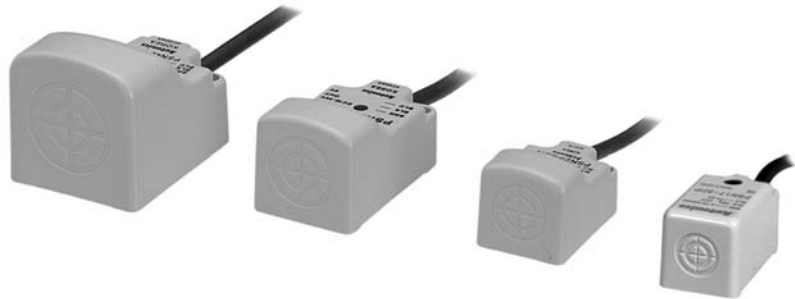


**Autonics**

**INDUCTIVE PROXIMITY SENSOR(SQUARE DC 3 WIRE)  
PSN SERIES**

**M A N U A L**



Thank you very much for selecting Autonics products.  
**For your safety, please read the following before using.**

**Caution for your safety**

- ※Please keep these instructions and review them before using this unit.
- ※Please observe the cautions that follow;
  - Warning** Serious injury may result if instructions are not followed.
  - Caution** Product may be damaged, or injury may result if instructions are not followed.
- ※The following is an explanation of the symbols used in the operation manual.
  - ⚠ caution: Injury or danger may occur under special conditions.

**Warning**

**1. In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, equipment entertainment or safety device etc), it requires installing fail-safe device, or contact us for information on type required.**

It may result in serious damage, fire or human injury.

**Caution**

**1. Do not use this unit in place where there is flammable, explosive gas, chemical or strong alkalis, acids.**

It may cause a fire or explosion.

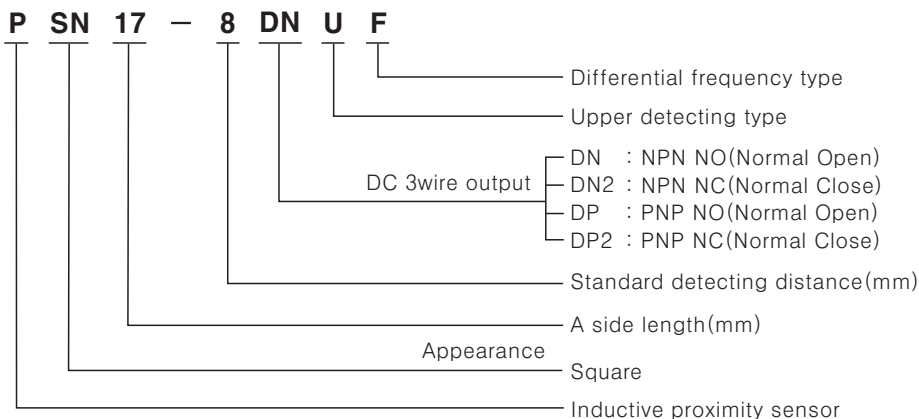
**2. Do not impact on this unit.**

It may result in malfunction or damage to the product.

**3. Do not apply AC power and observe specification rating.**

It may result in serious damage to the product.

**Ordering information**



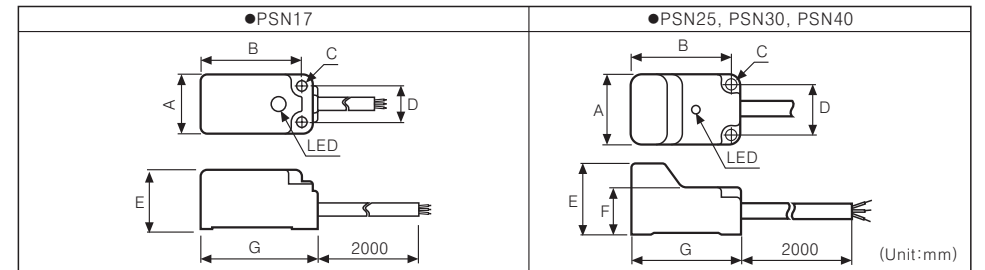
※The above specifications are changeable at anytime without notice.

**Specifications**

Model	PSN17-5DN PSN17-5DP PSN17-5DN2 PSN17-5DP2 PSN17-5DNU PSN17-5DN2U PSN17-5DPU PSN17-5DN2U-F PSN17-5DP2U-F PSN17-5DN-F PSN17-5DP-F	PSN17-8DN PSN17-8DP PSN17-8DN2 PSN17-8DP2 PSN17-8DNU PSN17-8DN2U PSN17-8DPU PSN17-8DN2U-F PSN17-8DP2U-F PSN17-8DN-F PSN17-8DP-F	PSN25-5DN PSN25-5DP PSN25-5DN2 PSN25-5DP2	PSN30-10DN PSN30-10DP PSN30-10DN2 PSN30-10DP2	PSN30-15DN PSN30-15DP PSN30-15DN2 PSN30-15DP2	PSN40-20DN PSN40-20DP PSN40-20DN2 PSN40-20DP2
Detecting distance	5mm ±10%	8mm ±10%	5mm ±10%	10mm ±10%	15mm ±10%	20mm ±10%
Hysteresis	Max. 10% of detecting distance					
Standard detecting target	18×18×1mm (Iron)	25×25×1mm (Iron)	30×30×1mm (Iron)	45×45×1mm (Iron)	60×60×1mm (Iron)	
Setting distance	0 to 3.5	0 to 5	0 to 3.5	0 to 7	0 to 10.5	0 to 14
Power supply (Operating voltage)	12-24VDC (10-30VDC)					
Current consumption	Max. 10mA					
Response frequency(★1)	700Hz	200Hz	350Hz	250Hz	200Hz	100Hz
Residual voltage	Max. 1.5V					
Affection by temp.	±10% Max. of detecting distance at +20°C within temperature range of -25 to +70°C					
Control output	Max. 200mA					
Insulation resistance	Min. 50MΩ (500VDC)					
Dielectric strength	1500VAC 50/60Hz for 1minute					
Vibration	1mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours					
Shock	500m/s <sup>2</sup> (50G) X, Y, Z directions for 3 times					
Indicator	Operating indicator (Red LED)					
Ambient temperature	-25 to +70°C (non-freezing condition)					
Storage temperature	-30 to +80°C (non-freezing condition)					
Ambient humidity	35 to 95%RH					
Protection circuit	Overload & short circuit protection, Reverse polarity protection, Surge protection circuit					
Protection	IP67(IEC specification)					
Weight	Approx. 71g	Approx. 70g	Approx. 111g	Approx. 158g		

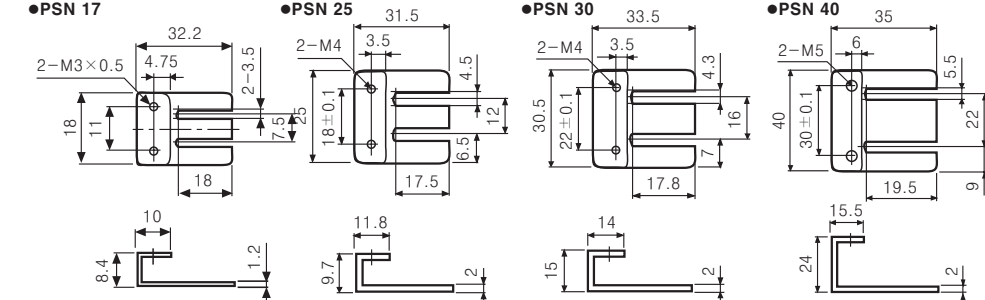
★1 The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.

**Dimensions**

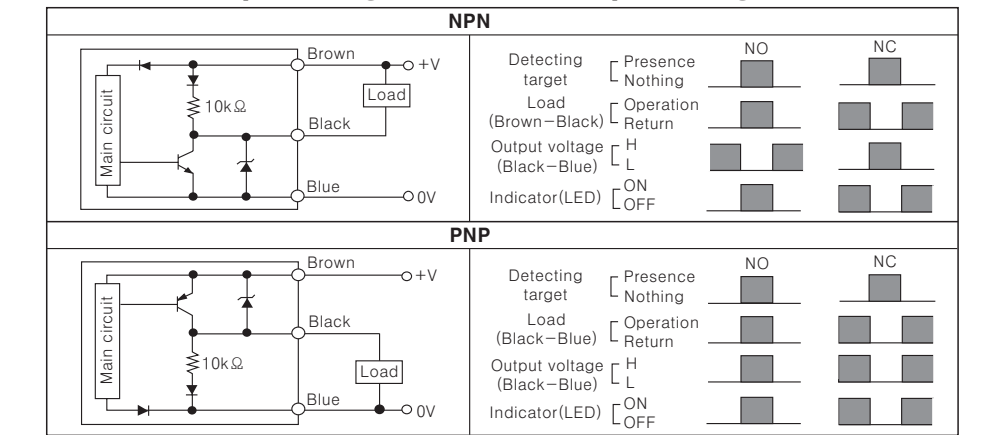


Item	A	B	C	D	E	F	G
PSN17	17	30.8	φ3.2	11	18	—	35.6
PSN25	25	35.5	φ4.2	18	25.3	16.8	39
PSN30	30	48.5	φ4.5	22	30	20	53
PSN40	40	47	φ5.5	30	40	25	53

Bracket



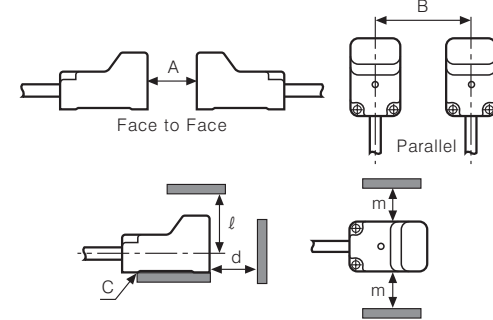
**Control output diagram & Load operating**



**Mutual-interference & Influence by surrounding metals**

◎Mutual-interference

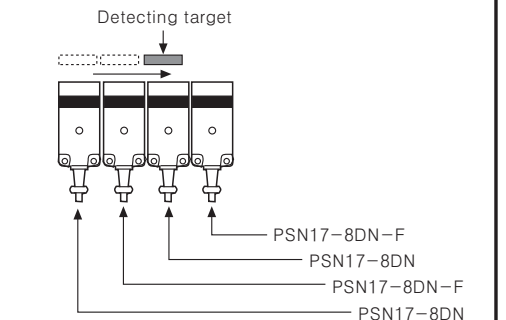
When plural proximity sensors are mounted in a close row, malfunction of sensor may be caused due to mutual interference. Therefore, be sure to provide a minimum distance between the two sensors, as below charts.



◎Differential frequency

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

※Differential frequency type is only for PS17.



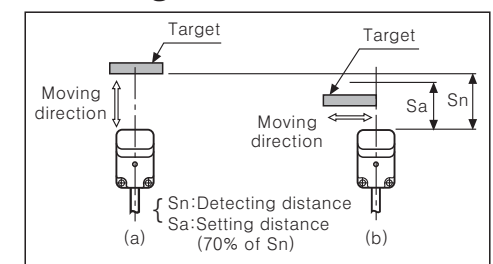
◎Influence by surrounding metals

When sensors are mounted on metallic panel, it must be prevented sensors from being affected by any metallic object except target, therefore, be sure to provide a minimum distance as below <Chart 1>.

< Chart 1 > (Unit:mm)

Item	PSN17		PSN25	PSN30		PSN40
	5mm	8mm		10mm	15mm	
A	30	48	30	60	90	120
B	36	40	40	50	65	70
C	5	5	5	5	5	5
d	15	24	15	30	45	60
l	24	33	25	30	45	45
m	18	20	20	25	35	35

**Setting distance**



●Detecting distance can be changed by the shape, size or material of the target. Therefore please check the detecting distance like (a), then pass the target within range of setting distance (Sa).

●Setting distance (Sa)  
= Detecting distance (Sn) × 70%  
ex) PSN30-10DN (See ordering information)  
Setting distance (Sa) = 10mm × 0.7 = 7mm

**Caution for using**

- This equipment shall not be used outdoors and beyond specification rating of temperature range.
- Do not load over than tensile strength cord. (φ4 : 30N max., φ5 : 50N max.)
- Do not use the same conduit with cord of this unit and electric power line and power line. Also avoid the same connection.
- Tighten strength of installing bolts should be under 10kgf · cm. (PSN17 Series max. 5kgf · cm)
- Please check the voltage changes of power source in order not to excess rating power input.
- Do not use this unit for 80ms after apply power.
- It might result in damage to this unit if use autotransformer. So please use insulated transformer.
- Please make wire short as much as possible in order to avoid noise.
- Be sure to cable as indicated specification on this product. If use wrong cable or bended cable, it shall not maintain the water-proof.
- It is possible to extend cable with over 0.3mm<sup>2</sup> and Max. 200m.
- In case of detecting plated target, it can be changed by the plating material.
- It may result in malfunction by metal particle on product.
- If there are machines (DC type bulb etc) which occurs big surge around this unit, please install the varistor or absorber to source of surge, even though there is built-in surge absorber in this unit.
- If connect the load with big inrush current (DC type bulb) to this unit, the big inrush current will flow due to the initial resistance is low. If the current flows, the resistance of load will be bigger, then it will return to standard current. In this case, proximity sensor might be damaged by inrush current. If you use DC type bulb, please connect extra relay or resistance in order to protect proximity sensor from.
- If close transceiver to proximity sensor or wire connection, it may cause malfunction.

※It may cause malfunction if above instructions are not followed.

**Major products**

- PROXIMITY SENSOR ■ PHOTOELECTRIC SENSOR
- AREA SENSOR ■ FIBER OPTIC SENSOR
- DOOR/DOOR SIDE SENSOR ■ PRESSURE SENSOR
- ROTARY ENCODER ■ SENSOR CONTROLLER
- SWITCHING POWER SUPPLY ■ TEMPERATURE CONTROLLER
- TEMPERATURE/HUMIDITY TRANSDUCER
- POWER CONTROLLER ■ RECORDER
- TACHOMETER/PULSE(RATE) METER ■ PANEL METER
- INDICATOR ■ SIGNAL CONVERTER
- COUNTER ■ TIMER
- DISPLAY UNIT ■ GRAPHIC PANEL
- STEPPING MOTOR & DRIVER & MOTION CONTROLLER

**Autonics Corporation**  
http://www.autonics.com

**Satisfiable Partner For Factory Automation**

**HEAD QUARTERS :**  
41-5, Yongdang-dong, Yangsan-si, Gyeongsang, 626-847, Korea

**OVERSEAS SALES :**  
Bldg. 402 3rd Fl., Busheon Techno Park, 193, Yakdae-dong, Wonmi-gu, Busheon-si, Gyeonggi-do, 420-734, Korea  
TEL: 82-32-610-2730 / FAX: 82-32-329-0728  
E-mail : sales@autonics.com

**The proposal of a product improvement and development : Product@autonics.com**

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