CONSTANT LIGHT CONTROLLER & MOTION DETECTOR
for 1/10V_DC ELECTRONIC BALLASTS

RE DMS 001

INSTRUCTIONS MANUAL

Technical Specifications

· **Power supply:** 230V~ 50Hz
· **Consumption:** 2W
· **Load type:** 80 dimmable 1/10V_DC electronic ballasts
· **Relay operating voltage:** 250V_AC
· **Relay cutout capacity:** 16A
· **Max. absorption current:** 500mA
· **Max. injection current:** 40mA
· **Coverage:** 360º and ∅6m max. at 2,4m high
· **Time delay:** AUTO mode: 10min ~ 30min
  MOV mode: 5sec ~ 10min
· **Number of motion sensors:** Up to 15 units
  (14 x DM SEN T03) - *Only in Automatic mode*
· **Sensor dimensions:** ∅65mm
· **Control dimensions:** 107 x 53 x 34mm
· **Weight:** 205g
· **Protection degree:** IP20 according to EN60529
· **Operating temperature:** 0ºC ~ +40ºC
· **Storage temperature:** -10ºC ~ +45ºC
· **Connection terminals:** Wires of up to 6mm^2 cross section
· **According to:** EN60730

1 CHARACTERISTICS

· Flush ceiling mounting.
· Built in LED – Which is lighted upon detecting movement.
· 1/10V_DC output – For dimmable electronic ballasts.
· Possibility of extending the coverage area of motion detection with extra sensors (only AUTO mode).

2 DESCRIPTION

It consists in a constant light control for installations with fluorescent lamps, associated to 1/10V dimmable electronic ballasts.

These type of systems are usually used in offices, conference halls, hotels,...

Consists of 2 elements:

Sensor:
- Flush ceiling sensor, just like a 65mm diameter halogen lamp.
- With built-in brigthness sensor and motion detector.
- RJ12 connector.
- Four settings:
  · Mode selector: Automatic (constant light control + motion detection), only constant light control or only motion detection (see point 5A).
  · Switch-off % level setting (see point 5B).
  · Time delay setting (see point 5C).
  · Programming setting (see point 5D).

Control:
- Can be mounted over the false ceiling, connected to the sensor.
- 1/10V_DC output signal for dimmable electronic ballasts.
- Incorporates a relay which disconnects physically the ballasts. It allows to switch-off completely the lamps.

Extra motion sensor DM SEN T03:
- Extra motion sensor that can extend the coverage area.
  Attention! Only for AUTO mode.
- RJ12 connector that allows quick and easy installation.

3 WORKING

The user sets the desired light level and the system dims the ballasts in order to maintain the brightness level.

The system can operate with or without motion detection. If this function is activated, the system will begin to run as soon as motion is detected and it will continue working until the selected time finishes.

If motion detection is not applied, the system will allways run whereas it is supplied.

The RE DMS 001 can also work as only motion detector with the Corridor function (adjustable switch-off level %).
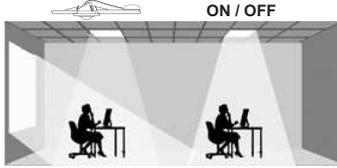
4 INSTALLATION AND WIRING

A. Select a appropiate location:
Depending on the use and operation mode:

- If the constant light control is used:
Distribute the installation by zones depending on the daylight.
In each clearly differentiated area it should be installed a sensor/control.

RE DMS 001
Constant Light Control
ON / OFF

Install the sensor over the place that is desired to take as brightness reference (normally the desk).

In order to get an optimal operation of the system, the sensor should be installed at a distance of 2 ~ 3m from the window.

Avoid placing the sensor over dark surfaces (dark furniture or carpets) or highly reflecting (polished tables and floors).

Avoid pointing light onto the sensor (sunray, reflexions of windows or mirrors, lamps focused to the sensor,...).

- Installation criteria for optimal performance of motion detection:
Install the sensor taking into account the range of vision or detection area.

LATERAL VIEW	TOP VIEW
2,4M / 6 M	6 M / 4 elements
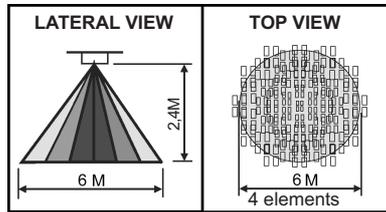
Considering that motion detector responds temperature changes, please avoid next conditions:
- Avoid pointing the sensor towards areas or objects whose surfaces are highly reflective or are subject to rapid temperature changes.
- Avoid mounting the sensor near heat sources, such as heating vents, air conditioners, dryers, vents or lights.
- Avoid directing the sensor towards light sources.
- Avoid aiming the sensor towards objects, which may move by wind, such as curtains, small trees or bushes.


A   B
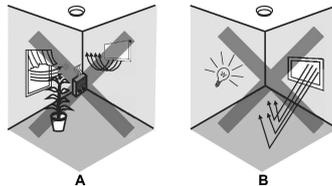
In case of making use of both functions (motion detection and constant light control) it is necessary to fulfill the above-cited requirements.

B. Installation procedure:
Before doing the wiring disconnect the mains supply in order to do the installation without voltage.

Easy installation on false ceilings. It is only necessary 48mm height, if the orifice has a diameter of 68mm:
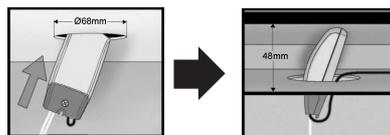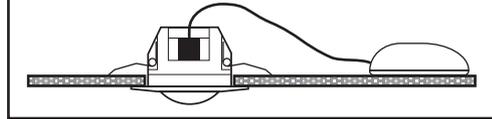

and 60mm height if the orifice is 55mm.

Access to the terminals:

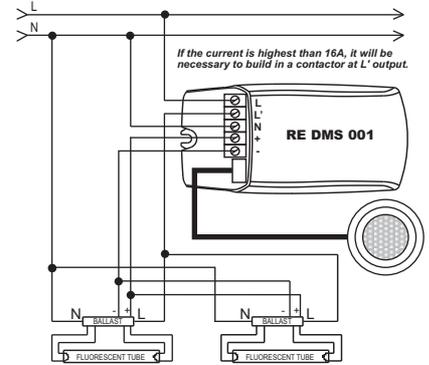## C. Wiring diagrams:

C.1. Installation using K relay (L' output)
Doing this wiring, the fluorescents will be physically disconnected when dimming level reaches a value lower than the 10%.


If the current is highest than 16A, it will be necessary to build in a contactor at L' output.

RE DMS 001

C.2. Installation without K relay (L' output)
Doing this wiring, the fluorescents will keep turned-on to its minimum level when the regulation signal reaches to its lowest value (enough natural light).

RE DMS 001
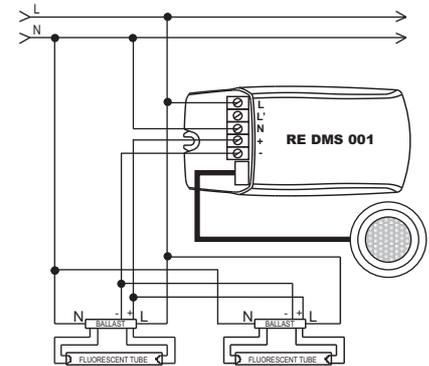
C.3. Installation of an auxiliary switch to turn-off manually
It is possible to install an auxiliary switch to turn on/off manually the system. At installations, for example, with the movement detection function cancelled, this swith will allow to turn on/off the system voluntarly at any time.
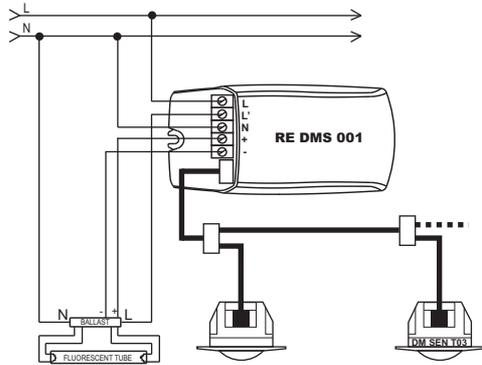

RE DMS 001
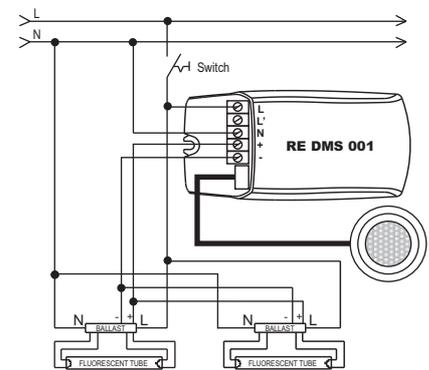
Nota: after supplying the dimmer the lamps will turn-on to its maximum level. The system is self-regulate to the adjusted light level with some inertia.

This inertia last, approximately, 10min, from the maximum level (100%) to the minimum (<10%).

C.4. Installation with extra motion sensors (only AUTO mode)

Is possible to extend the coverage area of motion detection by installing up to 14 extra motion sensors (DM SEN T03).

5 SETTINGS AND WORKING TEST

The RE DMS 001 has 4 knobs to do the different settings:

A. Working mode: Automatic (Constant Light Control + Motion Detection), only Constant Light Control or only Motion Detection

- **AUTO**: constant light control depending on the daylight with the motion detection function.
- **REG**: constant light control depending on the daylight without the motion detection function.
- **MOV**: only motion detection despite daylight and dimming. It is possible to set the switch-off level % (Corridor function - point 5B).
  In this mode, the LUX setting knob must be in the middle and it does not admit extra motion sensors (DM SEN T03).

B. Switch-Off setting %. Corridor Function

This setting is only operative working in motion detection function (MOV).

It allows setting the dimming level when the lamps are in stand-by, without any movement. It can be set between 0% (-) and 50% (+).

C. Delay time setting (TIME) and TEST mode (-)

With this knob is set the delay time after a motion detection.

This time can be adjusted between:
- AUTO mode: 10 ~ 30min.
- MOV mode: 5sec ~ 10min. TEST mode (-) is not available.

If the knob is adjusted at minimum (-) it is selected TEST mode. This mode is helpful at the moment of doing the detection tests for as it decreases the connection time to only 10sec. In this mode, and for 10sec, it could be also tested if the dimming of the lamps is working. For that, and with daylight, if the sensor is covered with the hand, it would be possible to check that the light of the lamps increases and at the moment of moving away the hand the light of the lamps will decreases step by step.

This setting is not important working in REG mode because the motion detection does not work.

A. OPTIONAL Programming day and night lighting setpoints
(only for AUTO and REG modes)

The system is calculated to achieve an adequate lighting, approximately 500 - 600Luxes, on the desk in a standard installation. If the results obtained with the factory settings are not the desired please adjust the setpoints "day" and "night" by following the steps detailed below.

Allows setting the desired brightness level in the installed place.
For programming, two points must be set: day and night.

A.1. At night or with the room in the dark:
- Install according to the above connection diagrams, and place the sensor in its location.
- Supply the device.
- Wait for 1 minute until the sensor is stabilized.
- Turn 'LUX' control knob to '☾' position. The sensor's red LED flickers intermittently. The lamps will be switched-on at maximum.
- Place the sensor in its position and get away from it around 4 - 5m.
- Wait for 1 minute. The lamps and the sensor's red LED will be switched-off. At this moment, the device has memorized the brightness target value for the maximum switching-on.
- Finally, set the 'LUX' control knob in the middle.

A.2. During the day and under normal conditions and with the desired daylight:
- Wait for 1 minute until the sensor is stabilized.
- Turn 'LUX' control knob to '☼' position. The sensor's red LED flickers intermittently. The lamps will be switched-off.
- Place the sensor in its position and get away from it around 4 - 5m.
- Wait for 1 minute. The lamps and the sensor's red LED will be switched-off. At this moment, the device has memorized the brightness target value for the switching-off.
- Finally, set the 'LUX' control knob in the middle.

E. Motion detection Test and LED Function

The LED can be used to show whether the load is switched-on or off when doing the working tests:

1. Aim the sensor towards the area to be covered.
2. Adjust TIME knob at "-" position. In this mode each detection is a time delay of a 10sec on.
3. Turn-on the device.
4. Wait for more than 1 minute for becoming stabilized.
5. Walk from outside to inside of the coverage area until the detection is done.
6. Adjust the head of the sensor to change the coverage area. Remind not pointing the head towards a light focus.
7. Repeat steps 5 and 6 until reaching the desired detection area.

6 REMOTE CONTROL 'CO REG R05'

Is possible to control the device via the infrared remote control CO REG R05. It will allow programming the day and night light points without the need to access to the roof and dim the lamps manually at any moment. It is only valid for AUTO or REG modes.

It has 3 working modes:

- **Programming mode "Prog":** sets the brightness target values (day and night).
- **Automatic mode "AUTO" or REG:** automatic dimming depending on the daylight.
- **Manual mode:** allows switching and dimming manually the lamps with the remote control.

A. Programming mode "Prog"

A.1. At night or with the room in the dark
- Turn on the lamps with the "ON" key and dim them to the desired level. This will be the maximum level to which it will turn on the lamps.
- Wait 30 seconds without blocking the light received by the sensor.
- Switch to programming mode by pressing the "Prog" key and without pointing to the sensor. By pressing the key, the LED on the remote control will light indicating that it is in this mode.
- Press the " ☾ " key pointing to the sensor. Thus, the night point is configured.

A.2. During the day and under normal conditions and with the desired daylight
- If the lamps are on, force them off by pressing the "OFF" key.
- Wait 30 seconds without blocking the light received by the sensor.
- Switch to programming mode by pressing the "Prog" key and without pointing to the sensor. By pressing the key, the LED on the remote control will light indicating that it is in this mode.
- Press the " ☼ " key pointing to the sensor. Thus, the day point is configured.
- Finally, press the "Auto" key pointing to the sensor to switch to automatic mode.

The RE DMS 001 indicates that the points have been stored (day and night) by three flashings of the red LED.

B. Automatic mode "Auto"

In this mode, the LED of the sensor will light only after detecting motion.

The lamps will be self-regulated depending on the set brightness level and the daylight.

C. Manual Mode

In this mode, the LED of the sensor will be on permanently.

It has several buttons for manual control: Dimming Up/Down, ON, OFF and Maximum ON.

When unlocking te remote control, it does not indicate the mode in which the sensor is. Is necessary to press the mode key you wish to activate.

KEY	FUNCTION
🔒	**Lock** The remote control is Locked and will not respond to pressed keys. Thus are avoided unintentional keystrokes and also contributes to saving battery.
🔓	**Unlock** The control is Unlocked responding to keystrokes. If no keys are pressed for 30sec the remote control goes into Lock mode.
🔋	**Battery LED** This LED stays on while the keyboard is unlocked and constantly flashes to indicate that the battery is running low.
Prog.	**Programming mode** Enters into programming mode to set the points for day and night lighting.
☾	**'Night' setting** Is memorized the daylight level below which the luminaires remain on.
☼	**'Day' setting** Is memorized the daylight level below which the luminaires remain off.
Reset	**Reset** Allows to reset the factory settings (day and night points).
Auto	**Automatic mode** Auto mode is selected. The lamps are regulate automatically according to the desired light level and the daylight.
▲ ▼	**Manual Dimming** Keeping pressed these keys is possible to dim manually the lamps.
ON OFF	**Manual ON / OFF** Is forced permanent ON or OFF manually.
MAX	**ON at Maximum** The lamps are turned-on at its maximum level.

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