

MP Motion Sensor (AMN2, 3, 4)

2. Absolute maximum ratings (Measuring condition: ambient temperature = 25°C 77°F) (Common to All types)

Items	Absolute maximum ratings
Power supply voltage	−0.3 to 7 V DC
Usable ambient temperature	−20 to 60°C −4 to +140°F (No freezing and condensing at low temperature.)
Storage temperature	−20 to 70°C −4 to +158°F

3. Electrical characteristics (Common to All types)

1) Digital output

Items	Symbol	Electrical characteristics (*) is low current consumption type	Measured conditions (*) is low current consumption type
Rated operating voltage	Minimum	Vdd	3.0 V DC (2.2 V DC)
	Maximum	Vdd	6.0 V DC (3.0 V DC)
Rated consumption current (Standby) Note	Typical	Iw	170 μA (46 μA)
	Maximum	Iw	300 μA (60 μA)
Output current (when detecting)	Maximum	Iout	100 μA
Output voltage (when detecting)	Minimum	Vout	Vdd −0.5
Circuit stability time	Typical	Twu	7 s
	Maximum	Twu	30 s

Note: The current which is consumed during detection consists of the standby consumed current plus the output current.

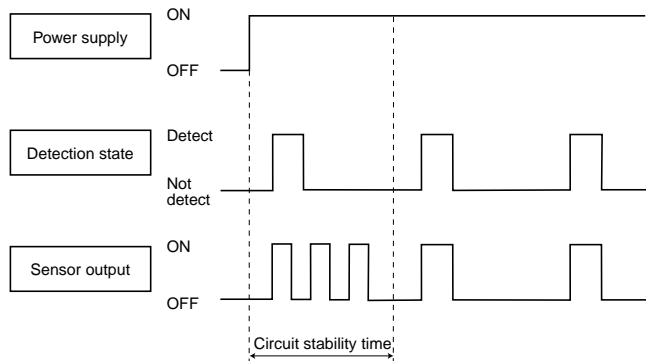
2) Analog output

Items	Symbol	Specified value	Measured conditions
Operating voltage	Minimum	Vdd	4.5 V DC
	Maximum	Vdd	5.5 V DC
Consumption current	Typical	Iw	170 μA
	Maximum	Iw	300 μA
Output current	Maximum	Iout	50 μA
Output voltage range	Minimum	Vout	0 V
	Maximum	Vout	Vdd
Output offset average voltage	Minimum	Voff	2.3 V
	Typical	Voff	2.5 V
	Maximum	Voff	2.7 V
Steady-state noise	Typical	Vn	155 m Vp-p
	Maximum	Vn	300 m Vp-p
Detection sensitivity	Minimum	Vh or Vl	0.45 V
Circuit stability time	Maximum	Twu	45 s

Note: To set to the same detection performance as the digital output type, set the output voltage to the offset voltage (2.5V) ±0.45V (i.e. 2.95V or more and 2.05V or less).

TIMING CHART

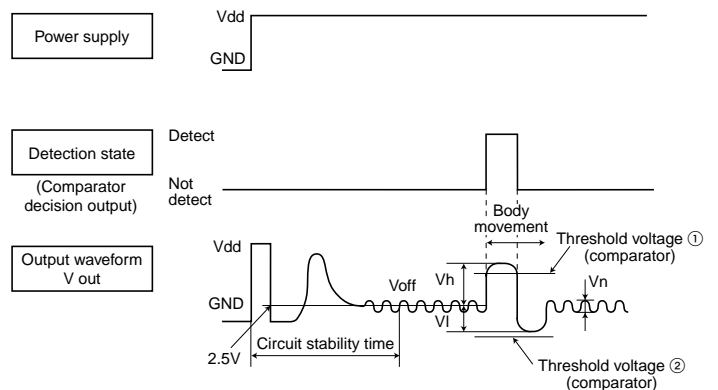
1. Digital output



Note: Circuit stability time: 30s max.

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

2. Analog output

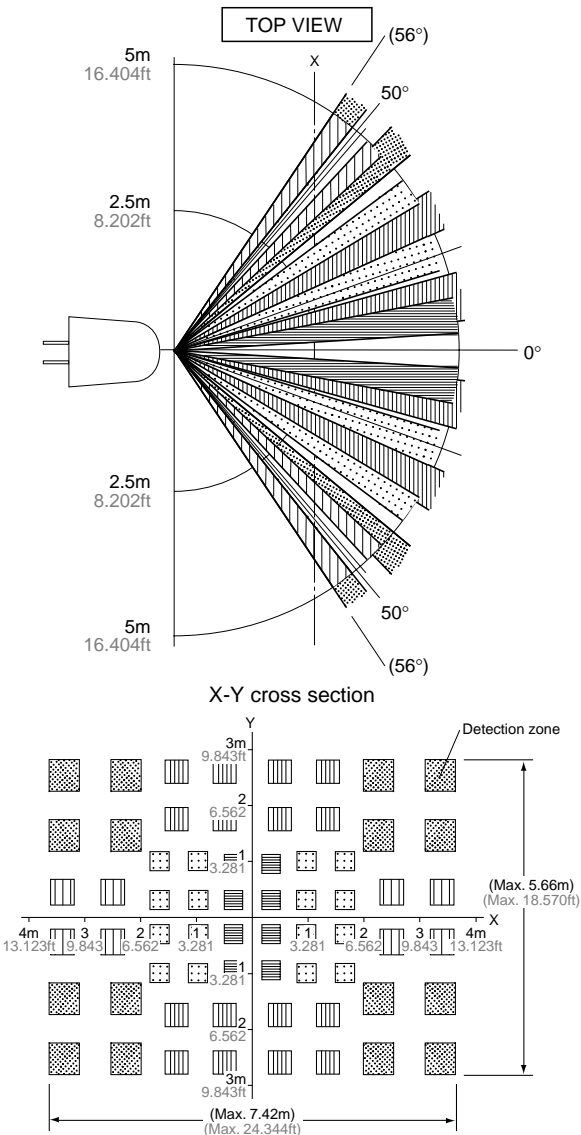


Note: Circuit stability time: 45s max.

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

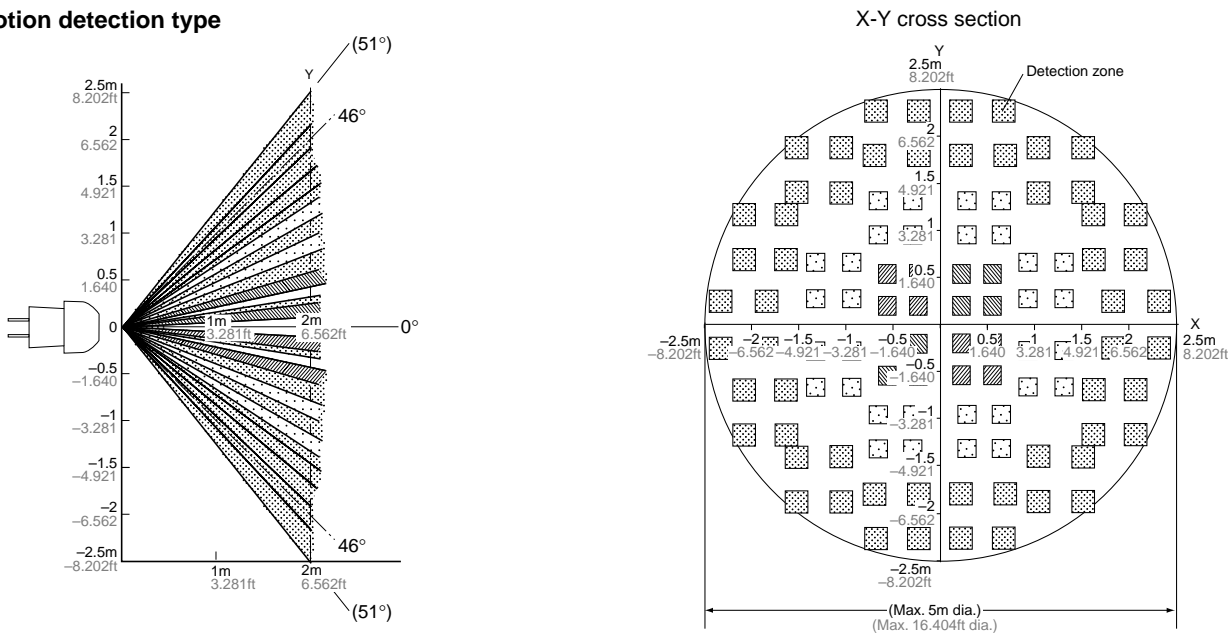
DETECTION PERFORMANCE

1. Standard detection type



Notes: 1. The X-Y cross-sectional diagram shows the detection area.
2. The differences in the detection zone patterns are indicative of the projections of the 16 lenses with single focal point and with five optical axes. An object whose temperature differs from the background temperature and which crosses inside the detection zone will be detected.

2. Slight motion detection type



Notes: 1. The X-Y cross-sectional diagram shows the detection area.
2. The differences in the detection zone patterns are indicative of the projections of the 26 lenses with single focal point and with three optical axes. An object whose temperature differs from the background temperature and which crosses inside the detection zone will be detected.