

AI Workplace Occupancy Sensor

MPC5117



MPC5117

MPC5117-2

MPC5117 is an AI workplace sensor designed to monitor occupancy and utilization in modern workspace, which can reach up to 98% recognition rate based on its AI algorithm. MPC5117 has dual versions transmitting data through LoRaWAN® or Ethernet for different applications.

Based on standard LoRaWAN® protocol, MPC5117 can work with Mpbicom Pro LoRaWAN® gateway and mainstream LoRaWAN® network servers. They are equipped with Wi-Fi for easy configuration without any configuration tools.

With Ethernet transmission, MPC5117-2 is available to provide more applications. Rich serial interfaces such as DI, DO, and RS485 are provided in MPC5117-2 for various scenarios.

MPC5117-2 supports data push via HTTP/MQTT for easily integration and allows for remote management via Mobicom Pro DeviceHub or Development Platform.

◆ Features

Shared Values

- Recognition rate is up to 98% based on advanced AI identification and analysis technologies
- Wide installation height and detection range with two versions for various scenarios
- Support regional people counting, occupancy detection and dwell time detection
- Support up to 16 mapped regions for detection

- Allow for bi-directional line-crossing people counting and people flow analysis
- Smart U-turn counting to filter redundant counting of people wandering around the area
- Support people flow analysis to calculate the traffic from different directions
- Support normal or blur mode and privacy masks up to 8 regions
- Support data retransmission to collect data securely

LoRaWAN® Version Only

- Compliant with GDPR without images collected, free from privacy concerns
- Equipped with Wi-Fi for web GUI configuration
- Support D2D protocol to enable ultra-low latency and directly control without gateway
- Function well with standard LoRaWAN® gateways and network servers

PoE Version Only

- Support scheduled detection
- Support Milesight DeviceHub or MobiCom Pro Development Platform management remotely
- Adapt to more applications with rich industrial interfaces
- DC or PoE power supply optional
- High compatibility of data transmission via Ethernet port (HTTP/MQTT/HTTP API)

◆ Specifications

| Model | MPC5117 | MPC5117-2 |
|---|--|-----------|
| People Counting | | |
| Field of View | Standard Version: 190 ° Horizontal, 112 ° Vertical High Ceiling Mount Version: 129.4 ° Horizontal, 68.4 ° Vertical | |
| Full Monitored Area | Standard Version: 78m ² (R = 5m, H = 3m) High Ceiling Mount Version:126m ² (L=18m, W=7m, H= 7m) | |
| Installation Height | Standard Version: 2.5m to 4m High Ceiling Mount Version: 5m to 7m | |
| Detection Rate ¹ | Region Counting: Up to 95% Line Crossing Counting: Up to 95% People Flow Analysis: Up to 98% | |
| Advanced Function | | |
| Regional People Counting & Dwell Time Detection | Up to 16 areas (up to 10 sides for each area) for regional people counting and dwell time detection | |

| | | |
|--------------------------------|---|---|
| Bi-Directional People Counting | Support | |
| U-turns Filtering | Filter redundant counting of people wandering in the bi-directional people counting areas | |
| People Flow Analysis | Calculate the traffic of different directions at most 4 edges | |
| Privacy Mask | Up to 8 privacy masks to cover certain areas | |
| Data Retransmission | Support 3000 data retransmission packets | |
| LoRaWAN® Transmission | | |
| Protocol | LoRaWAN®, D2D | --- |
| Frequency | CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4 | |
| Tx Power | 16 dBm (868 MHz)/20 dBm (915 MHz)/19 dBm (470 MHz) | |
| Sensitivity | -137 dBm @300bps | |
| Mode | OTAA/ABP Class C | |
| Ethernet Transmission | | |
| Ethernet Port | - | 1 × RJ45 10/100 Mbps (PoE PD) |
| Network Protocol | | MQTT(s), HTTP(s), RTSP, NTP, SSH,etc. |
| Other Interfaces | | |
| Wi-Fi | IEEE 802.11 b/g/n, 2.4GHz (AP Mode for Configuration) | - |
| DI/DO | - | 1/1 |
| Serial Interface | - | 1 × RS485 (Under development) |
| Button | 1 × Reset Button,1 × Wi-Fi Button | 1 × Reset Button |
| LED Indicators | 1 × Wi-Fi | 1 × Status |
| Power Input | - | 2-pin 3.5 mm Terminal Block |
| Physical Characteristics | | |
| Power Supply | DC 5V/ 1.5A by Type-C Port | 1. DC 5V/2A by Terminal Block 2. 802.3af PoE |
| Power Consumption | 3.5W | 1. DC:3.5W 2. POE:4.5W |
| Operating Temperature | -5°C ~ +55°C | |
| Storage Temperature | -20°C ~ +60°C | |
| Relative Humidity | 0 ~ 95% (Non-condensing) | |

| | | |
|--------------|--|--|
| Color&Weight | White/Black (Optional), 126.9g | White, 186g |
| Dimension | 85 × 85 × 20 mm (3.35 × 3.35 × 0.79 in) | 85 × 85 × 30 mm (3.35 × 3.35 × 1.18 in) |
| Installation | Ceiling Mounting | |
| Approvals | | |
| Regulatory | CE, FCC, RoHS | |

◆ Installation Height

To better utilize the advantage of AI algorithm, it's recommended to follow the below installation heights:

| Object | Height | Note |
|-----------------|---|--|
| Sitting object | >2.5 m (8.2ft) | Commonly used for region people counting |
| Standing object | > 3 m (9.8ft) (the optimum height is 3m) | Commonly used for line cross counting |

It's recommended to refer to below detection ranges² for people counting at different heights for accurate recognition:

| Installation Height (m) | Detection Range (m ²) |
|-------------------------|-----------------------------------|
| 2.3 | 2.6 × 8.6 |
| 2.5 | 3.2 × 9.8 |
| 2.7 | 4.2 × 13.6 |
| 3.0 | 4.8 × 14 |
| 3.2 | 5.2 × 15.4 |
| 3.5 | 6 × 17 |
| 4.0 | 6.8 × 18.8 |

For high ceiling mount version, the detection ranges are as below:

| Installation Height (m) | Detection Range (m ²) |
|-------------------------|-----------------------------------|
| 5.0 | 3.5 × 10.0 |
| 6.0 | 4.5 × 12.0 |
| 7.0 | 5.5 × 14.0 |

¹ Tested under the recommended detection range.

² The actual detection range may vary based on the height of the target individual.

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