ABB i-bus® KNX
DALI Gateway, Emergency Lighting, MDRC
DGN/S 1.16.1, 2CDG 110 142 R0011

2CDC 071 009 S0011

The KNX ABB i-bus® DALI Gateway with Emergency Lighting Function DGN/S 1.16.1 is a KNX modular installation device (MDRC) in Pro *M*-design for installation in the distribution board on 35 mm mounting rails.

The DGN/S integrates operating devices with DALI interfaces to EN 62386 into a KNX building installation. The connection to the ABB i-bus® is implemented via a KNX connection terminal on the device shoulders.

The DALI output of the DGN/S can be used to connect up to 64 DALI devices. It can also exclusively contain 64 DALI devices for self-contained emergency lighting compliant to EN 6286-202. Both "normal" lamps as well as battery operated emergency lighting can be connected in a mixed configuration to the DGN/S 1.16.1.

Control of the lamps via KNX is undertaken by 16 lighting groups, which can be comprised of any 64 DALI lamps.

An individual project-related DALI device group assignment is possible using the DALI-Software-Tool.

The fault status (lamps, ballasts or emergency light converter) of every individual DALI device or of the lighting group is sent via different KNX communication objects on the KNX.

In addition to the standard functions, e.g. switching, dimming and brightness value setting with the corresponding feedbacks, the DGN/S has the functions Staircase lighting, Scene, Sequence and Slave. The lighting groups can be integrated in this way into a constant lighting control.

Function, duration and partial duration tests and battery tests for the emergency lighting systems with individual batteries to EN 62386-202 can be triggered and stopped via KNX. The test results are made available on the KNX.

All DALI devices can be controlled together in KNX mode as well as manual mode.

The DGN/S is a DALI control device (master) and requires an AC or DC auxiliary power supply. A separate DALI power supply is not required. The DALI power source for the 64 DALI devices is integrated into the DGN/S.

Technical data

Supply	gateway operating voltage	85…265 V AC, 50/60 Hz 110…240 V DC
	power consumption total via mains	maximum 8 W at 230 V AC and max. load
	current consumption total via mains	maximum 35 mA at 230 V AC and max. load
	leakage loss total for device	maximum 3 W at 230 V AC and max. load
	current consumption KNX	maximum 10 mA
	power consumption via KNX	maximum 210 mW
DALI outputs (channels)	number of outputs	1 x 64 DALI device (16 lighting groups)
	number of DALI devices	maximum 64 to EN 62 386; DALI devices pfor self-contained emergency lighting to EN 62 386-202 are supported.[2]
	distance between DGN/S and last DALI device cable cross-section 0.5 mm² 0.75 mm² 1.0 mm² 1.5 mm²	100 m[1] 150 m[1] 200 m[1] 300 m[1]
Connections	KNX	KNX connection terminal, 0.8 mm Ø, single core
	DALI outputs and mains voltage	screw terminal 0.2…2.5 mm² stranded 0.2…4 mm² single core
	tightening torque	maximum 0.6 Nm

ABB i-bus® KNX
DALI Gateway, Emergency Lighting, MDRC
DGN/S 1.16.1, 2CDG 110 142 R0011

Operating and display elements	button ⬤	DALI output test
	button/LED ▭⊙ ●	for assignment of the physical address
	LED 🟢, green	display for operation readiness
	LED 🟡, yellow	for displaying DALI fault, constant light for displaying test mode, slow flashing for displaying initialisation or more than 64 DALI devices, quick flashing
Enclosure	IP 20	to EN 60529
Safety class	II	to EN 61140
Isolation category	overvoltage category	III to EN 60 664-1
	pollution degree	2 to EN 60664-1
KNX safety extra low voltage	SELV 24 V DC	
DALI voltage	typical 16 V DC (9.5…22.5 V DC)	to EN 60929 and EN 62386

	no-load voltage
	   lowest supply current at 11.5 V
	   highest supply current
		16 V DC
		160 mA
		230 mA

Temperature range	operation	-5 °C…+45 °C
	storage	-25 °C…+55 °C
	transport	-25 °C…+70 °C
Environmental conditions	humidity	maximum 93 %, moisture condensation should be excluded
Design	modular installation device (MDRC)	modular installation device, Pro *M*
	dimensions	90 x 72 x 64.5 mm (H x W x D)
	mounting width	4 modules at 18 mm
	mounting depth	68 mm
Installation	on 35 mm mounting rail	to EN 60 715
Mounting position	as required	
Weight	0.16 kg	
Housing, colour	plastic housing, grey	
Approvals	KNX to EN 50 090-1, -2	certification
CE mark	in accordance with the EMC guideline and low voltage guideline	

[1] The length relates to the common DALI control cable. The maximum values are rounded off and relate to the resistance values. EMC influences are not considered. For this reason, the values should be considered as absolute maximum values.

[2] Both "normal" lamps as well as battery operated emergency lighting can be connected in a mixed configuration to the DGN/S 1.16.1. However, the maximum number of DALI devices may not exceed 64.

8

Device type	Application program	Maximum number of communication objects	Maximum number of group addresses	Maximum number of associations
DGN/S 1.16.1	Switch Dim Emergency 1f DALI/…*	246	254	255

* … = current version number of the application program. **Please observe the software information on our homepage for this purpose.**
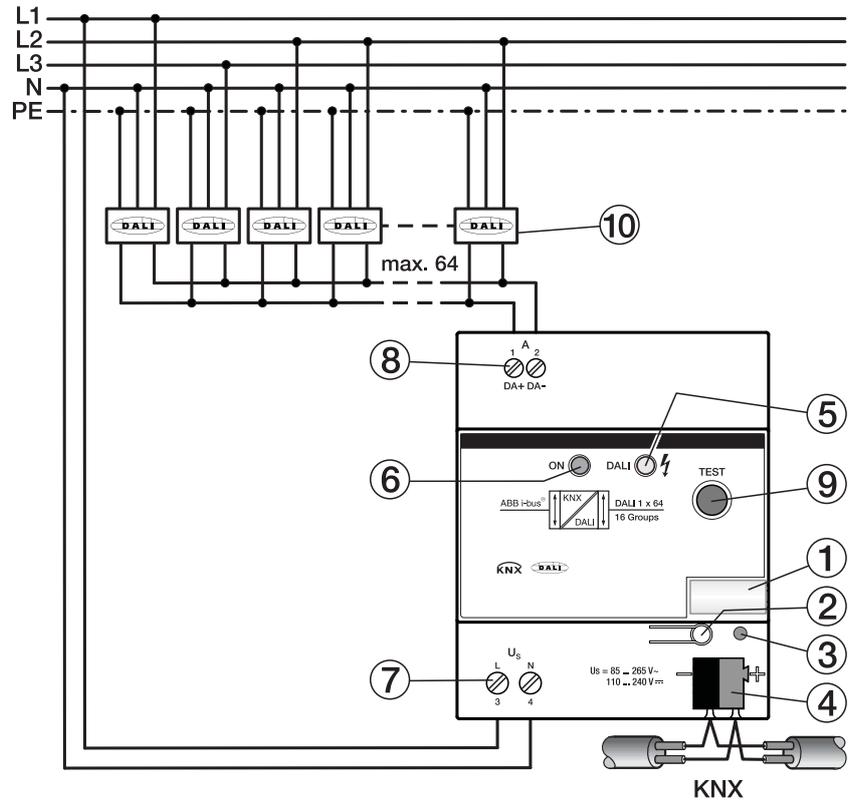
Note
The DGN/S is compliant to the SELV characteristics to IEC 60 364-4-41 (VDE 0100-410).
DALI does not need to feature SELV properties, and it is possible to route the DALI control lines together with the mains voltage on a multi-core cable.

Note
For a detailed description of the application program see "*DALI Gateway Emergency Lighting DGN/S 1.16.1*" product manual. It is available free-of-charge at *www.abb.com/knx*.
The ETS and the current version of the device application program are required for programming.
The current version of the application program is available for download on the internet at *www.abb.com/knx*. After import in the ETS, it is available in the ETS under *ABB//Lighting/DALI/ Switch Dim Emergency 1f DALI*.
The device does not support the closing function of a KNX device in the ETS. If you inhibit access to all devices of the project with a *BCU code*, it has no effect on this device. Reading out data and programming is still possible.

8

8

ABB i-bus® KNX
DALI Gateway, Emergency Lighting, MDRC
DGN/S 1.16.1, 2CDG 110 142 R0011

Circuit diagram

L1
L2
L3
N
PE

max. 64

2CDC 072 012 F0011

KNX

1 Label carrier
2 Button ⊐○ (KNX)
3 LED 🔴 (KNX)
4 Connection terminal (KNX)
5 LED 🟡 (DALI fault)
6 LED 🟢 (Gateway ON)
7 Gateway operating voltage
8 Output (DALI)
9 Button ◉ (DALI)
10 DALI device, without/with function *emergency lighting with individual battery*

Dimension drawing

58
43.5
6.5
90
45
72

2CDC 072 014 F0011