



Product Catalogue

# Realising the potential of lighting controls in new & refurbished buildings

## The new easyDALi solution from Elkay

**Elkay**

Power and productivity  
for a better world™

**ABB**



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## Realising the potential of lighting controls in new & refurbished buildings

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# Introduction

## Carbon footprint



Climate change is a serious problem that affects us all. There is now an overwhelming body of scientific evidence that emissions of greenhouse gases are changing the world's climate.

Reducing energy consumption therefore not only saves money, but also will reduce our carbon footprint. The new easyDALi system from Elkay provides a cost effective practical step along this important journey.

Backing up the science, the UK government passed the Climate Change Act 2008 which introduces the world's first long-term legally binding framework to tackle climate change. The Act aims to encourage the transition to a low-carbon economy in the UK through legally binding emissions reduction targets.

This is enforced by EU Energy Performance Directives, which now stipulate key areas for improvement in the energy performance of buildings.

The new easyDALi system Range gives architects, planners and electrical contractors a broad selection of simple but highly effective solutions to minimise the amount of energy used in all types of commercial and industrial environments.

In a domestic setting, the Elkay Range gives an excellent opportunity to increase functionality around the home, whilst making an important contribution to the reduction in our carbon footprint at the same time.



# Introduction

## Energy survey



**Businesses of all sizes have never been more aware of the need to reduce energy consumption. Mention the spiralling costs of fuel – all of which contribute to make reducing energy consumption a necessity rather than a luxury.**

But where do you begin? How can you be sure you're cutting costs not corners? After all you're in business to make a profit and cannot afford to cut energy consumption at the expense of running your business.

This is where Elkay can help. Decades of experience in energy management have given us the expertise to come into your organisation and carry out a complete audit of your energy expenditure.

When we undertake an Energy Survey, we'll tell you;

1. Where you are wasting energy and
2. Recommend practical steps by utilising the Elkay Energy Range, to reduce waste
3. Tell you exactly how much you'll save - in terms of energy output and money

It's a service which many blue-chip companies have already taken advantage of - and the savings can be staggering.

To reinforce these findings, one nationally known UK retailer has cut their energy bill for lighting in back room areas by a massive 87 percent at just one of their branches after implementing the recommendations made in their energy survey.

To find out more about our free Elkay energy Surveys or to arrange one for your business call 01675 468222 or email [techinfo-elk@tnb.com](mailto:techinfo-elk@tnb.com)

Now Elkay have added a simple to use and installer accessible DALI product sensor in to its range of products. Elkay can help at all stages of a lighting project with design, installation and end-user training.





# What is DALI?

DALI (Digital Addressable Lighting Interface) is a data protocol and transport mechanism that was jointly developed and specified by several manufacturers of lighting equipment.

It is essentially a network connected by a pair of cables and powered by a power supply. The common platform of DALI enables equipment from different manufacturers to be connected together.

Elkay's easyDALi is designed to work with all DALI compliant equipment displaying the DALI logo\*



## DALI ballasts have two addresses:

**Short address** - This is a 6 bit number, which allows a maximum of 64 devices on a DALI network. Each DALI device must have a unique address, which is frequently used for normal control of the DALI system.

**Long Address** - this is a 24 bit value that is primarily used for commissioning of the ballast.

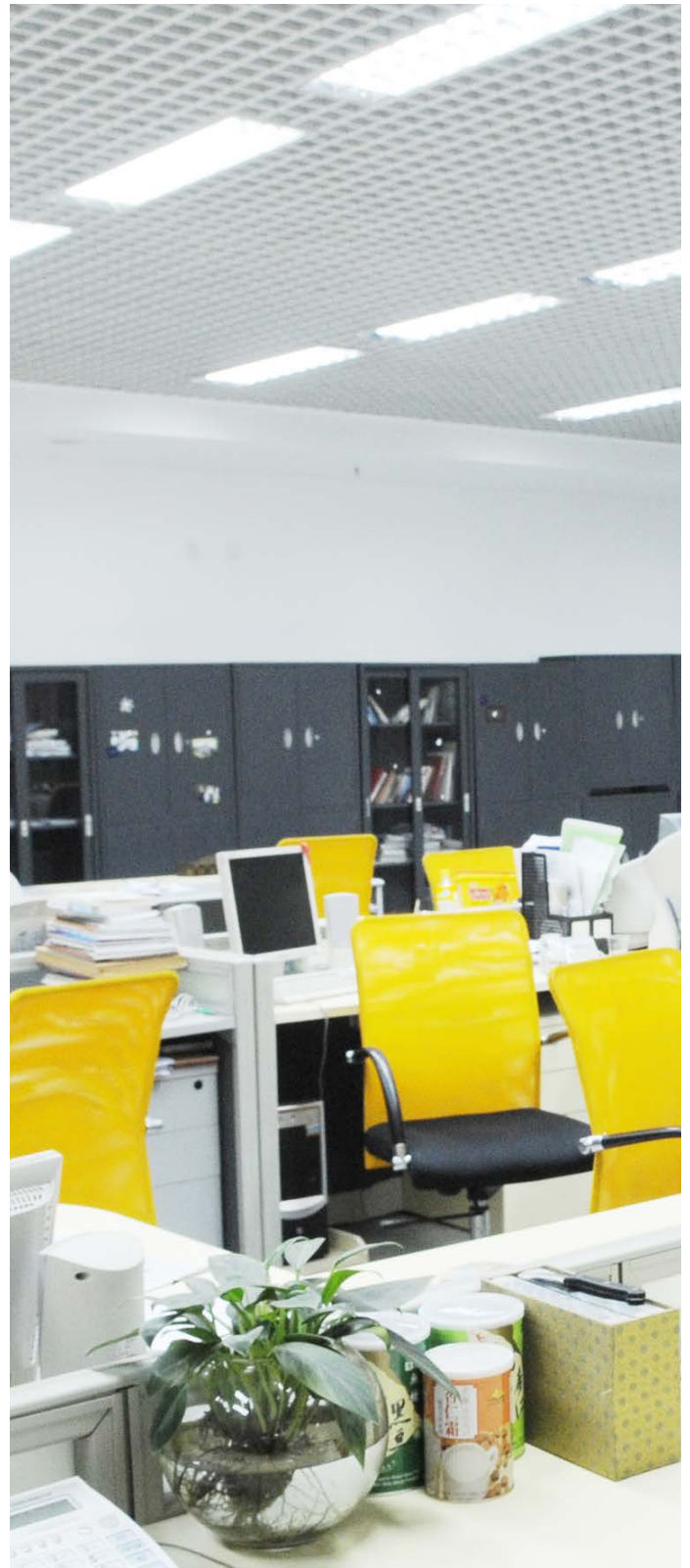
|                           |               |
|---------------------------|---------------|
| Maximum number of devices | 64            |
| Number of Groups          | 16 (15 + 1)** |
| Data Cable                | 2 wires       |
| Data Rate (bps)           | 1200bps       |
| Network Power Supply      | 18V DC 250mA  |

Put simply, DALI (digital addressable lighting interface) is a two-way communication system that brings digital technology to lighting. An international standard for communication, DALI defines the commands that ballasts need to recognize in order to be considered DALI ballasts. The system allows individual ballasts to “talk” to the user and allows the user to “talk” back via DALI controllers.



\* Only products that display the DALI logo are truly DALI compliant.

\*\* One group is dedicated to broadcast mode



# Why use DALI?

## How lighting controls from Elkay can support Part L

Part L of the building regulations will force the issue of lighting control in commercial buildings up the agenda, for both consultants and electrical installers.



With lighting using around 20 per cent of the electricity generated in the UK, the issue of lighting control, particularly in commercial buildings, forms a key part of the drive to reduce energy and carbon emissions.

Part L of the building regulations requires local control of the lighting, which offers the opportunity to create lighting control zones with appropriate controls for each type of zone, based on the 'ownership' of the workspace and the availability of natural light.

For example, a corridor which would be regarded as being 'unowned' in that it is not an individual employee's workstation, with minimal daylight and low occupancy, would, under Part L potentially be fitted with presence detection and a manual on / timed-off capability.

Similarly, often employees prefer to retain an element of control over lighting in their individual work areas which, generally, have greater access to natural light. In this situation, a 'request on' 'auto off' absence control could be implemented, along with daylight sensors and the ability to dim lighting to comfortable levels for the individual.

There is a strong business case for the deployment of lighting controls with very attractive payback times for occupiers of commercial buildings, which can be implemented either as stand-alone systems or as part of a wider building refurbishment.

If the commercial solution focuses on lighting controls then a simple DALi solution, such as one from Elkay, can be the answer. Taking advantage of its ease of installation and commissioning, by removing the need for a certified systems integrator, project costs and overheads can be reduced.

Whilst KNX can provide a holistic solution for Building Control, Elkay's easyDALi focuses on the ease of installation and commissioning when only intelligent lighting control is required.

Elkay's easyDALi system can automatically detect DALi lighting ballasts. The installer then simply wires the Part L-compliant DALi luminaires, the power supply and PIR together, and programs them via a simple dual purpose remote control.



A DALi lighting control system can be used to cover a single luminaire or can be connected to other DALi devices to create a much larger system. Elkay's easyDALi system can be used to configure up to 64 ballasts, as part of a much wider overall lighting strategy, connecting many hundreds of separate DALi systems on different floors of a building thus forming them into a coherent building lighting control system.

Programming is simple for both the installer or facilities manager and the end-user. The easyDALi system has default settings for broadcast mode, timing and daylight harvesting and a handheld remote control. With only one remote required to operate and program the system, it makes it easy for end-users to configure lighting that covers both personal preference and energy efficiency.

The remote can also be used by the installer or systems integrator to program the system, with specific installer modes for the discovery of ballasts, programming of luminaires and room timing options.

DALi systems have the potential to make significant energy savings for end-users. The combination of daylight harvesting, presence detection, corridor modes and room timing options can deliver savings of up to 80 per cent on energy consumption from lighting. For installers and systems integrators that have struggled to apply Part L in an efficient and cost-effective manner, easyDALi offers a compelling opportunity to achieve this requirement.

Overall, with easyDALi, the implementation of Part L-compliant lighting controls becomes a much easier proposition.

# Elkay

## The easyDALi System

Elkay's easyDALi solution has been designed to make installation and set-up of an intelligent lighting control system simple, easy and accessible. Through its ease of installation and commissioning, the need for expensive commissioning is removed, reducing project costs and other potential overheads.

Lighting use currently accounts for nearly 20% of the electricity generated in the UK. Lighting controls particularly in commercial buildings, can form a key aspect in the drive to reduce energy consumption and carbon emissions, whilst reducing energy spend.

With the increasing energy saving requirements to cut emissions and energy bills for consumers and businesses alike, Elkay's easyDALi system is here to meet these demands.

Elkay have achieved this by making the first range of sensors that can automatically configure DALI lighting ballasts, as well as the more commonly used broadcast mode. The system provides presence and absence detection and delivers daylight harvesting to ensure maximum energy efficiency. The Elkay easyDALi PIR is a **presence, absence** and **daylight harvesting** sensor all rolled into one.

In a brand new 'out of the box' installation of new DALI luminaires and with a new Elkay easyDALi PIR, you can simply wire the lighting, the power supply and the PIR together with the multi-purpose box and simply accept the default settings of...

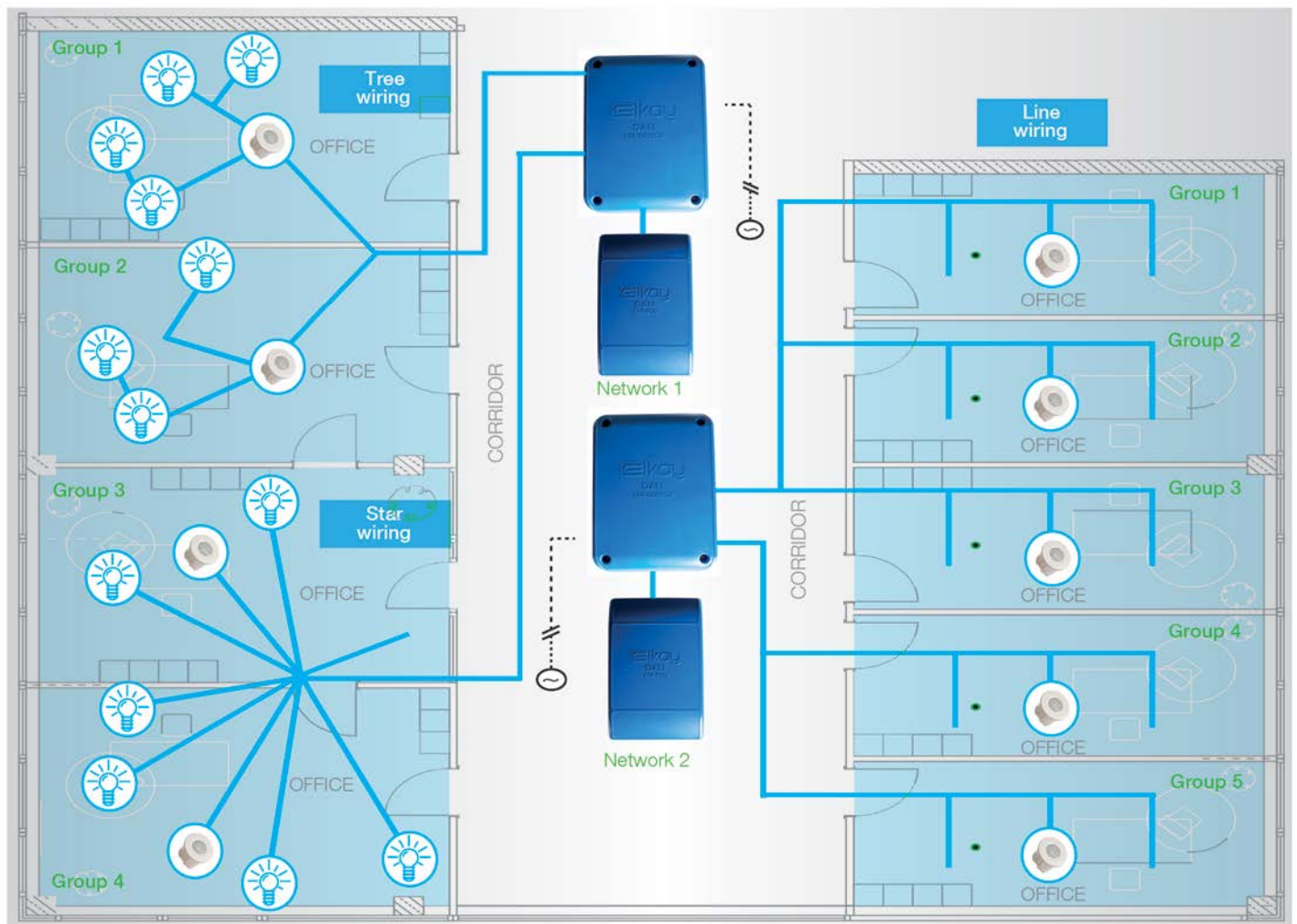
- Broadcast mode
- Timing
- Daylight Harvesting

...and the PIR with just a few pushes of the remote control will find and address all luminaires control gear on the network and the installation is complete.

With just a few more button selections on the PIR and the remote controller, the product can easily set up groups and scenes as well as corridor modes, additional timing modes and the PIR will also automatically daylight harvest to maximise energy savings.

For facility managers and commercial premises owners, Elkay's easyDALi system now provides inexpensive control from the beginning and flexible management of the lighting plan, without the expense of commissioning and servicing engineers, at the start and during the lifetime of the installation.





With its simple installation and integration, Elkay's easyDALi range of sensors can automatically detect DALI lighting ballasts, provide presence and absence detection and deliver daylight harvesting to ensure maximum energy efficiency.

A DALI lighting control system can be used to cover a small area of luminaires or can be connected to other DALI devices to create a much larger system. Elkay's easyDALi system can be used to configure up to 64 ballasts or used as part of a much wider overall lighting strategy, connecting many hundreds of separate DALI networks on different floors of a building for example, forming them into a coherent building lighting control system.

Programming is simple for both the installer or systems integrator. The easyDALi system has default settings for broadcast mode, timing and daylight harvesting and a handheld remote control, with only one remote required to operate and programme the system, making it easier for end users to configure lighting that covers both personal preference while being energy efficient.

The remote can also be used by the installer or systems integrator to program the system, with specific installer modes for the discovery of ballasts, programming of luminaires and room timing options for example.

#### What can you do with the system?

- Fit into New DALI networks
- Join existing groups in a network
- Use broadcast mode to control everything in the network and will control even brand new non-configured luminaires.
- Set up brand new luminaires with groups.
- Replace existing DALI PIRs even if manufactured by a competitor provided the group number is known.

Elkay's easyDALi solution has been designed to make installation and set-up of an intelligent lighting control system simple, easy and accessible.

# Elkay easyDALi range

## easyDALi PIR

The ceiling mounted Elkay easyDALi PIR has full DALI flexibility and is the intelligent sensor element of the Elkay easyDALi system, automatically addresses the lighting ballasts without the need for expensive controllers.

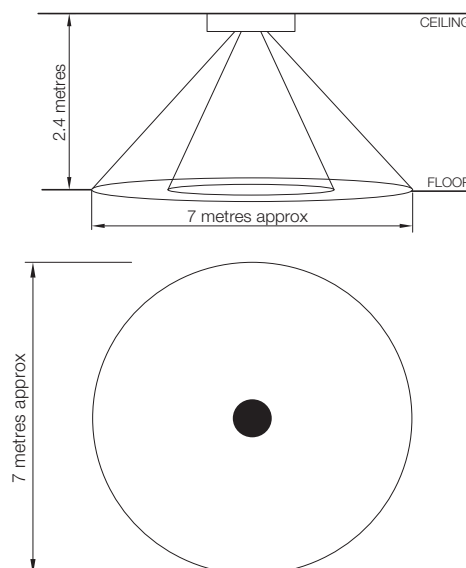
The PIR is switched on by the detection of moving body heat within a specified range. When this moving body heat is no longer detected the unit will dim down the luminaires and eventually switch off. It will also automatically harvest available daylight to maximise energy savings. With the remote it is possible to set dimming time delays and Room and Corridor options. There are also helpful coloured feedback LEDs to make programming easier.



### Key Features

- Presence and Absence Detection
- Automatic Daylight Harvesting
- Settable Time Modes including 4 Room Options and 4 Corridor Options
- Basic Luminaire set up without commissioning tools
- Broadcast and Group Functions
- Manual Lux Level and Sensitivity Control
- Walk Test
- 360° Detection
- 6-7m detection range
- Coloured Feedback LEDs
- Can control LED and fluorescent DALI luminaires

Ceiling mount PIR sensor detection diagram



# Elkay easyDALi range

## easyDALi Remote Control

The Elkay easyDALi remote control is an ergonomic hand held device to program and adjust sensors in the Elkay easyDALi range.

Consisting of eight soft touch buttons to control the Elkay easyDALi PIR, It can program basic installation and commissioning functionality. It also has a **hidden button** that changes the remote control from user mode to Installer Mode.

### Key Features

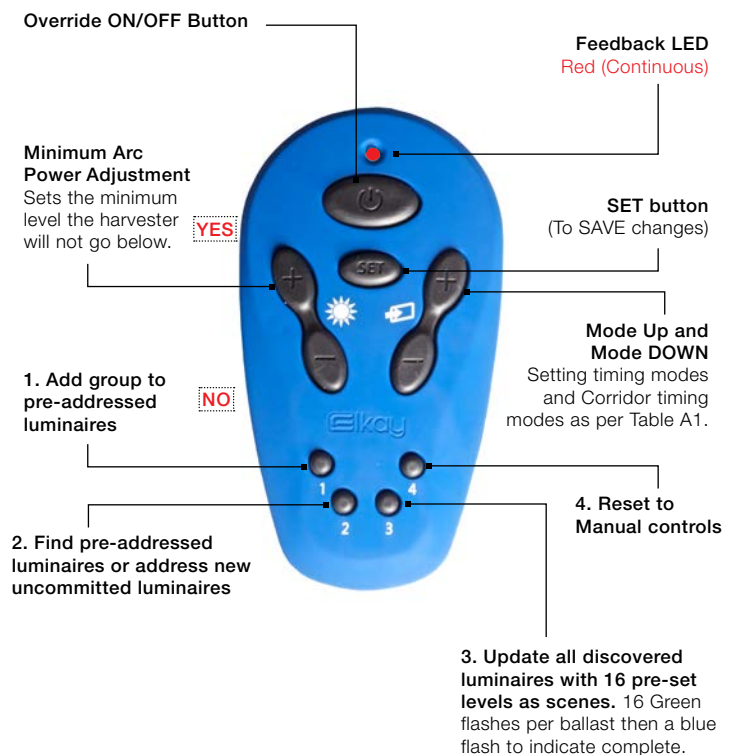
- Dual purpose DALI Remote Control
- For use with Elkay easyDALi system
- User mode for day to day control
- Override on/off
- Illumination adjustment
- Scene selection
- Fixed illumination settings
- Reset to Daylight Harvesting
  - 25% brightness level
  - 50% brightness level
  - 100% brightness level
- Installer configuration tools

Elkay have made DALI much simpler by having a 'ONE for all' remote control that programs sensors, that can be left with an end-user to personalise the lighting in their own space.

### User Modes



### Installer Modes



## Elkay easyDALi range easyDALi Multi-Purpose Box

The Multi-Purpose box gives installers maximum flexibility and true freedom in building a DALI system by allowing them to use their OWN cable choice without needing expensive connectors.

The multi-purpose box allows the installer to either use it to connect up multiple strings of DALI PIRS OR allows them to connect up to 10A of lighting loads or use it for both

### Key Features

- DALI Multi-Purpose Box for maximum connection flexibility
- Connects up multiple strings of DALI PIRS and lighting
- Maximum 10A rating per box
- 8 Multiple connections per box
- Connects power supply for Elkay easyDALi network
- Can control LED and fluorescent DALI luminaires



## Product Information easyDALi Power Supply Unit

Essential to power the network of easyDALi PIR sensors and DALI luminaire ballasts connected into the system.

### Key Features

- For use with Elkay easyDALi system
- Powers DALI network of PIRS and lighting ballasts
- Thermal and overload protection
- Connected to multi-purpose connection box
- 18V d.c. 250mA



# Elkay easyDALi range

## Product specification and data

**TABLE 1**

The Elkay easyDALi PIR needs only four elements to build a system. See Table 1 below.

|          | Elkay easyDALi PIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Elkay easyDALi Dual Purpose Remote Control                                                                                                                                                                                                                                                                                                                                                                                    | Elkay easyDALi Power Supply                                                                                                                                                                                                                                                   | Elkay easyDALi multi-purpose box                                                                                                                                                                                                                |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Image    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                             |                                                                                                                                                              |
| Part No. | 374-CMPIRDALI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 374-DREM                                                                                                                                                                                                                                                                                                                                                                                                                      | 374-PSU                                                                                                                                                                                                                                                                       | 374-DMBOX                                                                                                                                                                                                                                       |
| GID Code | 7TCA299030R0032                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 7TCA299030R0034                                                                                                                                                                                                                                                                                                                                                                                                               | 7TCA299030R0035                                                                                                                                                                                                                                                               | 7TCA299030R0033                                                                                                                                                                                                                                 |
| Features | <ul style="list-style-type: none"> <li>- Presence and Absence Detection</li> <li>- Automatic Daylight Harvesting</li> <li>- Settable Time Modes including 4 Room Options and 4 Corridor Options</li> <li>- Basic Luminaire set up without commissioning tools</li> <li>- Broadcast and Group Functions</li> <li>- Manual Lux Level and Sensitivity Control</li> <li>- Walk Test</li> <li>- 360° Detection</li> <li>- 6-7m detection range</li> <li>- Coloured Feedback LEDs</li> <li>- Can control LED and fluorescent DALI luminaires</li> </ul> | <ul style="list-style-type: none"> <li>- Dual Purpose control options for End user and Installers</li> <li>- Sets all non-default functions</li> <li>- Sets Timing Room Modes and Corridor Modes</li> <li>- Sets Min Arc Levels</li> <li>- 25%, 50% and 100% brightness pre sets</li> <li>- Override Functions</li> <li>- Remote Lux Control</li> <li>- Remote Feedback LEDs</li> <li>- 3 x AAA Batteries supplied</li> </ul> | <ul style="list-style-type: none"> <li>- For use with Elkay easyDALi system</li> <li>- Powers DALI network of PIRS and lighting ballasts</li> <li>- Thermal and overload protection</li> <li>- Connected to multi-purpose connection box</li> <li>- 18V d.c. 250mA</li> </ul> | <ul style="list-style-type: none"> <li>- Maximum 10A rating per box</li> <li>- 8 Multiple connections per box</li> <li>- Connects power supply for Elkay easyDALi network</li> <li>- Can control LED and fluorescent DALI luminaires</li> </ul> |

# Supporting and providing lighting controls

## Lighting controls for commercial premises

An education in lighting control. Commercial lighting is one of the most energy-intensive operational processes and taking it for granted, especially when it comes to control – or rather lack of it – can dramatically increase a building's operational costs.



Despite the drive towards efficient light sources, failing to reinforce any investment with a suitable control network will still leave facilities managers financially worse for wear.

### Shining a light on the need for change

Many public sector buildings, such as schools, colleges and wider educational facilities, have tight maintenance budgets which limit the extent to which facilities managers keep on top of a building's energy-draining systems. Whilst their hands are often forced into action by the impact of legislative updates such as Part L of the Building Regulations or the European Commission's Energy-related Products Directive (ErP Directive), taking the plunge and investing in a mass system upgrade can ultimately lead to significant long-term

savings on energy bills, which would soon cover the capital expenditure of new equipment.

Lighting is a prime example. Some educational facilities systems are in operation for as much as ten years between serious maintenance cycles, and with the Carbon Trust identifying that lighting accounts for as much as 25% of a school's total energy consumption, an out-of-date system can contribute to a significant amount of unnecessarily high running costs. When put into the context of a ten-year period, the potential overspend is staggering. Installing high-efficiency lamps or LEDs is often the first port of call when aiming to tackle a poorly-performing lighting system. However, doing so without upgrading the wider

lighting control infrastructure only scratches the surface of potential energy savings that could be made. Many existing lighting systems operate using simple on/off switches. As such, lights are either operating at full or no power, and the only energy-saving measure in place is reliant on staff, or students, turning the lights off when they leave the classroom.

### Taking control

Greater control over energy-saving lighting isn't as seemingly inaccessible as it once was. Technological innovations have become more widespread, driving down costs and increasing availability to end-users with limited maintenance and operational expenditure.

One innovation – which some schools may already be familiar with – is absence detection, which makes use of a Passive InfraRed (PIR) technology built into an energy management device. A PIR sensor is an electronic device that measures infrared light radiating from objects in its field of view, and it can be used in the construction of PIR-based motion detectors. It is activated when an infrared source with one temperature, such as a human, passes in front of an infrared source with another temperature, such as a wall.

Absence detectors are operated by a switch as normal but when the person leaves the room the electrical load is turned off after a pre-determined period of time. Upon returning the switch must be operated to reactivate the load. As such, there is no risk of the light either switching off when someone is in the room, or switching on if the room is empty.

### Balancing act

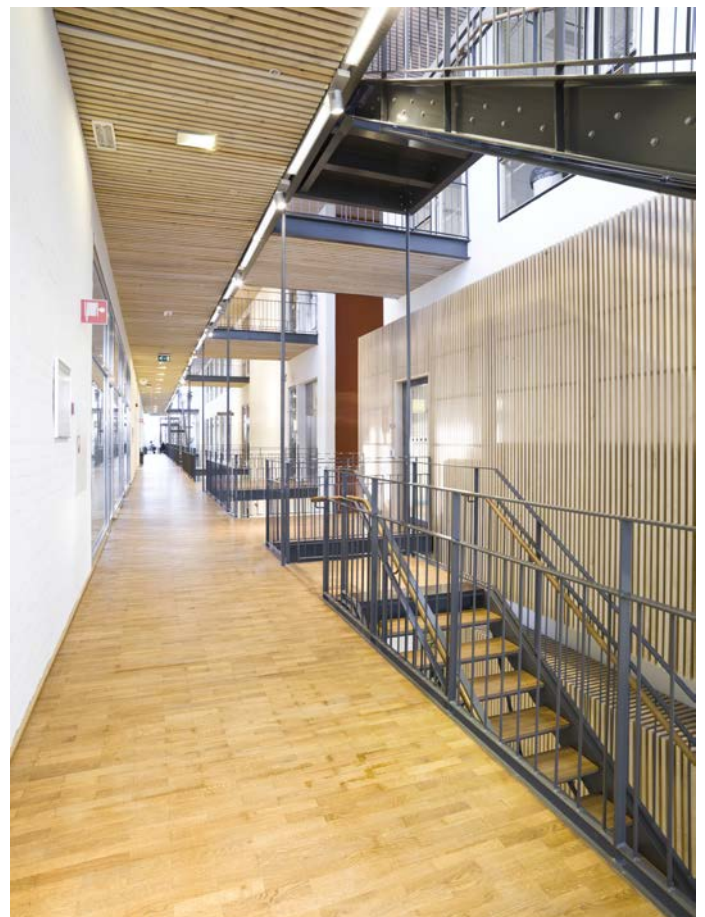
One final benefit which is offered by some PIRs, such as those from Elkay, is the ability to monitor and adjust lux level. This facilitates the potential integration of both daylight and artificial light to ensure a classroom is optimally lit, yet uses no more energy than necessary. As already alluded to, lighting systems which use standard on/off PIR's have two settings: full light, or no light. There isn't a dimming option, and in many cases lights are used without really having much of an impact as the classroom may already be nearly fully lit by natural daylight.

Many public sector buildings, such as schools, colleges and wider educational facilities, have tight maintenance budgets which limit the extent to which facilities managers keep on top of a building's energy-draining systems.

However, by setting a pre-determined time and then using a sensor to monitor a room's lux level, facilities managers can further reduce the amount of energy consumed by the lighting system. If there isn't sufficient ambient light to meet the required lux level, a classroom's LED luminaires can be alerted by the sensor, via DALI, to supplement daylight with artificial light in order to bring the room up to its required lux level. As such, not all of a lamp's output may be required to further reduce the amount of energy consumed.

### Final thoughts

Ultimately, upgrading lighting systems will help facilities managers in the education sector significantly cut operational costs. The technology to facilitate such an upgrade is readily available yet its accessibility perhaps remains beyond the knowledge of some who might think it out of their budget. Educating the market on the benefits of technology such as PIR sensors is central to driving forward change within the sector. Whilst maintenance and operational budgets for many schools may not be on a par with private sector companies, grasping the nettle and making the upgrade to an efficient lighting system which includes both low-energy lamps as well as sensor-based control elements will offer a tangible and long-lasting return on investment in terms of reduced operational costs and lower carbon consumption.



For your notes



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