Autonics

INDUCTIVE PROXIMITY SWITCH(SQUARE AC 2 WIRE)
PSN SERIES
M A N U A L

CE

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.
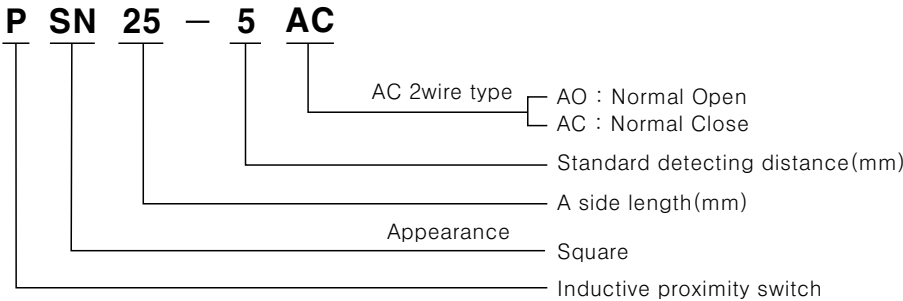⚠ caution:Injury or danger may occur under special conditions.

⚠ 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.

2. Do not connect power directly without load.
It may result in damage to inner components or burn them out.

⚠ 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. Please observe specification rating.
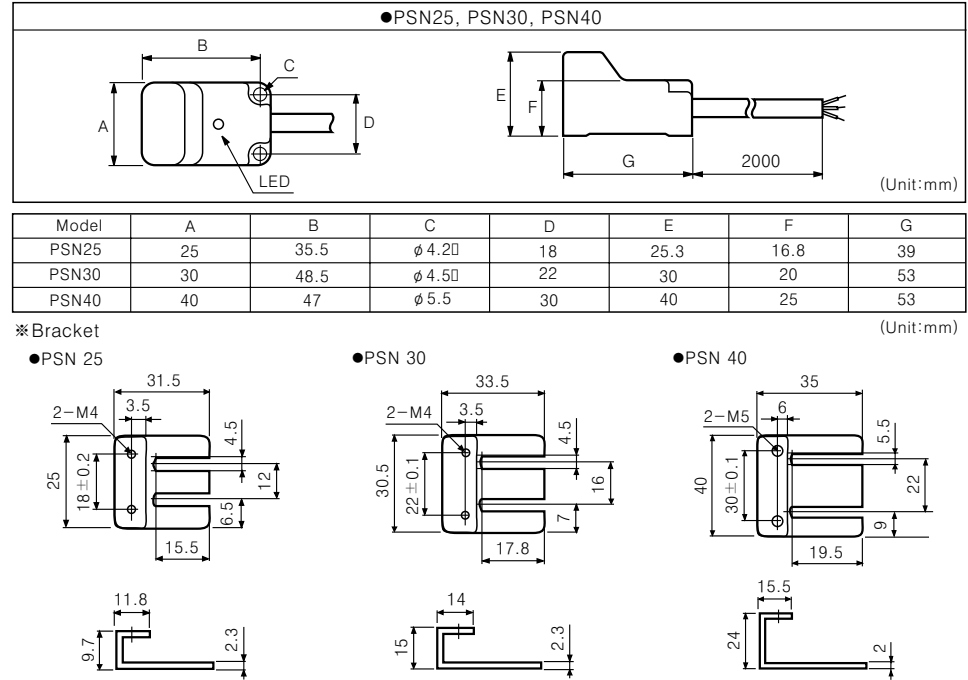It may result in serious damage to the product.

▣ Ordering information

P SN 25 − 5 AC

- AC 2wire type — AO : Normal Open / AC : Normal Close
- Standard detecting distance(mm)
- A side length(mm)
- Appearance — Square
- Inductive proximity switch

※**The above specification are changeable without notice anytime.**

▣ Specification

Model	PSN25−5AO PSN25−5AC	PSN30−10AO PSN30−10AC	PSN30−15AO PSN30−15AC	PSN40−20AO PSN40−20AC
Detecting distance	5mm ±10%	10mm ±10%	15mm ±10%	20mm ±10%
Hysteresis	Max. 10% of detecting distance‼			
Standard detecting target	25×25×1mm (Iron)	30×30×1mm (Iron)	45×45×1mm (Iron)	60×60×1mm (Iron)
Setting distance	0 ~ 3.5	0 ~ 7	0 ~ 10.5	0 ~ 14
Power supply (Operating voltage)	100−240VAC 50/60Hz (85−264VAC)			
Letage current	Max. 2.5mA			
Response frequency	20Hz			
Residual voltage	Max. 10V			
Affection by Temp.	±10% Max. of detecting distance at +20℃ within temperature range of −25 to +70℃			
Control output	200mA			
Insulation resistance	Min. 50MΩ(500VDC)			
Dielectric strength	2500VAC 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/s² (50G) X, Y, Z directions for 3 times			
Indicator	Operating indicator : Red LED			
Ambient temperature	−25 ~ +70℃(non−freezing condition)			
Storage temperature	−30 ~ +80℃(non−freezing condition)			
Ambient humidity	35 ~ 95%RH			
Protection circuit	Surge protection circuit			
Protection	IP67(IEC specification)			
Weight	Approx. 65g	Approx. 106g		Approx. 152g

▣ Dimension

●PSN25, PSN30, PSN40

(Unit:mm)

Model	A	B	C	D	E	F	G
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

(Unit:mm)

※Bracket
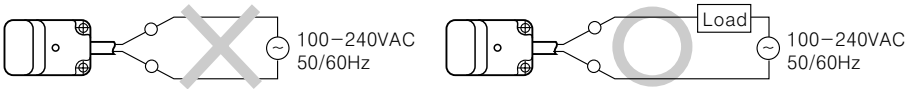●PSN 25   ●PSN 30   ●PSN 40

▣ Control output diagram & Load operating
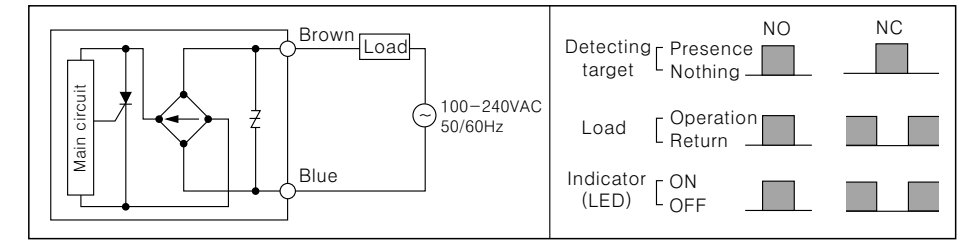
▣ Connection of the power supply

Be sure to connect the power after connecting the load, because direct connection of the switch may cause damage to the inner elements of the switch.
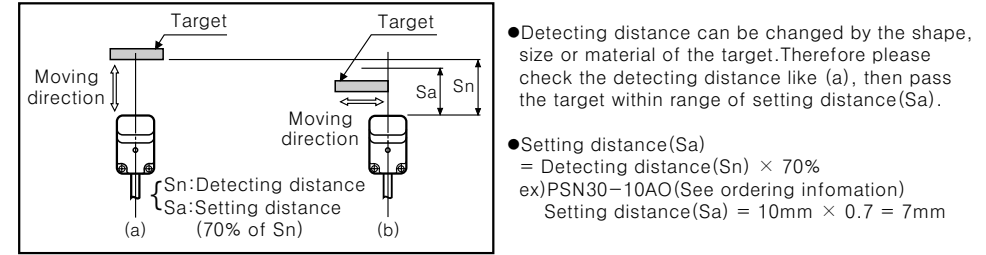

▣ Mutual-interference & Influence by surrounding metals

◎Mutual−interference
When plural proximity switches are mounted close in a row, switches may cause malfunction due to mutual interference, therefore, be sure to provide a minimum distance between the two switches, as <Chart 1>.

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

<Chart1> (Unit:mm)

Item / Model	PSN25	PSN30 10mm	PSN30 15mm	PSN40
A	30	60	90	120
B	40	50	65	70
C	5	5	5	5
d	15	30	45	60
ℓ	25	30	45	45
m	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)PSN30−10AO(See ordering infomation)
Setting distance(Sa) = 10mm × 0.7 = 7mm

▣ Caution for using

1. This equipment shall not be used outdoors or beyond specified temperature range.
2. Do not load over than tensile strength of cord. (φ4:30N max., φ5:50N max.)
3. Do not use the same conduit with cord of this unit and electric power line or power line. Also avoid the same connection.
4. Tighten strength of installing bolts should be under 15kgf・cm.
5. Please check the voltage changes of power source in order not to excess rating power input.
6. Do not connect capacity load to output part directly.
7. Please make wire short as much as possible in order to avoid noise.
8. Be sure to cable as indicated specification on this product. If use wrong cable or bended cable, it shall not maintain the water−proof.
9. It is possible to extend cable with over 0.3mm² and max. 200m.
10. If the target is plated, the operating distance can be changed by the plating material.
11. It may result in malfunction by metal particle on product.
12. If there are machines(motor, welding etc), which occurs big surge around this unit, please install the Varistor or absorber to source of surge, even though there is buit−in surge absorber in this unit.
13. If connect the load with big inrush current (Bulb, motor etc) 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 switch might be damaged by inrush current. If you use bulb, please connect relay or resistance in order to protect proximity switch from.
14. In case of the load current is small : When the load current is under 5mA, make the residual voltage is less than return voltage to connect the bleeder resistor to load in parallel.
※110VAC 50/60Hz:over 20kΩ 3W,
220VAC 50/60Hz:over 39kΩ 5W
15. If make a transceiver close to proximity switch or wire connection, it may cause malfunction.
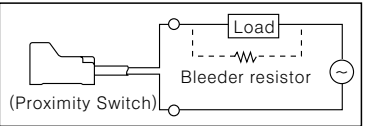
※**It may cause malfunction if above instructions are not followed.**

▣ Main products

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHOMETER
- LINE SPEED METER
- DISPLAY UNIT
- PROXIMITY SWITCH
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER

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