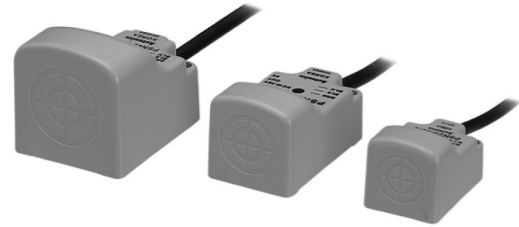# Autonics
INDUCTIVE PROXIMITY SENSOR(SQUARE AC 2WIRE)
PSN SERIES
INSTRUCTION MANUAL

CE

Thank you for choosing our Autonics product.
Please read the following safety considerations before use.

■ Safety Considerations

※Please observe all safety considerations for safe and proper product operation to avoid hazards.
※⚠ symbol represents caution due to special circumstances in which hazards may occur.
⚠**Warning** Failure to follow these instructions may result in serious injury or death.
⚠**Caution** Failure to follow these instructions may result in personal injury or product damage.

⚠Warning
1. **Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**
   Failure to follow this instruction may result in fire, personal injury, or economic loss.
2. **Do not disassemble or modify the unit.**
   Failure to follow this instruction may result in electric shock or fire.
3. **Do not connect, repair, or inspect the unit while connected to a power source.**
   Failure to follow this instruction may result in electric shock or fire.
4. **Check 'Connections' before wiring.**
   Failure to follow this instruction may result in fire.
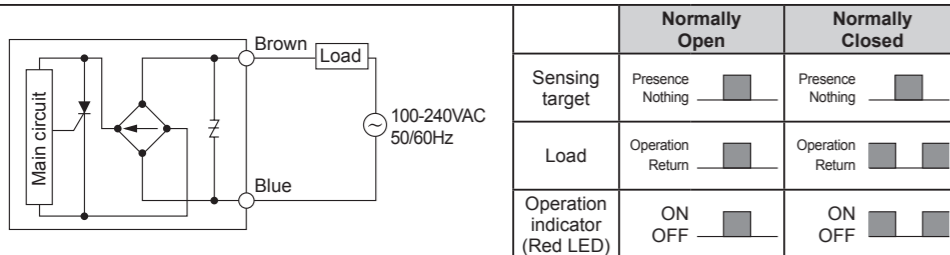
⚠Caution
1. **Use the unit within the rated specifications.**
   Failure to follow this instruction may result in fire or product damage.
2. **Use dry cloth to clean the unit, and do not use water or organic solvent.**
   Failure to follow this instruction may result in electric shock or fire.
3. **Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
   Failure to follow this instruction may result in fire or explosion.
4. **Do not supply power without load.**
   Failure to follow this instruction may result in fire or product damage.

■ 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		Operation Return	Operation Return
Operation indicator (Red 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.

100-240VAC 50/60Hz

Load 100-240VAC 50/60Hz

※The above specifications are subject to change and some models may be discontinued without notice.
※Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

■ Specifications

Model	PSN25-5AO PSN25-5AC	PSN30-10AO PSN30-10AC	PSN30-15AO PSN30-15AC	PSN40-20AO PSN40-20AC
Sensing distance	5mm	10mm	15mm	20mm
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 to 3.5mm	0 to 7mm	0 to 10.5mm	0 to 14mm
Power supply (Operating voltage)	100-240VAC∼ 50/60Hz (85-264VAC∼)			
Lackage current	Max. 2.5mA			
Response frequency	20Hz			
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. 50MΩ(at 500VDC megger)			
Dielectric strength	1,500VAC 50/60Hz for 1 minute			
Vibration	1mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours			
Shock	500m/s² (approx. 50G) in X, Y, Z directions for 3 times			
Indicator	Operating indicator(Red LED)			
Environment / Ambient temperature	-25 to 70℃, Storage: -30 to 80℃			
Ambient humidity	35 to 95%RH, Storage: 35 to 95%RH			
Protection circuit	Surge protection			
Protection	IP67(IEC standards)			
Cable※1	Ø4mm, 2 cores, 2m (AWG22, core diameter: 0.08mm, number of cores: 60, insulator diameter: Ø1.25mm)			
Materials	Case: Heat-resistant ABS, Standard cable(Black): Polyvinyl chloride(PVC)			
Approval	CE			
Unit Weight	Approx. 65g	Approx. 106g		Approx. 152g

※ 1. Do not pull the cable with a tensile strength of 30N or over. It may result in fire due to the broken wire. When extending wire, use AWG22 cable or over within 200m.
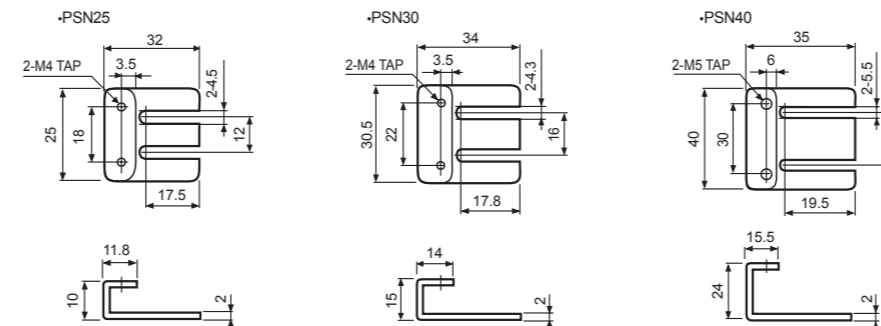※ Environment resistance is rated at no freezing or condensation.

■ Dimensions

(Unit: mm)

PSN25 / PSN30 / PSN40

	PSN25	PSN30	PSN40
A	25	30	40
B	35.5	48.5	47
C	Ø4.2	Ø4.5	Ø5.5
D	18	22	30
E	25.3	30	40
F	16.8	20	25
G	39	53	53
H	4	4	4

※When installing the product, tighten the screw with a tightening torque of 0.98N·m
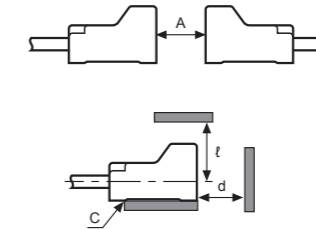
○Bracket

•PSN25 •PSN30 •PSN40

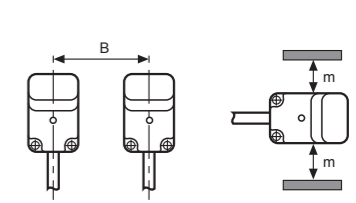## ■ Mutual-interference & Influence by Surrounding Metals

○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.
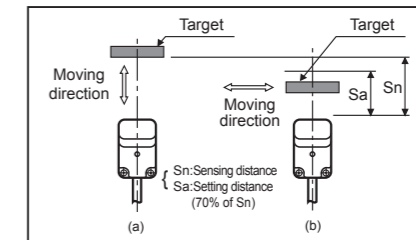

Face to Face   Parallel

○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)

Model / Item	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

Target   Target
Moving direction
Moving direction
Sn:Sensing distance
Sa:Setting distance (70% of Sn)
(a)   (b)

· 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%
  E.g.) PSN30-10AO
        Setting distance(Sa) = 10mm × 0.7 = 7mm

■ Caution during Use
1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. Wire as short as possible and keep away from high voltage lines or power lines, to prevent surge and inductive noise.
   Do not use near the equipment which generates strong magnetic force or high frequency noise (transceiver, etc.).
   In case installing the product near the equipment which generates strong surge (motor, welding machine, etc.), use diode or varistor to remove surge.
3. Do not connect capacity load to the output terminal directly.
4. This unit may be used in the following environments.
   ① Indoors (in the environment condition rated in 'Specifications')
   ② Altitude max. 2,000m
   ③ Pollution degree 2
   ④ Installation category II

■ Major Products

- Photoelectric Sensors
- Fiber Optic Sensors
- Door Sensors
- Door Side Sensors
- Area Sensors
- Proximity Sensors
- Pressure Sensors
- Rotary Encoders
- Connectors/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, Co₂, Nd: YAG)
- Laser Welding/Cutting System
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometers/Pulse (Rate) Meters
- Display Units
- Sensor Controllers

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