

INDUCTIVE LONG DISTANCE PROXIMITY SENSOR

AS80-50 SERIES

M A N U A L



■ Caution for your safety

※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.

1. 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.

- 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 the rated specifications.**
It may result in serious damage to the product.

A S 80 - 50 D N3

			Control output	N3	NPN output (N.O+N.C Symmetrical output)
				P3	PNP output (N.O + N.C Symmetrical output)
			Power supply	D	12-48VDC
			Sensing distance	Number	Standard sensing distance(mm)
		Dimension		Number	A side length(mm)
	Shape			S	Square
Item				A	Inductive proximity sensor

■ 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 ² (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		CE	
Unit weight		Approx. 470g	

※Environment resistance is rated at no freezing or condensation.

Technical drawing of the AS80-50DN3 sensor, showing dimensions in mm.

Front View:

- Overall width: 80 mm
- Overall height: 80 mm
- Mounting hole spacing (center-to-center): 65 mm
- Mounting hole diameter: 4- $\varnothing 5.5$
- Cable diameter: $\varnothing 5$
- Label text: Autonics AS80-50DN3, 10-65V DC/200mA, $\pm 10\%$ 4000PCS, MADE IN KOREA, Sn:50mm
- Operation indicator (Yellow LED)
- Power indicator (Green LED)

Side View:

- Overall width: $\varnothing 74$ mm
- Overall height: 45 mm
- Mounting flange height: 30 mm
- Base height: 20 mm
- Base width: 102 mm

Detail View:

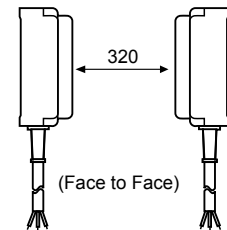
- Mounting hole diameter: $\varnothing 11$

※Cable specification : Ø5, 4 cores(Conductor cross section: 0.3 mm², Insulator diameter: Ø1.25)

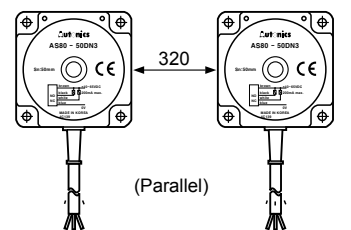
Output	Circuit	Load connection	Load operating							
NPN (N.O.+N.C.)			Sensing target Presence Nothing	Sensing target Presence Nothing	Load (Brown-Black) Operation Return	Load (Brown-White) Operation Return	Output voltage (Black-Blue) H L	Output voltage (White-Blue) H L	Indicator (LED) ON OFF	Indicator (LED) ON OFF
PNP (N.O.+N.C.)			Sensing target Presence Nothing	Sensing target Presence Nothing	Load (Black-Blue) Operation Return	Load (White-Blue) Operation Return	Output voltage (Black-Blue) H L	Output voltage (White-Blue) H L	Indicator (LED) ON OFF	Indicator (LED) ON OFF

© 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.



(Face to Face)

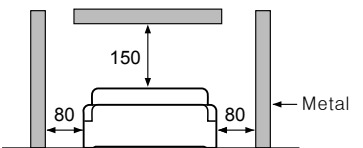


(Parallel)

(Unit: mm)

©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.

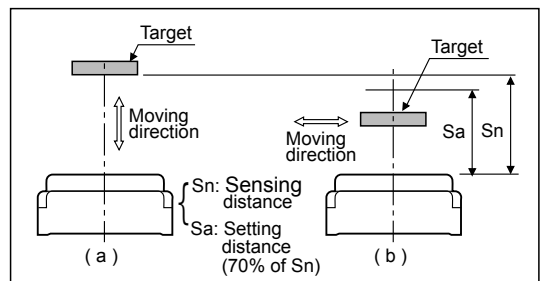


- Sensing distance can be changed by the shape, size or material of the target. Therefore please check the sensing distance like(a), then pass the target within range of setting distance(S_a).

- Setting distance(S_a)

$$= \text{Sensing distance}(S_n) \times 70\%$$

ex) AS80-50DN3 Setting distance(Sa)

$$= 50\text{mm} \times 0.7 = 35\text{mm}$$


1. This equipment shall not be used outdoors or beyond specified temperature range.
2. Do not apply over than tensile strength of cord. (ø5: Max. 50N)
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 the rated power input.
6. Do not use this unit during transient time(80ms) after supply power.
7. If using automatic transformer, it may result in damage to this product and power.
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 use wrong cable or bended cable, 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 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.
15. 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.**

- Proximity sensors
- Area sensors
- Photoelectric sensors
- Fiber optic sensors
- Door/Door side sensors
- Sensor controllers
- Graphic/Logic panels
- Temperature controllers
- Tachometer/Pulse(Rate) meters
- Temperature/Humidity transducers
- Switching power supplies
- Stepping motors/drivers/motion controllers
- Field network devices
- Laser marking system(CO₂, Nd:YAG)
- Laser welding/soldering system
- Counters
- Timers
- Display units
- Panel meters
- Pressure sensors
- Rotary encoders
- Power controllers

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