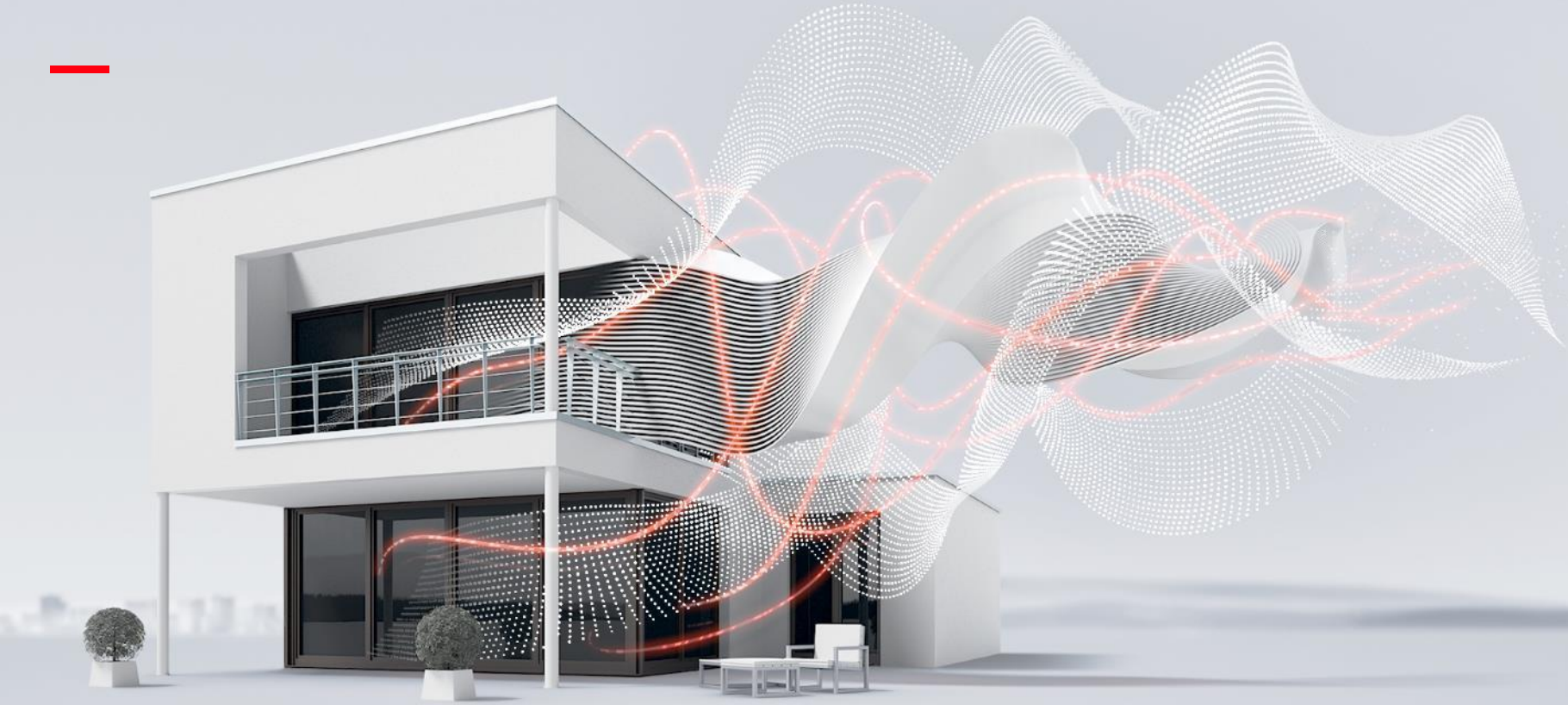


APRIL 2020

KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

Online Learning Session – Competence Center Europe – Smart Buildings

Thorsten Reibel, Jürgen Schilder, Stefan Grosse, Martin Wichary & Ilija Zivadinovic

 Document ID.: Rev.:

Online Learning Session – Competence Center Europe - Smart Buildings

NEW !!!

From home office to home office

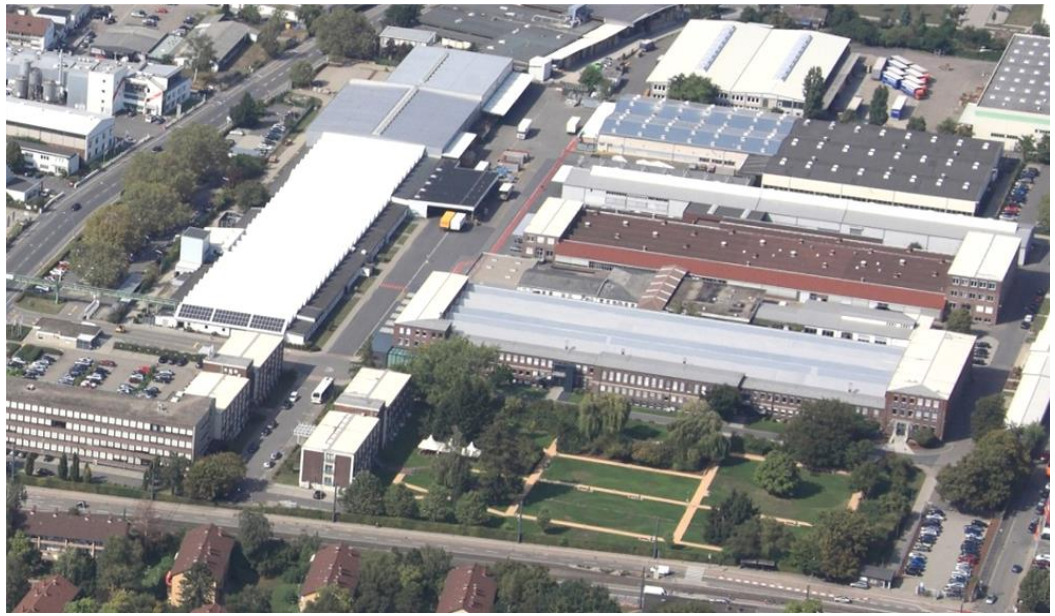
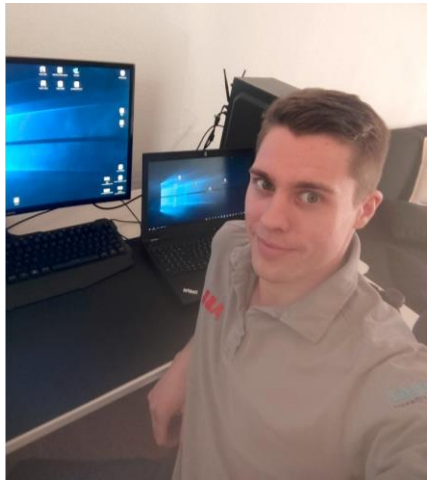


ABB STOTZ-KONTAKT GmbH
Heidelberg / Germany



Agenda

What is the “Standby switch-off” function and how does it work?

Commissioning of the “Standby switch-off” function

- ETS parameter
- Group objects
- Assignment of group addresses

ABB i-bus® Tool

Practical demonstration

KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

Online Learning Session

KNX DALI Gateway Premium DG/S x.64.5.1

Online Learning Session

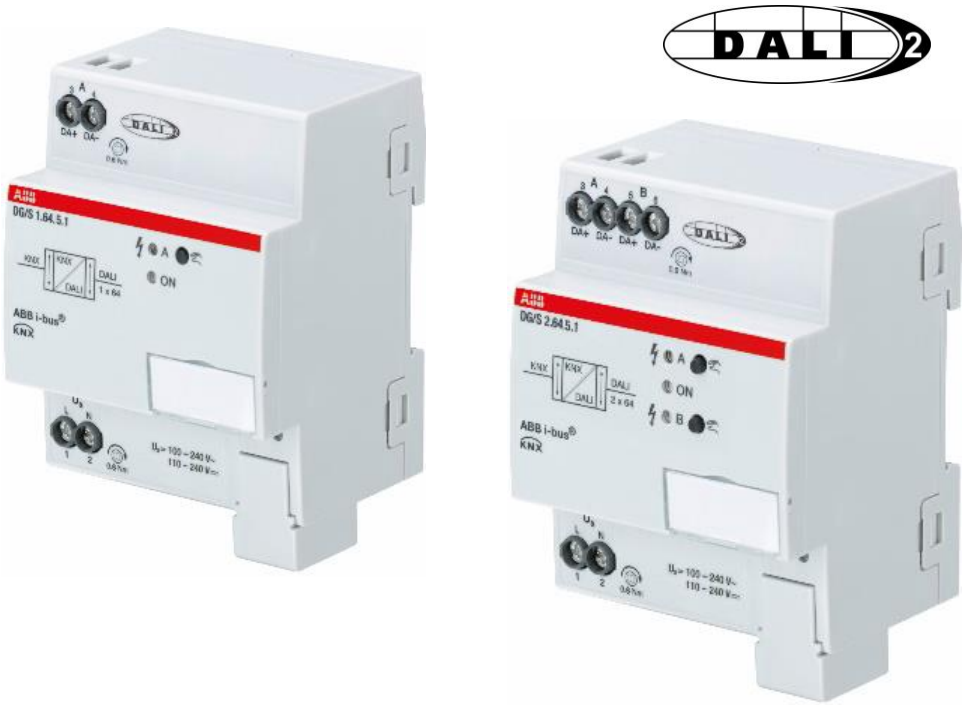
KNX DALI Gateway Premium DG/S x.64.5.1

Hardware

– DG/S 1.64.5.1 (one channel, 64 ballasts)
– DG/S 2.64.5.1 (two independent channels, 2 x 64 ballasts)

The following ballast can be operated on the gateway

– Normal DALI ballasts (device type 0)
– DALI single battery emergency lighting converter (device type 1)
– Colour-controlled DALI ballast (device type 8)
– Functions
  - Flexible combination of DALI groups or single control
  - ABB i-bus® tool support
  - Templates
  - Tunable white
  - Dim2Warm
  - Human Centric Lighting
  - **Standby switch-off**
  - …



KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

What is the “Standby switch-off” function?

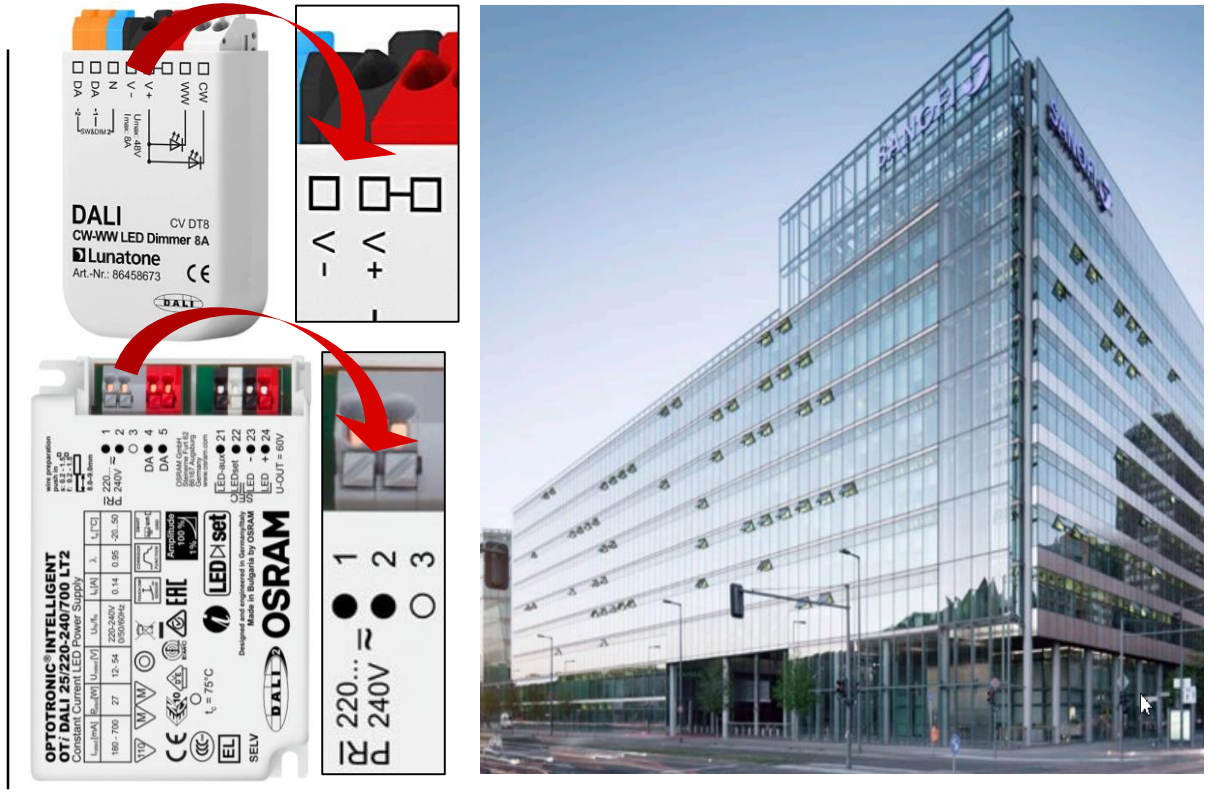
All ballasts are permanently connected to the supply voltage

A modern ballast has a power loss of approx. 0.12 to 0.2 Watts in stand-by mode (switched off)

With a large number of ballasts in a building, this leads to a not inconsiderable energy requirement

The “Standby switch-off” function saves energy by switching off the supply voltage of ballasts when they are all in standby (switched off)

→This serves to save energy



Source: Internet

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Function “Standby switch-off”

What is the “Standby switch-off” function?

If only one ballast remains on at a DALI output, no standby switch-off can be carried out

Standby switch-off is available for each DALI output, not for every ballast or group

The supply voltage can, but does not have to, be switched off for all ballasts

The supply voltage of the ballasts is switched on or off in combination with a KNX Switch Actuator SA/S and with a higher load via an installation contactor (e.g. ESB40)

The message "Ballast fault" is suppressed when the ballasts are switched off using the standby switch-off function

Installation contactor (e.g. ESB40)

Switch Actuator SA/S

Source: Lunatone Industrielle Elektronik GmbH

KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

What is the “Standby switch-off” function?

DALI emergency converter are not be integrated in Standby switch-off function

Note:

– Ballasts must support individual DALI power-on level (last value before failure), to be adjusted in the ETS Application under “Fault”

Installation contactor (e.g. ESB40)

Switch Actuator SA/S

Source: Lunatone Industrielle Elektronik GmbH

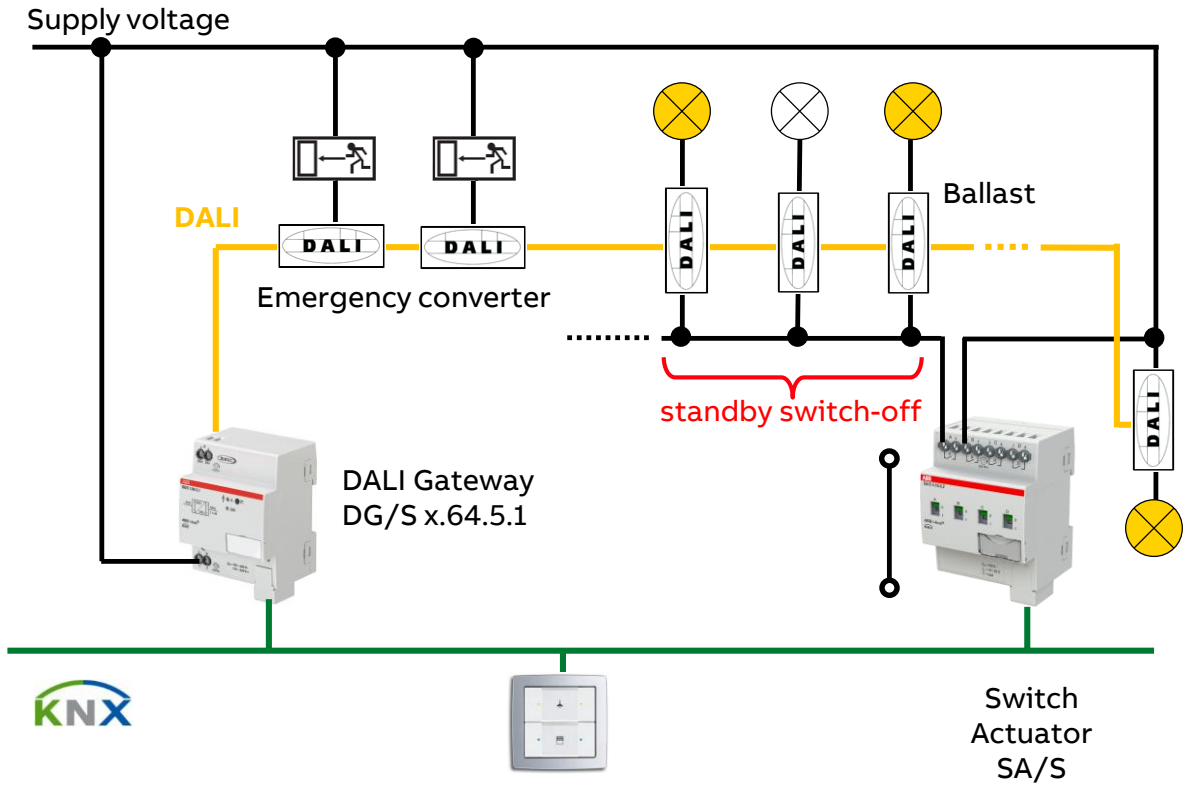
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

Some lights are turned on and all ballasts are supplied with supply voltage

→ no standby switch-off is possible

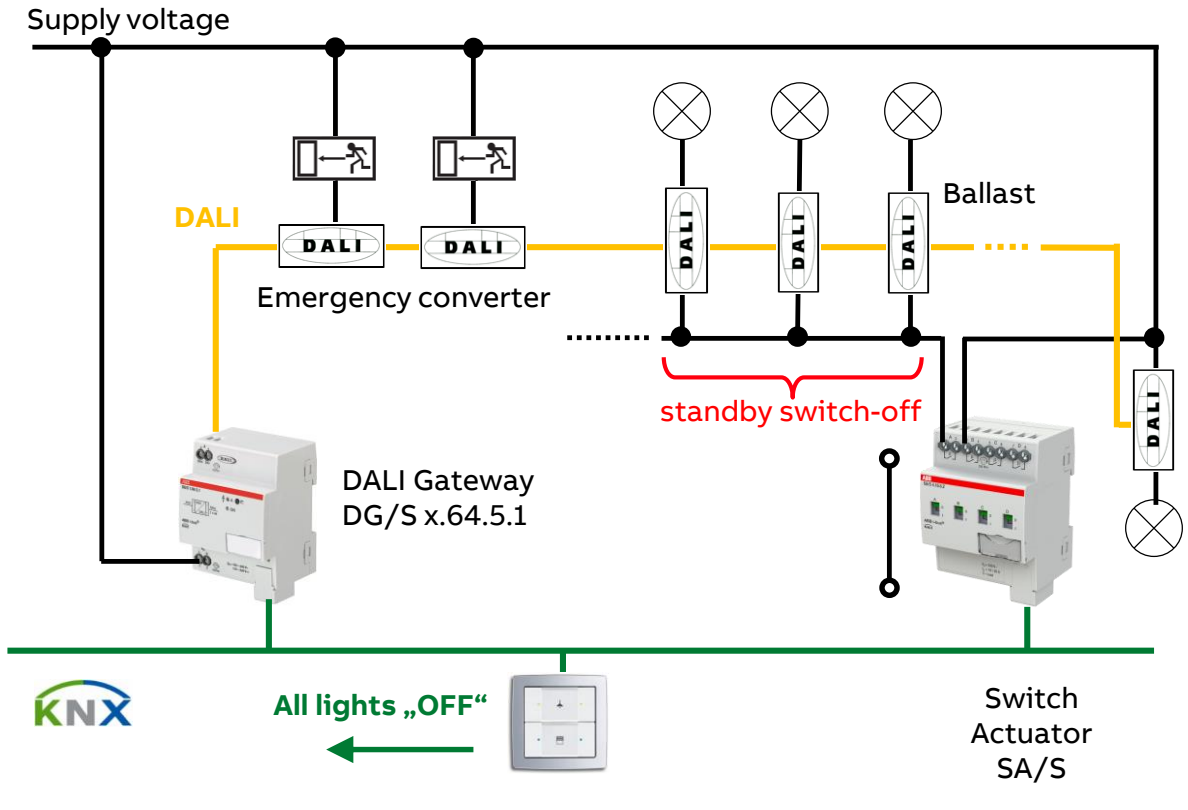


KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

All lights are turned off and all ballasts are in standby at a DALI output



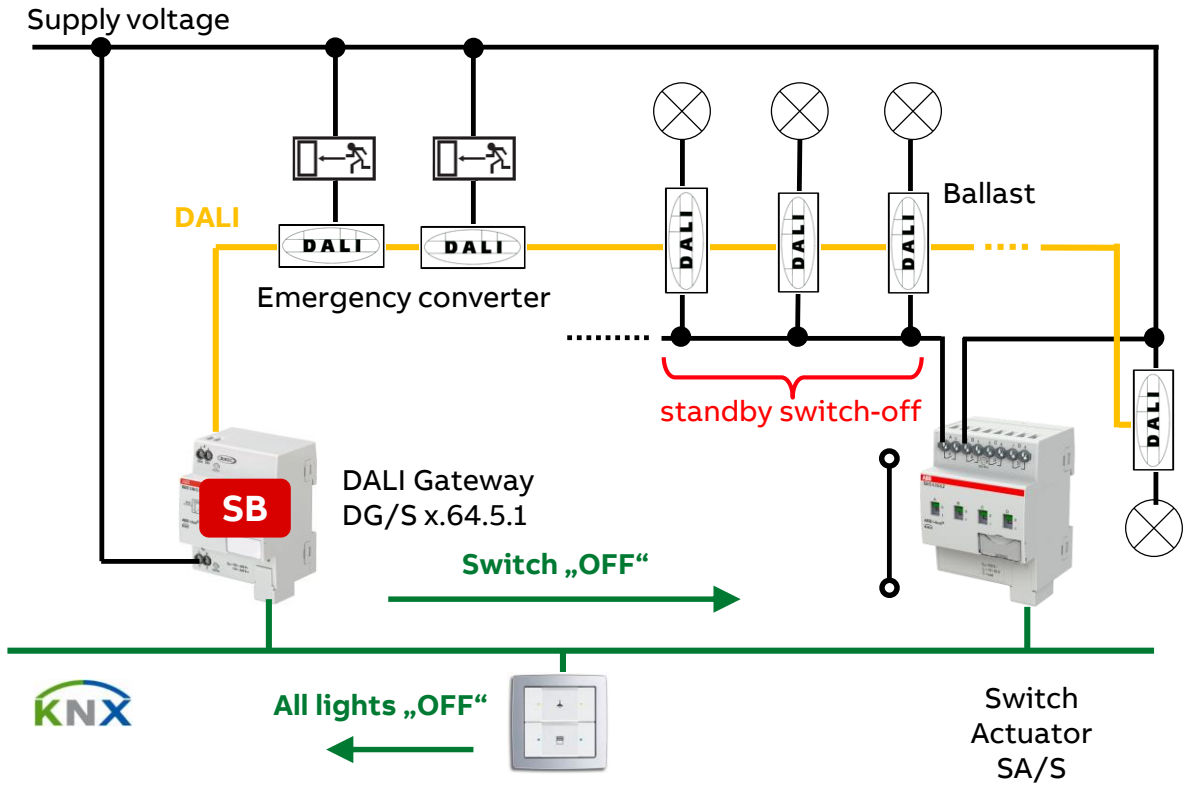
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

All lights are turned off and all ballasts are in standby at a DALI output

- After an adjustable delay time (1…65,535sec.) the standby switch-off function is activated
- A switch “OFF” telegram is sent on KNX



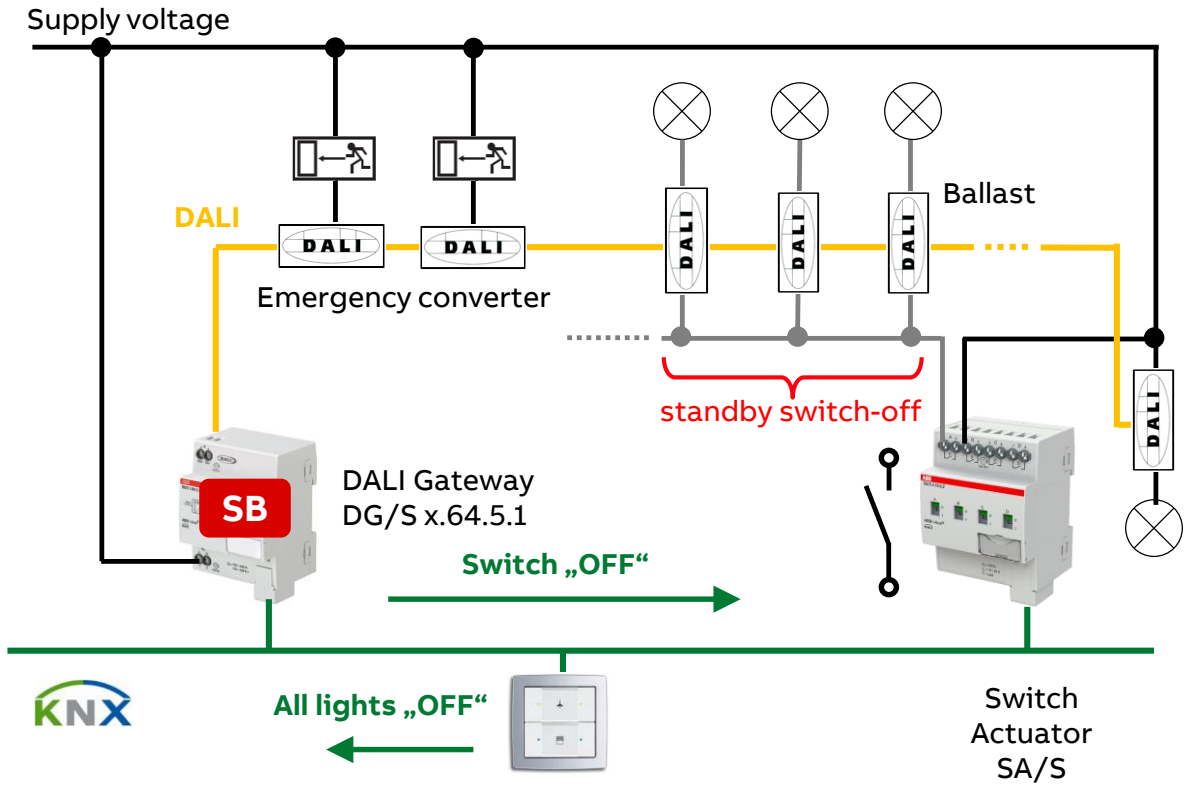
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

All lights are turned off and all ballasts are in standby at a DALI output

- After an adjustable delay time (1…65,535sec.) the standby switch-off function is activated
- A switch “OFF” telegram is sent on KNX
- All Switch Actuator SA/S channels linked with this group address switches off the ballasts supply voltage
  → All connected ballasts are deenergized



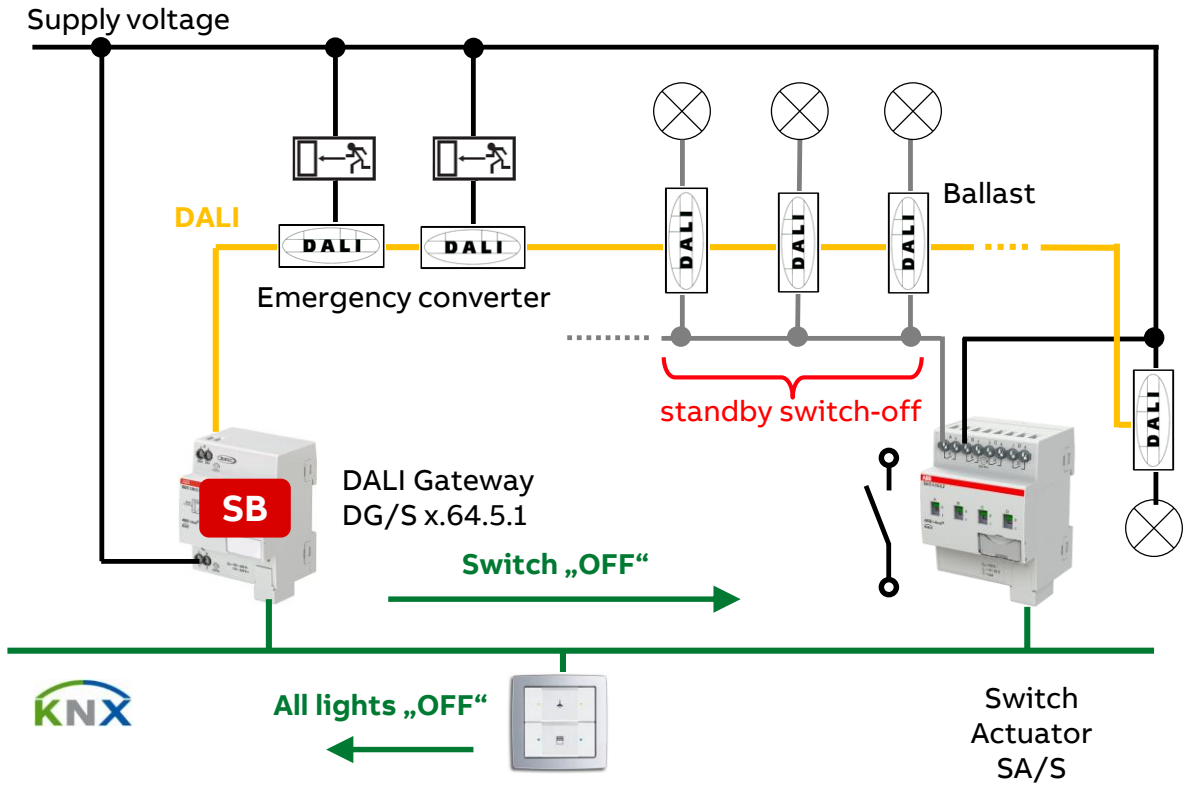
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

All lights are turned off and all ballasts are in standby at a DALI output

- After an adjustable delay time (1…65,535sec.) the standby switch-off function is activated
- A switch “OFF” telegram is sent on KNX
- All Switch Actuator SA/S channels linked with this group address switches off the ballasts supply voltage
  → All connected ballasts are deenergized
- The DG/S message "Ballast fault" is suppressed

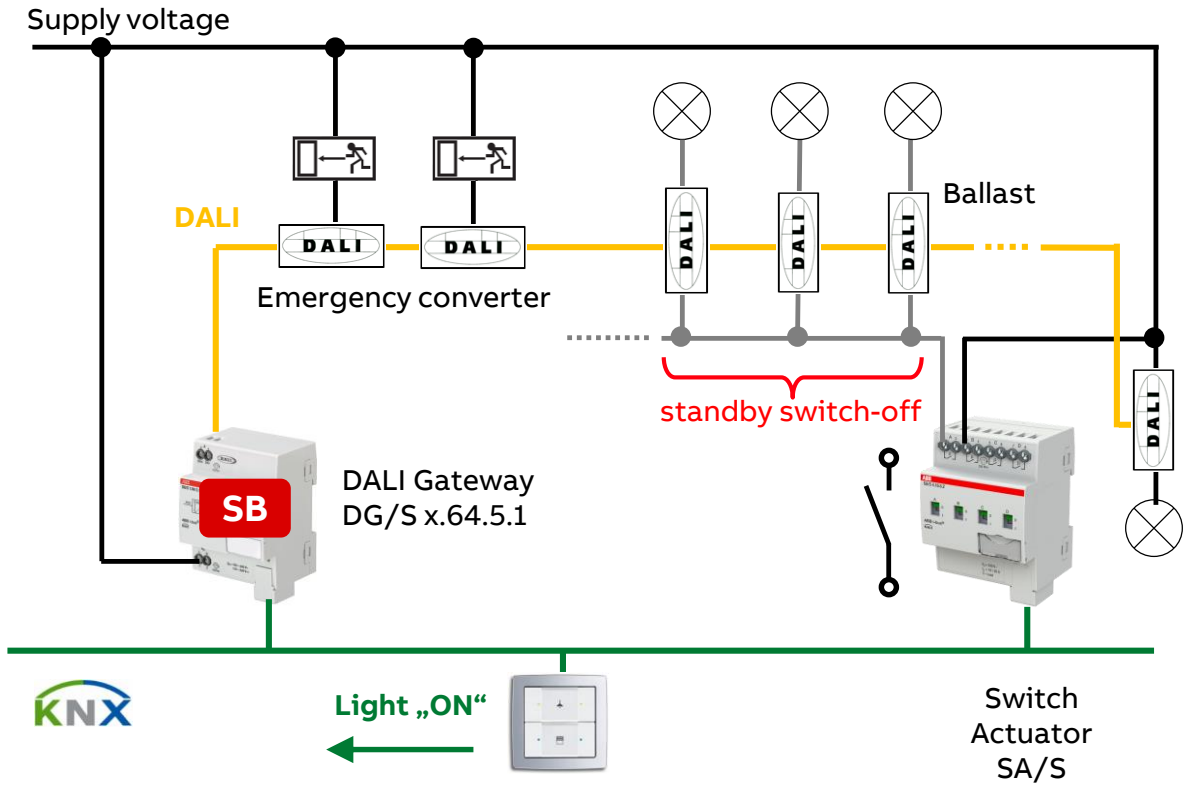


KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

When the function is active, a KNX sensor (e.g. control element or presence detector) sends a group address to the DALI Gateway to switch on a DALI ballast/group



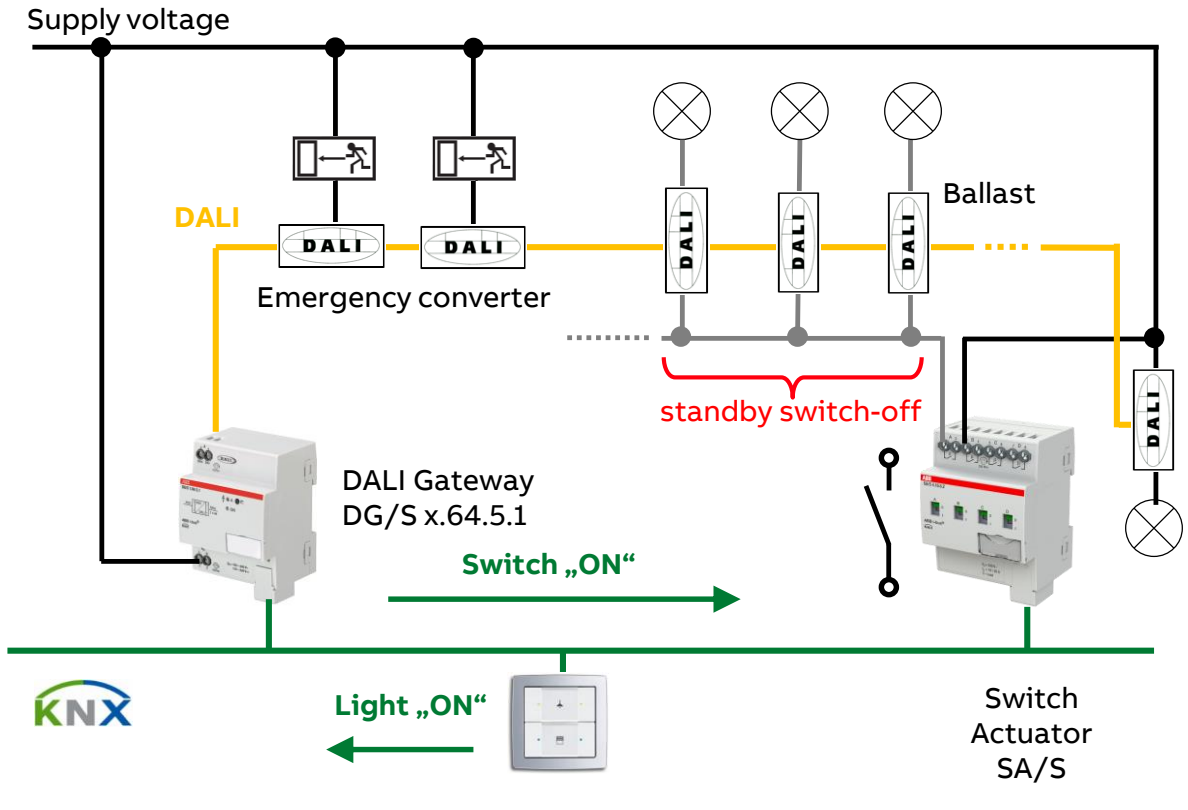
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

When the function is active, a KNX sensor (e.g. control element or presence detector) sends a group address to the DALI Gateway to switch on a DALI ballast/group

- The standby switch-off function is deactivated
- A switch “ON” telegram is sent on KNX



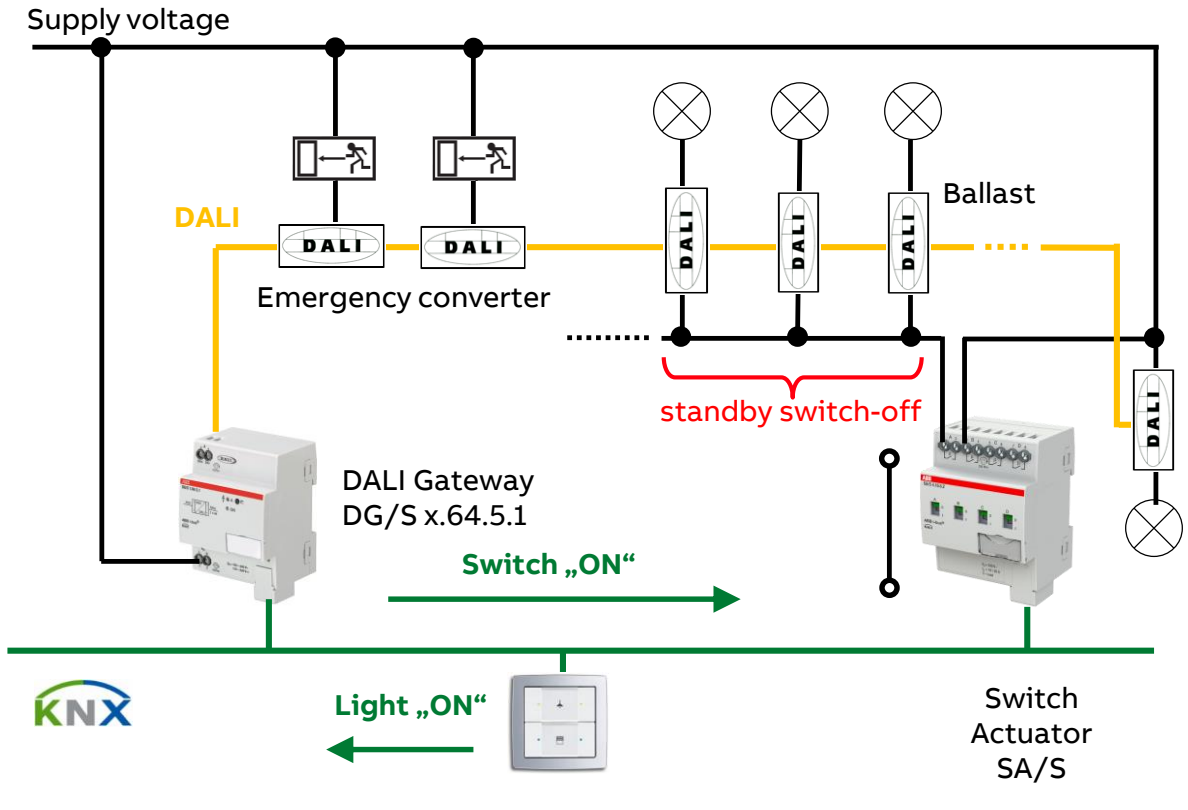
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

When the function is active, a KNX sensor (e.g. control element or presence detector) sends a group address to the DALI Gateway to switch on a DALI ballast/group

- The standby switch-off function is deactivated
- A switch “ON” telegram is sent on KNX
- All Switch Actuator SA/S channels linked with this group address switches on the ballasts supply voltage
  → All connected ballasts are energized



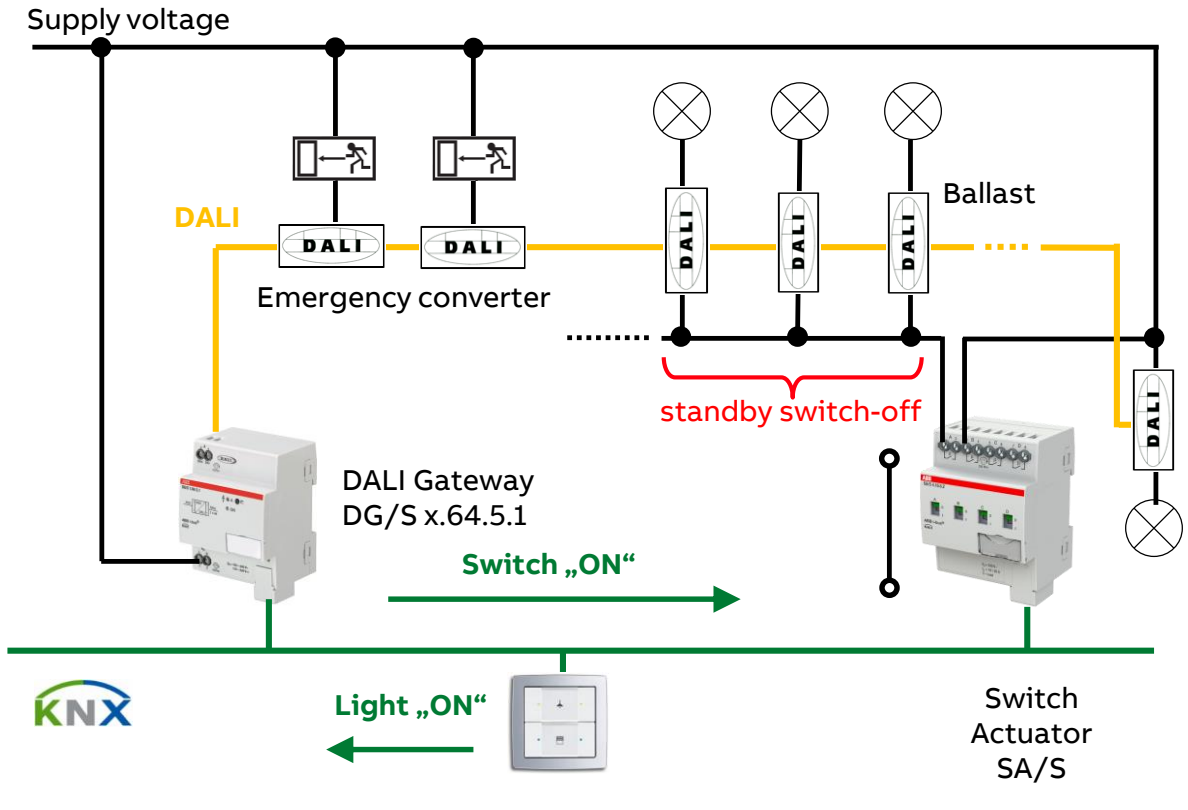
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

When the function is active, a KNX sensor (e.g. control element or presence detector) sends a group address to the DALI Gateway to switch on a DALI ballast/group

- The standby switch-off function is deactivated
- A switch “ON” telegram is sent on KNX
- All Switch Actuator SA/S channels linked with this group address switches on the ballasts supply voltage
  → All connected ballasts are energized
- After adjustable delay time (1…10sec., needed for restart of ballasts) all ballasts are ready to work



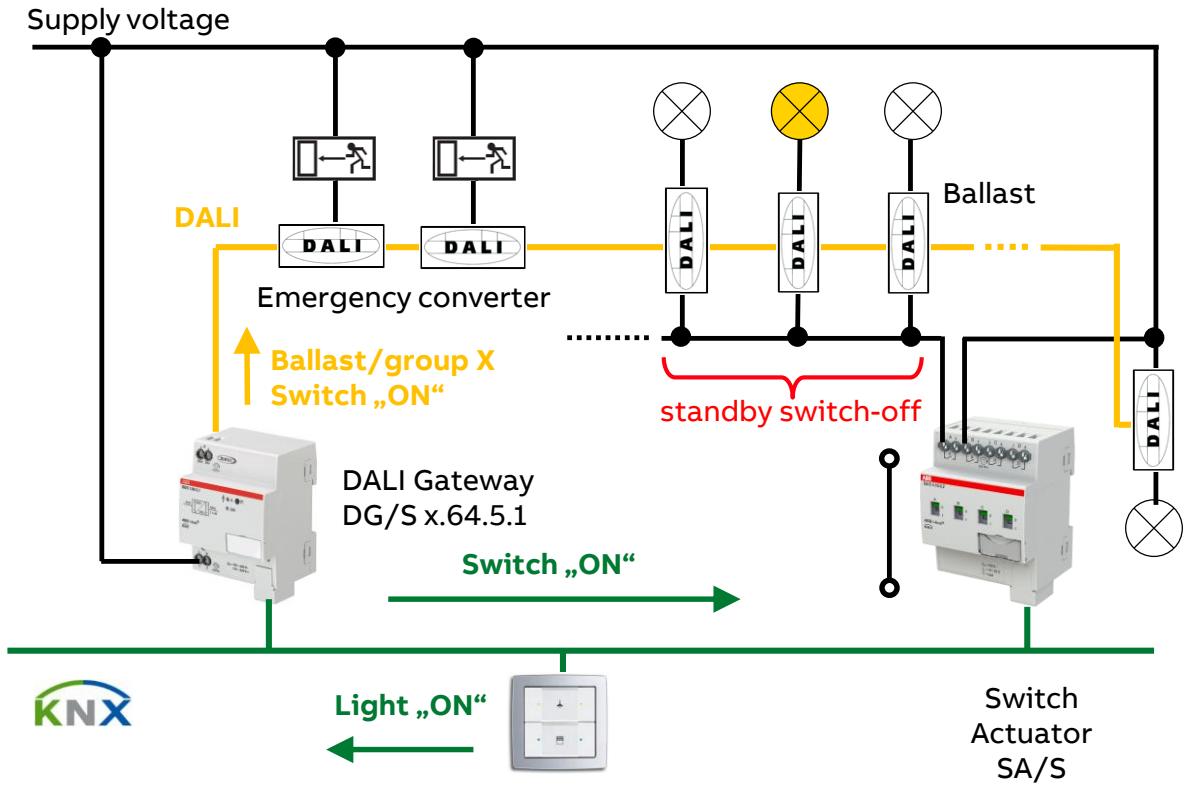
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

How does a “Standby switch-off” function work?

When the function is active, a KNX sensor (e.g. control element or presence detector) sends a group address to the DALI Gateway to switch on a DALI ballast/group

- The standby switch-off function is deactivated
- A switch “ON” telegram is sent on KNX
- All Switch Actuator SA/S channels linked with this group address switches on the ballasts supply voltage
  → All connected ballasts are energized
- After adjustable delay time (1…10sec., needed for restart of ballasts) all ballasts are ready to work
- The DALI Gateway sends an “ON” command to the DALI ballast/group and the light switches on
- Further actions to turn on lights are without delay



KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

Commissioning of a “Standby switch-off” function

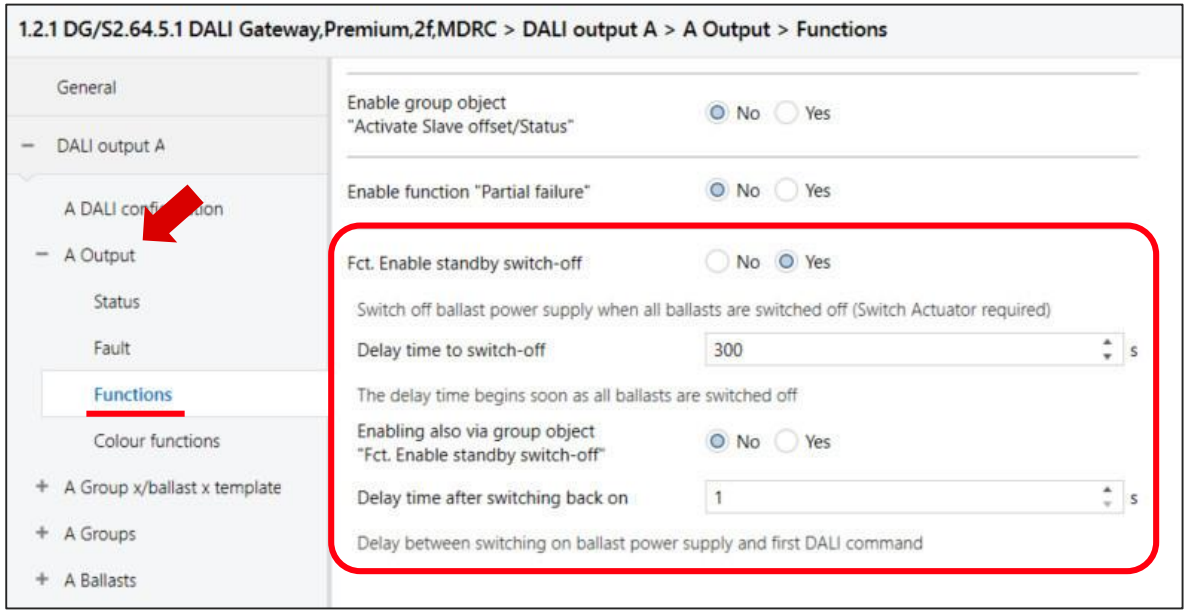
Set ETS parameter: DALI Output A → Output → Functions

- Enable DALI standby switch-off
- Set time of delay till switch-off (e.g. 5 min to avoid standby switch-off in case of short term standby situation)
- Optional: Enable group object “*Enable DALI standby switch-off*”
- Set time (1 …10s) of delay after restart (needed for restart of ballasts, ballast restart time less than 1 sec. according to DALI standard)

Set ETS parameter: DALI Output A → Group X or ballast X → Fault template … (template or individual)

- Select the "Last value before failure" parameter for all ballasts involved in Standby switch-off function

Connect the “*Standby switch-off*” group object to a Switch Actuator SA/S channel(s)



KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

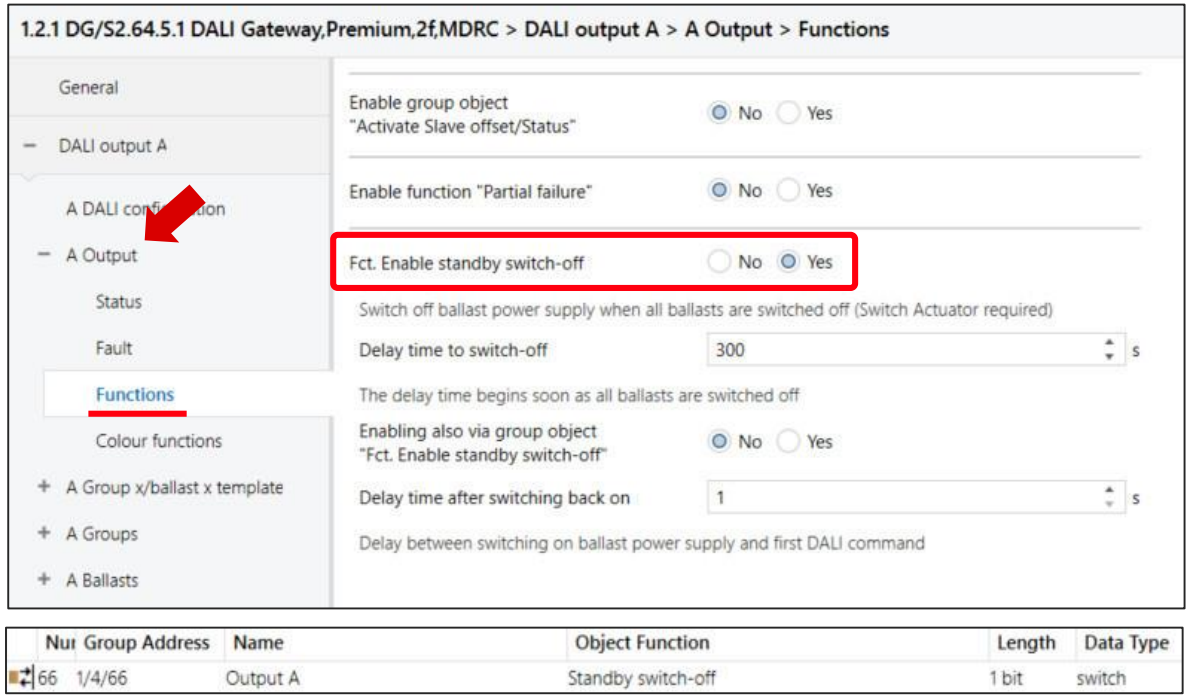
Enable standby switch-off

This parameter determines whether standby switch-off is enabled

Standby switch-off is when the ballast supply voltage switches off if all connected ballasts on an DALI output are in standby

– No
  - The Standby switch-off function is not enabled

– Yes
  - The Standby switch-off function is enabled
  - If all the ballasts on an DALI Output are switched off, the ballast supply voltage can be switched off too
  - However, this requires the "*Standby switch-off*" group object to be linked with a Switch Actuator SA/S channel



KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

Delay time to switch-off

This parameter can be used to set a ballast supply voltage standby switch-off delay time before the "*Standby switch-off*" group object is sent on KNX and switches off all the ballasts on DALI output A/B

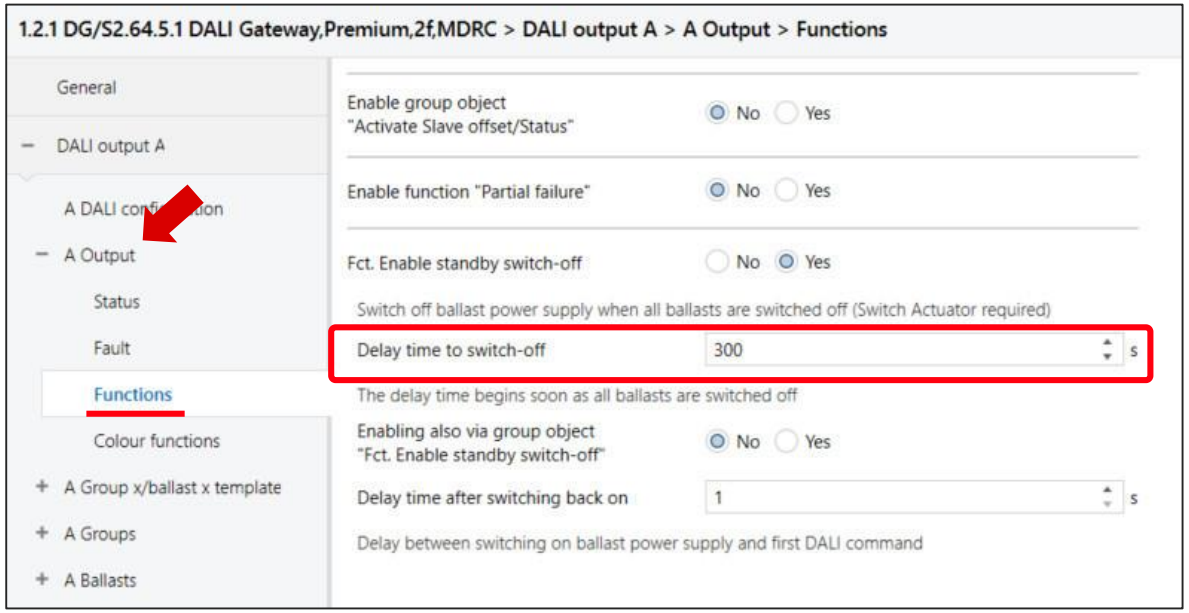
– 1…300…65,535sec.

Note

– Each time the supply voltage is switched off, the current values (brightness, colour temperature, …) are saved to the ballast's flash memory

– Note that the lifetime of the ballast memory and associated storage space reduces each time

– We therefore recommend switching off no more than once a day



KNX DALI Gateway Premium DG/S x.64.5.1

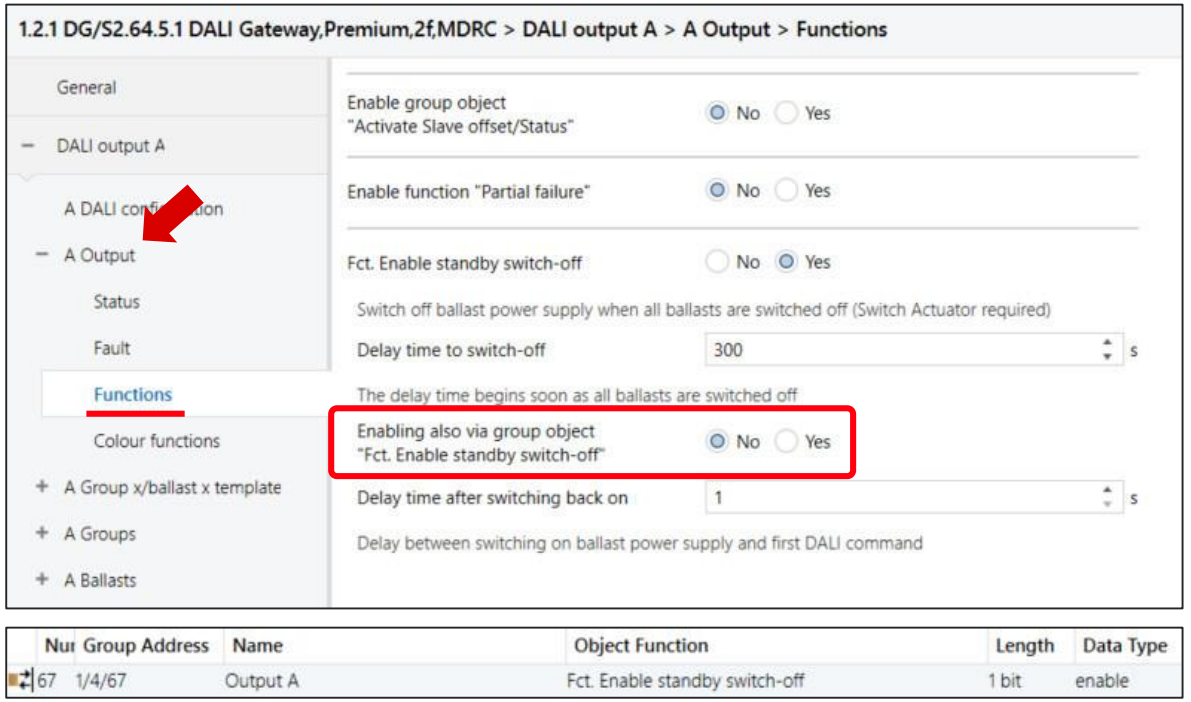
Function “Standby switch-off”

Enabling via group object “Fct. Enable standby switch-off”

This parameter allows you to enable ballast supply voltage switch-off using the “*Enable Standby switch-off*” group object

– No
  - The standby switch-off function cannot be enabled or blocked

– Yes
  - Standby switch-off function using the “*Function Enable standby switch-off*” group object is enabled
  - This group object can be used to enable or block the standby switch-off function
  - Telegram value:
    1 = Enables the standby switch-off function
    0 = Blocks the standby switch-off function



KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

Delay time after switching back on

This parameter sets a delay time before the ballast supply voltage is switched back on by a Switch Actuator SA/S

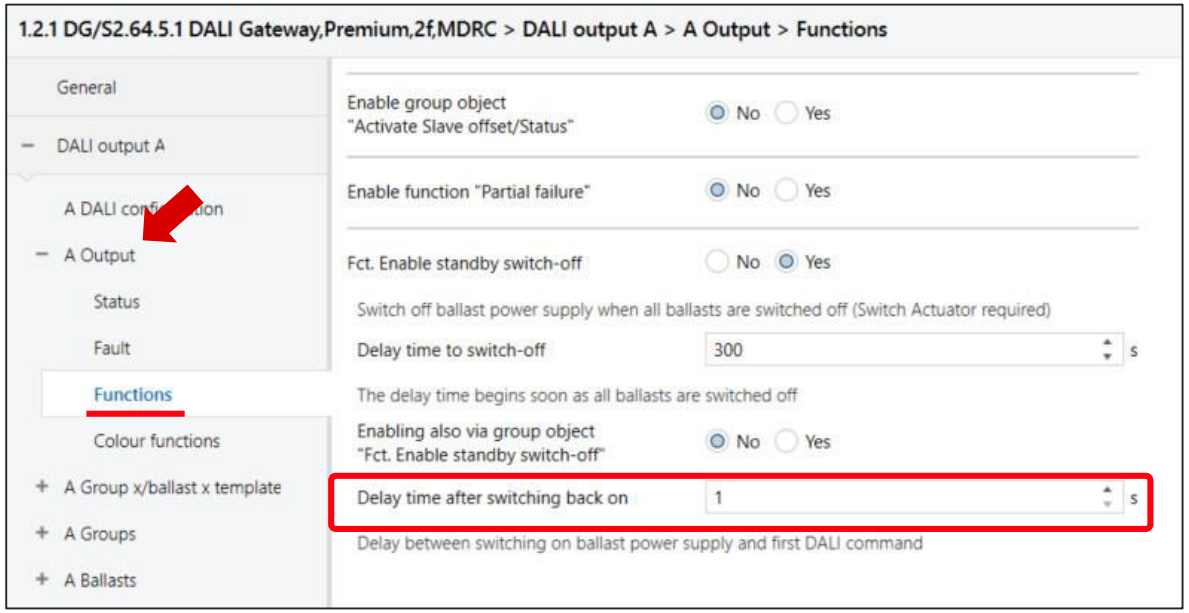
The delay time delays transmission of the first DALI commands after the ballast supply voltage is switched on (thus taking account of ballast start up behavior)

– 1…10sec.

When using power supplies, a time longer than one second may have to be set (stabilization of the output voltage)

Note:

– According to the DALI standard – depending on the type – a DALI device must be ready to receive a command between 100msec. and 1,200msec. after supply voltage recovery



KNX DALI Gateway Premium DG/S x.64.5.1

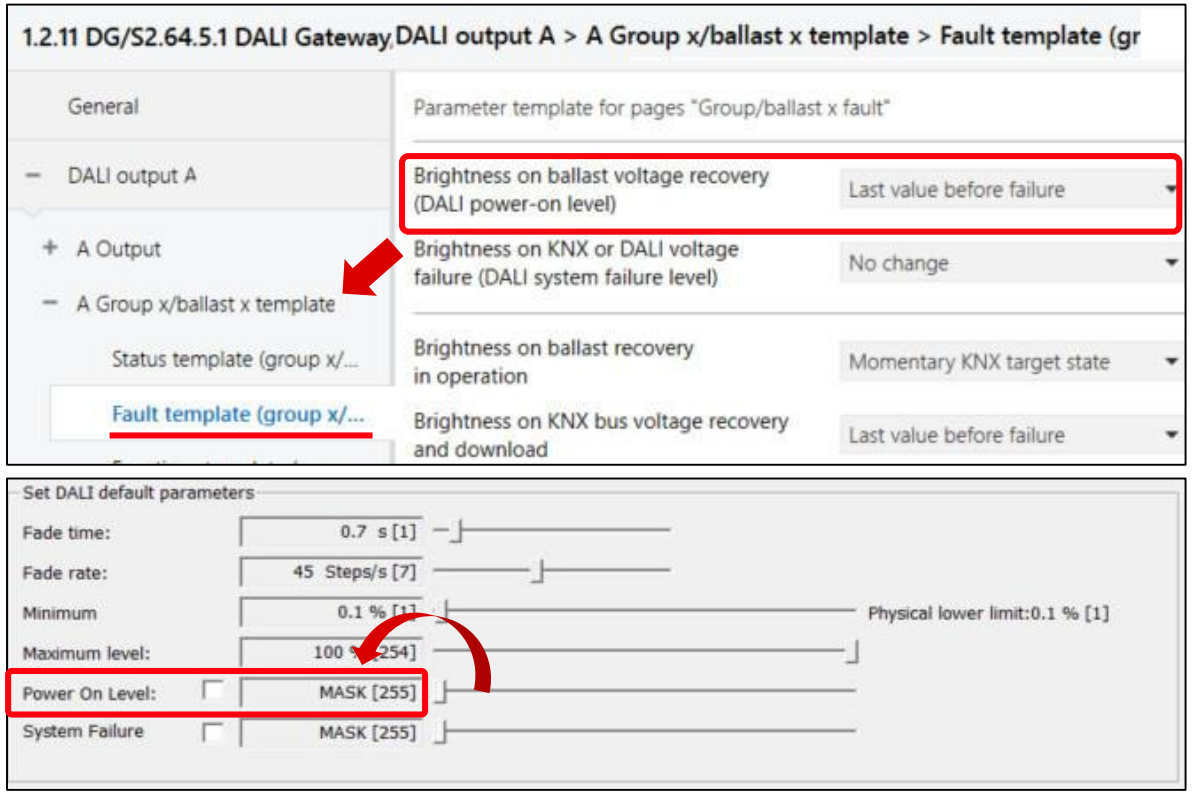
Function “Standby switch-off”

Brightness on ballast voltage recovery (DALI power-on level)

Set ETS parameter: DALI Output A → Group X or ballast X → Fault template … (template or individual)

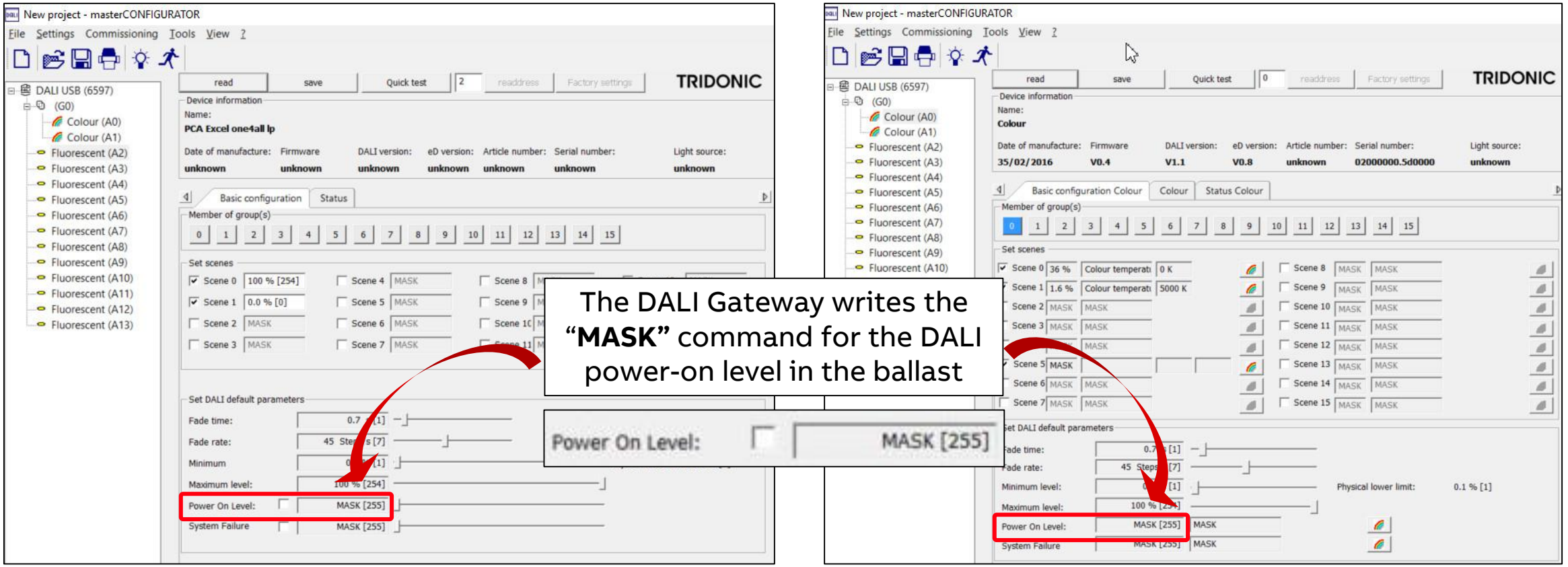
– Select the "Last value before failure" parameter for all ballasts involved in Standby switch-off function

- The DALI device (ballast) is switched on using the last (previous) set brightness value used before ballast supply voltage failure
- This function must be supported by the DALI devices
- Since the end of 2009, this property has been defined in the standard for DALI devices
- Please contact the ballast manufacturer in case of doubt
- The DALI Gateway writes the “MASK" command for the DALI power-on level in the ballast
- This parameter changes the factory setting of the ballast



KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off” – diagnosis with “DALI masterCONFIGURATOR” software (TRIDONIC)



KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

DALI software “masterCONFIGURATOR” (TRIDONIC)

The masterCONFIGURATOR software is a configuration and parameterization program for DALI devices

www.tridonic.com

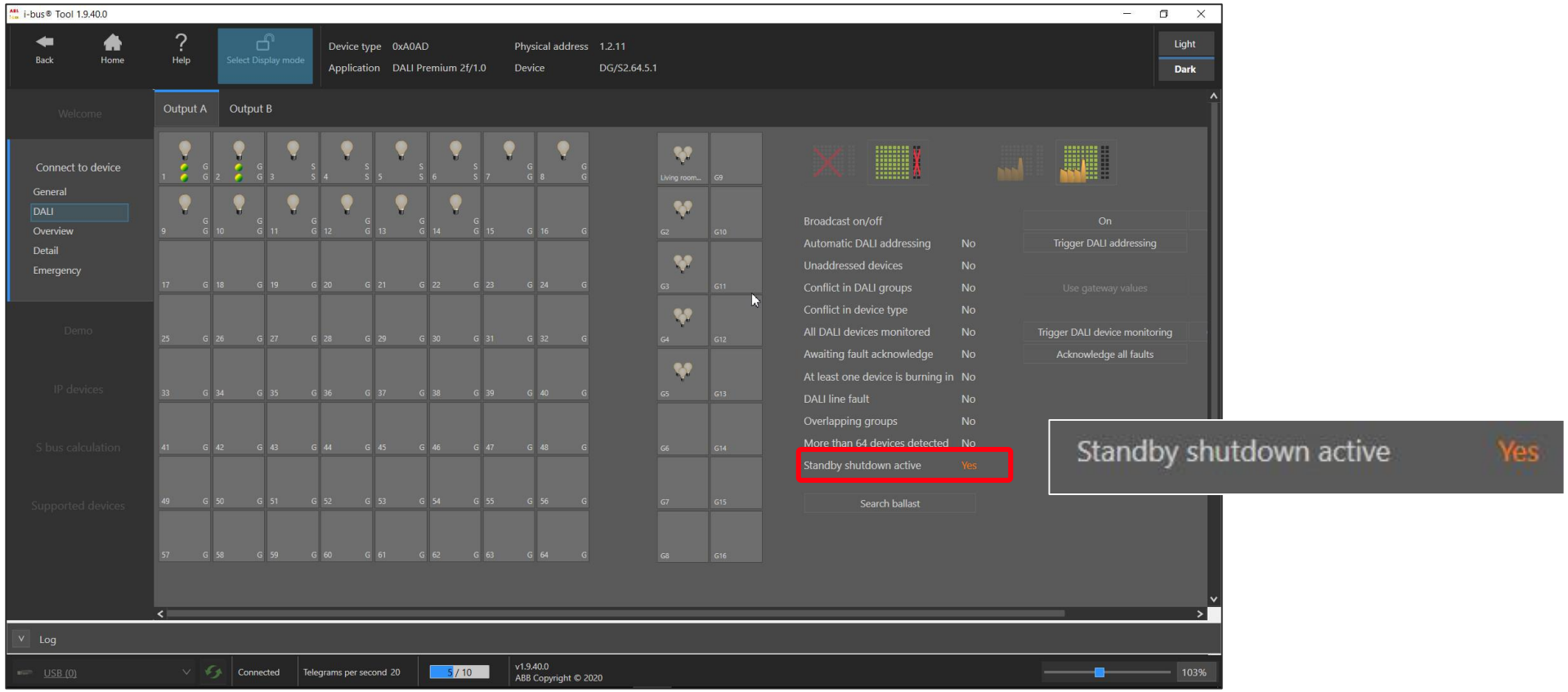
The “DALI USB” interface module is required for communication with the DALI and the ballasts (TRIDONIC article number 24138923)

Note:

- The “masterCONFIGURATOR” software should only be used for testing or diagnosis (e.g. reading out power-on level)
- All other settings (parameterizing, settings, addressing, grouping,, ...) are made via the ETS and the ABB i-busTool!

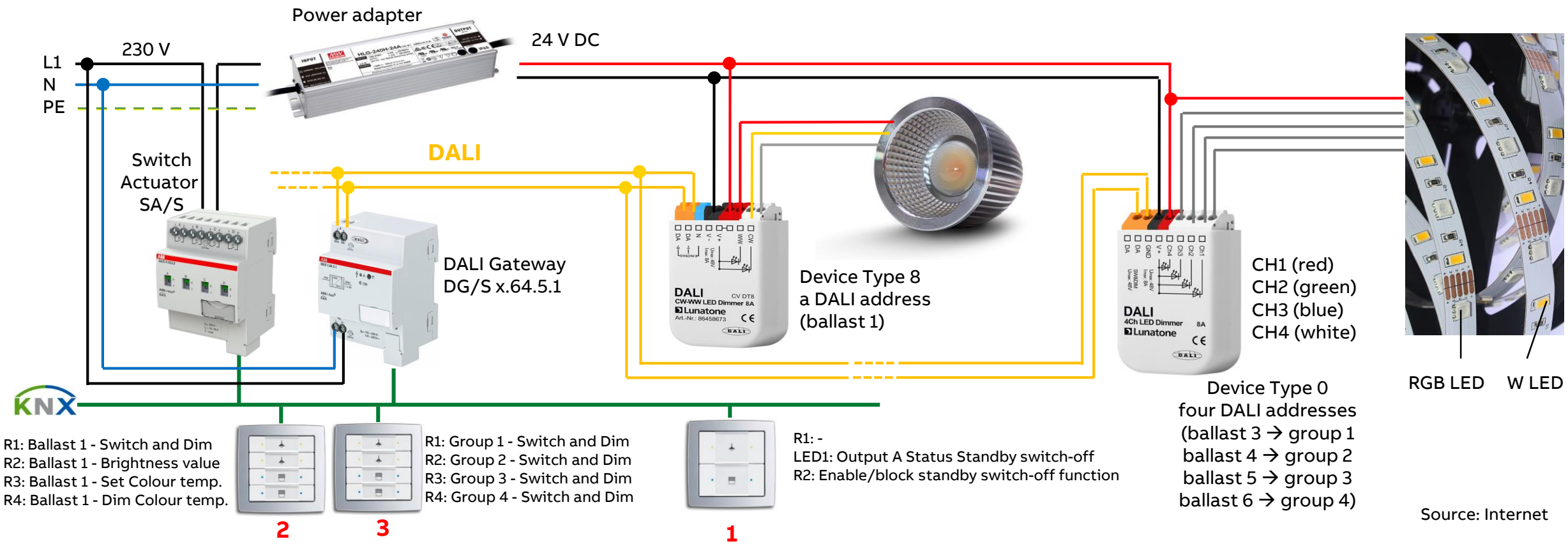
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off” – ABB i-bus® Tool



KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off” – Example



Source: Internet

KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off” – Example: Assignment of Group Addresses

DALI Gateway Premium DG/S x.64.5.16				
	Output A	Switch (1 bit)	←	… Output A Switch
		Relative dimming (4 bit)	←	… Output B Switch
		Brightness value (1 byte)	←	… Output X Switch
		Standby switch-off		
		Fct. Enable standby switch-off		… LED 1.x Status (1 bit)
		…		… S2.1 Switching (1 bit)
	Output A – group/ballast X	Grp./Ballast ….		… LED 2.x Status (1 bit)
		Ballast 1 Switch (1 bit)		… S1.1 Switching (1 bit)
		Ballast 1 Relative dimming (4 bit)		… S1.1 Relative dimming (4 bit)
		Ballast 1 Brightness value (1 byte)		… S2.1 Value Switching (1 byte)
		Ballast 1 Set Colour temperature (2 byte)		… S3.1 Value Switching (2 byte)
		Ballast 1 Dim Colour temperature (4 bit)		… S4.1 Relative dimming (4 bit)
		Grp./Ballast ….		… S1.1 Switching (1 bit)
		Grp. 1 Switch (1 bit)		… S1.1 Relative dimming (4 bit)
		Grp. 1 Relative dimming (4 bit)		

Switch Actuator SA/S		
Control element solo®	1	
Control element solo®	2	
C.E. solo®	3	

KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off” – Example: Assignment of Group Addresses

DALI Gateway Premium DG/S x.64.5.16

Output A	Switch (1 bit)
	Relative dimming (4 bit)
	Brightness value (1 byte)
	Standby switch-off
	Fct. Enable standby switch-off
	…
Output A – group/ballast X	Grp./Ballast ….
	Ballast 1 Switch (1 bit)
	Ballast 1 Relative dimming (4 bit)
	Ballast 1 Brightness value (1 byte)
	Ballast 1 Set Colour temperature (2 byte)
	Ballast 1 Dim Colour temperature (4 bit)
	Grp./Ballast ….
	Grp. 1 Switch (1 bit)
	Grp. 1 Relative dimming (4 bit)

Switch Actuator SA/S	… Output A Switch	
	… Output B Switch	
	… Output X Switch	
Control element solo®	… LED 1.x Status (1 bit)	1
	… S2.1 Switching (1 bit)	
	… LED 2.x Status (1 bit)	
Control element solo®	… S1.1 Switching (1 bit)	2
	… S1.1 Relative dimming (4 bit)	
	… S2.1 Value Switching (1 byte)	
	… S3.1 Value Switching (2 byte)	
	… S4.1 Relative dimming (4 bit)	
C.E. solo®	… S1.1 Switching (1 bit)	3
	… S1.1 Relative dimming (4 bit)	

KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off” – Example: Assignment of Group Addresses

DALI Gateway Premium DG/S x.64.5.16						
Output A	Switch (1 bit)	←	… Output A Switch	Switch Actuator SA/S		
	Relative dimming (4 bit)	←	… Output B Switch			
	Brightness value (1 byte)	←	… Output X Switch			
	Standby switch-off					
	Fct. Enable standby switch-off		… LED 1.x Status (1 bit)	Control element solo®	1	
	…		… S2.1 Switching (1 bit)			
Output A – group/ballast X	Grp./Ballast ….		… LED 2.x Status (1 bit)			
	Ballast 1 Switch (1 bit)	→	… S1.1 Switching (1 bit)	Control element solo®	2	
	Ballast 1 Relative dimming (4 bit)	→	… S1.1 Relative dimming (4 bit)			
	Ballast 1 Brightness value (1 byte)	→	… S2.1 Value Switching (1 byte)			
	Ballast 1 Set Colour temperature (2 byte)	→	… S3.1 Value Switching (2 byte)			
	Ballast 1 Dim Colour temperature (4 bit)	→	… S4.1 Relative dimming (4 bit)			
	Grp./Ballast ….					
	Grp. 1 Switch (1 bit)	→	… S1.1 Switching (1 bit)	C.E. solo®	3	
	Grp. 1 Relative dimming (4 bit)	→	… S1.1 Relative dimming (4 bit)			

KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off” – Example: Assignment of Group Addresses

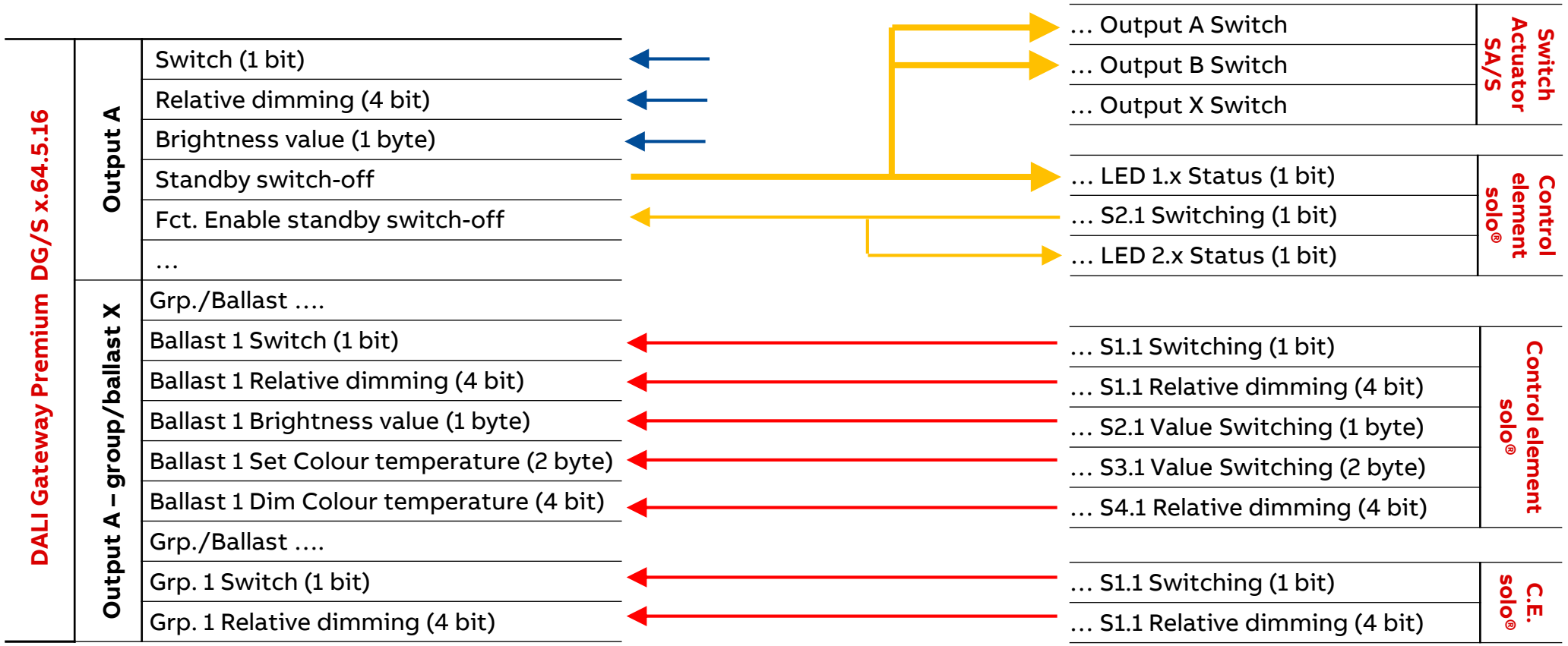
DALI Gateway Premium DG/S x.64.5.16

Output A	Switch (1 bit)	… Output A Switch
	Relative dimming (4 bit)	… Output B Switch
	Brightness value (1 byte)	… Output X Switch
	Standby switch-off	
	Fct. Enable standby switch-off	… LED 1.x Status (1 bit)
	…	… S2.1 Switching (1 bit)
		… LED 2.x Status (1 bit)
Output A – group/ballast X	Grp./Ballast ….	
	Ballast 1 Switch (1 bit)	… S1.1 Switching (1 bit)
	Ballast 1 Relative dimming (4 bit)	… S1.1 Relative dimming (4 bit)
	Ballast 1 Brightness value (1 byte)	… S2.1 Value Switching (1 byte)
	Ballast 1 Set Colour temperature (2 byte)	… S3.1 Value Switching (2 byte)
	Ballast 1 Dim Colour temperature (4 bit)	… S4.1 Relative dimming (4 bit)
	Grp./Ballast ….	
	Grp. 1 Switch (1 bit)	… S1.1 Switching (1 bit)
	Grp. 1 Relative dimming (4 bit)	… S1.1 Relative dimming (4 bit)

Switch Actuator SA/S		
Control element solo®	1	
Control element solo®	2	
C.E. solo®	3	

KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off” – Example: Assignment of Group Addresses



KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

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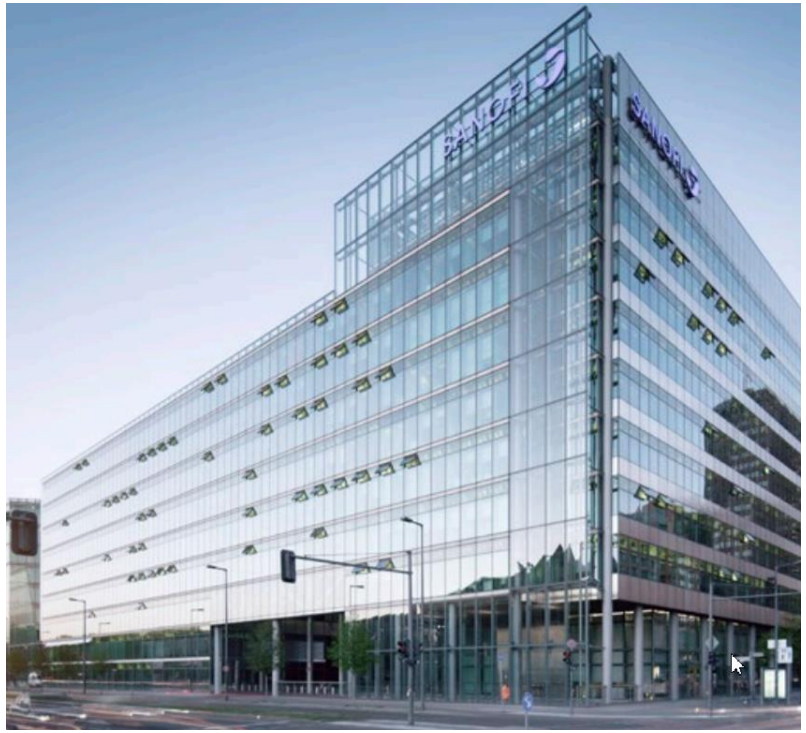
KNX DALI Gateway Premium DG/S x.64.5.1

Function “Standby switch-off”

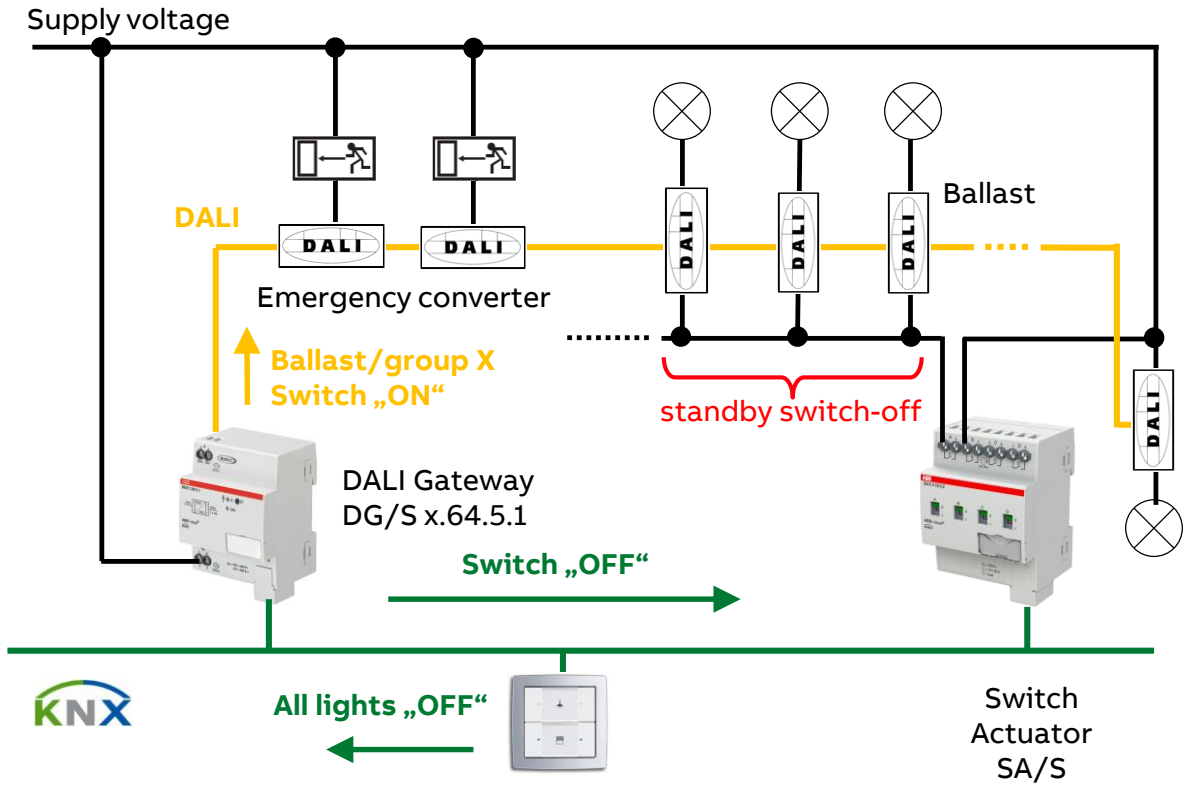
Summary

- The “Standby switch-off” function saves energy by switching off the supply voltage of ballasts when they are all in standby (switched off) → This serves to save energy
- The supply voltage of the ballasts is switched off via a Switch Actuator SA/S
- Standby switch-off is available for each DALI output, not for every ballast or group
- The message "Ballast fault" is suppressed when the ballasts are switched off using the standby switch-off function
- When it is switched on again, the DG/S sends an “ON” command to the ballast(s) after a restart of the ballasts
- DALI Ballasts must support individual DALI power-on level
- It is recommend switching off no more than once a day (limited write cycles to the ballast's flash memory)



KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

Questions



KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

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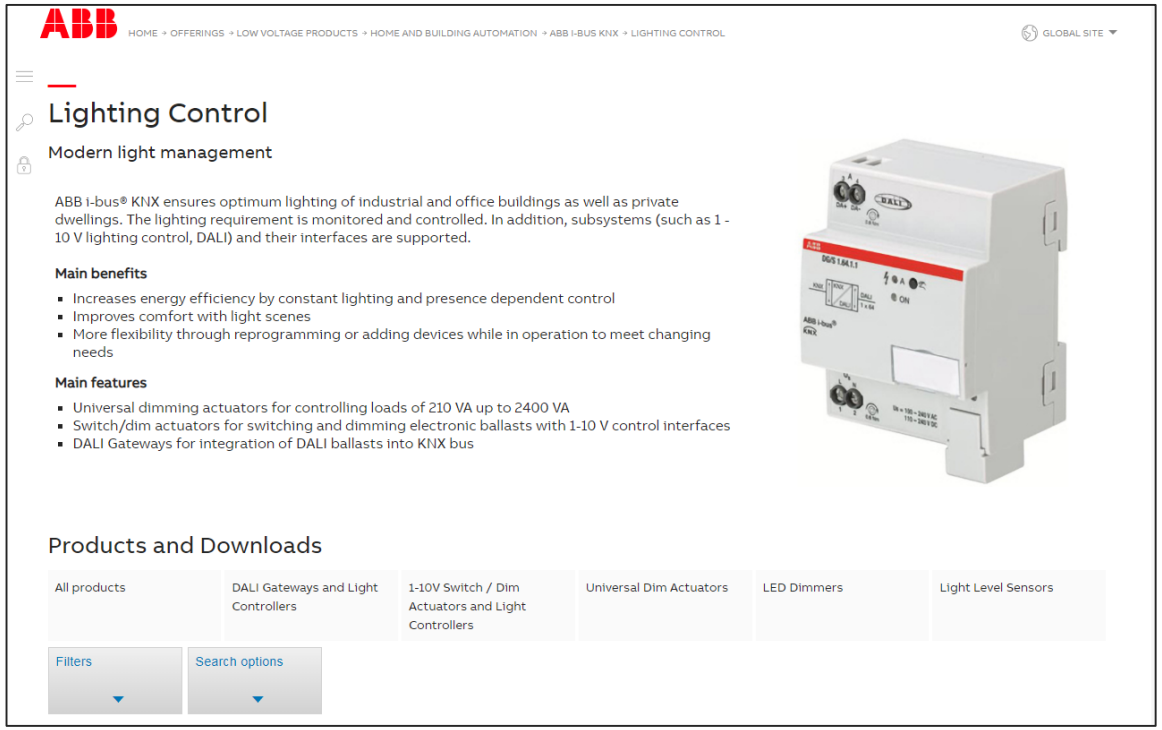
Homepage

www.abb.com/KNX

→ Products and Downloads
→ Lighting Control
→ Search Options DG/S

- Product Manual
- CAD Drawing
- Installation and Operating Instructions
- Specification Text
- ETS Application
- Selection Table
- CE & RoHS Declaration of Conformity
- • • •



KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

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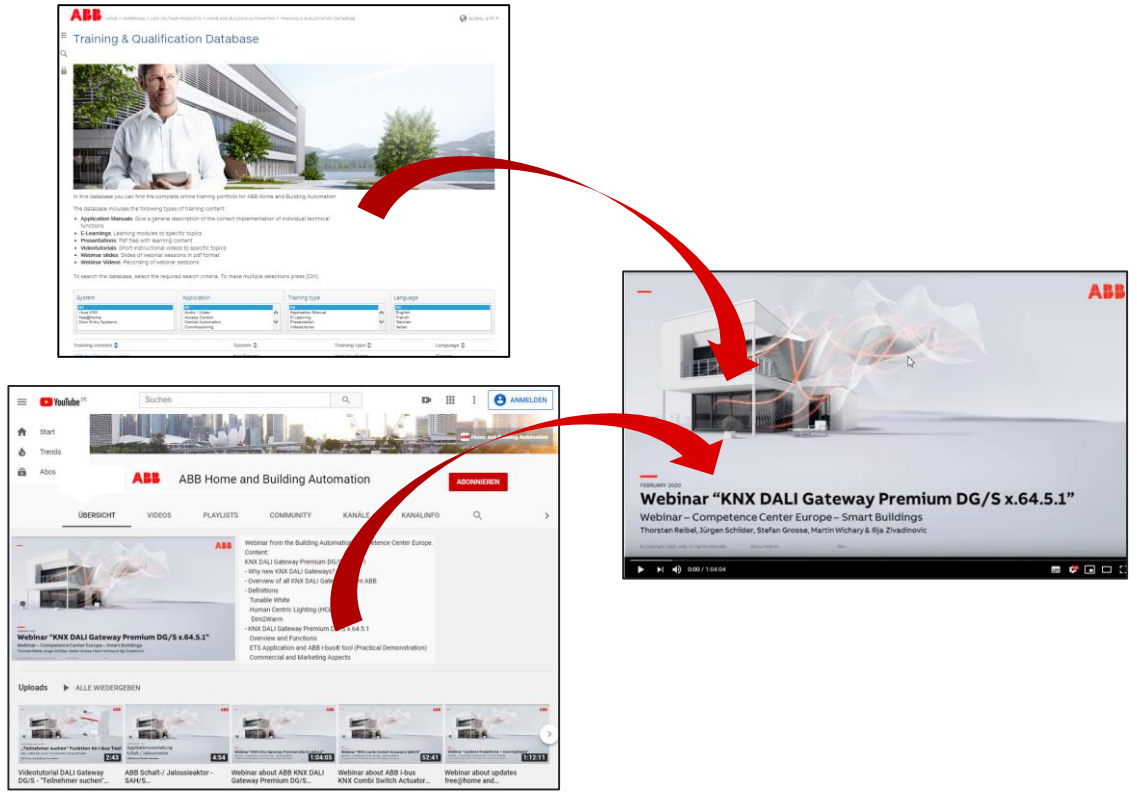
Further information

Training & Qualification Database

– The database includes the following types of training content:
  - Application Manuals
  - E-Learnings
  - Presentations
  - Video tutorials
  - Webinar slides and videos
  - ww.abb.com/knx or https://go.abb/ba-training

Youtube

– Channel “ABB Home and Building Automation”
  - https://www.youtube.com/user/ABBibusKNX



KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

Online Learning Session

Training & Qualification Calendar

In addition to the online modules and the traditional training programs offered by your local ABB sales team, we offer a variety of on-site trainings conducted by our specialists at different ABB training facilities

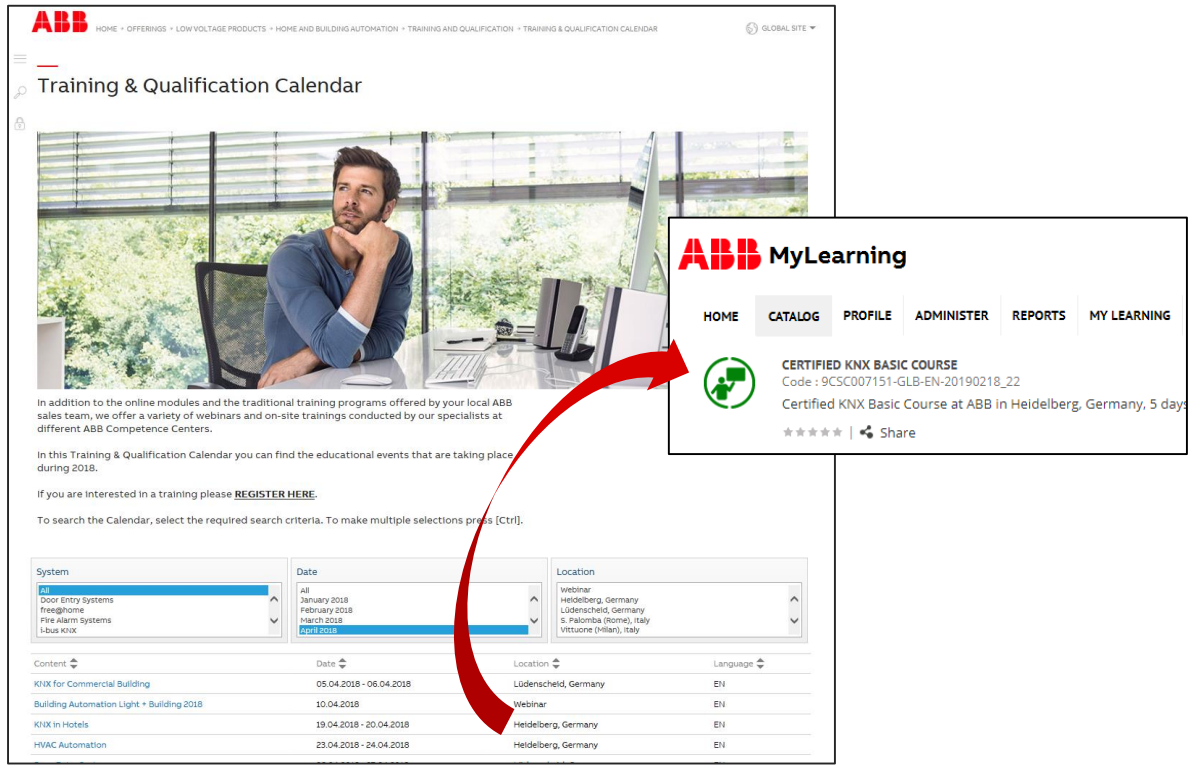
In this Training & Qualification Calendar you can find the educational events that are taking place during 2020

If you are interested in a training please click the training und you will be forwarded to register in “ABB MyLearning”

www.abb.com/knx or https://go.abb/ba-training

→ Training and Qualification

→ Training Calendar



KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

Online Learning Session

KNX Certified Trainings 2020

Certified KNX Courses in Heidelberg

- Advanced Course: 13th to 17th Jul.
- Tutor Course: 19th to 23rd Oct.
- Basic Course : 16th to 20th Nov.
- Followed by two day application training

Safe the date!!!

And many more training courses in the calendar
“International Training Dates 2020”

www.abb.com/knx or https://go.abb/ba-training

KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

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Next Webinar

KNX DALI Gateway Premium DG/S x.64.5.1 – Special functions

- Human Centric Lighting (HCL) – Colour temperature curve following daylight
- Dim2Warm – Colour temperature changes proportionally to brightness with the effect like a light bulb
- Standby switch-off – Ballast voltage shutdown via additional switching actuator to save energy
- Scenes – 1 bit recall and 1 byte coded scenes
- ABB i-bus® tool – Search menu for a ballast with unknown address, operating hours, …

Wednesday 6th May 2020

- Morning 09:00 am Europe Time (Berlin, UTC + 2h)
- Afternoon 03:00 pm Europe Time (Berlin, UTC + 2h)

KNX DALI Gateway Premium DG/S x.64.5.1 – “Standby switch-off”

Online Learning Session

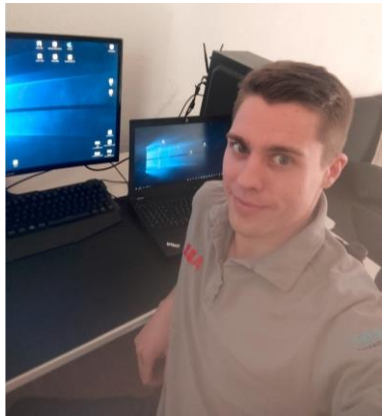
Next online learning sessions

- Tuesday 21st April: DALI Gateway DG/S x.64.5.1 – HCL Human Centric Lighting
- Thursday 23rd April: KNX ETS5 and group addresses – free-style address structure, export/import, generate group addresses in EXCEL, …
- Tuesday 28th April: ControlTouch – Basic Commissioning (Wizard)
- Thursday 30th April: ControlTouch – Sonos Linking
- Tuesday 5th May: ETS: Presence Detector – Zones, Calibration and Constant Light Control
- Thursday 7th May: Presence Detector – Master/Slave Concept

… and more will follow

NEW !!!

From home office to home office



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