

Autonics

INDUCTIVE PROXIMITY SWITCH

PSE SERIES(SQUARE DC 3 WIRE,OVAL TYPE)

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

P

SE

17

—

5

DN

DC 3wire output

Detecting distance

Dimension

Appearance

Item

DN : NPN NO(Normal Open)

DN2 : NPN NC(Normal Close)

DP : PNP NO(Normal Open)

DP2 : PNP NC(Normal Close)

Standard sensing distance(mm)

A side length(mm)

Square

Inductive proximity switch

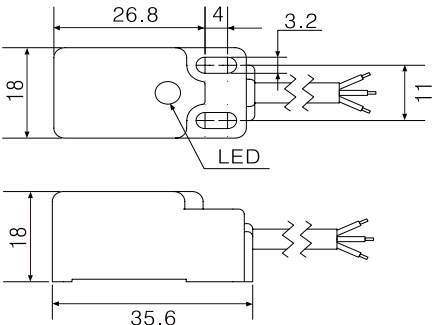
※The above specifications are changeable at anytime without notice.

Specifications

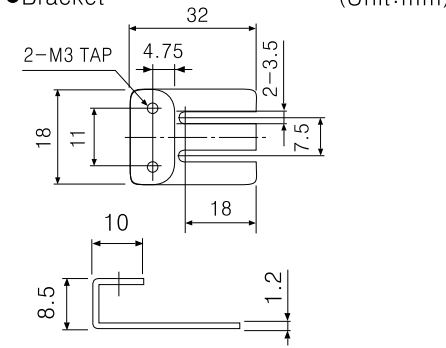
Model	PSE17-5DN PSE17-5DN2	PSE17-5DP PSE17-5DP2
Sensing distance	5mm ±10%	
Hysteresis	Max. 10% of sensing distance	
Standard sensing target	18×18×1mm(Iron)	
Setting distance	0 ~ 3.5mm	
Power supply (Operating voltage)	12-24VDC (10-30VDC)	
Current consumption	Max. 10mA	
Response frequency(★1)	700Hz	
Residual voltage	Max. 1.5V	
Affection by temp.	±10% Max. of sensing distance at +20℃ within temperature range of -25 to +70℃	
Control output	200mA	
Insulation resistance	Min.50M Ω(at 500VDC megger)	
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 ² (50G) X, Y, Z directions for 3 times	
Indicator	Operating indicator(Red LED)	
Ambient temperature	-25 to +70℃(non-freezing condition)	
Storage temperature	-30 to +80℃(non-freezing condition)	
Ambient humidity	35 to 95%RH	
Protection circuit	Surge protection circuit, Reverse polarity protection, Overload & short circuit protection	
Protection	IP67(IEC standard)	
Approval	CE	
Unit weight	Approx. 65g	

※(★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



LED

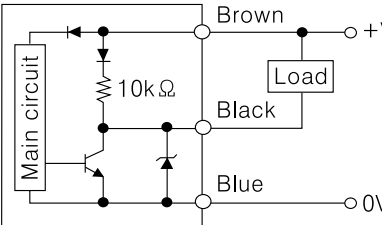


●Bracket

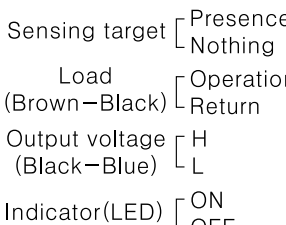
(Unit:mm)

Control output diagram & Load operating

Main circuit



10kΩ



Brown

Black

Blue

○+V

○0V

NPN

Sensing target

Presence

Nothing

NO

NC

Load

(Brown-Black)

Operation

Return

Output voltage

(Black-Blue)

H

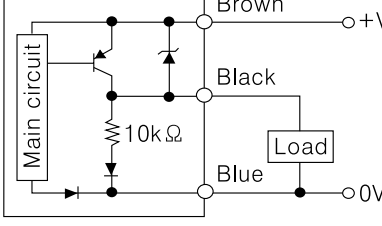
L

Indicator(LED)

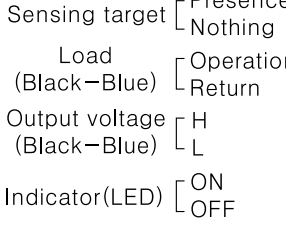
ON

OFF

Main circuit



10kΩ



Brown

Black

Blue

○+V

○0V

PNP

Sensing target

Presence

Nothing

NO

NC

Load

(Black-Blue)

Operation

Return

Output voltage

(Black-Blue)

H

L

Indicator(LED)

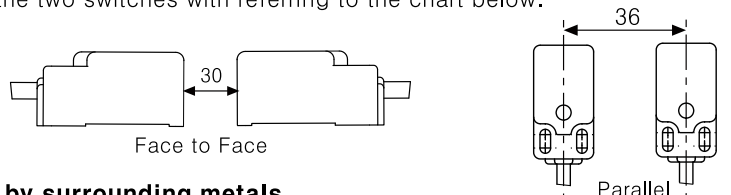
ON

OFF

Mutual-interference & Influence by surrounding metals

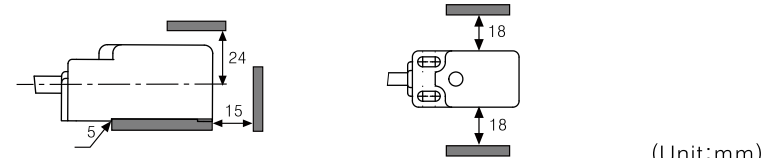
◎Mutual-interference

When several proximity switches are mounted closely, malfunction of switch may be caused due to mutual interference.Therefore, be sure to provide a minimum distance between the two switches with referring to the chart below.



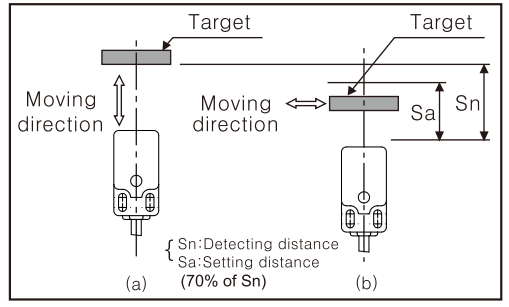
◎Influence by surrounding metals

When switches are mounted on metallic panel, it is required to protect the switches from being affected by any metallic object except target. Therefore, be sure to provide a minimum distance as below chart.



(Unit:mm)

Setting distance



●Sensing 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)
=Sensing distance(Sn)×70%
Ex)PSE17-5DN(See ordering information)
Setting distance(Sa)
=5mm×0.7=3.5mm

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: 30N max., φ5: 50N max.)

3. Do not use the same conduit with cord of this unit and electric power line or power line.

4. Tighten strength of installing bolts should be under 5kgf·cm.

5. Please check the voltage changes of power source in order not to excess rating power input.

6. Do not use this unit during transient time(10ms) after apply power.

7. It might result in damage to this product, if use automatic transformer. So please use insulated transformer.

8. Please make wire as short as possible in order to avoid noise.

9. 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.

10. It is possible to extend cable with over 0.3mm² and max. 200m.

11. If the target is plated, the operating distance can be changed by the plating material.

12. It may result in malfunction by metal particle on product.

13. 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 .

14. If connect the load with relay,please install the Varistor or absorber to source of surge, even though there is built-in surge absorber in this unit. in (Chart 1).

15. If connecting the load with big inrush current(DC type bulb) to this unit, the big inrush current will flow since 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 DC type bulb, please connect extra relay or resistance in order to protect proximity switch from.

16. If making a transceiver close to proximity switch or wire connection, it may cause malfunction.

※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

■ Connectors/Socket

■ 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

■ Tachometer/Pulse (Rate) Meters

■ Display Units

■ Sensor Controllers

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