

## KPT-MSA012-MWS Microwave Sensor Installation

Please read the instructions thoroughly along with the installation instructions for the luminaire and retain for future reference.

The KPT-MSA012-MWS microwave sensor is suitable for basic on/off control of lighting sources or dimming control and daylight harvesting with lighting sources that are 1-10V dimmable. The sensor is designed for recessed installation and has a range of up to 5m diameter when mounted at the maximum height of 6m. The operating parameters can be set via DIP switches or the optional remote control.

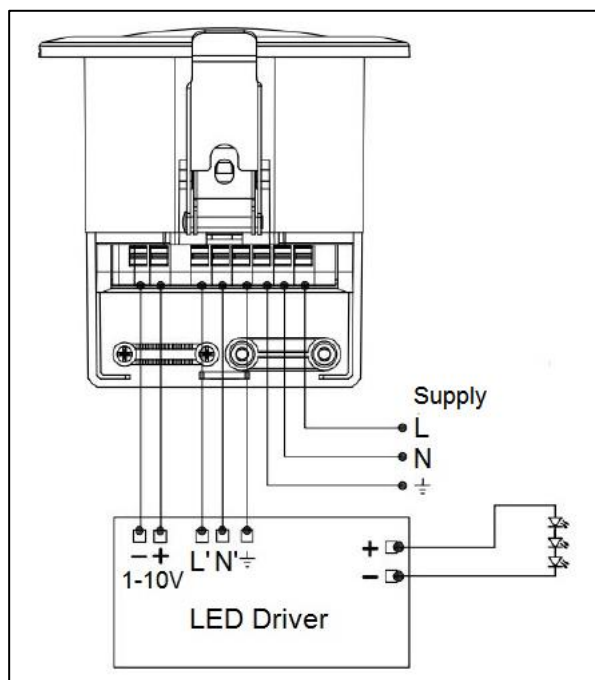
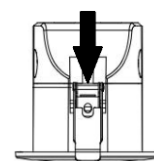
### Safety Information

- Installation must be carried out in accordance with national building and wiring regulations.
- Before commencing installation and maintenance, turn off and isolate the circuit(s) to be worked on by removing the fuse or switching the circuit breaker off at the distribution board.
- If you are in any doubt about installing this product, please consult a qualified electrician.
- The sensor is suitable for connection to a 120-277Vac 50-60Hz supply and is **IP20** rated.
- The sensor may control the following loads if the load surge is within the limits:

Load	400W (Inductive) 800W (resistive) @ 120Vac 800W (Inductive) 1000W (resistive) @ 277Vac
Surge Capacity	50A (50% Ipeak, twidth = 500uS, 277Vac full load, cold start) 80A (50% Ipeak, twidth = 200uS, 277Vac, full load, cold start)

### Installation Information

- To remove the sensor terminal cover, insert a small screwdriver blade where indicated opposite and withdraw the cover.
- Connect the supply cable and lighting source (for example the LED driver) to the terminals according to the diagram below.
- If the lighting source is 1-10V dimmable, connect the 1-10V + and – connections as shown to enable dimming and daylight harvesting operation.
- Ensure that all electrical connections are secure with no loose strands and tighten the cable grips.
- Replace the terminal enclosure cover and reconnect the power supply.
- Refer to the instructions below for operation, DIP switch settings and remote control functions.

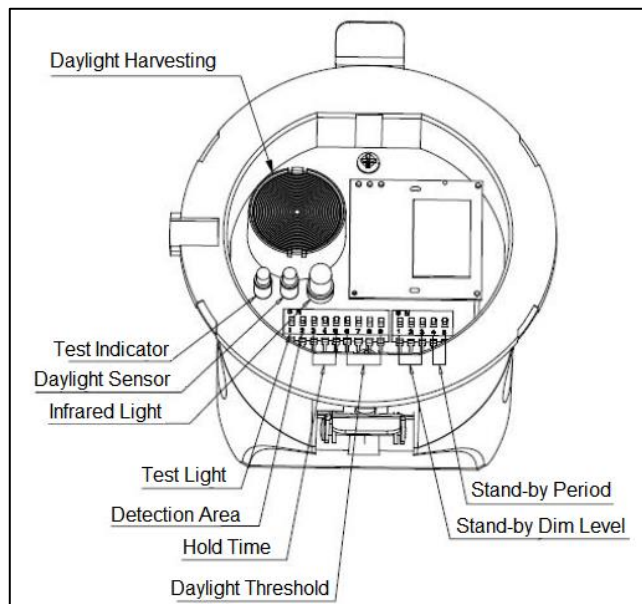


### Daylight Threshold / Daylight Harvesting

The sensor is aware of the ambient light level and a **Daylight Threshold** may be set, above which the sensor will not switch the load on. Additionally, where the load is 1-10V dimmable, **Daylight Harvesting** may be employed to maintain a constant user-set light level once the sensor is triggered. When Daylight Harvesting is used the sensor will use the 1-10V dimming control to keep the light level the same as the dimming level selected by the user by adjusting the light source output up or down as the available ambient light level changes. The remote control is required for this functionality.

## DIP Switches

- The DIP switches available under the front cover may be used to set the sensor parameters.
- There is a slim slot on the edge of the cover which a small screwdriver blade may be inserted into to remove the cover.



## DIP Switch Settings

### Test Light

This turns the green sensing indicator on in Test mode to aid commissioning. In normal operation this should be turned off.

ON	1	Test Light
ON	ON	Test Mode
	-	Normal

### Detection Area

This is the sensitivity of the sensor. On maximum, the sensor will detect movement up to 5m from the sensor. Detection area is affected by object size and motion speed, tested by a 165cm height person walking at 0.5m/s.

ON	2	Detection Area
ON	ON	100 %
	-	50 %

### Hold Time

This is the time that the light will remain on after presence is no longer detected.

ON	3	4	5	Hold Time
ON	ON	ON	ON	5 Seconds
	-	ON	ON	30 Seconds
	ON	-	ON	1 Minute
	-	-	ON	3 Minutes
	ON	ON	-	20 Minutes
	-	-	-	30 Minutes

### Daylight Threshold

The sensor can be set to prevent illumination when the ambient light is above the Daylight Threshold. When set to disabled, the sensor will switch the light on when presence is detected regardless of the ambient light level.

ON	6	7	8	9	Daylight Threshold
ON	ON	ON	ON	ON	5 Lux
	-	ON	ON	ON	15 Lux
	ON	-	ON	ON	30 Lux
	-	-	ON	ON	50 Lux
	ON	ON	-	ON	100 Lux
	ON	ON	ON	-	150 Lux
	-	-	-	-	Disabled

### Stand-by Period

This is the period which the light source will remain illuminated at the Stand-by Dim Level once presence has ended.

ON	1	2	3	Stand-by Period
ON	ON	ON	ON	0 s
	-	ON	ON	1 Minute
	ON	-	ON	3 Minutes
	-	-	ON	10 Minutes
	ON	ON	-	30 Minutes
	-	-	-	+ ∞

## Stand-by Dim Level

This is the lighting level for the Stand-by Period.

	1	2	Stand-by Dim Level
ON	ON	ON	10%
ON	-	-	20%
-	ON	-	30%
-	-	-	50%

## Remote Control

While the remote control is useful for testing, altering settings without accessing the DIP switches and for manual override of the sensor, it is the only way to access the Daylight Harvesting functionality available with 1-10V dimmable loads.

Once a lighting level has been set using the **DIM+** and **DIM-** buttons, pressing the **DH Mode** for greater than 3 seconds will put the sensor into daylight harvesting mode where it will adjust the load output to try to maintain the light level as the ambient light changes.

See the diagram below for detailed button information.

Press the "ON/OFF" button to switch to constant ON or constant OFF mode, disabling the sensor. Press the "Sensor Motion" button to return to normal sensing mode.

Press "Reset" to return to current DIP switch or factory settings.

Press "Sensor Motion" to return to normal sensing mode.

Press "DIM Test" to test the 1-10V dimming is connected correctly. After 2s returns to the current settings.

Press "Override DH" for >3s to exit Daylight Harvesting mode and enter Daylight Threshold mode subject to last setting.

Press to adjust the current dimming level. A short press adjusts the level by 2%.

Press "DH Mode" >3s to enter Daylight Harvesting mode and adapt the output to maintain the current brightness.

Scene selection	Detection range	Delay time	Hold Time	Dimming Ratio	Light sensor
QS1	100%	5min	10min	10%	30Lux
QS2	100%	10min	30min	10%	Disable
QS3	100%	20min	30min	10%	Disable

Press to adjust the current settings to one of the pre-programmed scene settings.

Press "TEST 2S" to enter a test mode where the settings are: Detection area 100%, Hold Time 2s, Stand-by Dim Level 10%, Stand-by Dim Period 0s, Daylight Sensor disabled. Press "Reset" to quit the test mode.

N/A

Daylight Threshold:  
5lux/15lux/30lux/50lux/100lux/150lux/Disable

Stand-by Dimming Period:  
0s/10s/1min/3min/5min/10min/30min/+∞

Hold Time:  
30s/5s/1min/3min/5min/10min/20min/30min

Stand-by Dimming Level:  
10%/20%/30%/50%

Detection Area:  
25%/50%/75%/100%

N/A

## Initialisation

The light will turn on at 100% brightness in the initial energisation, then turn to the brightness set by Stand-by Dim Level 10 seconds later. During initialisation, no external motion sensing signal will be detected.

## Factory Settings

Detection Area: 100%. Hold Time: 5s. Daylight Threshold: Disabled. Stand-by Period: 0s. Stand-by Dim Level: 10%

## Notes

- The spacing between sensors should be at least 3m.
- The use of the Daylight Harvesting function requires the remote control.
- If the sensor supply power is switched on and off three times in a row within 2s, **sensing is cancelled**, and it enters a normal brightness mode. Turn the sensor power on and off again to recover the sensor function.
- After each setting by the remote control is selected the load light will flash once, which means the setting is successful.
- There should be no metal plate, glass cover or other materials with high medium density in front of the sensor, which is easy to trigger by mistake.
- The sensor cannot be installed in a room that vibrates for a long time; the vibration signal will be regarded as a signal to trigger the sensor.
- Turn off the Test Light indicator in normal use to avoid affecting the constant light control.

We hereby declare that this product meets the requirements of the **EU Radio Equipment Directive 2014/53/EU**. Declaration is issued under the sole responsibility of the manufacturer. Conforms to:

EN 300 328	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques
EN 300 220-1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods
EN 301 489-1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
EN 301 489-3	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 40 GHz
EN 301 489-17	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems



The Waste Electrical & Electronic Equipment Regulations (WEEE) require that products bearing this symbol must not be disposed of with household waste as they may contain substances harmful to the environment. The Local Authority can provide advice on recycling.