

Autonics

Door Sensor ADS-A

INSTRUCTION MANUAL



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.

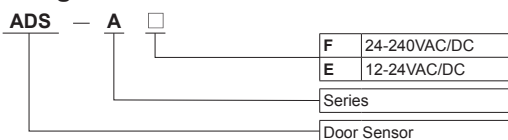
- ⚠ **Warning** Failure to follow these instructions may result in serious injury or death.
- ⚠ **Caution** Failure to follow these instructions may result in personal injury or product damage.

- ⚠ **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. **Use this product as secondary safety aid for door sensor.**
Failure to follow this instruction may result in personal injury or economic loss.
- 3. **Since the purpose of this product is secondary safety aid, please use it with another door sensor.**
 - ① Although install this product near the sensing area, object in the nearest area from the door can not be detected.
It is hard to detect kids or elders consecutively, they can be caught by the auto door.
 - ② Keep opened as much as setting time.
Since door closes after the setting time, people can be caught by the auto door.
- 4. **Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire.
- 5. **Check 'Connections' before wiring.**
Failure to follow this instruction may result in fire.
- 6. **Do not disassemble or modify the unit.**
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. **In case eliminating right/left sensing area, install the product in place where an object enters from the front.**
If enter from the side, door does not open.
- 5. **Do not use a load over the range of rated relay specification.**
Failure to follow this instruction may result in insulation failure, contact melt, contact failure, relay broken, or fire.

■ Ordering Information

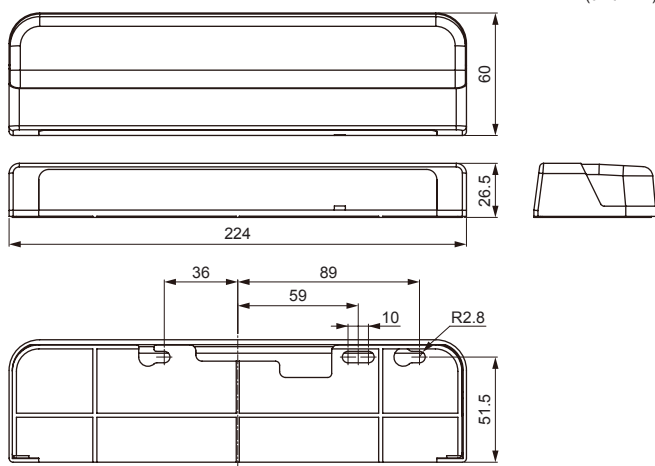


■ Specifications

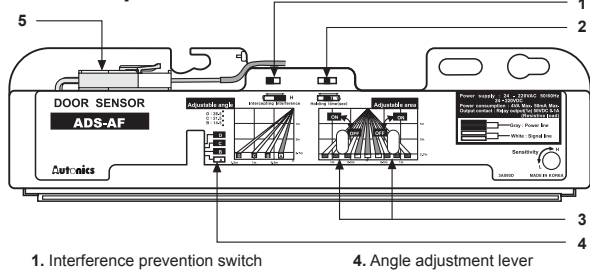
Model	ADS-AF	ADS-AE
Power supply	24V-240VAC±10% 50/60Hz, 24V-240VDC±10% (ripple P-P: max. 10%)	12V-24VAC±10% 50/60Hz, 12V-24VDC±10% (ripple P-P: max. 10%)
Power consumption	Max. 4VA (at 240VAC~)	Max. 2VA (at 24VAC~)
Control output ¹	Relay Relay contact capacity: 50VDC= 0.1A (resistive load) Relay contact composition: 1a	
Relay life cycle	Mechanical: min. 20,000,000 times, electrical: min. 50,000 times	
Mounting height	2.0m to 2.7m (max. sensing distance: 3.0m)	
Sensing area	9 Point (refer to the below chart)	
Sensing method	Infrared reflection method	
Sensing target	Opaque materials of min. Ø15mm	
Output holding time	Time delay approx. 0.5sec	
Stationary sensing time	Selectable 2sec, 7sec, 15sec. by holding time setting switch	
Interference prevention	H, L (interference prevention switch)	
Adjustable sensing area	Adjust angle A Step: 7.5° C Step: 21.5° (adjust angle adjustment lever) B Step: 14.5° D Step: 28.5°	
Light source	Eliminate Right/Left sensing area : adjusting with eliminating right/left sensing area lever Infrared chip diode (modulated)	
Indication	Operation indicator: orange LED, green LED, red LED (refer to "9. Check of sensing operation" for the display status in operation)	
Connection	Connector wire connection	
Insulation resistance	Over 20MΩ (at 500VDC megger)	
Noise immunity	±2,000V the square wave noise (pulse width: 1μs) by the noise simulator	
Dielectric strength	1,000VAC 50/60Hz for 1 minute	
Vibration	1.5mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 2 hours	
Shock	100m/s ² (approx. 10G) in each X, Y, Z direction for 3 times	
Environment	Ambient illumination: Sunlight: max. 3,000lx, incandescent lamp: max. 3,000lx (receiver illumination) Ambient temperature: -20°C to 50°C, storage: -20 to 70°C Ambient humidity: 35 to 85%RH, storage: 35 to 85%RH	
Accessories	Cable: 2.5m, mounting screw: 2, mounting template	
Protection	IP50 (IEC standard)	
Material	Case: ABS, lens: acryl, lens cover: acryl	
Unit weight	Approx. 320g	

※ 1: Do not use the load which is beyond the rated capacity of contact point of relay.
It may cause bad insulation, contact fusion, bad contact, relay breakdown, and fire etc.
※ The temperature or humidity mentioned in Environment indicates a non freezing or condensation environment.

■ Dimensions



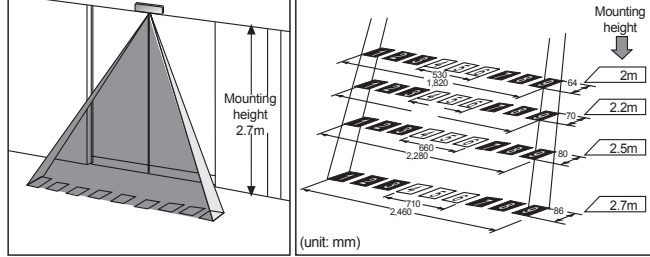
■ Unit Description



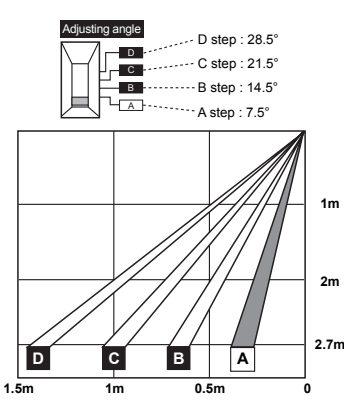
※ The above specifications are subject to change and some models may be discontinued without notice.
※ Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

■ Adjustment

1. **Check of the sensing area**
This unit has characteristic of the sensing area as below chart and figure.

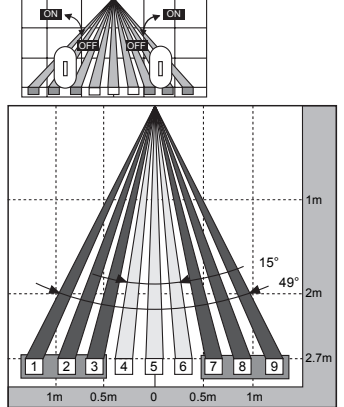


2. **Adjustable sensing area**
Sensing area angle(Step) : 7.5° to 28.5°
• Adjustable 7° in each step.



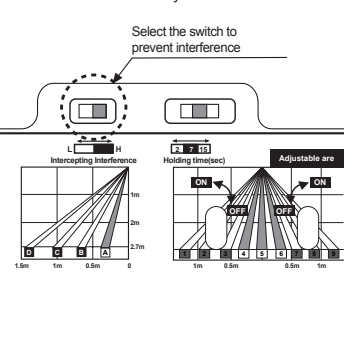
3. **Adjustment of Left, Right sensing area width.**

• Sensing area width 1, 2, 3 can be eliminated by left lever, 7, 8, 9 by right lever. But the elimination of sensing area can be normally operated in mounting height.
• Use the unit as removing non-sensing area by the lever adjusting width at narrow sensing area.
※ Turn the adjuster till stopping it toward arrow direction by a (-)driver.



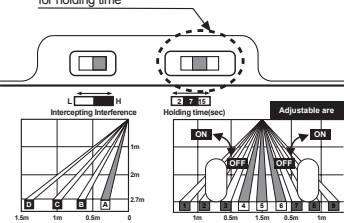
4. **How to set the switch for interference prevention**

• In case of using several door sensors adjacently, please set the interference prevention switches of the sensors differently.



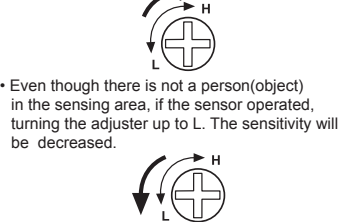
5. **Holding time switch setting**

• It can be set holding time by the holding time switch. (Selectable 2, 7, 15sec.)



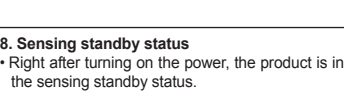
6. **Sensitivity setting**

• Even though there is a person(object) in the sensing area, if the sensor does not operate, turning the adjuster up to H. The sensitivity will be increased.



7. **Unit cover and stripping**

• Mount the cover on the unit, in case of using outlet to wire as form of the exposed cable, take off point. A groove on the side.
• Wrench and strip the protection cover putting a flathead screwdriver.



8. **Sensing standby status**

• Right after turning on the power, the product is in the sensing standby status.

⚠ Caution

People can be jammed in the door.
• Be sure to install a auxiliary photo sensor as the safe equipment. ADS-SE is available for door side sensor.

⚠ Caution

People may run against the door.
• When eliminate the right/left sensing range, be sure to install the unit at place where a person approaches at the front of the door.

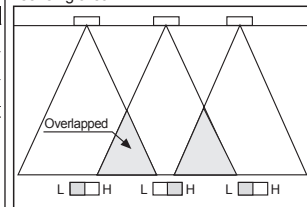
• In case of eliminating sensing area width; If a person approaches at the side direction of the door, the person may run against the door as not sensing people at sensing area width.
※ It can eliminate 1, 2, 3 by left lever and 7, 8, 9 by right lever at the once.
It is not able to eliminate individual areas like elimination of area 1 or 7.

⚠ Caution

Door can be opening and closing.
• When several door sensors are installed simultaneously without considering any interference prevention, it may cause malfunction by another door sensor even though no moving object exists.

⚠ Interference prevention

• If sensing area of the door sensors is overlapped, set each switch in difference or install the unit on non-overlapped sensing area.



⚠ Caution

People can be jammed in the door.
• Be sure to install an auxiliary photo sensor as the safe equipment. ADS-SE is available for door side sensor.
• The door will close after the time set by the holding time switch.

⚠ Caution

Door can be opening and closing.
• Please check the normal operation by turning the power ON/OFF after finishing the sensitivity setting.
It may not operate normally because the install setting is changed before and after sensitivity setting.

⚠ Warning

It may give an electric shock.
• Use this unit with unit cover.
• Be sure that this unit does not come in direct touch with water. It may cause a damage to the equipment or give an electric shock.
• In case of without the cable outlet, the unit must be installed at inner position of door.
• Be sure that cable outlet does not come in direct touch with water. It may cause a damage to the equipment or give an electric shock.

9. Check of sensing operation

• Check sensing operation as follow <figure>.

Entry activation	Power on	Out of sensing area	Enter the sensing area	Stationary sensing	Out of sensing area
	LED ON	LED OFF	LED ON	LED OFF	LED OFF
Operation LED	Orange	LED ON	LED OFF	LED OFF	LED OFF
	Green	LED OFF	LED ON	LED ON	LED ON
	Red	LED OFF	LED OFF	LED ON	LED OFF
Output contact	OFF	OFF	ON	Output on for Holding time	Output off after 0.5sec.
	OFF	OFF	ON	OFF	OFF

10. Maintenance

- If the sensing lens is unclean, the unit may cause malfunction.
- In this case, please clean it with dry tissue and natural detergent.
- Do not use an organic materials such as benzene, etc. It may cause malfunction of sensing part.

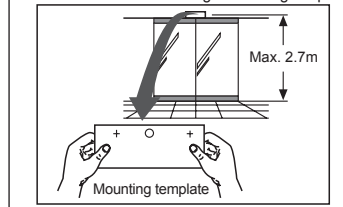
⚠ Warning

It may give an electric shock.
• Do not wash the unit with water.
• Do not repair or disassemble the unit.

■ Mounting Method

Installation order

1. **Attach mounting template at mounting position** (※ Mounting height: 2.0m to 2.7m).
• Drill Ø3.4mm hole based on mounting template.
• In case of wiring the cable on the wall to hide the cable, drill Ø9mm hole.
• Install the unit after removing a mounting template.



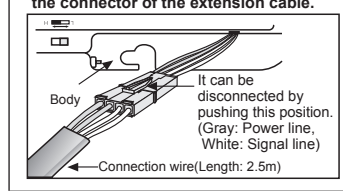
2. Please fix this unit with screw bolt after removing protection cover off.



3. Connect the code part of the extension cable to main control part.

- Please install the connector in order to connect with the body.

4. Connect the connector of the body and the connector of the extension cable.



⚠ Caution

It may give an electric shock.
• When using this unit with removing cable outlet, this unit must be installed indoor. (It may give an electric shock or damage to the equipment when the water inflows through cable outlet.)

⚠ Caution

People can be jammed in the door.
• In case of installing the unit higher than 2.7m height, the unit may not detect small children.
• In case of installing the unit lower than 2.0m height the unit may not work normally.

⚠ Warning

Fix the unit
• Do not put excessive tightening torque on screw bolt when mount this unit. It may result in fixing hole damage.

⚠ Protection cover detachment

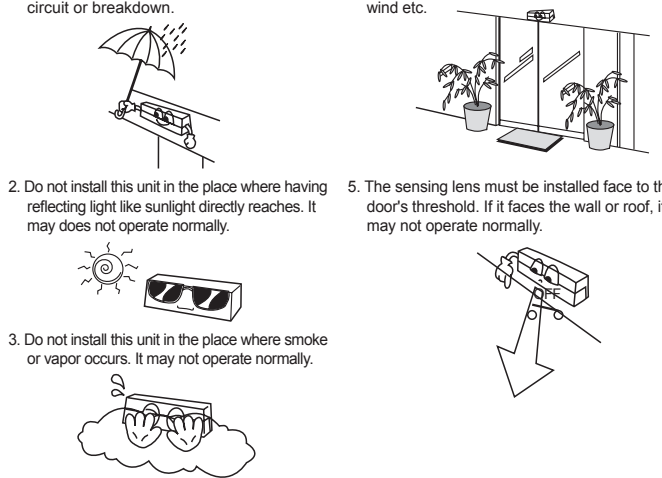
• Pulling left thumb toward ①, key lock will be released and pull right thumb toward ②, protection cover and body will be detached.

⚠ Warning

Connection of the connector
• Plug in the connector of the extension cable and the connector of the unit completely. The unit may not work normally by inferior contact.

■ Installation Environment

1. This product is not qualified for waterproof. Please install this without direct contacting to rain or snow etc. It may cause a short circuit or breakdown.
2. Do not install this unit in the place where having reflecting light like sunlight directly reaches. It may does not operate normally.
3. Do not install this unit in the place where smoke or vapor occurs. It may not operate normally.
4. If there is a movable object in the sensing area, it may cause malfunction by sensing the object because of natural phenomenon like wind etc.
5. The sensing lens must be installed face to the door's threshold. If it faces the wall or roof, it may not operate normally.



■ Troubleshooting

Malfunction	Cause	Troubleshooting
It is not work.	Power voltage	Check the power cable and adjust power voltage.
Sometimes it does not work.	Cable cut, disconnection	Check connector and wiring.
	The sensing lens are unclean	Clean the lens with dry tissue and natural detergent.
The door is opened even if people do not enter in sensing area.	There are moving objects.	Check the status of installation.
	By occurring sudden change of sensing area.	Check surrounding environment for installation.
	Sensing area is overlapped.	Install the unit to avoid overlap for sensing area. Set the switch intercepting interference.
	There is the equipment such as motor, neon lamp, generator, or high voltage line causing strong electric wave, noise.	Do not install the equipment causing strong electric wave, noise near the sensor.
	A drop of water is placed at the lens.	Remove a drop of water.

■ Cautions during Use

1. Follow instructions in 'Cautions during Use'. Otherwise, It may cause unexpected accidents.
2. 12-24VDC, 12-24VAC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
3. Use the product, 3 sec after supplying power.
When using separate power supply for the sensor and load, supply power to sensor first.
4. When using switching mode power supply to supply the power, ground F.G. terminal and connect a condenser between 0V and F.G. terminal to remove noise.
5. When connecting a DC relay or other inductive load, remove surge by using diodes or varistors.
6. Wire as short as possible and keep away from high voltage lines or power lines, to prevent surge and inductive noise.
7. 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 category 3
 - 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., 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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