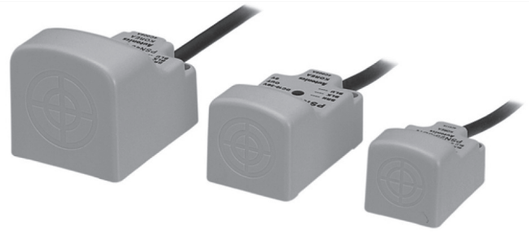
Autonics

INDUCTIVE PROXIMITY SENSOR(SQUARE AC 2WIRE)
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, entertainment or safety device etc), it is required to install fail-safe device, or contact us for information required.**
   It may cause a fire, human injury or property loss.

⚠Caution

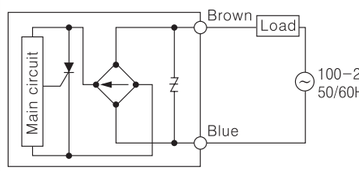
1. **Do not use this unit in place where flammable, explosive gas, chemical strong alkalis, or acids exist.**
   It may cause a fire or explosion.
2. **Do not impact on this unit.**
   It may cause malfunction or damage to the product.
3. **Do not use this unit beyond rated power.**
   It may result in serious damage to the product.

▣ Ordering information

P SN 25 - 5 AC

Control output	**AO**	Normally Open(N.O.)
	AC	Normally Closed(N.C.)
Sensing distance	**Number**	Sensing distance(Unit: mm)
Dimension	**Number**	A side length(Unit: mm)
Shape	**SN**	Square
Item	**P**	Inductive proximity sensor

▣ Control output diagram & Load operating



	Normally Open	Normally Closed
Sensing target	Presence / Nothing	Presence / Nothing
Load (Brown-Black)	Operation / Return	Operation / Return
Indicator (LED)	ON / OFF	ON / OFF

▣ Connection of the power supply

Be sure to supply the power after connecting the load, because direct connection of the proximity sensor may cause damage to the inner elements of this product.

※The above specifications are subject to change and some models may be discontinued without notice.

▣ Specifications

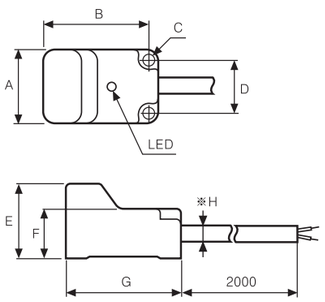
Model	PSN25-5AO PSN25-5AC	PSN30-10AO PSN30-10AC	PSN30-15AO PSN30-15AC	PSN40-20AO PSN40-20AC
Sensing distance	5㎜	10㎜	15㎜	20㎜
Hysteresis	Max. 10% of sensing distance			
Standard sensing target	25×25×1㎜(Iron)	30×30×1㎜(Iron)	45×45×1㎜(Iron)	60×60×1㎜(Iron)
Setting distance	0 to 3.5㎜	0 to 7㎜	0 to 10.5㎜	0 to 14㎜
Power supply (Operating voltage)	100-240VAC 50/60Hz (85-264VAC)			
Lackage current	Max. 2.5mA			
Response frequency	20㎐			
Residual voltage	Max. 10V			
Effect by Temp.	Within ±10℃ max. of sensing distance at 20℃ in temperature range of -25 to 70℃			
Control output	5 to 200mA			
Insulation resistance	Min. 50㏁(at 500VDC megger)			
Dielectric strength	1,500VAC 50/60㎐ for 1minute			
Vibration	1㎜ amplitude at frequency of 10 to 55㎐ in each of X, Y, Z directions for 2 hours			
Shock	500㎨(50G) in X, Y, Z directions for 3 times			
Indicator	Operating indicator(Red LED)			
Environment: Ambient temperature	-25 to 70℃, Storage: -30 to 80℃			
Environment: Ambient humidity	35 to 95%RH, Storage: 35 to 95%RH			
Protection circuit	Surge protection			
Protection	IP67(IEC standards)			
Materials	Case: Heat-resistant ABS, Standard cable(Black): Polyvinyl chloride(PVC).			
Approval	CE			
Unit Weight	Approx. 65g	Approx. 106g		Approx. 152g

※ Environment resistance is rated at no freezing or condensation.

▣ Dimensions

(Unit:mm)

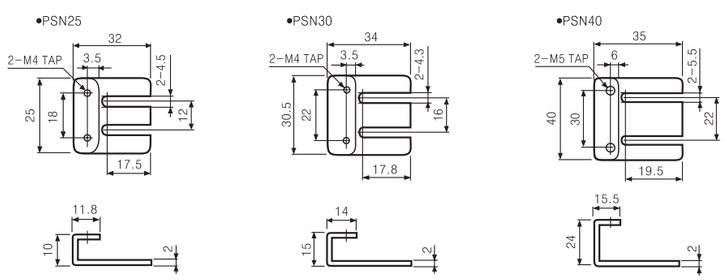
PSN25 / PSN30 / PSN40



	PSN25	PSN30	PSN40
A	25	30	40
B	35.5	48.5	47
C	ϕ4.2	ϕ4.5	ϕ5.5
D	18	22	30
E	25.3	30	40
F	16.8	20	25
G	39	53	53
H	4	4	4

※"**H**" type : ϕ4, 2 cores(Conductor cross section: 0.3㎟, Insulator diameter: ϕ1.25)

◎**Bracket**

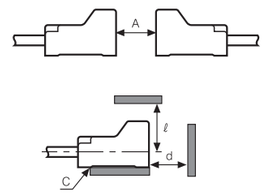


▣ Mutual-interference & Influence by surrounding metals

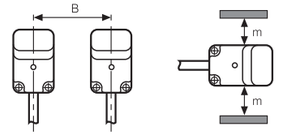
◎**Mutual-interference**

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

Face to Face



Parallel



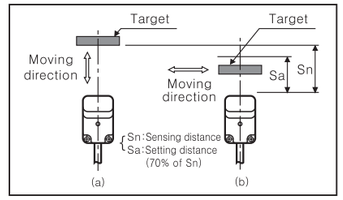
◎**Influence by surrounding metals**

When sensors are mounted on metallic panel, it is required to protect the sensors from malfunction by any metallic object. Therefore, be sure to keep a minimum distance as below chart.

(Unit:mm)

Item \ Model	PSN25	PSN30		PSN40
		10㎜	15㎜	
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



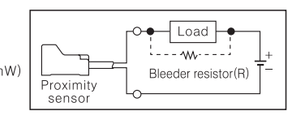
- Sensing distance can be changed by the shape, size or material of the target. Therefore please check the sensing distance like (a), then pass the target within range of setting distance(Sa) like (b).
- Setting distance(Sa)
  = Sensing distance(Sn) × 70%
  Ex)PSN30-10AO
  Setting distance(Sa) = 10mm × 0.7 = 7mm

▣ Caution for using

1. This equipment shall not be used outdoors or beyond specified temperature range.
2. Do not apply over tensile strength of cord. (ϕ4: max. 30N)
3. Do not use the same conduit with cord of this unit and electric power line or power line.
4. Tighten strength of installing screws should be under 10kgf·cm.
5. Please check the voltage changes of power source in order not to excess the rated power input.
6. Do not connect directly output terminal to capacitive load.
7. Please make wire as short as possible in order to avoid noise.
8. Be sure to use cable as indicated specification on this product. If wrong cable or bended cable is used, 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 cause 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 built-in surge absorber in this unit.
13. If connecting the load with big inrush current(AC type bulb, motor, etc.) to this unit, the big inrush current will flow because 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 AC type bulb, please connect extra relay or resistance in order to protect proximity sensor from.
14. If making a transceiver close to proximity sensor or wire connection, it may cause malfunction.
15. 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: 20kΩ, Min. 3W, 220VAC 50/60Hz: 39kΩ Min. 5W

Vs:Power supply, Io:Min.operating current for proximity sensor, Ioff:Return current of load, P:Resistance W of bleeder resistor

※$R \leq \frac{Vs}{Io-Ioff}$ (kΩ) $P > \frac{Vs^2}{R}$ (mW)



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

▣ Major products

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connector/Sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO_2, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate)meters
- Display units
- Sensor controllers

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