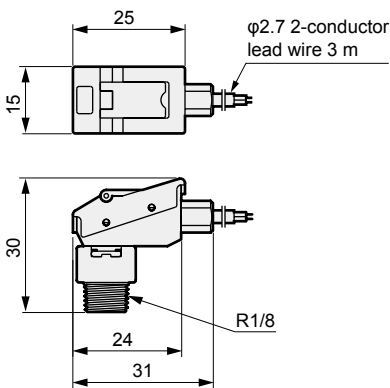
Cannot be disassembled

No.	Part name	Material	No.	Part name	Material
1	Pressure sensor	Diffusion semiconductor strain gauge	11	O-ring	Nitrile rubber
2	Body	Polybutylene terephthalate (glass fiber 30%)	12	Stopper	Stainless steel
3	Cover	Polycarbonate	13	Spring pin	Stainless steel
4	Trimmer guard	Polycarbonate	14	R1/8	Polybutylene terephthalate (glass fiber 30%)
5	Bush	Nitrile rubber	15	Plug	Polybutylene terephthalate (glass fiber 30%)
6	Bush holder	Aluminum	16	Push-in fitting	Polybutylene terephthalate
7	Cover gasket	Silicone rubber	17	Packing	Nitrile rubber
8	Lead wire (3 m)	Polyvinyl chloride	18	Chuck	Copper alloy (electroless nickeling)
9	O-ring	Nitrile rubber	19	Outer ring	Copper alloy (electroless nickeling)
10	O-ring	Nitrile rubber	20	Push ring	Polyacetal

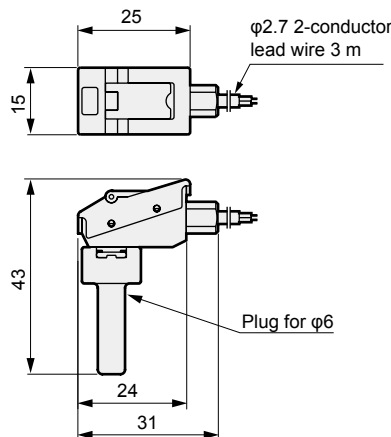
Dimensions



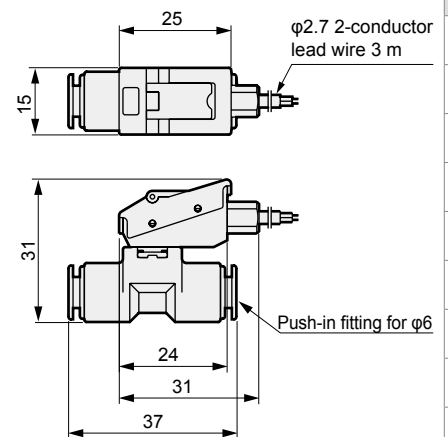
● PPE-□-6



● PPE-□-H6-B



● PPE-□-H6



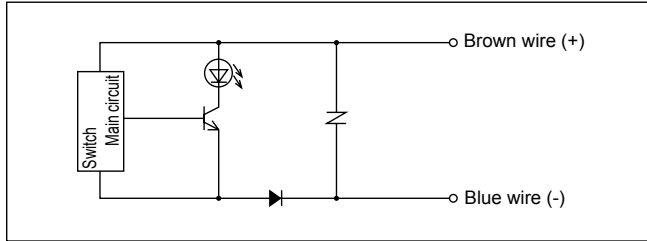
Refer to Safety precautions PPE Series on pages 1116 to 1117 for each component.

F.R.L
F (Filtr)
R (Reg)
L (Lub)
PresSW
Shutoff
SlowStart
FimResistFR
Oil-ProhR
MedPresFR
No Cu/
PTFE FRL
Outdrs FR
F.R.L
(Related)
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
SpdContr
Silncr
CheckV/
other
Jnt/tube
AirUnt
PrecsCompn
Mech/
ElecPresSw
ContactSW
AirSens
PresSW
Cool
AirFloSens/
Contr
WaterRtSens
TotAirSys
(Total Air)
TotAirSys
(Gamma)
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg
etc
Ending

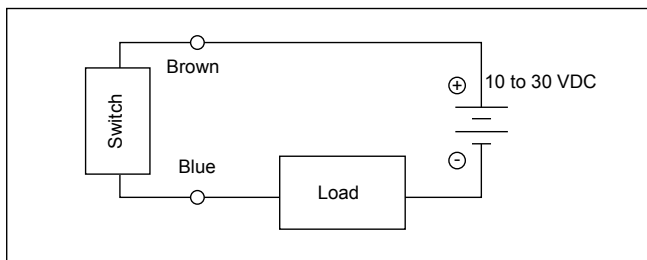
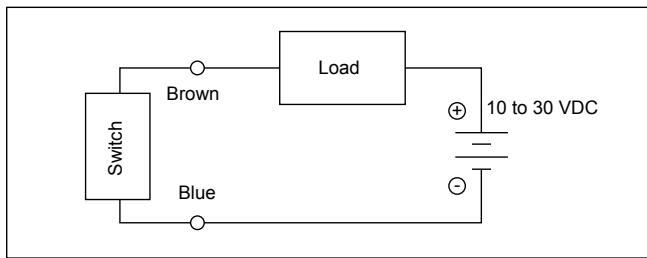
F.R.L
F (Filtr)
R (Reg)
L (Lub)
PresSW
Shutoff
SlowStart
FimResistFR
Oil-ProHR
MedPresFR
No Cu/ PTFE FRL
Outdrs FR
F.R.L (Related)
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
SpdContr
Silncr
CheckV/ other
Jnt/tube
AirUnt
PrecsCompn
Mech/ ElecPresSw
ContactSW
AirSens
PresSW Cool
AirFloSens/ Contr
WaterRtSens
TotAirSys (Total Air)
TotAirSys (Gamma)
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

Internal circuit / connection method

● Internal circuit diagram

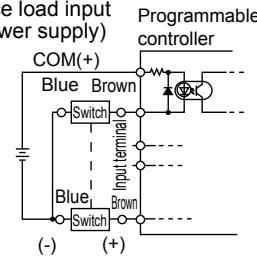


● Connecting the lead wire

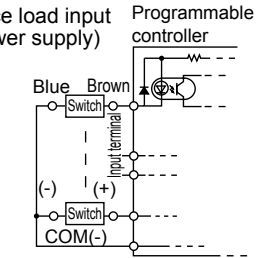


● Connection to programmable controller (PLC)

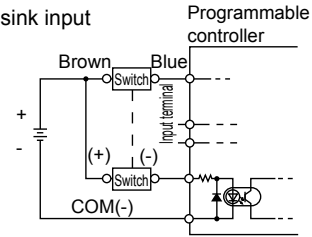
● Connection to source load input (external electric power supply)

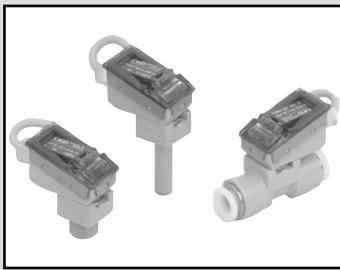


● Connection to source load input (internal electric power supply)



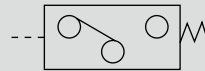
● Connection to sink input





Compact electronic pressure sensor (pressure sensor)
Analog output

PPE-□A Series



Overview

Pressure sensor PPE-A Series is semiconductor pressure sensor developed for pneumatic and vacuum systems. Output proportional to applied voltage: 1 to 5 V (analog output). Usage is flexible due to compact shape and three types of piping connection (R1/8, φ6 plug, φ6 push-in fitting).

Specifications

Model No.	Vacuum		Positive pressure	
	PPE-V01A-□*1	PPE-P01A-□*1	PPE-P10A-□*1	
Rated pressure	0 (≈0 psi) to -100 kPa (≈-15 psi)	0 (≈0 psi) to 100 kPa (≈15 psi)	0 (≈0 psi) to 1 MPa (≈150 psi)	
Plate line color *2	Red	Green	Blue	
Pressure sensitive element	Diffusion semiconductor pressure sensor			
Applicable fluid	Air/non-corrosive gas			
Proof pressure	0.3 MPa (≈44 psi, 3 bar)	0.3 MPa (≈44 psi, 3 bar)	1.5 MPa (≈220 psi, 15 bar)	
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 lighting 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 φ1.0)			
Protection circuit	Power reverse connection protection, load short-circuit protection			
Ambient temperature	0 (32°F) to 50°C (122°F) (no freezing)			
Temperature characteristics	±0.12% F.S./°C or less			
Insulation resistance	20 MΩ and over at 500 VDC			
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, φ6 plug, φ6 push-in fitting			
Weight	PPE-□-6/-H6-B: Approx. 37 g, PPE-□-H6: Approx. 42 g			

1 MPa = 10 bar

Features

- Semiconductor pressure sensor: Used semiconductor sensor pressure detection, high precision and high reliability are realized.
- Analog output: Analog output proportional to applied voltage (1 to 5 V).
- Power supply indicator lamp: When power is energized, green LED lights to show operational status at load short circuit.
- Integrated protection circuit to prevent power reverse connection/load short-circuit
A protection circuit for improper wire connection (power reverse connection, load short-circuit) is integrated.
- Wide port size: R1/8, φ6 plug, φ6 push-in fitting

*1: □ section is matched to piping section. (Refer to How to order)

*2: Name plate line is changed by pressure range. (To prevent improper use when intermixed)

Clean-room specifications (Catalog No. CB-033SA)

- Anti-dust generation structure for use in cleanrooms

PPE-□A-.....- P70

PPE-□A-.....- P80

How to order

PPE - V01 A - 6

Ⓐ Pressure range

Ⓑ Piping shape

Code	Content
Ⓐ Pressure range	
V01	0 to -100 kPa
P01	0 to 100 kPa
P10	0 to 1 MPa
Ⓑ Piping shape	
6	R1/8
H6-B	φ6 mm plug
H6	In-line of push-in fitting for φ6 (2 pcs.)

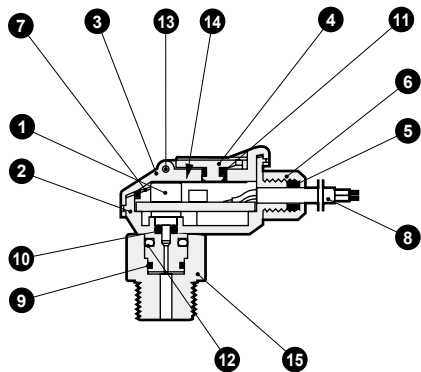
F.R.L
F (Filtr)
R (Reg)
L (Lub)
PresSW
Shutoff
SlowStart
FimResistFR
Oil-ProhR
MedPresFR
No Cu/
PTFE FRL
Outdrs FR
F.R.L
(Related)
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
SpdContr
Silncr
CheckV/
other
Jnt/tube
AirUnt
PresCompn
Mech/
ElecPresSw
ContactSW
AirSens
PresSW
Cool
AirFloSens/
Contr
WaterRtSens
TotAirSys
(Total Air)
TotAirSys
(Gamma)
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg
etc
Ending

PPE-□A Series

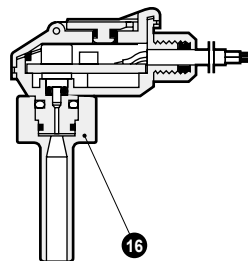
- F.R.L
- F (Filtr)
- R (Reg)
- L (Lub)
- PresSW
- Shutoff
- SlowStart
- FimResistFR
- Oil-ProhR
- MedPresFR
- No Cu/
PTFE FRL
- Outdrs FR
- F.R.L
(Related)
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneur
- AirBoost
- SpdContr
- Silncr
- CheckV/
other
- Jnt/tube
- AirUnt
- PrecsCompn
- Mech/
ElecPresSw
- ContactSW
- AirSens
- PresSW
Cool
- AirFloSens/
Contr
- WaterRtSens
- TotAirSys
(Total Air)
- TotAirSys
(Gamma)
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg
etc
- Ending

Internal structure and parts list

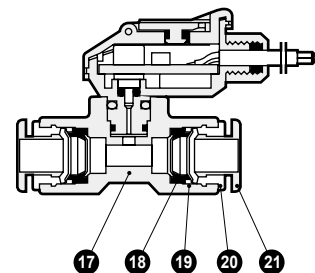
● PPE-□A-6



● PPE-□A-H6-B



● PPE-□A-H6



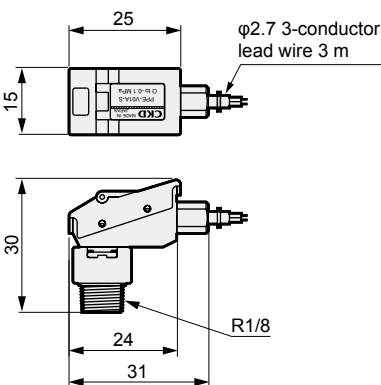
Cannot be disassembled

No.	Part name	Material	No.	Part name	Material
1	Pressure sensor	Diffusion semiconductor strain gauge	12	Stopper	Stainless steel
2	Body	Polybutylene terephthalate (glass fiber 30%)	13	Spring pin	Stainless steel
3	Cover	Polycarbonate	14	Shield sheet	Aluminum
4	Trimmer guard	Polycarbonate	15	R1/8	Polybutylene terephthalate (glass fiber 30%)
5	Bush	Nitrile rubber	16	Plug	Polybutylene terephthalate (glass fiber 30%)
6	Bush holder	Aluminum	17	Push-in fitting	Polybutylene terephthalate
7	Cover gasket	Silicone rubber	18	Packing	Nitrile rubber
8	Lead wire (3 m)	Polyvinyl chloride	19	Chuck	Copper alloy (electroless nickeling)
9	O-ring	Nitrile rubber	20	Outer ring	Copper alloy (electroless nickeling)
10	O-ring	Nitrile rubber	21	Push ring	Polyacetal
11	O-ring	Nitrile rubber			

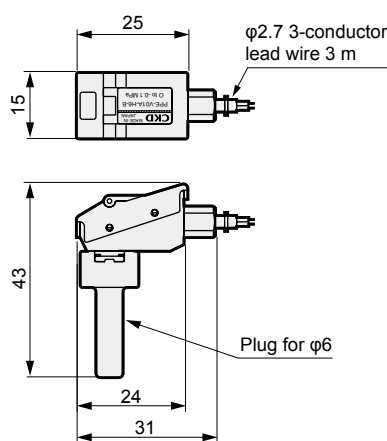
Dimensions



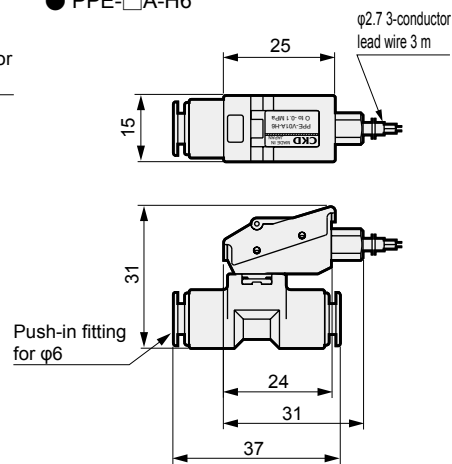
● PPE-□A-6



● PPE-□A-H6-B



● PPE-□A-H6



Caution

- Analog output accuracy is affected by temperature characteristics and heat generated when energized. Provide sufficient stand-by time (5 minutes or more after energizing) before use.
- Refer to Safety precautions in PPE-□A Series on pages 1118 to 1119.