

# DALI emergency lighting

## Why use DALI with emergency lighting?

Regular system checks must be carried out to guarantee that any emergency lighting system is fully operational. Emergency lighting with DALI constantly monitors the system, storing reports of any failures or issues and ensuring that the system is 100 percent healthy for the maximum time possible. The health of building occupants is assured, and automatic monitoring reduces maintenance costs.

### DALI emergency system key features:

- Central monitoring from touch screen panel
- Report logging software
- Functional and full duration tests
- Faults reported to central computer, reducing maintenance time and costs
- Fully addressable emergency system with central test to BS-EN and IEC standards
- Switching of maintained luminaires, individually or per group
- Scheduled tests can be programmed via the touch screen panel and automatic tests can be staggered minimising disruption to building users and still protecting every area in case of a real emergency
- Based on the international industry standard DALI protocol
- Utilises standard DALI bus wiring

## Advantages of using DALI with emergency lighting



**1. Proven DALI technology specific for emergency lighting**



**3. Cost-effective solution with reduced maintenance costs after commissioning**



**2. Our DALI solution is based on non-proprietary systems. As long as all components of a system are DALI compliant, they will be able to communicate with each other**



**4. With the addition of the ABB DALI gateway, we can connect our DALI luminaires with KNX systems and BMS**



**5. DALI (DiiA) Certified**

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It has never been more important to ensure the safety of a building, because ensuring safety requires full knowledge that the emergency lighting is fully operational and healthy. DALI emergency is an extension of the DALI protocol, allowing for monitoring of the status of emergency fittings from a touch screen. Proven DALI technology is specific for emergency lighting.

### About DALI emergency

DALI - Digital Addressable Lighting Interface - is an open standard defined under EN62386. This standard ensures that all DALI-compatible emergency control systems work in synchronization and that the technology is available to multiple device manufacturers. DALI emergency lighting is a cost effective monitored emergency system that often betters the traditional systems

As a standalone monitored emergency system DALI emergency can monitor lamp and battery status and advise whether the luminaires are working, faulty, charge levels and hours of use in either normal or emergency operation.

As DALI is a two-way communication protocol, the central control can send commands to the luminaire and they will send back information to the control system.

It's a mandatory requirement that building owners are taking steps to ensure that their emergency lighting installations are routinely tested, with detailed records maintained. The associated labour costs have resulted in the owners of many larger buildings or building complexes investing in automated centralised test systems.

This type of system has also become increasingly popular since changes to the fire regulations now place the legal responsibility for recording these testing procedures solely with the building owners.

The benefits of using DALI central test systems for emergency lighting applications are wide-ranging:

- Increased safety
- Reduced maintenance labour time
- Ongoing monitoring savings

# DALI

## 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. ABB's DALI is designed to work with all DALI-compliant equipment displaying the DALI logo.

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 allows individual ballasts to “talk” to the user and allows the user to “talk” back via DALI controllers.



DALI is a testing and control system that offers both flexibility and reliability.

### Bus wiring

In terms of wiring a DALI system also includes the bus wires that are used to connect together the DALI terminals of the various devices in the system.

- Standard 2-core cable (1.5mm<sup>2</sup>)
- 5-core cable possible to enable power and data
- Polarity free & free wiring topology
- maximum 64 devices per subnet (Hub/Routers)
- maximum 300m cabling
- maximum 250mA device consumption

### Control devices

Control devices can provide information to other control devices and can send commands to control gear. Input devices are a type or a part of a control device that provides some information. Application controllers are also a type or a part of a control device and are the decision makers in a DALI system – for example, they can send commands to control gear to modify the lighting or test an emergency lighting system.

### Bus power supplies

At least one bus power supply must be present in a DALI system. This is necessary to allow both communications on the bus, as well as to power any bus-powered devices. The bus power supply does not need to be a separate unit – it could be part of another device such as an DALI control unit or a KNX DALI gateway.

ABB has 3 different power supply options.

The central control DALI Touch screen panel or the KNX DALI gateway. Only one power supply is needed in each network.

### Control gear

Control gear usually contains the power control circuit to drive lamps, or some other type of output such as on/off switching.



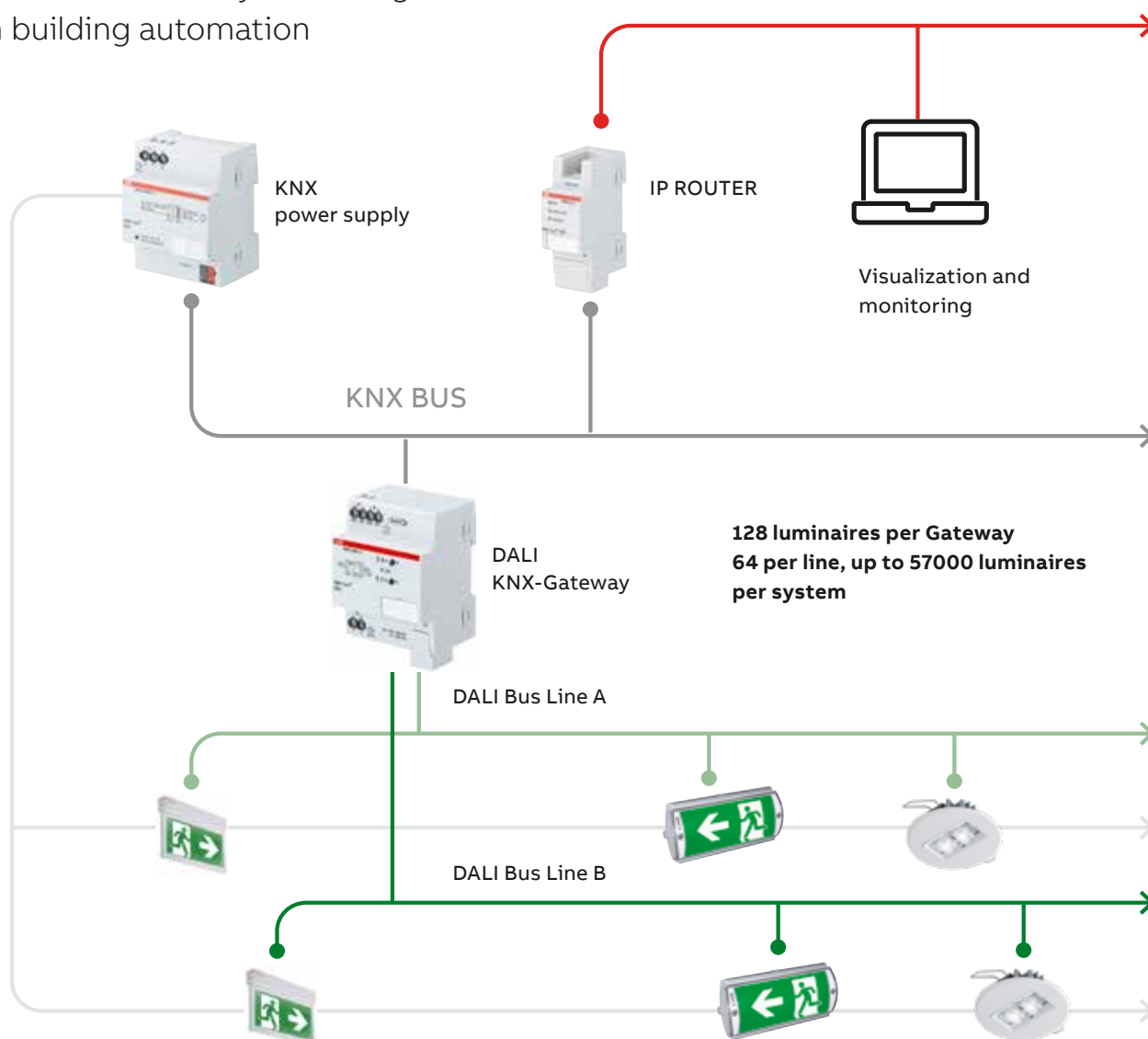
# KNX Integration

## Connection via DALI-KNX Gateway to KNX systems

- Central monitoring, testing and control via the KNX building automation through integration of DALI self-contained emergency lighting via the DALI-KNX Gateway
- Alternative to the DALI emergency lighting control unit - ELDCS (both can't be used together)
- DALI-KNX Gateways for 64 and 2x64 luminaires
- Can be combined with DALI luminaires for general lighting
- Additional software required for use



### DALI-KNX Gateway with integration in building automation



**DALI control unit (DCU)**  
Productivity & reliability



- DALI emergency lighting control panel**
- Ensuring building occupant safety
  - Touch screen to control, test and monitor emergency lighting
  - Simple to group and easy to install



| Control unit    |                 |                 |                             |
|-----------------|-----------------|-----------------|-----------------------------|
| Type Code       | Order code      | Material code   | Description                 |
| ELDCS1/DALI/ABB | 7TCA305060R0005 | ELDCS1/DALI ABB | DALI emergency control unit |

