ABB i-bus® KNX
DALI Gateways
Product Information

Power and productivity
for a better world™

ABB

Flexible lighting management and modern intelligent installation systems

Modern lighting must provide more than just "brightness". In the foreground is the creation of a utilisation-related atmosphere consisting of light, colour and moods, the operating comfort and increasingly aspects of energy conservation.

Increasingly, the entire electrotechnical building infrastructure management is controlled via KNX systems. The challenge consists of integrating the lighting system into this system – the DALI standard (EN 62386) was developed for this purpose. The standard defined the digital interface DALI (Digital Addressable Lighting Interface) for the control of technical lighting equipment.

KNX and DALI – a good team
Up to 64 DALI devices can be assigned to any light group and controlled via KNX. DALI provides feedback concerning the state of the lighting equipment and ballasts. This feedback can be evaluated and transferred via the KNX. The maintenance personnel are thus permanently supplied with the current state of the lighting system.

ABB has extended its proven DALI Gateways DG/S 8.1, DG/S 1.1 and DG/S 1.16.1 by the DALI Light Controller DLR/S 8.16.1M and the DALI Gateway Emergency Lighting DGN/S 1.16.1. Professionals now have a comprehensive range of products for all applications at their disposal.

DALI Gateway DGN/S 1.16.1
Lighting control and emergency lighting functions combined

The new ABB i-bus® KNX DALI Gateway with emergency lighting function combines flexible lighting control with a test function of individual emergency lighting batteries.

16 lighting groups with up to 64 DALI devices)

The function of the DGN/S 1.16.1 is identical to that of the DG/S 1.16.1. The only exception is the formation of lighting groups. No overlapping groups can be formed with the DGN/S 1.16.1 here. Up to 64 DALI devices can be flexibly installed via 16 lighting groups and controlled and monitored via KNX.

Lighting scenarios can support the room utilization demands with scene and a sequencer function. A staircase lighting function with a switch-off warning and basis brightness

facilitates time-dependent lighting control, particularly in halls or warehouses. With the integrated master-slave operation, any lighting groups can additionally optimize the energy consumption in buildings with a KNX light controller or presence detector.

Testing the emergency lighting function

Furthermore, the DALI gateway with emergency lighting function supports the DALI standard EN 62386-202 that specifies DALI emergency lighting with individual batteries. Here the cyclic monitoring functions of emergency or safety lighting with individual batteries can be activated via KNX, and the test results are sent with the aid of coded telegrams via KNX to a higher-level emergency lighting centre. The emergency lighting tests (functional test, continuous test and part continuous test) are undertaken autonomously by the DALI converter in the emergency light.. The actual function of the emergency lighting is not affected.

Information relating to a lamp and ballast fault is individually available for a lighting group or for a DALI device on the KNX.

Commissioning of the normal DALI lighting and the DALI emergency lighting is implemented via a separate commissioning tool used for assigning the DALI devices to the lighting groups. Furthermore, the error state of the DALI devices is also displayed in this tool and a test function is available..
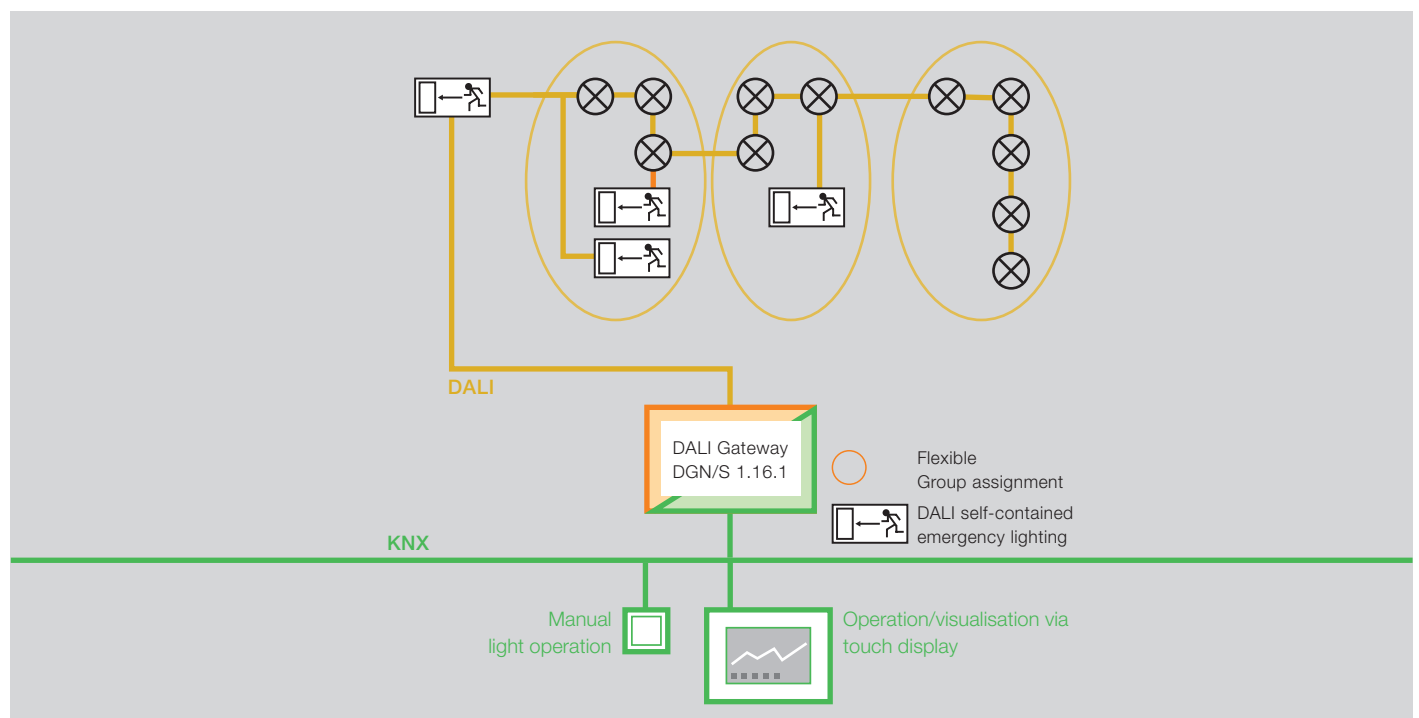
DALI Light Controller DLR/S 8.16.1M
Energy efficiency through constant lighting control

Flexible lighting control and modern intelligent installation systems – The new DALI Light Controller.

The new ABB i-bus® KNX DALI Light Controller can be used for control of up to 64 DALI devices. They can be assigned to 16 possible lighting groups. 8 of the 16 lighting groups can be applied individually in conjunction with a light sensor to automatically control the brightness in assigned rooms. Thus, an energy-saving constant lighting control can be easily and comfortably realized.

The 16 lighting groups are controlled via KNX telegrams. In addition to direct control, setting of light scenes is possible, which can be recalled or stored via 8 bit or 1 bit scene

telegrams. Furthermore, a staircase lighting function with a switch-off warning and basis brightness can be set, which can also be combined with constant lighting control, providing an additional operating efficiency dimension.

Information relating to a lamp and ballast fault is individually available for a lighting group or for a DALI device. Sending of error messages can be inhibited so that operation with emergency lighting systems, which disconnect the DALI devices from the gateway during an emergency lighting test, is possible.
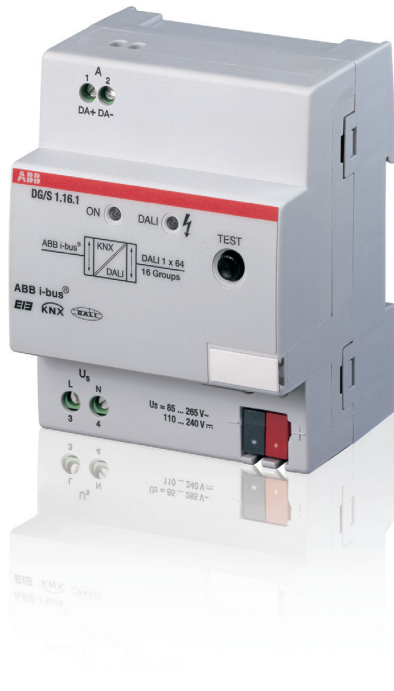
Commissioning of the DALI Light Controller is implemented via a separate commissioning tool used on the one hand for assigning the DALI devices to the lighting groups, and on the other hand for setting the lighting control. Furthermore, the error state of the DALI devices is also displayed in this tool.

The Light Controller provides the power supply for the 64 connectible DALI devices.
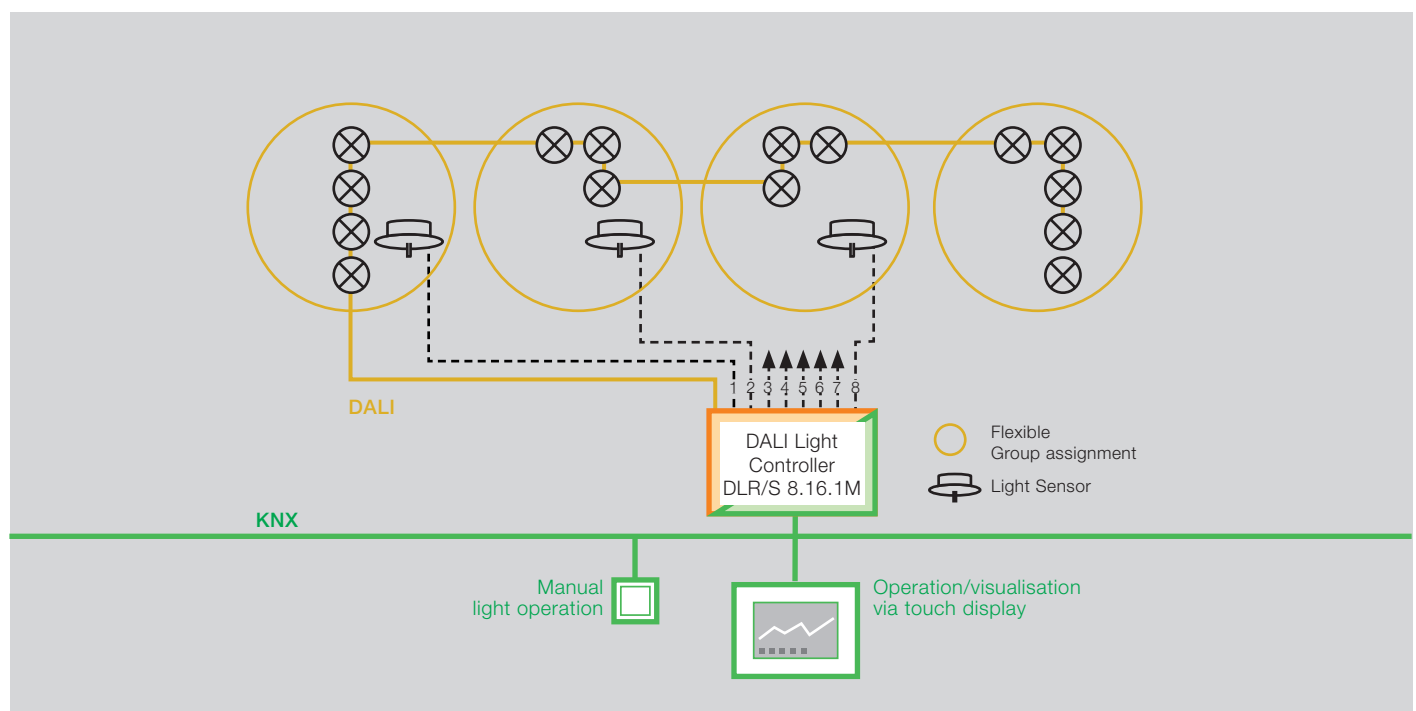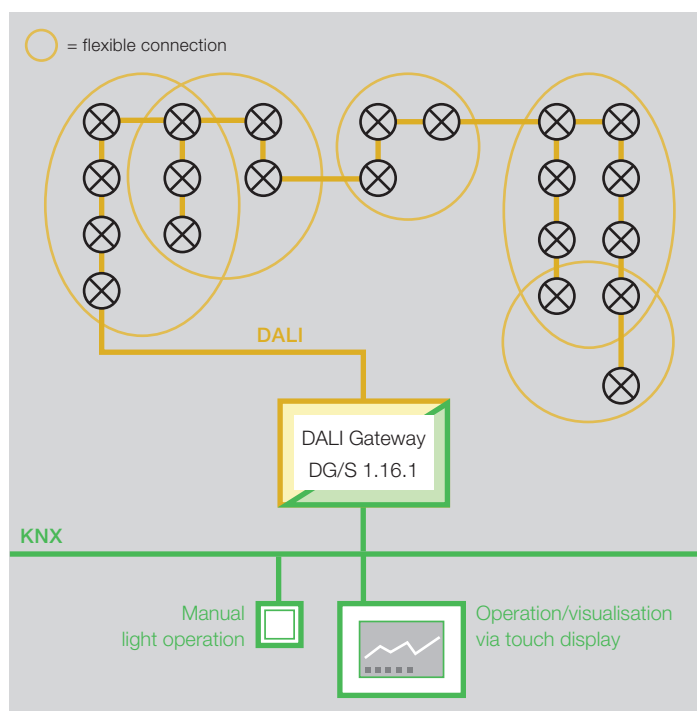
DALI Gateway DG/S 1.16.1
Flexibility in a good light

The new DALI Gateway DG/S 1.16.1 controls 16 flexible lighting groups with up to 64 DALI devices – also ideal for simultaneous switching and dimming of larger lighting groups.

The outstanding parameters are

– Comprehensive error messages and visualisation options for the entire lighting
– Light scenes can be controlled and stored via KNX
– Programmable power on level: the brightness value after ballast operating voltage recovery can be programmed
– Sequence control: Up to 10 consecutive scenes are possible, the scene can be repeated 1 to 254 times or can run endlessly
– Characteristic adjustment: The DALI characteristic can be linearized, the KNX control signal can have a higher resolution.

Just like the proven ABB Gateways DG/S 1.1 and DG/S 8.1, the DG/S 1.16.1 incorporates

– Switching, dimming, setting brightness values
– Staircase lighting function
– Slave function for integration in constant lighting controls
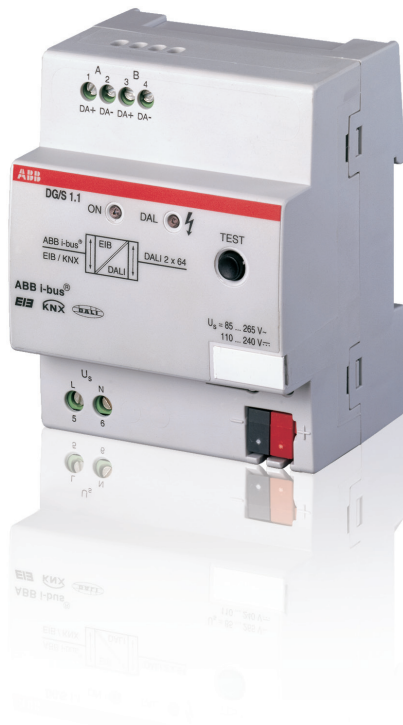– Burn-in function: e. g. for dimmable gas discharge lamps

Commissioning with software tool without special ETS knowledge

The 64 DALI devices can be addressed as required, and thus a modification of the room function is possible without great effort. During a fault, DALI ballasts can be exchanged and addressed without ETS and KNX knowledge.

Device function DG/S 1.16.1:
Large lighting groups can be controlled via flexible DALI groups.
1 x 64 DALI devices in 16 lighting groups.
Overlapping groups are possible.

DALI Gateway DG/S 1.1
Individual lighting control

The DALI Gateway 1-fold DG/S 1.1 controls an unlimited number of lighting groups that are only limited by the max. number of KNX associations. 64 DALI devices can be individually switched on/off, dimmed and controlled via a brightness value using KNX. Further individual functions are possible with an address-based control.

– Formation of user-defined groups via KNX
– Automatic DALI addressing
– Main channel: 64 DALI devices can be controlled individually
– Additional channel: 64 individually-coded, address-based controls or common control (broadcast)
– Lamps and ballast malfunctions via coded scanning
– Individual activation of a lamp burn-in time
– Light scenes
– Integrated DALI power supply

Due to the required addressing of 64 devices, the DG/S 1.1 is particularly suited for rooms, in which individual lamps are visible:
– Multipurpose rooms
– Exhibition halls and sports arenas
– Museums and event centres
– Open-plan offices

Device function DG/S 1.1:

Lighting groups are formed in KNX. Individual lamps are indicated on the KNX. Addressing implemented using the ETS independent software tool. 1 x 64 DALI devices in unlimited lighting groups.
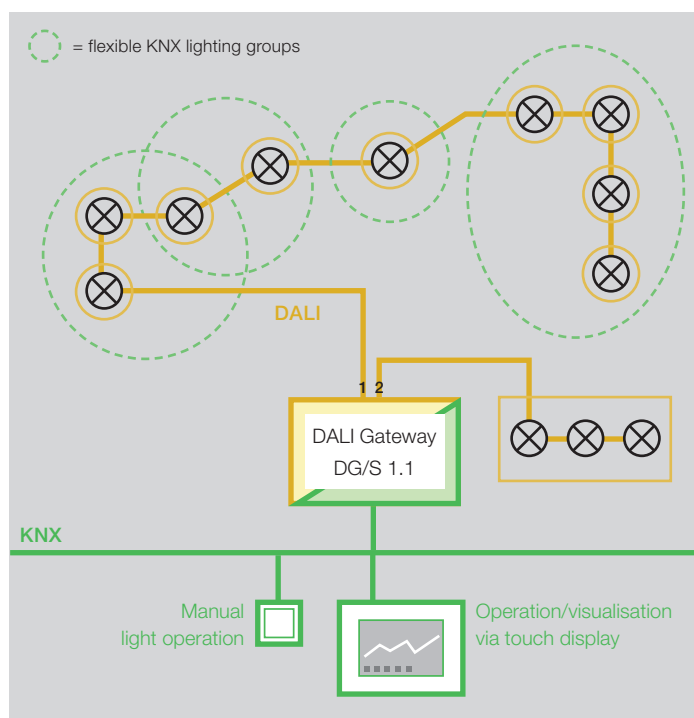
DALI Gateway DG/S 8.1
The proven technology

The DALI Gateway 8-fold DG/S 8.1 retains the installation habits of 1…10 V technology. No DALI addressing is necessary during commissioning – however, the benefits of DALI technology are available on the KNX.

– Formation of groups via wired installation devices
– Up to 8 lighting groups with a maximum of 16 DALI devices per channel (128 DALI devices per device)
– Common control and monitoring (broadcast) per channel
– Non-delayed switching, synchronous dimming
– Light scenes
– Scene-based dimming
– Lamp and ballast error messages per channel
– Channel-based burn-in function
– Integrated DALI power supply

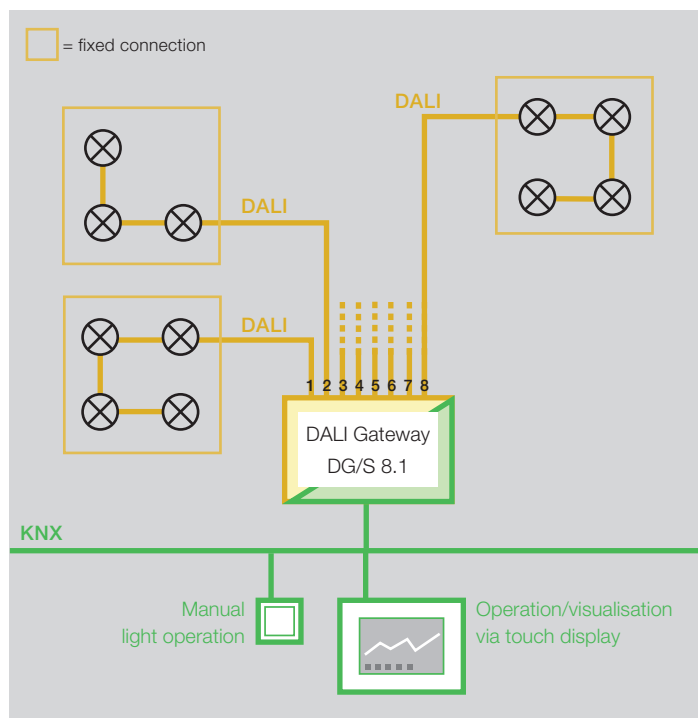As DALI addressing is unnecessary, the DG/S 8.1 is an ideal solution for
– Axis offices
– Hotel rooms
– Hospitals
– Residential homes

Device function DG/S 8.1:

Lighting groups are formed via "rigid" hardware wiring.

Fast commissioning as no addressing is necessary.

No readdressing when a ballast is exchanged. 8 x 16 DALI devices

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