Webinar KNX DALI-Gateway DG/S x.64.1.1
BU EPBP GPG Building Automation

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Global Application and Solution Team
Agenda

New Generation DALI-Gateways DG/S x.64.1.1

- Features DALI
- Assortment today – New Assortment
- Overview Devices
- Overview i-bus® Tool and ETS
- Single and Group Control
- Demonstration i-bus® Tool and ETS
- Market Launch

New DALI Gateways Part 2: Next Webinar in May
KNX DALI-Gateways DG/S x.64.1.1

Introduction

Prior Webinars

Constant Light Control (DALI Light Controller DLR/S)
DALI - Technology and Products
  – DALI standard IEC 62386
  – DALI Technology
  – DALI devices (control and operating devices)
  – ABB i-bus® KNX Gateways

Video and slides are available on Training & Qualification Database
> Application “Lighting Control”
Features DALI

- All functions for powerful lighting control in buildings
- DALI ballasts for various lamps (for example, LED, halogen and fluorescent lamps)
- Many companies develop and market DALI products and solutions worldwide
- Standardized and compatible data protocol (DALI Standard IEC / EN 62386)
- Flexibility in case of changes by reprogramming
- Switching, dimming and lighting scenes
- Single, group or broadcast control
Introduction

Features DALI

- With 2-wire bus cable less wiring and lines compared to a 1-10 V system
- Status messages, e.g. Luminaire ON / OFF, brightness and lamp or ballast failure
- Silent electronic switching without mechanical relays
- Integration of emergency lighting systems into a DALI system
- Growing and worldwide use of DALI in predominantly commercial projects
– and last but not least …

- DALI is used together with bus systems like KNX for a complete building automation solution. This was decisive for DALI's market success.
What is a KNX ABB i-bus® DALI Gateway?

The KNX ABB i-bus® DALI gateways establish the connection between the internationally standardized and company-neutral standards in building automation.

**DALI** (Digital Addressable Lighting Interface)  
acc. IEC/EN 62 386

&

**KNX Building Automation**  
Acc. ISO/IEC 14 533-3 bzw. EN 50 090

Connection of modern lighting with building automation
# KNX DALI-Gateways DG/S x.64.1.1

## Status April 2017

<table>
<thead>
<tr>
<th>Gateway DG/S 8.1</th>
<th>Gateway DG/S 1.1</th>
<th>Gateway DG/S 1.16.1</th>
<th>Gateway DGN/S 1.16.1</th>
<th>Light Controller DLR/S 8.16.1M</th>
<th>Light Controller DLR/A 4.8.1.1</th>
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<tbody>
<tr>
<td>Controlled</td>
<td>Broadcast</td>
<td>Single</td>
<td>Group</td>
<td>Group</td>
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<tr>
<td>DALI outputs</td>
<td>8 (A…H)</td>
<td>2 (A, B)</td>
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<tr>
<td>DALI ballast</td>
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<td>64 (ballasts and emergency lighting converter)</td>
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<tr>
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<td>A: 64 individual</td>
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<tr>
<td>Lighting groups established via</td>
<td>cable installation</td>
<td>A: KNX B: Broadcast*</td>
<td>DALI</td>
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<td>Lighting groups per Gateway</td>
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<td>A: Limited via KNX B: 1*</td>
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*Coded control per DALI ballast with two objects possible
## KNX DALI-Gateways DG/S x.64.1.1

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### Features *

*Except Sequence and overlapping DALI Groups*
### KNX DALI-Gateways DG/S x.64.1.1

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**Features**

*Except Sequence and overlapping DALI Groups*
KNX DALI-Gateways DG/S x.64.1.1

Overview Devices

**DG/S 1.64.1.1**

KNX DALI-Gateway **1-fold**

- **One** output for up to 64 DALI devices
- 16 DALI groups and 16 scenes
- ...
**DG/S 2.64.1.1**

**KNX DALI-Gateway 2-fold**

- **Two independent** outputs for up to 128 DALI devices (2 x 64)
- Two DALI power supplies
- 16 DALI groups and 16 scenes each output, means in total 32 DALI groups and 32 scenes

→ very economical solution, reduced costs per channel
KNX DALI-Gateways DG/S x.64.1.1

Overview Devices

**DG/S x.64.1.1**

KNX DALI-Gateways 1-fold and 2-fold

- Modular DIN Rail Device (MDRC)
- 4 Modules Width (72 mm)
- Supply voltage 100 - 240V AC/DC, 50/60Hz → **suitable for worldwide use**
- Integrated DALI power supply → **no additional power supply required**
- DALI Outputs 230V secure → **Incorrect connection with mains voltage does not destroy the device**
KNX DALI-Gateways DG/S x.64.1.1

Overview Devices

DG/S x.64.1.1

KNX DALI-Gateways 1-fold and 2-fold

- Extended DALI fault information via ETS and i-bus Tool
  → additional diagnostic options during operation and commissioning
- Flexible combination of DALI groups, KNX single control or KNX groups
  → DG/S 1.1 and DG/S 1.16.1 in one device, no longer the risk to select the wrong one
- Support DALI emergency lighting converter (DALI type 1)
  → General and emergency lighting in one system, with more functions and less investment
KNX DALI-Gateways DG/S x.64.1.1

Overview Devices

DG/S x.64.1.1

KNX DALI-Gateways 1-fold and 2-fold
- Manual operation with broadcast function
  → Test of installation and lighting
- 2 LEDs for device ON and DALI fault
  → Quick and easy diagnostics
- Current functions* DG/S 1.1, DG/S 1.16.1 and DGN/S 1.16.1 are covered
  → Downward compatibility
- Application for ETS4 and ETS5
- Fast application download via IPS/S 3.1.1 or IPR/S 3.1.1 → Time saving
- DALI commissioning via i-bus tool
  → unique support during commissioning and fault detection

* Except Sequence and overlapping DALI Groups
KNX DALI-Gateways DG/S x.64.1.1

Hardware

Connection Diagram

Device connection

1. Label carrier
2. KNX programming button
3. KNX programming LED (red)
4. KNX connection
5. Cover cap
6. Operating voltage
7. DALI output (1x DG/S 1.64.1.1, 2x DG/S 2.64.1.1)
8. Operation LED (green)
9. DALI A / B
10. DALI status LED A / B (yellow)
11. DALI equipment
**KNX DALI-Gateways DG/S x.64.1.1**

**i-bus tool**

**Functions**

- i-bus tool for diagnostic, test, DALI configuration and commissioning
- Clear representation of the DALI system including device- and group assignment
- Easy to find the lights (switching/flashing/dimming)
- Detection and change of DALI addresses
- Creation of DALI groups
- Switching and dimming per device or group
- Display of ballast, lamp, and communication faults
- Name of device and DALI group from ETS parameterization visible
- Legend to explain the status of each device
i-bus tool

**Functions**

- i-bus tool for diagnostic, test, DALI configuration and commissioning
  - Comprehensive information of the configuration and status of each individual DALI address
  - Display of status such as forced operation, blocking, burn-in, staircase function
  - For a self contained emergency lighting system, this can be tested and states can be displayed
  - i-bus tool is free of charge, independent use without ETS, thus easy and quick access for the technical end user
ETS for parametrization and commissioning

- Available for ETS4 and ETS5
- Parameter templates for individual ballasts or DALI groups
- Parameter lighting (on-off behavior, dimming speed, dimming limits, flexible dimming time, turn off brightness)
- Status functions such as switching, brightness and status byte
- Special functions such as slave, staircase light, forced operation or blocking
- Master - Slave dimming with offset
- Integrated scene function (16 scenes)
- Reaction in the event of power failure and recovery (Supply KNX and DALI)
ETS for parametrization and commissioning

- Parameterization of emergency lighting converters
- Automatic DALI addressing can be switched off (Default off)
- Pause between two DALI QUERY adjustable
- Dimming characteristic can be adjusted, DALI (logarithmic) or KNX (linear)
- Function turn off- and basic brightness
- Reaction in case of partial failure (Fault DALI voltage, emergency lighting active, lamp/ballast fault)
- Burn-in of luminaires configurable (per ballast or group)
- Fault message lamp and ballast device
Group objects and group addresses in ETS

- Due to the variety of available functions
  - Over 1,000 / 2,000 group objects
  - 2,000 or 4,000 possible group addresses
- Dynamic display, only visible when the function is activated
- No more problems with the limited number of assignments of group addresses (DG/S 1.1)
KNX DALI-Gateways DG/S x.64.1.1

Single and Group Control

**DG/S 1.64.1.1**

KNX single Control / KNX Groups
- Up to 64 ballasts can be controlled as a single device or in KNX groups per channel
- **KNX single control:** Individual communication objects (for example, switching, dimming, brightness, status) for each ballast to which group addresses can be assigned
- **KNX group:** As with conventional multi-channel KNX actuators, several devices or channels can be controlled via a common group address
- **Advantage:** Access to each individual DALI ballast, classic KNX programming as with multi-channel actuators, one ballast can be in several KNX groups, maximum flexibility for lighting control
**DALI Groups**

- Up to 16 DALI groups can be formed per channel and participants can be controlled together in the group. The assignment of the ballast to a DALI group is done in the ABB i-bus tool.

- **Advantage:** Fast and simple grouping, less telegram traffic on the DALI control line.

- **Please note:** Participants can only be in one group, overlapping DALI groups are not possible (Deviating from DG/S 1.16.1 or DGN/S 1.16.1).
**KNX DALI-Gateways DG/S x.64.1.1**

Single and Group Control

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**DG/S 1.64.1.1**

DALI Emergency Lighting Converter with single battery

- Up to 64 DALI emergency lighting converters can be controlled per channel
- DALI emergency lighting converters can also be installed together in a channel with 'normal' DALI ballasts and operated in common DALI groups
- **Prerequisite**: DALI emergency lighting converter can be switched normally, most of the emergency lighting converters can switch on their light only in the event of a power failure
- Emergency lighting converters can be an independent device and need not be assigned to a DALI group
DALI Emergency Lighting Converter with single battery

- Emergency lighting converters do not have group objects in the ETS and therefore cannot be addressed via KNX single control or KNX groups
Knx DalI-Gateways DG/S x.64.1.1

Single and Group Control

Dg/S 1.64.1.1

DalI Emergency Lighting Converter with single battery

– All necessary tests (duration and function test as well as information about the battery capacity) can be implemented by means of the DalI Gateways DG/S x.64.1.1 and a superior visualization software.
KNX DALI-Gateways DG/S x.64.1.1

Single and Group Control

**DG/S 1.64.1.1**

KNX single control / KNX groups, DALI groups and Emergency Lighting converters

- DALI groups and KNX single control / KNX groups can be mixed per channel
- In addition, single controlled ballasts / KNX groups as well as DALI groups can also be combined in another KNX group
- **Please note:** A ballast belongs either to a DALI group or is part of single control / KNX group
KNX DALI-Gateways DG/S x.64.1.1

Single and Group Control

**DG/S 2.64.1.1**

KNX single control/KNX groups, DALI groups and Emergency Lighting Converters together for two independent channels

- All the above mentioned functions are also valid for each channel of the DG/S 2.64.1.1 with two channels
- In addition, single controlled ballasts/ KNX groups as well as DALI groups can also be grouped together in a further KNX group
- Please note: A DALI group can only be formed within one channel, not with ballasts of two or more channels
Single and Group Control

**Multiple DG/S x.64.1.1**

Single control/KNX groups, DALI groups and Emergency Lighting Converters for several DALI gateways

- When several gateways are used in large projects, single controlled ballasts/KNX groups as well as DALI groups can also be grouped together in a further superior KNX group
KNX DALI Gateways DG/S x.64.1.1
Marketing Material

www.abb.com/knx

Products
Illumination and light sensors
DG/S 1.64.1.1 or DG/S 2.64.1.1

- Application Software ETS4 and ETS5
- Technical Data
- Installation and Operating Instructions
- Specification Text
- Product Manual
- CE Declaration of Conformity …

Coming Soon:
Webinar presentation and recording
Coastal engineering

The shelf is the area between high and low tide levels.

- The shelf is divided into two zones: the continental shelf and the shelf break.
- The continental shelf is the shallow area where the ocean floor rises gently.
- The shelf break is the point where the continental shelf ends and the deep ocean begins.

**Continental Shelf:**
- Depth: 0 to 200 meters
- Slope: gentle
- Habitat: shallow-water ecosystems
- Resources: oil, gas, and minerals

**Shelf Break:**
- Depth start: 200 meters
- Slope: steep
- Habitat: transition zone
- Resources: fish and water plants

**Continental Margin:**
- Depth: greater than 200 meters
- Slope: steep
- Habitat: deep-water ecosystems
- Resources: minerals, fish, and oil

*Topic is subjected to change*
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