

## PRESENCE MONITOR (WiFi/I-o-T)

(Model AR-APMW-1)

Unlike conventional PIR sensors that require body movement, this AVATAR product houses an infra-red (IR) thermal imaging sensor to capture the radiation emitted by human body.

The sensor FOV (field of view) of 60 degrees can cover a large area and can sense up to a distance of 4 meters. Signal from 64 thermopile sensors are processed by a microcontroller where different levels of software checks are performed to judge human presence. There is a built-in relay as well as a WiFi module inside the monitor.



A relay output (NO/NC) is provided to turn ON any external devices when a human presence is detected and automatically turns OFF otherwise.

The WIFI module sends the following information to the internet for remote viewing every minute.

- ❖ **Occupancy/Presence**
- ❖ **Location/Area/Room number**
- ❖ **Current accumulated time in minutes (while presence detected).**
- ❖ **Yesterday's accumulated time in minutes (while presence detected).**

The device helps in achieving

- ❖ Efficient energy management by automatically turning OFF equipment power when not in use;
- ❖ Remote management/reporting of occupancy in accommodation facilities and hotels.
- ❖ Alerting presence in security or restricted areas.
- ❖ Detection at NO AMBIENT LIGHT (night-time) for capturing unauthorized/authorized presence. Alarms can be generated, messages can be triggered over internet and cameras/light may be switched on, gates can be opened/locked etc;).

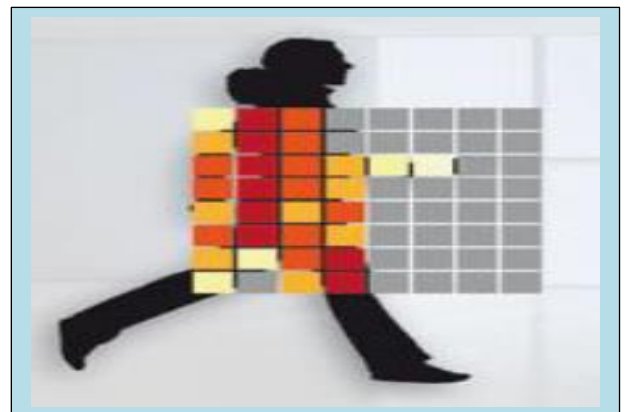
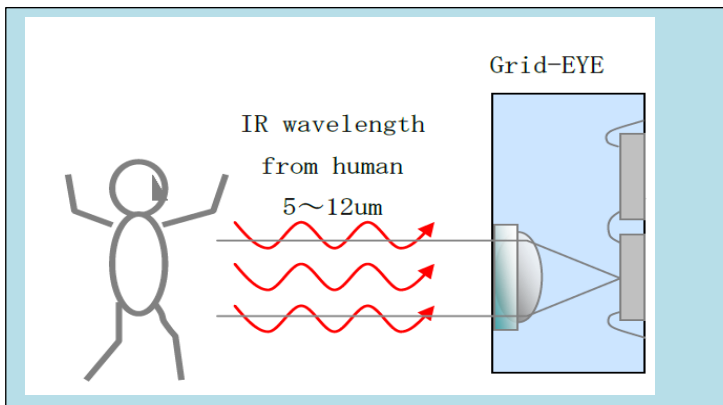
The unit must be mounted/installed by taking into account the following factors/**checklist**.

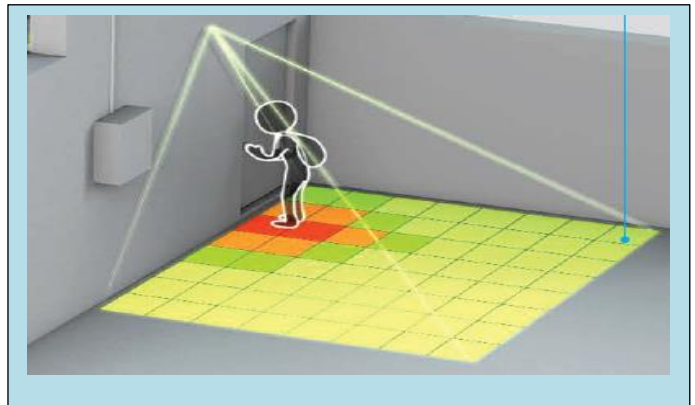
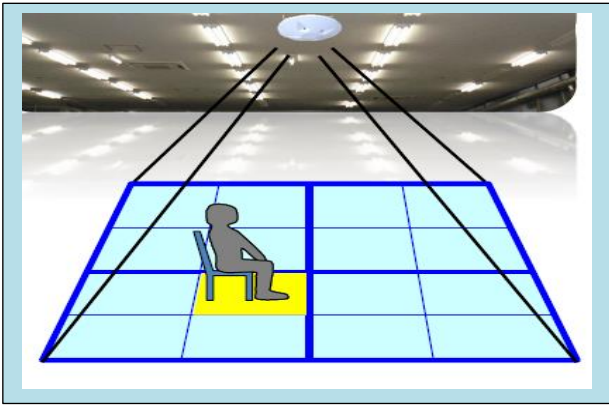
- ✓ **Avoid wind-flow paths, for example near a fan. The sensing path between the sensor and detection area must be free from erratic cold and hot wind-flow (that could cause erratic thermal gradients).**
- ✓ **Avoid vibrations. The device mounting should be rigid and not shaking due to wind or other factors.**
- ✓ **Align sensor (FOV, field of view) such that adequate sensor pixels capture human presence in the detection area.**
- ✓ **Avoid high humidity which may cause condensation and block the sensor window.**
- ✓ **Avoid solid objects that block the sensor view path.**
- ✓ **Keep away from hot objects.**
- ✓ **Keep away from strong magnetic or electrical interference.**

At power-on, it will take approximately 15 seconds to complete the initialization. The WiFi network connection may take time ranging from few seconds to about a minute depending on the local signal strength. In case a connection is not achievable, then it temporarily bypasses the WIFI and continue operation. The device automatically keeps checking and try connecting every 10 minutes.

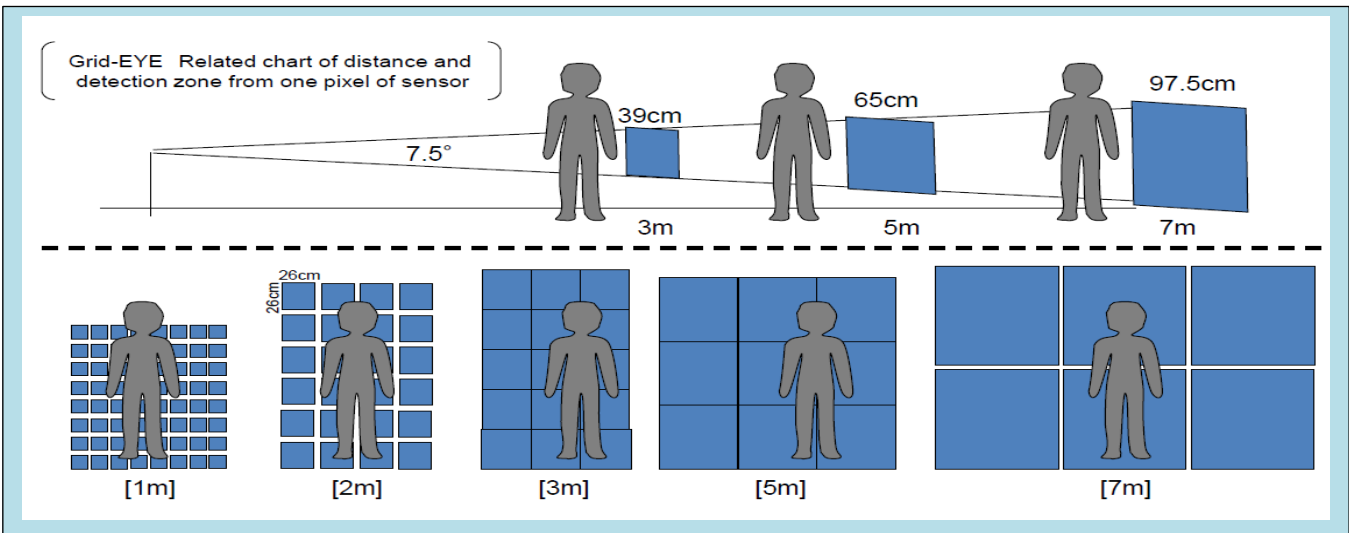
**Note:**

1. Since this uses thermal imaging, objects that could radiate heat in the same IR wavelength may also trigger a presence.
2. Wherever needed, other methods to restrict pets in the detection area is recommended.
3. Pay attention to electrical safety while using 110-230 VAC main supply.





Pointing the device to a flat surface or wall with uniform temperature distribution will give best results and improve detection range.



SPECIFICATION		
<b><i>The device requires a temperature difference, <math>\Delta T \geq 2 \text{ }^\circ\text{C}</math> (between object &amp; background)</i></b>		
<b><i>Recommended usage areas</i></b>		
❖ <b><i>Air-conditioned rooms (where ambient <math>\leq 28 \text{ }^\circ\text{C}</math>).</i></b>		
❖ <b><i>Machine shop-floors (where ambient <math>\geq 35 \text{ }^\circ\text{C}</math>).</i></b>		
❖ <b><i>Night watch (when ambient falls to <math>\leq 28 \text{ }^\circ\text{C}</math>).</i></b>		
1	Operating voltage/power	SMPS, 110-250 VAC +/- , < 3 Watts
2	Relay contact rating	NO/NC/COMMON, 230VAC, 2 Amps
3	IR sensing temperature	0 to 80 $^\circ\text{C}$
4	Indoor temperature	0 to 28 $^\circ\text{C}$ (room) and 35 to 55 $^\circ\text{C}$ (shop-floor)
5	Sensor	Panasonic Grid-Eye, IR Imaging , 64 pixels/sensors
6	Detection range	30 to 35 $^\circ\text{C}$
7	Scan rate	1 second
8	Wifi and Data update	1 Minute, 2.4 GHz IEEE802.11 b/g/n
9	Detection speed	< 2 seconds
10	FOV (field of view)	60 degrees
11	Sensing Range	2 to 4 meters (depends on ambient conditions and device mounting)
12	IR sensing wavelength	5 to 13 $\mu\text{m}$
13	Detection algorithm	Pattern recognition
14	Diagnostics Display	Internal 0.96" for factory use only

**Warranty:** There is no user serviceable parts and AVATAR RENEWABLES PVT LTD will provide 1 year warranty from the date of purchase for any device malfunction. This warranty will cover only if the device is operated as intended and not abused.

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