# Integrated light control ELS - MDS - EMD - custom made





# Integrated light control

Brilliant in its simplicity



No additional wiring is required, only the power supply needs to be connected.

Integrated light control means that the complete lighting control (sensor, control and dimmable ballast) is integrated into the luminaires.

#### Significant energy savings

A luminaire with Integrated light control adjusts its luminous flux to the situation in the surrounding area. The lamp will be dimmed or switched off, depending on the available amount of light and/or the presence of persons in the immediate environment. Integrated daylight and movement dependent lighting control helps you achieve significant energy savings (up to 45%).

#### High user acceptance

Users are quite satisfied with Integrated light control, because the light at any place in the room is perfectly adjusted to the local situation.

#### Easy design

A specific study on the lighting control strategy and the installation of sensors is not required.

With Integrated light control, the sensors are integrated into the luminaires.

#### Simple installation

Only the power supply needs to be connected, no additional wiring is required. The factory setting ensures that the appropriate lighting control strategy is automatically activated upon installation of the luminaires. No on-site commissioning is required.

#### A more rigid ceiling

Integrated light control obviates the need for additional sensors, so your ceiling remains perfectly rigid.

#### Customised expert advice

The standard sensors of ETAP's Integrated light control can be applied in a wide variety of situations. In some situations the use of special sensors may be indicated. Our ETAP advisers will gladly help you with this (see also pages 10 and 11).



This diagram illustrates the total lighting energy costs. Integrated light control helps you save up to 45%.

#### ELS:

Daylight dependent dimming lets you save approx. 20% on your lighting energy costs.

#### MDS:

Movement dependent switching lets you save approx. 20% on your lighting energy costs.

#### EMD:

EMD combines daylight and movement dependent dimming/switching and IR control. This results in an average energy saving of more than 40%.







### *ELS* allows you to save up to 20% on the total energy use of your lighting system.



*The small sensor is unobtrusively integrated into the luminaire* (*D4 LED downlight*).



Percentage energy saving of a luminaire with ELS with respect to a luminaire with a non-dimmable electronic ballast.

# **ELS** Daylight dependant control

#### **Discreet integration**

A small sensor integrated into the luminaire continuously measures the amount of light below the luminaire. Depending on the total amount of light the sensor will dim the lamp: as more daylight enters, the luminaire will produce less artificial light and consume less energy.

#### High user comfort

The unique control strategy of ELS combines high energy savings with outstanding user acceptance. ELS responds immediately to changes in incident light, both with increasing and decreasing light levels.

#### **Energy friendly**

ELS sensors have very low energy consumption (less than 0.1 W for 1-10 V versions), and save on average 20% on your total lighting energy costs.

#### Wide field of application

Hundreds of thousands of luminaires with ELS have been successfully installed all over Europe – in offices, schools, hotels, in the health sector, in industry, etc. For spaces higher than 5 m we first perform a test to verify proper operation.



How much energy you save depends, among other things, on daylight entry and the orientation of the building.



*ELS provides the correct light level for every user, even under widely varying conditions. (example situation)* 



Variations in the surroundings can easily be compensated for on site: the light levels can be adjusted up or down by up to 25%.



ELS in an industrial environment (Wälzholz Hagen, Germany)





Saving up to 20%



The standard MDS sensor is perfectly integrated into the luminaire.

# **MDS** Movement detection

#### Integrated movement detection

A sensor with associated control is integrated into the luminaire. The sensor switches off the lamp and ballast when there is no one in the immediate area.

#### **Energy friendly**

MDS sensors save on average 20% on your total lighting energy costs.

#### The appropriate sensor for each application

ETAP has movement sensors for each application and for different mounting heights.

#### The correct lighting control for your application

An MDS sensor can control luminaires in various ways: either the individual luminaire with the built-in sensor, or a group of luminaires. Your ETAP adviser will gladly help you find the best solution for each situation.



As long as there is movement in the space, the lamps will remain normally lit.



No movement? MDS waits a while.



MDS then switches off the light completely.



Again movement below the luminaire? MDS restores the light to its normal level.







*In corridors, movement must be detected over the full length, so that sensors with elongated detection zones are required.* 



*In large, open spaces, e.g. industrial halls up to 12 m high, sensors are needed that can detect the slightest of movements at great distances.* 



Saving up to 45%



The EMD sensor is perfectly integrated into the luminaire.

# **EMD** Combined lighting control

#### Integrated multisensor

ETAP's EMD multisensor combines the functions of movement sensor, daylight sensor and IR receiver. EMD controls luminaires with DALI ballasts. EMD sensors can switch the luminaire on or off, but also dim it. They are therefore the logical choice for applications where movement detection is best combined with daylight control.

#### Highest energy savings

In many applications the combination of daylight dependent and movement dependent control yields the highest energy savings on your total lighting energy cost (40% on average), either in or not in combination with an IR remote control.

#### The correct lighting control for your application

An EMD sensor can control luminaires in various ways: either the individual luminaire with the built-in sensor, or a group of luminaires. Ask your ETAP adviser to work out the best solution for your specific situation.

#### High acceptance in landscape offices

The ETAP multisensors are ideally suited for movement detection in landscape or group offices. In fact, in such applications it is usually desirable that the light should not go out but only dim in zones where no one is present. The area then remains bright enough for any persons still present in adjacent rooms. The lights will not go out until the last person leaves the space.



*The light is controlled as a function of the incident daylight and movement.* 



The luminaires are grouped. As long as one luminaire detects any movement within the group, the whole group of luminaires remains active.





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# **Custom lighting control**

**Modified sensors** 

In some cases, the standard sensors may not be enough. You can then ask ETAP to devise a custom solution. ETAP has the necessary expertise in both sensors and circuits and their settings.

#### A small selection of possibilities:



UZA, Belgium

#### Group circuits

This 55 m long Kardó line has 12 sensors and 37 lighting modules. When 1 sensor detects movement, the UZA (University Hospital Antwerp) wants the complete line to remain lit. The through wiring and the modules are fully customised. The challenge here was to configure the sensors so that a complete system could be proposed.





<sup>b</sup> Redshift Photography 2010

DCLG, UK

#### Optimal maintenance comfort

Colgate attaches great importance to high user comfort. To facilitate maintenance of the luminaires, the ELS was here integrated into the bracket of the movement sensor instead of into the actual luminaires.



Colgate, France

#### Added energy savings

EMD normally switches off the light completely after a preset delay time or dims it to a preset minimum level. The Department for Communities and Local Government (DCLG) required a modified response to enable further energy savings. If no movement is detected for some time, the light must switch to a minimum level. It then usually remains lit continuously. At DCLG, the light will switch off completely after a preset time.

#### Saving energy while preserving ergonomics

Sanacorp distributes medicines. The company attaches great importance to energy saving while maintaining a high level of comfort. In its warehouses, with main and side corridors, this led to a remarkable solution. If the lighting in the side corridors were to be switched as a function of movement, they would nearly always be dark. But then again, the luminaires in the side corridors were not to light up to full capacity upon every movement in a main corridor. The solution begins with a judicious choice of the type of sensors, with which the detection range can be very accurately defined. When no one is present, the movement detector switches the lamps to a minimum level. Sanacorp can itself set the desired level. In this way, energy usage decreases while there is still a minimum amount of light in the side corridors, so that one never has the impression of walking past or down an unlighted corridor.



Sanacorp, Germany



### Integrated light control

- Perfect integration
- Maximum energy savings
- Easy to design and install
- Highest user acceptance

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