314 Tilting Microwave Detector

The Tilting Microwave Detector provides occupancy detection for the automatic control of DALI lighting loads. The unit can also be controlled using a Helvar infrared remote handset, such as the 303 DIGIDIM Infrared Remote Control.

Helvar’s 314 detects movement using its highly sensitive microwave detector. It works by emitting low-power microwave signals and measuring the reflections as the signals bounce off moving objects.

The unit has an adjustable sensor head that allows the area of detection to be optimised for the required application. When an area is no longer occupied, the load switches off after a certain time. This time-out period is configured using Helvar’s lighting system design and control software: Designer, or Toolbox.

Features and Connections

- **Microwave sensor**: Detects movement within the detection range allowing load control in response to changes in room occupancy.
- **IR receiver**: Receives control and programming commands from a Helvar infrared remote handset (available separately).
- **Status LED**: The red LED flashes to indicate the following:
  - Valid setting received
  - Identify active
    
    ![Status LED](image)

Optional connection to external power

12 V to 24 V. See 'External Power Supply (Optional)' on page 3.

DALI connection

The DALI connection is made via DA+ and DA– terminals. The DALI input is not polarity sensitive (unless you are using an external power supply).

Detection Pattern

Detector head position at 80° to the vertical for large offices or classrooms and for corridor and aisles. Sensitivity set to maximum.

Detector head position at 0° to the vertical for open plan areas and offices. Sensitivity set to maximum.
Installation

1. Install the unit: see ‘Connection and Fixing’ on page 2.

2a. Connect the DALI terminal blocks to the sockets located at the rear of the sensor.

2b. If required, connect the optional power supply: see ‘Detection Pattern’ on page 1.

3. Power the unit up.

4. After the lighting load switches on, by default it will switch off after 20 minutes of no movement detected.

Installation Notes

- Position the sensor so that the occupants of the room are normally inside the detection zone.
- Do not install the sensor within 1 m of any lighting, forced air heating, or ventilation equipment.
- Do not fix the sensor to an unstable or vibrating surface.
- Install the unit as far away as possible from the surface of metal objects.
- The detection pattern illustrated (see ‘Sensitivity’ on page 3) is based on a mounting height of 2.8 m. A lower mounting height will decrease the overall size of the detection zone.

Connection and Fixing

Mounting hole

1. If required, connect the external power cable.

2. Attach the cable clamp.

3. Ø 78 mm

4. WARNING Take special care when bending springs to install the unit.

Surface back box SBB-B

All dimensions in millimetres.
You can use a Helvar infrared remote handset, such as the 303 DIGIDIM Infrared Remote Control, to send signals to the 314 Detector to:
- Recall lighting scenes 1–4.
- Adjust light levels.
- Store current level.
- Install preset levels for scenes 1–4.

**Remote Control**

303 DIGIDIM Infrared Remote Control
For details, see the 303 Installation and User Guide.

**Other Functions**

**Sensitivity**
Adjust the sensitivity using Designer, or Toolbox (Helvar’s lighting system design and control software).

*Note:* On maximum sensitivity, the detector unit is extremely sensitive to movement and may detect through glass, thin walls or partitions. If this causes a problem, reduce its sensitivity.

**Adjusting On, Exit and Transition Time-Outs**
The default time-outs for On, Exit and Transition can be altered using Designer, or Toolbox.

**Check connection to DALI Network**
To check the sensor is correctly connected the DALI network, use the *Identify* function in Designer, or Toolbox.

**Using Designer and Toolbox Software**
When using Designer, connect the PC to the lighting network via a Helvar Router.
When using Toolbox, connect the PC to the lighting network via a Helvar serial or USB interface.

*For further information about Designer and Toolbox, visit www.helvar.com.*

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**External Power Supply (Optional)**

The following table gives the 12 V to 24 V external power supply units that can be used, as well as the sensor hardware revision needed for each of them. With some models, you must make a wire link between the DALI negative terminal and the negative terminal of the external power supply, as shown in the figure.

<table>
<thead>
<tr>
<th>EPS</th>
<th>Current limited</th>
<th>Link from DA− to EPS−</th>
<th>Sensor hardware revision</th>
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<tbody>
<tr>
<td>Helvar 401</td>
<td>Yes</td>
<td>No</td>
<td>Any</td>
</tr>
<tr>
<td>Helvar 402</td>
<td>Yes</td>
<td>Yes</td>
<td>Any</td>
</tr>
<tr>
<td>Helvar 403</td>
<td>Yes</td>
<td>No</td>
<td>Any</td>
</tr>
<tr>
<td>Helvar LL1x30-E-CV24</td>
<td>Slow</td>
<td>No</td>
<td>4 or later</td>
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<tr>
<td>Generic 12 V to 24 V</td>
<td>No</td>
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<td>4 or later</td>
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*Except in some cases where the generic EPS output is referenced to earth.*

**Head Locking**

1. Remove metal locking clip from rear of unit.
2. Adjust head to required position.
   - Push clip into position shown below to lock head.
   - To remove clip, lever out with a small screwdriver.

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**Remote Control**

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- Recall lighting scenes 1–4.
- Adjust light levels.
- Store current level.
- Install preset levels for scenes 1–4.

**Other Functions**

**Sensitivity**
Adjust the sensitivity using Designer, or Toolbox (Helvar’s lighting system design and control software).

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Technical Data

Connections

External power / DALI: Removable terminal block
Wire section: 0.5 mm² – 1.5 mm² solid or stranded
Cable rating: All cables must be mains rated.

Power

DALI supply input: 13 V to 22.5 V
DALI consumption: 40 mA
Note: DALI consumption is less than 2 mA when external power is supplied to the unit.

(Optional) External power: 12 V to 24 V; 0.5 W
Remote control functions

Use Helvar infrared remote handset to:
- Recall lighting scenes 1–4.
- Adjust light levels.
- Store current level.
- Install preset levels for scenes 1–4.
Note: Adjust sensitivity using Designer, or Toolbox (not by remote control unit).
Factory setting for sensor sensitivity: 9 (maximum).

Microwave operating frequency

Model | Frequency
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314 | 10.687 GHz
China, Hong Kong, India, Malaysia, Middle East, Singapore, United Kingdom
314/R1 | 10.525 GHz
Australia, Europe except for Austria, France, Germany, Ireland, Portugal, Slovakia, Switzerland and the United Kingdom
314/R3 | 9.900 GHz
France, Portugal, Switzerland

Mechanical data

Mounting hole diameter: 78 mm
Bezel diameter: 85 mm
Recommended clearance depth (incl. 50 mm for cabling): 80 mm (without protective cover)
100 mm (with protective cover)
Material (casing): Flame retardant ABS and PC/ABS
Finish / Colour: Matt / White RAL 9003
Weight: 124 g

IP code: IP30

Operating conditions

Ambient temperature: 0 °C to +50 °C
Relative humidity: Max. 90 %, noncondensing
Storage temperature: –10 °C to +70 °C

Conformity and standards

EMC immunity: EN 61000-6-1
EMC emission: EN 61000-6-3
Safety: EN 60730-1
Environment: Complies with WEEE and RoHS directives.

Version information

Software version: 6
Hardware version: Rev. 4
Software compatibility

Designer: 4.1 or later
Toolbox: 2.2.16 or later

Dimensions

Hole diameter: Ø 78 mm

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