

# There's digital and there's digital

Only DALI ECG offers all the necessary features

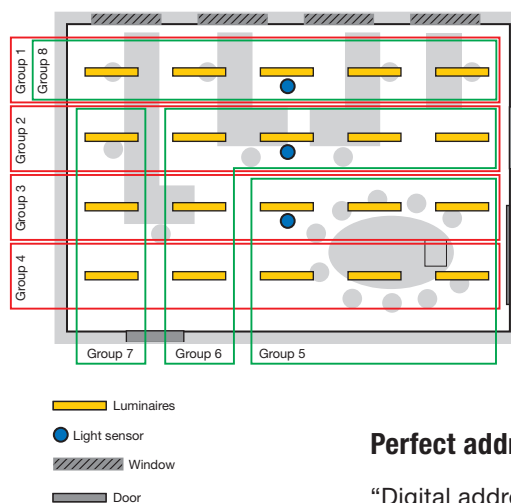
## Education through clarity

When reading the technical documentation of some manufacturers of electronic control gear, you frequently come across the term "digital electronic control gear". This description is currently causing some confusion in the lighting industry owing to the mixing of what are different definitions from the "digital world".

The following information is intended to clear up the situation regarding the term "digital" in relation to electronic control gear.

## Only truly digital is exceptional

Many requests for tenders refer to digital electronic control gear integrated in a



*Fig. 1. Light control systems based on the DALI standard offer versatile addressing options: single lamps, groups or all lamps*

digital light control system. However, the devices involved are often not digital components as defined by DALI that meet all three criteria – digital addressability, digital processing and digital communication.

## Perfect addressing

"Digital addressability" indicates that electronic control gear (ECG) can be addressed directly. A software routine is used to assign an individual address to each control gear unit, via which it can then be addressed at any time. ECG units with

different individual addresses can subsequently be combined in groups, this simplifies the control of this sub-area within a lighting system.

A broadcast function makes it possible to jointly address all units.

Digital addressing permits reorganisation of the groups at any time, and thus easy configuration of new light situations (scenes). Consequently, all the light sources can be reassigned in different ways and any number of times, giving you a previously unknown degree of flexibility (Fig. 1).

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There is currently only one standard on the market with which electronic control gear can really be addressed digitally – the “Digital Addressable Lighting Interface” (DALI). Older systems, such as those using DSI signals, do not usually permit individual addressing of the individual ECG units.

### Interference immunity through digital processing

“Digital processing” means that internal processes within the control gear are processed digitally and are thus absolutely immune to interference. For example, the end of the service life of a lamp is reliably detected and the lamp also switched off for reasons of safety. Moreover, the electronic equipment guarantees the specified lamp preheating, meaning that the lamp starts reliably without flickering over a wide temperature range and at any dimming setting. This “internal intelligence” likewise ensures that preheating is shut off (“Cut Off” technology) for optimum energy efficiency.



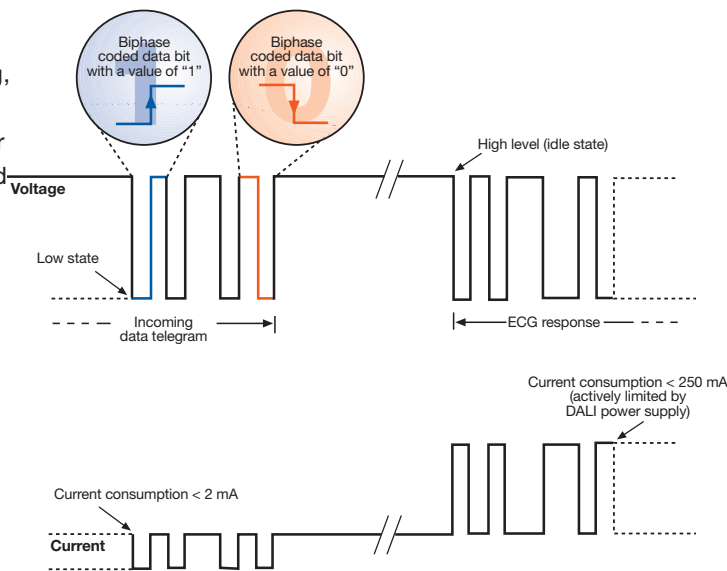
**Fig. 2. The Top Control mark guarantees internal intelligence**

These and other processes in an ECG unit can only be controlled with the help of an additional microprocessor. In this context, ECG products of superior design meet the highest demands on quality, safety and convenience (**Fig. 2 and 3**).

### Standardised digital communication

“Digital communication” means that all electronic control gear products, including the controller, communicate with each other in digital form only – like a computer with a connected printer. This ensures that all the elements in a system communicate commands in the same, uniform “language”, virtually ruling out communication problems (**Fig. 4**) – see also “DALI in detail” in ECG SPOT 3/2000.

**Fig. 4. Communication according to the DALI interface standard**



Digital communication makes it possible for a certain ECG unit to send a feedback message to the controller, for example, telling it that the lamp in question is faulty or currently set to a dimming value of 70%. The

information is received at a central point and turned into appropriate action, if necessary.

This function likewise only became possible with the DALI standard and enables the

the electrician then called in can replace the specific lamp in this room.

The intelligent software of the controller or the building management system even makes it possible to send the electrician information on the required lamp type in advance, saving unnecessary checks and extra journeys.

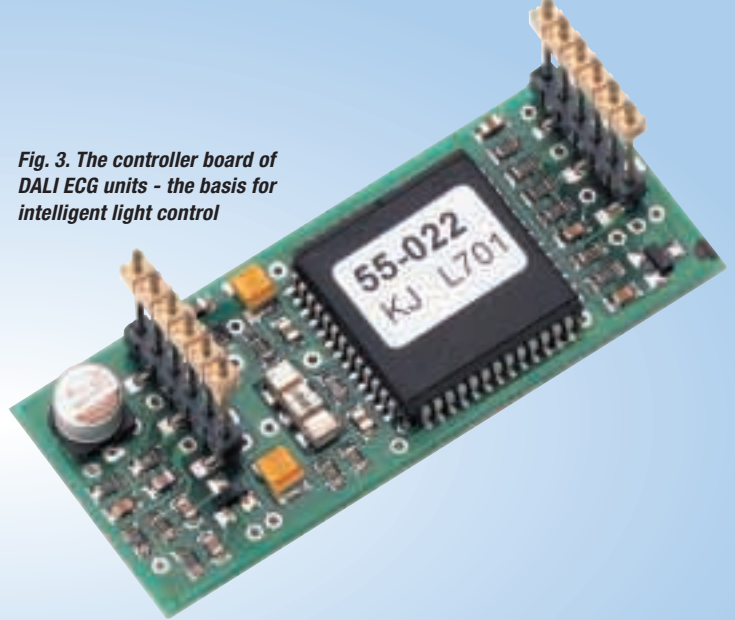
### DALI is the state of the art

Only DALI stands for consistent fulfilment of all three named criteria. Because of the definition of its functions, this international interface standard for ECG additionally offers confidence for the user as well as offering technical innovation. Confusion caused by company-specific solutions is thus a thing of the past.

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system to report a lamp fault. For instance, the caretaker in a large building complex gets a message that the lamp assigned to ECG No. 47 in Room No. 4 on the second floor has failed. As a result,

**Fig. 3. The controller board of DALI ECG units - the basis for intelligent light control**



The latest information on DALI can also be found on the Internet at “[www.ag-dali.org](http://www.ag-dali.org)” and “[www.osram.de/produkte/betriebsgeraete/dali](http://www.osram.de/produkte/betriebsgeraete/dali)”.

Detailed information can be found in the new DALI handbook issued by the activity group AG-DALI.

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