

# Autonics

## INDUCTIVE LONG DISTANCE PROXIMITY SENSOR

### AS80-50 SERIES

#### MANUAL



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.

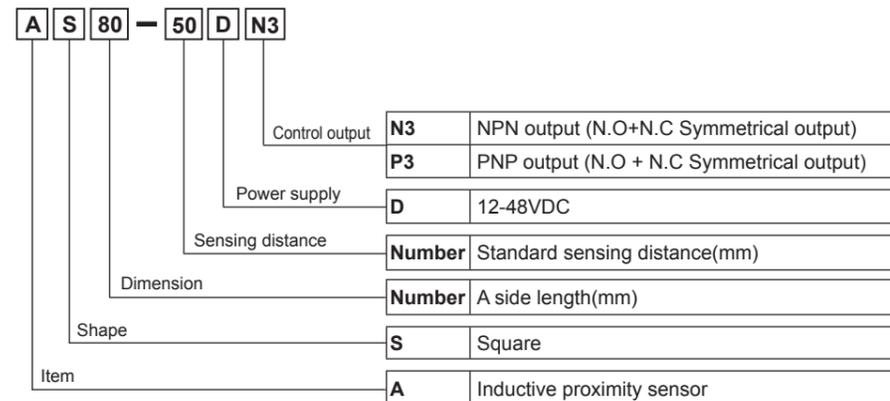
#### Warning

- In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.  
It may cause a fire, human injury or damage to property.

#### Caution

- 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.
- Do not impact on this unit.  
It may result in malfunction or damage to the product.
- Do not apply AC power and observe the rated specifications.  
It may result in serious damage to the product.

#### Ordering information



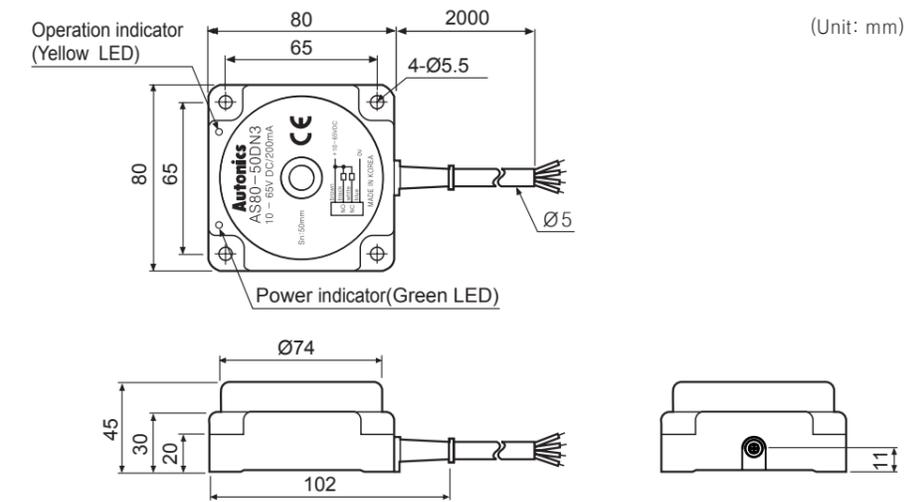
※ The above specifications are subject to change and some models may be discontinued without notice.

#### Specifications

Model	AS80-50DN3	AS80-50DP3
Sensing distance	50mm	
Hysteresis	Max. 15% of sensing distance	
Standard sensing target	150×150×1mm(Iron)	
Setting distance	0 to 35mm	
Power supply (Operating voltage)	12-48VDC (10-65VDC)	
Current consumption	Max. 20mA	
Response frequency	30Hz	
Residual voltage	Max. 2V	
Affection by Temp.	±10% max. of sensing distance at +20°C within temperature range of -25 to 70°C	
Control output	200mA	
Insulation resistance	Min. 50MΩ (at 500VDC megger)	
Dielectric strength	1500VAC 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/s <sup>2</sup> (50G) in X, Y, Z directions for 3 times	
Indicator	Power indicator: Green LED, Operating indicator: Yellow LED	
Environment	Ambient temperature	-25 to +70°C, Storage: -30 to +80°C
	Ambient humidity	35 to 95%RH, Storage: 35 to 95%RH
Protection circuit	Reverse polarity protection, Surge protection, Overload & short-circuit protection	
Protection	IP67(IEC specification)	
Material	Case: Heat-resistant ABS, Standard cable(Black): PVC	
Approval	<b>CE</b>	
Unit weight	Approx. 470g	

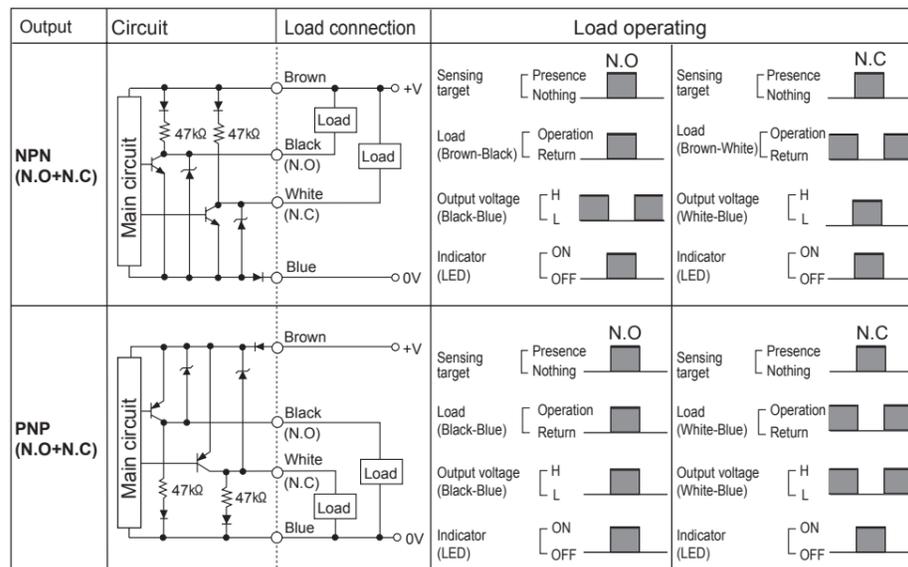
※Environment resistance is rated at no freezing or condensation.

#### Dimensions



※Cable specification : Ø5, 4 cores(Conductor cross section: 0.3 mm<sup>2</sup>, Insulator diameter: Ø1.25)

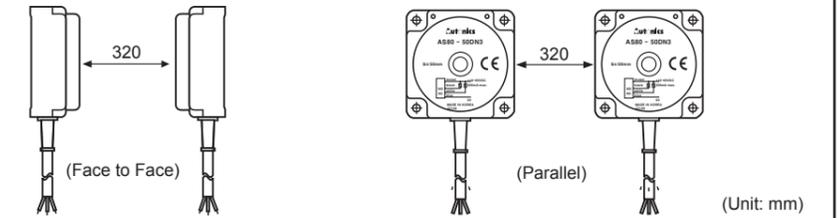
#### Control output diagram & Load operating



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

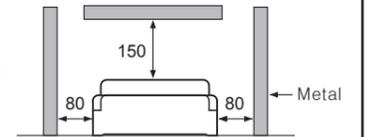
◎ Mutual-interference

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



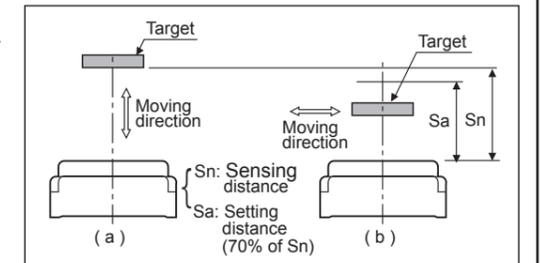
◎ Influence by surrounding metals

When sensors are mounted on metallic panel, it may cause malfunction affected by any metallic object except target. Therefore, be sure to provide a minimum distance shown in picture right.



#### 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).



• Setting distance(Sa)

= Sensing distance(Sn) × 70%

ex) AS80-50DN3 Setting distance(Sa)  
= 50mm × 0.7 = 35mm

#### Caution for using

- This equipment shall not be used outdoors or beyond specified temperature range.
- Do not apply over than tensile strength of cord. (Ø5: Max. 50N)
- Do not use the same conduit with cord of this unit and electric power line or power line.  
Also avoid the same connection.
- Tighten strength of installing bolts should be under 15kgf·cm.
- Please check the voltage changes of power source in order not to exceed the rated power input.
- Do not use this unit during transient time(80ms) after supply power.
- If using automatic transformer, it may result in damage to this product and power.  
Use insulated transformer.
- Please make wire as short as possible in order to avoid noise.
- Be sure to use 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.
- If the target is plated, the operating distance can be changed by the plating material.
- It may result in malfunction by metal particle on product.
- 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.
- If connect the load with big inrush current(DC type bulb) 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 DC type bulb, please connect extra relay or resistance in order to protect proximity sensor from.
- If make a transceiver close to proximity sensor 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
- 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<sub>2</sub>, 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

### Autonics Corporation

<http://www.autonics.com>

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