

# PS/PSN Series

## Rectangular type proximity sensor

### ■ Features

- Shorten the time of maintenance with the body
- Improved the noise resistance by adopting dedicated IC (DC 3-wire type)
- Reverse power polarity (DC), surge (DC/AC), overcurrent protection (DC type—Except for PS12 Series.)
- Long life cycle and high reliability
- Red LED status indication
- IP67 rated waterproof structure (IEC standard)
- Replacer for micro switches and limit switches



**⚠ Please read "Caution for your safety" in operation manual before using.**



### ■ Specifications

#### ● DC 3-wire type

※ The existing PS17 is upgraded its function and design and changed as PSN17.  
 ※ The case color of PNP output type is changed from orange to gray.

| Model                            | PS12-4DN<br>PS12-4DP<br>PS12-4DN2<br>PS12-4DNU<br>PS12-4DPU<br>PS12-4DN2U         | PSN17-5DN<br>PSN17-5DP<br>PSN17-5DN2<br>PSN17-5DP2<br>PSN17-5DNU<br>PSN17-5DPU<br>PSN17-5DN2U<br>PSN17-5DN-F | PSN17-8DN<br>PSN17-8DP<br>PSN17-8DN2<br>PSN17-8DNU<br>PSN17-8DPU | PSN17-8DN-F<br>PSN17-8DP-F<br>PSN17-8DN2-F<br>PSN17-8DNU-F<br>PSN17-8DPU-F<br>PSN17-8DN2U-F | PSN25-5DN<br>PSN25-5DP<br>PSN25-5DN2<br>PSN25-5DP2 | PSN30-10DN<br>PSN30-10DP<br>PSN30-10DN2<br>PSN30-10DPU | PSN30-15DN<br>PSN30-15DP<br>PSN30-15DN2<br>PSN30-15DPU | PSN40-20DN<br>PSN40-20DP<br>PSN40-20DN2<br>PSN40-20DPU | PS50-30DN<br>PS50-30DP<br>PS50-30DN2<br>PS50-30DPU |
|----------------------------------|---|--|--|---|--|--|--|--|--|
| Sensing distance                 | 4mm ±10%  | 5mm ±10%   | 8mm ±10%   |   | 5mm ±10%   | 10mm ±10%  | 15mm ±10%  | 20mm ±10%  | 30mm ±10%  |
| Hysteresis                       | Max. 10% of sensing distance  |  |  |   |  |  |  |  |  |
| Standard sensing target          | 12×12×1mm (Iron)  | 18×18×1mm (Iron)   | 25×25×1mm (Iron)   |   |  | 30×30×1mm (Iron)                                       | 45×45×1mm (Iron)                                       | 60×60×1mm (Iron)                                       | 90×90×1mm (Iron)                                   |
| Setting distance                 | 0~2.8mm   | 0~3.5mm  | 0~5.6mm  | 0~3.5mm   | 0~7mm  | 0~10.5mm   | 0~14mm   | 0~21mm   |  |
| Power supply (Operation voltage) | 12~24VDC (1~30VDC)  |  |  |   |  |  |  |  |  |
| Current consumption              | Max. 10mA   |  |  |   |  |  |  |  |  |
| Response frequency(*1)           | 500Hz   | 700Hz  | 200Hz  | 300Hz   | 250Hz  | 200Hz  | 100Hz  | 50Hz   |  |
| Residual voltage                 | Max. 1.5V   |  |  |   |  |  |  |  |  |
| Affection by Temp.               | ±10% Max. for sensing distance at +20℃ within temperature range of -25 ~ +70℃     |  |  |   |  |  |  |  |  |
| Control output                   | Max. 200mA  |  |  |   |  |  |  |  |  |
| Insulation resistance            | Min. 50MΩ (at 500VDC mega)  |  |  |   |  |  |  |  |  |
| Dielectric strength              | 1500VAC 50/60Hz for 1minute   |  |  |   |  |  |  |  |  |
| Vibration                        | 1mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours |  |  |   |  |  |  |  |  |
| Shock                            | 500m/s <sup>2</sup> (50G) in X, Y, Z direction for 3 times                        |  |  |   |  |  |  |  |  |
| Indicator                        | Operation indicator (Red LED)   |  |  |   |  |  |  |  |  |
| Ambient temperature              | -25 ~ +70℃ (at non-freezing status)   |  |  |   |  |  |  |  |  |
| Storage temperature              | -30 ~ +80℃ (at non-freezing status)   |  |  |   |  |  |  |  |  |
| Ambient humidity                 | 35 ~ 95%RH  |  |  |   |  |  |  |  |  |
| Protection circuit               | Surge, Reverse power polarity protection circuit                                  |  |  | Surge, Reverse power polarity, Overcurrent protection circuit                               |  |  |  |  |  |
| Protection                       | IP67 (IEC standard)   |  |  |   |  |  |  |  |  |
| Cable spec.                      | φ 4 × 2P, 2m  |  |  |   |  | φ 5 × 2P, 2m   |  |  |  |
| Approval                         | <b>CE</b>   |  |  |   |  |  |  |  |  |
| Unit weight                      | Approx. 62g   | Approx. 71g  | Approx. 70g  |   | Approx. 111g                                       | Approx. 158g   | Approx. 220g   |  |  |

※ (\*1) The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.

# Rectangular Type

## ■ Specifications

### ● DC 2-wire type

※The existing PS17 is upgraded its function and design and changed as PSN17.  
 ※The case color of Normal Close type is changed from orange to gray.

| Model                               | PSNT17-5DO<br>PSNT17-5DC  | PSNT17-5DOU<br>PSNT17-5DCU |
|-------------------------------------|---|----------------------------|
| Sensing distance                    | 5mm ±10%  |                            |
| Hysteresis                          | Max. 10% of sensing distance  |                            |
| Standard sensing target             | 18×18×1mm (Iron)  |                            |
| Setting distance                    | 0 ~ 3.5mm   |                            |
| Power supply<br>(Operating voltage) | 24VDC<br>(15~30VC)  |                            |
| Leakage current                     | Max. 0.6mA  |                            |
| Response frequency(*1)              | 700Hz   |                            |
| Residual voltage                    | Max. 3.5V   |                            |
| Affection by Temp.                  | ±10% Max. for sensing distance at +20°C within temperature range of -25 ~ +70°C   |                            |
| Control output                      | 2~100mA   |                            |
| Insulation resistance               | Min. 50MΩ (at 500VDC mega)  |                            |
| Dielectric strength                 | 1500VAC 50/60Hz for 1 minute  |                            |
| Vibration                           | 1mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours |                            |
| Shock                               | 500m/s <sup>2</sup> (50G) in X, Y, Z direction for 3 times                        |                            |
| Indicator                           | Operation indicator (Red LED)   |                            |
| Ambient temperature                 | -25 ~ +70°C (at non-freezing status)  |                            |
| Storage temperature                 | -30 ~ +80°C (at non-freezing status)  |                            |
| Ambient humidity                    | 35 ~ 95%RH  |                            |
| Protection circuit                  | Surge protection circuit  |                            |
| Protection                          | IP67 (IEC standard)   |                            |
| Cable                               | φ4×3P, 2m   |                            |
| Approval                            | CE  |                            |
| Unit weight                         | Approx. 69g   |                            |

※(\*1) The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.

### ● AC 2-wire type

※The case color of Normal Close type is changed from orange to gray.

| Model                               | PSN25-5AO<br>PSN25-5AC  | PSN30-10AO<br>PSN30-10AC | PSN30-15AO<br>PSN30-15AC | PSN40-20AO<br>PSN40-20AC |
|-------------------------------------|---|--------------------------|--------------------------|--------------------------|
| Sensing distance                    | 5mm ±10%  | 10mm ±10%                | 15mm ±10%                | 20mm ±10%                |
| Hysteresis                          | Max. 10% of sensing distance  |                          |                          |                          |
| Standard sensing target             | 25×25×1mm (Iron)  | 30×30×1mm (Iron)         | 45×45×1mm (Iron)         | 60×60×1mm (Iron)         |
| Setting distance                    | 0 ~ 3.5mm   | 0 ~ 7mm                  | 0 ~ 10.5mm               | 0 ~ 14mm                 |
| Power supply<br>(Operating voltage) | 100~240VDC<br>(85~264VC)  |                          |                          |                          |
| Leakage current                     | Max. 2.5mA  |                          |                          |                          |
| Response frequency(*1)              | 20Hz  |                          |                          |                          |
| Residual voltage                    | Max. 10V  |                          |                          |                          |
| Affection by Temp.                  | ±10% Max. for sensing distance at +20°C within temperature range of -25 ~ +70°C   |                          |                          |                          |
| Control output                      | 5 ~ 200mA   |                          |                          |                          |
| Insulation resistance               | Min. 50MΩ (at 500VDC mega)  |                          |                          |                          |
| Dielectric strength                 | 2500VAC 50/60Hz for 1 minute  |                          |                          |                          |
| Vibration                           | 1mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours |                          |                          |                          |
| Shock                               | 500m/s <sup>2</sup> (50G) in X, Y, Z direction for 3 times                        |                          |                          |                          |
| Indicator                           | Operation indicator (Red LED)   |                          |                          |                          |
| Ambient temperature                 | -25 ~ +70°C (at non-freezing status)  |                          |                          |                          |
| Storage temperature                 | -30 ~ +80°C (at non-freezing status)  |                          |                          |                          |
| Ambient humidity                    | 35 ~ 95%RH  |                          |                          |                          |
| Protection circuit                  | Surge protection circuit  |                          |                          |                          |
| Protection                          | IP67 (IEC standard)   |                          |                          |                          |
| Cable                               | φ4×2P, 2m   | φ5×2P, 2m                |                          |                          |
| Approval                            | CE  |                          |                          |                          |
| Unit weight                         | Approx. 65g   | Approx. 106g             | Approx. 152g             |                          |

※(\*1) The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.

(A)  
Counter

(B)  
Timer

(C)  
Temp.  
controller

(D)  
Power  
controller

(E)  
Panel  
meter

(F)  
Tacho/  
Speed/  
Pulse  
meter

(G)  
Display  
unit

(H)  
Sensor  
controller

(I)  
Switching  
power  
supply

(J)  
Proximity  
sensor

(K)  
Photo  
electric  
sensor

(L)  
Pressure  
sensor

(M)  
Rotary  
encoder

(N)  
Stepping  
motor &  
Driver &  
Controller

(O)  
Graphic  
panel

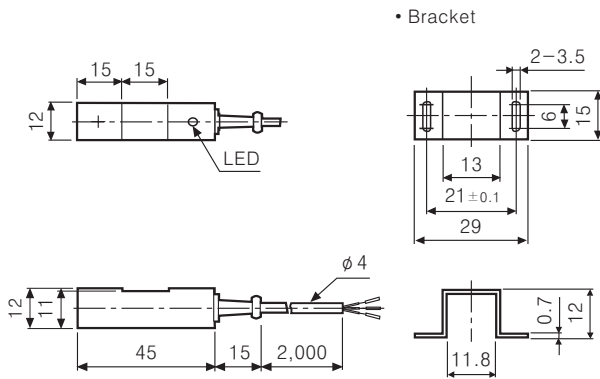
(P)  
Production  
stoppage  
models &  
replacement

# PS/PSN Series

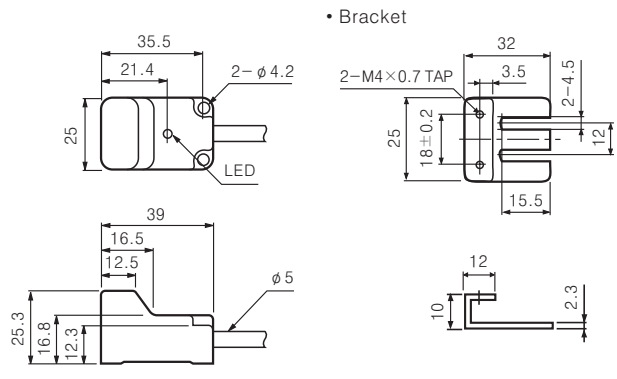
## ■ Dimensions

(Unit:mm)

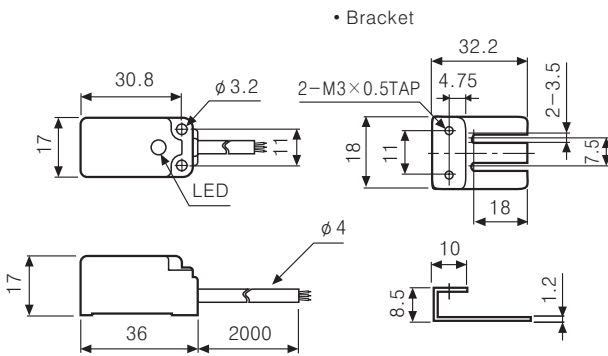
### ●PS12



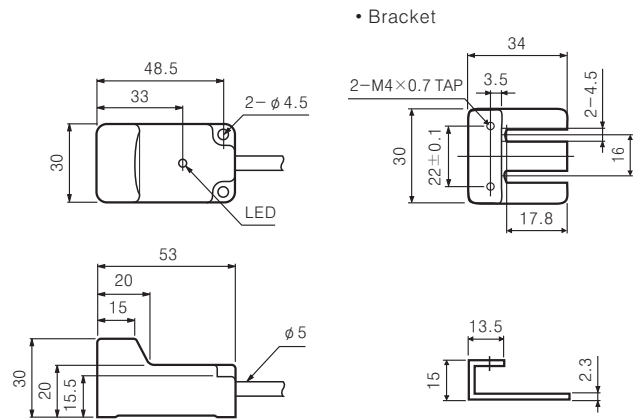
### ●PSN25



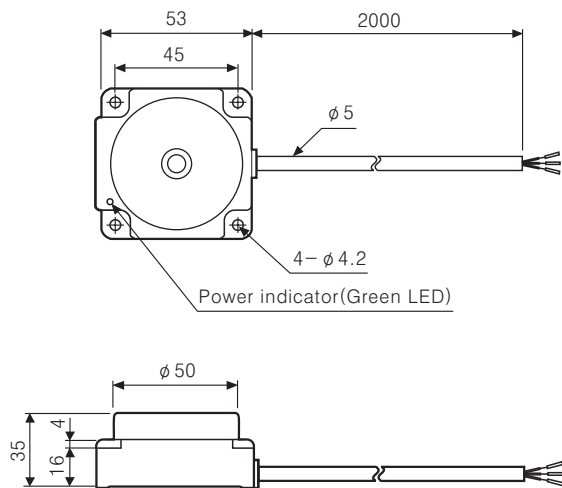
### ●PSN17 / PSNT17 (Former : PS17/ PST17)



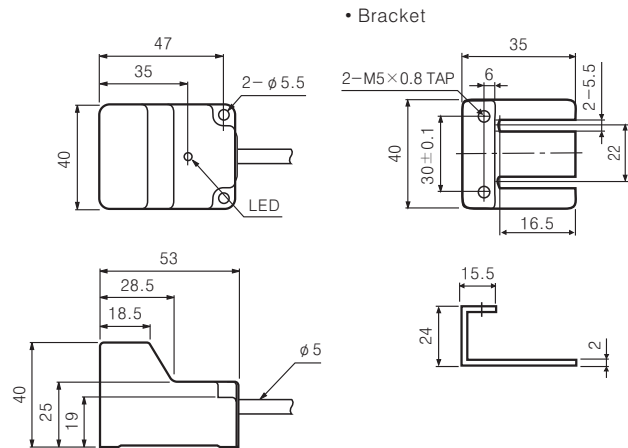
### ●PSN30



### ●PS50



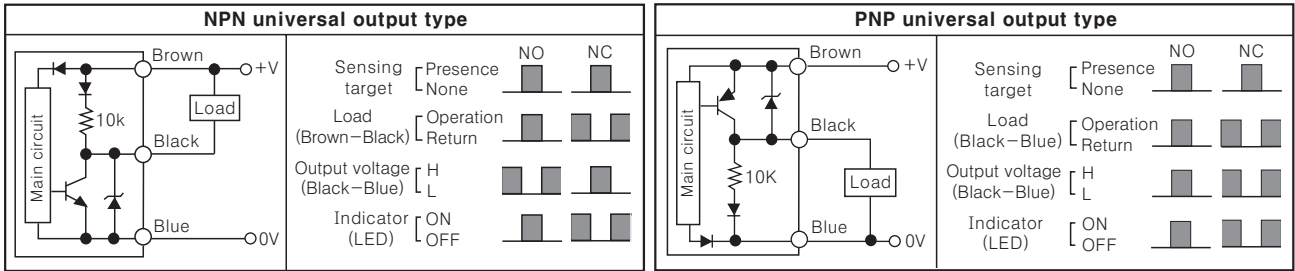
### ●PSN40



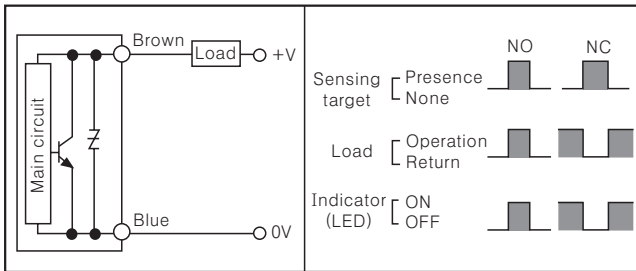
# Rectangular Type

## Control output diagram

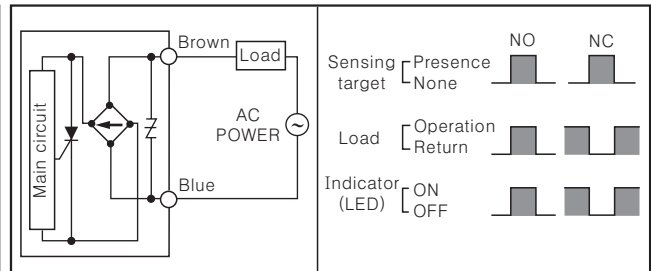
### DC 3-wire type



### DC 2-wire type

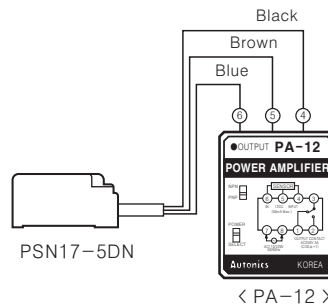
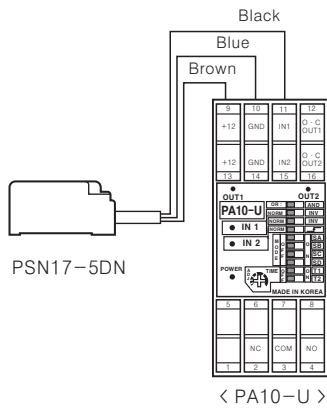


### AC 2-wire type



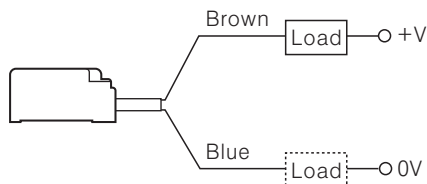
## Connections

### DC 3-wire type



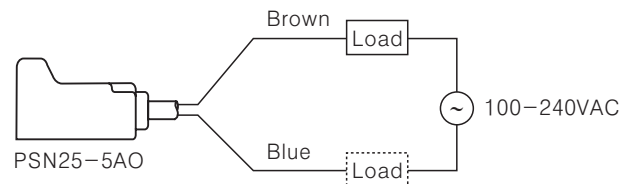
※ There is NPN/PNP selection switch in PA-12.

### DC 2-wire type



※ The load can be connected to either wire.

### AC 2-wire type



※ The load can be connected to either wire.

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

(N) Stepping motor & Driver & Controller

(O) Graphic panel

(P) Production stoppage models & replacement

