# MWS1A-IP-PRM
# Product Guide

mySmart

# Weather Proof Microwave Presence Detector - wall mounted

## Overview

The MWS1A-IP series of microwave presence detector switches are designed to provide automatic control of lighting, heating or ventilation loads. The MWS1A-IP detects movement using a highly sensitive microwave detector. This works by emitting low power microwave signals and measuring the reflections as the signals bounce of moving objects. The MWS1A-IP is optimised for wall mounting applications to give detection over long distances.

When movement is detected the load is turned on. When an area is no longer occupied the load will switch off after an adjustable time out period.

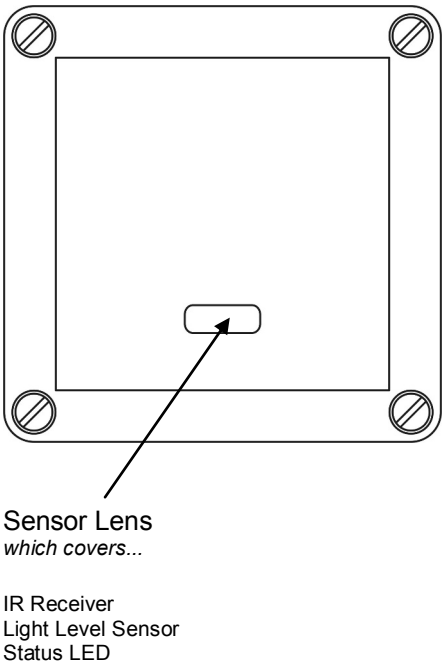
The internal light sensor provides additional energy saving in lighting applications. When an area is occupied lighting is only switched on when the level of natural light is below a preset level.

Three variants are available

| | |
|---|---|
| **MWS1A-IP-PRM** | Mains voltage, switched live contact |
| **MWS1A-IP-PRM-VFC** | Mains voltage, isolated changeover contact |
| **MWS1A-IP-PRM-LV** | Low voltage, isolated changeover contact |

## Features

Fig 1: Front features




**Microwave Sensor**

Detects movement within the unit's detection range, allowing load control in response to changes in occupancy.

**IR Receiver**

Receives control and programming commands from an IR (infrared) handset.

**Light Level Sensor**

An integral adjustable photocell allows the lights to be kept off if there is sufficient ambient light.

**Presence detection**

When movement is detected the load will automatically turn on. When the area is no longer occupied the load will automatically switch off after an adjustable time period.

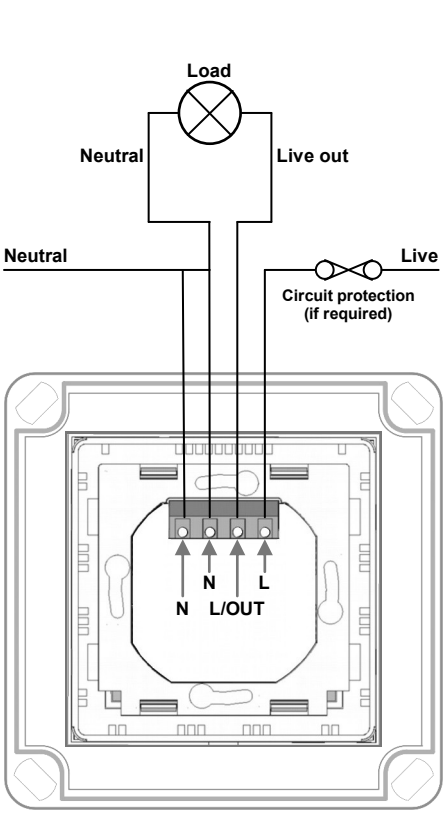
**Status LED**

The LED flashes **R**ed to indicate the following:

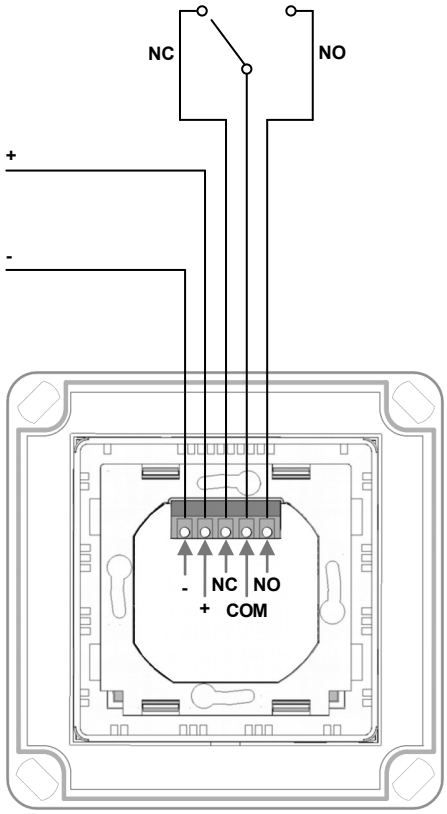
| | |
|---|---|
| ***Walk Test LED active*** | *when movement is detected* |
| ***Valid setting received*** | |

# Wiring

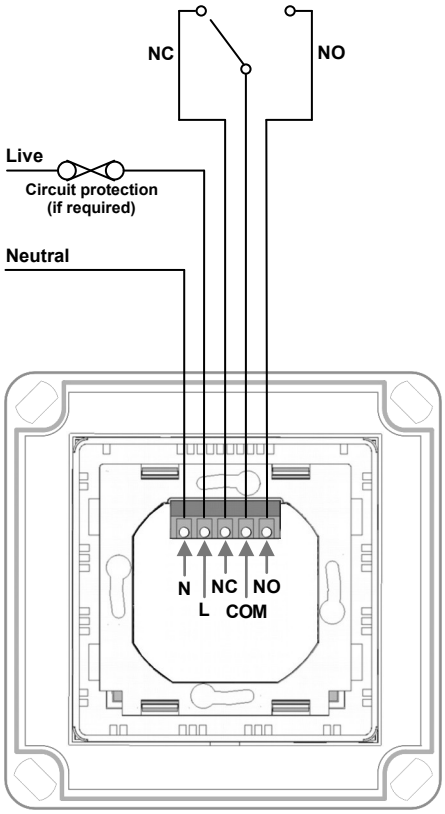
**MWS1A-IP-PRM**




**MWS1A-IP-PRM-LV**




**MWS1A-IP-PRM-VFC**




To switch from more than one position simply wire two or more units in parallel to achieve two way and intermediate switching.

The detector should be sited so that the occupants of the room fall inside the detection pattern shown overleaf, at a recommended height of 1.2m to 1.5m for wall sensors. Note that the higher the sensor is installed the shorter the detection range will be.

- Do not site within 1m of any lighting or ventilation equipment.
- Do not fix to a vibrating surface.
- Site as far away as possible from the surface of metal objects.
- Ensure that all cable entry to the enclosure is via suitable cable glands and seal with silicone sealant where appropriate.
- If it is necessary to screw through the rear of the enclosure ensure that any holes are covered with the caps provided and sealed with silicone sealant where appropriate.
- Note: when externally mounted the unit may be triggered by trees, animals, leaves etc.

# Fault finding

**What if the load does not turn ON?**

- Check to see if the live supply to the circuit is good. For the MWS1A-IP-PRM version only: strap across the *L* and *LIVE OUT* terminal to turn the load on.
- If the supply and wiring are good, check the LUX level setting. Increase the LUX level setting to allow the controller to turn on at higher ambient natural light level.

**What if the load does not turn OFF?**

- Ensure that the area is left unoccupied for a greater time period than the time out period set using the switch.
- Make sure that the sensor is not adjacent to vibrating surfaces or objects (e.g. ventilation equipment).
- The unit may pick up movement through thin partitions or walls. Reduce the sensitivity.

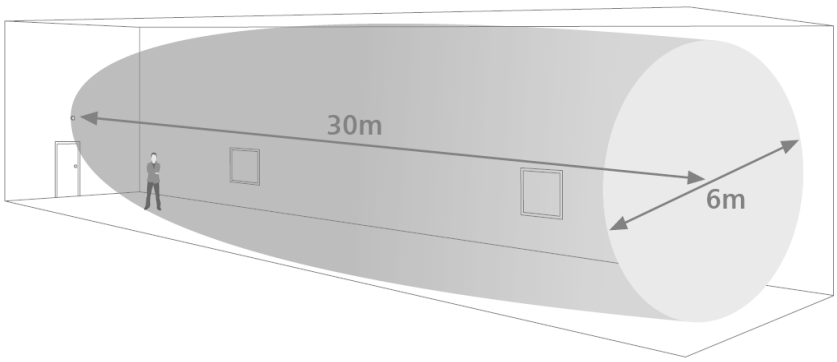
The functionality of the MWS1A-IP is controlled by a number of parameters which can be changed or programmed by any of the following devices:

- **UHS5** Infrared Handset. See below for programmable functions.
- **UN-LCDHS** Infrared Handset (with LCD). See user guide for full programming details.

For most basic programming operations the UHS5 handset can be used and the following procedures are based on using this device.
Point the handset at the Sensor and send the required programming commands to the unit as shown below.
Valid commands will be indicated by a red LED flash. See page 1 for details of other LED responses.
*Note: other functions on the UHS5 which are not shown below are not applicable to this product.*

| | | ***Number of Shift key presses*** | | | | | |
|---|---|---|---|---|---|---|---|
| **Parameter Name** | **Default Value** | **0** SHIFT 1 ○ SHIFT 2 ○ | **1** SHIFT 1 ☼ SHIFT 2 ○ | **2** SHIFT 1 ○ SHIFT 2 ☼ | **3** SHIFT 1 ☼ SHIFT 2 ☼ | **UHS5 Handset Graphics** | **Description** |
| | | Button Activation | | | | | |
| **On / Raise** | | On | | | | | Turn lights on. |
| **Off / Lower** | | Off | | | | | Turn lights off. |
| **Walk test** | Off | On | Off | | | | When set to On this causes a red LED to flash on the sensor when it detects movement. Use this feature to check for adequate sensitivity levels. |
| **Time Out** ***(Time adjustment)*** | 10 mins | 1, 10 & 20 minutes | 5, 15 & 30 minutes | | | | Once the detector is turned on, this value sets how long the lights will stay on once movement has ceased. |
| **Lux on level** ***(Switch level on)*** | 9 | 2, 5 & 7 | 4, 6 & 9 | | | | Lux level setting to prevent the luminaires being switched on if the ambient light level is sufficient (adjustable between 1 and 9). The luminaires will always be switched on at level 9. |
| **Lux off level** ***(Switch level off)*** | 9 | 2, 5 & 7 | 4, 6 & 9 | | | | Lux level setting to switch the luminaires off during occupancy if the ambient light level goes above the setting (adjustable between 1 and 9). Level 9 will always keep the lights on. This setting can be used for “window row switching”. |
| **Sensitivity** | 9 | 1, 5 & 9 | 3, 6 & 8 | | | | Sensitivity level for detecting movement.<br>1 = low sensitivity<br>9 = high sensitivity |
| **Defaults** | | | | D | | | Returns the unit to the default settings. |
| **Shift** | | | | | | | Use this button to select the settings in red and blue signified by the ‘Shift 1’ and ‘Shift 2’ LEDs |

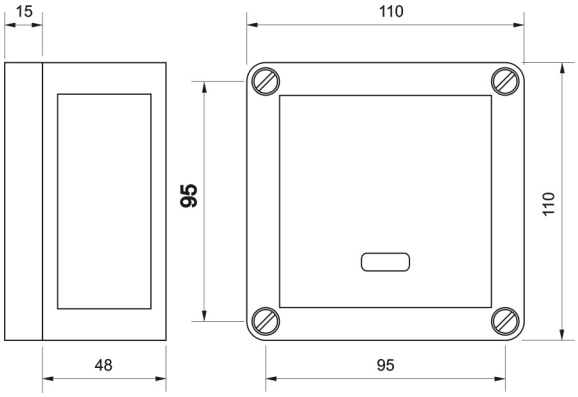
## Detection pattern




Area of high sensitivity

Area of lower sensitivity

## Dimensions




## Technical data

**MWS1A-IP-PRM**

| | |
|---|---|
| Supply Voltage | 230VAC +/- 10% |
| Frequency | 50Hz |
| Power consumption | On 1.15W<br>Off - 790mW<br>Load 10A of lighting and or ventilation including incandescent, fluorescent, compact fluorescent, low voltage (switch primary of transformer). |

**MWS1A-IP-PRM-LV**

| | |
|---|---|
| Supply Voltage | Min 11.5VDC max 36VDC, min 10VAC max 26.5VAC |
| Power consumption | On 1.01W<br>Off - 712mW<br>Load Low voltage supply with relay output rating 16A resistive 10A inductive |

**MWS1A-IP-PRM-VFC**

| | |
|---|---|
| Supply Voltage | 230VAC +/- 10% |
| Frequency | 50Hz |
| Power consumption | On 1.15W<br>Off - 790mW |
| Load | **Normally closed contact**<br>2 Amp maximum<br>Minimum load 100mA<br>**Normally open contact**<br>6 Amp fluorescent lighting and resistive<br>3 Amp compact fluorescent lighting<br>3 Amp low energy lighting<br>3 Amp low voltage lighting (switch primary of transformer)<br>Fluorescent lighting (max 6 fittings recommended)<br>For fluorescent lighting total power factor correction capacitance must not exceed 40µF.<br>3 Amp fans and ventilation equipment<br>Switch SON lighting loads via a contactor<br>Minimum load 100mA |

**All models**

| | |
|---|---|
| Weight | 0.25kg |
| Terminal Capacity | 2.5mm$^2$ |
| Time out period | Adjustable 10 seconds to 99 minutes. Optional adjustment by using IR programming handsets. |
| Light level | Surface fixing by screws (not supplied) . |
| Fixing method | |
| Temperature | -10ºC to 35ºC |
| Humidity | 5 to 95% non-condensing |
| Material (casing) | Polystyrene Type Class 2 |
| IP rating | IP 66 |
| Compliance | EMC-2004/108/EC<br>LVD-2006/95/EC CE |
| Safety | The microwave radiation emitted by these units is extremely low power. At a distance of > 50mm the power density is <6% of the ANSI IEEE C95.1 –1991 recommended microwave power density. At a distance of 5mm from the unit it is <84% of recommended power density. |

| | |
|---|---|
| MWS1A-IP-PRM | Weatherproof microwave presence detector (wall mounting) |
| MWS1A-IP-PRM-LV | Weatherproof microwave presence detector (wall mounting) Low Voltage |
| MWS1A-IP-PRM-VFC | Weatherproof microwave presence detector (wall mounting) Volt Free Contact |

## Frequency compatibility

The allowable frequency of operation of this product is different depending on region. Please select the correct order code using the table below.

| Code suffix | Region | Frequency |
|---|---|---|
| **blank** | UK, China, India, Middle East, Malaysia, Hong Kong, Singapore | 10.687GHz |
| **-R2** | Australia and all of Europe except:<br>UK, France, Portugal, Germany, Switzerland, Austria, Slovak Republic, Republic of Ireland | 10.525GHz |
| **-R3** | France, Portugal, Switzerland | 9.900GHz |
| **-R4** | Germany, Austria, Slovak Republic | 9.350GHz |
| **-R5** | Republic of Ireland | 10.41GHz |

**IMPORTANT NOTICE!**

This device should be installed by a qualified electrician inaccordance with the latest edition of the AS/NZS Wiring Rules and any applicable Building Regulations.

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Due to our policy of continual product improvement mySmart reserves the right to alter the specification of this product without prior notice.



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