EN

WEINZIERL

Operation and installation manual

KNX IO 534 (4D)

(Art. # 5314)

Dimming actuator with 4 PWM dimming outputs
Application with RGB / RGBW / Tunable White support

KNX IO 534 (4D)

Application area

The KNX IO 534 (4D) is a compact RGB / RGBW / Tunable White dimming actuator with 4 PWM outputs.

The dimming actuator can be used e.g. for LED panels or stripes with RGB / RGBW / Tunable White configuration or as 4 independent PWM dimmer channels. Every configuration allows controlling the channel by switching, rel. dimming and dimming value.

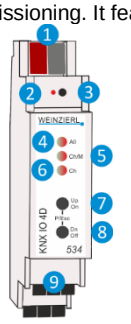
Several comfort functions are integrated as well, including scenes, slumber fading, staircase light and sequencer.

Two push buttons and three LEDs allow a local operation and a visualization of the device state.

In addition to the output channels the device includes 16 independent functions for logic or timer control.

1. Installation and connection

The KNX IO 534 is designed for installation on a DIN rail (35 mm) with a width of 1 units (18 mm). An installation-friendly design with pluggable screw terminals helps to reduce the cost of commissioning. It features the following controls and displays:



1. *KNX bus connector*
2. *Programming LED*
3. *Button f. programming mode*
4. *LED All (multicolor)*
5. *LED Ch/M (multicolor)*
6. *LED Ch (multicolor)*
7. *Button Up/On*
8. *Button Dn/Off*
9. *Pluggable screw terminals*

This device is powered by the KNX bus. An external power supply is not necessary.

The device is not working without bus power.

A. KNX Programming mode

The KNX programming mode is activated/deactivated either by pressing the flushed KNX programming button 3 or by simultaneously pressing the buttons 7 and 8. Accessing the programming mode via the device front buttons can be enabled / disabled via the ETS® by changing the value of *Prog. mode on device front.*

When the programming mode is active, the programming LED 2 and LED Ch/M 5 light red.

B. Manual operation and status display

The LED Ch/M 5 lights up or flashes if the device is successfully powered by the KNX bus.

The channel for manual operation can be selected by pressing button A 7 or B 8 short. The selected channel is indicated by a continuous light or cyclic flashing of LED Ch/M 5 in green, where the number of flash cycles indicates the number (A=1, B=2, C=3, D=4) of the channel. On continuous light all channels are controlled simultaneously in manual operation.

Pressing button A 7 or B 8 for a long time switches to manual operation for the selected channel of the dimming actuator. This is indicated by continuous light or cyclic flashing of the LED Ch/M 5 in orange. The flashing frequency corresponds again to the channel selection.

In manual operation, the respective channel can be switched on by pressing button On 7 and switched off by pressing button Off 8 short. In addition, it can be dimmed brighter with long button press on 7 and darker with long button press on 8.

The manual operation mode can be exit by pressing the buttons (Esc) 7 and 8 simultaneously.

LED A 4 indicates the status of the dimming actuator. It lights up when the channel is switched on and is off when the channel is switched off.

Summary of the states of LED Ch/M 5:

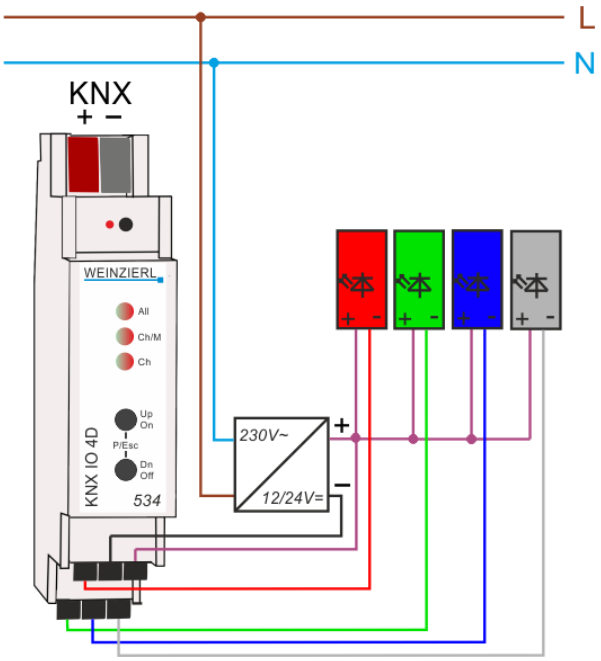
LED Status	Meaning
LED lights green	Device is working in standard operation mode. After activation of manual operation all channels can be operated.
LED flashes 1x green	The device is currently loaded by the ETS **or** after activation of manual operation channel A can be operated.
LED flashes 2x green	After activation of manual operation channel B can be operated.
LED flashes 3x green	After activation of manual operation channel C can be operated.
LED flashes 4x green	After activation of manual operation channel D can be operated.
LED lights red	Programming mode is active.
LED lights orange	Programming mode is not active. Manual operation is active, simultaneous switching/dimming of all channels possible.
LED flashes 1x orange	Programming mode is not active. Manual operation is active, switching/dimming of channels A possible.
LED flashes 2x orange	Programming mode is not active. Manual operation is active, switching/dimming of channels B possible.
LED flashes 3x orange	Programming mode is not active. Manual operation is active, switching/dimming of channels C possible.
LED flashes 4x orange	Programming mode is not active. Manual operation is active, switching/dimming of channels D possible.
LED flashes red	Programming mode is not active. Manual operation is not active. The device is not properly loaded, e.g. after an interrupted ETS download.

2. Reset to factory device settings

It is possible to reset the device to its factory settings:

- Disconnect the KNX Bus connector 1 from device
- Press the KNX programming button 3 and keep it pressed down
- Reconnect the KNX Bus connector 1 of device
- Keep the KNX programming button 3 pressed for at least another 6 seconds
- A short flashing of all LEDs (2 4 5 6) visualizes the successful reset of the device to factory default settings.

3. Wiring scheme



Pluggable screw terminals

The pluggable screw terminals 9 are used to control e.g. LED panels or stripes.

The +12/24V connection of the used power supply unit is connected to the right terminal at the upper screw terminals (12..24V +), at the same time with the common anode of the consumers. The ground connection of the power supply unit is connected to the middle terminal (12..24V -). The remaining terminals are connected to the cathode of the desired channel. The device has the following labeling of the channels:

- Labeling:

Ch 1 Out -	12..24V - +	
Ch 2 Out -	Ch 3 Out -	Ch 4 Out -

In the basic setting of the individual operating modes, the assignment of the channels from the parameters corresponds to the following scheme, whereby the assignment of the channels can be changed freely in the ETS parameter dialog:

- 1 x RGB:

R Out -	12..24V - +	
G Out -	B Out -	Ch D Out -

- 1 x RGBW:

R Out -	12..24V - +	
G Out -	B Out -	W Out -

- 1 x Tunable White:

CW Out -	12..24V - +	
WW Out -	Ch C Out -	Ch D Out -

- 2 x Tunable White:

TW A: CW Out -	12..24V - +	
TW A: WW Out -	TW B: CW Out -	TW B: WW Out -

- 4 x Common Dimmer:

Ch A Out -	12..24V - +	
Ch B Out -	Ch C Out -	Ch D Out -

4. Operating parameters of the dimmer channels

Maximum connectable power

The maximum dimmable power of the dimming actuator is essentially limited by the power loss in the device. The maximum current of 6 A can be distributed to any of the four channels. With identical loads, 1.5 A per channel is thus permitted.

In Tunable White (TW) mode, two channels are used for each function. In the standard setting, the total current of the two channels is 100% of the maximum current of one channel. Thus TW LEDs with double current can be connected here. Example:

- Channel 1: TW A cold white 3 A
- Channel 2: TW A warm white 3 A
- Channel 3: TW B cold white 3 A
- Channel 4: TW B warm white 3 A

PWM Phase position

The PWM signals of output channels 1 and 4 are in phase. Channels 2 and 3 are also in phase, but shifted by 180° to 1 and 4.

Power dissipation

The dimming of luminaires is not possible without a certain power loss in the dimmer. This power dissipation leads to a heating of the device and depends on several factors. In addition to the output of the connected lamps, the current dimming value is also taken into account. Thus, the loss with the luminaire switched off is almost zero except for the leakage current. Even at 100%, the power loss is relatively low and can be traced back to the contact resistance of the output.

Between 0 and 100% the switching losses caused by the PWM are added. Overall, there is a maximum power loss in the upper dimming range.

The rated power of 144W refers to the maximum permitted ambient temperature for free installation. If there are other devices next to the dimming actuator that emit heat, the power that can be connected is reduced. Alternatively, the devices can also be mounted at a small distance (approx. ½ TE = 9 mm). Suitable spacers for the top-hat rail are available on the market for this purpose.

Safety shutdown

The dimming actuator has an electronic fuse for overcurrent and overtemperature. In both error cases, the output is switched off and can be switched on again via a command if the error is no longer present.

In addition, the device is also equipped with fuses against overcurrent and overtemperature. This fuse stage protects connected devices and surrounding materials against severe damage, but leads to failure of the dimming actuator and can no longer be reset.

5. ETS database

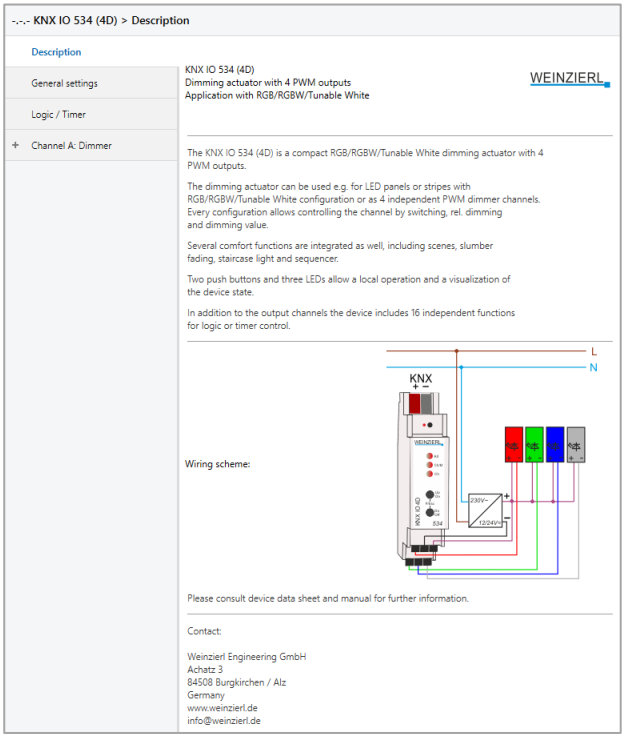
The ETS database (for ETS 4.2 ETS and 5) can be downloaded from the product website of the KNX IO 534 (4D) (www.weinzierl.de) or via the KNX online catalogue.

ETS parameter dialog

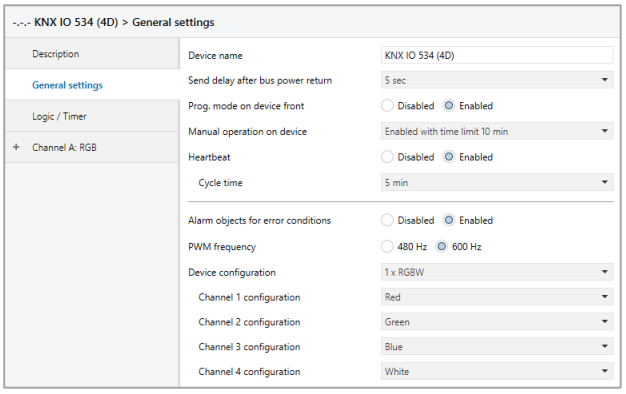
The following pages and parameters are visible in the ETS:

A. Description

This page shows the device description and the associated wiring scheme.



B. General settings



Device name (30 Characters)

An arbitrary name can be assigned for the KNX IO 534 (4D). The device name should be meaningful, e.g. „Living Room“. This helps the clarity of the ETS project.

Send delay after bus power return

A send delay of telegrams after the return of the bus voltage can be set via this parameter. In this case, telegrams from the device are sent to the KNX bus in a delayed manner by the set time. This results in a reduction of the bus load at a bus power return. Other functions such as receiving telegrams of switching operations of the actuator are not affected by this parameter.

Prog. mode on device front

In addition to the normal programming button 3 the device allows activating the programming mode on the device front without opening the switchboard cover. The programming mode can be activated and deactivated via pressing simultaneously both buttons 7 and 8.

This feature can be enabled and disabled via the parameter “Prog. mode on device front”. The recessed programming button 3 (next to the Programming LED 2) is always enabled and not influenced by this parameter.

Manual operation on device

This parameter is used to configure the manual operation on the device. The manual operation mode can be disabled or activated (with or without time limitation). The time limit defines the duration until the automatic return from the manual operation mode back into the normal operating mode.

The device is in normal operating mode when the manual control is not active. In the manual operating mode, received switching telegrams are ignored. When the manual operation mode is terminated (after expiry of the time limit or manually), the last state of the outputs remains, until a new switching telegram is received again.

The following options are selectable:

- Disabled
- Enabled with time limit 1 min
- Enabled with time limit 10 min
- Enabled with time limit 30 min
- Enabled without time limit

Heartbeat

Cyclic sending of values to the KNX-Bus, to indicate that the device is operational. For the Cycle time values between 1 min and 24h are selectable.

Group Object	Type KNX	Size	Direction
GO 1 Heartbeat - Trigger	1.001	1 Bit	To KNX

Alarm objects for error conditions

With this parameter, the following objects for the visualization of error states become visible:

Group Object	Type KNX	Size	Direction
GO 2 Alarm - Overload	1.001	1 Bit	To KNX
GO 3 Alarm - Overtemperature	1.001	1 Bit	To KNX
GO 4 Alarm - No supply voltage	1.001	1 Bit	To KNX

If an error condition is detected, all dimmer outputs switch off and an ON telegram is sent via the respective object. The outputs are disabled for the duration of the error state, if it is resolved, the respective object sends an OFF telegram, and the dimmer can be used normally again.

Overload is triggered from a load of 8A, overtemperature from a measured temperature of 85°C in the load section. If no value is received by the load section for longer than 3 seconds, the error state "No supply voltage" is triggered.

PWM frequency

Here can be switched between 480Hz and 600Hz PWM frequency. This parameter affects all dimmer outputs.

Device configuration

Here the general configuration of the device can be set; the following are available for selection:

- 1 x RGB
  The device is operated as an RGB dimmer, 3 output channels are occupied, 1 further output channel can be used as a general dimmer or remain deactivated.
- 1 x RGBW
  The device is operated as an RGBW dimmer, for which all 4 output channels are occupied.
  In this configuration, the output value of white is automatically set, the value for white is calculated from the current RGB value with the formula:

$$\text{White} = \text{Brightness} \cdot (1 - \text{Saturation})$$

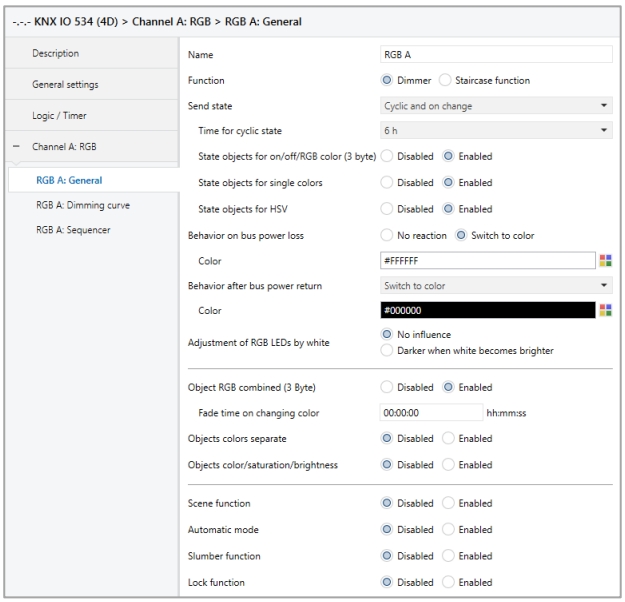
- 1 x Tunable White
  The dimmer is used for a Tunable White consumer, both cold and warm white LEDs occupy 1 output channel. 2 further output channels can be used as a general dimmers or remain deactivated.
- 2 x Tunable White
  The dimmer is used for 2 independent Tunable White consumers, for this all 4 output channels are occupied.
- 4 x Common Dimmer
  Each output channel can be used as an independent dimmer.

Channel 1..4 configuration

Depending on the configuration of the device, these parameters can be used to assign the output channels to the internal functions. The assignment of the channels in the basic setting is described in section 3 (Wiring scheme).

Device configuration “RGB” and “RGBW”

A. RGB A: General



Name (30 Characters)

An arbitrary name can be assigned for the channel. However, this should be clear and meaningful, this makes it easier to work with the associated group objects, because the given name is displayed there as a label. If no name is assigned, the group objects are named “RGB A: …”.

Function

This parameter defines the functionality of the actuator, the following options are selectable:

- Dimmer
  When this functionality is selected, scene function, automatic mode, slumber and lock function are available. In addition, objects can be configured for switching on/off, relative dimming and absolute value of the 3 in-

dividual colors, of color value, saturation and brightness, as well as for controlling the dimmer via RGB value.

- Staircase function
  The parameter page "RGB A: Staircase function" is displayed. Only the lock function is available here.

Send state

This parameter defines the behavior of the state objects:

- Disabled
  State objects are deactivated and not displayed.
- Only on read
  State objects send only on request.
- On change
  State objects send on value change.
- Cyclic and on change
  State objects send cyclically and on value change.

Time for cyclic state

With this parameter, the cycle time can be set, when “Cyclic and on change“ is selected for sending state.

State objects for on/off/RGB color (3 byte)

Activates the following state objects:

Group Object	Type KNX	Size	Direction
GO 31 RGB A: RGB output - State on/off	1.001	1 Bit	To KNX
GO 32 RGB A: RGB output - State color	232.600	3 Byte	To KNX

If sending on value change is activated and all 3 colors change to value 0, the state object On/Off sends an OFF telegram, if at least one of the 3 colors changes to a value greater than 0, the object sends an ON telegram.

If sending on value change is activated and at least one of the 3 colors changes, the state object color sends new RGB values with a time interval of at least 1 second.

State objects for single colors

Activates the following state objects:

Group Object	Type KNX	Size	Direction
GO 33 RGB A: Red output - State value	5.001	1 Byte	To KNX
GO 34 RGB A: Green output - State value	5.001	1 Byte	To KNX
GO 35 RGB A: Blue output - State value	5.001	1 Byte	To KNX

In RGBW configuration the following object is also available:

Group Object	Type KNX	Size	Direction
GO 36 RGB A: White output - State value	5.001	1 Byte	To KNX

If sending on value change is activated, the state objects transmit with a time interval of at least 1 second if the color assigned to the object has changed by at least 1% or if a dimming process has been completed.

State objects for HSV

Activates the following state objects:

Group Object	Type KNX	Size	Direction
GO 37 RGB A: HSV color angle - State angle	5.003	1 Byte	To KNX
GO 38 RGB A: HSV saturation - State value	5.001	1 Byte	To KNX
GO 39 RGB A: HSV brightness - State value	5.001	1 Byte	To KNX

If sending on value change is activated, the state objects transmit with a time interval of at least 1 second if the color attribute assigned to the object has changed by at least 1% or if a dimming process has been completed.

Behavior on bus power failure

The behavior of the output in the event of bus power failure can be configured here.

The following options are selectable:

- No reaction
- Switch to color
  A parameter for adjusting the color appears.

Behavior after bus power return

Here the behavior of the output after bus power return can be configured. This behavior will be set after every device restart (e.g. also on restart after ETS download).

The following options are selectable:

- No reaction
- Switch to color
  A parameter for adjusting the color appears.
- State like before bus power failure

Adjustment of RGB LEDs with white

This parameter is only visible when the device is used in RGBW configuration. With this parameter it can be switched whether the output values for red, green and blue should be scaled depending on the current value of white:

- No influence
  White has no influence on RGB, e.g. with an RGB color value of white (#FFFFFF) all 4 outputs are set to maximum.
- Darken when white becomes brighter
  In this setting the output values of red, green and blue are scaled with the formula 1 - white value, e.g. with an RGB color value of white (#FFFFFF) the outputs of red, green and blue are at minimum, the output of white at maximum.

Object RGB combined (3 Byte)

Enables the function block for controlling the dimmer via the following object:

Group Object	Type KNX	Size	Direction
GO 11 RGB A: RGB - Set value	232.600	3 Byte	From KNX

To set the fade time, the following parameter becomes also visible:

Fade time on changing color

The period is related to a complete dimming process of 0-100%.

Objects colors separate

Enables the function blocks for controlling the 3 single colors red, green and blue. For each color, a parameter block is displayed, which is explained in section B.

Objects color/saturation/brightness

Enables the function blocks for controlling the dimmer via the 3 attributes color, saturation and brightness. For each attributes, a parameter block is displayed, which is explained in sections C, D and E.

Scene function

The scene function can be activated or deactivated here; it is only available in the "Dimmer" operating mode. If this function is activated, the parameter page "RGB A: Scene function" appears for further configuration of scenes 1-16. The further functionality is explained in section H.

Automatic mode

Automatic mode is only available in the "Dimmer" function. If this mode is selected, the following objects become visible:

Group Object	Type KNX	Size	Direction
GO 41 RGB A: Automatic mode - Activate	1.001	1 Bit	From/To KNX
GO 42 RGB A: Autom. RGB - Set value	232.600	3 Byte	From KNX

When using automatic mode, the dimmer can be controlled via object 42, e.g. for light control or daylight-dependent basic lighting.

In automatic mode, the dimmer can be manually overridden by the function blocks "Object RGB combined", "Objects colors separate" and "Objects color/saturation/brightness", as well as by scene, slumber and sequencer function. During manual override, values of object 42 are ignored, each manual override restarts the fallback time.

After the fallback time set in the parameter has elapsed, the RGB values received on object 42 are processed again.

Via object 41, the automatic can be switched on or off at any time, it also serves as a state object for automatic mode.

Slumber function

The slumber function is only available in the "Dimmer" operating mode. The slumber function offers 2 different fade times each for switching on and off via object. If this function is activated, a new parameter page appears, which is explained in section I.

Lock function

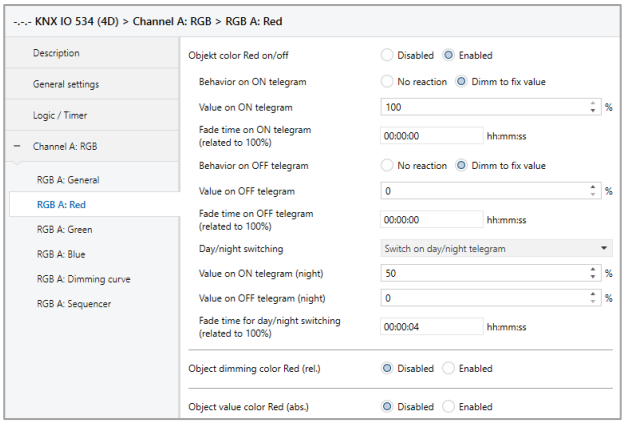
The lock function can be activated or deactivated here.

This function is available in both "Dimmer" and "Staircase function" operating modes. If this function is activated, a new parameter page appears for further configuration, which is explained in Section J in more detail.

B. RGB A: Red
RGB A: Green
RGB A: Blue

Each of the 3 individual colors red, green and blue can be controlled independently with on/off telegram, relative dimming and dimming value. The following parameters and objects are available for each color:

Object color Red on/off
Object color Green on/off
Object color Blue on/off



For switching the single colors, the following objects are available, if they have been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 12 RGB A: Red on/off - Switch	1.001	1 Bit	From KNX
GO 15 RGB A: Green on / off - Switch	1.001	1 Bit	From KNX
GO 18 RGB A: Blue on / off - Switch	1.001	1 Bit	From KNX

Behavior on ON telegram

This parameter can be used to configure the behavior when switching on via the respective object.

It is available:

- No reaction
- Dim to fix value

Value on ON telegram

With suitable parameterization this value is activated on ON telegram via the respective object.

Fade time on ON telegram

This fade time is active when an ON telegram is received. The period is related to a complete dimming process of 0-100%.

Behavior on OFF telegram

This parameter describes the behavior of the dimmer when an OFF telegram is received via the respective object.

It is available:

- No reaction
- Dim to fix value

Value on OFF telegram

With suitable parameterization this value is activated on OFF telegram via the respective object.

Fade time on OFF telegram

This fade time is active when an OFF telegram is received. The period is related to a complete dimming process of 0-100%.

Day/night switching

When using this function for at least one of the 3 colors, the following object is visible for switching between day/night mode:

Group Object	Type KNX	Size	Direction
GO 30 RGB A: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on the object, night mode with an OFF telegram. After a restart, the device is in day mode.

Telegrams on object 30 affect all activated day/night switches of the RGB channel.

In addition, it can be determined when the values become active after receiving a telegram on this object, it is available:

- Disabled
- Switch on day/night telegram
  Immediately after reception of day/night switching, it is dimmed to the active value according to the last received switch-on/switch-off via object 12, 15 or 18.
- Switch on next on/off telegram
  The currently active value is not used until the next switch on/off telegram via object 12, 15 or 18.

There is a separate switch-on and switch-off value for night mode in the parameters, in day mode the always visible values are used.

Value on ON telegram (night)

If the dimmer is in night mode, this value is activated by ON telegram via object 12, 15 or 18 and appropriate parameterization.

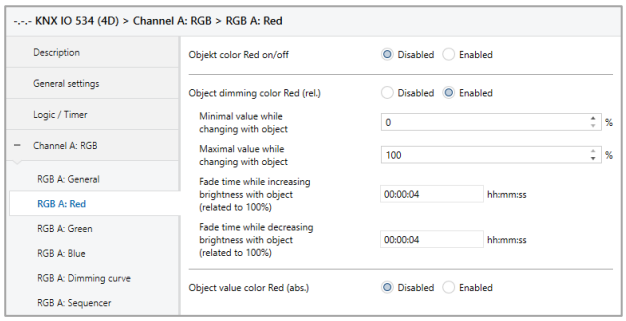
Value on OFF telegram (night)

If the dimmer is in night mode, this value is activated by OFF telegram via object 12, 15 or 18 and appropriate parameterization.

Fade time for day/night switching

This fade time is only active if switching on day/night telegram is used. If switching on next on/off telegram is used, the regular fade time of the respective on or off telegram is active. The period refers to a complete dimming process of 0-100%.

Object dimming color Red (rel.)
Object dimming color Green (rel.)
Object dimming color Blue (rel.)



The following objects are available for dimming the 3 colors using relative dimming commands, if they have been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 13 RGB A: Red dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX
GO 16 RGB A: Green dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX
GO 19 RGB A: Blue dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX

Minimal value while changing with object

This parameter can be used to set which minimum value can be reached via relative dimming. If the current value is below the minimum value, the brightness cannot be reduced via object 13, 16 or 19.

Maximal value while changing with object

This parameter can be used to set which maximum value can be reached via relative dimming. If the current value is above the maximum value, the brightness cannot be increased via object 13, 16 or 19.

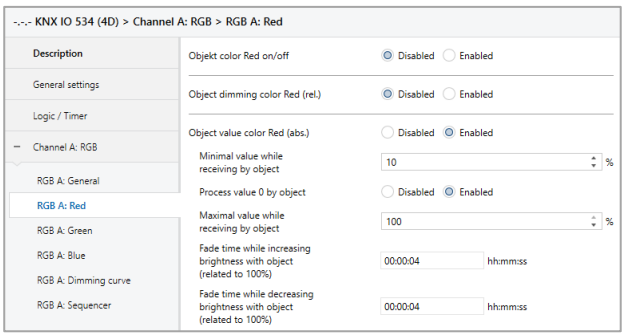
Fade time while increasing brightness with object

This fade time is active when the brightness is increased via relative dimming with object 13, 16 or 19. The period refers to a complete dimming process of 0-100%.

Fade time while decreasing brightness with object

This fade time is active when the brightness is decreased via relative dimming with object 13, 16 or 19. The period refers to a complete dimming process of 0-100%.

Object value color Red (abs.)
Object value color Green (abs.)
Object value color Blue (abs.)



The following objects are used to control the 3 colors via the dimming value if they have been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 14 RGB A: Red dimming abs. - Set value	5.001	1 Byte	From KNX
GO 17 RGB A: Green dimming abs. - Set value	5.001	1 Byte	From KNX
GO 20 RGB A: Blue dimming abs. - Set value	5.001	1 Byte	From KNX

Minimal value while receiving by object

This parameter can be used to configure which minimum value can be reached via object 14, 17 or 20. If a value is received below the minimum value, the color is controlled with the minimum value. If a value >0% is set here, the following parameter is also visible:

Process value 0 by object

Here it is to select whether the color is switched off when a value of 0% is received.

Minimal value while changing with object

This parameter can be used to configure which maximum value can be reached via object 14, 17 or 20. If a value above the maximum value is received, the color is controlled with the maximum value.

Fade time while increasing brightness with object

This fade time is active when the brightness is increased by values received via object 14, 17 or 20. The period refers to a complete dimming process of 0-100%.

Fade time while decreasing brightness with object

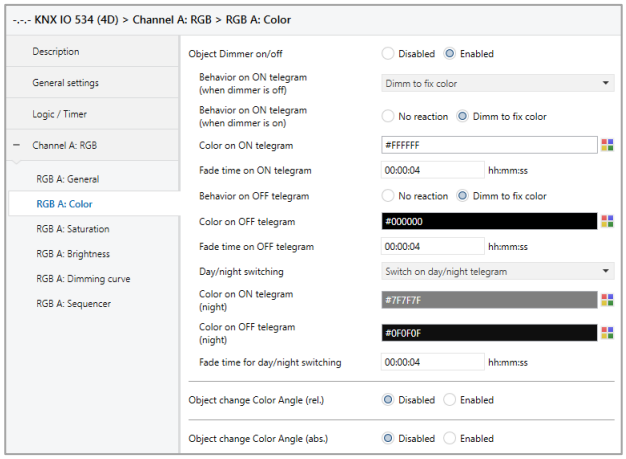
This fade time is active when the brightness is decreased by values received via object 14, 17 or 20. The period refers to a complete dimming process of 0-100%.

C. RGB A: Color

With this function block you can activate different colors via on/off telegrams, in addition there are objects for manipulating the color angle.

The color angle is an attribute of a color in the HSV space and assigns an angle in a color circle to each hue.

Object Dimmer on/off



The following object is available for switching the dimmer, if it has been activated in the parameters:

Group Object	Type KNX	Size	Direction
GO 21 RGB A: Color on/off - Switch	1.001	1 Bit	From KNX

Behavior on ON telegram (when dimmer is off)

If the dimmer is switched off, this parameter can be used to configure the behavior when switching on via object 21.

It is available:

- No reaction
- Dim to fix color
- Dim to last color before switching off

Behavior on ON telegram (when dimmer is on)

If the dimmer is already switched on, this parameter can be used to configure the behavior for a new ON telegram via object 21.

It is available:

- No reaction
- Dim to fix color

Color on ON telegram

With suitable parameterization this color is activated by ON telegram via object 21.

Fade time on ON telegram

This fade time is active when an ON telegram is received. The period is related to a complete dimming process of 0-100%.

Behavior on OFF telegram

This parameter describes the behavior of the dimmer when an OFF telegram is received via object 21.

It is available:

- No reaction
- Dim to fix color

Color on OFF telegram

With suitable parameterization this color is activated by OFF telegram via object 21.

Fade time on OFF telegram

This fade time is active when an OFF telegram is received. The period is related to a complete dimming process of 0-100%.

Day/night switching

When using this function, the following object is visible for switching between day/night mode:

Group Object	Type KNX	Size	Direction
GO 30 RGB A: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on the object, night mode with an OFF telegram. After a restart, the device is in day mode.

Telegrams on object 30 affect all activated day/night switches of the RGB channel.

In addition, it can be determined when the colors become active after receiving a telegram on this object, it is available:

- Disabled
- Switch on day/night telegram
  Immediately after reception of day/night switching, it is dimmed to the active color according to the last switch-on/switch-off received via object 21.
- Switch on next on/off telegram
  The currently active color is not used until the next switch on/off telegram via object 21.

There is a separate switch-on and switch-off color for night mode in the parameters, in day mode the always visible colors are used.

Color on ON telegram (night)

If the dimmer is in night mode, this color is activated by ON telegram via object 21 and appropriate parameterization.

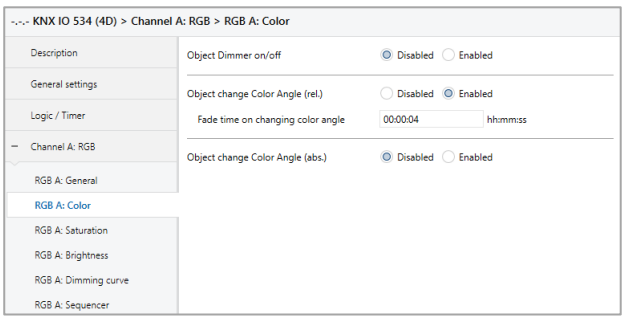
Color on OFF telegram (night)

If the dimmer is in night mode, this color is activated by OFF telegram via object 21 and appropriate parameterization.

Fade time for day/night switching

This fade time is only active if switching on day/night telegram is used. If switching on next on/off telegram is used, the regular fade time of the respective on or off telegram is active. The period refers to a complete dimming process of 0-100%.

Object change Color Angle (rel.)



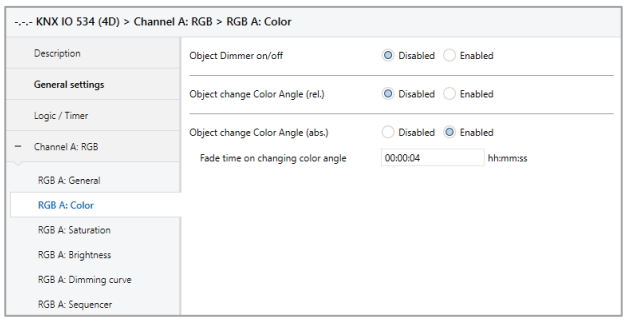
To change the color angle using relative dimming commands, the following object is available, if it has been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 22 RGB A: Color angle adjusting rel. - Increase/Decrease	3.007	4 Bit	From KNX

Fade time for changing color angle

The time period is related to a complete dimming process of 0-360°.

Object change Color Angle (abs.)



To set the absolute value of the color angle, there is the following object, if it has been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 23 RGB A: Color angle adjusting abs. - Set value	5.003	1 Byte	From KNX

Fade time for changing color angle

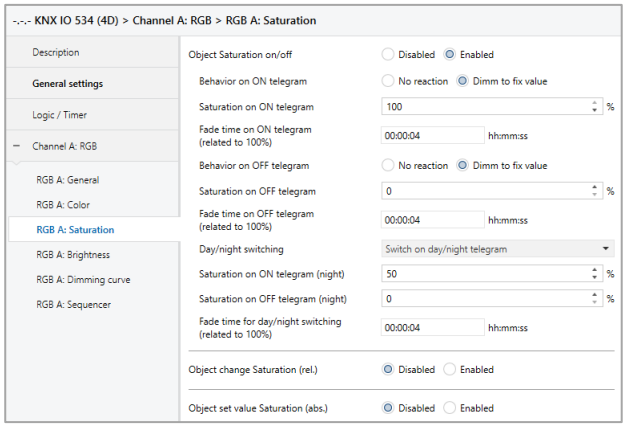
The time period is related to a complete dimming process of 0-360°.

D. RGB A: Saturation

Saturation is an attribute of a color in the HSV space and represents the amount of white of a color.

Pure colors without white have a saturation of 100%, the lower the saturation, the more the color is perceived as white.

Object Saturation on/off



The following object is available for switching saturation, if it has been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 24 RGB A: Saturation on/off - Switch	1.001	1 Bit	From KNX

Behavior on ON telegram

This parameter can be used to configure the behavior when switching on via the respective object.

It is available:

- No reaction
- Dim to fix value

Saturation on ON telegram

With suitable parameterization, this saturation is activated by an ON telegram via object 24.

Fade time on ON telegram

This fade time is active when an ON telegram is received. The period is related to a complete dimming process of 0-100%.

Behavior on OFF telegram

This parameter describes the behavior of the dimmer when an OFF telegram is received via object 24.

It is available:

- No reaction
- Dim to fix value

Saturation on OFF telegram

With suitable parameterization, this saturation is activated by an OFF telegram via object 24.

Fade time on OFF telegram

This fade time is active when an OFF telegram is received. The period is related to a complete dimming process of 0-100%.

Day/night switching

When using this function, the following object is visible for switching between day/night mode:

Group Object	Type KNX	Size	Direction
GO 30 RGB A: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on the object, night mode with an OFF telegram. After a restart, the device is in day mode.

Telegrams on object 30 affect all activated day/night switches of the RGB channel.

In addition, it can be determined when the values become active after receiving a telegram on this object, it is available:

- Disabled
- Switch on day/night telegram
  Immediately after reception of day/night switching, it is dimmed to the active value according to the last switch-on/switch-off received via object 24.
- Switch on next on/off telegram
  The currently active value is not used until the next switch on/off telegram via object 24.

There is a separate switch-on and switch-off saturation for night mode in the parameters, in day mode the always visible saturation values are used.

Saturation on ON telegram (night)

If the dimmer is in night mode, this value is activated by ON telegram via object 24 and appropriate parameterization.

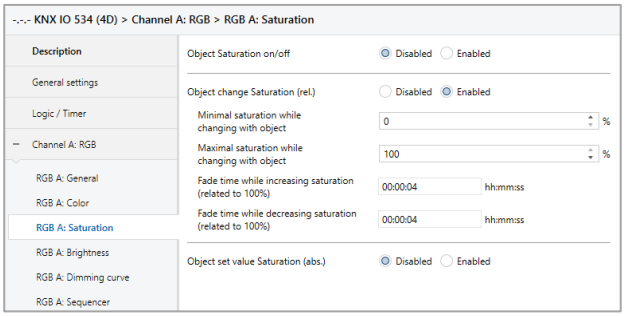
Saturation on OFF telegram (night)

If the dimmer is in night mode, this value is activated by OFF telegram via object 24 and appropriate parameterization.

Fade time for day/night switching

This fade time is only active if switching on day/night telegram is used. If switching on next on/off telegram is used, the regular fade time of the respective on or off telegram is active. The period refers to a complete dimming process of 0-100%.

Object change Saturation (rel.)



To change the saturation via relative dimming commands, there is the following object, if it has been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 25 RGB A: Saturation adjusting rel. - Increase/ Decrease	3.007	4 Bit	From KNX

Minimal saturation while changing with object

This parameter can be used to set the minimum saturation that can be achieved by relative dimming. If the current saturation is below the minimum value, the saturation cannot be reduced via object 25.

Maximal saturation while changing with object

This parameter can be used to set the maximum saturation that can be achieved by relative dimming. If the current saturation is above the maximum value, the saturation cannot be increased via object 25.

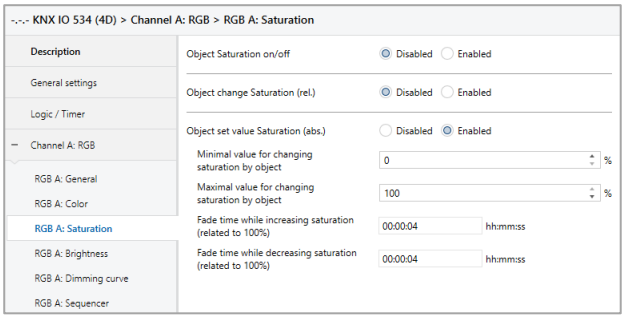
Fade time while increasing saturation

This fade time is active when the saturation is increased by relative dimming with object 25. The time period refers to a complete dimming process of 0-100%.

Fade time while decreasing saturation

This fade time is active when the saturation is reduced by relative dimming with object 25. The period refers to a complete dimming process of 0-100%.

Object set value Saturation (abs.)



The following object is used to control saturation via dimming value, if it has been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 26 RGB A: Saturation adjusting abs. - Set value	5.001	1 Byte	From KNX

Minimal value for changing saturation with object

This parameter can be used to configure which minimum saturation can be reached via object 26. If a value below the minimum value is received, the dimmer is controlled with the minimum value.

Minimal value for changing saturation with object

This parameter can be used to configure which maximum saturation can be reached via object 26. If a value below the maximum value is received, the dimmer is controlled with the maximum value.

Fade time while increasing saturation

This fade time is active when the saturation is increased by values received via object 26. The period is related to a complete dimming process of 0-100%.

Fade time while decreasing saturation

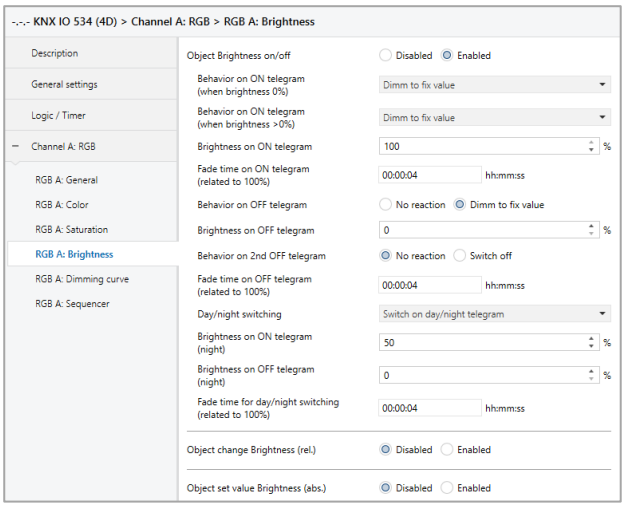
This fade time is active when the saturation is decreased by values received via object 26. The period is related to a complete dimming process of 0-100%.

E. RGB A: Brightness

Brightness is an attribute of a color in HSV space.

A brightness of 100% means that the color shines with maximal possible intensity, the lower the brightness, the less bright the color shines.

Object Brightness on/off



The following object is available for switching the brightness, if it has been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 27 RGB A: Brightness on/off - Switch	1.001	1 Bit	From KNX

Behavior on ON telegram (when Brightness 0%)

If the current brightness is 0%, this parameter can be used to configure the behavior when switching on via object 27.

It is available:

- No reaction
- Dim to fix value
- Dim to last value before switching off

Behavior on ON telegram (when Brightness >0%)

If the current brightness is greater than 0%, this parameter can be used to configure the behavior for a new ON telegram via object 27.

It is available:

- No reaction
- Dim to fix value
- Dim to fix value if higher than actual

Brightness on ON telegram

This brightness is activated by ON telegram via object 27 with suitable parameterization.

Fade time on ON telegram

This fade time is active when an ON telegram is received. The period refers to a complete dimming process of 0-100%.

Behavior on OFF telegram

This parameter describes the behavior of the dimmer when an OFF telegram is received via object 27.

It is available:

- No reaction
- Dim to fix value

Brightness on OFF telegram

This brightness is activated by OFF telegram via object 27 with suitable parameterization.

Behavior on 2. OFF telegram

This parameter describes the behavior of the dimmer when a 2. OFF telegram is received via object 27.

It is available:

- No reaction
- Switch off

The 2. OFF telegram must follow the 1. OFF telegram within 1 second in order to be evaluated. If the current brightness is equal to or lower than the parameterized brightness for OFF telegram, the device is already switched off by the 1. OFF telegram.

Fade time on OFF telegram

This fade time is active when an OFF telegram is received. The period refers to a complete dimming process of 0-100%.

Day/night switching

When using this function, the following object is visible for switching between day/night mode:

Group Object	Type KNX	Size	Direction
GO 30 RGB A: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on the object, night mode with an OFF telegram. After a restart, the device is in day mode.

Telegrams on object 30 affect all activated day/night switches of the RGB channel.

In addition, it can be determined when the values become active after receiving a telegram on this object, it is available:

- Disabled
- Switch on day/night telegram
  Immediately after reception of day/night switching, it is dimmed to the active value according to the last switch-on/switch-off received via object 27.
- Switch on next on/off telegram
  The currently active value is not used until the next switch on/off telegram via object 27.

There is a separate switch-on and switch-off brightness for night mode in the parameters, in day mode the always visible brightness values are used.

Brightness on ON telegram (night)

If the dimmer is in night mode, this value is activated by ON telegram via object 27 and suitable parameterization.

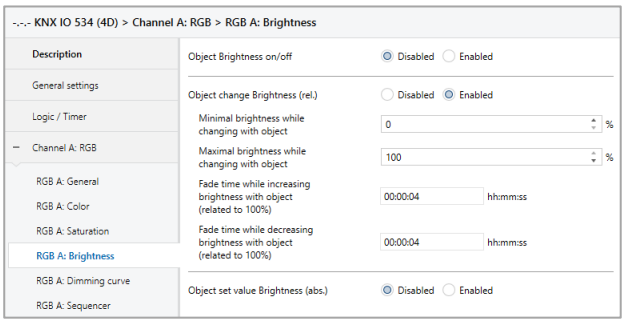
Brightness on OFF telegram (night)

If the dimmer is in night mode, this value is activated by OFF telegram via object 27 and suitable parameterization.

Fade time for day/night switching

This fade time is only active if switching on day/night telegram is used. If switching on next on/off telegram is used, the regular fade time of the respective on or off telegram is active. The period refers to a complete dimming process of 0-100%.

Object change Brightness (rel.)



To change the brightness via relative dimming commands, the following object is available, if activated via parameters:

Group Object	Type KNX	Size	Direction
GO 28 RGB A: Brightness dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX

Minimal brightness while changing with object

This parameter can be used to set the minimum brightness that can be achieved by relative dimming. If the current brightness is below the minimum value, the brightness cannot be reduced via object 28.

Maximal brightness while changing with object

This parameter can be used to set the maximum brightness that can be achieved by relative dimming. If the current brightness is above the maximum value, the brightness cannot be increased via object 28.

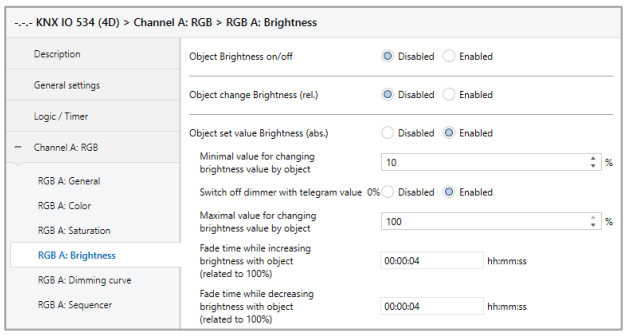
Fade time while increasing brightness with object

This fade time is active when the brightness is increased by relative dimming with object 28. The period refers to a complete dimming process of 0-100%.

Fade time while decreasing brightness with object

This fade time is active when the brightness is decreased by relative dimming with object 28. The period refers to a complete dimming process of 0-100%.

Object set value Brightness (abs.)



The following object is used to control the brightness via dimming value, if it has been activated via parameters:

Group Object	Type KNX	Size	Direction
GO 29 RGB A: Brightness dimming abs. - Set value	5.001	1 Byte	From KNX

Minimal value for changing brightness by object

This parameter can be used to configure which minimum brightness can be reached via object 29. If a value below the minimum value is received, the dimmer is controlled with the minimum value. If a value >0% is set here, the following parameter is also visible:

Switch off dimmer with telegram value 0%

Here it is to select whether the dimmer is switched off when a value of 0% is received.

Maximal value for changing brightness by object

This parameter can be used to configure the maximum brightness that can be achieved via object 29. If a value above the maximum value is received, the dimmer is controlled with the maximum value.

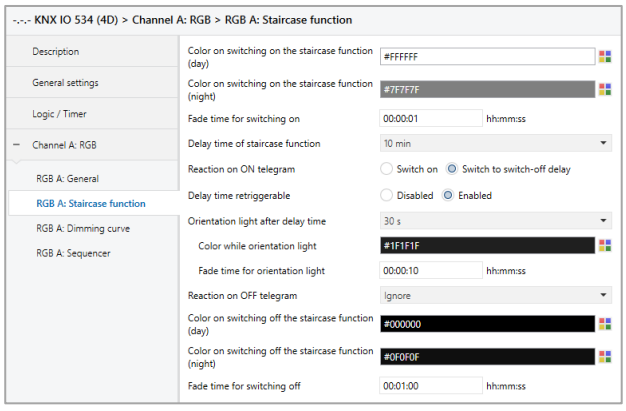
Fade time while increasing brightness with object

This fade time is active when the brightness is increased by receiving values via object 29. The period is related to a complete dimming process of 0-100%.

Fade time while decreasing brightness with object

This fade time is active when the brightness is decreased by receiving values via object 29. The period is related to a complete dimming process of 0-100%.

F. RGB A: Staircase function



This parameter page can be used to implement a staircase function with optional orientation light. The staircase function can be overridden by the lock function. It has the following objects:

Group Object	Type KNX	Size	Direction
GO 11 RGB A: Staircase function - Trigger	1.010	1 Bit	From KNX
GO 30 RGB A: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on the object, night mode with an OFF telegram. After a restart, the device is in day mode.

Color on switching on the staircase function (day)

This color is used in day mode when the staircase house function is switched on by telegram to object 11.

Color on switching on the staircase function (night)

This color is used in night mode when the staircase house function is switched on by telegram to object 11.

Fade time for switching on

This fade time is active when the staircase function is switched on by telegram to object 11. The period refers to a complete dimming process of 0-100%.

Delay time for staircase function

After the delay time has elapsed, the dimmer is dimmed to the switch-off or orientation light color, depending on the parameter setting.

Reaction on ON telegram

This parameter determines the behavior after switching on the staircase function via ON telegram to object 11: With the "Switch on" setting, the channel remains switched on after ON telegram until the delay time is started via OFF telegram. In the setting "Switch to switch-off delay", the channel enters immediately the delay time after the ON telegram.

Delay time retriggerable

If it is set that the delay time is started with ON telegram, this parameter determines whether only the 1. ON telegram on object 11 restarts the delay time, or also each further one.

If it is set that the delay time is started with OFF telegram, this parameter determines whether only the 1. OFF telegram on object 11 restarts the delay time, or also any other if the staircase function is already in the delay time.

Orientation light after delay time

This parameter can be used to set whether the dimmer dims to switch-off value or to orientation light at the end of the delay time, as well as the duration of the orientation light.

It is available:

- Disabled
- 1 s
- 2 s
- 5 s
- 10 s
- 30 s
- 1 min
- 2 min
- 5 min
- 10 min
- 20 min
- 30 min

- 1 h
- 2 h
- Without time limit

Color while orientation light

This color is dimmed to at the end of the delay time when orientation light is used.

Fade time for orientation light

This fade time is active when the staircase function dims to orientation light. The period refers to a complete dimming process of 0-100%.

Reaction on OFF telegram

Here it can be set how the staircase function behaves in the event of an OFF telegram. The following options are available:

- Ignore
  No reaction of the channel on OFF telegram
- Switch off
  Switch to switch-off value from the parameters
- Switch to switch-off delay
  The delay time is started with OFF telegram.
- Switch to orientation light
  The orientation light phase is started with OFF telegram.
- Switch to orientation light/switch off
  With 1. OFF telegram the orientation light phase is started, with 2. OFF telegram it is dimmed to switch-off value.

Color on switching off the staircase function (day)

This color is dimmed to in day mode if the staircase function is switched off after the delay time or via OFF telegram on object 11.

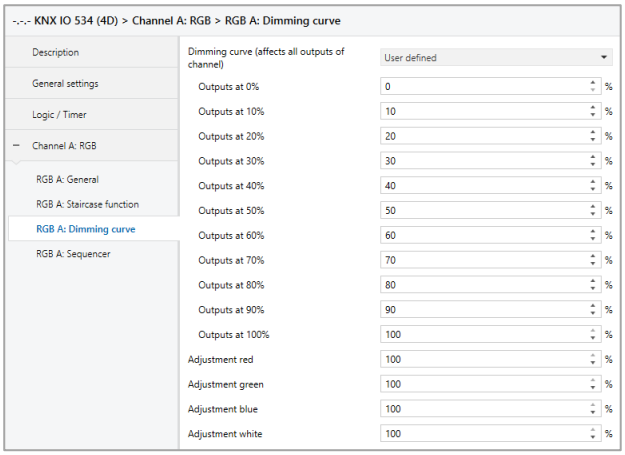
Color on switching off the staircase function (night)

This color is dimmed to in night mode if the staircase function is switched off after the delay time or via OFF telegram on object 11.

Fade time for switching off

This fade time is active when the staircase function dims to the switch-off value. The period refers to a complete dimming process of 0-100%.

G. RGB A: Dimming curve



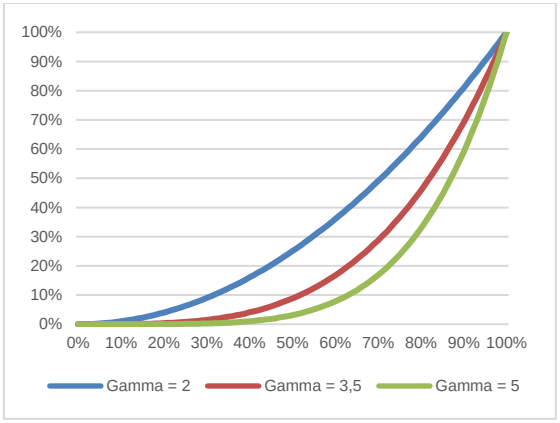
This parameter page is used for fine adjustment of the dimmer to different light sources.

All parameters on this page only affect the PWM value of the output, not the dimming or output status value.

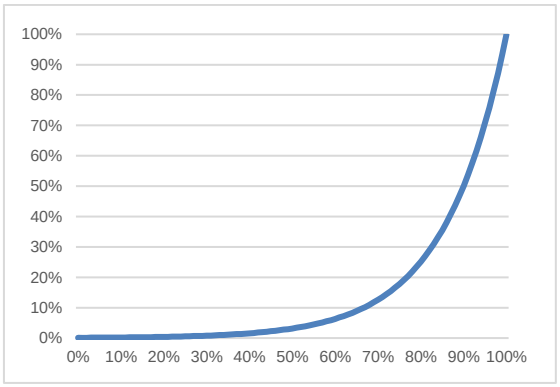
Dimming curve

Here it can be specified which PWM values are output by the dimming outputs when the dimming channel has reached a certain color. The curve affects all outputs of the channel. The following options are available:

- Linear
- Logarithmic
- User defined
- Gamma
  Gamma correction according to the formula:
  $$\text{PWM value} = \text{Dimming value}^{\text{Gamma}}$$
  Gamma is adjustable via parameter from 1.00 to 5.00

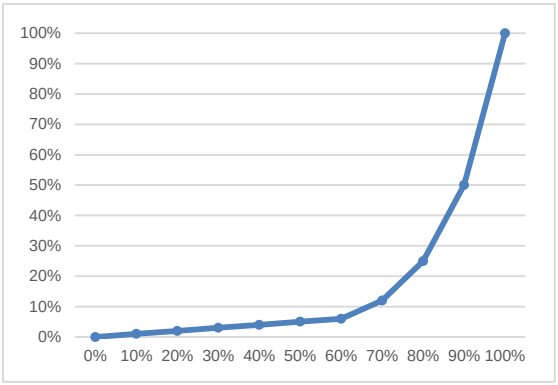


- DALI
  Function based on DALI with the formula:
  $$\text{PWM value} = 10^{3\cdot(\text{Dimming value}-1)}$$



Outputs at x%

For the "Linear", "Logarithmic" and "User defined" dimming curves, these values determine the PWM values of a dimming output at the specified dimming value. Values between the specified points are calculated and output linearly. As an example, a dimming output with dimming curve "Logarithmic" behaves according to the following graph:



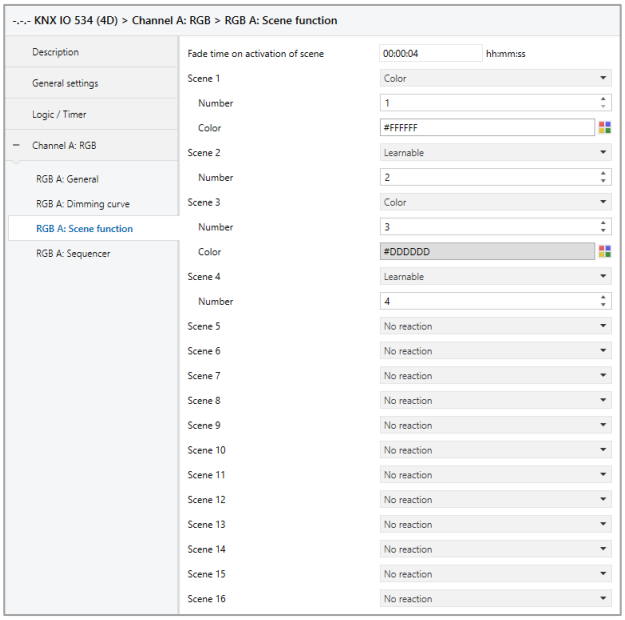
The output values are fixed for the "Linear" and "Logarithmic" dimming curves, and can be freely configured for the "User-defined" curves.

If a dimming value of 0% is reached, the channel always switches off.

Adjustment red
Adjustment green
Adjustment blue
Adjustment white

The PWM value of the color calculated by the dimming curve is additionally scaled with this value. "Adjustment white" is only available in RGBW configuration.

H. RGB A: Scene function



If the scene function is activated, the following group object appears:

Group Object	Type KNX	Size	Direction
GO 40 RGB A: Scene - Activ./Lrn.	18.001	1 Byte	From KNX

Fade time on activation of scene

Here the period can be set in which the received scene is dimmed to. The period refers to a complete dimming process of 0-100%.

Scene 1-16

These parameters can be used to configure the reaction of the channel when the respective scene is received.

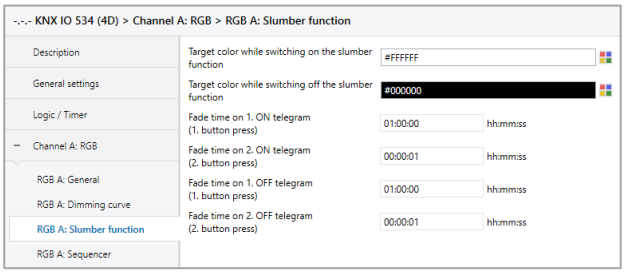
It is available:

- No reaction
- Color
  The output is switched to the set color value if the scene of the corresponding number was received.
- Learnable
  With the help of a scene control telegram, the current state at the output for the respective scene can be saved here. Thus the scene can be adapted by the user without ETS download.

Number

With this parameter any scene number between 1 and 64 can be assigned to the scene. No scene numbers may be assigned twice.

I. RGB A: Slumber function



If the slumber function is active, the following object is visible:

Group Object	Type KNX	Size	Direction
GO 43 RGB A: Slumber function - Trigger	1.001	1 Bit	From KNX

Target color while switching on the slumber function

This color is reached by the channel after completion of the dimming process after receiving an ON telegram via object 43.

Target color while switching off the slumber function

This color is reached by the channel after completion of the dimming process after receiving an OFF telegram via object 43.

Fade time on 1. ON telegram (1. button press)

This fade time is used to dim to the target color for switching on after the 1. button press. The period refers to a complete dimming process of 0-100%.

Fade time on 2. ON telegram (2. button press)

This fade time is used to dim to the target color for switching on after the 2. button press. The period refers to a complete dimming process of 0-100%.

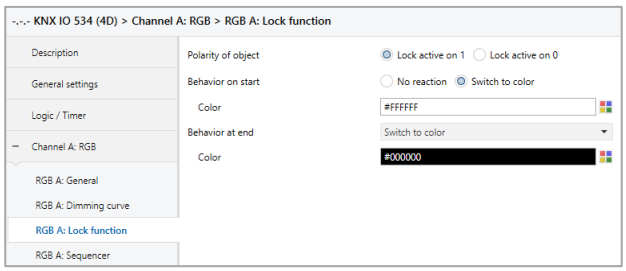
Fade time on 1. OFF telegram (1. button press)

This fade time is used to dim to the target color for switching off after the 1. button press. The period refers to a complete dimming process of 0-100%.

Fade time on 2. OFF telegram (2. button press)

This fade time is used to dim to the target color for switching off after the 2. button press. The period refers to a complete dimming process of 0-100%.

J. RGB A: Lock function



If the lock function is activated, the following objects are active:

Group Object	Type KNX	Size	Direction
GO 44 RGB A: Lock - Activate	1.001	1 Bit	From KNX
GO 45 RGB A: Prior. RGB on/off - Switch	1.001	1 Bit	From KNX
GO 46 RGB A: Prior. RGB - Set value	232.200	3 Byte	From KNX

If the lock was activated by object 44, other received telegrams for dimmer, automatic mode, slumber, scene function and sequencer are not executed.

In addition to the lock object, 2 priority objects become visible when the lock function is activated, with which the dimmer can be controlled independently of the lock. This makes it possible to set an initial state without affecting other functions.

Example of the priority objects:
In the case of events in public buildings or in restaurants, the normal operation can be set into an inoperative state by the lock group object. Thus it is possible to lock during the lecture or concert, switches that are accessible to unauthorized persons, in order to prevent unmeant switching. Nevertheless, the individual lamps can controlled by use of the priority object without canceling the lock.

Polarity of object

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0.

The following options are selectable:

- Lock active on 1
- Lock active on 0

Behavior on start

This parameter configures, which state the output should set, if the lock activates.

The following options are selectable:

- No reaction
- Switch to color
  A parameter for adjusting the color appears.

This output state can still be changed by the priority object.

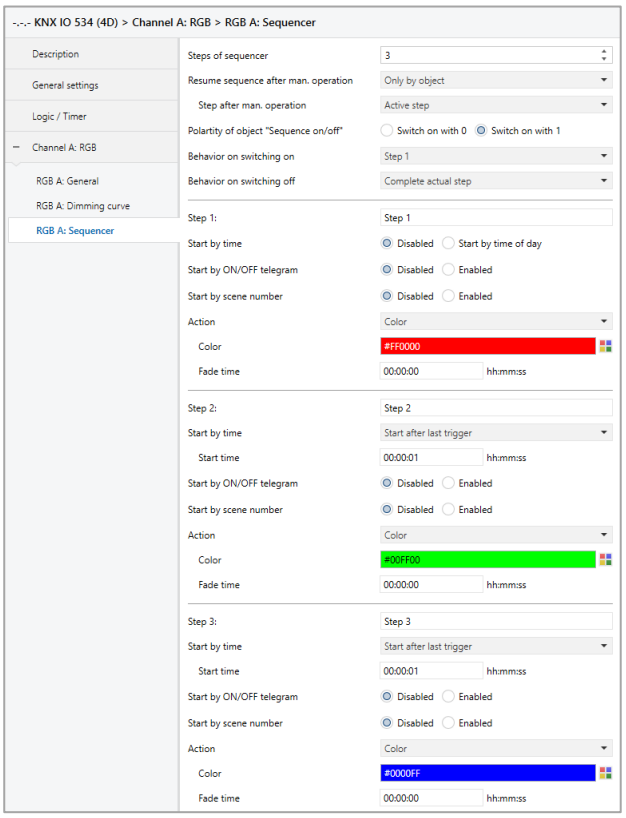
Behavior at end

This parameter defines, which state the output should set, if the lock deactivates.

The following options are selectable:

- No reaction
- Switch to color
  A parameter for adjusting the color appears.
- State before lock
  This restores the original state before the lock was activated. Telegrams received during the lock are ignored.
- State without lock
  Here the state of the last received telegram is restored. This takes into account the received telegrams during the lock. Thus, when the lock is deactivated, the last received telegram is set.

K. RGB A: Sequencer



The sequencer can be used to create complex sequence programs consisting of up to 32 individual steps for the dimmer channel. The individual steps can be activated under the following starting conditions:

- At a fixed time of day
- After a waiting time from a previous step has elapsed
- By on/off telegram
- When receiving a parameterized scene number

When a step is activated, a color can be dimmed to or a scene number can be sent, and a step or a whole sequence of steps can be repeated cyclically.

The following objects are available for the general control of the sequencer:

Group Object	Type KNX	Size	Direction
GO 53 RGB A: Sequence suspend - Suspend/Resume	1.001	1 Bit	From KNX
GO 54 RGB A: Sequence on/off - Switch	1.001	1 Bit	From KNX

The following parameters determine the general behavior of the sequencer:

Steps of sequencer

Number of steps (0...32) to be used

Resume sequence after man. operation

An activated sequence can always be interrupted or continued via object 53, an ON telegram interrupts the sequence, and with an OFF telegram it is continued.

A sequence is also interrupted after manual operation, i.e. after commands for dimmer, automatic mode, slumber or scene function.

In addition, this parameter determines how an interrupted sequence can still be continued:

- Only by object
  The sequence can only be continued by object 53.
- After off-time
  The sequence is continued after the set off-time.
- On next activated step
  The sequence is continued with the next activated step, the next step can be activated by object or time-controlled.

Off-time

Only visible if the sequence is to be continued after off-time, with this parameter the off-time can be configured.

Step after man. operation

This step is executed when resuming after manual operation, the function of the set step is always executed, regardless of its otherwise set starting conditions.

Polarity of object "Sequence on/off"

This parameter can be used to set the telegram value with which the sequence can be switched on and off via object 54. If the sequence is switched off, any further activation of a step is disabled.

Behavior on switching on

Here it is determined how the sequencer behaves when switched on by object 54:

- No reaction
  No function is executed, the sequencer waits for steps to be activated.
- Step x
  The function of the step is executed (independent of the other set start conditions of the step), the sequence is then continued according to its configuration from this step onwards.

Switching on also reactivates a sequence interrupted by manual operation.

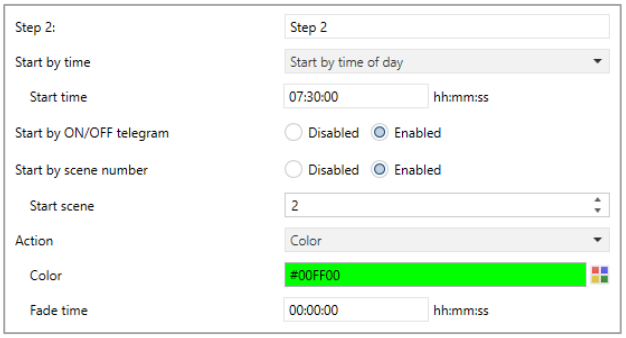
Behavior on switching off

Here it is determined how the sequencer behaves when switched off by object 54:

- Complete actual step
  If the sequencer is in a dimming process, it is completed.
- Step x
  The function of the step is executed (independent of the other set start conditions of the step).
- Stop immediately
  If the sequencer is in a dimming process, it is stopped.

Apart from the set behavior when switching off, any further activation of a step after switching off is disabled until the sequencer is switched on again by object 54.

Step 1-32



When a step is activated, its parameters for configuration appear.

In the text box at the top right with the content "Step x", you can enter your own name for the step. This designation serves for better orientation of the user and has no influence on the function of the step.

Start by time

This parameter is used to configure a temporal start condition of the step.

- Disabled
  Start condition not used
- Start at a fixed time of day
  Here the time of day at which the step should start can be entered. When using this start condition, the current time must have been received via the following object:

Group Object	Type KNX	Size	Direction
GO 5 Time of Day - Set	10.001	3 Byte	From KNX

If no valid time was received by object 5, all start conditions at fixed times of day are not active.

The time is continuously updated by the device through its internal timers, but component tolerances always result in a deviation from the actual time. Therefore, the current time should be sent to the device by a precise timer at least twice a day in order to keep the deviation as small as possible.

- Start after last trigger
  Here you can specify the time interval to wait after the previous activation before executing the step. This start condition is not available for step 1.

Start time

Here either the time day or the waiting time can be specified for the execution of the current step, if a timed start condition is used.

Start by ON/OFF telegram

When using this start condition, a separate object is available for each step:

Group Object	Type KNX	Size	Direction
GO 55-86 RGB A: Sequence Step x on/off - Switch	1.001	1 Bit	From KNX

An ON telegram to one of these objects activates the respective step, the sequence is then continued according to its configuration from this step onwards.

An OFF telegram also activates this step, but resets the sequence at the same time.

Start by scene number

When using this start condition, the following object becomes visible:

Group Object	Type KNX	Size	Direction
GO 51 RGB A: Sequence scene - Activate step	18.001	1 Byte	From KNX

A telegram with the set scene on this object activates the respective step, the sequence is then continued according to its configuration from this step onwards.

All steps with this start condition are controlled by this object.

Action

When the step is activated, the configured function is executed, the following functions are available for selection:

- None
  No function is executed, for example this can be used to implement a switch-on delay for a sequence.
- Start loop
  The sequence continues from the selected step. Parameters for the initial step of the loop and the number of loops become visible.
- Send scene number
  When using this function, the following object becomes visible:

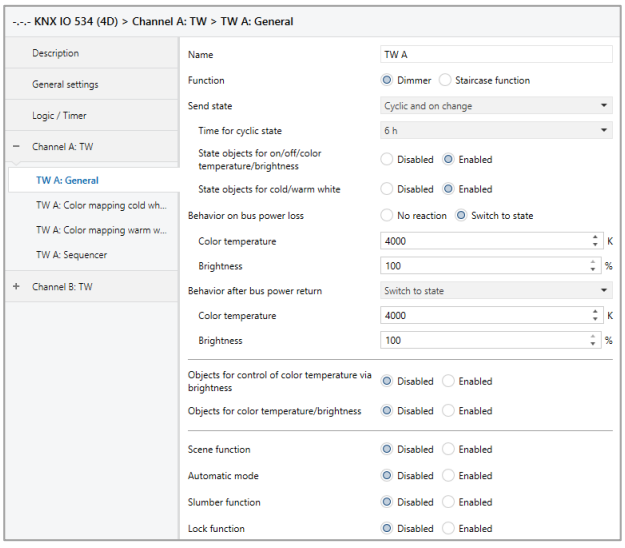
Group Object	Type KNX	Size	Direction
GO 52 RGB A: Sequence scene - Send scene	18.001	1 Byte	To KNX

  A parameter for the scene number to be sent becomes visible. When the step is activated, this scene number is sent via the object.

  All steps send the scene number via this object, if this function is used for the respective step.
- Color
  Parameters for color and fade time become visible. When this step is activated, the dimmer dims from the current color value to the specified color with the parameterized fade time. This time is related to a complete dimming process of 0-100%.

Device configuration „Tunable White“

A. TW A: Common
TW B: Common



Name (30 Characters)

An arbitrary name can be assigned for the channel. However, this should be clear and meaningful, this makes it easier to work with the associated group objects, because the given name is displayed there as a label. If no name is assigned, the group objects are named “TW A …“ respectively “TW B ...“.

Function

This parameter defines the functionality of the actuator, the following options are selectable:

- Dimmer
  In this operating mode, scene function, automatic operation, slumber function and disable function are available. In the "Dimmer" function, objects for switching on/off, relative dimming and absolute value can be configured.
- Staircase function
  The parameter page "TW A: Staircase function" or "TW B: Staircase function" is displayed. Only the lock function is available here.

Send state

This parameter defines the behavior of the state objects:

- Disabled
  State objects are deactivated and not displayed.
- Only on read
  State objects send only on request.
- On change
  State objects send on value change.
- Cyclic and on change
  State objects send cyclically and on value change.

Time for cyclic state

With this parameter, the cycle time can be set, when “Cyclic and on change“ is selected for sending state.

State objects for on/off/color temperature/brightness

Activates the following state objects:

Group Object TW A	Type KNX	Size	Direction
GO 22 TW A: TW output - State On/Off	1.001	1 Bit	To KNX
GO 23 TW A: TW output - State temperature	7.600	2 Byte	To KNX
GO 24 TW A: TW output - State brightness	5.001	1 Byte	To KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 102 TW B: TW output - State On/Off	1.001	1 Bit	To KNX
GO 103 TW B: TW output - State temperature	7.600	2 Byte	To KNX
GO 104 TW B: TW output - State brightness	5.001	1 Byte	To KNX

If sending on change is activated, the state object On/Off sends an OFF telegram when the brightness changes to value 0%, if the brightness changes from 0% to a value greater than 0%, the object sends an ON telegram.

If sending on change is activated, the state objects for color temperature and brightness send new values with a time interval of at least 1 second if the respective value has changed by at least 1%.

State objects for cold/warm white

Activates the following state objects:

Group Object TW A	Type KNX	Size	Direction
GO 25 TW A: Cold white output - State brightness	5.001	1 Byte	To KNX
GO 26 TW A: Warm white output - State brightness	5.001	1 Byte	To KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**

GO 105 TW B: Cold white output - State brightness	5.001	1 Byte	To KNX
GO 106 TW B: Warm white output - State brightness	5.001	1 Byte	To KNX

If sending on change is activated, the state objects transmit with a time interval of at least 1 second if the color assigned to the object has changed by at least 1%, or if a dimming process has been completed.

Behavior on bus power failure

The behavior of the output in the event of bus power failure can be configured here.

The following options are selectable:

- No reaction
- Switch to state
  Parameters for adjusting color temperature and brightness appear.

Behavior after bus power return

Here the behavior of the output after bus power return can be configured. This behavior will be set after every device restart (e.g. also on restart after ETS download).

The following options are selectable:

- No reaction
- Switch to state
  Parameters for adjusting color temperature and brightness appear.
- State like before bus power failure

Objects for control color temperature via brightness

Enables the function block for controlling the color temperature via brightness. If this functionality is activated, a parameter page appears for further configuration. The further functionality is explained in section B.

Objects for color temperature and brightness

Enables the function blocks for separate control of color temperature and brightness. If this functionality is activated, parameter pages appear for further configuration. The further functionality is explained in sections C and D.

Scene function

The scene function can be activated or deactivated here; it is only available in the "Dimmer" operating mode. If this function is activated, a parameter page appears for further configuration of scenes 1-16. The further functionality is explained in section G.

Automatic mode

Automatic mode is only available in the "Dimmer" function. If this mode is selected, the following objects become visible:

Group Object TW A	Type KNX	Size	Direction
GO 30 TW A: Automatic mode - Activate	1.001	1 Bit	From/To KNX
GO 31 TW A: Autom. dimming abs. - Set brightness value	5.001	1 Byte	From KNX
GO 32 TW A: Autom. dimming abs. - Set color temperature together with brightness	5.001	1 Byte	From KNX
GO 33 TW A: Autom. dimming abs. - Set color temperature via scaling	5.001	1 Byte	From KNX
GO 34 TW A: Autom. dimming abs. - Set color temperature	7.600	2 Byte	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 110 TW B: Automatic mode - Activate	1.001	1 Bit	From/To KNX
GO 111 TW B: Autom. dimming abs. - Set brightness value	5.001	1 Byte	From KNX
GO 112 TW B: Autom. dimming abs. - Set color temperature together with brightness	5.001	1 Byte	From KNX
GO 113 TW B: Autom. dimming abs. - Set color temperature via scaling	5.001	1 Byte	From KNX
GO 114 TW B: Autom. dimming abs. - Set color temperature	7.600	2 Byte	From KNX

When using automatic mode, the dimmer can be controlled via the objects for automatic dimming, e.g. for light control or daylight-dependent basic lighting.

In automatic mode the dimmer can be manually overridden by the function blocks "Objects for controlling the color temperature via brightness" and "Objects for color temperature/brightness", as well as by the scene, slumber and sequencer functions. During manual override, values from the objects for automatic dimming are ignored, each manual override restarts the fallback time.

After the fallback time set in the parameter has elapsed, the values received on the objects for automatic dimming are processed again.

Via object 30 or 110, the automatic can be switched on or off at any time, it also serves as a status object for automatic operation.

Slumber function

The slumber function is only available in the "Dimmer" function. The slumber function offers 2 different fade times each for switching on and off via object. If this function is activated, a parameter page appears, which is explained in section H.

Lock function

The lock function can be activated or deactivated here.

This function is available in both "Dimmer" and "Staircase function" operating modes. If this function is activated, a new parameter page appears for further configuration, which is explained in Section I in more detail.

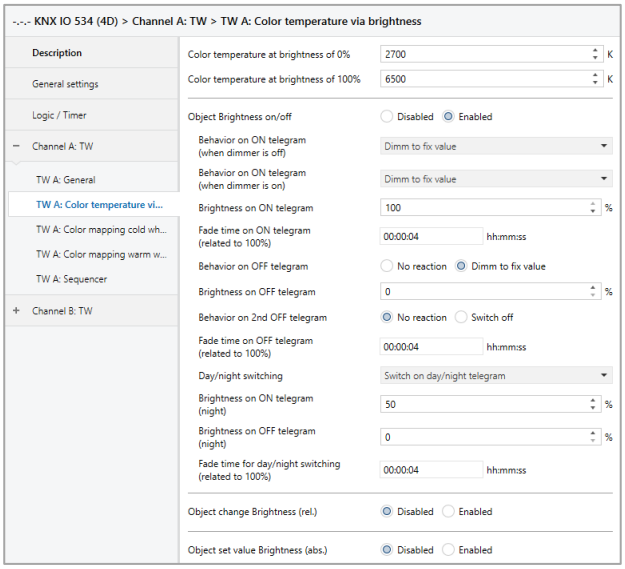
B. TW A: Color temperature via brightness
TW B: Color temperature via brightness

In this operating mode the dimmer is controlled via brightness, the color temperature is automatically adjusted according to the current brightness and the 2 following parameters:

Color temperature at brightness 0%
Color temperature at brightness 100%

These two color temperatures are assigned to the two limit values of the brightness, in the range between 0% and 100% it is linearly calculated and output.

Object Brightness on/off



The following objects are available for switching the brightness, if they have been activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 11 TW A: Color temperature via brightness - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 91 TW B: Color temperature via brightness - Switch	1.001	1 Bit	From KNX

Behavior on ON telegram (when dimmer is off)

If the dimmer is switched off, this parameter can be used to configure the behavior when switching on via the respective object.

It is available:

- No reaction
- Dim to fix value
- Dim to last value before switching off

Behavior on ON telegram (when dimmer is on)

If the dimmer is already switched on, this parameter can be used to configure the behavior for a new ON telegram via the respective object.

It is available:

- No reaction
- Dim to fix value
- Dim to fix value if higher than actual

Brightness on ON telegram

This value is activated by ON telegram via the respective object with suitable parameterization.

Fade time on ON telegram

This fade time is active when an ON telegram is received. The period refers to a complete dimming process of 0-100%.

Behavior on OFF telegram

This parameter describes the behavior of the dimmer when an OFF telegram is sent via the respective object.

It is available:

- No reaction
- Dim to fix value

Brightness on OFF telegram

This brightness is activated with suitable parameterization by OFF telegrams via the respective object.

Behavior on 2. OFF telegram

This parameter describes the behavior of the dimmer when a 2. OFF telegram is received via the respective object.

It is available:

- No reaction
- Switch off

The 2. OFF telegram must follow the 1. OFF telegram within 1 second in order to be evaluated. If the current brightness is equal to or lower than the parameterized brightness for OFF telegram, the device is already switched off by the 1. OFF telegram.

Fade time on OFF telegram

This fade time is active when an OFF telegram is received. The period refers to a complete dimming process of 0-100%.

Day/night switching

When using this function, the following objects are visible for switching between day/night mode:

Group Object TW A	Type KNX	Size	Direction
GO 21 TW A: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 101 TW B: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on the respective object, night mode with an OFF telegram. After a restart, the device is in day mode.

Telegrams on object 21 or 101 affect all activated day/night switches of the TW channel.

In addition, it can be determined when the values become active after receiving a telegram on these objects, it is available:

- Disabled
- Switch on day/night telegram
  Immediately after reception of day/night switching, it is dimmed to the active value according to the last switch-on/switch-off received via object 11 or 91.
- Switch on next on/off telegram
  The currently active value is not used until the next switch on/off telegram via object 11 or 91.

There is a separate switch-on and switch-off value for night mode in the parameters, in day mode the always visible values are used.

Brightness on ON telegram (night)

If the dimmer is in night mode, this value is activated by ON telegram via object 11 or 91 and suitable parameterization.

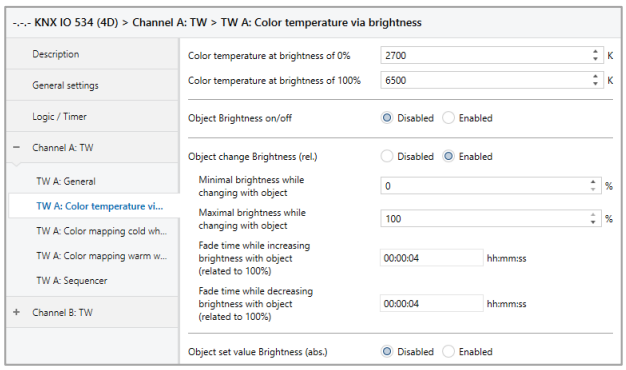
Brightness on OFF telegram (night)

If the dimmer is in night mode, this value is activated by OFF telegram via object 11 or 91 and suitable parameterization.

Fade time for day/night switching

This fade time is only active if switching on day/night telegram is used. If switching on next on/off telegram is used, the regular fade time of the respective on or off telegram is active. The period refers to a complete dimming process of 0-100%.

Object change Brightness (rel.)



The following objects are available for dimming brightness using relative dimming commands, if activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 12 TW A: Color temperature via brightness dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 92 TW B: Color temperature via brightness dimming rel.- Brighter/Darker	3.007	4 Bit	From KNX

Minimal brightness while changing with object

This parameter can be used to set the minimum brightness that can be achieved by relative dimming. If the current brightness is below the minimum value, the brightness cannot be reduced via object 12 or 92.

Maximal brightness while changing with object

This parameter can be used to set the maximum brightness that can be achieved by relative dimming. If the current brightness is above the maximum value, the brightness cannot be increased via object 12 or 92.

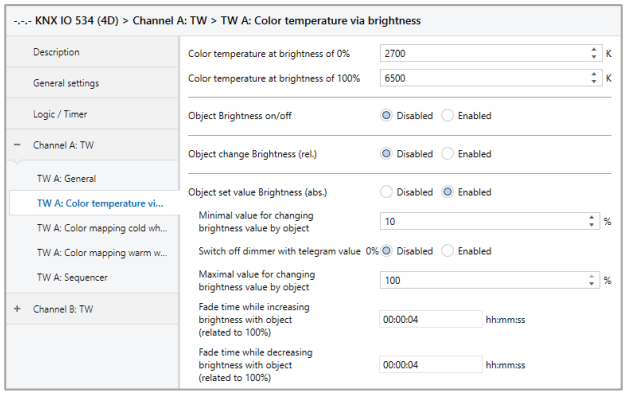
Fade time while increasing brightness with object

This fade time is active when the brightness is increased by relative dimming with object 12 or 92. The period refers to a complete dimming process of 0-100%.

Fade time while decreasing brightness with object

This fade time is active when the brightness is decreased by relative dimming with object 12 or 92. The period refers to a complete dimming process of 0-100%.

Object set value Brightness (abs.)



The following objects are used to control the brightness via dimming value, if activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 13 TW A: Color temperature via brightness dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 93 TW B: Color temperature via brightness dimming abs. - Set value	5.001	1 Byte	From KNX

Minimal value for changing brightness by object

This parameter can be used to configure which minimum brightness can be reached via object 13 or 93. If a value below the minimum value is received, the dimmer is controlled with the minimum value. If a value >0% is set here, the following parameter is also visible:

Switch off dimmer with telegram value 0%

Here it is to select whether the dimmer is switched off when a value of 0% is received.

Maximal value for changing brightness by object

This parameter can be used to configure the maximum brightness that can be achieved via object 13 or 93. If a value above the maximum value is received, the dimmer is controlled with the maximum value.

Fade time while increasing brightness with object

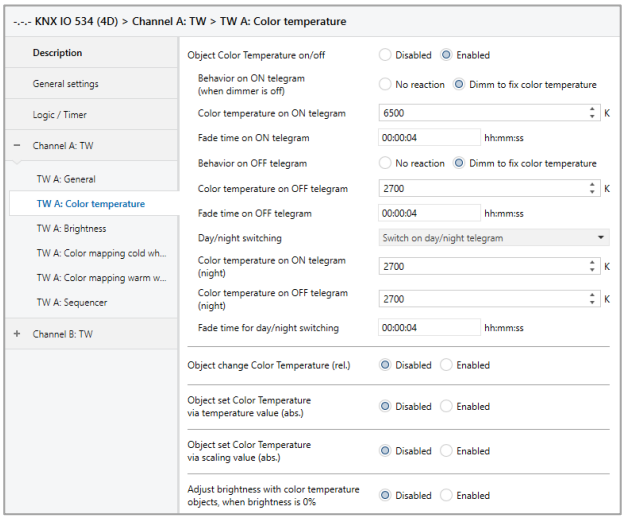
This fade time is active when the brightness is increased by receiving values via object 13 or 93. The period is related to a complete dimming process of 0-100%.

Fade time while decreasing brightness with object

This fade time is active when the brightness is decreased by receiving values via object 13 or 93. The period is related to a complete dimming process of 0-100%.

C. TW A: Color temperature
TW B: Color temperature

Object Color Temperature on/off



The following objects are available for switching the color temperature, if they have been activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 14 TW A: Color temperature on/off - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 94 TW B: Color temperature on/off - Switch	1.001	1 Bit	From KNX

Behavior on ON telegram

This parameter can be used to configure the behavior when switching on via the respective object.

It is available:

- No reaction
- Dim to fix color temperature

Color temperature on ON telegram

This color temperature is activated by ON telegram via object 14 or 94 if the parameters are suitable.

Fade time on ON telegram

This fade time is active when an ON telegram is received. The period refers to a complete dimming process of 0-100%.

Behavior on OFF telegram

This parameter describes the behavior of the dimmer when an OFF telegram is received via object 14 or 94.

It is available:

- No reaction
- Dim to fix color temperature

Color temperature on OFF telegram

This color temperature is activated by OFF telegram via object 14 or 94 if the parameters are suitable.

Fade time on OFF telegram

This fade time is active when an OFF telegram is received. The period refers to a complete dimming process of 0-100%.

Day/night switching

When using this function, the following objects are visible for switching between day/night mode:

Group Object TW A	Type KNX	Size	Direction
GO 21 TW A: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 101 TW B: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on the respective object, night mode with an OFF telegram. After a restart, the device is in day mode.

Telegrams on object 21 or 101 affect all activated day/night switches of the TW channel.

In addition, it can be determined when the values become active after receiving a telegram on these objects, it is available:

- Disabled
- Switch on day/night telegram
  Immediately after reception of day/night switching, it is dimmed to the active value according to the last switch-on/switch-off received via object 14 or 94.
- Switch on next on/off telegram
  The currently active value is not used until the next switch on/off telegram via object 14 or 94.

There is a separate switch-on and switch-off value for night mode in the parameters, in day mode the always visible values are used.

Color temperature on ON telegram (night)

If the dimmer is in night mode, this value is activated by ON telegram via object 11or 91 and suitable parameterization.

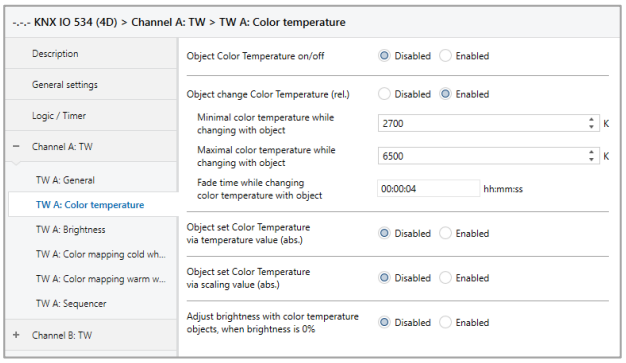
Color temperature on OFF telegram (night)

If the dimmer is in night mode, this value is activated by OFF telegram via object 11 or 91 and suitable parameterization.

Fade time for day/night switching

This fade time is only active if switching on day/night telegram is used. If switching on next on/off telegram is used, the regular fade time of the respective on or off telegram is active. The period refers to a complete dimming process of 0-100%.

Object change Color Temperature (rel.)



To change the color temperature by relative dimming commands, the following objects are available, if activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 15 TW A: Color temperature dimming rel. - Increase/Decrease	3.007	4 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 95 TW B: Color temperature dimming rel. - Increase / Decrease	3.007	4 Bit	From KNX

Minimal color temperature while changing with object

This parameter can be used to set which minimum color temperature can be achieved by relative dimming. If the current color temperature is below the minimum value, the color temperature cannot be reduced via object 15 or 95.

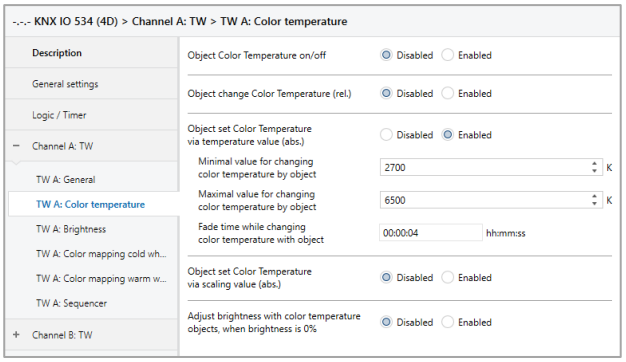
Maximal color temperature while changing with object

This parameter can be used to set the maximum color temperature that can be achieved by relative dimming. If the current saturation is above the maximum value, the color temperature cannot be increased via object 15 or 95.

Fade time while changing color temperature with object

This fade time is active when the color temperature is changed by relative dimming with object 15 or 95. The period refers to a complete dimming process of 0-100%.

Object set Color Temperature via temperature value (abs.)



The following objects are used to control the color temperature via the temperature value, if they have been activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 16 TW A: Color temperature value abs. - Set value	7.600	2 Byte	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 96 TW B: Color temperature value abs. - Set value	7.600	2 Byte	From KNX

Minimal value while changing color temperature with object

This parameter can be used to configure which minimum color temperature can be reached via objects 16 and 96. If a value below the minimum value is received, the dimmer is controlled with the minimum value.

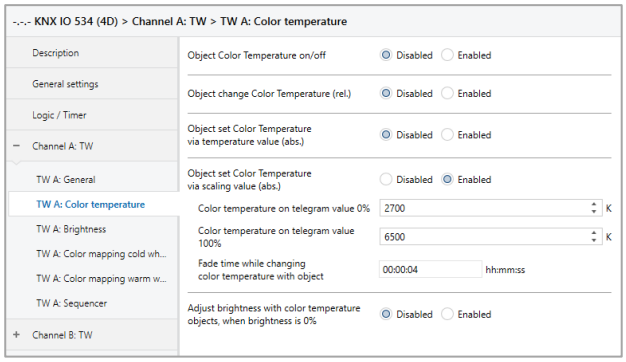
Maximal value while changing color temperature with object

This parameter can be used to configure the maximum color temperature that can be reached via objects 16 and 96. If a value above the maximum value is received, the dimmer is controlled with the maximum value.

Fade time while changing color temperature with object

This fade time is active when the color temperature is changed by receiving a value via object 16 and 96. The period refers to a complete dimming process of 0-100%.

Object set Color Temperature via scaling value (abs.)



The following objects are used to control the color temperature by scaling value, if they have been activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 17 TW A: Color temperature dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 97 TW B: Color temperature dimming abs. - Set value	5.001	1 Byte	From KNX

Color temperature on telegram value 0%

This parameter can be used to configure which color temperature is set when receiving 0% via objects 17 and 97.

Color temperature on telegram value 100%

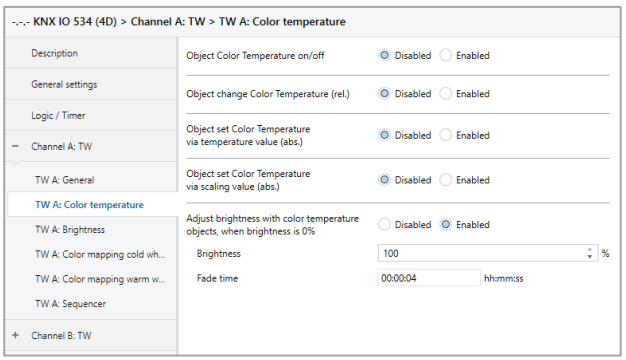
This parameter can be used to configure which color temperature is set when receiving 100% via objects 17 and 97

If a value between 0-100% is received, the color temperature is calculated and output linearly on basis of the set limit values.

Fade time while changing color temperature with object

This fade time is active when the color temperature is changed by receiving a value via object 17 and 97. The period refers to a complete dimming process of 0-100%.

Adjust brightness with color temperature objects, when brightness 0%



If the current brightness is 0% and the color temperature is changed via one of the objects in the parameter block Color Temperature, the brightness is dimmed to the set brightness at the same time. If the current brightness is >0%, this parameter has no effect on the brightness.

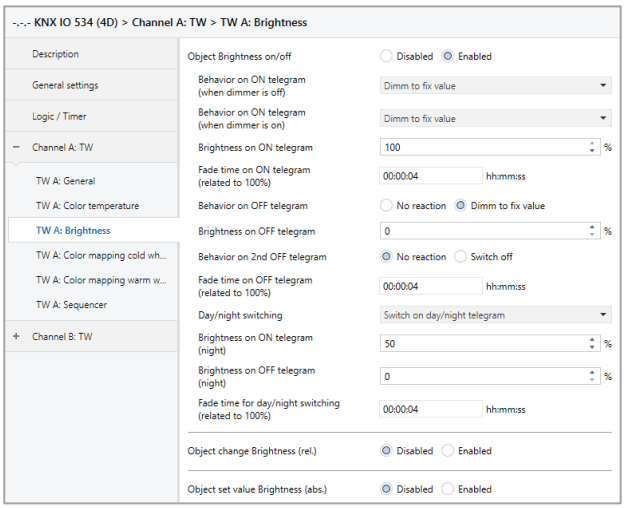
If this parameter is not used, a change in the color temperature has no visible effect if the current brightness is 0%.

Fade time

This fade time is active if the current brightness is 0% and the color temperature is changed via one of the objects in the parameter block. The period refers to a complete dimming process of 0-100%.

D. TW A: Brightness
TW B: Brightness

Object Brightness on/off



The following objects are available for switching the brightness, if they have been activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 18 TW A: Brightness on/off - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 98 TW B: Brightness on/off - Switch	1.001	1 Bit	From KNX

Behavior on ON telegram (when Brightness 0%)

If the current brightness is 0%, this parameter can be used to configure the behavior when switching on via object 18 or 98.

It is available:

- No reaction
- Dim to fix value
- Dim to last value before switching off

Behavior on ON telegram (when Brightness >0%)

If the current brightness is greater than 0%, this parameter can be used to configure the behavior for a new ON telegram via object 18 or 98.

It is available:

- No reaction
- Dim to fix value
- Dim to fix value if higher than actual

Brightness on ON telegram

This brightness is activated by ON telegram via object 18 or 98 with suitable parameterization.

Fade time on ON telegram

This fade time is active when an ON telegram is received. The period is related to a complete dimming process of 0-100%.

Behavior on OFF telegram

This parameter describes the behavior of the dimmer when an OFF telegram is sent via object 18 or 98.

It is available:

- No reaction
- Dim to fix value

Brightness on OFF telegram

This brightness is activated by OFF telegram via object 18 or 98 with suitable parameterization.

Behavior on 2. OFF telegram

This parameter describes the behavior of the dimmer when a 2. OFF telegram is received via object 18 or 98.

It is available:

- No reaction
- Switch off

The 2. OFF telegram must follow the 1. OFF telegram within 1 second in order to be evaluated. If the current brightness is equal to or lower than the parameterized brightness for OFF telegram, the device is already switched off by the 1. OFF telegram.

Fade time on OFF telegram

This fade time is active when an OFF telegram is received. The period refers to a complete dimming process of 0-100%.

Day/night switching

When using this function, the following objects are visible for switching between day/night mode:

Group Object TW A	Type KNX	Size	Direction
GO 21 TW A: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 101 TW A: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on the respective object, night mode with an OFF telegram. After a restart, the device is in day mode.

Telegrams on object 21 or 101 affect all activated day/night switches of the TW channel.

In addition, it can be determined when the values become active after receiving a telegram on these objects, it is available:

- Disabled
- Switch on day/night telegram
  Immediately after reception of day/night switching, it is dimmed to the active value according to the last switch-on/switch-off received via object 18 or 98.
- Switch on next on/off telegram
  The currently active value is not used until the next switch on/off telegram via object 18 or 98.

There is a separate switch-on and switch-off value for night mode in the parameters, in day mode the always visible values are used.

Brightness on ON telegram (night)

If the dimmer is in night mode, this value is activated by ON telegram via object 18 or 98 and suitable parameterization.

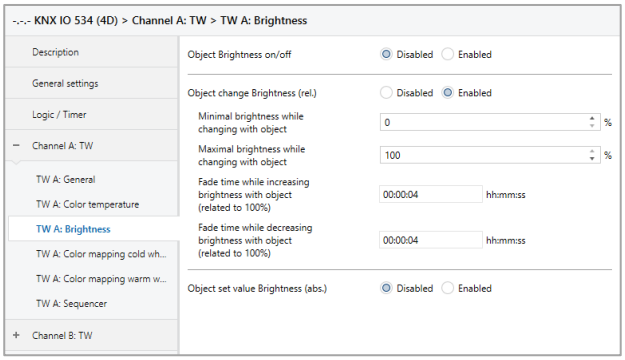
Brightness on OFF telegram (night)

If the dimmer is in night mode, this value is activated by OFF telegram via object 18 or 98 and suitable parameterization.

Fade time for day/night switching

This fade time is only active if switching on day/night telegram is used. If switching on next on/off telegram is used, the regular fade time of the respective on or off telegram is active. The period refers to a complete dimming process of 0-100%.

Object change Brightness (rel.)



To change the brightness via relative dimming commands, the following objects are available, if activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 19 TW A: Brightness dimming rel. - Brighter/Darker	3.007	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 99 TW B: Brightness dimming rel. - Brighter/Darker	3.007	1 Bit	From KNX

Minimal brightness while changing with object

This parameter can be used to set the minimum brightness that can be achieved by relative dimming. If the current brightness is below the minimum value, the brightness cannot be reduced via object 19 or 99.

Maximal brightness while changing with object

This parameter can be used to set the maximum brightness that can be achieved by relative dimming. If the current brightness is above the maximum value, the brightness cannot be increased via object 19 or 99.

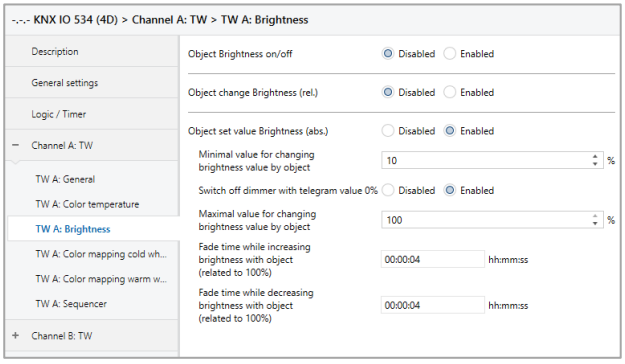
Fade time while increasing brightness with object

This fade time is active when the brightness is increased by relative dimming with object 19 or 99. The period refers to a complete dimming process of 0-100%.

Fade time while decreasing brightness with object

This fade time is active when the brightness is decreased by relative dimming with object 19 or 99. The period refers to a complete dimming process of 0-100%.

Object change Brightness (abs.)



The following objects are used to control the brightness via dimming value, if activated via parameters:

Group Object TW A	Type KNX	Size	Direction
GO 20 TW A: Brightness dimming abs. - Set value	5.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 100 TW B: Brightness dimming abs. - Set value	5.001	1 Bit	From KNX

Minimal value for changing brightness value by object

This parameter can be used to configure which minimum brightness can be achieved via object 20 or 100. If a value below the minimum value is received, the dimmer is controlled with the minimum value. If a value >0% is set here, the following parameter is also visible:

Switch off dimmer with telegram value 0%

Here it is to select whether the dimmer is switched off when a value of 0% is received.

Maximal value for changing brightness value by object

This parameter can be used to configure which maximum brightness can be achieved via object 20 or 100. If a value above the maximum value is received, the dimmer is controlled with the maximum value.

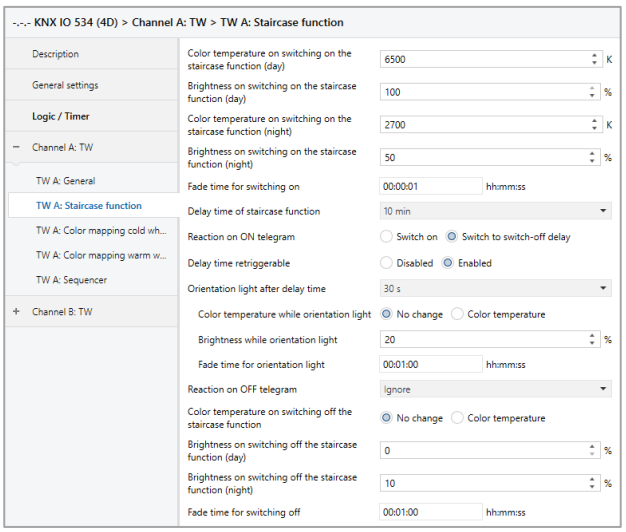
Fade time while increasing brightness with object

This fade time is active when the brightness is increased by receiving values via object 20 or 100. The period is related to a complete dimming process of 0-100%.

Fade time while decreasing brightness with object

This fade time is active when the brightness is decreased by receiving values via object 20 or 100. The period is related to a complete dimming process of 0-100%.

E. TW A: Staircase function
TW B: Staircase function



This parameter page can be used to implement a staircase function with optional orientation light. The staircase function can be overridden by the lock function. It has the following objects:

Group Object TW A	Type KNX	Size	Direction
GO 11 TW A: Staircase function - Trigger	1.010	1 Bit	From KNX
GO 21 TW A: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 91 TW A: Staircase function - Trigger	1.010	1 Bit	From KNX
GO 101 TW A: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an OFF telegram on object 21 or 101, night mode with an ON telegram. After a restart, the device is in day mode.

Color temperature on switching on the staircase function (day)

This color temperature is used in day mode when the staircase function is switched on by ON telegram to object 21 or 101.

Brightness on switching on the staircase function (day)

This brightness is used in day mode when the staircase function is switched on by ON telegram to object 21 or 101.

Color temperature on switching on the staircase function (night)

This color temperature is used in night mode when the staircase function is switched on by ON telegram to object 21 or 101.

Brightness on switching on the staircase function (night)

This brightness is used in night mode when the staircase function is switched on by ON telegram to object 21 or 101.

Fade time for switching on

This fade time is active when the staircase function is switched on by ON telegram to object 21 or 101. The period refers to a complete dimming process of 0-100%.

Delay time for staircase function

After the delay time has elapsed, the dimmer is dimmed to the switch-off or orientation light color, depending on the parameter setting.

Reaction on ON telegram

This parameter determines the behavior after switching on the staircase function via ON telegram to object 21 or 101: With the "Switch on" setting, the channel remains switched on after ON telegram until the delay time is started via OFF telegram. In the

setting "Switch to switch-off delay", the channel enters immediately the delay time after the ON telegram.

Delay time retriggerable

If it is set that the delay time is started with ON telegram, this parameter determines whether only the 1. ON telegram on object 21 or 101 restarts the delay time, or also each further one.

If it is set that the delay time is started with OFF telegram, this parameter determines whether only the 1. OFF telegram on object 21 or 101 restarts the delay time, or also any other if the staircase function is already in the delay time.

Orientation light after delay time

This parameter can be used to set whether the dimmer dims to switch-off value or to orientation light at the end of the delay time, as well as the duration of the orientation light.

It is available:

- Disabled
- 1 s
- 2 s
- 5 s
- 10 s
- 30 s
- 1 min
- 2 min
- 5 min
- 10 min
- 20 min
- 30 min
- 1 h
- 2 h
- Without time limit

Color temperature while orientation light

This color temperature is dimmed to at the end of the delay time when orientation light is used. If "No change" is set, the current color temperature is maintained.

Color temperature

This color temperature is dimmed to at the end of the delay time when orientation light is used.

Brightness while orientation light

This brightness is dimmed to at the end of the delay time when orientation light is used.

Fade time for orientation light

This fade time is active when the staircase function dims to orientation light. The period refers to a complete dimming process of 0-100%.

Reaction on OFF telegram

Here it can be set how the staircase function behaves in the event of an OFF telegram. The following options are available:

- Ignore
  No reaction of the channel on OFF telegram
- Switch off
  Switch to switch-off value from the parameters
- Switch to switch-off delay
  The delay time is started with OFF telegram.
- Switch to orientation light
  The orientation light phase is started with OFF telegram.
- Switch to orientation light/switch off
  With 1. OFF telegram the orientation light phase is started, with 2. OFF telegram it is dimmed to switch-off value.

Color temperature on switching off the staircase function

The behavior of the color temperature can be determined here when the device is switched off. If "No change" is set, the current color temperature is maintained.

Color temperature (day)

Should be dimmed to a color temperature when switched off, the value for the day mode can be entered here.

Color temperature (night)

Should be dimmed to a color temperature when switched off, the value for the night mode can be entered here.

Brightness on switching off the staircase function (day)

This brightness is used in day mode when the staircase function is switched off.

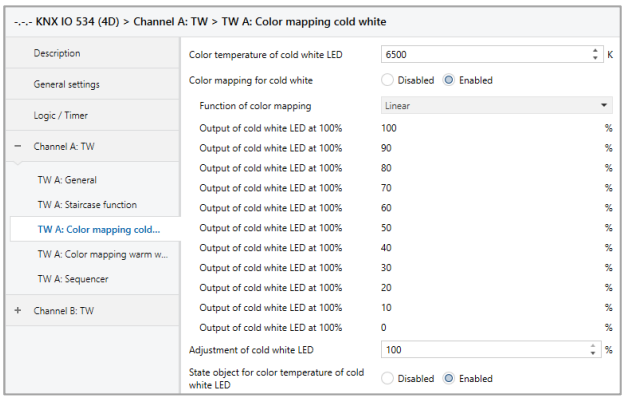
Brightness on switching off the staircase function (night)

This brightness is used in night mode when the staircase function is switched off.

Fade time for switching off

This fade time is active when the staircase function dims to the switch-off value. The period refers to a complete dimming process of 0-100%.

F. TW A: Color mapping cold white
TW A: Color mapping warm white
TW B: Color mapping cold white
TW B: Color mapping warm white



This parameter page is used for fine adjustment of the dimmer to different light sources.

All parameters on this page only affect the PWM value of the output, not the dimming or output status value.

Color temperature of cold white LED
Color temperature of warm white LED

The specified color temperature of the respective LED must be entered here.

Color mapping for cold white
Color mapping for warm white

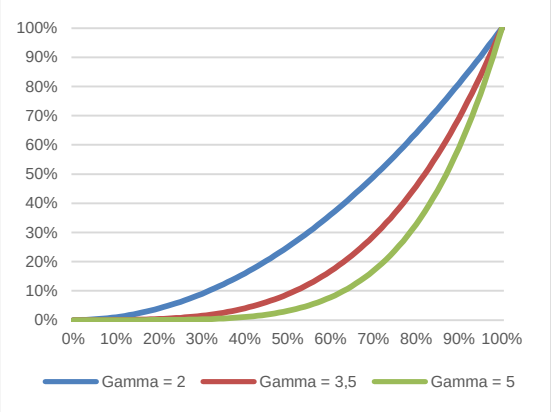
Enables the color matching of the respective LED.

In Tunable White mode, the LEDs for cold and warm white are coupled, so when using color mapping, make sure that the maximum output of a channel or the entire device is not exceeded at any time.

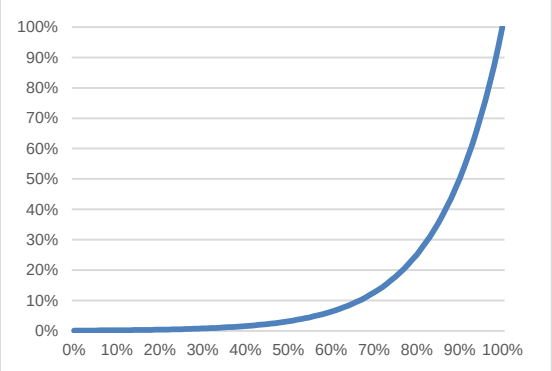
Function of color mapping

Here it can be specified which PWM values are output by the dimming outputs for cold or warm white, when the dimming channel has reached a certain color temperature. The following options are available:

- Linear
- Logarithmic
- User defined
- Gamma
  Gamma correction according to the formula:
  $$\text{PWM value} = \text{Dimming value}^{\text{Gamma}}$$
  Gamma is adjustable via parameter from 1.00 to 5.00

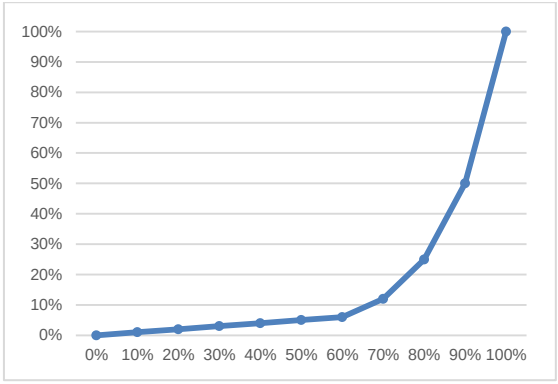


- DALI
  Function based on DALI with the formula:
  $$\text{PWM value} = 10^{3\cdot(\text{Dimming value}-1)}$$



Output of cold white LED at x%
Output of warm white LED at x%

For the "Linear", "Logarithmic" and "User defined" dimming curves, these values determine the PWM values of a dimming output at the specified dimming value. Values between the specified points are calculated and output linearly. As an example, a dimming output with dimming curve "Logarithmic" behaves according to the following graph:



The output values are fixed for the "Linear" and "Logarithmic" dimming curves, and can be freely configured for the "User-defined" curves.

If a dimming value of 0% is reached, the channel always switches off.

Adjustment of cold white LED
Adjustment of warm white LED

The PWM value of the color temperature calculated by the dimming curve is additionally scaled with this value.

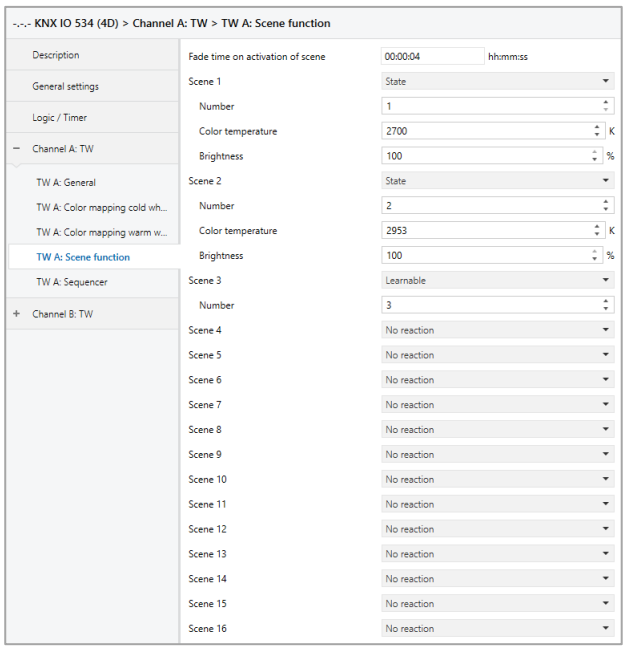
State object color temperature of cold white LED
State object color temperature of warm white LED

When activated, the following objects become visible:

Group Object TW A	Type KNX	Size	Direction
GO 27 TW A: State cold white LED - Color temperature	7.600	2 Byte	To KNX
GO 28 TW A: State warm white LED - Color temperature	7.600	2 Byte	To KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 107 TW B: State cold white LED - Color temperature	7.600	2 Byte	To KNX
GO 108 TW B: State cold white LED - Color temperature	7.600	2 Byte	To KNX

These objects transmit the parameterized color temperatures of the cold and warm white LEDs once when the device is started. The values are also available for read requests.

G. TW A: Scene function
TW B: Scene function



If the scene function is activated, the following group objects appear:

Group Object TW A	Type KNX	Size	Direction
GO 29 TW A: Scene - Activ./Lrn.	18.001	1 Byte	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 109 TW B: Scene - Activ./Lrn.	18.001	1 Byte	From KNX

Fade time on activation of scene

Here the period can be set in which the received scene is dimmed to. The period refers to a complete dimming process of 0-100%.

Scene 1-16

These parameters can be used to configure the reaction of the channel when the respective scene is received.

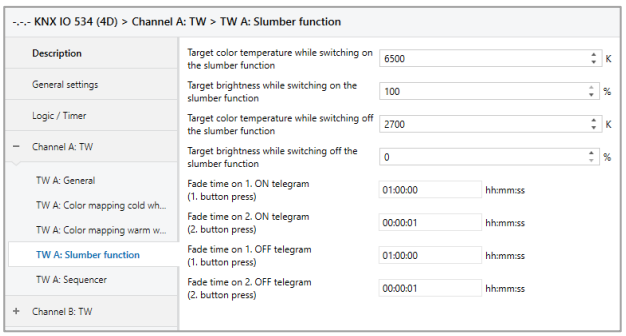
It is available:

- No reaction
- State
  The output is switched to the set color temperature and brightness if the scene of the corresponding number was received.
- Learnable
  With the help of a scene control telegram, the current state at the output for the respective scene can be saved here. Thus the scene can be adapted by the user without ETS download.

Number

With this parameter any scene number between 1 and 64 can be assigned to the scene. No scene numbers may be assigned twice.

H. TW A: Slumber function
TW B: Slumber function



If the slumber function is active, the following objects are visible:

Group Object TW A	Type KNX	Size	Direction
GO 35 TW A: Slumber function - Trigger	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 115 TW B: Slumber function - Trigger	1.001	1 Bit	From KNX

Target color temperature while switching on the slumber function

This color temperature is reached by the channel after completion of the dimming process after receiving an ON telegram via object 35 or 115.

Target brightness while switching on the slumber function

This brightness is reached by the channel after completion of the dimming process after receiving an ON telegram via object 35 or 115.

Target color temperature while switching off the slumber function

This color temperature is reached by the channel after completion of the dimming process after receiving an OFF telegram via object 35 or 115.

Target brightness while switching off the slumber function

This brightness is reached by the channel after completion of the dimming process after receiving an OFF telegram via object 35 or 115.

Fade time on 1. ON telegram (1. button press)

This fade time is used to dim to the target values for switching on after the 1. button press. The period refers to a complete dimming process of 0-100%.

Fade time on 2. ON telegram (2. button press)

This fade time is used to dim to the target values for switching on after the 2. button press. The period refers to a complete dimming process of 0-100%.

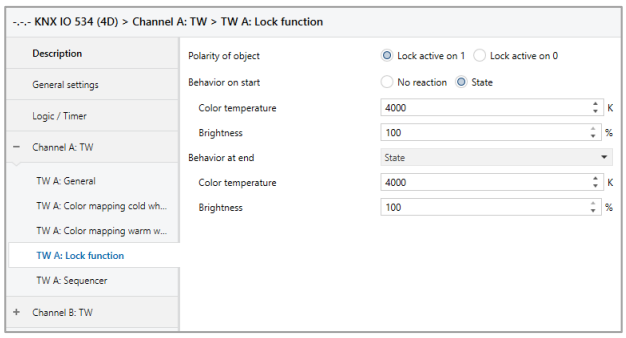
Fade time on 1. OFF telegram (1. button press)

This fade time is used to dim to the target values for switching off after the 1. button press. The period refers to a complete dimming process of 0-100%.

Fade time on 2. OFF telegram (2. button press)

This fade time is used to dim to the target values for switching off after the 2. button press. The period refers to a complete dimming process of 0-100%.

I. TW A: Lock function
TW B: Lock function



If the lock function is activated, the following objects are active:

Group Object TW A	Type KNX	Size	Direction
GO 36 TW A: Lock - Activate	1.001	1 Bit	From KNX
GO 37 TW A: Prior. dimming on/off - Switch	1.001	1 Bit	From KNX
GO 38 TW A: Prior. dimming rel - Brighter/Darker	3.007	4 Bit	From KNX
GO 39 TW A: Prior. dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 116 TW B: Lock - Activate	1.001	1 Bit	From KNX
GO 117 TW B: Prior. dimming on/off - Switch	1.001	1 Bit	From KNX
GO 118 TW B: Prior. dimming rel - Brighter/Darker	3.007	4 Bit	From KNX
GO 119 TW B: Prior. dimming abs. - Set value	5.001	1 Byte	From KNX

If the lock was activated by object 36 or 116, other received telegrams for dimmer, automatic mode, slumber, scene function and sequencer are not executed.

In addition to the lock object, 3 priority objects become visible when the lock function is activated, with which the dimmer can be controlled independently of the lock. This makes it possible to set an initial state without affecting other functions.

Example of the priority objects:
In the case of events in public buildings or in restaurants, the normal operation can be set into an inoperative state by the lock group object. Thus it is possible to lock during the lecture or concert, switches that are accessible to unauthorized persons, in order to prevent unmeant switching. Nevertheless, the individual lamps can controlled by use of the priority object without canceling the lock.

Polarity of object

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0.

The following options are selectable:

- Lock active on 1
- Lock active on 0

Behavior on start

This parameter configures, which state the output should set, if the lock activates.

The following options are selectable:

- No reaction
- Switch to state
  Parameters for adjusting color temperature and brightness appear.

This output state can still be changed by the priority object.

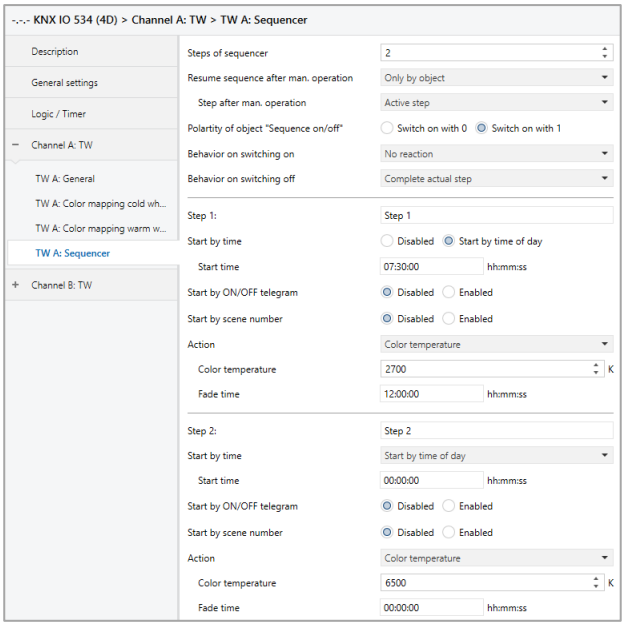
Behavior at end

This parameter defines, which state the output should set, if the lock deactivates.

The following options are selectable:

- No reaction
- Switch to color
  Parameters for adjusting color temperature and brightness appear.
- State before lock
  This restores the original state before the lock was activated. Telegrams received during the lock are ignored.
- State without lock
  Here the state of the last received telegram is restored. This takes into account the received telegrams during the lock. Thus, when the lock is deactivated, the last received telegram is set.

J. TW A: Sequencer
TW B: Sequencer



The sequencer can be used to create complex sequence programs consisting of up to 32 individual steps for the dimmer channel. The individual steps can be activated under the following starting conditions:

- At a fixed time of day
- After a waiting time from a previous step has elapsed
- By on/off telegram
- When receiving a parameterized scene number

When a step is activated, a color temperature and/or a brightness can be dimmed to or a scene number can be sent, and a step or a whole sequence of steps can be repeated cyclically.

The following objects are available for the general control of the sequencer:

Group Object TW A	Type KNX	Size	Direction
GO 53 TW A: Sequence suspend - Suspend/Resume	1.001	1 Bit	From KNX
GO 54 TW A: Sequence on/off - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 133 TW B: Sequence suspend - Suspend/Resume	1.001	1 Bit	From KNX
GO 134 TW B: Sequence on/off - Switch	1.001	1 Bit	From KNX

The following parameters determine the general behavior of the sequencer:

Steps of sequencer

Number of steps (0...32) to be used

Resume sequence after man. operation

An activated sequence can always be interrupted or continued via object 53 or 133, an ON telegram interrupts the sequence, and with an OFF telegram it is continued.

A sequence is also interrupted after manual operation, i.e. after commands for dimmer, automatic mode, slumber or scene function.

In addition, this parameter determines how an interrupted sequence can still be continued:

- Only by object
  The sequence can only be continued by object 53 or 133.
- After off-time
  The sequence is continued after the set off-time.
- On next activated step
  The sequence is continued with the next activated step, the next step can be activated by object or time-controlled.

Off-time

Only visible if the sequence is to be continued after off-time, with this parameter the off-time can be configured.

Step after man. operation

This step is executed when resuming after manual operation, the function of the set step is always executed, regardless of its otherwise set starting conditions.

Polarity of object "Sequence on/off"

This parameter can be used to set the telegram value with which the sequence can be switched on and off via object 54 or 134. If the sequence is switched off, any further activation of a step is disabled.

Behavior on switching on

Here it is determined how the sequencer behaves when switched on by object 54 or 134:

- No reaction
  No function is executed, the sequencer waits for steps to be activated.
- Step x
  The function of the step is executed (independent of the other set start conditions of the step), the sequence is then continued according to its configuration from this step onwards.

Switching on also reactivates a sequence interrupted by manual operation.

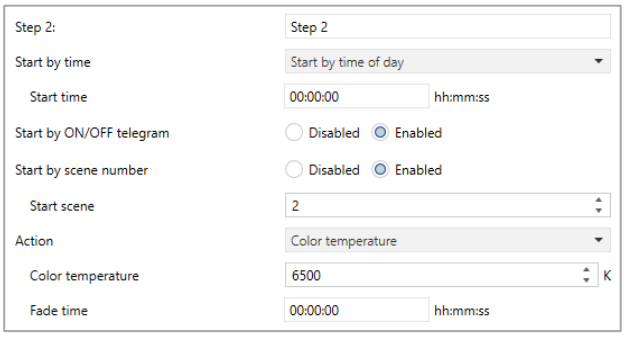
Behavior on switching off

Here it is determined how the sequencer behaves when switched off by object 54 or 134:

- Complete actual step
  If the sequencer is in a dimming process, it is completed.
- Step x
  The function of the step is executed (independent of the other set start conditions of the step).
- Stop immediately
  If the sequencer is in a dimming process, it is stopped.

Apart from the set behavior when switching off, any further activation of a step after switching off is disabled until the sequencer is switched on again by object 54 or 134.

Step 1-32



When a step is activated, its parameters for configuration appear.

In the text box at the top right with the content "Step x", you can enter your own name for the step. This designation serves for better orientation of the user and has no influence on the function of the step.

Start by time

This parameter is used to configure a temporal start condition of the step.

- Disabled
  Start condition not used
- Start at a fixed time of day
  Here the time of day at which the step should start can be entered. When using this start condition, the current time must have been received via the following object:

Group Object	Type KNX	Size	Direction
GO 5 Time of Day - Set	10.001	3 Byte	From KNX

If no valid time was received by object 5, all start conditions at fixed times of day are not active.

The time is continuously updated by the device through its internal timers, but component tolerances always result in a deviation from the actual time. Therefore, the current time should be sent to the device by a precise timer at least twice a day in order to keep the deviation as small as possible.

- Start after last trigger
  Here you can specify the time interval to wait after the previous activation before executing the step. This start condition is not available for step 1.

Start time

Here either the time day or the waiting time can be specified for the execution of the current step, if a timed start condition is used.

Start by ON/OFF telegram

When using this start condition, a separate object is available for each step:

Group Object TW A	Type KNX	Size	Direction
GO 55-86 TW A: Sequence Step x on/off - Switch	1.001	1 Bit	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**

GO 135-166 TW B: Sequence Step x on/off - Switch	1.001	1 Bit	From KNX

An OFF telegram also activates this step, but resets the sequence at the same time.

Start by scene number

When using this start condition, the following objects become visible:

Group Object TW A	Type KNX	Size	Direction
GO 51 TW A: Sequence scene - Activate step	18.001	1 Byte	From KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 131 TW B: Sequence scene - Activate step	18.001	1 Byte	From KNX

A telegram with the set scene on this object activates the respective step, the sequence is then continued according to its configuration from this step onwards.

All steps with this start condition are controlled by this object.

Action

When the step is activated, the configured function is executed, the following functions are available for selection:

- None
  No function is executed, for example this can be used to implement a switch-on delay for a sequence.
- Start loop
  The sequence continues from a previous step. Parameters for the initial step of the loop and the number of loops become visible.
- Send scene number
  When using this function, the following objects become visible:

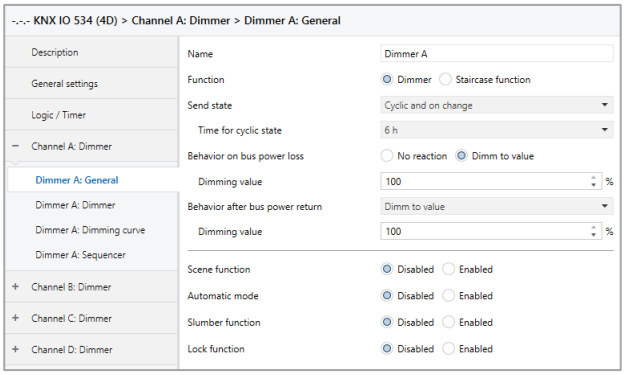
Group Object TW A	Type KNX	Size	Direction
GO 52 TW A: Sequence scene - Send scene	18.001	1 Byte	To KNX
Group Object TW B	**Type KNX**	**Size**	**Direction**
GO 132 TW B: Sequence scene - Send scene	18.001	1 Byte	To KNX

  A parameter for the scene number to be sent becomes visible. When the step is activated, this scene number is sent via the object.

  All steps send the scene number via this object, if this function is used for the respective step.
- Brightness
- Color temperature
- Brightness/Color temperature
  Parameters for color temperature and/or brightness, and fade time become visible. When this step is activated, the dimmer dims from the current values to the specified with the parameterized fade time. This time is related to a complete dimming process of 0-100%.

Device configuration „Common dimmer“

C. Dimmer A: General
Dimmer B: General
Dimmer C: General
Dimmer D: General



Name (30 Characters)

An arbitrary name can be assigned for the channel. However, this should be clear and meaningful, this makes it easier to work with the associated group objects, because the given name is displayed there as a label. If no name is assigned, the group objects are named „Dimmer “ + character of the channel.

Function

This parameter defines the functionality of the actuator, the following options are selectable:

- Dimmer
  When this functionality is selected, scene function, automatic mode, slumber and lock function are available. In the "Dimmer" function, objects for switching on/off, relative dimming, dimmer control via dimming and RGB value can be configured. The parameter page "Dimmer x: Dimmer" is displayed.
- Staircase function
  The parameter page "Dimmer x: Staircase function" is displayed. Only the lock function is available here.

When a function is selected, the following parameters appear:

Send state

This parameter defines the behavior of the state objects:

- Disabled
  State objects are deactivated and not displayed.
- Only on read
  State objects send only on request.
- On change
  The switch object sends an OFF telegram when the output value changes to 0%, an ON telegram when the output value changes from 0% to a value greater than 0%. The value object transmits with a time interval of at least 1 second if the value at the output has changed by at least 1% or if a dimming process has been completed.
- Cyclic and on change
  State objects send cyclically and on value change.

Group Object Dimmer A	Type KNX	Size	Direction
GO 176 Dimmer A: Dimming output - State On/Off	1.001	1 Bit	To KNX
GO 177 Dimmer A: Dimming output - State value	5.001	1 Byte	To KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 236 Dimmer B: Dimming output - State On/Off	1.001	1 Bit	To KNX
GO 237 Dimmer B: Dimming output - State value	5.001	1 Byte	To KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 296 Dimmer C: Dimming output - State On/Off	1.001	1 Bit	To KNX
GO 297 Dimmer C: Dimming output - State value	5.001	1 Byte	To KNX

Group Object Dimmer D	Type KNX	Size	Direction
GO 356 Dimmer D: Dimming output - State On/Off	1.001	1 Bit	To KNX
GO 357 Dimmer D: Dimming output - State value	5.001	1 Byte	To KNX

Time for cyclic state

With this parameter, the cycle time can be set, when “Cyclic and on change“ is selected for sending state.

Behavior on bus power failure

The behavior of the output in the event of bus power failure can be configured here.

The following options are selectable:

- No reaction
- Dim to value
  A parameter for adjusting the value appears.

Behavior after bus power return

Here the behavior of the output after bus power return can be configured. This behavior will be set after every device restart (e.g. also on restart after ETS download).

The following options are selectable:

- No reaction
- Dim to value
  A parameter for adjusting the value appears.
- State like before bus power failure

Scene function

The scene function can be activated or deactivated here; it is only available in the "Dimmer" operating mode. If this function is activated, the parameter page "Dimmer x: Scene function" appears for further configuration of scenes 1-16. The further functionality is explained in section G.

Automatic mode

Automatic mode is only available in the "Dimmer" function. If this mode is selected, the following objects become visible:

Group Object Dimmer A	Type KNX	Size	Direction
GO 179 Dimmer A: Automatic Mode - Activate	1.001	1 Bit	From/To KNX
GO 180 Dimmer A: Autom. dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 239 Dimmer B: Automatic Mode - Activate	1.001	1 Bit	From/To KNX
GO 240 Dimmer B: Autom. dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 299 Dimmer C: Automatic Mode - Activate	1.001	1 Bit	From/To KNX
GO 300 Dimmer C: Autom. dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 359 Dimmer D: Automatic Mode - Activate	1.001	1 Bit	From/To KNX
GO 360 Dimmer D: Autom. dimming abs. - Set value	5.001	1 Byte	From KNX

When using automatic mode, the dimmer can be controlled via object 180, 240, 300 or 360, e.g. for light control or daylight-dependent basic lighting.

In automatic mode, the dimmer can be manually overridden by dimming on/off, dimming rel., dimming value, scene, slumber function or sequencer. During manual override, values of object 180, 240, 300 or 360 are ignored, each manual override restarts the fallback time.

After the fallback time set in the parameter has elapsed, the values received on object 180, 240, 300 or 360 are processed again.

Via object 179, 239, 299 or 359, the automatic can be switched on or off at any time, it also serves as a state object for automatic mode.

Slumber function

The slumber function is only available in the "Dimmer" operating mode. The slumber function offers 2 different fade times each for switching on and off via object. If this function is activated, a new parameter page appears, which is explained in section H.

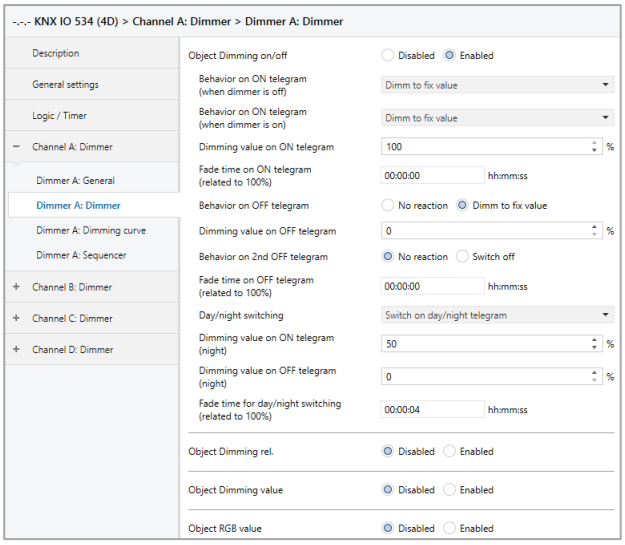
Lock function

The lock function can be activated or deactivated here.

This function is available in both "Dimmer" and "Staircase function" operating modes. If this function is activated, a new parameter page appears for further configuration, which is explained in Section I in more detail.

D. Dimmer A: Dimmer
Dimmer B: Dimmer
Dimmer C: Dimmer
Dimmer D: Dimmer

Object Dimming on/off



For switching the dimmers, the following objects are available, if they have been activated via parameters:

Group Object Dimmer A	Type KNX	Size	Direction
GO 171 Dimmer A: Dimming on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 231 Dimmer B: Dimming on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 291 Dimmer C: Dimming on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 351 Dimmer D: Dimming on/off - Switch	1.001	1 Bit	From KNX

Behavior on ON telegram (when dimmer is off)

If the dimmer is switched off, this parameter can be used to configure the behavior when switching on via object 171, 231, 291 or 351.

It is available:

- No reaction
- Dim to fix value

- Dim to last value before switching off

Behavior on ON telegram (when dimmer is on)

If the dimmer is already switched on, this parameter can be used to configure the behavior for a new ON telegram via object 171, 231, 291 or 351.

It is available:

- No reaction
- Dim to fix value
- Dim to fix value if higher than actual

Dimming value on ON telegram

This value is activated by ON telegram via object 171, 231, 291 or 351 with suitable parameterization.

Fade time on ON telegram

This fade time is active when an ON telegram is received. The period refers to a complete dimming process of 0-100%.

Behavior on OFF telegram

This parameter describes the behavior of the dimmer when an OFF telegram is sent via object 171, 231, 291 or 351.

It is available:

- No reaction
- Dim to fix value

Dimming value on OFF telegram

This value is activated by OFF telegram via object 171, 231, 291 or 351 with suitable parameterization.

Behavior on 2. OFF telegram

This parameter describes the behavior of the dimmer when a 2. OFF telegram is received via object 171, 231, 291 or 351.

It is available:

- No reaction
- Switch off

The 2. OFF telegram must follow the 1. OFF telegram within 1 second in order to be evaluated. If the current brightness is equal to or lower than the parameterized brightness for OFF telegram, the device is already switched off by the 1. OFF telegram.

Fade time on OFF telegram

This fade time is active when an OFF telegram is received. The period refers to a complete dimming process of 0-100%.

Day/night switching

When using this function, the following objects are visible for switching between day/night mode:

Group Object Dimmer A	Type KNX	Size	Direction
GO 175 Dimmer A: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 235 Dimmer B: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 295 Dimmer C: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 355 Dimmer D: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on object 175, 235, 295 or 355, night mode with an OFF telegram. After a restart, the device is in day mode.

In addition, it can be determined when the values become active after receiving a telegram on these objects, it is available:

- Disabled
- Switch on day/night telegram
  Immediately after reception of day/night switching, it is dimmed to the active value according to the last switch-on/switch-off received via object 171, 231, 291 or 351.
- Switch on next on/off telegram
  The currently active value is not used until the next switch on/off telegram via object 171, 231, 291 or 351.

There is a separate switch-on and switch-off value for night mode in the parameters, in day mode the always visible values are used.

Dimming value on ON telegram (night)

If the dimmer is in night mode, this value is activated by ON telegram via object 171, 231, 291 or 351 and suitable parameterization.

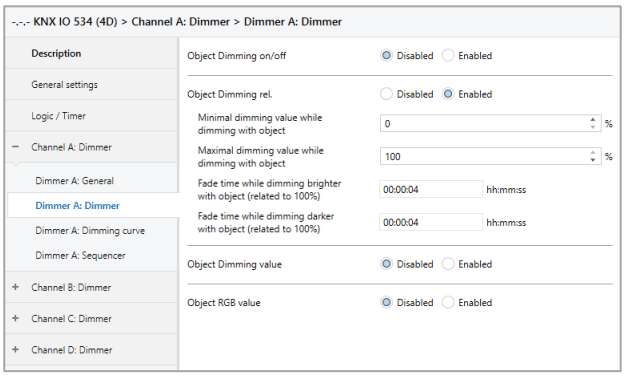
Dimming value on OFF telegram (night)

If the dimmer is in night mode, this value is activated by OFF telegram via object 171, 231, 291 or 351 and suitable parameterization.

Fade time for day/night switching

This fade time is only active if switching on day/night telegram is used. If switching on next on/off telegram is used, the regular fade time of the respective on or off telegram is active. The period refers to a complete dimming process of 0-100%.

Object Dimming rel.



The following objects are available for dimming using relative dimming commands, if activated via parameters:

Group Object Dimmer A	Type KNX	Size	Direction
GO 172 Dimmer A: Dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 232 Dimmer B: Dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 292 Dimmer C: Dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 352 Dimmer D: Dimming rel. - Brighter/Darker	3.007	4 Bit	From KNX

Minimal dimming value while dimming with object

This parameter can be used to set which minimum dimming value can be achieved via relative dimming. If the current dimming value is below the minimum value, the brightness cannot be reduced via object 172, 232, 292 or 352.

Maximal dimming value while dimming with object

This parameter can be used to set which maximum dimming value can be achieved via relative dimming. If the current dimming value is above the maximum value, the brightness cannot be increased via object 172, 232, 292 or 352.

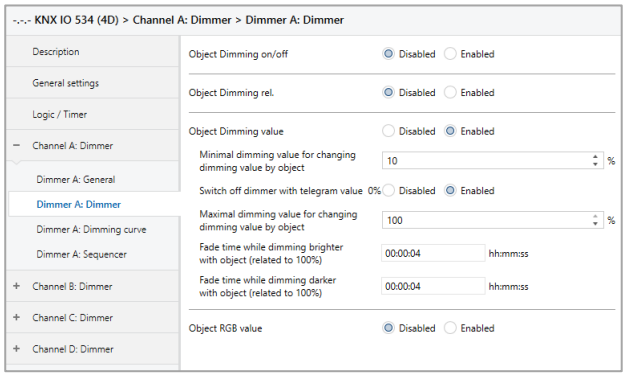
Fade time while dimming brighter with object

This fade time is active when the brightness is increased by relative dimming with object 172, 232, 292 or 352. The period refers to a complete dimming process of 0-100%.

Fade time while dimming darker with object

This fade time is active when the brightness is decreased by relative dimming with object 172, 232, 292 or 352. The period refers to a complete dimming process of 0-100%.

Object Dimming value



The following objects are used to control the dimmer via dimming value if they have been activated via parameters:

Group Object Dimmer A	Type KNX	Size	Direction
GO 173 Dimmer A: Dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 233 Dimmer B: Dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 293 Dimmer C: Dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 353 Dimmer D: Dimming abs. - Set value	5.001	1 Byte	From KNX

Minimal dimming value for changing dimming value with object

This parameter can be used to configure which minimum dimming value can be reached via object 173, 233, 293 or 353. If a value below the minimum value is received, the dimmer is controlled with the minimum value. If a value >0% is set here, the following parameter is also visible:

Switch off dimmer with telegram value 0%

Here it is to select whether the dimmer is switched off when a value of 0% is received.

Minimal dimming value for changing dimming value with object

This parameter can be used to configure which maximum dimming value can be reached via object 173, 233, 293 or 353. If a value above the maximum value is received, the dimmer is controlled with the maximum value.

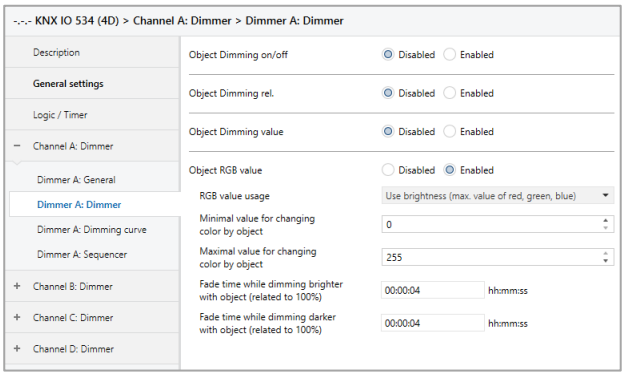
Fade time while dimming brighter with object

This fade time is active when the brightness is increased by relative dimming with object 173, 233, 293 or 353. The period refers to a complete dimming process of 0-100%.

Fade time while dimming darker with object

This fade time is active when the brightness is decreased by relative dimming with object 173, 233, 293 or 353. The period refers to a complete dimming process of 0-100%.

Object RGB value



To control the dimmer via RGB color value, the following objects are available, if activated via parameter:

Group Object Dimmer A	Type KNX	Size	Direction
GO 174 Dimmer A: RGB color value - Set value	232.600	3 Byte	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 234 Dimmer B: RGB color value - Set value	232.600	3 Byte	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 294 Dimmer C: RGB color value - Set value	232.600	3 Byte	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 3544 Dimmer D: RGB color value - Set value	232.600	3 Byte	From KNX

RGB value usage

Here it is set how a received RGB color value is to be processed:

- Use red part
  The 1. byte of the RGB value (red) is used to control the brightness of the dimmer.
- Use green part
  The 2. byte of the RGB value (green) is used to control the brightness of the dimmer.
- Use blue part
  The 3. byte of the RGB value (blue) is used to control the brightness of the dimmer.
- Use white (min. value of red, green, blue)
  The smallest value of the 3 bytes is used to control the brightness of the dimmer.
- Use brightness (max. value of red, green, blue)
  The largest value of the 3 bytes is used to control the brightness of the dimmer.

Minimal value for changing color by object

This parameter can be used to configure which minimum dimming value can be set via object 174, 234, 294 or 354. If a value below the minimum value is received, the dimmer is controlled with the minimal value.

Maximal value for changing color by object

This parameter can be used to configure which maximum dimming value can be set via object 174, 234, 294 or 354. If a value above the maximum value is received, the dimmer is controlled with the maximum mal value.

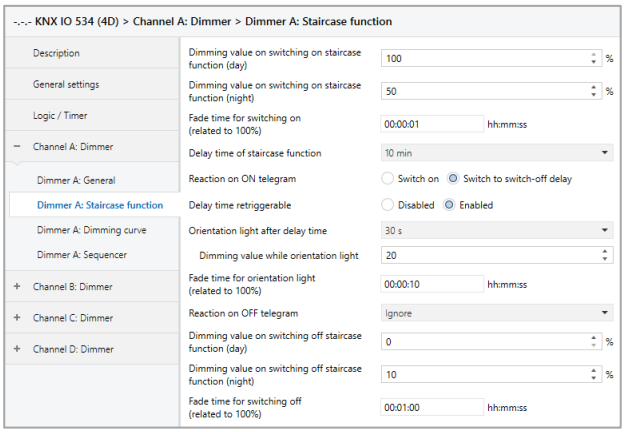
Fade time while dimming brighter with object

This dimming time is active when the brightness is increased by values received via object 174, 234, 294 or 354. The time period refers to a complete dimming process of 0-100%.

Fade time while dimming darker with object

This dimming time is active when the brightness is decreased by values received via object 174, 234, 294 or 354. The time period refers to a complete dimming process of 0-100%.

E. Dimmer A: Staircase function
Dimmer B: Staircase function
Dimmer C: Staircase function
Dimmer D: Staircase function



This parameter page can be used to implement a staircase function with optional orientation light. The staircase function can be overridden by the lock function. It has the following objects:

Group Object Dimmer A	Type KNX	Size	Direction
GO 171 Dimmer A: Staircase function - Trigger	1.010	1 Bit	From KNX
GO 175 Dimmer A: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 231 Dimmer B: Staircase function - Trigger	1.010	1 Bit	From KNX
GO 235 Dimmer B: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 291 Dimmer C: Staircase function - Trigger	1.010	1 Bit	From KNX
GO 295 Dimmer C: Day/Night - Switch	1.001	1 Bit	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 351 Dimmer D: Staircase function - Trigger	1.010	1 Bit	From KNX
GO 355 Dimmer D: Day/Night - Switch	1.001	1 Bit	From KNX

Day mode is triggered with an ON telegram on object 175, 235, 295 or 355, night mode with an OFF telegram. After a restart, the device is in day mode.

Dimming value on switching on the staircase function (day)

This value is used in day mode when the staircase function is switched on via ON telegram to object 171, 231, 291 or 351.

Dimming value on switching on the staircase function (night)

This value is used in night operation when the staircase function is switched on via ON telegram to object 171, 231, 291 or 351.

Fade time for switching on

This dimming time is active when the staircase function is switched on via ON telegram to object 171, 231, 291 or 351. The period refers to a complete dimming process of 0-100%.

Delay time for staircase function

After the delay time has elapsed, the dimmer is dimmed to the switch-off or orientation light value depending on the parameter setting.

Reaction on ON telegram

This parameter determines the behavior after switching on the staircase function via ON telegram on object 171, 231, 291 or 351: When "Switch on" is set, the channel remains switched on after ON telegram until the follow-up time is started via OFF telegram. In the setting "Switch to delay time", the channel enters the delay time immediately after the ON telegram.

Delay time retriggerable

If it is set that the delay time is started with ON telegram, this parameter determines whether only the 1. ON telegram on object 171, 231, 291 or 351 starts the delay time, or also any further.

If it is set that the delay time is started with OFF telegram, this parameter determines whether only the 1. OFF telegram on object 171, 231, 291 or 351 starts the delay time, or also any other if the staircase function is already in the delay time.

Orientation light after delay time

This parameter can be used to set whether the dimmer dims to switch-off value or to orientation light at the end of the delay time, as well as the duration of the orientation light.

It is available:

- Disabled
- 1 s
- 2 s
- 5 s
- 10 s
- 30 s
- 1 min
- 2 min
- 5 min
- 10 min
- 20 min
- 30 min
- 1 h
- 2 h
- Without time limit

Dimming value while orientation light

This value is dimmed to at the end of the delay time when orientation light is used.

Fade time for orientation light

This fade time is active when the staircase function dims to orientation light. The period refers to a complete dimming process of 0-100%.

Reaction on OFF telegram

Here it can be set how the staircase function behaves in the event of an OFF telegram. The following options are available:

- Ignore
  No reaction of the channel on OFF telegram
- Switch off
  Switch to switch-off value from the parameters

- Switch to switch-off delay
  The delay time is started with OFF telegram.
- Switch to orientation light
  The orientation light phase is started with OFF telegram.
- Switch to orientation light/switch off
  With 1. OFF telegram the orientation light phase is started, with 2. OFF telegram it is dimmed to switch-off value.

Dimming value on switching off the staircase function (day)

This value is dimmed to in day mode if the staircase function is switched off after the delay time or via OFF telegram on object 171, 231, 291 or 351.

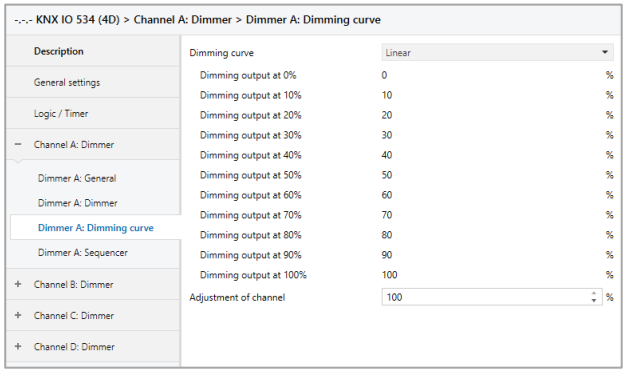
Dimming value on switching off the staircase function (night)

This value is dimmed to in night mode if the staircase function is switched off after the delay time or via OFF telegram on object 171, 231, 291 or 351.

Fade time for switching off

This fade time is active when the staircase function dims to the switch-off value. The period refers to a complete dimming process of 0-100%.

F. Dimmer A: Dimming curve
Dimmer B: Dimming curve
Dimmer C: Dimming curve
Dimmer D: Dimming curve



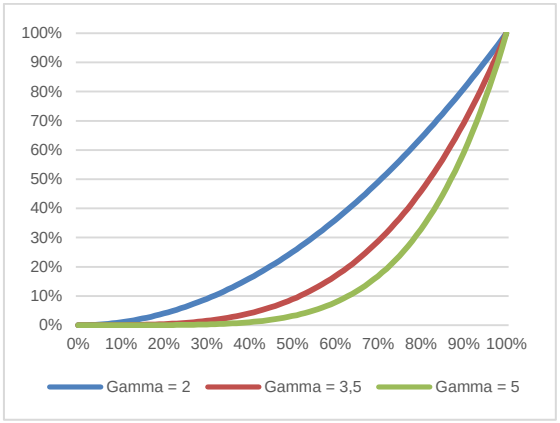
This parameter page is used for fine adjustment of the dimmer to different light sources.

All parameters on this page only affect the PWM value of the output, not the dimming or output status value.

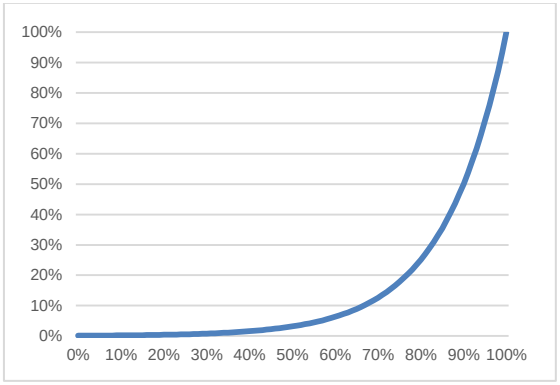
Dimming curve

Here it can be specified which PWM values are output by the dimming outputs when the dimming channel has reached a certain dimming value. The following options are available:

- Linear
- Logarithmic
- User defined
- Gamma
  Gamma correction according to the formula:
  $$\text{PWM value} = \text{Dimming value}^{\text{Gamma}}$$
  Gamma is adjustable via parameter from 1.00 to 5.00.

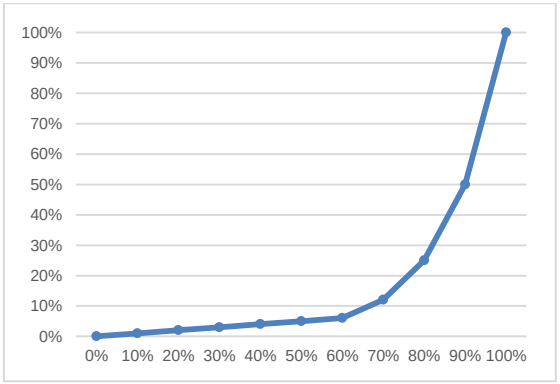


- DALI
  Function based on DALI with the formula:
  $$\text{PWM value} = 10^{3\cdot(\text{Dimming value}-1)}$$



Dimming output at x%

For the "Linear", "Logarithmic" and "User defined" dimming curves, these values determine the PWM values of a dimming output at the specified dimming value. Values between the specified points are calculated and output linearly. As an example, a dimming output with dimming curve "Logarithmic" behaves according to the following graph:



The output values are fixed for the "Linear" and "Logarithmic" dimming curves, and can be freely configured for the "User-defined" curves.

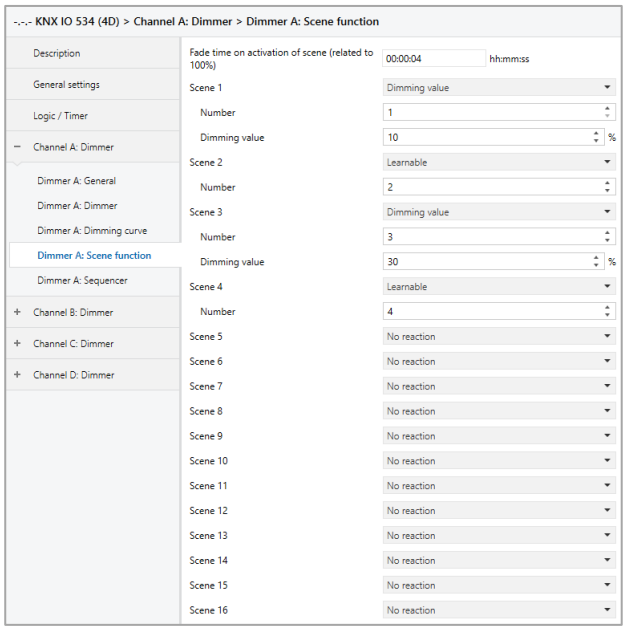
If a dimming value of 0% is reached, the channel always switches off.

Adjustment of channel

The PWM value of the calculated value by the dimming curve is additionally scaled with this value.

G. Dimmer A: Scene function
Dimmer B: Scene function

Dimmer C: Scene function
Dimmer D: Scene function



If the scene function is activated, the following group objects appear:

Group Object Dimmer A	Type KNX	Size	Direction
GO 178 Dimmer A: Scene - Activ./Lrn.	18.001	1 Byte	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 238 Dimmer B: Scene - Activ./Lrn.	18.001	1 Byte	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 298 Dimmer C: Scene - Activ./Lrn.	18.001	1 Byte	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 358 Dimmer D: Scene - Activ./Lrn.	18.001	1 Byte	From KNX

Fade time on activation of scene

Here the period can be set in which the received scene is dimmed to. The period refers to a complete dimming process of 0-100%.

Scene 1-16

These parameters can be used to configure the reaction of the channel when the respective scene is received.

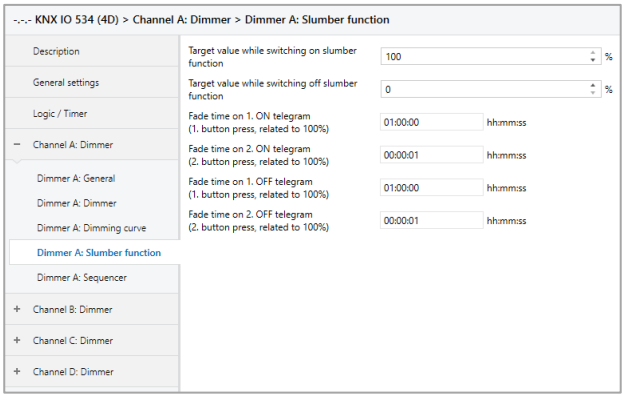
It is available:

- No reaction
- Dimming value
  The output is switched to the set dimming value if the scene of the corresponding number was received.
- Learnable
  With the help of a scene control telegram, the current state at the output for the respective scene can be saved here. Thus the scene can be adapted by the user without ETS download.

Number

With this parameter any scene number between 1 and 64 can be assigned to the scene. No scene numbers may be assigned twice.

H. Dimmer A: Slumber function
Dimmer B: Slumber function
Dimmer C: Slumber function
Dimmer D: Slumber function



If the slumber function is active, the following objects are visible:

Group Object Dimmer A	Type KNX	Size	Direction
GO 181 Dimmer A: Slumber function - Trigger	1.001	1 Bit	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 241 Dimmer B: Slumber function - Trigger	1.001	1 Bit	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 301 Dimmer C: Slumber function - Trigger	1.001	1 Bit	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 361 Dimmer D: Slumber function - Trigger	1.001	1 Bit	From KNX

Target value while switching on the slumber function

This value is reached by the channel after completion of the dimming process after receiving an ON telegram via object 181, 241, 301 or 361.

Target value while switching off the slumber function

This value is reached by the channel after completion of the dimming process after receiving an OFF telegram via object 181, 241, 301 or 361.

Fade time on 1. ON telegram (1. button press)

This fade time is used to dim to the target value for switching on after the 1. button press. The period refers to a complete dimming process of 0-100%.

Fade time on 2. ON telegram (2. button press)

This fade time is used to dim to the target value for switching on after the 2. button press. The period refers to a complete dimming process of 0-100%.

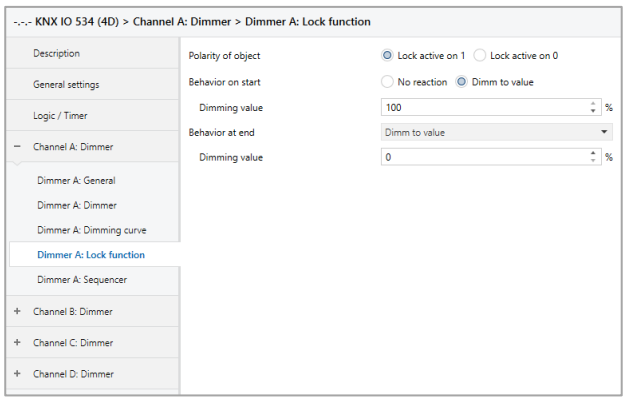
Fade time on 1. OFF telegram (1. button press)

This fade time is used to dim to the target value for switching off after the 1. button press. The period refers to a complete dimming process of 0-100%.

Fade time on 2. OFF telegram (2. button press)

This fade time is used to dim to the target value for switching off after the 2. button press. The period refers to a complete dimming process of 0-100%.

I. Dimmer A: Lock function
Dimmer B: Lock function
Dimmer C: Lock function
Dimmer F: Lock function



If the lock function is activated, the following objects are active:

Group Object Dimmer A	Type KNX	Size	Direction
GO 182 Dimmer A: Lock - Activate	1.001	1 Bit	From KNX
GO 183 Dimmer A: Prior. dimming on/off - Switch	1.001	1 Bit	From KNX
GO 184 Dimmer A: Prior. dimming rel - Brighter/Darker	3.007	4 Bit	From KNX
GO 185 Dimmer A: Prior. dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 242 Dimmer B: Lock - Activate	1.001	1 Bit	From KNX
GO 243 Dimmer B: Prior. dimming on/off - Switch	1.001	1 Bit	From KNX
GO 244 Dimmer B: Prior. dimming rel - Brighter/Darker	3.007	4 Bit	From KNX
GO 245 Dimmer B: Prior. dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 302 Dimmer C: Lock - Activate	1.001	1 Bit	From KNX
GO 303 Dimmer C: Prior. dimming on/off - Switch	1.001	1 Bit	From KNX
GO 304 Dimmer C: Prior. dimming rel - Brighter/Darker	3.007	4 Bit	From KNX
GO 305 Dimmer C: Prior. dimming abs. - Set value	5.001	1 Byte	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 362 Dimmer D: Lock - Activate	1.001	1 Bit	From KNX
GO 363 Dimmer D: Prior. dimming on/off - Switch	1.001	1 Bit	From KNX
GO 364 Dimmer D: Prior. dimming rel - Brighter/Darker	3.007	4 Bit	From KNX
GO 365 Dimmer D: Prior. dimming abs. - Set value	5.001	1 Byte	From KNX

If the lock was activated by object 182, 242, 302 or 362, other received telegrams for dimmer, automatic mode, slumber, scene function and sequencer are not executed.

In addition to the lock object, 3 priority objects become visible when the lock function is activated, with which the dimmer can be controlled independently of the lock. This makes it possible to set an initial state without affecting other functions.

Example of the priority objects:
In the case of events in public buildings or in restaurants, the normal operation can be set into an inoperative state by the lock group object. Thus it is possible to lock during the lecture or concert, switches that are accessible to unauthorized persons, in order to prevent unmeant switching. Nevertheless, the individual lamps can controlled by use of the priority object without canceling the lock.

Polarity of object

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0.

The following options are selectable:

- Lock active on 1
- Lock active on 0

Behavior on start

This parameter configures, which state the output should set, if the lock activates.

The following options are selectable:

- No reaction
- Dim to value
  A parameter for adjusting the value appears.

This output state can still be changed by the priority object.

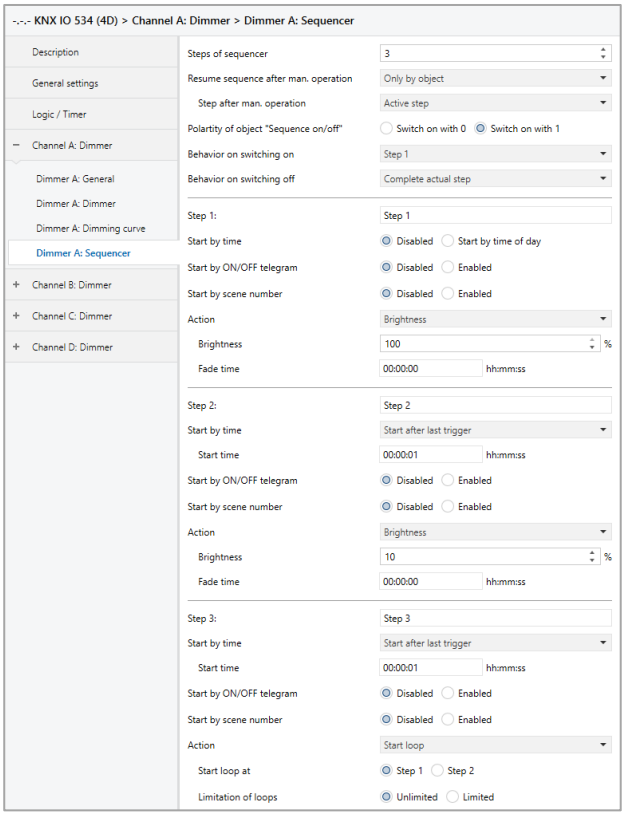
Behavior at end

This parameter defines, which state the output should set, if the lock deactivates.

The following options are selectable:

- No reaction
- Dim to value
  A parameter for adjusting the value appears.
- State before lock
  This restores the original state before the lock was activated. Telegrams received during the lock are ignored.
- State without lock
  Here the state of the last received telegram is restored. This takes into account the received telegrams during the lock. Thus, when the lock is deactivated, the last received telegram is set.

J. Dimmer A: Sequencer
Dimmer B: Sequencer
Dimmer C: Sequencer
Dimmer D: Sequencer



The sequencer can be used to create complex sequence programs consisting of up to 32 individual steps for the dimmer channel. The individual steps can be activated under the following starting conditions:

- At a fixed time of day
- After a waiting time from a previous step has elapsed

- By on/off telegram
- When receiving a parameterized scene number

When a step is activated, a value can be dimmed to or a scene number can be sent, and a step or a whole sequence of steps can be repeated cyclically.

The following objects are available for the general control of the sequencer:

Group Object Dimmer A	Type KNX	Size	Direction
GO 193 Dimmer A: Sequence suspend - Suspend/Resume	1.001	1 Bit	From KNX
GO 194 Dimmer A: Sequence on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 253 Dimmer B: Sequence suspend - Suspend/Resume	1.001	1 Bit	From KNX
GO 254 Dimmer B: Sequence on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 313 Dimmer C: Sequence suspend - Suspend/Resume	1.001	1 Bit	From KNX
GO 314 Dimmer C: Sequence on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 373 Dimmer D: Sequence suspend - Suspend/Resume	1.001	1 Bit	From KNX
GO 374 Dimmer D: Sequence on/off - Switch	1.001	1 Bit	From KNX

The following parameters determine the general behavior of the sequencer:

Steps of sequencer

Number of steps (0...32) to be used

Resume sequence after man. operation

An activated sequence can always be interrupted or continued via object 193, 253, 313 or 373 an ON telegram interrupts the sequence, and with an OFF telegram it is continued.

A sequence is also interrupted after manual operation, i.e. after commands for dimmer, automatic mode, slumber or scene function.

In addition, this parameter determines how an interrupted sequence can still be continued:

- Only by object
  The sequence can only be continued by object 193, 253, 313 or 373.
- After off-time
  The sequence is continued after the set off-time.
- On next activated step
  The sequence is continued with the next activated step, the next step can be activated by object or time-controlled.

Off-time

Only visible if the sequence is to be continued after off-time, with this parameter the off-time can be configured.

Step after man. operation

This step is executed when resuming after manual operation, the function of the set step is always executed, regardless of its otherwise set starting conditions.

Polarity of object "Sequence on/off"

This parameter can be used to set the telegram value with which the sequence can be switched on and off via object 194, 254, 314 or 374. If the sequence is switched off, any further activation of a step is disabled.

Behavior on switching on

Here it is determined how the sequencer behaves when switched on by object 194, 254, 314 or 374:

- No reaction
  No function is executed, the sequencer waits for steps to be activated.
- Step x
  The function of the step is executed (independent of the other set start conditions of the step), the sequence is then continued according to its configuration from this step onwards.

Switching on also reactivates a sequence interrupted by manual operation.

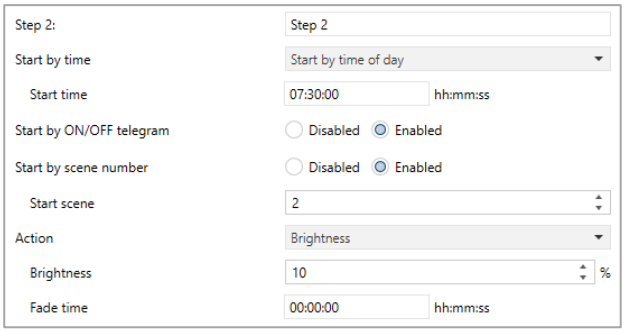
Behavior on switching off

Here it is determined how the sequencer behaves when switched off by object 194, 254, 314 or 374:

- Complete actual step
  If the sequencer is in a dimming process, it is completed.
- Step x
  The function of the step is executed (independent of the other set start conditions of the step).
- Stop immediately
  If the sequencer is in a dimming process, it is stopped.

Apart from the set behavior when switching off, any further activation of a step after switching off is disabled until the sequencer is switched on again by object 194, 254, 314 or 374.

Step 1-32



When a step is activated, its parameters for configuration appear.

In the text box at the top right with the content "Step x", you can enter your own name for the step. This designation serves for better orientation of the user and has no influence on the function of the step.

Start by time

This parameter is used to configure a temporal start condition of the step.

- Disabled
  Start condition not used
- Start at a fixed time of day
  Here the time of day at which the step should start can be entered. When using this start condition, the current time must have been received via the following object:

Group Object	Type KNX	Size	Direction
GO 5 Time of Day - Set	10.001	3 Byte	From KNX

If no valid time was received by object 5, all start conditions at fixed times of day are not active.

The time is continuously updated by the device through its internal timers, but component tolerances always result in a deviation from the actual time. Therefore, the current time should be sent to the device by a precise timer at least twice a day in order to keep the deviation as small as possible.

- Start after last trigger
  Here you can specify the time interval to wait after the previous activation before executing the step. This start condition is not available for step 1.

Start time

Here either the time day or the waiting time can be specified for the execution of the current step, if a timed start condition is used.

Start by ON/OFF telegram

When using this start condition, a separate object is available for each step:

Group Object Dimmer A	Type KNX	Size	Direction
GO 195-226 Dimmer A: Sequence Step x on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 255-286 Dimmer B: Sequence Step x on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 315-346 Dimmer C: Sequence Step x on/off - Switch	1.001	1 Bit	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 375-406 Dimmer D: Sequence Step x on/off - Switch	1.001	1 Bit	From KNX

An ON telegram to one of these objects activates the respective step, the sequence is then continued according to its configuration from this step onwards.

An OFF telegram also activates this step, but resets the sequence at the same time.

Start by scene number

When using this start condition, the following object becomes visible:

Group Object Dimmer A	Type KNX	Size	Direction
GO 191 Dimmer A: Sequence scene - Activate step	18.001	1 Byte	From KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 251 Dimmer B: Sequence scene - Activate step	18.001	1 Byte	From KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 311 Dimmer C: Sequence scene - Activate step	18.001	1 Byte	From KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 371 Dimmer D: Sequence scene - Activate step	18.001	1 Byte	From KNX

A telegram with the set scene on this object activates the respective step, the sequence is then continued according to its configuration from this step onwards.

All steps with this start condition are controlled by this object.

Action

When the step is activated, the configured function is executed, the following functions are available for selection:

- None
  No function is executed, for example this can be used to implement a switch-on delay for a sequence.

- Start loop
  The sequence continues from a previous step. Parameters for the initial step of the loop and the number of loops become visible.

- Send scene number
  When using this function, the following object becomes visible:

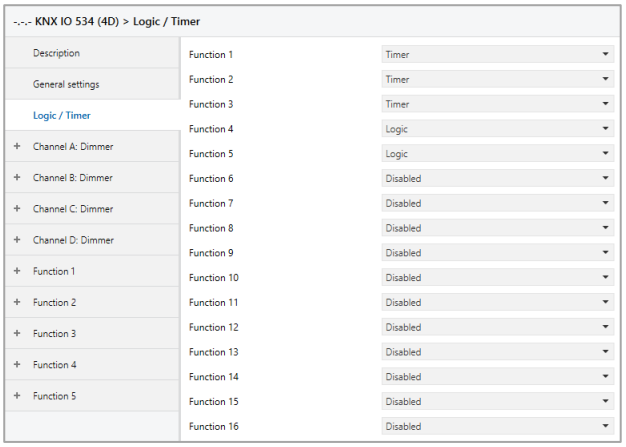
Group Object Dimmer A	Type KNX	Size	Direction
GO 192 Dimmer A: Sequence scene - Send scene	18.001	1 Byte	To KNX
Group Object Dimmer B	**Type KNX**	**Size**	**Direction**
GO 252 Dimmer B: Sequence scene - Send scene	18.001	1 Byte	To KNX
Group Object Dimmer C	**Type KNX**	**Size**	**Direction**
GO 312 Dimmer C: Sequence scene - Send scene	18.001	1 Byte	To KNX
Group Object Dimmer D	**Type KNX**	**Size**	**Direction**
GO 372 Dimmer D: Sequence scene - Send scene	18.001	1 Byte	To KNX

  A parameter for the scene number to be sent becomes visible. When the step is activated, this scene number is sent via the object.

  All steps send the scene number via this object, if this function is used for the respective step.

- Brightness
  Parameters for brightness and fade time become visible. When this step is activated, the dimmer dims from the current brightness value to the specified brightness with the parameterized fade time. This time is related to a complete dimming process of 0-100%.

K. Logic / Timer



Function 1 - 16

These channels contain additional functions such as timing and logic. All these 16 additional functions are identical.

The following options are selectable:

- Disabled
- Timer
- Logic

Function type (Disabled)

If the function type is set to "Disabled", no timer or logic specific parameters and group objects are available.

Function type (Timer)

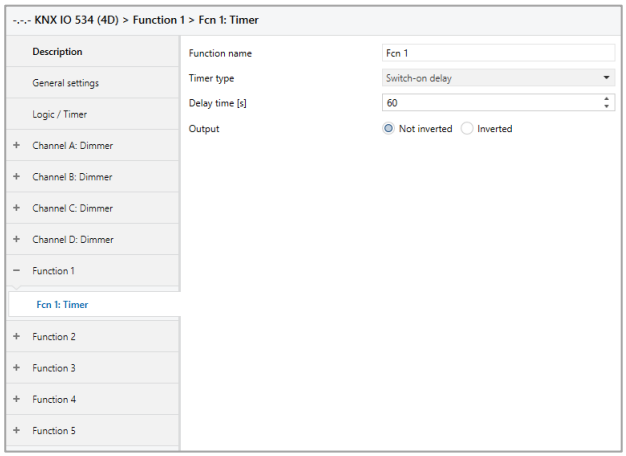
The timer-specific parameters and group objects are available.

Function type (Logic)

The logic-specific parameters and group objects are available.

These additional logic and timer functions can be linked to one another by means of the associated group objects. This also allows to create complex structures. For this purpose, the output of a function is set to the same group address as the input of the next function.

L. Function 1 - 16 (Timer)



Function name (10 Characters)

The function name can be chosen freely.
The name is visible in the group object entry in the ETS software. This makes it easier to work with the associated group objects, because the given name is displayed there as a label.

Timer type (Switch-on delay)

A timer that switches ON after duration defined in ‘Delay time [s]’ parameter.
The output value can be inverted by parameter ‘Output’ (Not inverted / inverted).

Input -------1----------0----------
Output -------|-T-1----------0----------

Group Object	Type KNX	Size	Direction
Timer - Switch-on delayed - Input	1.002	1 Bit	From KNX
Timer - Switch-on delayed - Output	1.002	1 Bit	To KNX

Timer type (Switch-off delay)

A timer that switches OFF after duration defined in ‘Delay time [s]’ parameter.
The output value can be inverted by parameter ‘Output’. (Not inverted / inverted)

Input -------1----------0----------
Output -------1----------|-T-0------

Group Object	Type KNX	Size	Direction
Timer - Switch-off delayed - Input	1.002	1 Bit	From KNX
Timer - Switch-off delayed - Output	1.002	1 Bit	To KNX

Timer type (Switch-on and -off delay)

A timer that switches ON and OFF after duration defined in ‘Delay time [s]’ parameter.
The output value can be inverted by parameter ‘Output’. (Not inverted / inverted)

Input -------1----------0----------
Output -------|-T-1----------|-T-0------

Group Object	Type KNX	Size	Direction
Timer - Switch-on/off delayed - Input	1.002	1 Bit	From KNX
Timer - Switch-on/off delayed - Output	1.002	1 Bit	To KNX

Timer type (Impulse (Staircase))

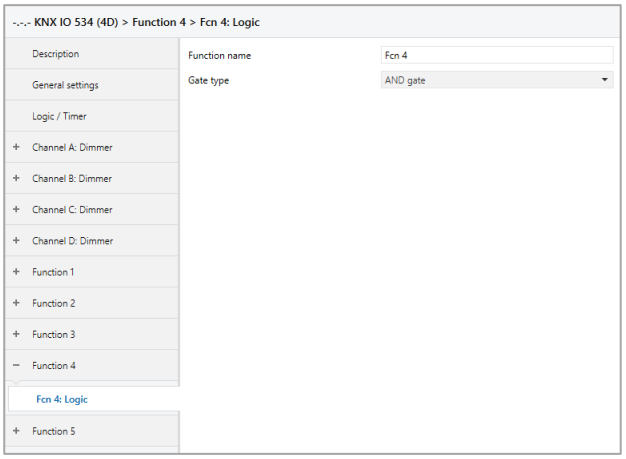
Timer with impulse that – after being switched **ON** – **automatically switches OFF** after a defined duration defined in ‘Delay time [s]’ parameter.
The output value can be inverted by parameter ‘Output’. (Not inverted / inverted)

Input -------1----------0----------
Output -------1-T-0----------

Group Object	Type KNX	Size	Direction
Timer - Switch-impulse (staircase) - Input	1.002	1 Bit	From KNX
Timer - Switch-impulse (staircase) - Output	1.002	1 Bit	To KNX

Each timer can be stopped by sending the opposite value to its input group object.
For example:
An already started switch on timer can be stopped by sending OFF (0) to its input group object.

M. Function 1 - 16 (Logic)



Function name (10 Characters)

The function name can be chosen freely.
The name is visible in the group object entry in the ETS software. This makes it easier to work with the associated group objects, because the given name is displayed there as a label.

Group Object	Type KNX	Size	Direction
Logic – Gate input A - Input	1.002	1 Bit	From KNX
Logic – Gate input B - Input	1.002	1 Bit	From KNX
Logic – Gate output – Output	1.002	1 Bit	To KNX

Gate type (AND gate)

The output is triggered on (1), if both inputs are switched on (1).

Gate type (OR gate)

The output is triggered on (1), if one or both inputs are switched on (1).

Gate type (XOR gate)

The output is triggered on (1), if the two inputs are not equal.

Gate type (NAND gate)

The output is triggered on (1), if one or both inputs are switched off (0).

Gate type (NOR gate)

The output is triggered on (1), if both inputs are switched off (0).

Gate type (XNOR gate)

The output is triggered on (1), if both inputs are equal.

Gate type (INVERTER)

Input on (1) is converted into output off (0). Input off (0) is converted into output on (1).

Group Object	Type KNX	Size	Direction
Logic - Gate input - Input	1.002	1 Bit	From KNX
Logic - Gate output - Output	1.002	1 Bit	To KNX

WARNING

- The device must be mounted and commissioned by an authorized electrician.
- The prevailing safety rules must be heeded.
- The device must not be opened.
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
- The power rating is indicated on the side of the product.

ETS4/5 Database
www.weinzierl.de/en/products/534/ets4

Datasheet
www.weinzierl.de/en/products/534/datasheet

CE Declaration
www.weinzierl.de/en/products/534/ce-declaration

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