

## FEATURES

Rickard offers further Energy Savings by shutting down diffusers when a zone is unoccupied. Built in Diffuser and Wall Thermostat Occupancy Sensing integrate directly with the standard MLM Controls. The System saves Fan Energy by closing diffusers when a zone is not occupied. Since a VAV system is pressure dependent, energy savings are realised as soon as the fan receives a signal to slow down and maintain system pressure.

## APPLICATION

Rickard's occupancy sensing can be used in applications wherever energy saving is a priority. In a typical building occupancy levels are usually in the order of 70%. By closing the diffusers in these areas, the building can save energy. Green Building innovation credits are awarded to buildings that use occupancy sensing to close diffusers when zones are unoccupied.

## OPERATION

### RICKARD MLM OCCUPANCY SENSOR LOGIC

#### 1. Occupant leaves the room

- Diffuser drives to minimum control disc position after a preset delay (delay 1 adjustable in seconds, default is set to 900 seconds or 15 minutes).
- Diffuser drives to fully closed control disc position after a further preset delay (delay 2 adjustable in seconds, default is set to a further 900 seconds or 15 minutes). If the room temperature drifts outside the Back-off band (value is adjustable in °C/F in the 'Back-off band' field), the diffuser(s) will revert to the minimum closed position.

#### 2. Occupant enters the room

- Diffuser starts to control temperature normally as soon as movement is detected.

**Note:** Backoff band values allow the temperature to deviate above or below setpoint by the Backoff value entered before driving the diffuser to minimum position.

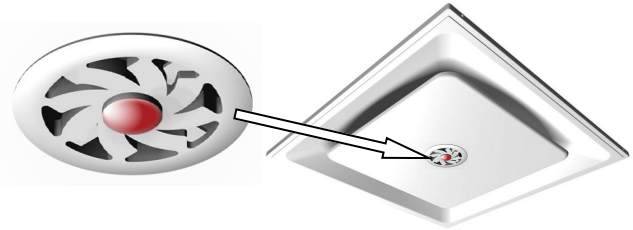
### OCCUPANCY SENSOR EXTRAS

- Ability to Disable the Occupancy Sensor. If necessary, the occupancy sensor can be disabled. This can be achieved by disabling the sensor on the MLM application.
- MLM Application shows occupancy sensor status i.e. Status (occupied/unoccupied) and a graphic indicating the period the zone has been un-occupied during the 1<sup>st</sup> or 2<sup>nd</sup> delay.
- Occupancy Status variables are available to the BMS. Rickard Occupancy Sensors can not only save HVAC energy by intelligently reacting to occupancy but can also allow Building Management System access for further control.

## SELECTION

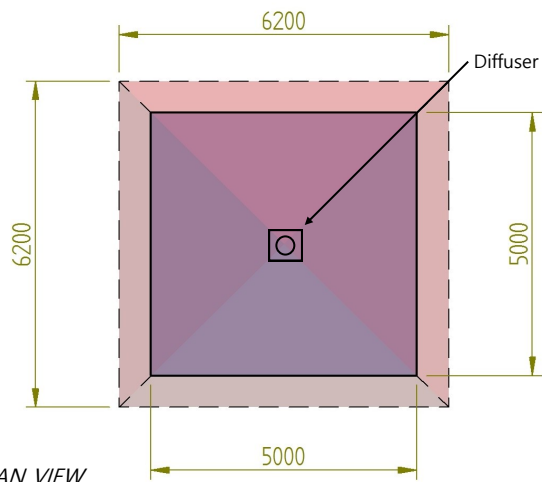
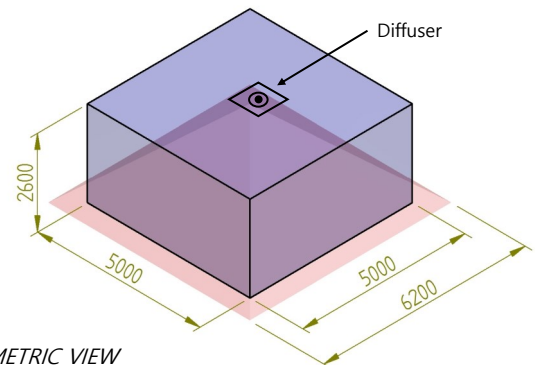
### OCCUPANCY SENSOR MOUNTING POSITION

- In the Diffuser Face Plate (Sensor Cap). By mounting the Occupancy Sensor in the face of the diffuser, it is unlikely that furniture will affect it's coverage. Diffusers are typically mounted in the centre of a room or spaced symmetrically, making it an ideal position for an occupancy sensor.



### COVERAGE

- Rickard's onboard diffuser occupancy sensors have been specifically designed to sense a zone slightly bigger than a diffusers temperature control zone. For large open plan temperature control zones, multiple diffuser occupancy sensors can work together to switch that zone. In this case the sensor signals are combined in an 'or' function, i.e. movement picked up by any sensor will switch that zone to an occupied status.
- Occupancy Sensor mounted in the Diffuser (Sensor Cap)
  - Example Room Size 5 x 5 x 2.6m. Coverage is at least 6.2m square at a ceiling height of 2.6m. Coverage larger than the room size or overlap of sensing zones is favourable to ensure good coverage.



### DIFFUSER OCCUPANCY SENSING COVERAGE (MOUNTED CENTRALLY)

#### NOTE

- Occupancy Sensors detect movement and infer that an area is occupied. If there is no movement then the sensor cannot trigger.
- Occupancy Sensors detect movement in direct line of sight. Objects that block the view of the occupancy sensor reduce it's detection of movement and therefore it's ability to sense movement behind that object.
- Occupancy Sensing coverage is square pyramid shaped. Positioning can therefore effect performance. Position the sensor to optimize coverage.