Autonics

INDUCTIVE LONG DISTANCE PROXIMITY SENSOR

AS80-50 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 fire.
3. **Do not connect, repair, or inspect the unit while connected to a power source.**
   Failure to follow this instruction may result in 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 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.

▣ Ordering Information

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(unit: mm)
Dimension	**Number**	A side length(unit: mm)
Shape	**S**	Square
Item	**A**	Inductive proximity sensor

※**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).**

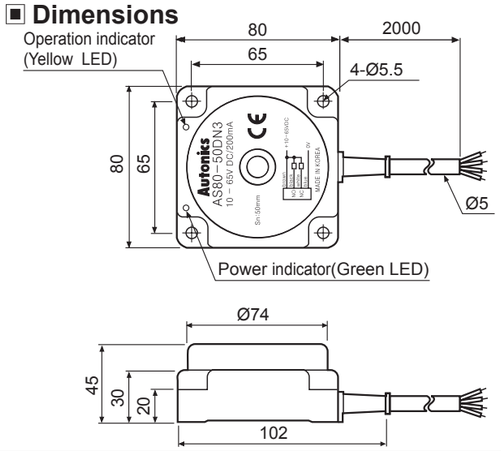
▣ Specifications

Model		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℃ within temperature range of -25 to 70℃	
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/s² (approx. 50G) in X, Y, Z directions for 3 times	
Indicator		Power indicator: Green LED, Operating indicator: Yellow LED	
Enviro-nment	Ambient temp.	-25 to +70℃, Storage: -30 to +80℃	
	Ambient humi.	35 to 95%RH, Storage: 35 to 95%RH	
Protection circuit		Reverse polarity protection, Surge protection, Overload & short-circuit protection	
Protection		IP67(IEC specification)	
Cable※1		Ø5mm, 4 cores, 2m	
		AWG22, core diameter: 0.08mm, number of cores: 60, insulator diameter: Ø1.25mm	
Material		Case: Heat-resistant ABS, Standard cable(Black): PVC	
Approval		CE	
Unit weight		Approx. 470g	

※1: Do not pull the cable with a tensile strength of 50N 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.

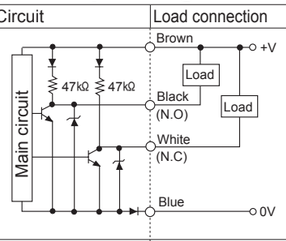
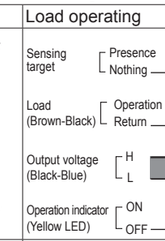
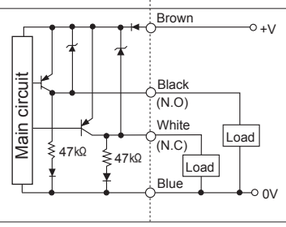
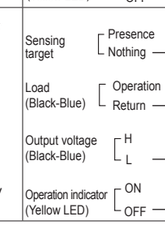
▣ Dimensions

(unit: mm)



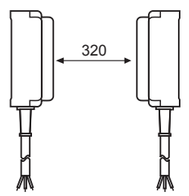
※When installing the product, tighten the screw with a tightening torque of 1.47N·m.

▣ Control Output Diagram & Load Operating

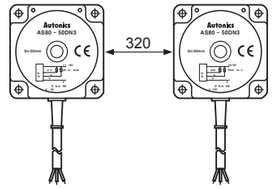
Output	Circuit	Load connection	Load operating
NPN (N.O+ N.C)			
PNP (N.O+ N.C)			

▣ 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.



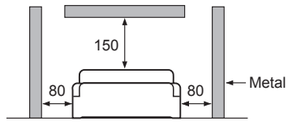
(Face to Face)



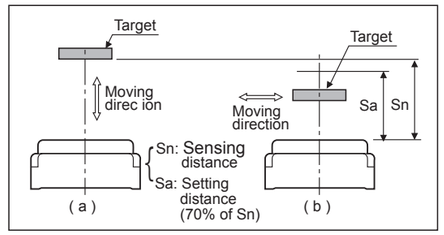
(Parallel)

(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.



▣ 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%
  E.g.) AS80-50DN3 Setting distance(Sa)
  = 50mm × 0.7 = 35mm

▣ Cautions During Use

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. 12-48VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
3. Use the product, after 0.8 sec of supplying power.
4. 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.
5. 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
- 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/cutting system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate)meters
- Display units
- Sensor controllers