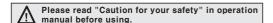
## Rectangular type proximity sensor

#### **■**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







#### ■ Specifications

### ●DC 3-wire type

- $\slash\hspace{-0.4em}$  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	PS12-4DN2 PS12-4DNU	PSN17-5DN PSN17-5DP PSN17-5DN2 PSN17-5DP2 PSN17-5DNU PSN17-5DPU PSN17-5DN2U PSN17-5DN2U PSN17-5DN-F	PSN17-8DP PSN17-8DN2 PSN17-8DNU	PSN17-8DN-F PSN17-8DP-F PSN17-8DN2-F PSN17-8DNU-F PSN17-8DPU-F PSN17-8DN2U-F	PSN25-5DP PSN25-5DN2	PSN30-10DN PSN30-10DP PSN30-10DN2 PSN30-10DP2	PSN30-15DP PSN30-15DN2	PSN40-20DP PSN40-20DN2		
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)	25×25×1 mm (Ir		ron)	$30 \times 30 \times 1$ mm (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.	$\pm 10\%$ Max. for sensing distance at $+20^{\circ}\mathrm{C}$ within temperature range of $-25\sim +70^{\circ}\mathrm{C}$									
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/s² (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.	$\phi$ 4×2P, 2m $\phi$ 5×2P, 2m									
Approval					C€					
Unit weight	Approx. 62g	Approx. 71g		Approx. 70g		Approx	x. 111g	Approx. 158g	Approx. 220g	

<sup>\*(\*1)</sup> 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.

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## 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 PSNT17-5DC	PSNT17-5DOU PSNT17-5DCU				
Sensing distance	5mm ±10%					
Hysteresis	Max. 10% of sensing distance					
Standard sensing target	18×18×1mm(	(ron)				
Setting distance	0 ~ 3.5mm					
Power supply (Operating voltage)	24VDC (15-30VC)					
Leakage current	Max. 0.6mA					
Response frequency(*1)	700Hz					
Residual voltage	Max. 3.5V					
Affection by Temp.	$\pm 10\%$ Max. for sensing distance at $+20\%$ within temperature range of $-25 \sim +70\%$					
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 ℃ (at non-freezing status)					
Ambient humidity	35 ~ 95%RH					
Protection circuit	Surge protection circuit					
Protection	IP67 (IEC standard)					
Cable	φ 4×3P, 2m					
Approval	C€					
Unit weight	Approx. 69g					

<sup>\*(\*1)</sup> 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	PSN30-10AO	PSN30-15AO	PSN40-20AO				
Wodel	PSN25-5AC	PSN30-10AC	PSN30-15AC	PSN40-20AC				
Sensing distance	$5$ mm $\pm 10$ %	10mm ±10%	15mm ±10%	20mm ±10%				
Hysteresis	Max. 10% of sensing distance							
Standard sensing target	$25 \times 25 \times 1$ mm(Iron)	30×30×1mm(Iron)	$45 \times 45 \times 1$ mm (Iron)	60×60×1mm(Iron)				
Setting distance	0 ~ 3.5mm	0 ~ 7mm	0 ~ 10.5mm	0 ~ 14mm				
Power supply (Operating voltage)	100-240VDC (85-264VC)							
Leakage current	Max. 2.5mA							
Response frequency(*1)	20Hz							
Residual voltage	Max. 10V							
Affection by Temp.	$\pm 10\%$ Max. for sensing distance at $+20\%$ within temperature range of $-25\sim +70\%$							
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/s² (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 protection circuit							
Protection	IP67 (IEC standard)							
Cable	φ 4×2P, 2m φ 5×2P, 2m							
Approval	C€							
Unit weight	Approx. 65g	Appro	ox. 106g	Approx. 152g				

<sup>\*(\*1)</sup> 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

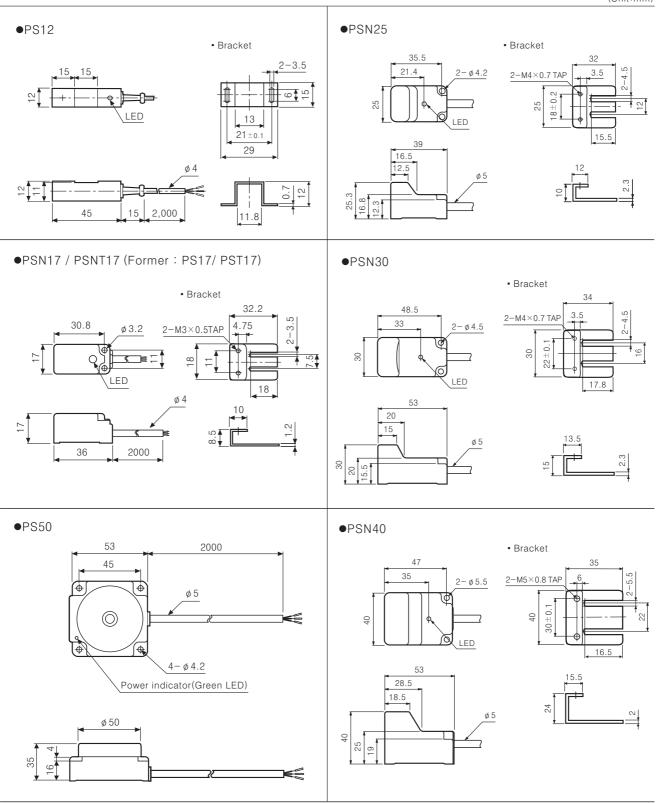
(O) Graphic panel

Production stoppage models & replacement

**Autonics** J-34

# **PS/PSN Series**

## ■ Dimensions (Unit:mm)

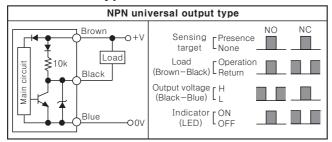


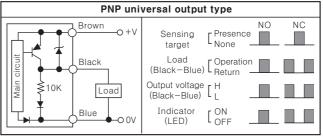
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## Rectangular Type

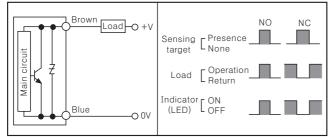
### **■**Control output diagram

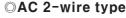
#### ODC 3-wire type

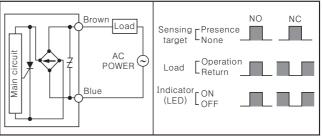




#### ○DC 2-wire type

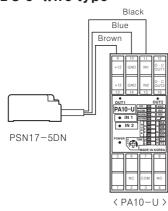


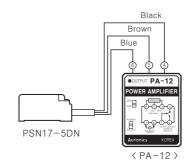




#### Connections

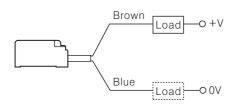
#### ○DC 3-wire type





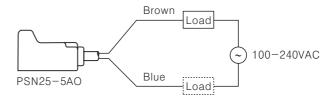
★There is NPN/PNP selection switch in PA-12.

#### ○DC 2-wire type



X The load can be connected to either wire.

#### OAC 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

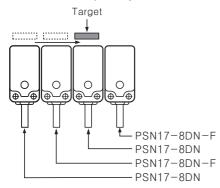
(P) Production stoppage models & replacement

Autonics J-36

## **PS/PSN Series**

#### ■ Proper usage

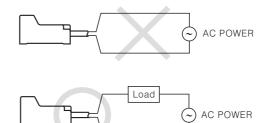
#### ODifferential frequency



When installing several proximity sensor closely, it may cause malfunction due to mutual interference. Therefore, please use differential frequency for the application.

\*Differential frequency type is only for 17 square.

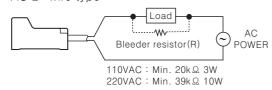
### ©Connection of the power supply



When using DC 2-wire and AC 2-wire type, a load must be connected before applying power; otherwise, components can be damaged.

#### OIn case of the load current is small

#### ●AC 2-wire type



It may cause return failure of load by residual voltage.

If the load current is under 5mA, please make sure the residual voltage is less than the return voltage of the load by connecting a bleeder resistor in parallel with the load as shown in the diagram.

$$R = \frac{V_s}{I} (\Omega) \qquad P = \frac{V_s^2}{R} (W)$$

[ I:Action current of load, R:Bleeder resistance, P:Permissible power]

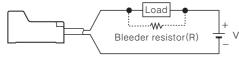
Please make the current on proximity sensor smaller than the return current of load by connecting a Bleeder resistor in parallel.

\*\*W value of Bleeder resistor should be bigger for proper heat dissipation.

 $R = \frac{V_S}{Io-Ioff} (\Omega) \quad P = \frac{V_S^2}{R} (W)$ 

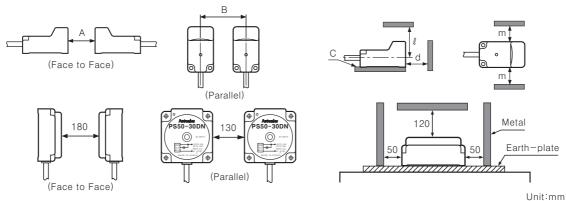
Vs : Power supply, Io : Min. action current of proximity sensor Ioff : Return current of load, P : Number of Bleeder resistance watt

## ●DC 2-wire type



#### OMutual-interference & Influence by surrounding metals

When several proximity sensors are mounted closely, malfunction of sensor may be caused due to mutual interference. Therefore, be sure to provide a minimum distance between the two sensors, as below.



Model	PS12	PS12 PSN1		PSN25	PSN30		PSN40
Item	4mm	5mm	8mm	5mm	10mm	15mm	20mm
А	24	30	48	30	60	90	120
В	24	36	40	40	50	85	70
С	5	5	5	5	5	5	5
d	12	15	24	15	30	45	60
l	18	24	33	25	30	45	45
m	12	18	20	20	25	35	35

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