

Elkay easyDALi PIR



Features

- Presence and Absence Detection Options
- Automatic Daylight Harvesting
- Settable Timing Modes
- Basic Luminaire setup without expensive commissioning tools
- Broadcast and Group Functions
- Dual Mode Remote Control
- Room & Corridor Options
- Manual Lux Level and Sensitivity Control
- Coloured Feedback LEDs
- Walk Test
- Can control LED and fluorescent DALI luminaires

Elkay easyDALi PIR Instructions must be read in conjunction with Remote Control Instructions in order to enable all features of the PIR.

This flush mounted ceiling mount Elkay easyDALi PIR has full DALI flexibility and is the intelligent sensor element of the Elkay easyDALi system. It can automatically address 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.

Mains power should never be connected to any terminal of the easyDALi PIR

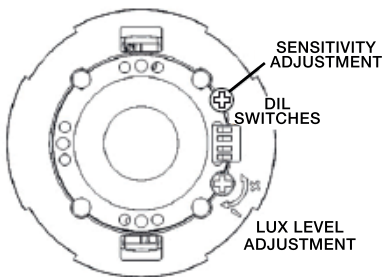
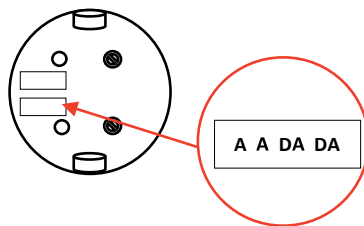
The DALI connections are made to the DA DA bus lines. There is no polarity but it is advisable and good practice to keep wiring colours to the same connections for consistency.

Absence detection on the Elkay easyDALi system can easily be achieved with the addition of of a momentary switch. To turn this easyDALi PIR from a presence detector to an absence detector simply connect a momentary switch to the A and A Absence Control lines and the PIR will now be a absence detector.

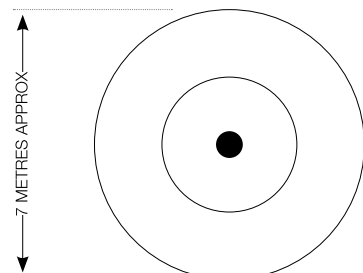
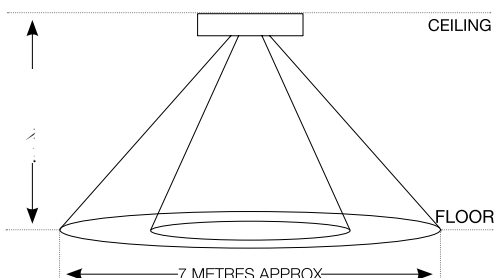
CAREFUL POSITIONING OF THE PIR IS ESSENTIAL TO MAINTAIN OPTIMUM DETECTION PERFORMANCE.

Elkay easyDALi PIR wiring connections

A	Absence Control Lines
A	Absence Control Lines
DA	DALI Bus line
DA	DALI Bus line



PIR sensor detection pattern



Broadcast Mode

The Elkay easyDALi PIR is set to presence and broadcast mode straight out of the box and will control even brand new un-configured luminaires. In Broadcast Mode the Elkay easyDALi PIR broadcasts DALI control signals to all luminaires on the connected DALI network. This is the simplest way to control DALI luminaires. In this way the Elkay easyDALi PIR is truly a 'wire up and work' system. For each Power supply you can have one new broadcast network PIR to control luminaires.





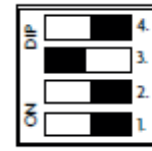
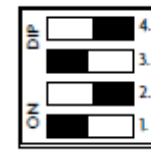
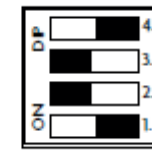
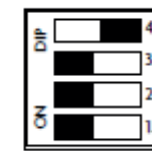

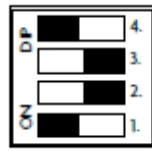


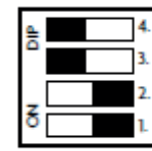
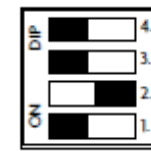
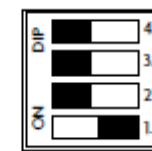

1. Firstly ensure the Elkay easyDALi PIR is set by setting all four dipswitches to off (default factory setting).
2. Simply connect the bus lines in the PIR with the Multi-purpose box and power supply unit in system.
3. The easyDALi PIR unit will automatically control all the luminaires on that network.

That's it!

For broadcast mode you have completed set-up at this point and the PIR will automatically daylight harvest and work as a presence or absence detector with the addition of a momentary switch.

Table 1- Broadcast and Group Dipswitch Selection

Please note that the **BLACK** bar denotes position of the dipswitch

							
Broadcast Mode	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
							
Group 8	Group 9	Group 10	Group 11	Group 12	Group 13	Group 14	Group 15

Setting Group Mode

There are 15 groups available with the 4 dip switches plus broadcast (see Table 1). As with standard DALI protocol you cannot have more than one DALI PIR controlling the same lights on the same group. The standard DALI protocols ensure that maximum efficiencies are obtained by having the smallest groups possible. For example, one easyDALi PIR to 4 Luminaires all set to Group one, another easyDALi PIR controlling 6 luminaires on Group 2.....etc. **In order to program a group on the Elkay easyDALi PIR the dipswitch must be set first.**

The Elkay easyDALi PIR can control luminaires via a group address. When a group is set on the Elkay easyDALi PIR it sends DALI control signals to luminaires with only that group address programmed within the ballast. In this way the Elkay easyDALi PIR can replace an existing PIR in a pre-programmed network provided the group number is known. The Elkay easyDALi PIR can also program the ballast within luminaires on a network to work on the currently set group (see 'Add group to pre-addressed luminaires') without the need for expensive commissioning tools. Using different groups, a number of Elkay easyDALi PIRs can control sets of luminaires on the same network, with many manufacturers PIRs this is not possible

Add group to pre-addressed luminaires.

Setup of existing luminaires on a DALI network is important even if some or all of the luminaires are not to be controlled by the Elkay easyDALi PIR currently being installed. In setting up luminaires the Elkay easyDALi PIR updates its list of DALI addresses currently in use, so that those addressed are not allocated to new luminaires. **To get the PIR to setup luminaires:**

1. Select the required group on the easyDALi PIR dip switches as per the Table 1 above.
2. You must turn lights OFF with the remote first to operate and program in this mode. To do this, point the remote control at the Elkay easyDALi PIR & press the override off button. While in override off the Elkay easyDALi PIR LED flashes white.
3. Set the remote control to installer mode by pressing the hidden installer button inside the battery compartment, the remote control LED illuminates red.
4. Point the remote control at the PIR & press button '1'. The Elkay DALI PIR will now search the network for luminaires that have a DALI short address pre-programmed.
5. Once the search is completed the lamps will pulsate. If you want the PIR to control the pulsating luminaire in the group, press the remote control brightness up button for 'YES' or brightness down button for 'NO'. If 'YES' is pressed the luminaires ballast is updated with the DALI group currently set on the Elkay DALI PIR dip switches and it updates its address list and controller list. This luminaire is now in the PIRs group. If 'NO' is pressed only the address list is updated and the Elkay DALI PIR will not control this luminaire in that group selected. Please note twin fluorescent DALI luminaires will only pulsate if both tubes are engaged in the fitting correctly and are both working normally.

Set up for Brand new unaddressed luminaires

The Elkay easyDALi PIR has the ability to do basic setup of brand new luminaires. With the 'Add new luminaires' function, group and scene information can then be programmed into the ballast within the luminaire. When new luminaires are addressed for the first time you must then complete the 'Add group to pre-addressed luminaires'. N.B. If there are existing pre-programmed luminaires already on the network skip back to 'Setting Group Mode' first before returning to this section.

To put the Elkay DALI PIR into 'Add new luminaires' mode:

1. You must turn lights **OFF** first with the remote to operate and program in this mode. To do this, point the remote control at the Elkay easyDALi PIR & press the override off button. While in override off the Elkay easyDALi PIR LED flashes white.
2. Set the Dipswitch with the group number you wish to use for the PIR.
3. Set the remote control to installer by pressing the hidden installer button inside the battery compartment, the remote control LED illuminates red.
4. Point the remote control at the Elkay easyDALi PIR & press button '2' at the bottom of the remote control while the remote LED is red. The Elkay easyDALi PIR will now search for uncommitted DALI ballasts and program an unused DALI short address. **An uncommitted luminaire will flash up to 5 times.** During this search the blue signal LED on the Elkay easyDALi PIR will flash repeatedly.
5. When the PIR flashes red the search is completed and any correctly programmed luminaires on the DALI network will be unaffected. Once completed the newly setup luminaires can have a group (see **Add group to, pre-addressed luminaires**) and a basic set of scenes (see '**Set Scenes**') programmed into their ballasts.

Any correctly programmed luminaires on the DALI network will be unaffected. Once completed the newly setup luminaire(s) can have a group (see **Add group to pre-addressed luminaires.**) and a basic set of scenes (see '**Set scenes**') programmed into their ballasts.

Please note these instructions must be read in conjunction with the Remote Control instructions

Set scenes

When a new DALI luminaire is purchased the internal ballast has no scene information programmed. The Elkay DALI PIR can configure a basic set of scenes into the ballasts of luminaires that have been setup using the '**Add group to pre-addressed luminaires**' function. Basic scene setup is sixteen scenes that range in brightness from minimum to maximum illumination.

All luminaires on the network with the PIRs set group will have their ballast updated with the basic scene set.

Setting scenes on the Elkay easyDALi PIR will give a basic 16 stepped levels of brightness

When replacing another manufacturers DALi PIR with an Elkay easyDALi PIR it is essential that the group number is known and set via the dip switches first. If you want to keep pre-programmed previous scene information then **DO NOT** follow '**Set Scenes**' below.

1. You must turn lights **OFF** first with the remote to operate and program in this mode. To do this, point the remote control at the Elkay easyDALi PIR & press the override off button. While in override off the Elkay easyDALi PIR LED flashes white.
2. Set the Dipswitch with the group number you wish to use for the PIR.
3. Set the remote control to installer by pressing the hidden installer button inside the battery compartment, the remote control LED illuminates red.
4. Point the remote control at the Elkay easyDALi PIR & press button '3' at the bottom of the remote control while the remote LED is red. The Elkay easyDALi PIR will now flash green 16 times per ballast and give a blue flash when scene set is complete. This process repeats until all ballasts in the group are set with scenes.

Walk Test

Walk test can be used to test and setup the Elkay easyDALi PIR sensitivity by moving in & out of the PIRs detection range.

The signal LED on the PIR indicates presence by flashing blue and can be used as a basic walk test. During walk test detection the luminaires will be illuminated to full brightness then after 10 seconds with no presence detected the luminaires will dim but not go off.








To put the Elkay DALI PIR into luminaire walk test:

1. You must turn lights **OFF** using the remote first to operate and program in this mode. To do this, point the remote control at the Elkay easyDALi PIR & press the override off button. While in override off the Elkay easyDALi PIR LED flashes white.
2. Set the remote control to installer mode by pressing the hidden installer button inside the battery compartment, the remote control LED illuminates red.
3. Point the remote control at the easyDALi PIR & press the 'Set' button, this will initiate luminaire walk test mode.
4. The LED on the easyDALi PIR will be illuminated blue while presence is detected and the luminaires will be set to full brightness. The PIR will also flash red and green to indicate Walk test mode is initiated.
5. Leaving the easyDALi PIR detection zone for more than 10 seconds is indicated by the luminaires being dimmed & the LED being extinguished.

Walk test mode will be exited after 10 minutes or by pointing the remote at the easyDALi PIR and pressing any remote control button. When the walk test is completed point the remote at the easyDALi PIR & press the override off button to return to normal. The remote control will automatically exit install mode after approximately 2 minutes from the last button press or can be taken out of installer mode immediately by re-pressing the hidden installer button.

Table 2 - PIR Feedback Colours and Flash Status

The PIR flashes several feedback colours via its LED to let you know what state it is in. The following table indicates the states that it is showing after installation.

Mode	PIR Colour	State
PRESENCE Lights OFF	No Flash	No Flashes at PIR indicates no detection and lights will be OFF. There are no absence wall switches involved in this circuit.
PRESENCE Lights ON		When operating in normal presence mode sensor LED blinks BLUE when there is presence detection and presence detected.
PRESENCE OFF by Remote		In presence mode even if lights are switched off by Remote control then sensor will flash white (even if presence not detected i.e. no one is in the room). This is to let you know the system has been switched off by remote control.
ABSENCE Lights ON		If there are wall switches in this circuit wired into the A A position and the wall switch is operated, the LEDES on the sensor will blink BLUE then RED to indicate presence detected and absence mode is set.
ABSENCE Lights OFF		Sensor continues to blink RED with lights off to indicate sensor is in absence mode (even if presence not detected. i.e. no one is in the room). If lights are switched off by Remote control and are in absence mode then sensor will also flash RED (even if presence not detected)
CORRIDOR Option		In corridor option a greenish yellow flash will indicate presence detected and in corridor option.
CORRIDOR Option (Hibernation)		PIR is in Corridor Option and 2 white flashes indicate it has been switched off completely by remote (Hibernation). When the remote ON/OFF button is re-pressed the PIR will resume in corridor mode.
Remote Button Press		When any button is pressed on the Remote Control a GREEN flash confirms acceptance at PIR. (Note Green flashes need to be counted when Selecting Room and Corridor Options- see Table X on the Remote Control Instructions)

STAIRWELLS

An additional feature of the Corridor Mode option makes it possible to have more than one group switched by a PIR. This means that luminaires in the current group or floor can be selected as well as other floors in the stairwell. Simply see the **‘Add group to pre-addressed luminaires’** and select YES for every luminaire you wish to be controlled in the stairwell. This flexibility allows you to maximise energy savings in stairwells.

Positioning OF THE DETECTOR

CAREFUL POSITIONING IS ESSENTIAL TO OBTAIN OPTIMUM PERFORMANCE

Use the detection range to determine a suitable location for the sensor. When locating the position of the units, ensure the sensor is not subjected to bright or direct sunlight or in areas with high reflective surfaces. Do not site units on a vibrating surface, or near forced air heating and ventilation. They should not be placed within 1 metre of the load. Sensors work when objects move across their field of view. Position the sensor where people will be detected walking across the zones rather than towards the zones identified in PIR sensor detection pattern. Adjust sensitivity to suit the area that the sensor has been installed in.

FLUSH MOUNTING

Void Depth 70mm minimum
Cut Out Diameter 65mm

Calculating maximum ratios of PIRs to ballasts in a single network

Each PIR is capable of running 64 ballasts (although in reality that will not be sensible practice). In order to calculate the maximum numbers of PIRs and luminaires that can be on the same network, use the following equation.

$$\frac{180 - (L \times 2)}{14}$$

where L = number of luminaires

**Worked Example 1
20 ballasts**

For example 20 ballasts x 2 =40
180-40 = 140
 $\frac{140}{14} = 10$
Therefore maximum 10 detectors for 20 ballasts

**Worked Example 2
40 ballasts**

40 ballasts x 2 =80
180-80 = 100
 $\frac{100}{14} = 7$ (rounded up)
Therefore maximum 7 detectors for 40 ballasts

Elkay easyDALi Network Solution Overview

The Elkay easyDALi system has been designed to make installation and set-up of a DALI system quicker and easier for installers. With the increasing energy saving requirements to cut emissions and energy bills from 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 deliver 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.

Unlike some manufacturers systems Elkay's easyDALi PIR sensors can be wired to control their own set of luminaires using in built DALI group functions to give control by group and not just by broadcast alone.

The complete Elkay easyDALi PIR is provided with just four elements.

	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 Codes	7TCA299030R0032	7TCA299030R0034	7TCA299030R0035	7TCA299030R0033
Features	<ul style="list-style-type: none"> - Presence and Absence Detection - Automatic Daylight Harvesting - Default Timing Modes - Broadcast and Group Functions - Room & Corridor Mode - Manual Lux Level and Sensitivity Control - Coloured Feedback LEDs - Walk Test 	<ul style="list-style-type: none"> - Dual Purpose control options for End user and Installers - Sets all non-default functions - Sets Timing Room Modes and Corridor Modes - Sets Min Arc Levels - 25%, 50% and 100% brightness pre sets - Override Functions - Remote Lux Control - Remote Feedback LEDs - 3 x AAA Batteries Supplied 	<ul style="list-style-type: none"> - 18V d.c. 250mA - Connects to Multi-Purpose Box - Essential to supply power to DALI network 	<ul style="list-style-type: none"> - 10A Max for Lighting loads - Connects Lighting (ALL TYPES) and DALI network - Connects Power Supply

RPM-487



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All wiring should be carried out by a competent person or a qualified electrician and should be fitted to IEE Wiring regulations BS7671. The circuit should be isolated before carrying out any work. Failure to adhere to the instructions will invalidate the warranty.

The Company's policy is one of continuous improvement and reserves the right to change specifications at any time without prior notice.

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