Lighting Controls eliminates commissioning on CAT A installations

Lighting Controls' new Area Controller comes with new test features, allowing a lighting control network to be checked before commissioning. All DALI strings are also tested. In other words, the integrity of the installation can be checked when the network wiring is completed, and the lighting system fully working. With this new and innovative protocol the building lighting is functional before a CAT B fit out but without the cost of commissioning.

Using the new system, immediately after installation, all lights connected to the area controller are ON when activated by any PIR in the system. All luminaires remain ON until 30 minutes after any PIR has ceased to sense motion.

The area controller has four buttons: Two to check that the lamps dim and brighten; one button to start the Test function; and, one button to cancel the Test function. Pushing the Test button causes the lights to go OFF either for 20 minutes or until the Cancel button is pushed.

Contact
T +44 (0)1252 470027
Sales Enquiries, Rob Walker:
rob.walker@lightingcontrols.ltd.uk
Technical Enquiries, Andre French:
andrew.french@lightingcontrols.ltd.uk
www.lightingcontrols.ltd.uk

New controller is a breath of fresh air for air conditioning

CP Electronics has launched a new PIR – a surface mounted controller that provides auto on/ auto off switching of infrared controlled air conditioning (AC) units.

Battery powered, easy to install and adjustable via a simple push button operation, the intelligent PIR learns the infrared code of an AC unit, overrides the on/off commands and regulates the use based on room occupancy. As a result, significant energy savings can be achieved.

The GESM-AC is compatible with the majority of infrared controlled air conditioning units. It is also capable of going into sleep mode and waking up on detection, to save battery life. The timeout period can be set, making installation and set-up simple.

Suitable for any room that has an AC unit in place, the AC controller is ideal for healthcare applications, classrooms and small meeting rooms; where air conditioning is not always turned off when occupants leave a room. It is also well suited to countries with hot climates where air conditioning is commonly used within buildings.

The new GESM-AC is part of CP Electronics' established green-i range of products, an off-the-shelf solution for greater energy efficiency.

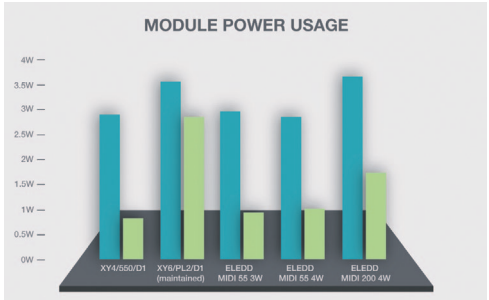
T +44 (0)333 900 0671
www.cpelectronics.co.uk

Conserving Energy in Emergency Lighting

Stewart Langdown MSLL, Business Development Director at Mackwell Electronics considers the power consumption taken by non-maintained emergency lighting and new technology now developed to save energy.

In recent years, various initiatives and directives from government have put the lighting industry under increased pressure to reduce energy and drive greater efficiency.

Innovations such as LED light sources, daylight control and dimming used in conjunction with more efficient control gear have gone a long way in reducing operating costs. Although this goes some way in ticking the 'energy saving' box, there is still one area that has been neglected and that is emergency lighting. The comfort and safety of the building occupants must be been taken into consideration, and energy saving measures must reflect the performance and ultimately the safety of the building. Recent trends to isolate the mains supply to LED drivers, and in some cases invertors to minimise parasitic losses, risks adding an additional point of failure. It far better to address the efficiency of the individual components and make them as efficient as you possibly can.



Parasitic Lighting
The power consumed by emergency lighting is deemed parasitic. This is the power consumed by the device whist the Emergency lighting is in a non-operational or standby mode. In emergency language this would be a non-maintained emergency luminaire that functions in the event of a mains failure. The luminaire and its electronics are connected to the mains and will continue to draw power unless managed via a technology such as SmartCharge™.

As a safety circuit emergency lighting is exempt from the limits set with other lighting components such as LED drivers where the parasitic losses should be <0.5W in the off state. As a consequence, inefficient emergency circuits can consume a significant amount of energy in the standby/off state.

This is generally down to the method of charging and will vary dependent upon the cell chemistry, and the charging regime. The only two battery chemistries currently approved for emergency lighting are nickel-cadmium (Ni-Cd) and nickel-metal hydride (Ni-MH).

Nickel-cadmium (Ni-Cd) batteries readily accept a constant current charge however nickel-metal hydride (Ni-MH) batteries should not be overcharged as this can damage the cells and are typically pulse charged. Therefore, you need two distinct charging methods tailored to each battery chemistry and in addition with Ni-MH you must protect against overcharge.

It is worth point out that Ni-Cd, although a robust battery design is gradually being replaced by the greener alternative Ni-MH. This has been driven by the need to ban toxic substances such as cadmium which in many European countries has been outlawed except for military, health and emergency lighting.

Furthermore, Ni-MH has a greater capacity by volume than Ni-Cd making it suitable for smaller, slimmer luminaires. For these reasons Mackwell utilises Ni-MH across its XYLUX range of LED luminaires.

The Nickel-metal hydride charge regime
As previously mentioned it is recommended that Ni-MH batteries for emergency lighting are charged using a lower duty cycle, whereby a pulse of higher current is delivered when the battery voltage drops below a defined level. Following extensive research, Mackwell took this duty cycle charge regime to the next level by developing its own innovative SmartCharge™ technology. Using a combination of intelligent hardware and specially designed software, SmartCharge™ ensures compliance by constant current charging the battery for the initial 24 hour period before relaxing to a lower duty cycle programmed as a 10% charge rate to 90% rest rate meaning that the battery is effectively not charging for 9 minutes out of every 10. When energised by a permanent supply and used within its correct operating parameters this results in the following benefits:

Firstly, the luminaire power consumption is reduced as can be witnessed by its charge cycle of 1 in every 10 minutes. Utilising SmartCharge™ technology, individual non-maintained emergency luminaires can see their power consumption reduced from a typical 2.6W to less than 1W and as the emergency lighting can contribute anything up to 30% of a buildings lighting load it is not difficult to calculate how this can result in a significant reduction in operating costs.

Secondly, the battery temperature is typically reduced between 5–10°C because in its 'rest' state the battery is allowed to cool. This cooling effect is seen across the whole luminaire and will in many cases reduce the battery temperature to a level well within its recommended operating parameters therefore satisfying design life and potentially extending life.

The technology utilised within SmartCharge™ emergency modules goes largely unseen and unnoticed by the end user; its benefits however will continue to materialise in both reductions in energy consumption and the reduction of maintenance costs through the life of a project.

Further information on SmartCharge™ technology is available from Mackwell customer services on: +44 (0)1922 458255, by emailing: customer.services@mackwell.com or by visiting the company's website at: www.mackwell.com