(Standard detection type)

(W) White | (B) Black | (PW) Pearl White

(Long distance detection type)

(W) White | (B) Black | (PW) Pearl White

APPLICATIONS

Commercial / Residential Equipment
- Lighting fixtures, Sensor switches,
- Video intercoms, Vending machines,
- Home automation control panels

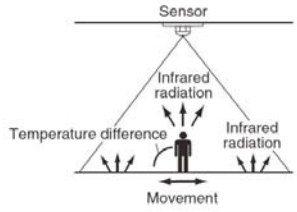
Home Appliances (Energy Savings)
- Television and PC monitor
- Air conditioners, Air purifiers

What is passive infrared type?

This sensor detects changes in infrared radiation which occur when there is movement by a person (or object) which is different in temperature from the surroundings.

① As this sensor detects temperature differences, it is well suited to detecting the motion of people by their body temperature.

② Wide sensing area.



Compliance with RoHS Directive

1. ***Simplified circuitry with fully integrated sensor design***

Panasonic's proprietary high-density embedded circuit design eliminates external sensing circuits. Advantages include reduced development and design schedules.

2. ***Low curvature lens for product designs***

Panasonic's lens formation technology achieves a semi-flat lens with a smooth surface and minimum protrusion from the device.
In addition to white and black lens options, pearl white is offered for design aesthetics.
(※Refer to "Dimensions" on page 5)

3. ***Robust design prevents false detection***

PaPIRs sensing circuits are enclosed in a metallic can to minimize adverse effects of external electromagnetic fields. Examples include irradiated noise caused by cellular phones.

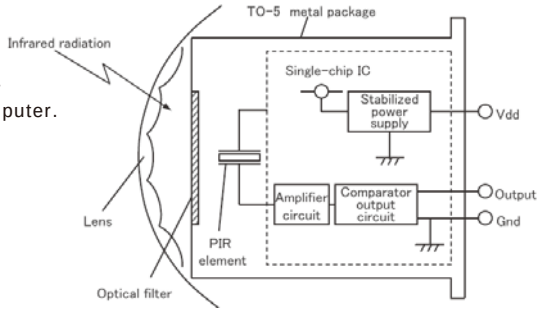
A high S/N ratio minimizes sensitivity to false tripping when operated under various environmental conditions.

4. ***Lead-free pyroelectric elements***

PaPIRs sensing elements contain lithium tantalate and are lead-free. Typical PIR sensing elements are ferroelectric ceramic (PZT) containing lead.

Block Diagram *(Digital output circuit)*

Built-in amplifier and comparator connected directly to a microcomputer.



ORDERING INFORMATION

EKMC ☐☐☐☐☐☐

Output: **1**: Digital

Current Consumption: **6**: 170 µA

Detection Performance: **01**: Standard detection type
03: Long distance defection type

Lens Color:
1: White **2**: Black **3**: Pearl White

Lens Material: **1**: Polyethylene

Mounting: **1**: TO-5

PRODUCT TYPES

Detection Performance	Current Consumption	Lens Color	Model No.	Inner Package	Outer Package
Standard detection type	170 μA	White	EKMC1601111	50pcs	1000pcs
		Black	EKMC1601112		
		Pearl White	EKMC1601113		
Long Distance detection type	170 μA	White	EKMC1603111	50pcs	1000pcs
		Black	EKMC1603112		
		Pearl White	EKMC1603113		

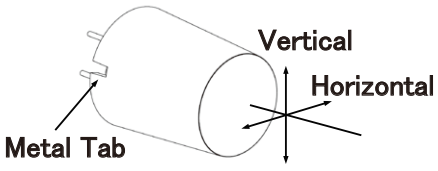
PERFORMANCE

1. Detection Performance [Conditions for measuring: Ambient temperature:25℃(77℉) Operating voltage:5VDC]

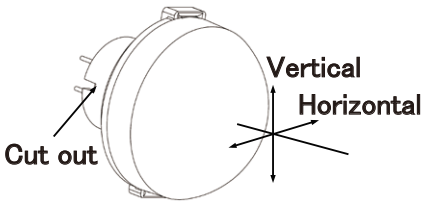
Items		Standard Detection type	Long Distance Detection type	Conditions concerning target
Detection Range *1)		Max. 5m	Max. 12m	1. The temperature difference between the target and the surroundings should be superior to 4℃(7.2℉). 2. Movement speed: 1.0m/s 3. Target concept is human body (Size: 700× 250mm)
Detection Area	Horizontal *2)	94° (±47°)	102° (±51°)	
	Vertical *2)	82° (±41°)	92° (±46°)	
	Detection Zone *3)	64 zones	92 zones	

*1) Depending on the target's speed and its temperature difference with the surroundings, detection can occur at a range superior to the above value. However, please use this sensor according to the specifications.

*2) Definitions for "Horizontal" and "Vertical"



Standard detection type



Long Distance detection type

*3) Refer to the "detection area" diagram on P.4.

2. Maximum Rated Values

Items	Specified value
Power Supply Voltage	−0.3～7.0V DC
Usable Ambient Temperature	−20～+60℃ (−4～+140℉) Do not use in a freezing or condensation environment.
Storage Temperature	−20～+70℃ (−4～+158℉)