Application description KNX Room Controller with integrated DALI/KNX-Gateway, compatible to B.E.G. detectors V5.0

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Application description KNX Room Controller with integrated DALI/KNX-Gateway, compatible to B.E.G. detectors V5.0

Introduction

What is B.E.G's KNX Room Controller?

The B.E.G. KNX Room Controller is a pre-wired control unit for a KNX occupancy detector as well as other loads. Basically, it is the power element of the occupancy detector. The pre-wiring of other loads, which are all connected via GST18 plugs and sockets, consumes place and therefore it is no longer possible to accommodate all electronic elements in the housing of a standard occupancy detector. This is the reason why the electronic elements are accommodated in a separate box, the B.E.G. KNX Room Controller. The sensor part enabling detection of movement and the light sensor still are accommodated in the housing of the occupancy detector. The detector as well as the other loads can be connected fast and easily to the KNX Room Controller. This offers the possibility to connect all B.E.G. KNX detectors to the KNX Room Controller.

The B.E.G. KNX Room Controller controls various functions of a room via the KNX BUS. It cooperates with software version 5.0.

The integrated DALI/KNX gateway offers the possibility to use DALI electronic ballasts, which are becoming more and more popular.

The B.E.G. KNX Room Controller switches or dims the DALI lights of a room depending on movement. Furthermore, the blinds can be controlled via an integrated actuator. Additionally, it is possible to control the lights or the blinds manually by means of two push button inputs. After programming the RCT in ETS, these push button inputs can be controlled and programmed individually as CH1 to CH4.

A special advantage is offered by B.E.G.'s KNX Room Controller: the service switch. The switch being in its "Service" position, the basic functionality of all connected loads is provided, without ETS. This means that the lights and the blinds/roller shutters can be used during installation. ETS can be programmed unhurriedly. Thereafter, the switch is put to its "KNX" position and the connected loads are operated automatically according to the settings.

1. GENERAL

1.1 KNX BUS basics

The B.E.G. KNX Room Controller gets its supply voltage via a mains connection. Via the BUS, it sends or receives telegrams. For this, the communication objects of the KNX Room Controller have to be connected with the appropriate communication objects of other actuators. Settings are made with the ETS programming tool. In order to understand these instructions, users must have completed a KNX commissioning and configuration course.

In order for you to work with the B.E.G. applications, these must first be imported into ETS.

Warning:

It is important to pay attention to object data types. For example, a 1 bit object can only work together with a 1 bit object of another device. Occupancy detectors work with 1 bit, 2 bit, 4 bit, 1 byte or 2 byte data types, which depend on the object used.

1.2 Symbols

In the following application description, various symbols are used to improve clarity. A brief explanation of these symbols is given here.

Warning:

This symbol shows passages of text which absolutely have to be read, to avoid errors in project planning and installation.

Recommendation:

This symbol indicates parameter settings which have been shown by experience to result in optimum use of the product.

1.3 Functions of the B.E.G. KNX Room Controller

To provide a simple introduction to the instructions for this application, the general functions of the B.E.G. KNX RCT will be described first. Primary functionality is lighting control via DALI broadcast commands, and blinds/roller shutter control. This can be realised via the internal 4 push button inputs or via external communication objects.

Mounting location

The B.E.G. KNX Room Controller should be installed above suspended ceilings.

2. GENERAL SETTINGS

2.1 Activating/deactivating outputs

The individual channels CH1 to CH4, the dimming actuator and the blinds/shutter actuator can be activated or deactivated. The standard setting is "activated".

Warning

Only when a channel is activated, do the relevant communication objects appear.

CH1 to CH4	- deactivated - **activated (default)**
dimming actuator	- deactivated - **activated (default)**
blinds/roller shutter actuator	- deactivated - **activated (default)**

CH1 to CH4 can afterwards individually be activated and configured. The dimming actuator and the blinds/roller shutter actuator can also be configured, but are already activated. The various possibilities for configuration are described below.

3. PUSH BUTTON INPUTS (CH1 to CH4)

The purpose of the push button inputs is to send KNX telegrams via conventional push buttons. The telegrams which can be sent over the particular channels (CH1 to CH4) have to be set up for each respective channel via the parameters window.

Warning:

Please do not connect 230V to the push button inputs. Only use potential-free switches!

The following settings can be performed on each of the four channels CH1 to CH4 individually:

CHx	**deactivated (default)**
	switch on DALI output (100%)
	switch off DALI output (0%)
	toggle DALI output
	freely configurable

The parameters "switch on DALI output (100%)", "switch off DALI output (0%)" or "toggle DALI output" being selected, a value is sent directly via the channel. It is therefore not possible to configure these functions using objects. When pushing the push button assigned to the respective channel, the connected DALI ballasts are switched on to 100% or switched off to 0%, respectively. As a configuration example, CH1 can be used to switch on the DALI output (100%) and CH2 can be used to switch off the DALI output (0%). In this case, CH3 can be used to move the blinds/roller shutters up and CH4 can be used to move them down.

The setting "Toggle DALI output" being selected, it is for example possible to switch the light on and off again using the same push button.

If the corresponding input is set to "freely configurable", the following settings can be accessed:

3.1 Debounce time

When electromechanical switches are opened or closed, this can lead to noise, or the so-called bounce. The cause of this noise lies in the physical effect of an elastic impact. When opening or closing, the contact bounces back, and thus triggers several telegrams with only one push button press. Depending on the switch/push button used, bounce times can vary. In order to prevent this effect, the debounce time must be set. In normal cases, the 30ms standard time setting is entirely sufficient.

Parameter values

30ms (default)
50ms
70ms
100ms
150ms
200ms

3.2 Contact type of the push button

Here, the type of contact used is defined as normally open (NO) or normally closed (NC). Default value is NO.

3.3 Operating mode

Here, the channel's operating mode is defined. Selection can be made between switching, dimming or blinds/roller shutter actuator. Depending on the selection, various functions and parameters are available.

The following parameters can be selected:

operating mode	**switching (default)**
	dimming
	blinds/roller shutters

"Switching"

The channel sends 1 bit 0- and 1-telegrams via the object "Switching – output", for example in order to control an occupancy detector or switch actuator. The current status can be given via "Feedback object toggle – input". The parameters available in switching mode are described in section 3.3.1.

"Dimming"

Via the object "Dimming command – output - CHx" (4 bit) and "Dimming value – output – CHx" (1bit) the channel sends the respective telegrams to the BUS in order to control the dimming actuator. The parameters available in dimming mode are described in section 3.3.2.

"Blinds/roller shutters"

The channel is for controlling the blind/roller shutter actuators. Move or step commands (objects "Move command – output" or "Slats stop/step command") can be sent. Move commands provoke a longer upward or downward movement of the blinds or roller shutters. Step commands provoke a change of the position of the slats or a short upward or downward movement of the blinds/roller shutters. The parameters available in "Blinds/roller shutters" mode are described in section 3.3.3.

3.3.1 Operating mode: "Switching"

"Object type"

If the channel is in switching mode, this parameter can be used to set up which telegrams are to be sent.

The following parameters are available:

object type	**switching, 1 bit (default)**
	forced operation, 2 bit
	value in percent, 1 byte

According to the object type chosen, various group objects appear enabling a detailed configuration. "Switching" is for configuring the automatic switching mode. If the "forced

operation" is active for a channel, a manual switching of the assigned push button overrides the automatic control. This means that the priority of the respective push button is higher than the priority of the automatic control. For further explanation see paragraph "Response when pressing the push button". The object ""value in percent" is for defining the respective values to be sent. In the operating mode "switching", the following parameters explained hereafter are available.

"Response when pressing the push button"

With this parameter, you can set up the functions which will be performed when a connected push button is activated. In the table below, the first line indicates the corresponding object type and the columns explain the functions available. "No response" means that pressing the push button will not provoke a reaction. "Switch on" is for switching on the connected load upon pressing the push button and "switch off" is for switching it off. "Toggle" means that a first press of the push button switches the connected load on and another press of the push button switches the load off. Concerning the object type "forced operation", the function "forcedly ON" means that upon pressing the push button the connected load is switched on imperatively, i.e. the case being against the automatic control. "Forcedly OFF" means that upon pressing the push button the connected load is switched off imperatively. "Forced operation inactive" deactivates the forced operation mode.
As an example, the following setting could be configured: Upon pressing the push button assigned to CH1 the connected load – in the example the light – is switched on imperatively ("forcedly ON"). In order to avoid that the light remains on permanently in the forced operation mode, CH2 is used to deactivate the forced operation mode ("forced operation inactive") upon pressing the assigned push button and hence to reactivate the automatic control.
The object "value in percent" is for defining the value for switching the connected load.

switching	forced operation	value in percent
no response	no response	no response
switch on (default)	**forcedly ON (default)**	send value (0-100%)
switch off	forcedly OFF	
toggle	forced operation inactive	

"Response when releasing the push button"

With this parameter, you can set up the functions which will be performed when a connected push button is released. For an explanation of the functions see paragraph "response when pressing the push button".

switching	forced operation	value in percent
no response	no response	no response
switch on	forcedly ON	send value (0-100%)
switch off	forcedly OFF	
toggle	forced operation inactive	

3.3.2 Operating mode: "Dimming"

If the channel is set up as a dimmer under the parameter "operating mode", the following functions can be set up:

"Long push button press from"

The push button interface can distinguish between short and long push button presses. This function is used so that you can issue 2 commands with one push button. In dimming mode, a short press triggers 1 bit switching telegrams. A long push button press triggers 4 bit dimming telegrams. This parameter defines the duration required by the system to recognise a push button press as being long and to carry out the function assigned to a long push button press.

Parameter values

- 300 ms
- **600 ms (default)**
- 900 ms
- 1.2 s
- 1.5 s
- 2.0 s

"Dimming direction"

A channel's dimming direction is set by this parameter. The following parameters are available:

dimming direction	**increase/decrease brightness (toggle) (default)**
	increase brightness
	decrease brightness

For example, CH1 can be used to increase brightness and CH2 to reduce brightness.
Having selected the function "increase/decrease brightness (toggle)" a first push button press is for increasing the brightness and a second push button press is for decreasing the brightness, i.e. the function changes with each push button press. Hence it is possible to use a push button having only one rocker.

"Dimming step up" / "Dimming step down"

Dimming steps define the value in percent for changing the intensity of the connected load step by step. This means that the maximum dimming step size can be set via these parameters. If, for example, the dimming amount is set at 25%, the dimming actuator can be dimmed by a maximum of 25%. In order to dim more, a fresh push button press is needed. Different values can be defined for dimming upwards and dimming downwards.

Parameter values

- **100% (default)**
- 50%
- 25%
- 12%
- 6%
- 3%
- 1.5%

3.3.3 Operating mode: "Blinds/roller shutters"

If the channel is set up in blinds/roller shutters mode under the parameter "operating mode", the following functions can be set up:

"Long push button press from"

The push button interface can distinguish between short and long push button presses. This function is used so that you can issue 2 commands with one push button. In this mode, a short push button press triggers a 1 bit step telegram. A long push button press triggers a 1 bit move telegram. This parameter defines the duration required by the system to recognise a push button press as being long and to carry out the function assigned to a long push button press.

Parameter values

- 300 ms
- **600 ms (default)**
- 900 ms
- 1.2 s
- 1.5 s
- 2.0 s

"Response to short push button press"

A short push button press is used to adjust the slats' position. Every press sends a step command. Step commands are for adjusting the slats' position, as already mentioned, or for moving the blinds/roller shutters only a little bit. The following parameters are available:

response to short push button press	no response
	step up (default)
	step down
	step up/down (toggle)

"Response to long push button press"

With a long push button press, move commands are triggered, to move a blind up or down.
The following parameters are available:

response to long push button press	no response
	move up (default)
	move down
	move up / down (toggle)

Also in this mode, the setting "move up/down (toggle)" is for changing the direction of the movement. A first button press moves the blinds/roller shutters upwards, a second button press downwards (same push button).

3.4 Locking mode

As default the locking mode is deactivated. Therefore it is necessary to activate the locking mode in the parameters.

With locking mode, you can take out of service the functions of each individual channel via a communication object. After a lock, it is no longer possible to use the individual channel until it is unlocked again. However, the forced operation mode – if activated – has a higher priority than the locking mode. Therefore, the functions set in forced operation mode can be carried out.

Basically, the channel is locked with a 1 bit 1-telegram and unlocked with a 1 bit 0-telegram via the corresponding object.

Depending on mode and object type, various parameters become available in order to make best use of locking mode.

3.4.1. Operating mode: Switching

In the operating mode "switching", the following parameters are available for the locking function:

"Response on locking"

The reaction of the connected load upon locking can be defined. The following parameters are available:

response on locking	**no response (default)**
	same as when pressing the push button
	same when releasing the push button

For a description of the parameters "same as when pressing the push button" and "same as when releasing the push button" see section 3.3.1.

"Response on unlocking"

The reaction of the connected load upon unlocking can be defined. The following parameters are available:

response on unlocking	**no response (default)**
	same as when pressing the push button
	same as when releasing the push button

For a description of the parameters "same as when pressing the push button" and "same as when releasing the push button" see section 3.3.1.

3.4.2. Operating mode: Dimming

In the operating mode "dimming", the following parameters are available for the locking function:

"Response on locking"

The following parameters are available:

response on locking	**no response (default)**
	switch ON
	switch OFF
	send brightness value (0%-100%)

"Switch ON" implies that the connected load is activated at 100% and "switch OFF" is for deactivating the connected load (0%). The parameter "send brightness value (0%-100%)" being activated, a suitable percentage value can be set for switching on the connected load.

"Response on unlocking"

The following parameters are available:

response on unlocking	**no response (default)**
	switch ON
	switch OFF

	send brightness value (0%-100%)

"Switch ON" implies that the connected load is activated at 100% and "switch OFF" is for deactivating the connected load (0%). The parameter "send brightness value (0%-100%)" being activated, a suitable percentage value can be set for switching on the connected load.

3.4.3. Operating mode: blinds/roller shutters

In the operating mode "blinds/roller shutters", the following parameters are available for the locking function:

"Slats: response on locking"

Here, the reaction of the slats upon locking is defined. The following parameters are available:

slats: response on locking	**no response (default)**
	step up
	step down

The options "step up" or "step down" are for adjusting the position of the slats. Each time the push button is pressed, a step command is triggered. Step commands provoke a change of the position of the slats or a short upward or downward movement of the blinds/roller shutters.

"Slats: response on unlocking"

Here, the reaction of the slats upon unlocking is defined. The following parameters are available:

slats: response on unlocking	**no response (default)**
	step up
	step down

"Blinds/roller shutters: response on locking"

Here, the reaction of the blinds/roller shutters upon locking is defined. The following parameters are available:

blinds/roller shutters: response on locking	**no response (default)**
	move up
	move down

The options "move up" or "move down" are for triggering move commands, to move a blind or roller shutter up or down.

"Blinds/roller shutters: response on unlocking"

Here, the reaction of the blinds/roller shutters upon unlocking is defined. The following parameters are available:

blinds/roller shutters: response on unlocking	**no response (default)**
	move up
	move down

3.5 Behaviour on bus voltage recovery

The behaviour of each individual channel on bus voltage recovery, for example as a consequence of a power break-down, can be set.

3.5.1. Operating mode: Switching

In the operating mode "switching", the following parameters are available:

response on bus voltage recovery	**no response (default)**
	same as when pressing the push button
	same as when releasing the push button

For a description of the parameters "same as when pressing the push button" and "same as when releasing the push button" see section 3.3.1.

3.5.2. Operating mode: Dimming

In the operating mode "dimming", the following parameters are available:

response on bus voltage recovery	**no response (default)**
	switch ON
	switch OFF
	send brightness value (0%-100%)

"Switch ON" implies that the connected load is activated at 100% and "switch OFF" is for deactivating the connected load (0%). The parameter "send brightness value (0%-100%)" being activated, a suitable percentage value can be set for switching on the connected load.

3.5.3. Operating mode: Blinds/roller shutters

In the operating mode "blinds/roller shutters" the behaviour of the slats can be defined. The options "step up" or "step down" are for adjusting the position of the slats. Each time the push button is pressed, a step command is triggered. Step commands provoke a change of the position of the slats or a short upward or downward movement of the blinds/roller shutters.

"Slats: response on bus voltage recovery"

The following parameters are available:

slats: response on bus voltage recovery	**no response (default)**
	step up
	step down

Furthermore, the behaviour of the blinds/roller shutters can be defined. The options "move up" or "move down" are for triggering move commands, to move a blind up or down.

"Blinds/roller shutters: response on bus voltage recovery"

blinds/roller shutters: response on bus voltage recovery	**no response (default)**
	move up
	move down

4. DIMMING FUNCTION

Initially, the scenes function and the locking function can be activated. As default both are deactivated. After activation, the objects "scenes function" and "locking function" appear in addition to the already visible objects "dimming behaviour" and "startup and voltage loss behaviour". These objects will be explained below.

4.1 Dimming behaviour

4.1.1 Dimming curve

The behaviour of fluorescent lamps upon being switched on differs from the behaviour of, for example, LEDs. Therefore, in this setting selection can be made between "for fluorescent lamps" (logarithmic dimming curve, corresponding to eye sensitivity) and "standard" (linear).

4.1.2 Minimum/maximum dimming value

Here, the lowest and the highest dimming value can be set as a percentage (1% to 100%).

4.1.3 Dimming speed from 0% to 100% in seconds

Here, the duration in seconds can be specified which is required for dimming from 0% to 100%. The duration defined here is the standard dimming speed.

4.1.4 Lower range to / Upper range from / Respective behaviour

The dimming range can be divided into three sub-ranges. To do this, the upper limit of the lower range (lower range to) and the lower limit of the upper range (upper range from) have to be defined. The dimming speed can be set differently for the respective ranges. It is, for example, possible to select a slower dimming speed (half dimming speed) for the lower range in order to enable the eyes to adjust to the light. In the upper range the dimming speed can, for example, be set to "double dimming speed" due to the fact that the changes in light are not so important for the eyes. If the standard dimming speed is set to 5 seconds, half dimming speed is 10 seconds and double dimming speed is 2.5 seconds.

behaviour in lower range	**half dimming speed (default)**
	standard dimming speed
	double dimming speed

behaviour in upper range	half dimming speed
	standard dimming speed
	double dimming speed (default)

4.1.5 Switching off via dimming command

If this parameter is activated, the lighting can be switched off via dimming command by reducing the brightness. If not, the lighting remains at the lowest pre-set level.

4.1.6 Behaviour on switching

With this parameter, it can be defined whether the lighting reaches its pre-set level immediately ("jump to value"), or comes up to this level gradually (soft start; "dim to value").

4.1.7 Light-on behaviour

Here, the light-on brightness value is pre-set.

light-on behaviour	**last brightness value (default)**
	adjustable value

The last brightness value is stored. The option "last brightness value" defines that this value also is used for switching on. If the option "adjustable value" is selected, the parameter "light-on value" becomes visible.

4.1.8 Light-on value

For the option "adjustable value", the value in percent (0%-100%) to be used for switching on (regardless of the last brightness value) can be defined here.

4.1.9 Light-off value

If dimming goes below the value defined here the lighting switches off.

4.1.10 Behaviour on Dimming value

With this parameter, it can be defined whether the lighting reaches its pre-set level immediately ("jump to value"), or comes up to this level gradually (soft start; "dim to value").

4.1.11 Turn off device in power-off mode

If this parameter is activated, the internal power relay of the connected DALI lighting is switched off through an OFF-telegram, so that there is no longer any standby consumption. After activation of this parameter, the parameter "pause between turning off and communication" becomes visible.

4.1.12 Pause between turning off and communication

Furthermore, the length of time between the OFF-telegram and the switch-off of the supply voltage can be defined.

4.2. STARTUP AND VOLTAGE LOSS BEHAVIOUR

The behaviour of the system in case of a voltage loss can be defined here, for both, the bus voltage loss and the bus voltage recovery.

4.2.1 Behaviour on bus voltage recovery

The behaviour of the system on bus voltage recovery is defined by means of the following parameters:

behaviour on bus voltage recovery	no response
	value in percent (default)
	same behaviour as before voltage loss

The parameter "value in percent" being activated, a value can be defined which is sent to the system for switching on the connected load. If "same behaviour as before voltage loss" is selected, the system returns to the values stored.

4.2.2 Behaviour on bus voltage loss

behaviour on bus voltage loss	no response
	value in percent (default)

The parameter "value in percent" being activated, a value can be defined which is sent to the system for switching on the connected load.

4.3 Scenes function

The B.E.G. RCT Room Controller has a scenes input which can be accessed via the KNX bus, for example by means of the occupancy detector. If the function "save scenes" is activated, the user is allowed to save scenes via KNX without ETS. However, it can be useful to deactivate this function, for example in schools or other public buildings. The function being deactivated, the user is only allowed to select predefined scenes without having the right to program scene parameters. The parameter "overwrite scenes when downloading" defines if scenes are overwritten when downloading from ETS to KNX or not. In private homes, for example, it can be useful to deactivate this function in order to keep the scenes programmed by the user. A total of eight scenes (A-H) can be defined. The parameter "scene (letter) number" assigns the scene number (number between 1 and 64) and "scene (letter) value" defines the brightness value for switching on the lighting. Furthermore, it can be selected whether the lighting reaches its pre-set level immediately on scene retrieval ("jump to value") or comes up to this level gradually ("dim to value"). If the option "dim to value" is activated, the dimming curve can be extended, which is set in hours and minutes. This function is for example helpful in children's bedrooms, if the children only fall asleep when the light is on. The function being activated, the brightness is reduced very slowly allowing the children to fall asleep without being afraid.

4.4 Locking function

The locking function is also available for the dimming actuator. It offers the possibility to take out of service the dimming actuator via communication object. After being locked, the dimming actuator cannot be used until it is unlocked again.

The following parameters are available:

"Locking via" / "unlocking via"

Under the parameter "locking via", three options are available. A 1 bit ON telegram can be sent (default). In this case, "unlocking via" should be set to 1 bit OFF telegram (default). This means that the locking is activated by means of an ON telegram and is deactivated by means of an OFF telegram. However, it is also possible to lock by means of an OFF telegram and to unlock by means of an ON telegram. In both cases the reaction on locking and unlocking can be defined: either there is no response or a corresponding value can be sent for switching the connected load. The third option is to lock or unlock by means of a 1 byte scenes telegram. In this case, the scene number can be indicated to be used for locking and unlocking, respectively.

5. BLINDS AND ROLLER SHUTTER ACTUATOR

Selection can be made between two operating modes: blinds and roller shutters.

5.1 Difference in the operating mode "blinds": the parameter "step time"

For the operating mode "blinds", the additional parameter "step time" is available. A step is a short movement of the blind triggered by a short push button press. A step duration between 50 and 500ms can be set. Default value is a duration of 100ms.

Parameter values:

50ms
100ms (default)
150 ms
200ms
250ms
300ms
350ms
400ms
450ms
500ms

All other parameters are similar in blinds and roller shutters mode and will be explained below.

5.2 "Move time in minutes" / "move time in seconds"

These parameters define the move time of the blinds or the roller shutters between the positions "open" or "closed". In other words, the duration for a downward or upward movement of the blinds/roller shutters is defined.

5.3 Reverse direction delay

The time set here relates to the delay between upwards and downwards travel of the blind/roller shutter. It can be set to a duration between 100ms and 1000ms, the default value being 500ms.

Parameter values:

100ms
200ms
300 ms
400ms
500ms (default)
300ms
350ms
400ms
450ms
500ms

5.4 Weather alarm

If the system includes a weather station, the behaviour of the blinds/roller shutters in case of a weather alarm can be defined. If a weather alarm occurs, blinds/roller shutters can be set to move up or down.

The following parameters are available:

weather alarm	**no weather alarm (default)**
	move up on weather alarm
	move down on weather alarm

5.5 Behaviour on bus voltage recovery

The behaviour of the blinds/roller shutters on bus voltage recovery, for example after voltage loss due to power breakdown, can be defined. The following parameters are available:

behaviour on bus voltage recovery	**switch off drive (default)**
	move up
	move down

"Switch off drive" means that the relays are disconnected. The option "Move up" or "move down" provokes the blinds/roller shutters to be opened or closed, respectively.

5.6 Behaviour on bus voltage loss

The behaviour of the blinds/roller shutters on bus voltage loss, for example due to power breakdown, can be defined. The following parameters are available:

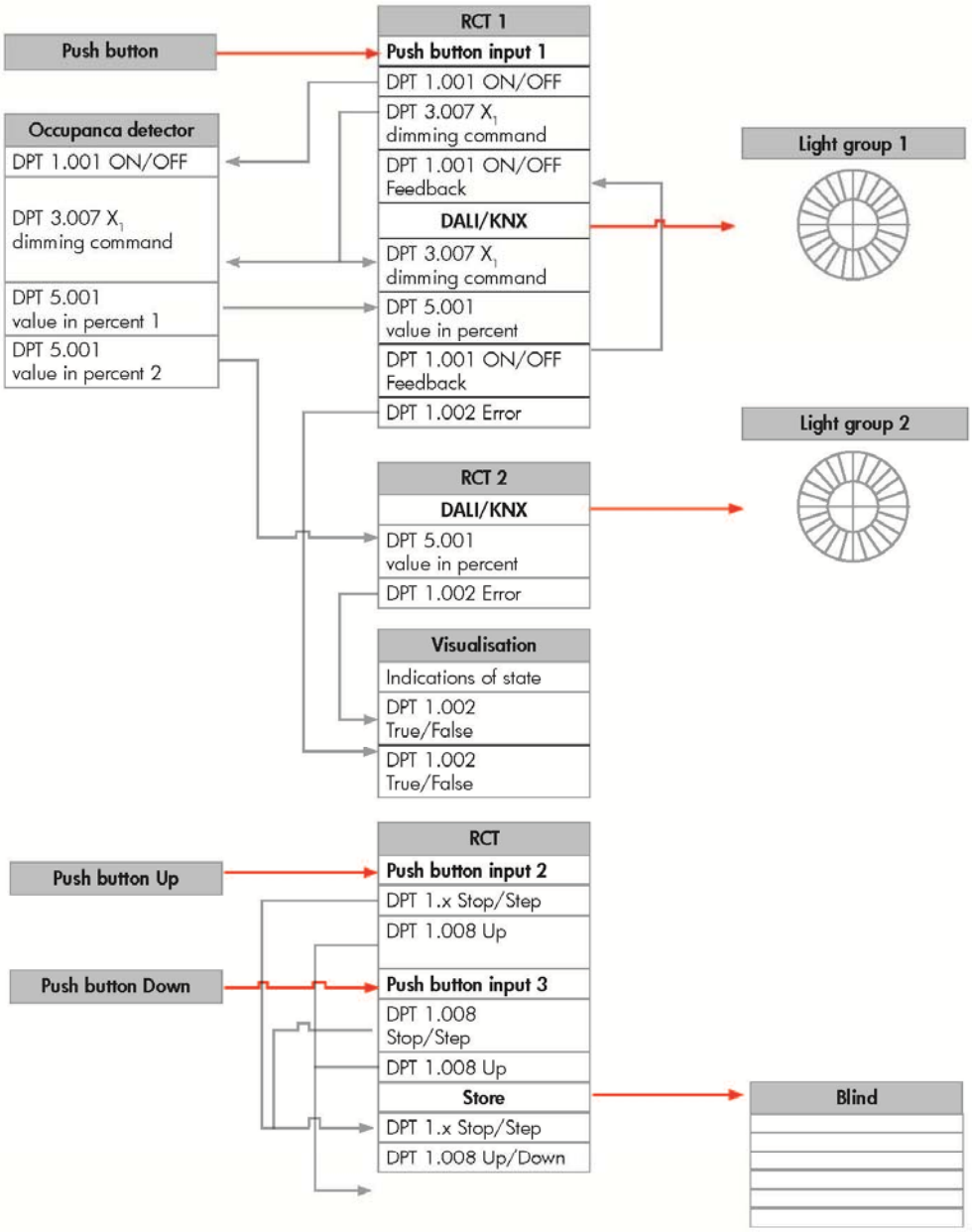
behaviour on bus voltage loss	No response
	switch off drive (default)
	move up
	move down

"Switch off drive" means that the relays are disconnected. The option "Move up" or "move down" provokes the blinds/roller shutters to be opened or closed, respectively.

6. Connection of RCT and B.E.G. detector

As already mentioned in section 1.1, the various communication objects of the RCT have to be connected to the respective communication objects of other KNX devices. This also applies to B.E.G. KNX motion and occupancy detectors. The following diagram serves as example of use:

Application description KNX Room Controller with integrated DALI/KNX-Gateway, compatible to B.E.G. detectors V5.0



7. COMMUNICATION OBJECTS

Object	Description	Function	Type	DPT
	External inputs: push buttons, switches			
0	Switching - output	CH1	1 bit	[1.1] DPT_Switch
0	Forced operation - output	CH1	2 bit	[2.1] DPT_Switch_Control
0	Value - output	CH1	1 byte	[5.1] DPT_Scaling
0	Slats stop/step command - output	CH1	1 bit	[1.7] DPT_Step
1	Dimming command - output	CH1	4 bit	[3.7] DPT_Control_Dimming
1	Move command - output	CH1	1 bit	[1.8] DPT_UpDown
2	Dimming value - output	CH1	1 byte	[5.1] DPT_Scaling
3	Locking object - input	CH1	1 bit	[1.3] DPT_Enable
4	Feedback object toggle - input	CH1	1 bit	[1.1] DPT_Switch
5	Switching - output	CH2	1 bit	[1.1] DPT_Switch
5	Forced operation - output	CH2	2 bit	[2.1] DPT_Switch_Control
5	Value - output	CH2	1 byte	[5.1] DPT_Scaling
5	Slats stop/step command - output	CH2	1 bit	[1.7] DPT_Step
6	Dimming command - output	CH2	4 bit	[3.7] DPT_Control_Dimming
6	Move command - output	CH2	1 bit	[1.8] DPT_UpDown
7	Dimming value - output	CH2	1 byte	[5.1] DPT_Scaling
8	Locking object - input	CH2	1 bit	[1.3] DPT_Enable
9	Feedback object toggle - input	CH2	1 bit	[1.1] DPT_Switch
10	Switching - output	CH3	1 bit	[1.1] DPT_Switch
10	Forced operation - output	CH3	2 bit	[2.1] DPT_Switch_Control
10	Value - output	CH3	1 byte	[5.1] DPT_Scaling
10	Slats stop/step command - output	CH3	1 bit	[1.7] DPT_Step
11	Dimming command - output	CH3	4 bit	[3.7] DPT_Control_Dimming
11	Move command - output	CH3	1 bit	[1.8] DPT_UpDown
12	Dimming value - output	CH3	1 byte	[5.1] DPT_Scaling
13	Locking object - input	CH3	1 bit	[1.3] DPT_Enable
14	Feedback object toggle - input	CH3	1 bit	[1.1] DPT_Switch
15	Switching - output	CH4	1 bit	[1.1] DPT_Switch
15	Forced operation - output	CH4	2 bit	[2.1] DPT_Switch_Control
15	Value - output	CH4	1 byte	[5.1] DPT_Scaling
15	Slats stop/step command - output	CH4	1 bit	[1.7] DPT_Step
16	Dimming command - output	CH4	4 bit	[3.7] DPT_Control_Dimming
16	Move command - output	CH4	1 bit	[1.8] DPT_UpDown
17	Dimming value - output	CH4	1 byte	[5.1] DPT_Scaling
18	Locking object - input	CH4	1 bit	[1.3] DPT_Enable
19	Feedback object toggle - input	CH4	1 bit	[1.1] DPT_Switch
	KNX/DALI dimming actuator			
20	Switching - input	KNX/DALI	1 bit	[1.1] DPT_Switch
21	Dimming command - input	KNX/DALI	4 bit	[3.7] DPT_Control_Dimming

22	Dimming value - input	KNX/DALI	1 byte	[5.1] DPT_Scaling
23	Scene - input	KNX/DALI	1 byte	[18.1] DPT_Scene Control
24	Locking object - input	KNX/DALI	1 bit	[1.3] DPT_Enable
25	Feedback object - output	KNX/DALI	1 byte	[5.1] DPT_Scaling
26	Feedback object - output	KNX/DALI	1 bit	[1.1] DPT_Switch
27	Communication error - output	DALI/KNX	1 bit	[1.3] DPT_Enable
28	Lamp error - output	DALI/KNX	1 bit	[1.3] DPT_Enable
	Blinds actuator			
29	Slats stop/step command	Blinds/roller shutter actuator	1 bit	[1.7] DPT_Step
29	Stop command - input	Blinds/roller shutter actuator	1 bit	[1.17] DPT_Trigger
30	Move command - input	Blinds/roller shutter actuator	1 bit	[1.8] DPT_UpDown
31	Weather alarm - input	Blinds/roller shutter actuator	1 bit	[1.5] DPT_Alarm