„The missing link“

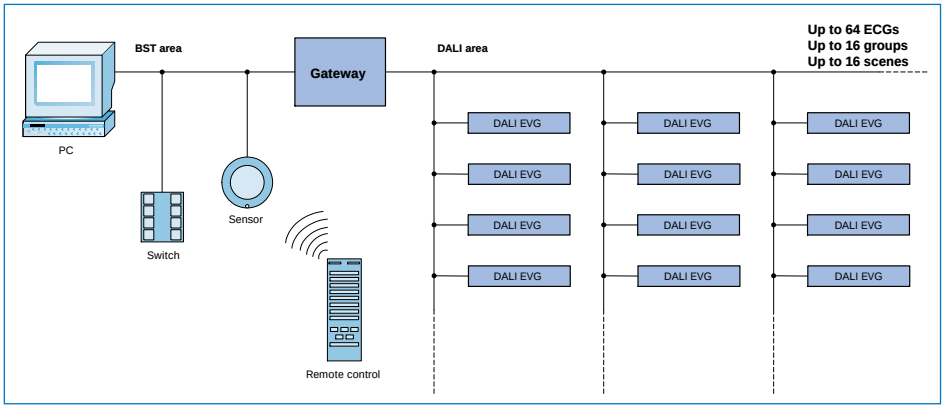
DALI and innovative building management

DALI

Digital Addressable Lighting Interface

The perfect connection:

DALI and building management



With special gateways the benefits of DALI can also be incorporated in building management systems.

DALI – open for new possibilities

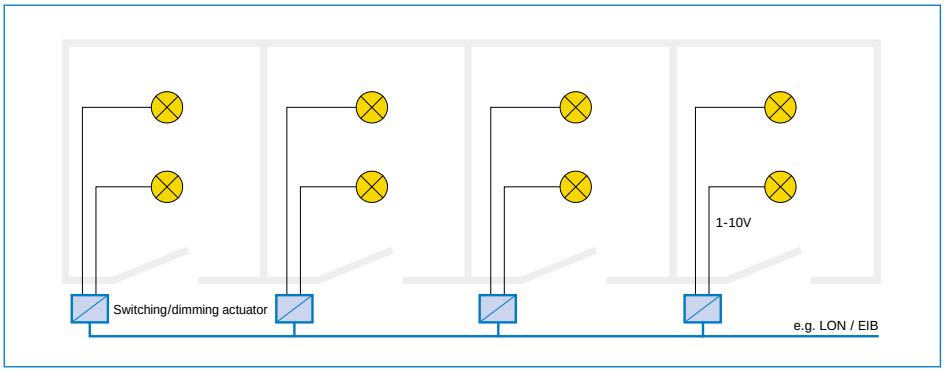
DALI has become established worldwide as the standard for digital lighting control. DALI is an open non-proprietary standard that for the fist time makes genuine freely addressable lighting control a reality (individual, group, all together). DALI is much easier to install, extremely versatile and much more cost-effective than any lighting control systems already on the market, despite its greater functionality.

Innovative DALI lighting solutions can be now perfectly integrated in modern building control systems (BCS). Special gateways act as "translators" between building control systems (BCS) and DALI. They ensure that all the benefits of DALI can also be used in building management.

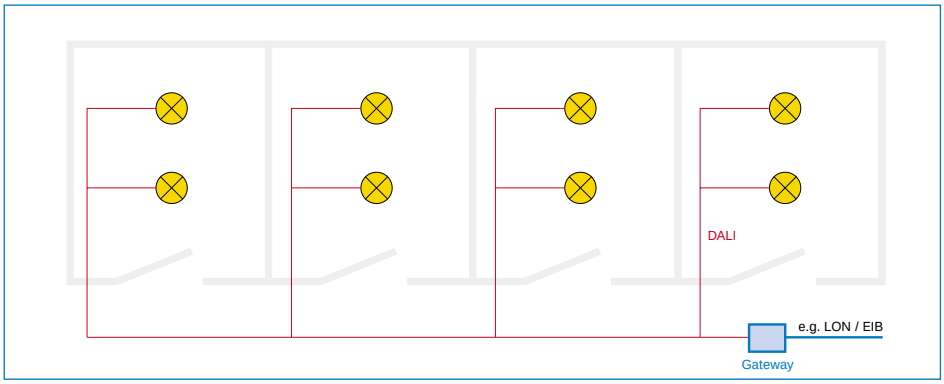
Simple topology

DALI offers easier planning, lower costs and greater flexibility. DALI equipment is installed using standard installation material for mains voltage (e.g. 5 x 1.5 mm^2 NYM), with the two free wires being used for DALI. Any wiring topology can be used, such as line, star or mixed, without using terminating resistors. And there is no obligation to physically assign any of the DALI units to specific groups of luminaires. The only restrictions are that there can be no closed rings in the wiring and that the maximum distance between the gateway and the DALI unit is 300 m.

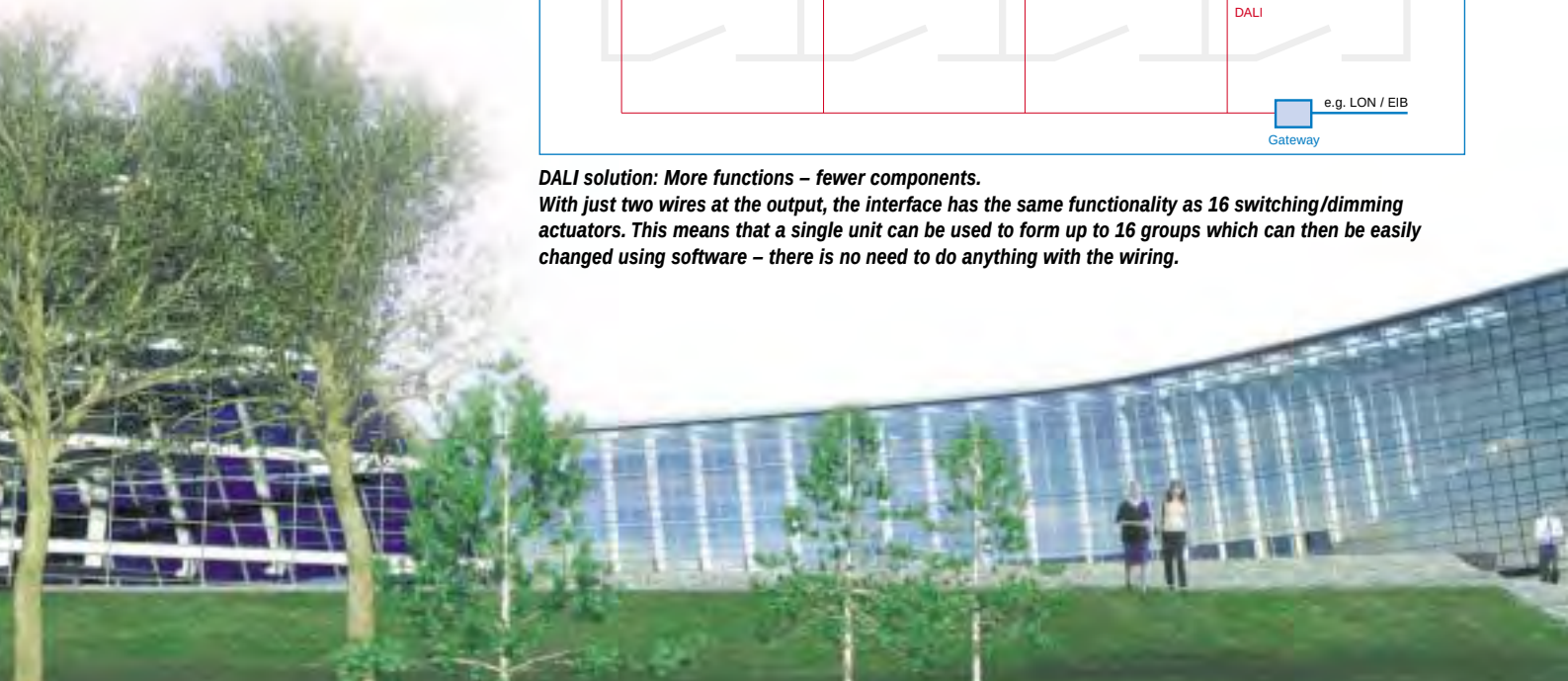
Thanks to its topology DALI is the best and most flexible solution because multiple switching/dimming actuators can be replaced by one gateway (see illustrations right).



1-10 V solution: At least one 2-way switching/dimming actuator is needed per room.



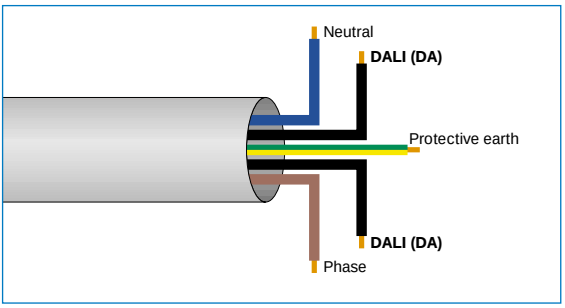
DALI solution: More functions – fewer components.
With just two wires at the output, the interface has the same functionality as 16 switching/dimming actuators. This means that a single unit can be used to form up to 16 groups which can then be easily changed using software – there is no need to do anything with the wiring.



DALI makes everything easier

Simple wiring

A separate bus cable is not needed for installing DALI. A single 5-core cable will handle DALI and power supply requirements at the same time. As in 1-10 V systems, there is no need to worry about polarity. Another clever feature is that with DALI there is also no need for external switching relays because the DALI unit switches itself on and off with the aid of digital commands. What makes DALI particularly simple to set up is that luminaires do not have to be wired in groups. This means there is total flexibility in changing the use of a room. All the changes are made in the software.



DALI wiring:
All what is needed for DALI and power supply is a single standard 5-core cable.

Intelligent fault reporting

DALI allows lamp faults to be queried by groups and, now for the first time, individually. Such precise fault information is important particularly where for safety or cost reasons it is essential to locate defective lamps quickly, for example in tunnels or at airports. Individual querying is also ideal for detecting "hidden" faults, for example in daylight ceilings which are covered by translucent foil or frosted glass.

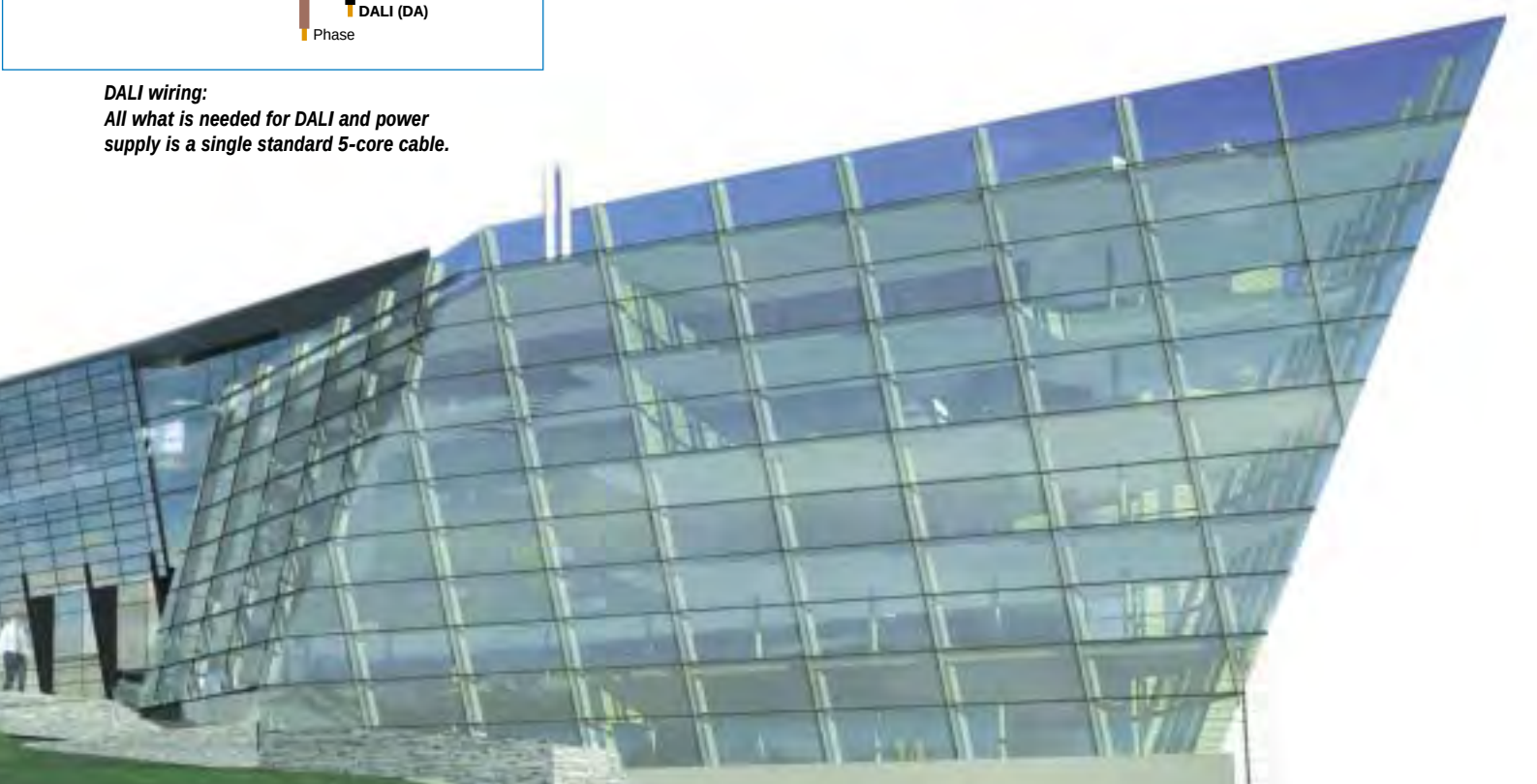
In conjunction with appropriate control units, it is also possible to record the number of hours burned. Complaints about premature failure can then be backed up by documentation – and scheduled lamp replacements can be coordinated more effectively.

Complete central monitoring of large properties is now a reality. With DALI, the lighting subsystem can at last be incorporated in building systems technology – all the room lighting statuses can be quickly, easily and reliably mapped on a PC.

Start-up as usual – flexibility like never before

For integrating DALI there are software tools available from various building systems companies that are based on traditional start-up operations for 1-10 V systems. Start-up can be easily achieved with a PC and standard software, for example from the EIB/LON environment. If a room is to be used for a new purpose, all that's needed for adjustments is to be made in the software. With DALI, there is no longer need for costly and time-consuming changes to be made by wiring.

DALI can be easily expanded and modified at any time. Further elements can be added – and then integrated in the existing system simply by means of software.



DALI. Flexible lighting solutions that will fascinate your customers

The standard for digital lighting control

The DALI standard defines the communication between the DALI controller and DALI units, such as electronic control gears. The interface definition for ECGs, published as Annex E4 to European Standard EN 60929, was developed by the DALI Activity Group (under the auspices of the ZVEI) – an association of the leading manufacturers of control units and electronic control gears.

This was the basis on which DALI became established as the digital standard in the lighting industry.

Benefits of DALI
No need to worry about the mains voltage phase (L1, L2, L3)
Two-wire line, no need to worry about the polarity or potential of the control wires
No need for a separate bus line
No wiring by groups (or channels)
Free addressing of the DALI units: all together, by group, individual
Scene memory in the DALI units (maximum of 16)
Individual status messages from DALI units (e.g. lamp faults)
Synchronised scene transitions
Dimmer curve analogous to the behaviour of the human eye
No external relay, DALI units switch themselves on and off

For more information on DALI please contact your luminaire or control equipment manufacturer or refer to the DALI handbook published by the DALI Activity Group. You can also go to:

www.dali-ag.org

Activity Group DALI
of ZVEI e.V., Electrical Luminaires Association
Stresemannallee 19
D-60596 Frankfurt am Main
Telefon: +49 (0) 69 63 02-0
Telefax: +49 (0) 69 63 02-317
E-Mail: licht@zvei.org

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