

EKMC(VZ) series

Current consumption **170 μ A** **Digital output**



Standard detection type



Long distance detection type



Wall installation type

○Economy type suitable for a wide range of applications

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

Lensless type available
170 μ A type: EKMC1600100

Specifications

| Detection performance | Model no. | Current consumption | Lens color | Output type | Detection distance | Detection area | | Detection zones |
|----------------------------------|-------------|---------------------|-------------|-------------|---|----------------|----------|-----------------|
| | | | | | | Horizontal | Vertical | |
| Standard detection type | EKMC1601111 | 170 μ A | White | Digital | 5m | 94° | 82° | 64 |
| | EKMC1601112 | | Black | | | | | |
| | EKMC1601113 | | Pearl white | | | | | |
| Long distance detection type | EKMC1603111 | | White | | 12m | 102° | 92° | 92 |
| | EKMC1603112 | | Black | | | | | |
| | EKMC1603113 | | Pearl white | | | | | |
| Wall installation type | EKMC1604111 | | White | | 12m (1st step lens) 6m (2nd step lens) 3m (3rd step lens) | 40° | 105° | 68 |
| | EKMC1604112 | | Black | | | | | |
| | EKMC1604113 | | Pearl white | | | | | |

■ Ordering information

EKMC16 **1**

- PaPIRs motion sensor
- Detection (Lens)
 - 00: Lensless / 01: 5m distance standard / 03: 12m long distance / 04: Wall installation type

- Lens color
 - 0: Lensless / 1: White / 2: Black / 3: Pearl white
- Lens
 - 0: Lensless / 1: with lens

Characteristics

■ Maximum rated values

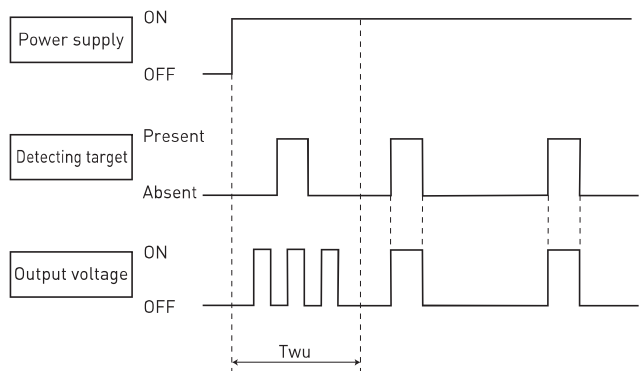
| Items | Value |
|----------------------|--|
| Power supply voltage | -0.3 to 7V |
| Ambient temperature | -20 to +60°C (no frost, no condensation) |
| Storage temperature | -20 to +70°C |

■ Electrical characteristics

| Items | | Symbol | EKMC (VZ) type | Conditions |
|--|-----|--------|----------------|---|
| Operating voltage | Max | Vdd | 6.0V | — |
| | Min | | 3.0V | |
| Current consumption (in standby mode) Note 1) | Ave | Iw | 170 μ A | Ambient temperature: 25°C Iout=0 Vdd: 5V |
| Output current (during detection) Note 2) | Max | Iout | 100 μ A | Ambient temperature: 25°C Vout \geq Vdd-0.5 |
| Output voltage (during detection period) | Min | Vout | Vdd-0.5V | Ambient temperature: 25°C Open at no detection |
| Circuit stability time (when voltage is applied) | Max | Twu | 30 sec | Ambient temperature: 25°C Iout=0 Vdd: 5V |

Note 1) Current consumption during detection period is the total value of current consumption in standby mode add to output current.
Note 2) Please select an output resistors (pull-down concept) in accordance with Vout so that the output current is lower than or equal to 100 μ A. If the output current is more than 100 μ A, this may cause false alarms.

Timing chart



[Explanation of the timing]
Twu: Circuit stability time: max. 30 sec
During this stage, the output's status is undefined (ON/OFF) and detection is therefore not guaranteed.

Lenses for the EKMB/EKMC series

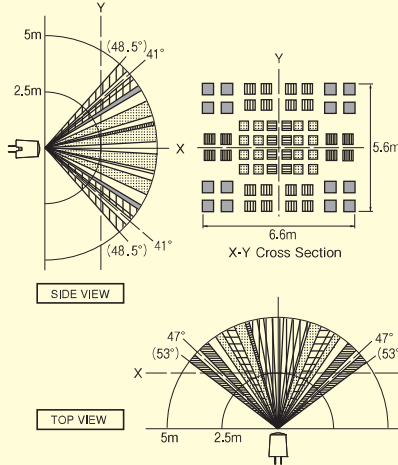
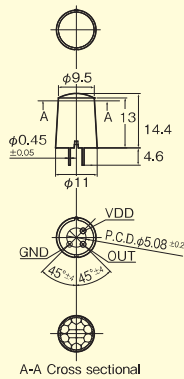
Dimension (mm)

Detection zone

Detection characteristics

Standard detection type

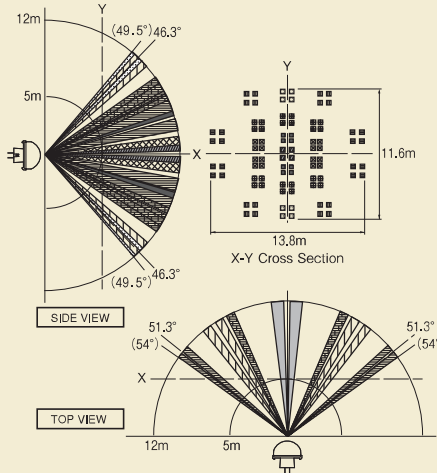
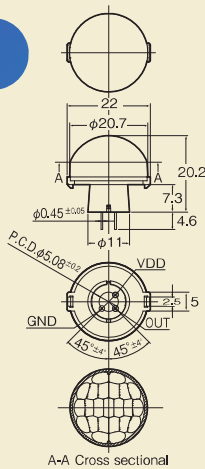
CAD data



| | |
|---------------------|--|
| Detection distance | Max. 5m |
| Field of view | 94°×82° |
| Detection zone | 64 beams |
| Detection condition | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1.0m/s Target concept: Human body with an approx. size of 700×250mm Target moving direction: Crossing the detection beam. |

Long distance detection type

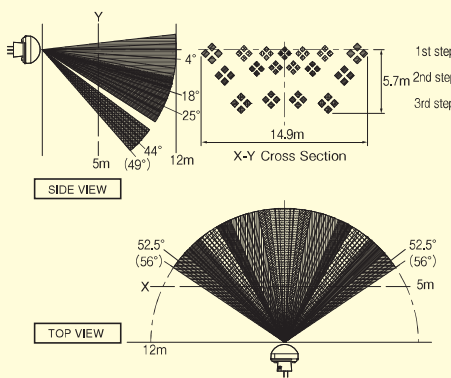
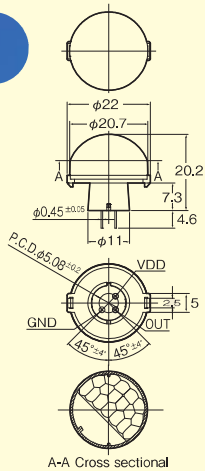
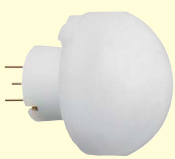
CAD data



| | |
|---------------------|--|
| Detection distance | Max. 12m |
| Field of view | 102°×92° |
| Detection zone | 92 beams |
| Detection condition | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1.0m/s Target concept: Human body with an approx. size of 700×250mm Target moving direction: Crossing the detection beam. |

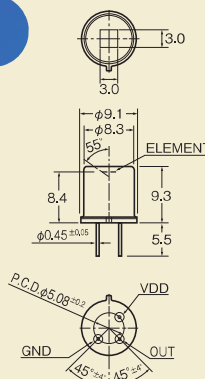
Wall installation type

CAD data

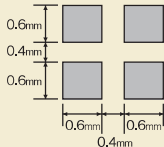


| | | |
|---------------------|--|----------|
| Detection distance | 1st step lens | Max. 12m |
| | 2nd step lens | Max. 6m |
| | 3rd step lens | Max. 3m |
| Field of view | 40°×105° | |
| Detection zone | 68 beams | |
| Detection condition | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1.0m/s Target concept: Human body with an approx. size of 700×250mm Target moving direction: Crossing the detection beam. | |

Lensless type



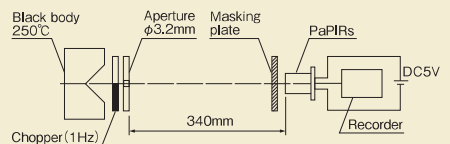
PIR element



| | |
|-----------------------|---|
| Detection sensitivity | <p>Average: 5.6μW/cm²</p> <p>Maximum: 7.6μW/cm²</p> |
|-----------------------|---|

※Detection sensitivity is measured by following system

Test setup



Horizontally wide detection type

Current consumption **1/2/6/170µA**

Digital output

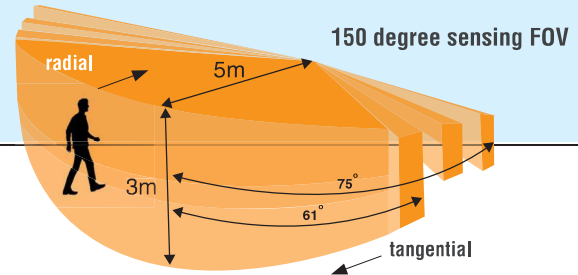
> World's first PIR with "Approach Sensing" technology

Panasonic presents the world's first PIR sensor in the shape of a hammerhead with a special optic, which is more sensitive to radial motion.



Recommended applications

Wall switches, thermostats, IP cameras, wake-up switch for displays, intrusion alarm sensors (e.g. for windows and doors), door intercom systems, entrance and garden lamps, automatic door systems, vending machines



Horizontally wide detection type

| | | | | | |
|---|--------------------------|-------------|-------------|--------------|-------------|
| Current consumption in standby mode (1µA type: in sleep mode) | 1µA | 2µA | 6µA | 170µA | |
| | Digital (open collector) | | | | |
| Lens color | White | EKMB1105111 | EKMB1205111 | EKMB1305111K | EKMC1605111 |
| | Black | EKMB1105112 | EKMB1205112 | EKMB1305112K | EKMC1605112 |
| | Pearl white | EKMB1105113 | EKMB1205113 | EKMB1305113K | EKMC1605113 |

| Dimension (mm) | Detection zone | Detection characteristics | | | | | | | | | | | | | | | | | | |
|-----------------------------------|----------------|--|--------------------|----------|--|---------------|--------|------------|--------|------------|----------------|--------|----|--------|----|-----------------------|--------|--|--------|--|
| <p>CAD data by request</p> | | <table border="1"> <tr> <td>Detection distance</td> <td colspan="2">Max. 5m*</td> </tr> <tr> <td rowspan="2">Field of view</td> <td>Area A</td> <td>122° x 35°</td> </tr> <tr> <td>Area B</td> <td>150° x 20°</td> </tr> <tr> <td rowspan="2">Detection zone</td> <td>Area A</td> <td>88</td> </tr> <tr> <td>Area B</td> <td>16</td> </tr> <tr> <td rowspan="2">Detection condition ▲</td> <td>Area A</td> <td> <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1m/s Target concept: human head with an approx. size of 700x250mm Target moving direction: crossing 2 detection zones </td> </tr> <tr> <td>Area B</td> <td> <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 8°C. Movement speed: 1m/s Target concept: human body with an approx. size of 700x250mm Target moving direction: crossing 2 detection zones </td> </tr> </table> | Detection distance | Max. 5m* | | Field of view | Area A | 122° x 35° | Area B | 150° x 20° | Detection zone | Area A | 88 | Area B | 16 | Detection condition ▲ | Area A | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1m/s Target concept: human head with an approx. size of 700x250mm Target moving direction: crossing 2 detection zones | Area B | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 8°C. Movement speed: 1m/s Target concept: human body with an approx. size of 700x250mm Target moving direction: crossing 2 detection zones |
| Detection distance | Max. 5m* | | | | | | | | | | | | | | | | | | | |
| Field of view | Area A | 122° x 35° | | | | | | | | | | | | | | | | | | |
| | Area B | 150° x 20° | | | | | | | | | | | | | | | | | | |
| Detection zone | Area A | 88 | | | | | | | | | | | | | | | | | | |
| | Area B | 16 | | | | | | | | | | | | | | | | | | |
| Detection condition ▲ | Area A | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1m/s Target concept: human head with an approx. size of 700x250mm Target moving direction: crossing 2 detection zones | | | | | | | | | | | | | | | | | | |
| | Area B | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 8°C. Movement speed: 1m/s Target concept: human body with an approx. size of 700x250mm Target moving direction: crossing 2 detection zones | | | | | | | | | | | | | | | | | | |

* Under specified detection conditions
 ▲ Please refer to "Cautions for use" (page 18) and "Basic principles" (page 18, point 5), for more details

Please contact your local sales representative for detailed specifications.

Standard and slight motion detection type

Current consumption **1/2/6/170µA**

Digital output



> 2 functions in 1 lens

High Sensitivity Centre ZONE: Optimized for detecting small movements and small objects
 Normal Sensitivity Outer ZONE: Optimized for detecting larger movements of larger objects

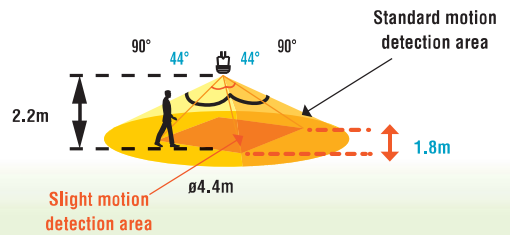


Recommended applications

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



Standard and slight motion detection type



| | | | | | |
|--|--------------------------|-------------|-------------|--------------|-------------|
| ► Current consumption in standby mode (1µA type: in sleep mode) | 1µA | 2µA | 6µA | 170µA | |
| | Digital (open collector) | | | | |
| ► Output | Digital (open collector) | | | | |
| | White | EKMB1193111 | EKMB1293111 | EKMB1393111K | EKMC1693111 |
| | Black | EKMB1193112 | EKMB1293112 | EKMB1393112K | EKMC1693112 |
| ► Lens color | Pearl white | EKMB1193113 | EKMB1293113 | EKMB1393113K | EKMC1693113 |

| Dimension (mm) | Detection zone | Detection characteristics | | | | | | | | | | | | | | | | | | |
|--|---------------------------------|--|--------------------|------------|--|---------------|---------------|-----------|-----------------|-----------|----------------|---------------|----|-----------------|----|-----------------------|---------------|---|-----------------|--|
| <p>CAD data by request</p> <p>SECTION A-A</p> | <p>X-Y Cross Section (2,2m)</p> | <table border="1"> <tr> <td>Detection distance</td> <td colspan="2">Max. 2.2m*</td> </tr> <tr> <td rowspan="2">Field of view</td> <td>Slight motion</td> <td>44° x 44°</td> </tr> <tr> <td>Standard motion</td> <td>90° x 90°</td> </tr> <tr> <td rowspan="2">Detection zone</td> <td>Slight motion</td> <td>36</td> </tr> <tr> <td>Standard motion</td> <td>48</td> </tr> <tr> <td rowspan="2">Detection condition ▲</td> <td>Slight motion</td> <td> <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 0,5m/s Target concept: human head with an approx. size of 200x200mm Target moving direction: crossing 1 detection zone </td> </tr> <tr> <td>Standard motion</td> <td> <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1.0m/s Target concept: human body with an approx. size of 400x200mm Target moving direction: crossing 2 detection zones </td> </tr> </table> <p>* Under specified detection conditions ▲ Please refer to "Cautions for use" (page 18) and "Basic principles"(page 18, point 5), for more details</p> | Detection distance | Max. 2.2m* | | Field of view | Slight motion | 44° x 44° | Standard motion | 90° x 90° | Detection zone | Slight motion | 36 | Standard motion | 48 | Detection condition ▲ | Slight motion | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 0,5m/s Target concept: human head with an approx. size of 200x200mm Target moving direction: crossing 1 detection zone | Standard motion | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1.0m/s Target concept: human body with an approx. size of 400x200mm Target moving direction: crossing 2 detection zones |
| Detection distance | Max. 2.2m* | | | | | | | | | | | | | | | | | | | |
| Field of view | Slight motion | 44° x 44° | | | | | | | | | | | | | | | | | | |
| | Standard motion | 90° x 90° | | | | | | | | | | | | | | | | | | |
| Detection zone | Slight motion | 36 | | | | | | | | | | | | | | | | | | |
| | Standard motion | 48 | | | | | | | | | | | | | | | | | | |
| Detection condition ▲ | Slight motion | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 0,5m/s Target concept: human head with an approx. size of 200x200mm Target moving direction: crossing 1 detection zone | | | | | | | | | | | | | | | | | | |
| | Standard motion | <ul style="list-style-type: none"> The temperature difference between the target and the surroundings must be higher than 4°C. Movement speed: 1.0m/s Target concept: human body with an approx. size of 400x200mm Target moving direction: crossing 2 detection zones | | | | | | | | | | | | | | | | | | |

Please contact your local sales representative for detailed specifications.

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С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

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Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru