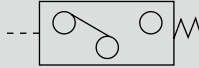
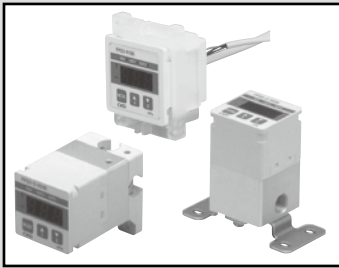


# PPD3/PPD3-S Series



## Overview

Pressure switch PPD3 Series is ideal for pneumatic lines. Due to various port options, in addition to source pressure confirmation, suction confirmation and contact confirmation, etc., are possible.

## Features

- Semiconductor pressure sensor and stainless steel diaphragm pressure sensor series are available with common coupling structure. Models can be easily replaced in response to worsened or improved air-line conditions.
- Push-in fitting resin port (6HD/6HT/H6) is available. These lightweight ports help save space.
- Through ports(6T/6HT/H6) are available. Ideal for suction and seating confirmation. Can be installed using minimal piping space.
- Convenient functions such as a peak hold function, forcible switch function, and pressure gauge reading function make equipment settings more efficient.
- CE marking compatible.

## Sensor integrated/sensor separated Specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	PPD3			PPD3-S		
	R10	R03	R01	R10	R03	R01
Pressure sensitive element	Diffused semiconductor pressure sensor			Single stainless steel diaphragm pressure sensor		
Applicable fluid	Air/non-corrosive gas			Air/non-corrosive gas/compressed air (including water and drain)		
Rated pressure	-100 to 980 kPa	-100 to 300 kPa	-100 to 100 kPa	-100 to 980 kPa	-100 to 300 kPa	-100 to 100 kPa
Display unit	kPa	kPa	kPa	kPa	kPa	kPa
Min. display unit *1	1 kPa (≈0.2 psi, 0.01 bar)					
Proof pressure	1.5 MPa	0.6 MPa	0.2 MPa *2	2 MPa	0.6 MPa	0.6 MPa
Display accuracy (25°C)	±2% F.S.					±3% F.S.
Temp (0 to 50°C)	±4% F.S.					±5% F.S.
Leak rate	1 cm <sup>3</sup> /min (ANR) or less					
Display	3-digit LED display character height 8 mm					
Power supply voltage	12 to 24 VDC ± 10% (ripple rate 1% or less)					
Current consumption	50 mA or less (60 mA or less for sensor separated)					
Switch output	Sensor integrated	N : NPN transistor open collector output 2 points P : PNP transistor open collector output 2 points NA: NPN transistor open collector output 1 point + analog output 1 point PA: PNP transistor open collector output 1 point + analog output 1 point				
	Sensor separated	NA: NPN transistor open collector output 2 points + analog output 1 point PA: PNP transistor open collector output 2 points + analog output 1 point				
Switch output current	50 mA or less					
Switch output voltage drop value	2.4 V or less					
Switch output response time	Approximately 5 msec					
Analog output	1 to 5 ±0.1 V load impedance: 10 kΩ or more					
Set value hold	EEPROM					
Lead wire	Body: oil resistance vinyl cable 4-conductor (0.3 mm <sup>2</sup> insulator outer diameter φ1.1) 1 m (for sensor separated, 5-conductor 0.2 mm <sup>2</sup> insulator outer diameter φ1.0) Sensor section of sensor separated: oil resistance vinyl cable 3-conductor (0.15 mm <sup>2</sup> insulator outer diameter φ1.0) 3 m					
Ambient temperature	0 (32°F) to 50 (122°F)°C					
Ambient humidity	0 to 85%RH (no condensation)					
Vibration resistance	10 to 55 Hz compound amplitude 1.5 mm 2 hours per X, Y, Z direction					
Degree of protection	IP65 equiv. *3 (IP40 equivalent only for display section of sensor separated)					
Protection circuit *4	Power reverse connection protection, switch output reverse connection protection, switch output load short-circuit protection					
Weight	PPD3-R□-6B: approx. 85 g			PPD3-S-R□-6B: approx. 105 g		

\*1 : This indicates min. display unit, and does not guarantee display accuracy.

\*2 : Sensor separated is 0.3 MPa.

\*3 : When an atmosphere introduction port is processed. (Refer to page 1124.)

\*4 : This product's protection circuit is effective only for specific misconnections and load short-circuits. It does not provide protection for all misconnections.

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

- Anti-dust generation structure for use in cleanrooms

PPD3-..... - P7\*

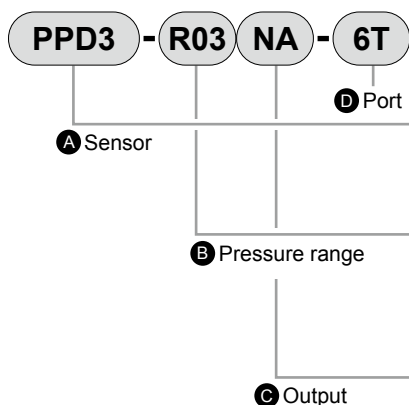
PPD3-..... - P8\*

PPD3-..... - P9\*

Circuit diagram and connection method  
Refer to page 1091.

### How to order

- Sensor integrated



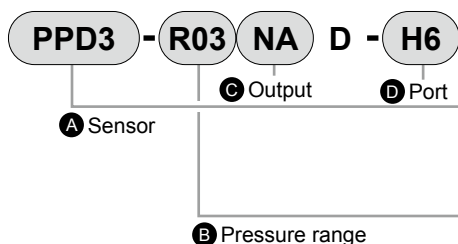
Code	Content
<b>A Sensor</b>	
PPD3	Semiconductor sensor
PPD3-S	Stainless steel diaphragm sensor
<b>B Pressure range</b>	
R10	-100 to 980 kPa
R03	-100 to 300 kPa
R01	-100 to 100 kPa
<b>C Output</b>	
N	NPN transistor output 2 point
P	PNP transistor output 2 points
NA	NPN transistor output 1 point + analog output 1 point
PA	PNP transistor output 1 point + analog output 1 point
<b>D Port</b>	
6B	Rc1/8, 2 direction port rear side, lower outlet
6T	Axial Rc1/8, through port both sides outlet
6HD	Lightweight port with 6 mm push-in fitting (downward)
6HT	Lightweight through port with two 6 mm push-in fittings (horizontal both sides)

### ⚠ Precautions for model selection

Mounting brackets and kits are not enclosed with the body.

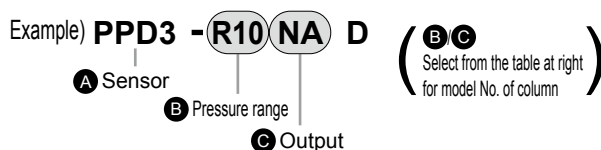
They are available separately. Refer to the "Mounting brackets and kits" model numbers on the next page.

- Sensor separated

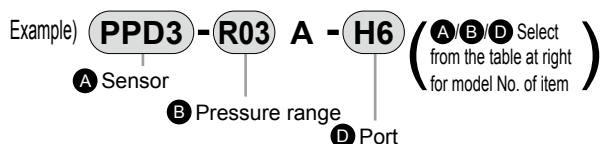


Code	Content	
<b>A Sensor</b>		
PPD3	Semiconductor sensor	
PPD3-S	Stainless steel diaphragm sensor	
<b>B Pressure range</b>		
R10	-100 to 980 kPa	
R03	-100 to 300 kPa	
R01	-100 to 100 kPa	
<b>C Output</b>		
NA	NPN transistor output 2 points + analog output 1 point	
PA	PNP transistor output 2 points + analog output 1 point	
<b>D Port</b>		
6	R1/8	For PPD3 (semiconductor sensor)
H6	6 mm push-in fitting	
H6-B	6 mm plug	
6B	Rc1/8	For PPD3-S (stainless steel diaphragm sensor)

- Model No. of single display



- Discrete sensor model No.



### ⚠ Precautions for model selection

Mounting brackets and kits are not enclosed with the body.

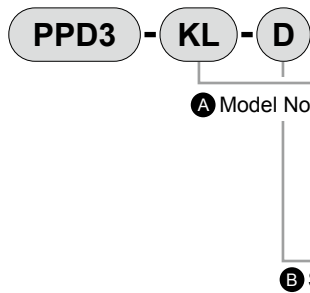
They are available separately. Refer to the "Mounting brackets and kits" model numbers on the next page.

- Refer to the following page for "Mounting brackets and kits".

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
PrescR
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

# PPD3/PPD3-S Series

## ● Mounting bracket and kit



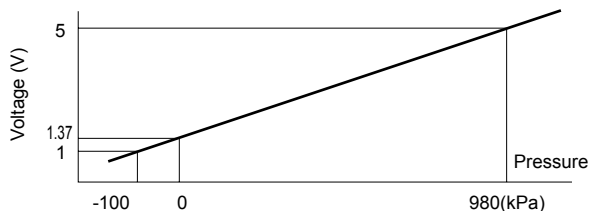
Code	Content
<b>A Model No.</b>	
PPD3-KL	One side mounting foot (L shaped mounting) (mounting screw attached)
PPD3-KD	Both sides mounting foot (parallel mounting) (mounting screw attached)
PPD3-KHS	Panel mounting bracket set, with guard (φ6 push-in fitting attached for integrated)
PPD3-KC	Operation protective cover *1
<b>B Shape</b>	
Blank	Sensor integrated *2
D	Sensor separated

\*1 Because PPD3-KC is common for integrated and separated sensors, indicate Blank for B Shape when selecting PPD3-KC for the sensor separated.

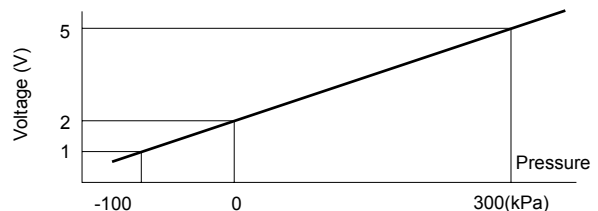
\*2 This panel mounting method applies for port "6B". It cannot be used with other ports.

## Analog output voltage - pressure characteristics

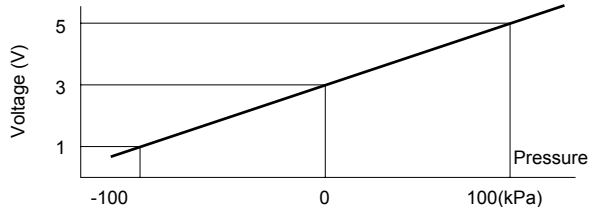
### ● PPD3(-S)-R10NA R10PA R10A



### ● PPD3(-S)-R03NA R03PA R03A



### ● PPD3(-S)-R01NA R01PA R01A



### [Precautions]

- Analog output accuracy is affected by temperature characteristics and heat generated when energized. Be sure to provide a standby time of 5 minutes and over after power is turned ON when using.

- F.R.L
- F (Filtr)
- R (Reg)
- L (Lub)
- PresSW
- Shutoff
- SlowStart
- FimResistFR
- Oil-ProhrR
- MedPresFR
- No Cu/PTFE FRL
- Outdrs FR
- F.R.L (Related)
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneurR
- 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

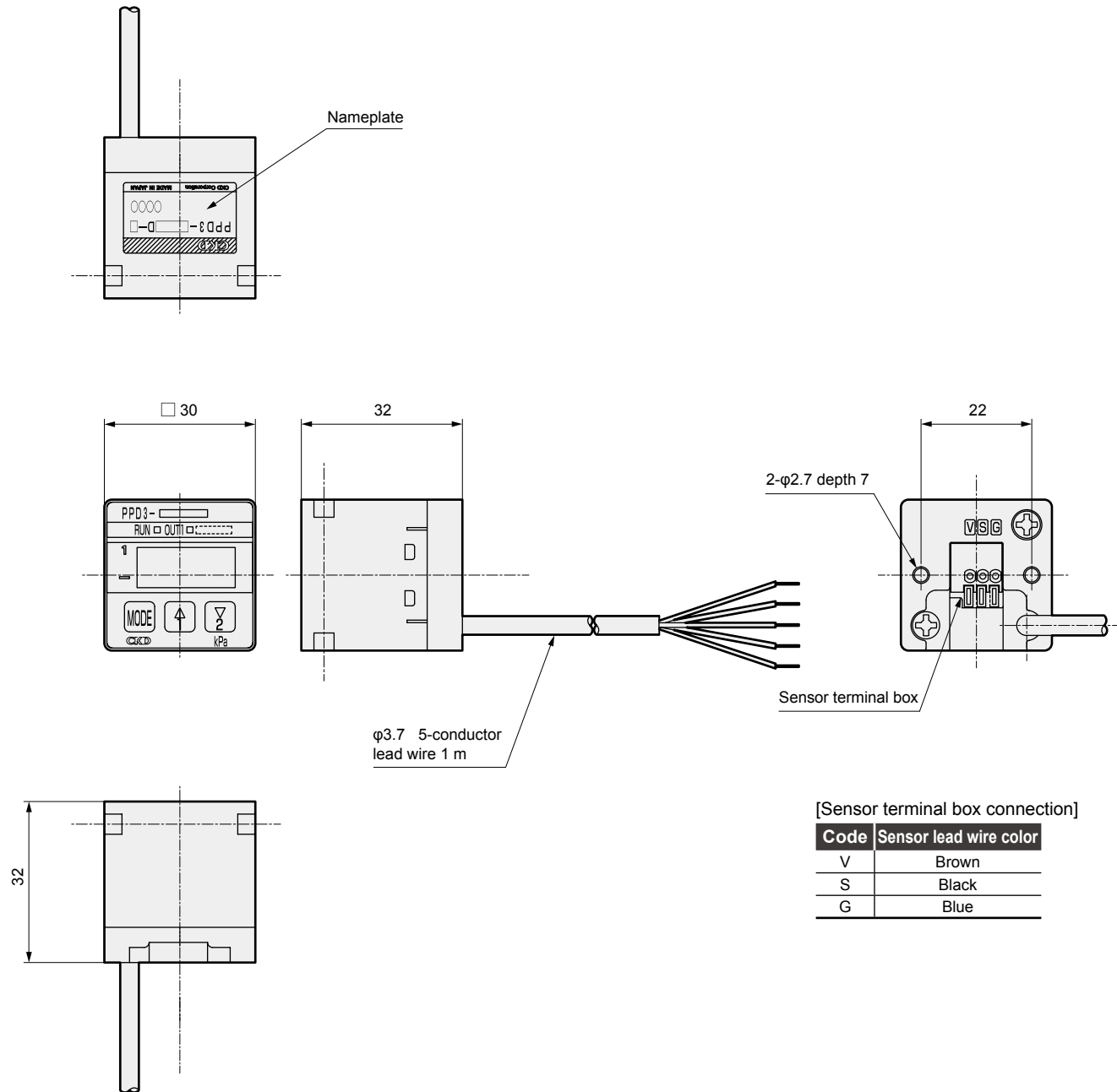
# PPD3/PPD3-S Series

Sensor separated (display)

## Dimensions

Sensor separated (display)

● PPD3-\*\*\*\*\*-D (display)



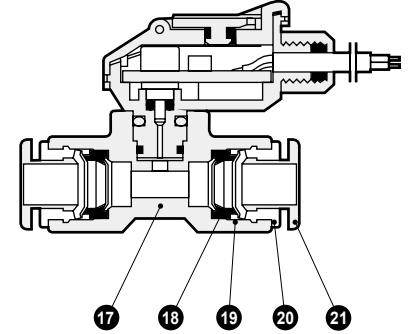
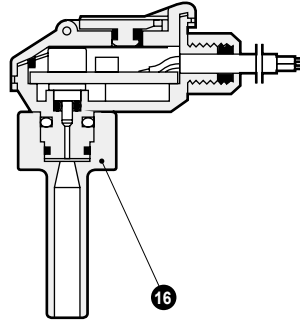
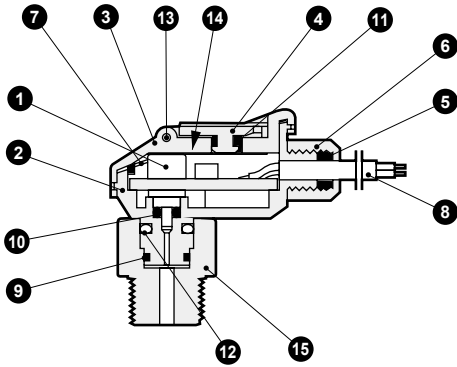
- F.R.L
- F (Filtr)
- R (Reg)
- L (Lub)
- PresSW
- Shutoff
- SlowStart
- FimResistFR
- Oil-ProhR
- MedPresFR
- No Cu/PTFE FRL
- Outdrs FR
- F.R.L (Related)
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- SpdContr
- Silncr
- CheckV/other
- Jnt/tube
- AirUnt
- PrecsCompn
- Mech/ElecPresSw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

# PPD3/PPD3-S Series

## F.R.L Internal structure and parts list

Sensor separated (semiconductor sensor)

- PPD3-R\*\*D-6
- PPD3-R\*\*A-6 (discrete sensor model No.)
- PPD3-R\*\*D-H6-B
- PPD3-R\*\*A-H6-B (discrete sensor model No.)
- PPD3-R\*\*D-H6
- PPD3-R\*\*A-H6 (discrete sensor model No.)



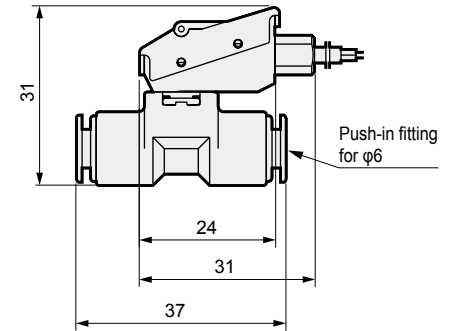
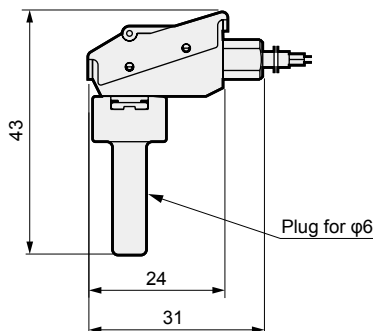
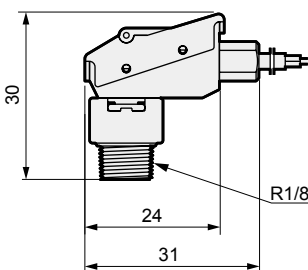
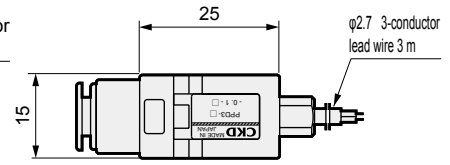
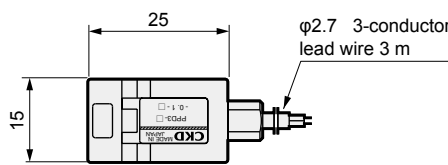
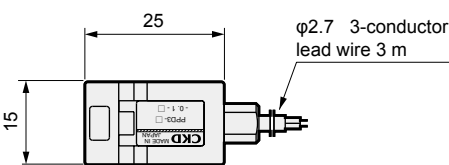
**Cannot be disassembled**

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

Sensor separated (semiconductor sensor)

- PPD3-R\*\*D-6
- PPD3-R\*\*A-6 (discrete sensor model No.)
- PPD3-R\*\*D-H6-B
- PPD3-R\*\*A-H6-B (discrete sensor model No.)
- PPD3-R\*\*D-H6
- PPD3-R\*\*A-H6 (discrete sensor model No.)



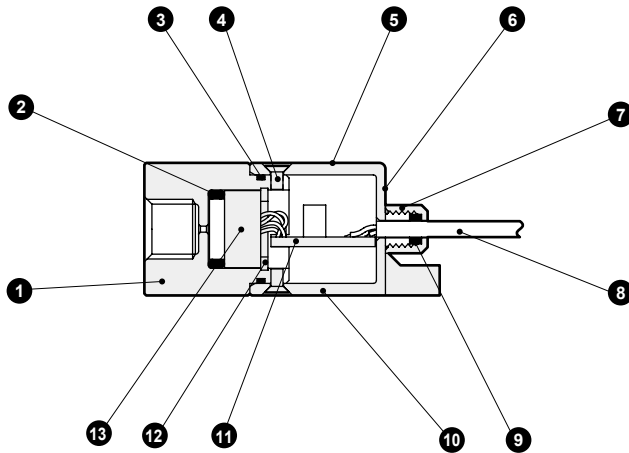
# PPD3/PPD3-S Series

Sensor separated (stainless steel diaphragm sensor)

## Internal structure and parts list

Sensor separated (stainless steel diaphragm sensor)

- PPD3-S-R\*\*D-6B
- PPD3-S-R\*\*A-6B (discrete sensor model No.)



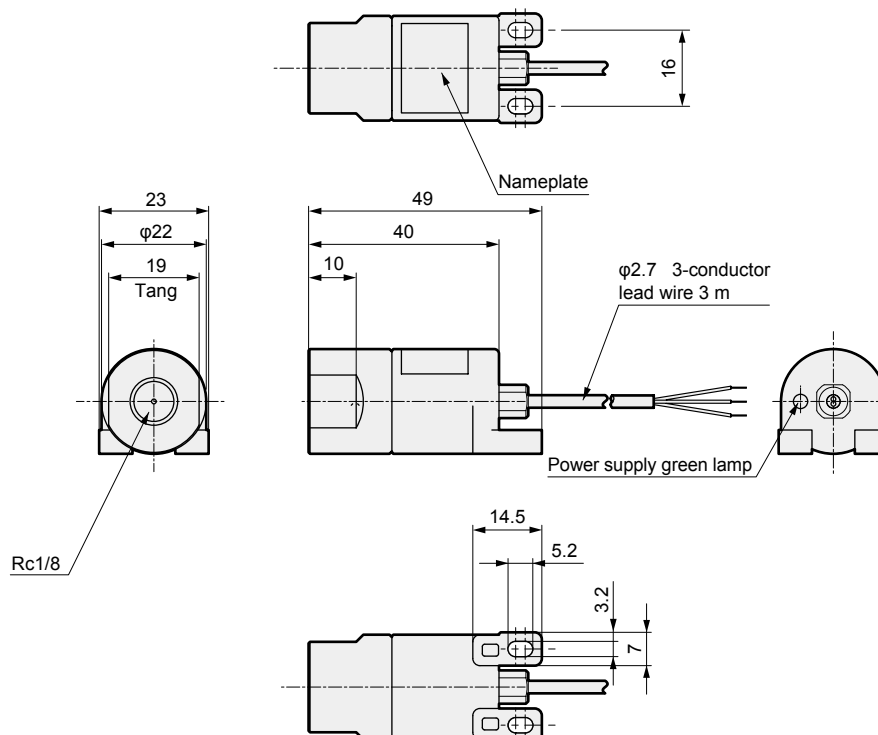
Cannot be disassembled

No.	Part name	Material	No.	Part name	Material
1	Pressure port	Aluminum	8	Lead wire (3 m)	Polyvinyl chloride
2	O-ring	Fluoro rubber	9	Bush	Nitrile rubber
3	O-ring	Nitrile rubber	10	Sensor body	Polybutylene terephthalate (glass fiber 30%)
4	Flat head screw	SUSXM7	11	Amplifier board	Glass epoxy resin
5	Nameplate	Polyester film	12	C ring for hole	Stainless steel
6	Light sheet	Polyester film	13	Pressure sensor	Stainless steel diaphragm strain gauge
7	Bush holder	Aluminum			

## Dimensions

Sensor separated (stainless steel diaphragm sensor)

- PPD3-S-R\*\*D-6B
- PPD3-S-R\*\*A-6B (discrete sensor model No.)



- 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
- PrescR
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- SpdContr
- Silncr
- CheckV/other
- Jnt/tube
- AirUnt
- PresCompn
- Mech/ElecPresSw
- ContactSW
- AirSens
- PresSW Cool
- AirFloSens/Contr
- WaterRISens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending

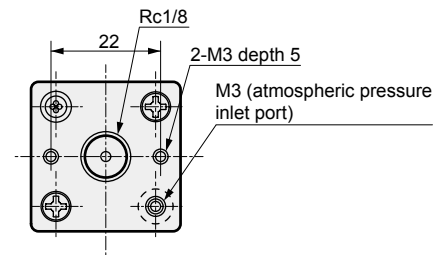
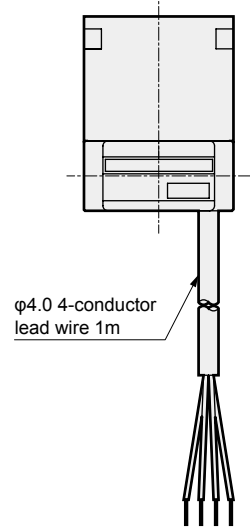
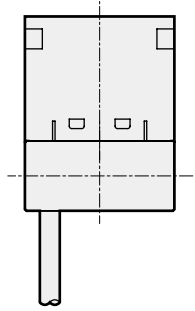
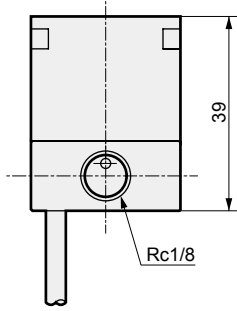
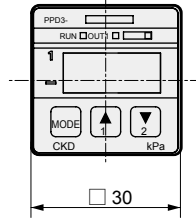
# PPD3/PPD3-S Series



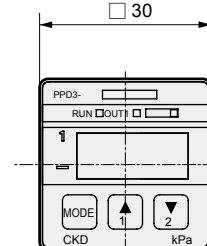
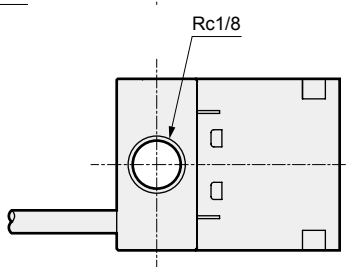
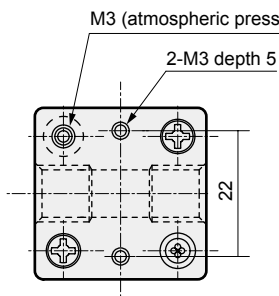
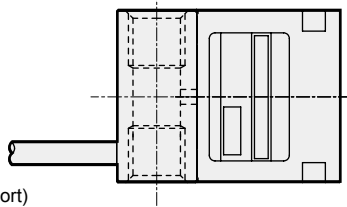
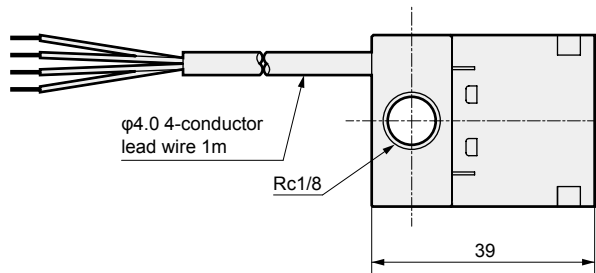
## Dimensions: PPD3

Sensor integrated (semiconductor sensor)

● PPD3- \*\*\*\*\* -6B



● PPD3- \*\*\*\*\* -6T



Refer to Safety precautions of PPD3 (-S) Series on pages 1123 to 1125 for wiring method and precautions.

# PPD3/PPD3-S Series

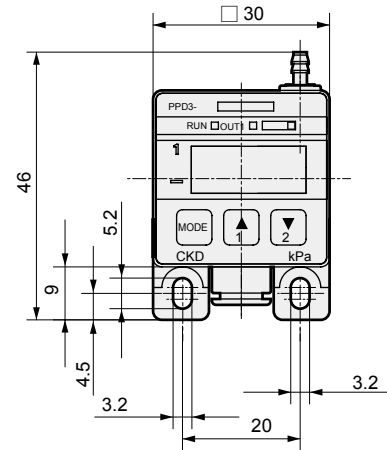
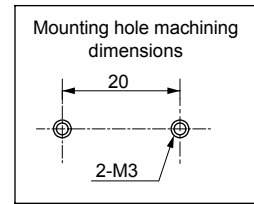
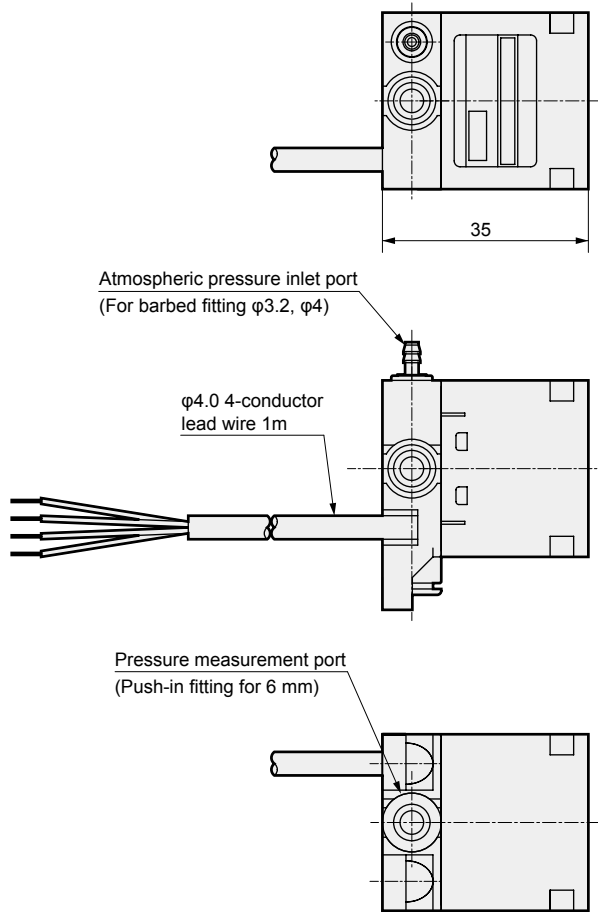
Sensor integrated (semiconductor sensor)

## Dimensions: PPD3

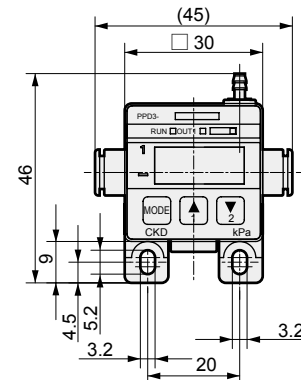
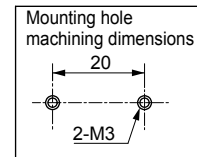
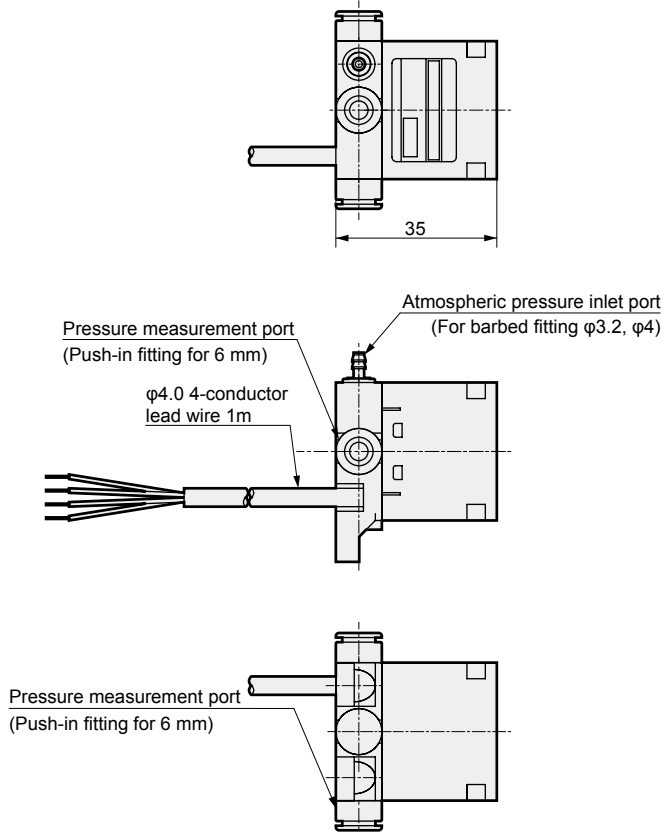


Sensor integrated (semiconductor sensor)

● PPD3- \*\*\*\*\* -6HD



● PPD3- \*\*\*\*\* -6HT



Refer to Safety precautions of PPD3 (-S) Series on pages 1123 to 1125 for wiring method and precautions.

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



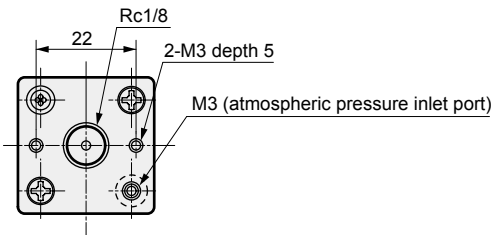
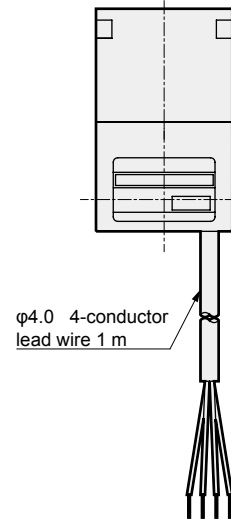
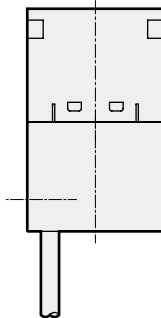
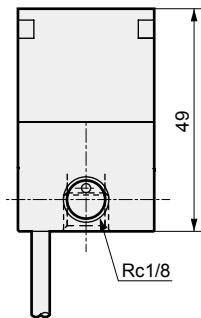
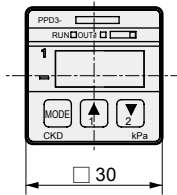
# PPD3/PPD3-S Series

- 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

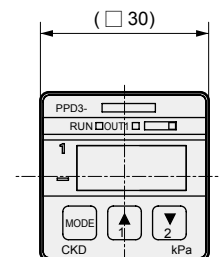
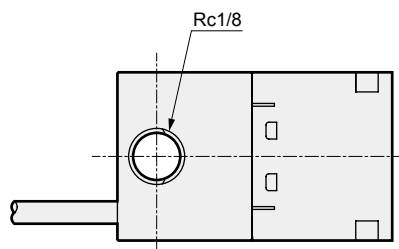
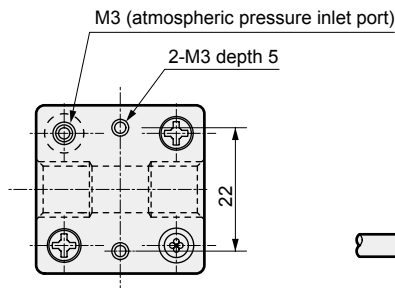
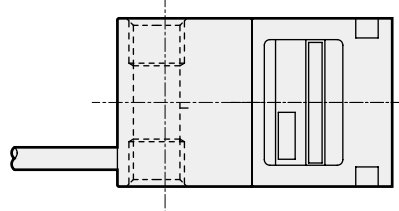
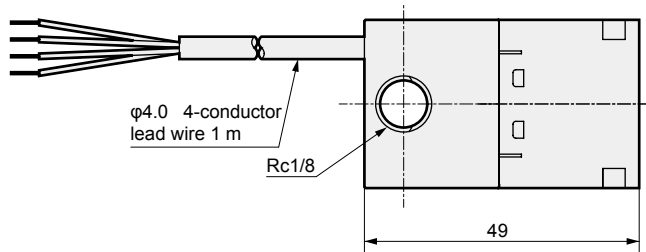
## Dimensions: PPD3-S



Sensor integrated (stainless steel diaphragm sensor)  
 ● PPD3-S-\*\*\*\*\*-6B



## ● PPD3-S-\*\*\*\*\*-6T



Refer to Safety precautions of PPD3 (-S) Series on pages 1123 to 1125 for wiring method and precautions.

# PPD3/PPD3-S Series

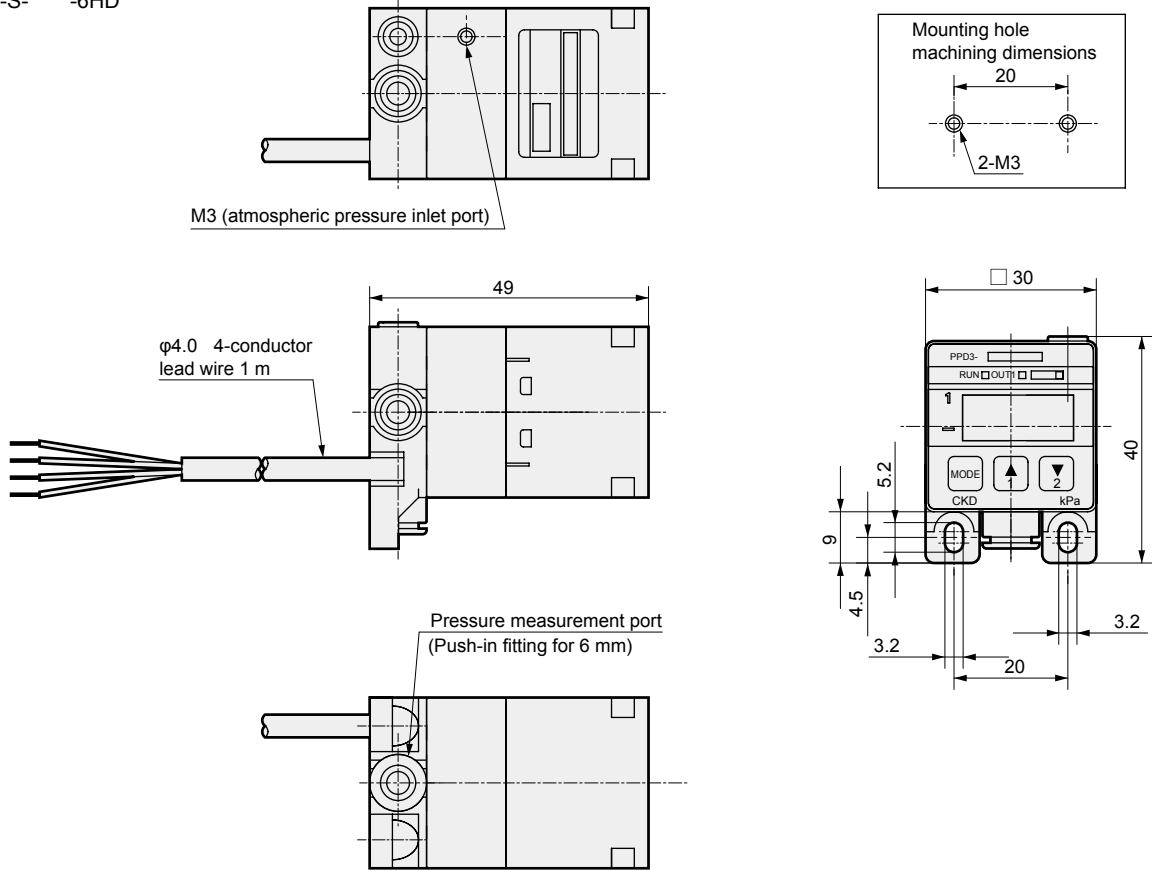
Sensor integrated (stainless steel diaphragm sensor)

## Dimensions: PPD3-S

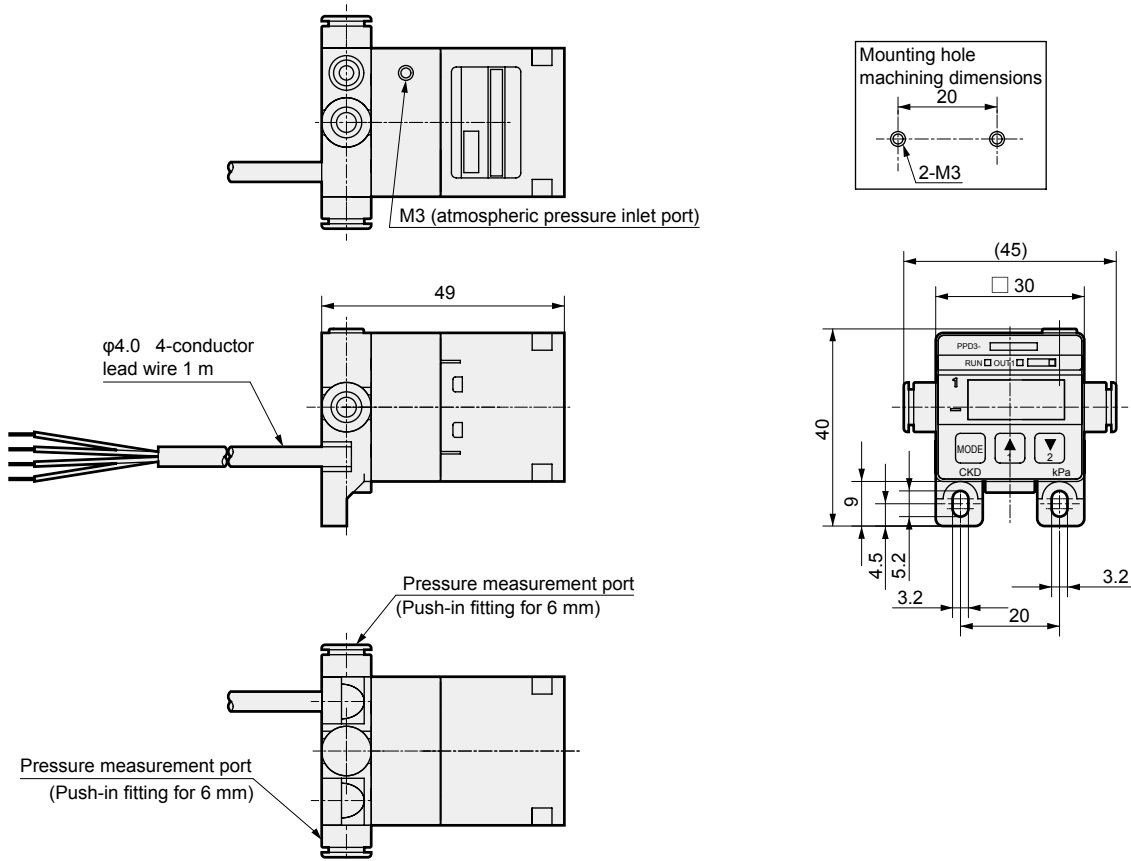


Sensor integrated (stainless steel diaphragm sensor)

● PPD3-S-\*\*\*\*\*-6HD



● PPD3-S-\*\*\*\*\*-6HT



Refer to Safety precautions of PPD3 (-S) Series on pages 1123 to 1125 for wiring method and precautions.

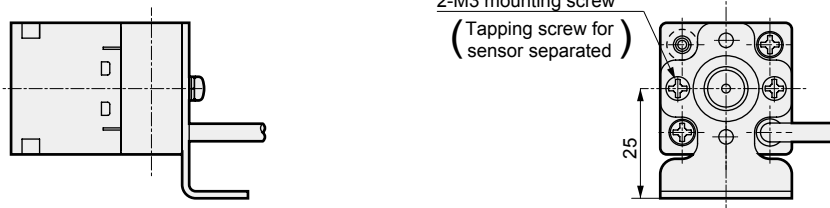
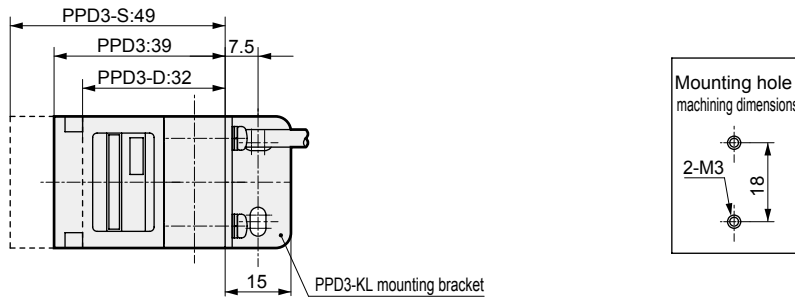
F.R.L
F (Filtr)
R (Reg)
L (Lub)
PresSW
Shutoff
SlowStart
FimResistFR
Oil-ProhR
MedPresFR
No Cu/ PTFE FRL
Outdrs FR
F.R.L (Related)
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
SpdContr
Silncr
CheckV/ other
Jnt/tube
AirUnt
PrecsCompn
Mech/ ElecPresSw
ContactSW
AirSens
PresSW Cool
AirFloSens/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

# PPD3/PPD3-S 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

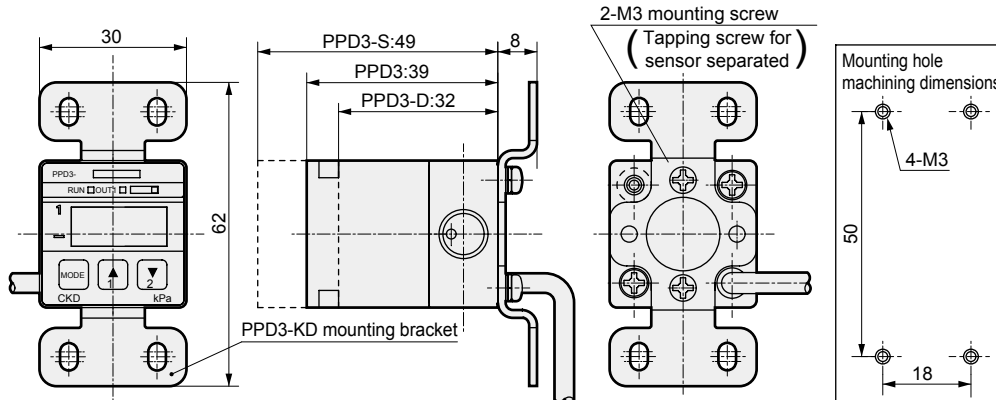
## Dimensions: Mounting bracket

### ● PPD3-KL (-D) assembly drawing



### ● PPD3-KD (-D) assembly drawing

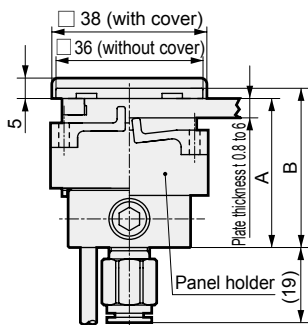
Note: For this installation, use CKD miniature fitting FTL4-M3 for atmospheric release port. (Sensor integrated only)



### ● PPD3-KHS (-D) assembly drawing

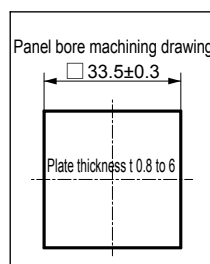
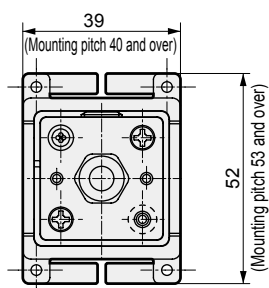
Note: Push-in fitting is not attached with PPD3-KHS-D.

#### Combinations with PPD3-R\*\*\*\*-6B



Mounting dimensions for each model

Model	A	B
PPD3	36.5	39
PPD3-S	46.5	49
PPD3-D	29.5	32



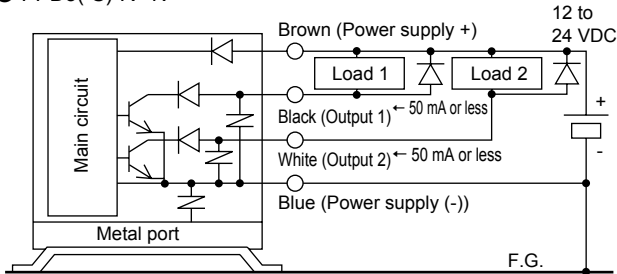
Refer to Safety precautions of PPD3 (-S) Series on pages 1123 to 1125 for wiring method and precautions.

### Internal circuit / connection method

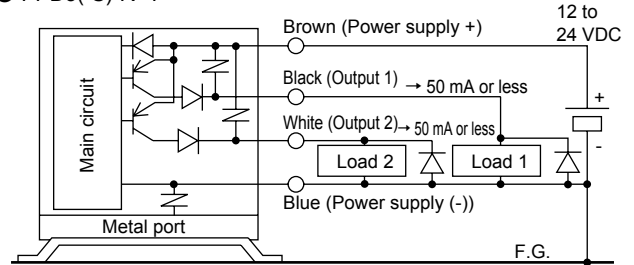
#### [Circuit and connection method]

#### PPD3 (-S) Series (sensor integrated)

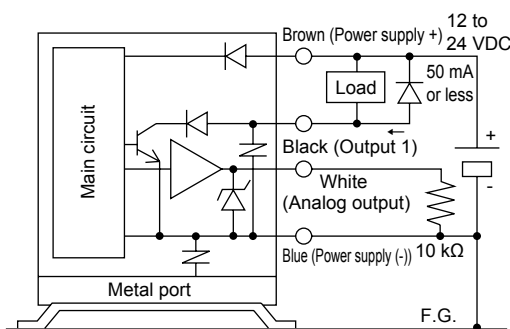
##### ● PPD3(-S)-R\*\*N



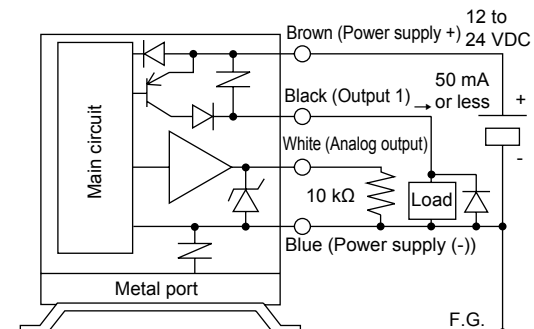
##### ● PPD3(-S)-R\*\*P



##### ● PPD3(-S)-R\*\*NA



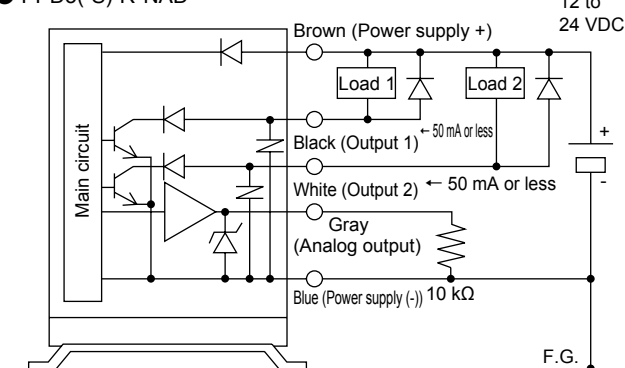
##### ● PPD3(-S)-R\*\*PA



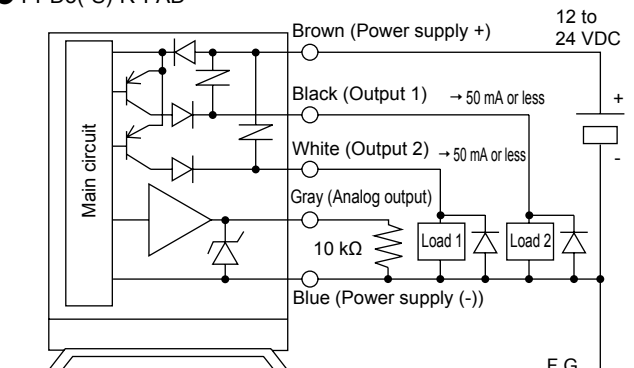
#### [Circuit and connection method]

#### PPD3 (-S)-D Series (sensor separated)

##### ● PPD3(-S)-R\*NAD

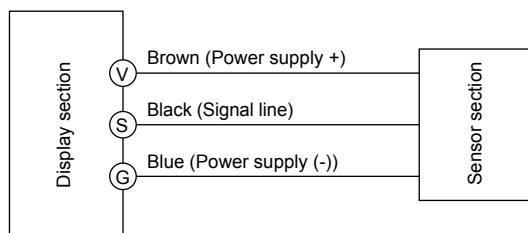


##### ● PPD3(-S)-R\*PAD

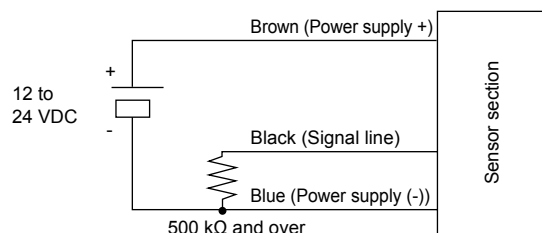


#### Sensor section connection method

##### ● PPD3(-S)-R\*D



##### ● PPD3(-S)-R\*A connection method when single sensor is used



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