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# AMN (NaPiOn) series

Current consumption **170 $\mu$ A**

**Digital/Analog output**



Standard detection type



Slight motion detection type



Spot detection type



10m detection type

- Line-up with special detection lenses for slight motion or narrow spot detection
- Digital and analog output types

**Recommended applications**

Lighting control, lighting equipment, heaters, ventilators or air conditioners, security equipment for IP cameras, intrusion alarms, digital signage, vending machines, multi-function printers, display panels for meeting rooms, PCs

## Specifications

Detection performance	Model no.	Current consumption	Lens color	Output type	Detection distance	Detection area		Detection zones				
						Horizontal	Vertical					
Standard detection type 	AMN31112	170 $\mu$ A	White	Digital	5m	100°	82°	64				
	AMN31111		Black									
	AMN21112		White	Analog								
	AMN21111		Black									
Slight motion detection type 	AMN32112		White	Digital					2m	92°	92°	104
	AMN32111		Black									
	AMN22112		White	Analog								
	AMN22111		Black									
Spot detection type 	AMN33112		White	Digital	5m	22°	38°	24				
	AMN33111		Black									
	AMN23112		White	Analog								
	AMN23111		Black									
10m detection type 	AMN34112	White	Digital	10m					110°	93°	80	
	AMN34111	Black										
	AMN24112	White	Analog									
	AMN24111	Black										

■ Ordering information

AMN       1 1   

- NaPiOn sensor
- Output type  
2: Analog output / 3: Digital output (170 $\mu$ A)

- Lens color  
1: Black / 2: White
- Detection (Lens)  
1: Standard type / 2: Slight motion type / 3: Spot type / 4: 10m type

## Characteristics

### Maximum rated values

Items	Value
Power Supply voltage	-0.3 to 7V
Ambient temperature	-20 to +60°C (No frost, no condensation)
Storage temperature	-20 to +70°C

### Electrical characteristics (digital output)

Items	Symbol	Digital output	Conditions
Operating voltage	Max	6.0V	—
	Min	3.0V	
Current consumption (in standby mode) Note1)	Ave	170μA	Ambient temperature: 25°C Iout=0 Vdd: 5V
Output current (during detection period) Note2)	Max	100μA	Ambient temperature: 25°C Vout ≥ Vdd - 0.5
Output voltage (during detection period)	Min	Vdd - 0.5V	Ambient temperature: 25°C Open at no detection
Circuit stability time (when voltage is applied)	Max	30 sec	Ambient temperature: 25°C Iout=0 Vdd: 5V

Note 1) The total current consumption is equal to the current consumption in standby mode (Iw) plus the output current during detection (Iout).

Note 2) Please select an output resistor (pull-down concept) in accordance with Vout so that the output current is lower than or equal to 100μA. If the output current is more than 100μA, this may cause false alarms.

### Electrical characteristics (analog output)

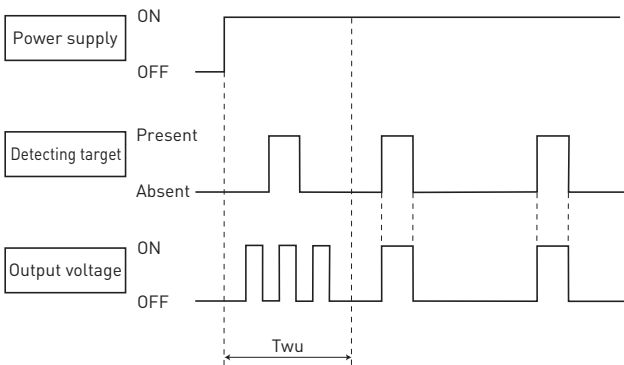
Items	Symbol	Analog output	Conditions	
Operating voltage	Max	5.5V	—	
	Min	4.5V		
Current consumption (in standby mode) Note1)	Ave	Iw	170μA	Ambient temperature: 25°C Iout=0 Vdd: 5V
Output current (during detection period) Note2)	Max	Iout	50μA	Ambient temperature: 25°C Vdd: 5V
Output voltage range (during detection period)	Max	Vout	Vdd	Ambient temperature: 25°C Vdd: 5V
	Min	Vout	0V	
Output off set voltage (at non detection)	Max	Voff	2.7V	Ambient temperature: 25°C Vdd: 5V Steady output voltage at non detection
	Ave		2.5V	
	Min		2.3V	
Steady noise	Max	Vn	300mVpp	Ambient temperature: 25°C Vdd: 5V
	Ave	Vn	155mVpp	
Detection sensitivity	Min	Vh or VL	0.45V	Ambient temperature: 25°C Vdd: 5V
Circuit stability time (when voltage is applied)	Max	Twu	45 sec	Ambient temperature: 25°C Vdd: 5V

Note 1) The total current consumption is equal to the current consumption in standby mode (Iw) plus the output current during detection (Iout).

Note 2) To set the same detection sensitive as for the digital output type, set the output voltage to 2.5V ±0.45V

## Timing chart

### Digital output

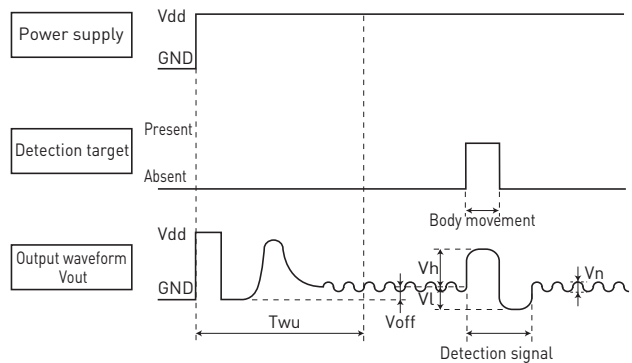


[Time axis explanation]

Twu: Circuit stability time: max. 30 sec

While the circuitry is stabilizing after the power is turned on, the sensor output is not fixed in the ON or OFF state. This is true regardless of whether or not the sensor has detected anything.

### Analog output



[Time axis explanation]

Twu: Circuit stability time: max. 45 sec

While the circuitry is stabilizing after the power is turned on, the sensor output is not fixed in the ON or OFF state. This is true regardless of whether or not the sensor has detected anything.

# Lenses for the AMN series

EKMB series

EKMC series

AMN series

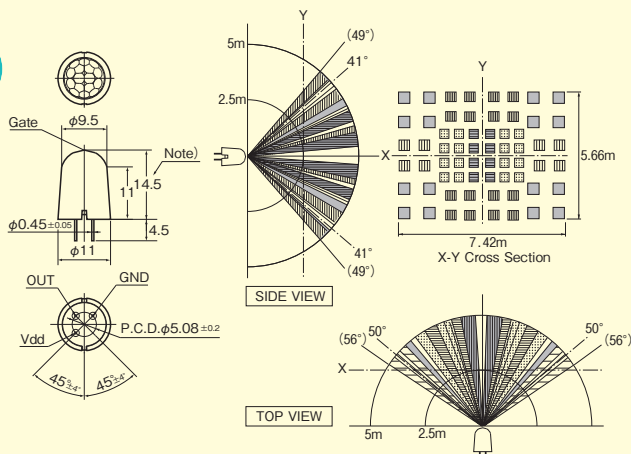
## Dimension (mm)

## Detection zone

## Detection characteristics

### Standard detection type

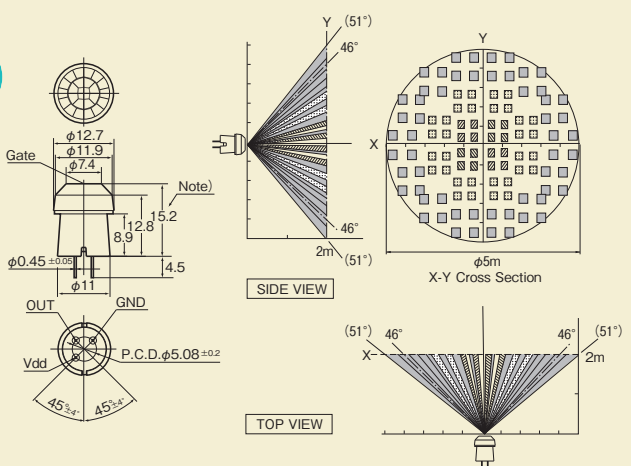
CAD data



Detection distance	5m
Field of view	100°×82°
Detection zone	64 beams
Detection condition	<ul style="list-style-type: none"> <li>The temperature difference between the target and the surroundings must be higher than 4°C.</li> <li>Movement speed: Digital output 0.8 to 1.2m/s Analog output 0.5 to 1.5m/s</li> <li>Target concept: Human body with an approx. size of 700×250mm</li> <li>Target moving direction: Crossing the detection beam.</li> </ul>

### Slight motion detection type

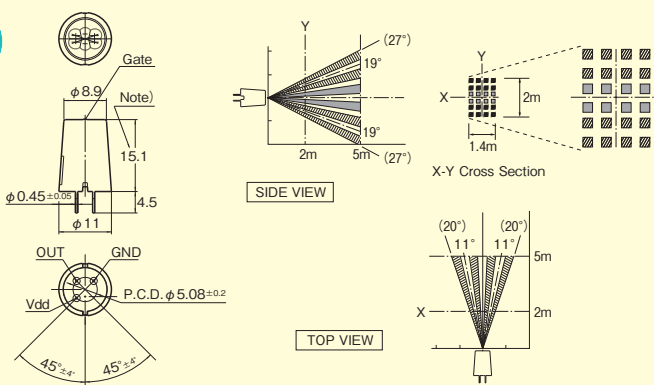
CAD data



Detection distance	2m
Field of view	92°×92°
Detection zone	104 beams
Detection condition	<ul style="list-style-type: none"> <li>The temperature difference between the target and the surroundings must be higher than 4°C.</li> <li>Movement speed: Digital output 0.5m/s Analog output 0.3 to 1.0m/s</li> <li>Target concept: Human body with an approx. size of 200×200mm</li> <li>Target moving direction: Crossing the detection beam.</li> </ul>

### Spot detection type

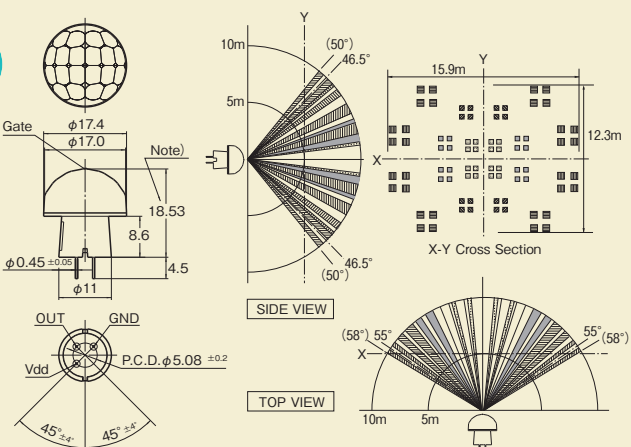
CAD data



Detection distance	5m
Field of view	22°×38°
Detection zone	24 beams
Detection condition	<ul style="list-style-type: none"> <li>The temperature difference between the target and the surroundings must be higher than 4°C.</li> <li>Movement speed: Digital output 0.8 to 1.2m/s Analog output 0.5 to 1.5m/s</li> <li>Target concept: Human body with an approx. size of 700×250mm</li> <li>Target moving direction: Crossing the detection beam.</li> </ul>

### 10m detection type

CAD data



Detection distance	10m
Field of view	110°×93°
Detection zone	80 beams
Detection condition	<ul style="list-style-type: none"> <li>The temperature difference between the target and the surroundings must be higher than 4°C.</li> <li>Movement speed: Digital output 0.8 to 1.2m/s Analog output 0.5 to 1.5m/s</li> <li>Target concept: Human body with an approx. size of 700×250mm</li> <li>Target moving direction: Crossing the detection beam.</li> </ul>