

N 527, N 528 Modular universal dimmers

20...500 VA



260 €*

N 527/31

20...500 VA



150 €*

N 527/41

20...1000 VA



200 €*

N 527/51

20...300 VA



220 €*

N 528/31

20...300 VA



120 €*

N 528/41

Main modules

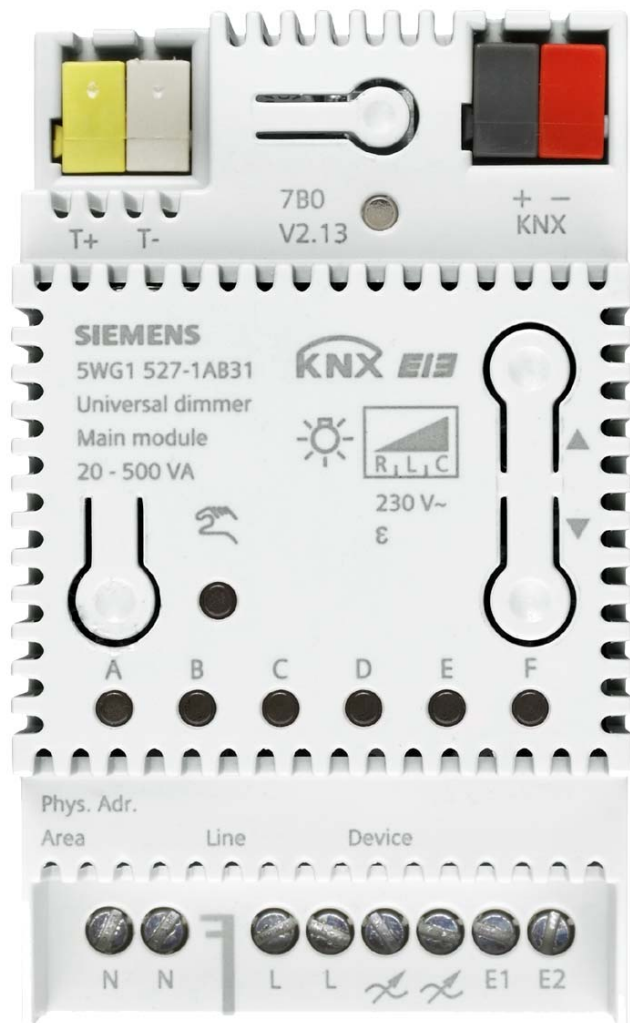
Submodules

* LP as of June 2009

Common features of all modules

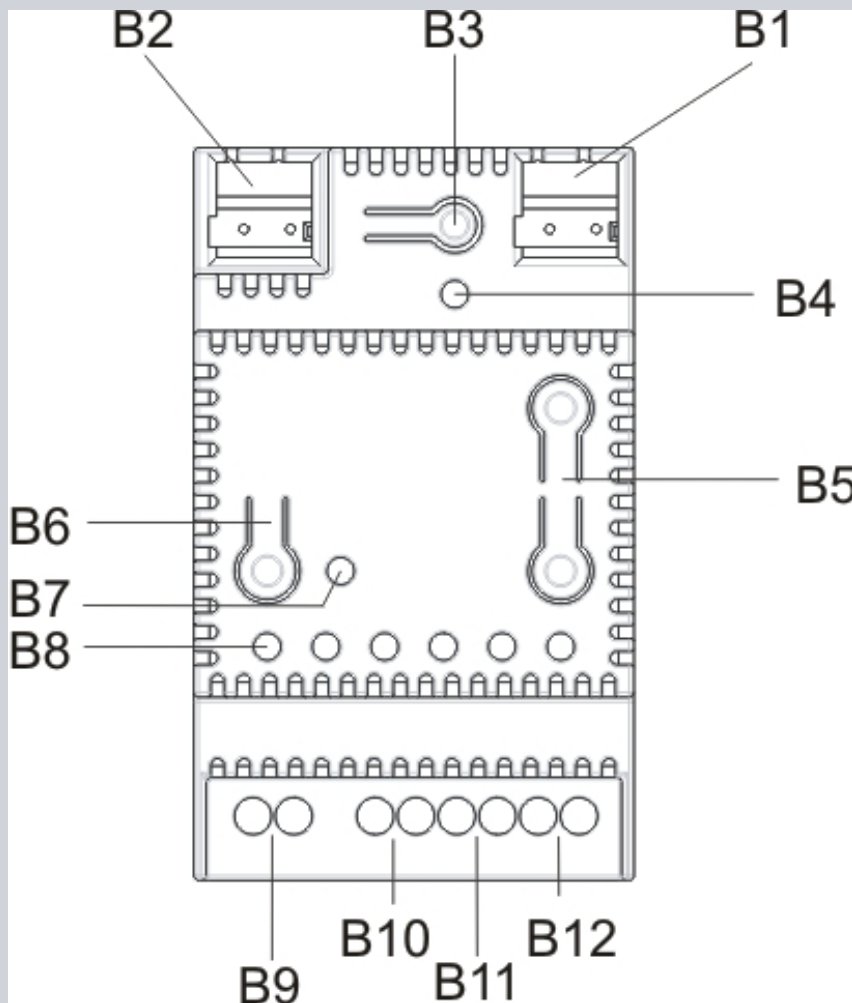
- Switching and dimming of resistive, inductive or capacitive loads; the connection of mixed loads (as well of inductive as of capacitive loads) is not permitted
- Automatic adaptation to the load type, but also settable per parameter to leading / trailing edge phase control (trailing edge phase control is needed e.g. for dimming electronic transformers)
- Power supply of electronics by an integrated mains adaptor for AC 230 V
- **To be operated stand-alone:** switching and dimming possible after connection of conventional pushbuttons to inputs E1 and E2 (inputs for AC 230 V)
- Electronic protection against short circuit and overload
- Electronic protection against temperature rise
- All modules are only 3 MU broad (MU – module units)

Main modules N 527/31, N 528/31



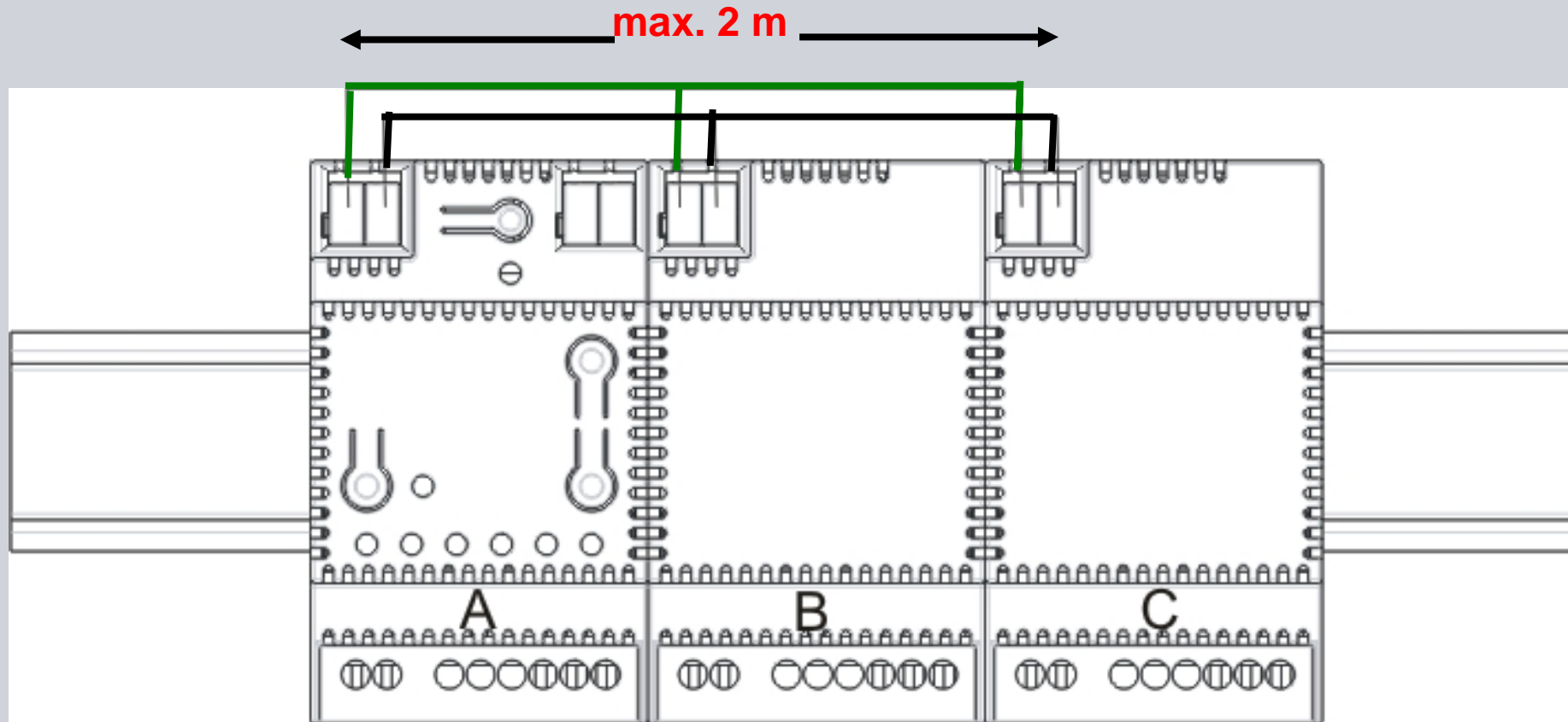
- Only a main module can be connected to the KNX bus
- Up to 5 submodules can be connected to a main module via a twisted pair of wires (max. length 2 m)
- Submodules may be connected in any combination, i.e. dimmers with 1 to 6 channels and identical or different load per channel are realizable
- The status of all channels is displayed by bicolored LEDs at the main module (green=OFF, red=ON, blinking=failure)
- Each channel can be selected in direct mode (yellow LED is on) via the direct mode pushbutton and can then be switched and dimmed via the two pushbuttons above LED „F“

Main module N 527/31, N 528/31



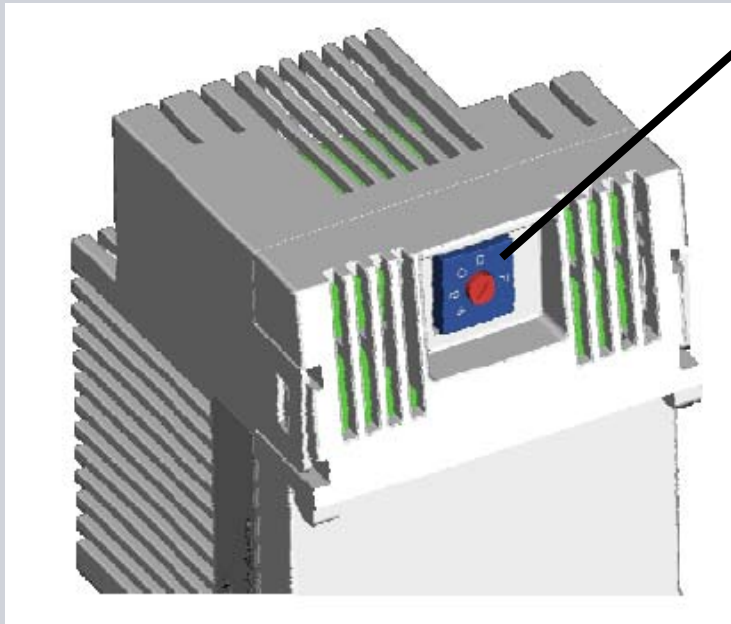
- B1** Bus terminal block
- B2** Low voltage terminal block for connecting universal dimmer submodules
- B3** Commissioning pushbutton
- B4** Commissioning LED
- B5** Pushbutton for switching / dimming the selected device (channel)
- B6** Pushbutton for switching between bus- / direct mode and for selecting a device (channel))
- B7** LED (yellow) direct mode = ON
- B8** LEDs (bicolor) for display by continuous light if the channel) is OFF (green) or ON (red) or by blinking that a failure is detected
- B9** Screw terminals for neutral (N) conductor
- B10** Screw terminals for phase (L) conductor
- B11** Screw terminals for connecting the load
- B12** Screw terminals for pushbuttons for direct switching and dimming of the channel

Connection of submodules



Connection of submodules

Rotary switch for adjusting the device address



- With a submodule the device address B...F has to be adjusted via a rotary switch on the bottom side of the submodule.
- A main module must always be set to the device address A.

Submodules N 527/41, N 528/41



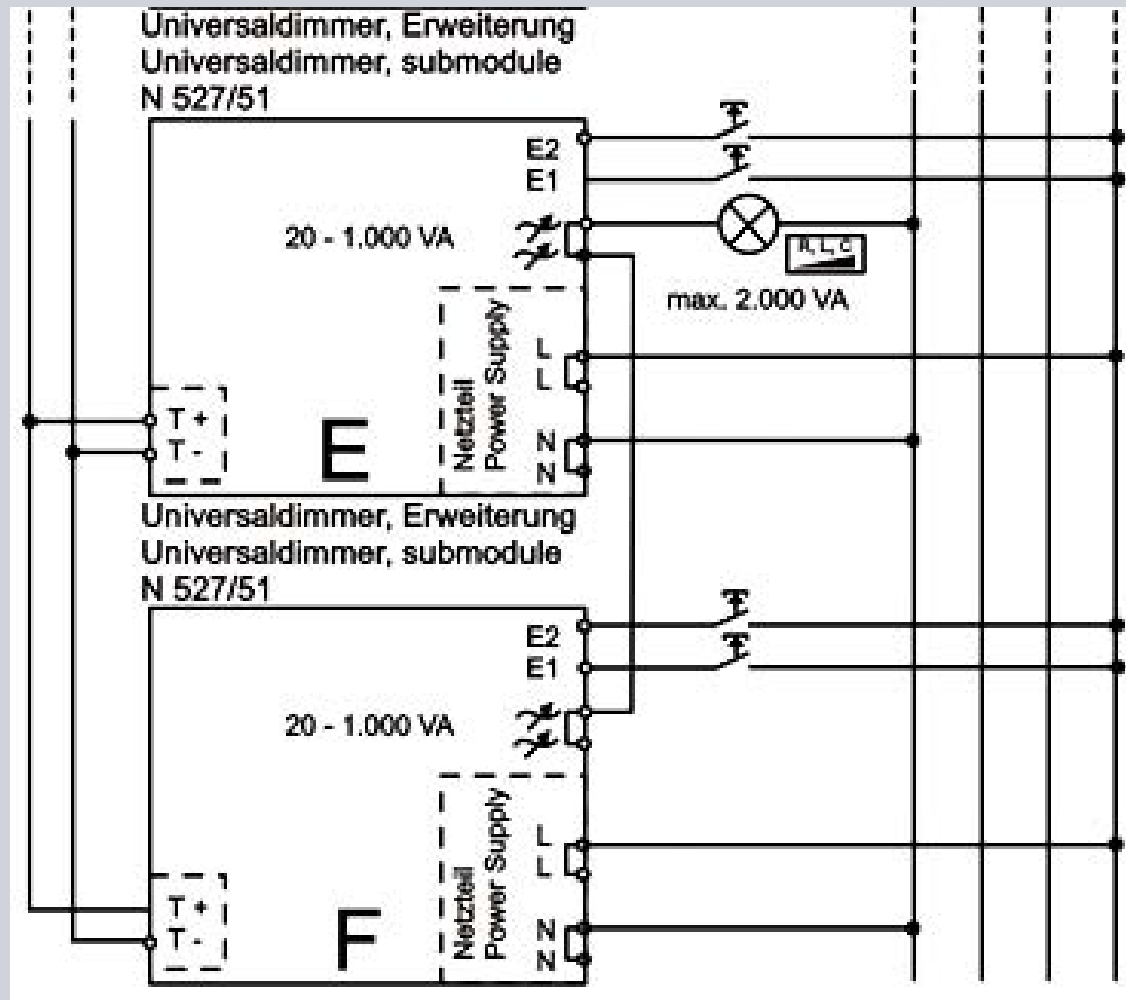
- A submodule may be operated stand-alone; in this case switching and dimming are effected by conventional pushbuttons connected to inputs E1, E2 (inputs for AC 230 V)
- In bus mode the operation of the pushbuttons at the inputs E1, E2 may be transmitted over the bus and may be used for switching and dimming other actuators

Submodule N 527/51 (20...**1000** VA)



- **Only 3 MU wide (1 MU = 18 mm) !**
- This submodule may be operated stand-alone; in this case switching and dimming are effected by conventional pushbuttons connected to inputs E1, E2 (inputs for AC 230 V)
- In bus mode the operation of the pushbuttons at the inputs E1, E2 may be transmitted over the bus and may be used for switching and dimming other actuators
- **The outputs of two N 527/51 may be switched in parallel for switching and dimming of loads 40...2000 VA**
- **The parallel operation of two N 527/51 is only permitted if both are connected to a main module; at both N 527/51 pushbuttons may be connected to inputs E1, E2 for direct switching and dimming**

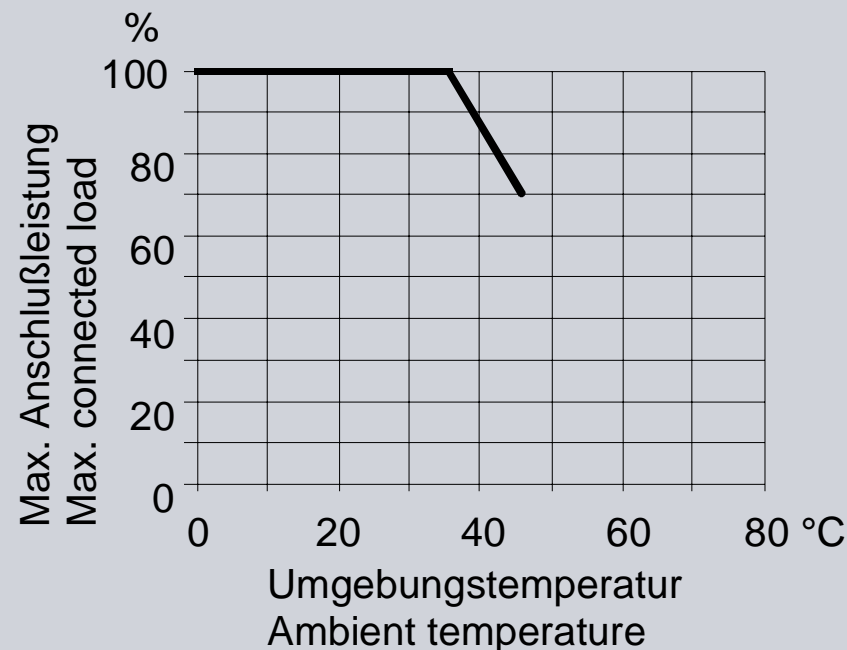
Parallel operation of two N 527/51



Reduction of max. connected load

The indicated max. permitted load at a N 527/31, N 527/41 or N 527/51 is valid with an ambient temperature up to +35 °C. With higher ambient temperatures the max. permitted load has to be reduced (see figure).

This has specially to be considered if the device is mounted in a cavity floor or is used for overhead or horizontal installation.



Software of the modular dimmers (1)

- The product data base for N 527/31 and N 528/31 is a plug-in to the ETS which supports the export and import of a project as xml-file.
- For loading the data base of N 527/31 and N 528/31 you need the ETS up from version 3.0 f.
- Each dimmer module contains its own software for detection of load type and for autonomous switching and dimming.
- The application program for a main module controls the main module as well as all connected submodules.
- At mains voltage failure all current switching / dimming status information are stored in the main module; the behavior at mains voltage recovery can be set by a parameter.
- At bus voltage failure only the communication over the KNX bus fails. All dimmers will continue to work autonomously. The behavior at bus voltage failure / recovery can be set by parameters.

Software of the modular dimmers (2)

- The application program contains the following functions per channel:
 - switching, without / with ON / OFF delay,
 - dimming brighter / darker and dimming to a dimming value in %,
 - switching ON / OFF by dimming / dimming value,
 - night mode with temporary limited ON-time,
 - 1-level and 2-level time switch mode,
 - warning before OFF at night mode and time switch mode,
 - sending of all pushbutton actuations at inputs E1 and E2 as command telegrams via the KNX bus,
 - sending of switching / dimming status information,
 - monitoring / messaging of short circuit, overload, temperature rise,
 - blocking / releasing of a channel,
 - adjustable behavior at mains voltage recovery,
 - adjustable behavior at bus voltage failure / recovery,
 - integrated 8-bit scene control with allocation of a channel into up to 8 scenes.

Software of the modular dimmers (3)

- The application program contains the following parameter windows:
 - „Device overview“, for setting number and type of the connected submodules and the type of configuration per channel (identically, individually or parallel with N 527/51),
 - „Functions, objects“, for selection of additional functions and objects,
 - „General“, for setting the ON-time in direct mode, the time up from which a pushbutton actuations counts as „long“, the behavior at mains voltage recovery and bus voltage failure / recovery,
 - „Channel X“, for setting per channel: mode of operation, load type adaptation, min. / max. dimming value, dimming times for switching, dimming brighter / darker and dimming value, switching ON / OFF via dimming, ON / OFF delay,
 - „X: 8-bit scenes“, for allocation of channel X into up to 8 scenes.

Highlights at a glance

- You can offer and create dimmers with 1 to 6 channels but with only 1 bus interface.
- You can offer and create multi-channel dimmers with outputs for the same max. power or for different max. powers.
- You can offer a cost-saving and only 3 MU (3x 18 mm) wide 1000 VA dimmer
- You can offer the dimming of loads up to 2000 VA by switching two 1000 VA dimmers in parallel.
- You can offer the use of low-cost conventional pushbuttons at the inputs E1 and E2 for direct switching and dimming of a module.
- All modules can be operated stand-alone if necessary (with push-buttons at inputs E1, E2) and can be integrated into a KNX network at any time.

KNX/DALI Gateway N 141/02



Product data

Product
KNX/DALI Gateway

Order no.
5WG1 141-1AB02

Units per Package (Pieces)
1



Application Area

Application in Non-Residential Buildings

- Switching and Dimming of
 - Luminaires with DALI ECG
 - Self-contained emergency luminaires, with DALI inverter and DALI ECG
 - Emergency luminaires with DALI ECG
(Emergency operation with central battery / emergency generator)
- RGB control
- Effect lighting



Technical Data

- KNX bus power:
via bus line
- KNX bus current: 5 mA
(only half standard bus load !)

- Electronic and DALI output:
 - integrated power supply for
AC/DC 110-240 V, 50-400 Hz
 - Power usage: max. 7 W



Technical Data

- Mains connection:
3 terminals (PE, N, L)
- Note:
The mains power connection to the N141/02 must be protected by a breaker with characteristic B or C for a max. operating current of 6 A!
- DALI output acc. to IEC 60929
- max. 64 DALI devices with
>8kOhm input impedance
- DALI voltage: ca. DC 19 V,
potential-free, short circuit proof



Technical Data

Connections

- Push-in terminals for mains voltage and DALI output, insulation strip length 10 ... 11 mm
- Permissible conductor cross-sections:
 - 0,5 ... 3,3 mm² (AWG 12) single core
 - 0,5 ... 3,3 mm² (AWG 12) stranded multi-core
 - 0,5 ... 3,3 mm² (AWG 12) finely stranded, untreated
 - 0,5 ... 1,5 mm² finely stranded, with connector sleeve
- KNX bus line:
 - Pressure contacts on data rail and bus terminal



Technical Data

Mechanical Data

- Housing: plastic
- Dimensions: DIN rail mounted device in N-system dimensions, width: 4 module units (1 module unit = 18 mm)
- Weight: ca. 150 g
- Fire load: ca. 3400 kJ
- Mounting: Snap-on mounting on DIN rail
EN 60715-TH35-7,5



Display and operating elements

A1 Button for toggling between normal / addressing mode for transferring the physical address

A2 LED (red) for displaying normal mode (LED off) or addressing mode (LED on); it is automatically extinguished once the physical address has been transferred

A3 Plug for bus connecting terminal

A4 Pushbuttons for direct operation (all lamps On / Off)

A5 Red LED
 direct mode: status all lamps (On/Off)
 display DALI – failure
 flash N times – approx. 1s break – flash N times ...
 N = 1: -> 230V connect to DALI – Input!
 N = 2: -> shorted DALI – cable!
 N = 3: -> low DALI – voltage!
 N = 4: -> no DALI – device connected!

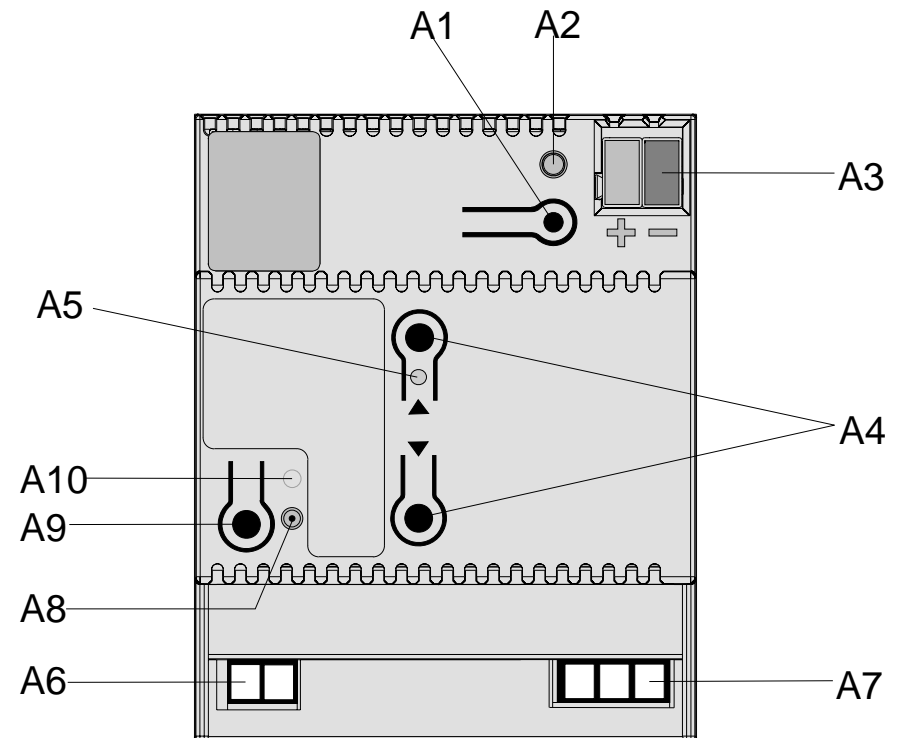
A6 Terminals for the DALI bus cable (D+, D-)

A7 Terminals for protective earth, neutral and phase conductor (PE, N, L)

A8 LED (yellow) for displaying when direct mode = On

A9 Button for toggling between bus / direct mode

A10 LED (green) for displaying the operating voltage



Functions Object Overview

<u>For operation modes</u>	<u>for general status messages</u>	<u>for max. 16 Scenes</u>	<u>for max. 16 Effects</u>	<u>for max. 16 Groups</u>	<u>for individually addressed ECG's</u>	<u>for Test of self-contained emergency ECG</u>
Night mode		8bit Scene	Effects	Switching, Group x	Switching, „ECG x“	Start Test „Inverter x“
Emergency mode	New!			Dimming, Group x	Dimming, „EVG x“ New!	New!
				Dimming value, Group x	Dimming value, „ECG x“	
Status Direct operation	DALI, Status power supply			Status Dimm. value, Group x	Status Dimm. value, ECG	Test result „Inverter x“
	DALI, Status short circuit			Status switching, Group x	Status switching, ECG	New!
	Status switching „Luminaire xy“			Status, Group x (Lamp failure)		
	Status dimming „Luminaire xy“			Status, Group x (ECG failure)	Failure status, ECG	
	Failure status „Luminaire xy“			Status, Group x (Failure status)	New!	
				New!		

Status Objects

Functions

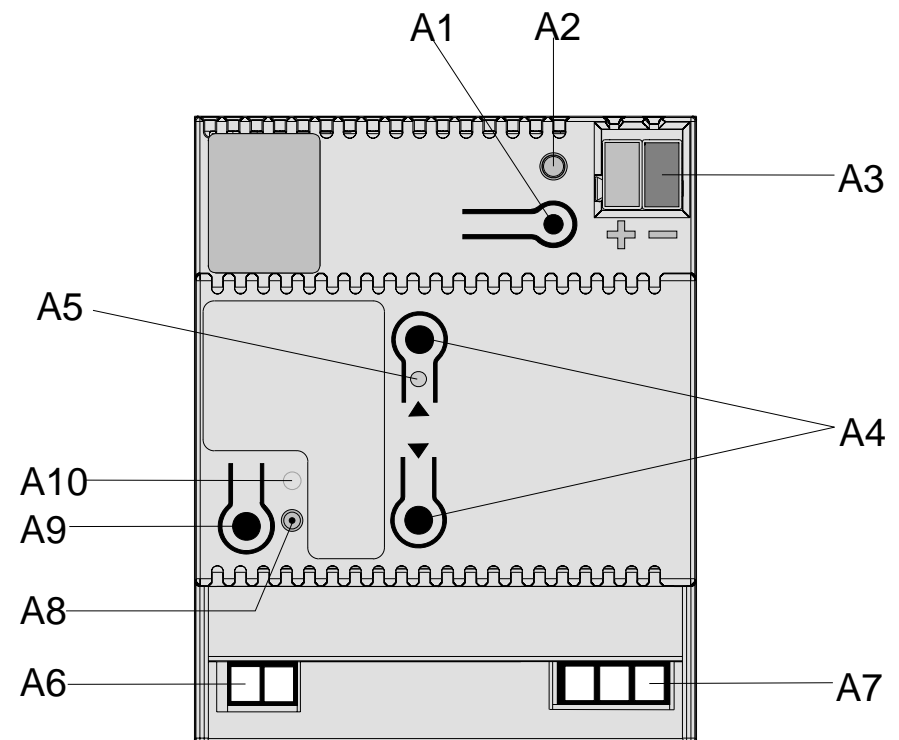
Operating mode: Direct operation

Description

- Yellow LED (A8) is lit
- Operation via push button (A4) is enabled
- Only operation of all ECG's together is possible
- Status display via red LED (A5)
- Telegrams received via bus are not executed but saved as target value

Application area:

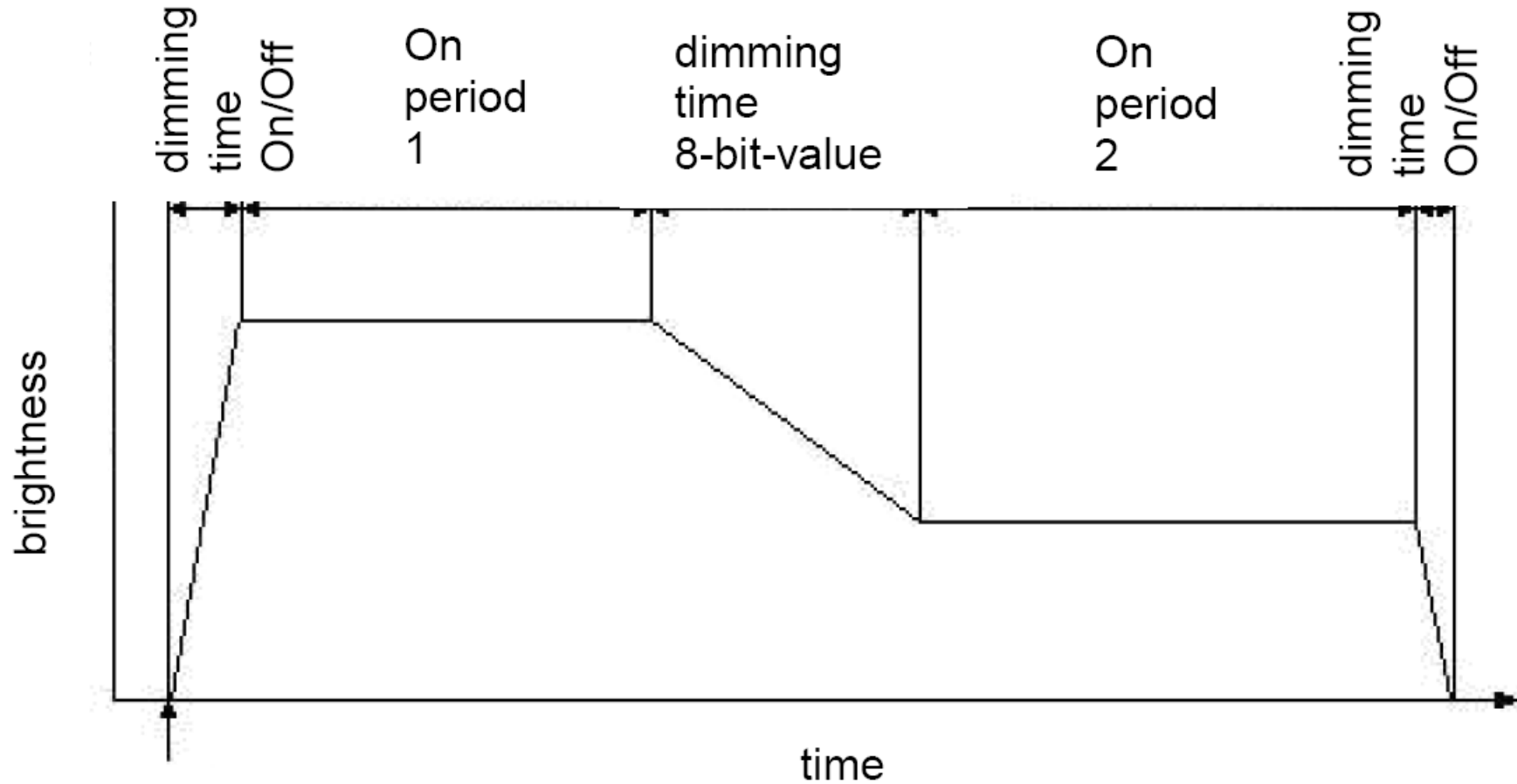
- Lamp test
- Replacement for building site control function
- Manual operation at the device



- Description:
 - In this operation mode groups can only be switched on for a limited time.
 - Via the parameter „Warn before switching-off during night mode “ the group is not turned off immediately but is slowly dimmed down (ca. 30s) and then turned off.
- Application:
 - Cleaning crew lighting

Functions

1- and 2-stage timer operation



ON Telegramm

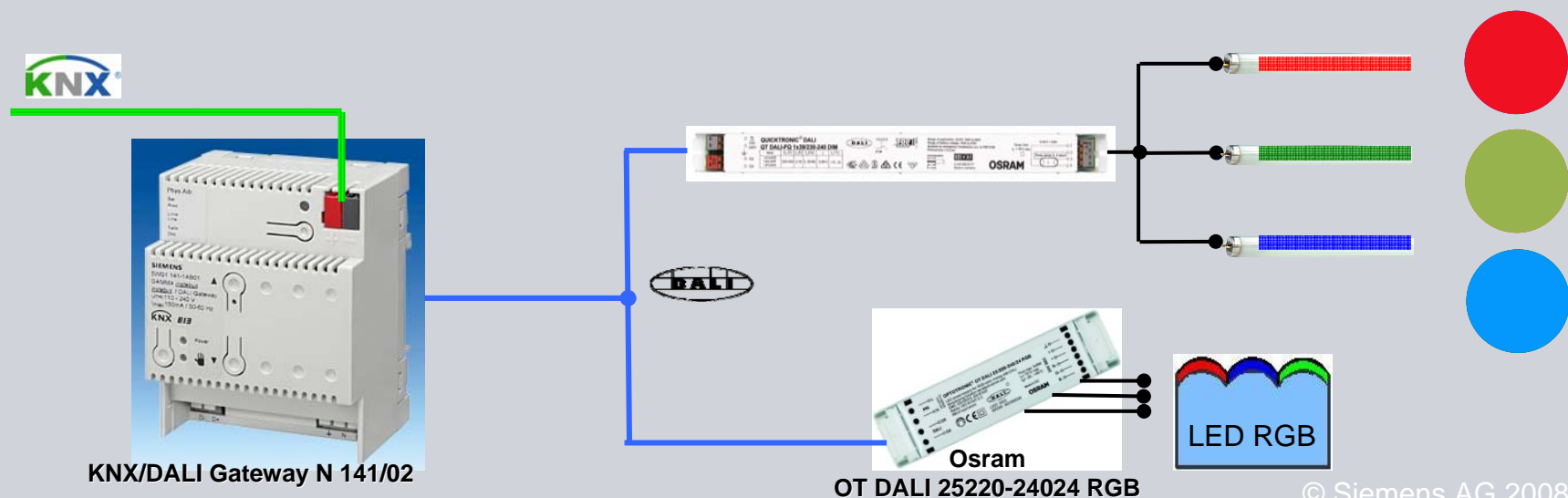
Functions

Scene control

- Up to 16 scenes can be configured.
- Different groups can be included in a scene.
- Dimming values (scene values) can be assigned to individual groups.
- A scene can be associated with a dimming time
(Observe Note on dimming time)
- Timer functions cannot be executed as part of a scene!

Functions Effect control

- Up to 16 effects with up to 500 steps can be configured.
- Groups, single ECG's and scenes may be included in an effect.
- The number of cycles may be unlimited or may be a defined number.
- Dimming values and dimming times can be assigned to groups, individual ECG's, and scenes. (Observe Note on dimming time)
- **New!** Effects are triggered by 8-Bit Scene commands.



KNX/DALI Gateway N 141/02

Osram
OT DALI 25220-24024 RGB

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Functions

Emergency operation



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- Via parameter the failure of a pre-defined number of ECG's can be determined as a power supply failure, that is annunciated via Object 6 „N141/02, power supply failure“ to Object 8 „emergency operation“ to other KNX/DALI Gateways.
- During emergency operation all connected luminaires are dimmed to the value set via the parameter “Dimming value on emergency”.
- Via Object 5 the KNX/DALI Gateway annunciates the power recovery at the DALI ECG's.
- Wenn power resumes the connected ECG's dim to the dimming value that is pre-defined via the parameter “Behaviour on emergency operation OFF”.

Functions

ECG's with integrated constant light level control



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ECGs with integrated constant light level control and directly connected light level sensor are supported as follows:

- On-/Off switching
Wenn switching on the luminaire switches on with maximum brightness. Then it dims to the preset fixed setpoint.
- Dimming brighter/darker
Via dimming brighter/darker the setpoint of the constant light level control is shifted temporarily until the luminaire is turned off. When the luminaire is turned on again it is controlled to the preset fixed setpoint.

The following limitations apply to these ECGs:

- „Normal Mode“ is the only permissible selection as „Operation Mode“.
- It is not possible to add such ECG's to DALI Groups, as the status for the individual ECG's may be different.
- It is not possible to assign such ECG's to a scene.
- The parameters „Starting value“, „Dimming value on emergency“, „ Dimming time for switching on/off from 0% to 100% [hh:mm:ss] “, „ Dimming time for dimming brighter/darker from 0% to 100% [in seconds] “, „ Dimming time for set value from 0% to 100% [hh:mm:ss] “, „Switch On/Off via dimming brighter/darker“, „Switch on/off via set value“ and „Accept dimming value“ are deactivated and have no effect.

Test functions

- Test ECG's
 - On/Off – switching of all ECG's together
 - Read/change dimming values per ECG
 - Read parameter values
 - Trigger function test

- Test Groups
 - On/Off – switching, Dimming brighter/darker per group
 - Read / Change dimming values per group
 - Read parameter values

Test functions

- Test Scenes
 - Single scenes can be recalled
 - Change of individual scenes is possible

- Test Effects
 - Individual effects can be recalled
 - Effects can be executed at an accelerated speed.
 - Change of individual effects is possible

Commissioning N141/02

1. All DALI devices must be connected with the KNX/DALI Gateway N 141/02. The mains power supply must be available at the DALI devices and at the KNX/DALI Gateway N 141/02.
2. The individual address is loaded into the KNX/DALI Gateway N 141/02.
3. The application program was already loaded into the KNX/DALI Gateway N 141/02 in the factory.
A complete download of the parameters and group addresses takes about six minutes.
It is recommended to load configuration data into the device using partial download.
4. In commissioning mode (bus access is available) the parameter window of the KNX/DALI Gateway N 141/02 to be commissioned is open.
5. After assigning the ECG's and setting the parameters this new data must be loaded into the KNX/DALI Gateway N 141/02 (see item 3).

Commissioning DALI devices

Manual Assignment

- ECG's must be operational and connected with the N 141/02
- Press the button „Search ECG's“ in the commissioning window.
(Search may take a few minutes)
 - DALI devices found appear in the right (narrow) window
- When clicking on an ECG it will identify itself (by blinking, ...)
- Now ECG's can be assigned from right to left
- After assignment of the ECG's this configuration is downloaded via ETS into the KNX/DALI Gateway N 141/02

Assignment via CIN

- ECG's must be operational and connected with the N 141/02
- DALI devices with CIN are found and then immediately assigned in the left window
- After assignment of the ECG's this configuration is downloaded via ETS into the KNX/DALI Gateway N 141/02

Commissioning when exchanging ECG's

- Defective ECG's have been replaced and the „new“ ECG's must be operational and connected to the N 141/02.
- In the commissioning window select the button „Search ECG's“.
(Search may take a few minutes)
 - newly found DALI devices appear in the right (narrow) window
- Via mouse click on an ECG this can be identified (blinking,...)
- Now the „new“ ECG's can be assigned from the right to the left
- After the assignment download with ETS into the KNX/DALI Gateway N 141/02
- The data from the „old“ ECG is stored in the „old“ N 141/02 and will be downloaded to the „new“ ECG provided that the correct assignment happened.

Customer benefit (building operator)

New!

- Integration of self-contained emergency luminaires or emergency luminaires (emergency power supply via central battery) in energy efficient lighting control (presence-, schedule- or light level dependent)
- Integrated energy efficiency via
 - Night mode
 - Timer mode, 1- and 2-staged
- Usage of annunciation of lamp failures / ECG failures for optimization of maintenance work flows (demand driven maintenance)
- Integrated scene control
 - Changing and Saving of scene configuration by the end user is possible
- Integrated effect control for e.g. running light effects or cyclically repeating coloured light effects
 - Start of effect control via 8-Bit scene commands

New!

High flexibility

- Each of the up to 64 ECG's can be assigned to one of up to 16 DALI groups or can be controlled individually
- In case of room or usage changes only a reconfiguration is required (new assignment of luminaires in ETS). No wiring changes!

Advantages for the installer

- Simple system design
 - No switching loads have to be considered for N 141/02
 - Simple wiring
- Commissioning only with ETS
 - No additional tool required.
 - Structured commissioning window for commissioning of DALI ECG's
 - Support of DALI commissioning via CIN (Chip Identification Number, only available with Osram ECG)
- DIN rail mounted device in space-saving N-system dimensions
 - Width 4TE (1TE =18mm)
 - Plug-in terminals for mains voltage and DALI output
 - Simple mounting
- Test function for scenes, effects, groups, individual ECG's
- Switching at the device from bus operation to direct mode for lamp test, building site function

Contact

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