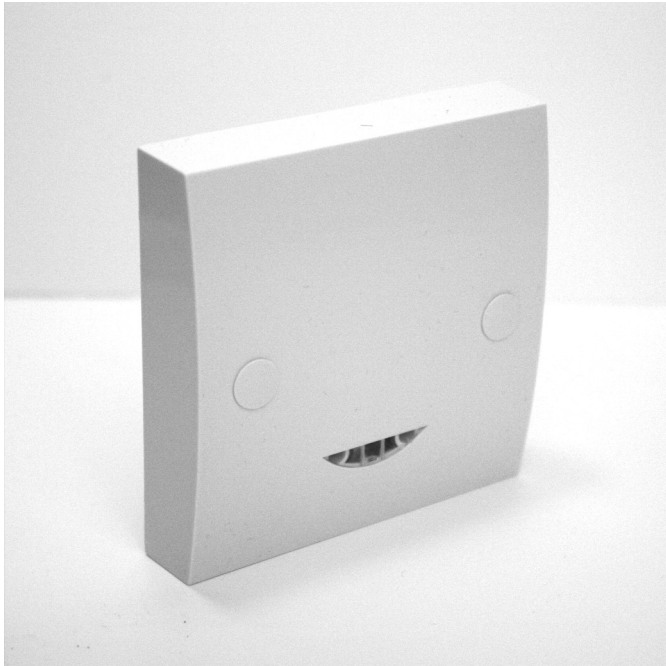


MWS1A-PRM

Microwave Presence Detector - wall mounted

Overview



The MWS1A series of microwave presence detector switches are designed to provide automatic control of lighting, heating or ventilation loads. The MWS1A detects movement using a highly sensitive microwave detector. This works by emitting low power microwave signals and measuring the reflections as the signals bounce off moving objects. The MWS1A 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.

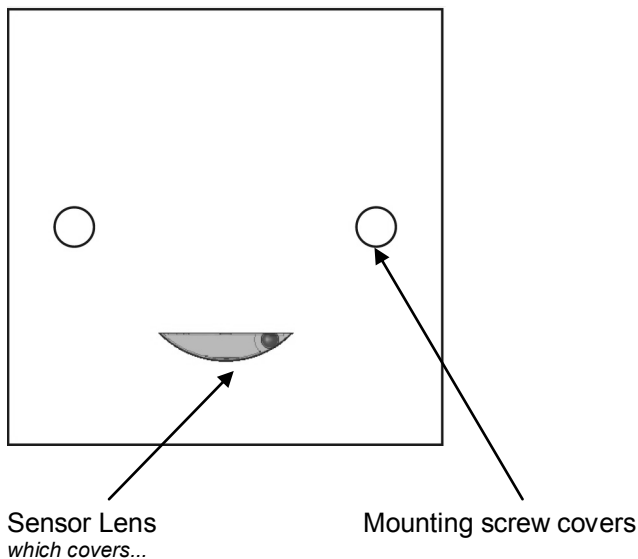
The internal light sensor provides additional energy saving in lighting applications. When an area is occupied lighting is only switched on when the level of natural light is below a preset level.

Three variants are available

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

Features

Fig 1: Front features



IR Receiver
Light Level Sensor
Status LED

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

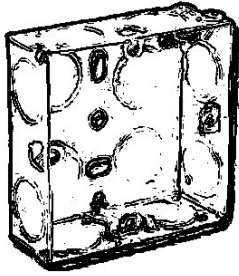
The LED flashes Red to indicate the following:

Walk Test LED active	when movement is detected
Valid setting received	

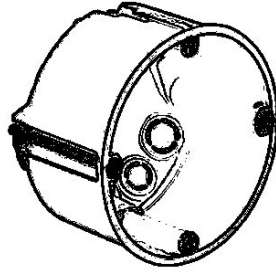
Installation

Back box Compatibility

The MWS1A is designed to fit both UK and EU style backboxes.

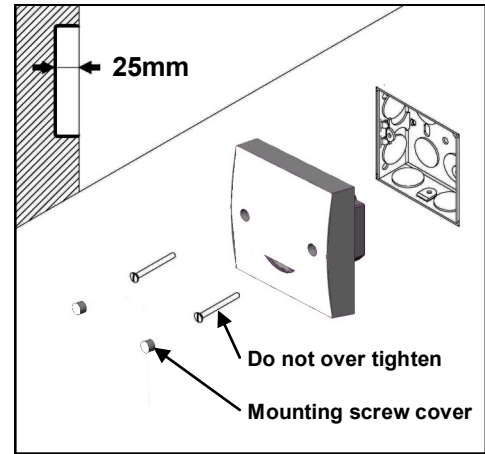


BS4662 square back box



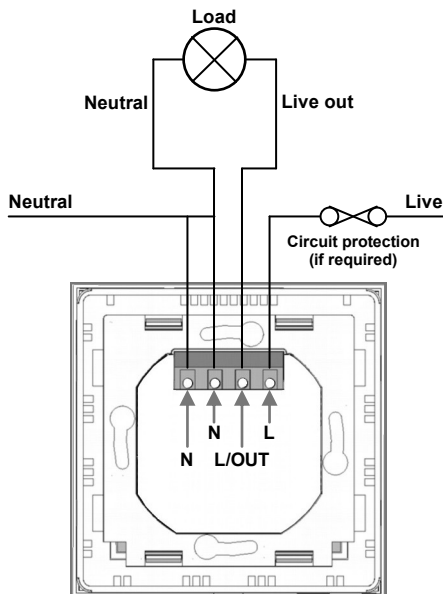
DIN standard round back box

Mounting

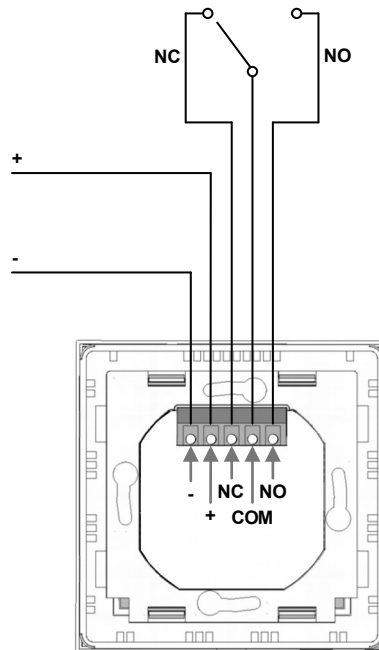


Wiring

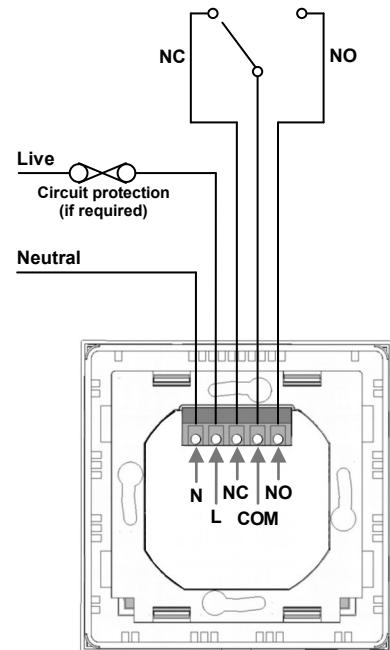
MWS1A-PRM



MWS1A-PRM-LV



MWS1A-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.

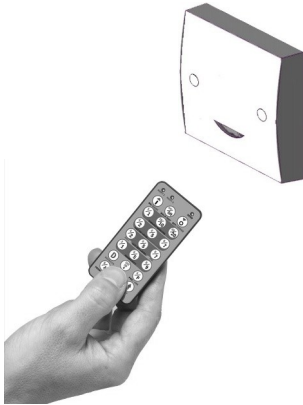
Fault finding

What if the load does not turn ON?

- Check to see if the live supply to the circuit is good. For the MWS1A-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 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.

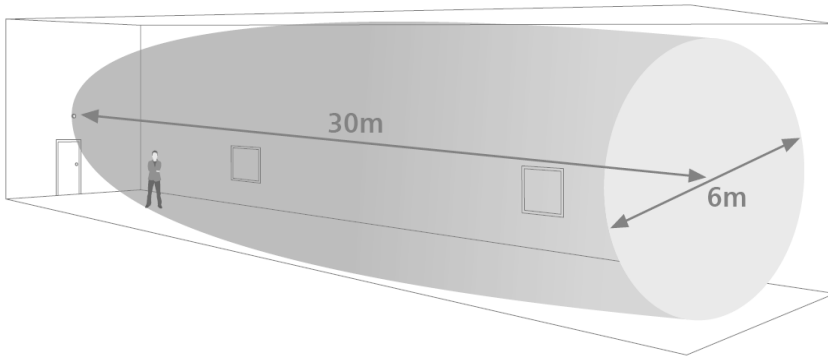
Point the handset at the Sensor and send the required programming commands to the unit as shown below.

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.

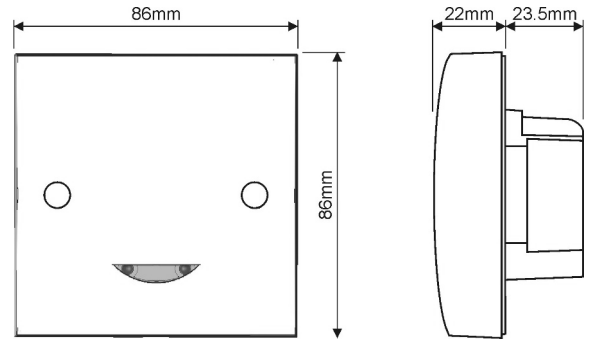
Parameter Name	Default Value	Number of Shift key presses			UHS5 Handset Graphics	Description
		0 SHIFT	1 SHIFT 1	2 SHIFT 2		
Button Activation						
On / Raise		On				Turn lights on.
Off / Lower		Off				Turn lights off.
Walk test	Off	On	Off			When set to On this causes a red LED to flash on the sensor 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. 1 = low sensitivity 9 = high sensitivity
Defaults				D		Returns the unit to the default settings.
Presence / Absence	Presence	Presence	Absence			Absence mode not implemented—do not use.
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-PRM

Supply Voltage
Frequency
Power consumption

230VAC +/- 10%
50Hz
On 1.15W
Off 790mW

Load

10A of lighting and or ventilation including incandescent, fluorescent, compact fluorescent, low voltage (switch primary of transformer).

MWS1A-PRM-LV

Supply Voltage
Power consumption

Min 11.5VDC max 36VDC, min 10VAC max 26.5VAC
On 1.01W
Off 712mW

Load

Low voltage supply with relay output rating 16A resistive 10A inductive

MWS1A-PRM-VFC

Supply Voltage
Frequency
Power consumption

230VAC +/- 10%
50Hz
On 1.15W
Off 790mW

Load

Normally closed contact
2 Amp maximum
Minimum load 100mA
Normally open contact
6 Amp fluorescent lighting and resistive
3 Amp compact fluorescent lighting
3 Amp low energy lighting
3 Amp low voltage lighting (switch primary of transformer)


All models

Weight
Terminal Capacity
Time out period
Light level
Fixing method

Temperature
Humidity
Material (casing)
Compliance

Safety

Fluorescent lighting (max 6 fittings recommended)
For fluorescent lighting total power factor correction capacitance must not exceed 40µF.
3 Amp fans and ventilation equipment
Switch SON lighting loads via a contactor
Minimum load 100mA

0.1kg
2.5mm²
Adjustable 10 seconds to 99 minutes.
Optional adjustment by using IR programming handsets.
Surface fixing
35mm deep plastic surface mount moulded box.
Flush fixing
25mm steel backbox or 25mm deep cavity backbox.
-10°C to 35°C
5 to 95% non-condensing
Flame retardant ABS Type Class 2
EMC-2004/108/EC
LVD-2006/95/EC 

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.

Part numbers

MWS1A-PRM Microwave presence detector (wall mounting)
MWS1A-PRM-LV Microwave presence detector (wall mounting) Low Voltage
MWS1A-PRM-VFC 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 <i>except</i> : 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



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