

# BILTON

## BILTON LED-Dimmer KNX Manual



101651  
SXT-24914



101673  
REG-S24914



101645  
S-24914

Version 4.0/ September 2017

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## 1 GENERAL

The BILTON KNX LED-Dimmer is a bus-capable LED dimmer and serves to control LED light fittings with 12-24V DC.

The device has four independent constant voltage outputs (CV), which are controlled via the KNX bus.

The device is designed for operating multi-channel LED lighting in order to realise, for example, coloured lighting. The following functions can be used for controlling the lights:

- // ON/OFF per channel
- // Status 1bit and/or 1Byte per channel
- // Absolute dimming
- // Relative dimming
- // 4 colour wheels
- // 64 scenes
- // 5 freely selectable sequences with up to 16 scenes

### 1.1 Safety

#### **Safety information:**

The operating manual is a component of the product and must be read carefully before use and must be available always.

#### **General information:**

The BILTON KNX LED-Dimmer is safely designed and under normal conditions does not represent a danger, however there are dangers during installation, which is why the device may only be installed by qualified staff.

The BILTON KNX LED-Dimmer is a device in protection class III. BILTON is not liable for the operation of incorrect LED modules and lighting.

#### **Correct use:**

The BILTON KNX LED-Dimmer serves the operation of LED lamps and LED strips with 12-24 VDC at home.

It must not be used with other loads. The stated maximum values must not be exceeded.

#### **Care during maintenance and repair:**

Disconnect the device from the power supply and replace, if damaged, with an equivalent device.

In principle, the device is maintenance-free.

#### **WARNING**

Do not extend or modify the device.

It must be ensured that the voltages on the primary side correspond to the SELV conditions. It must be ensured that the connected lighting is designed for the maximum current.

Do not open the device.

There are sensitive electronics inside the device, which in the worst case could be destroyed if touched and may lead to a risk of fire.

## 1.2 Description of the device KNX LED-Dimmer BASIC

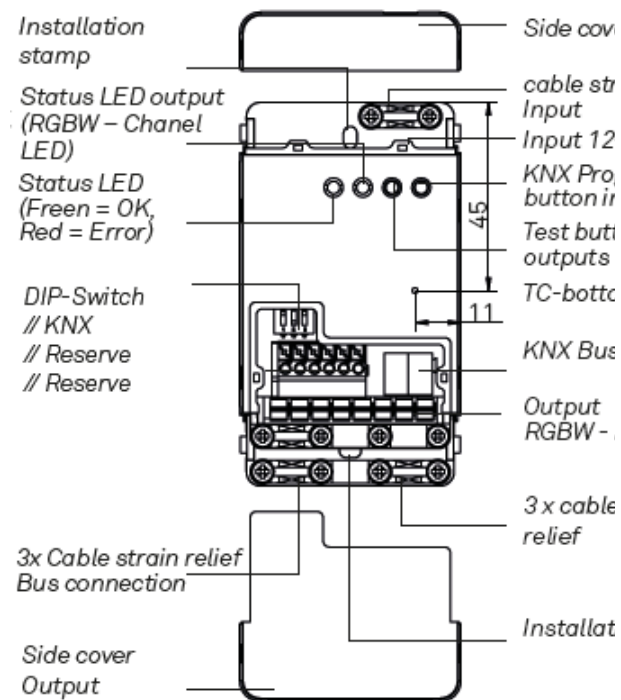


Figure 1: Description of the device  
KNX LED-Dimmer BASIC

## 1.2.1 Device connection

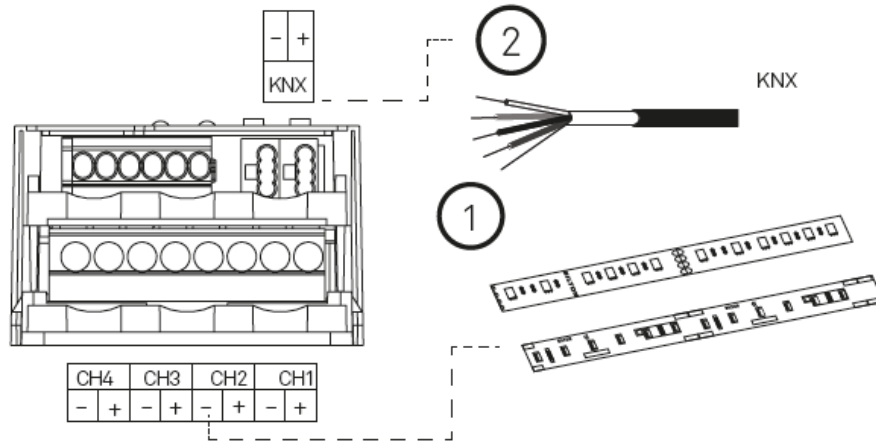


Figure 2: Outputs

1. Connect LED (COM+)
  - // RGB
  - // RGBW
  - // RGB + W
  - // Up to 4 W
2. Connect KNX bus
3. Connect power supply (12-24 VDC)

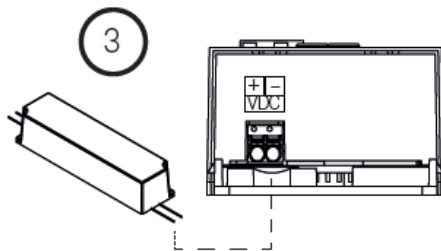


Figure 3: Power supply connection

4. Fit cable strain relief

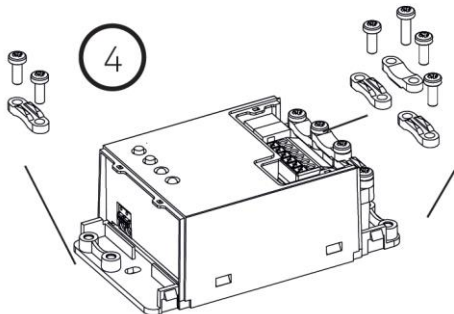


Figure 4: Cable strain relief

## 1.2.2 Technical data

Power supply	KNX operating voltage:	21...40V DC
	KNX power consumption:	Maximum 15mA
	Power supply for outputs:	12-24V DC $\pm 10\%$ ,
Outputs	Max. input voltage:	30 VDC
	Output power consumption:	10 A (load-dependent (max. 10A/channel & max. 10A/device))
	Pulse width modulated outputs voltage-controlled:	PWM Frequency 600Hz Dimming range 0-100%
Connections	KNX:	Bus terminal
	Infeed for load current circuit:	Spring balancer Single wire 0.75-1.5 mm <sup>2</sup>
	Outputs:	Spring balancer Single wire 0.75-2.5 mm <sup>2</sup> Max. cable length 10m
Operation	KNX: 1 programming button	1 LED red/green flashing shows whether the programming mode is enabled. Status LED is red when device is in programming mode.
	1 Test button	Tests the outputs (keying)
Safety devices	Reverse polarity protection	YES (input side)
	Over-temperature protection	YES
	Overload protection	YES
Installation instructions	Location:	Only for indoor use
	Cooling:	Sufficient cooling must be ensured in order to remain in the KNX actuator temperature range
Temperature range	Operation:	-5°C ... +45°C
	Storage:	-20°C ... +70°C
Casing	Material	PA black
	Flame resistance	V0
Protection class		IP20
Lifespan		45,000 hrs
Weight		98.5g
Total Dimensions	L x W x H in mm	95 x 53 x 33
Max. casing temperature at +45°C	TC	99°C
EMC according to	EN55015 / EN 61547 / EN50491-5-2	YES
Product safety according to	EN 61347-1 / EN 61347-2-13	YES



### 1.2.3 Specific operating modes

#### 1.2.3.1 Behaviour after bus voltage failure

The device is inactive and cannot be controlled. The last operating mode at the outputs is saved. The behaviour of the device can be set via the ETS.

The operating mode at the outputs can be controlled via the menu "Bus voltage failure/restore parameters".

- // Last colour
- // All channels 100%
- // All channels 0%
- // All channels via 1 parameter
- // Parameter per channel

#### 1.2.3.2 Behaviour after bus voltage restoration

The device can be controlled via the KNX bus again.

In the "Bus voltage failure/restoration parameters" menu you can set the device's behaviour.

- // Last set brightness
- // All channels 100%
- // All channels 0%
- // All channels via 1 parameter
- // Parameter per channel

#### 1.2.3.3 Behaviour after failure of the 12 - 24V DC power supply

The device does not react to control commands and the LEDs are off.

#### 1.2.3.4 Behaviour after restoration of the 12 - 24V DC power supply

The behaviour after restoration of the voltage can be set via the "Status parameter" menu under item "Save the current status".

### 1.2.4 Assembly

The device is suitable for wall and ceiling installation.

It is fastened with two screws to the two installation straps (installation screws are not included in the delivery).

It must be ensured that the LED dimmer is not installed directly next to a heat source and that there is sufficient air circulation (minimum distance 20cm).

Access for operation and replacement of the device must be ensured.

Maximum cable length to the LED modules must not exceed 10m.

## 1.3 Description of the device KNX LED-Dimmer REG

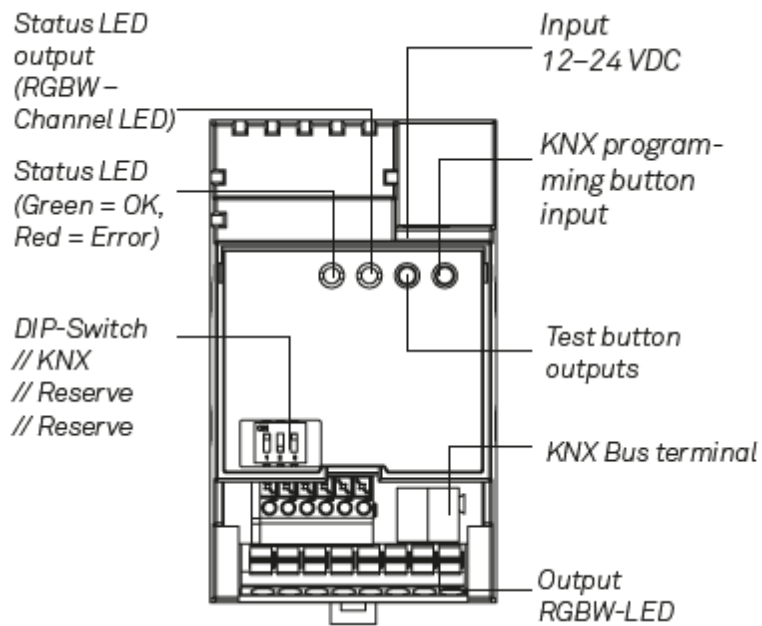


Figure 5: Description of the device  
KNX LED-Dimmer REG

## 1.3.1 Device connection

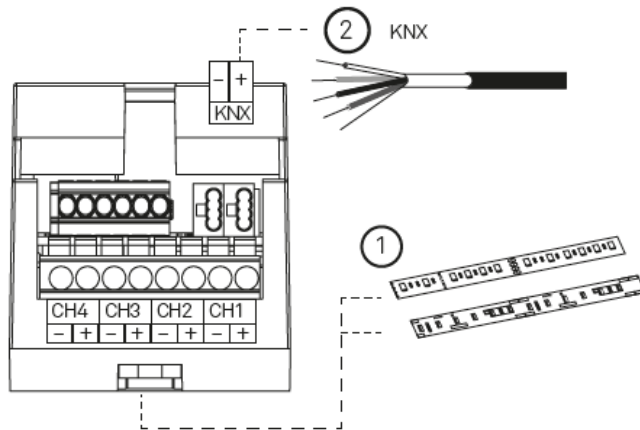


Figure 6: Outputs

1. Connect LED (COM+)
  - // RGB
  - // RGBW
  - // RGB + W
  - // Up to 4 W
2. Connect KNX bus
3. Connect power supply (12-24 VDC)

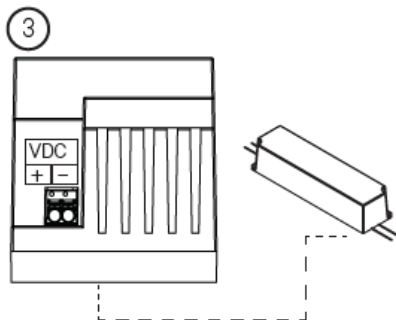


Figure 7: Power supply connection

## 1.3.2 Technical data

Power supply	KNX operating voltage:	21...40 VDC
	KNX power consumption:	Maximum 15mA
	Power supply for outputs:	12-24V DC $\pm 10\%$ ,
outputs	Max. input voltage:	30 VDC
	Output power consumption:	10 A (load-dependent (max. 14A/device multichannel: 4x3.5A max. 10A/device single channel))
	Pulse width modulated outputs voltage-controlled:	PWM Frequency 600Hz Dimming range 0-100%
Connections	KNX:	Bus terminal
	Infeed for load current circuit:	Spring balancer Single wire 0.75-1.5 mm <sup>2</sup>
	Outputs:	Spring balancer Single wire 0.75-2.5 mm <sup>2</sup> Max. cable length 10m
Operation	KNX: 1 programming button	1 LED red/green flashing shows whether the programming mode is enabled. Status LED is red when device is in programming mode.
	1 Test button	Tests the outputs (keying)
Safety devices	Reverse polarity protection	YES (input side)
	Over-temperature protection	YES
	Overload protection	YES
Installation instructions	Location:	Only for indoor use
	Cooling:	Sufficient cooling must be ensured in order to remain in the KNX actuator temperature range
Temperature range	Operation:	-5°C ... +45°C
	Storage:	-20°C ... +70°C
Casing	Material	PA black
	Flame resistance	V0
Protection class		IP20
Lifespan		45,000 hrs
Weight		90 g
Total Dimensions	LxWxH in mm	90 x 52 x 59 mm
Max. casing temperature at +45°C	TC	99°C
EMC according to	EN55015 / EN 61547 / EN50491-5-2	YES
Product safety according to	EN 61347-1 / EN 61347-2-13	YES

## 1.3.3 Specific operating modes

### 1.3.3.1 Behaviour after bus voltage failure

The device is inactive and cannot be controlled. The last operating mode at the outputs is saved. The behaviour of the device can be set via the ETS.

The operating mode at the outputs can be controlled via the menu "Bus voltage failure/restore parameters".

- // Last colour
- // All channels 100%
- // All channels 0%
- // All channels via 1 parameter
- // Parameter per channel

### 1.3.3.2 Behaviour after bus voltage restoration

The device can be controlled via the KNX bus again.

In the "Bus voltage failure/restoration parameters" menu you can set the device's behaviour.

- // Last set brightness
- // All channels 100%
- // All channels 0%
- // All channels via 1 parameter
- // Parameter per channel

### 1.3.3.3 Behaviour after failure of the 12 - 24V DC power supply

The device does not react to control commands and the LEDs are off.

### 1.3.3.4 Behaviour after restoration of the 12 - 24V DC power supply

The behaviour after restoration of the voltage can be set via the "Status parameter" menu under item "Save the current status".

## 1.3.4 Assembly

The device is suitable for top hat rail assembly in a switch of distribution cabinet.

It is fixed with an assembly clip and guide on the top hat rail.

It must be ensured that the LED dimmer is not installed directly next to a heat source and that there is sufficient air circulation (minimum distance 20cm).

Access for operation and replacement of the device must be ensured.

Maximum cable length to the LED modules must not exceed 10m.

## 1.4 Description of the device KNX LED-Dimmer SXT

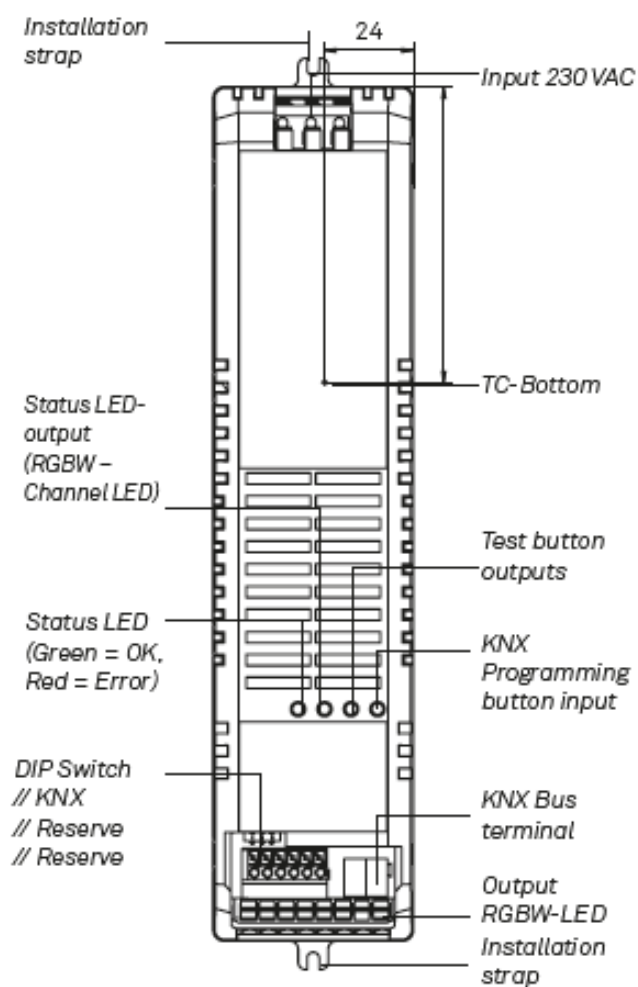


Figure 8: Description of the device KNX LED-Dimmer SXT

## 1.4.1 Device connection

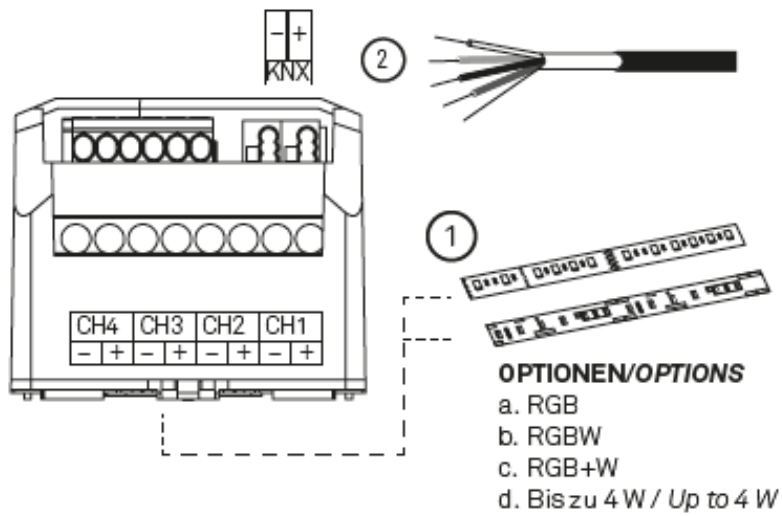


Figure 9: Output connections

1. Connect LED (COM+)
  - // RGB
  - // RGBW
  - // RGB + W
  - // Up to 4 W
2. Connect KNX bus
3. Connect power supply (230VAC)

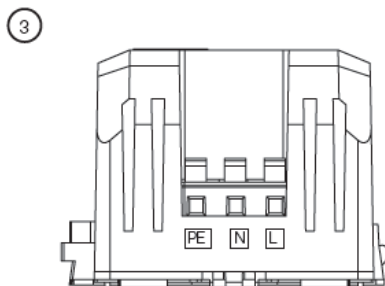


Figure 10: Power supply connection

## 1.4.2 Technical data

Power supply	KNX operating voltage:	21...40V DC
	KNX power consumption:	Maximum 15mA
	Power supply for outputs:	24V DC (device-internal),
	Max. input voltage:	230V AC $\pm 10\%$
outputs	Output power consumption:	4 A (load-dependent (max. 4A/channel & max. 4A/device))
	Pulse width modulated outputs voltage-controlled:	PWM Frequency 600Hz Dimming range 0-100%
Connections	KNX:	Bus terminal
	Infeed for load current circuit:	Spring balancer clamps Single wire 0.75-1.5 mm <sup>2</sup>
	Outputs:	Spring balancer clamps Single wire 0.75-2.5 mm <sup>2</sup> Max. cable length 10m
Operation	KNX: 1 programming button	1 LED red/green flashing shows whether the programming mode is enabled. Status LED is red when device is in programming mode.
	1 Test button	Tests the outputs (keying)
Safety devices	Reverse polarity protection	YES (input side)
	Over-temperature protection	YES
	Overload protection	YES
Installation instructions	Location:	Only for indoor use
	Cooling:	Sufficient cooling must be ensured in order to remain in the KNX actuator temperature range
Temperature range	Operation:	-5°C ... +45°C
	Storage:	-20°C ... +70°C
Casing	Material	PC black
	Flame resistance	V0
Protection class		IP20
Lifespan		45,000h
Weight		351.2g
Total dimensions	LxWxH in mm	226 x 53 x 45
Max. casing temperature at +45°C	TC	70°C
EMC according to	EN55015 / EN61547 / EN 50491-5-2	YES
Product safety according to	EN61347-1 / EN61347-2-13	YES



## 1.4.3 Specific operating modes

### 1.4.3.1 Behaviour after bus voltage failure

The device is inactive and cannot be controlled. The last operating mode at the outputs is saved. The behaviour of the device can be set via the ETS.

The operating mode at the outputs can be controlled via the menu "Bus voltage failure/restore parameters".

- // Last colour
- // All channels 100%
- // All channels 0%
- // All channels via 1 parameter
- // Parameter per channel

### 1.4.3.2 Behaviour after bus voltage restoration

The device can be controlled via the KNX bus again.

In the "Bus voltage failure/restoration parameters" menu you can set the device's behaviour.

- // Last set brightness
- // All channels 100%
- // All channels 0%
- // All channels via 1 parameter
- // Parameter per channel

### 1.4.3.3 Behaviour after failure of the 12 - 24V DC power supply

The device does not react to control commands and the LEDs are off.

### 1.4.3.4 Behaviour after restoration of the 12 - 24V DC power supply

The behaviour after restoration of the voltage can be set via the "Status parameter" menu under item "Save the current status".

## 1.4.4 Assembly

The device is suitable for wall and ceiling installation.

It is fastened with two screws to the two installation straps (installation screws are not included in the delivery).

It must be ensured that the LED dimmer is not installed directly next to a heat source and that there is sufficient air circulation (minimum distance 20cm).

Access for operation and replacement of the device must be ensured.

Maximum cable length to the LED modules must not exceed 10m.

## 1.5 Status LED

Col-our	Flash code	Error code
Green	Lights	No error
Red	Lights	Programming mode active
Red	1x flashing	Initialisation error
Red	2x flashing	Overtemperature error
Red	3x flashing	Over-temperature switch-off
Red	4x flashing	Overload
Red	5x flashing	-
Red	6x flashing	KNX bus error
Red	7x flashing	-
Red	8x flashing	Unknown/several errors

## 1.6 DIP Switch

No.	Description	Factory setting
1	KNX	ON = KNX
2	Reserve	ON
3	Reserve	OFF

## 1.7 Exclusion of liability

The technical information in these Handling instructions correspond to the status at the time of printing and have been worked out to the best of our knowledge. However, errors and printing errors are reserved. The information serves to describe the article in more detail, however these are not guaranteed features according to the Austrian Civil Code (ABGB) unless expressly stated as such. Make sure that you always use the latest version of the Handling instructions.

The device is maintenance-free. Damage due to transportation, etc. must immediately be reported to the manufacturer. Guarantee claims shall lapse in the event of independent repairs or opening of the device. The guarantee shall only apply in the case of demonstrably correct assembly. Installation and removal work is excluded from the liability. The guarantee is regulated within the framework of the statutory conditions. Further information is available on [www.biltongroup.com](http://www.biltongroup.com)

## 2 SOFTWARE DESCRIPTION

The application software is the basic program for using the BILTON KNX LED-Dimmer. The latest version can be found on our homepage <http://www.biltongroup.com/de/downloads/>. It offers, for example, basic functionalities (such as dimming, switching colour wheel, ...) so that the respective outputs can be controlled.

Use the 2nd button to check the function of the LEDs when commissioning the device.

To program the device, the current Engineering Tool Software (ETS4.2 or higher) is required.

### 2.1 Overview of functions

Global parameters	Number of channels // 1 – 4	2.2.1.2
	Minimum value // 1 – 254	2.2.1.2
	Maximum value // 2 – 255	2.2.1.2
	Dimming process // Linear // Quadratic // Logarithmic	2.2.1.4
Status parameter	Reporting the switch status // YES // NO	2.2.2.1
	Reporting the brightness value // YES // NO	2.2.2.2
	Minimal change to brightness before it is sent // 1 – 25%	2.2.2.3
	Enable error feedback // YES // NO	2.2.2.4

Switch parameters	Switch on with // Last brightness // Defined brightness	2.2.3.1
	Brightness value after the ON command // 0 – 255	2.2.3.2
	Delay before exiting OFF // 0 – 65535 * 10ms	2.2.3.3
	Delay before entering OFF // 0 – 65535 * 10ms	2.2.3.4
	Switch-on process // Dimming // Jump	2.2.3.5
	Dimming speed for ON command // 1 – 65535 s	2.2.3.6
	Dimming speed for OFF command // 1 – 65535 s	2.2.3.7
Dimming parameters	Dimming mode selection for absolute value // Dimming // Jump	2.2.4.1
	Dimming speed absolute by // parameters via ETS // parameters via BUS	2.2.4.2
	Dimming speed absolute // 1 – 65535 s	2.2.4.3
	Dimming speed relative by // parameters via ETS // parameters via BUS	2.2.4.4
	Dimming speed relative // 1 – 65535 s	2.2.4.5
	Allow Relative OFF // YES // NO	2.2.4.6
BUS voltage failure/ BUS voltage restoration parameters	BUS voltage restoration message delay // 0 – 65535 * 10ms	2.2.5.1
	BUS voltage restoration value selection // Last set colour // All channels 100% // All channels 0% // All channels 1 parameter // Parameter per channel	2.2.5.2
	Bus voltage restoration value all channels // 0 – 255	2.2.5.3
	Bus voltage restoration value channel 1 // 0 – 255	2.2.5.4
	Bus voltage restoration value channel 2 // 0 – 255	2.2.5.4
	Bus voltage restoration value channel 3 // 0 – 255	2.2.5.4
	Bus voltage restoration value channel 4 // 0 – 255	2.2.5.4
	BUS voltage failure value selection // Last set colour // All channels 100% // All channels 0% // All channels 1 parameter	2.2.5.5

Specific functions	// Parameter per channel	
	Bus voltage failure value all channels // 0 – 255	2.2.5.6
	Bus voltage failure value channel 1 // 0 – 255	2.2.5.7
	Bus voltage failure value channel 2 // 0 – 255	2.2.5.7
	Bus voltage failure value channel 3 // 0 – 255	2.2.5.7
	Bus voltage failure value channel 4 // 0 – 255	2.2.5.7
	Enable scenes // YES // NO	2.2.6.1
	Enable scenes control // YES // NO	2.2.6.2
	Enable colour wheel // YES // NO	2.2.6.3
	Enable sequence // YES // NO	2.2.6.4
Scenes parameters	Enable flash control // YES // NO	2.2.6.5
	Scene for parameter change // Scene 0 // .... // Scene 63	2.2.7.1
	Enable channel 1 // YES // NO	2.2.7.2
	Channel 1 // 0 – 255	2.2.7.3
	Enable channel 2 // YES // NO	2.2.7.2
	Channel 2 // 0 – 255	2.2.7.3
	Enable channel 3 // YES // NO	2.2.7.2
	Channel 3 // 0 – 255	2.2.7.3
	Enable channel 4 // YES // NO	2.2.7.2
	Channel 4 // 0 – 255	2.2.7.3
Scenes control of all parameters	All channels can be addressed here at the same time	1.1.1.1
Colour wheel parameters	Colour wheel dimming speed via // parameters via BUS // parameters via ETS	2.2.8.1

Sequence parameter	Function of the colour wheel // Colour wheel RGB // Colour wheel RGBW // Colour wheel RGB + W // Colour wheel White Emotion	2.2.8.2
	Length of the colour wheel // 20 – 65535s (RGBW/RGB+W) // 15 – 65535s (RGB) // 10 – 65535s (White Emotion)	2.2.8.3
	Setting after the colour wheel // Current colour // Last colour // All channels 0% // All channels 100 % // Parameter per channel // All channels via 1 parameter	2.2.8.5
	Brightness value all channels // 0 – 255	2.2.8.6
	Brightness value channel 1 // 0 – 255	0
	Brightness value channel 2 // 0 – 255	0
	Brightness value channel 3 // 0 – 255	0
	Brightness value channel 4 // 0 – 255	0
	Enable sequence 1 // YES // NO	2.2.9.1
	Enable sequence 2 // YES // NO	2.2.9.1
	Enable sequence 3 // YES // NO	2.2.9.1
	Enable sequence 4 // YES // NO	2.2.9.1
	Enable sequence 5 // YES // NO	2.2.9.1
	Sequence X	
	Number of scenes in sequence X // 2 – 16	2.2.10.1
	Enable channel 1 // YES // NO	2.2.10.2
	Enable channel 2 // YES // NO	2.2.10.2
	Enable channel 3 // YES // NO	2.2.10.2
	Enable channel 4 // YES // NO	2.2.10.2

Scene 1-16 in sequence X	Setting after stopping the sequence // Current colour // Last colour // All channels 0% // All channels 100 % // Parameter per channel // All channels via 1 parameter	2.2.10.3
	Brightness value all channels // 0 – 255	2.2.10.4
	Brightness value channel 1 // 0 – 255	2.2.10.5
	Brightness value channel 2 // 0 – 255	2.2.10.5
	Brightness value channel 3 // 0 – 255	2.2.10.5
	Brightness value channel 4 // 0 – 255	2.2.10.5
	Channel 1 // 0 – 255	2.2.10.7
	Channel 2 // 0 – 255	2.2.10.7
	Channel 3 // 0 – 255	2.2.10.7
	Channel 4 // 0 – 255	2.2.10.7
	Time in the scene // 0 – 255 s	2.2.10.8
	Time to dimming to the next scene // 0 – 255 s	2.2.10.9
Flash parameters	Number of flashes // 0 – 65535	2.2.11.1
	Flash ON time (1st colour) // 1 – 65535 * 10ms	2.2.11.2
	Flash OFF time (2nd colour) // 1 – 65535 * 10ms	2.2.11.3
	1. Colour channel 1 // 0 – 255	2.2.11.4
	1. Colour channel 2 // 0 – 255	2.2.11.4
	1. Colour channel 3 // 0 – 255	2.2.11.4
	1. Colour channel 4 // 0 – 255	2.2.11.4
	2. Colour through // Preferred colour // Last colour	2.2.11.5
	2. Colour channel 1 // 0 – 255	2.2.11.6
	2. Colour channel 2 // 0 – 255	2.2.11.6
	2. Colour channel 3 // 0 – 255	2.2.11.6
	2. Colour channel 4 // 0 – 255	2.2.11.6
	Setting after flash	2.2.11.7



// Current colour	
// Last colour	
// All channels 0%	
// All channels 100 %	
// Parameter per channel	
// All channels via 1 parameter	
Brightness value all channels // 0 – 255	2.2.11.8
Brightness value channel 1 // 0 – 255	2.2.11.9
Brightness value channel 2 // 0 – 255	2.2.11.9
Brightness value channel 3 // 0 – 255	2.2.11.9
Brightness value channel 4 // 0 – 255	2.2.11.9

Table 1: Overview of functions

## 2.2 General definition of the parameters

The parameters described here in the respective categories always refer to all outputs. The outputs are not discussed here separately in the explanation.

### 2.2.1 Parameter window GLOBAL PARAMETERS

The global parameters are set in this window.

**1.1.1 BILTON BASIC KNX LED-Dimmer > Global Parameters**

Global Parameters	BILTON LED Dimmer to be programmed	Bilton KNX LED-Dimmer Basic
Status Parameters	Count of channels	4 1-4 channels
Switching Parameter	Output 1 is controlled by	Channel 1 = Red
Dimming Control Parameters	Output 2 is controlled by	Channel 2 = Green
Bus Power Down/Up Parameter	Output 3 is controlled by	Channel 3 = Blue
Special Features	Output 4 is controlled by	Channel 4 = White
	Lowest possible set value (LPV)	1 1-254
	Highest possible set value (HPV)	255 2-255
	Note:	HPV > LPV
	Dimming Style by	Linear

Figure 11: Overview of global parameters

#### 2.2.1.1 BILTON LED Dimmer to be programmed

The LED dimmer to be programmed must be visible here.

BILTON LED Dimmer to be programmed BILTON KNX LED-Dimmer REG

Figure 12: BILTON LED Dimmer to be programmed

#### 2.2.1.2 Number of channels

The number of channels and available communication objects are set here.

Count of channels	4 1-4 channels
Output 1 is controlled by	Channel 1 = Red
Output 2 is controlled by	Channel 2 = Green
Output 3 is controlled by	Channel 3 = Blue
Output 4 is controlled by	Channel 4 = White

Figure 13: Number of channels

The channel allocation is displayed in the ETS. In addition, this table is designed to serve as an overview.

Number of channels	Channel 1	Channel 2	Channel 3	Channel 4
1	White	White	White	White
2	Warm white	Cold white	Warm white	Cold white
3	Red	Green	Blue	Disabled
4	Red	Green	Blue	White

Table 2: Number of channels and their allocation

## 2.2.1.3 Minimum / Maximum value

The minimum value and the maximum value of the dimmer can be changed in these parameters.

It must be ensured that the maximum value is always greater than the minimum value!

If the input is incorrect, the maximum value is always set on the dimmer and the minimum value recalculated in the device.

$$MIN = MAX - 1$$

Lowest possible set value (LPV)	<input type="text" value="1"/>	1-254
Highest possible set value (HPV)	<input type="text" value="255"/>	2-255
Note:	HPV > LPV	

Figure 14: Setting minimum / maximum value

## 2.2.1.4 Setting the dimming curve

Dimming Style by	<div>Linear</div> <div>Linear</div> <div>Quadratic</div> <div>Logarithmical</div>
------------------	---

Figure 15: Setting the dimming curve

Several dimming curves can be set on the BILTON KNX LED-Dimmer. These can be used to adjust the brightness curve to the human eye.

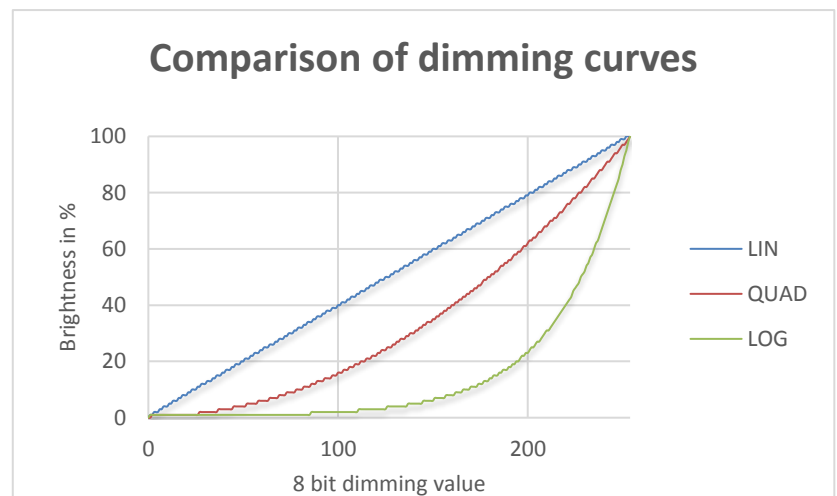


Figure 16: Comparison of dimming curves

## 2.2.2 Status parameters

In this window, the status parameters for the feedback are set.

**1.1.1 BILTON BASIC KNX LED-Dimmer > Status Parameters**

Global Parameters	Response of switching state	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Status Parameters</b>	Response of brightness value	<input checked="" type="radio"/> Yes <input type="radio"/> No
Switching Parameter	Minimum change of actual value before sending	5 1-25 %
Dimming Control Parameters	Enable Error Detection	<input type="radio"/> Yes <input checked="" type="radio"/> No
Bus Power Down/Up Parameter	Saving of actual State after 5 min	<input type="radio"/> Yes <input checked="" type="radio"/> No
Special Features		

Figure 17: Status parameters

### 2.2.2.1 Reporting the switch status

Here you can set whether the additional object for feeding back the switch status is to be enabled for all outputs (outputs are displayed singly). You can use this, in particular, if you have connected an external display and want to display the switch condition on it.

Response of switching state ☒ Yes ☐ No

Figure 18: Reporting the switch status

### 2.2.2.2 Reporting the brightness value

Here you can set whether the additional object for feeding back the brightness value is to be enabled. You can use this, in particular, if you have connected an external display and want to display the brightness value on it. The outputs are displayed here singly.

Response of brightness value ☒ Yes ☐ No

Figure 19: Reporting the brightness value

### 2.2.2.3 Minimal change to brightness before it is sent.

With this parameter, you can set how often the brightness value is sent to the bus. The brightness value is sent for all X values and upon reaching the Min/Max Set Value and when reaching the target value.

So that the bus is not too heavily loaded for a colour wheel run/sequence, a higher value should be selected.

Minimum change of actual value before sending 5 1-25 %

Figure 20: Minimal change to brightness before it is sent.

Overview of how many values at X % are sent:

Percent	Result
1%	Each value is sent
2%	Each 5th value is sent
5%	Each 13th value is sent
25%	~ Each 64th value is sent

Table 3: Values when sending the brightness

This parameter is only enabled if Report brightness value (2.2.2.2) is set to "YES".

#### 2.2.2.4 Enable error feedback

With this parameter, the reporting of errors (over-temperature and overload) to the KNX bus can be enabled.

Enable Error Detection

☐ Yes ☒ No

Figure 21: Enable error feedback

## 2.2.3 Switch parameters

In this window the parameters for the behaviour during switching ON/OFF can be set.

1.1.1 BILTON BASIC KNX LED-Dimmer > Switching Parameter

Global Parameters	Switch on with	<input type="radio"/> Last Brightness <input checked="" type="radio"/> Defined Brightness
Status Parameters	Set value after reception of switch ON	20 0-255
Switching Parameter	Delay before leaving OFF-State (0 = no delay)	0 0-65535 10ms
Dimming Control Parameters	Delay before enter in OFF-State (0 = no delay)	0 0-65535 10ms
Bus Power Down/Up Parameter	Switch on	<input type="radio"/> via Dimming <input checked="" type="radio"/> via Jump
Special Features		

Figure 22: Switch parameters

### 2.2.3.1 Switch on with

This parameter sets the value has to be set for the ON command.

Last brightness = Setting the brightness before the OFF command

Defined brightness see 2.2.3.2 Brightness value after the ON command.

Switch on with ☐ Last Brightness ☒ Defined Brightness

Figure 23: Switch on with

### 2.2.3.2 Brightness value after the ON command

This value is set after the ON command.

Set value after reception of switch ON 20 0-255

Figure 24: Brightness value after the ON command

This parameter is only enabled if Switch on with (2.2.3.1) is set to "Defined brightness".

### 2.2.3.3 Delay before exiting OFF

The switch-on delay is set with this parameter.

Delay before enter in OFF-State  
(0 = no delay) 0 0-65535 10ms

Figure 25: Delay before exiting OFF

0 corresponds to a direct jump to the target value, otherwise the time can be selected in intervals of 10 milliseconds (ms).

The following table is designed to simplify entry in the menu window:

Value	Millisec- onds	Seconds	Minutes	Hours
1	10			
5	50			
10	100			
100	1000	1		
500	5000	5		
3000	30000	30	$\frac{3}{4}$	
6000	60000	60	1	
30000	300000	300	5	
...		...	...	
65535	655350	655	11	

Table 4: Delay before exiting OFF (time table)

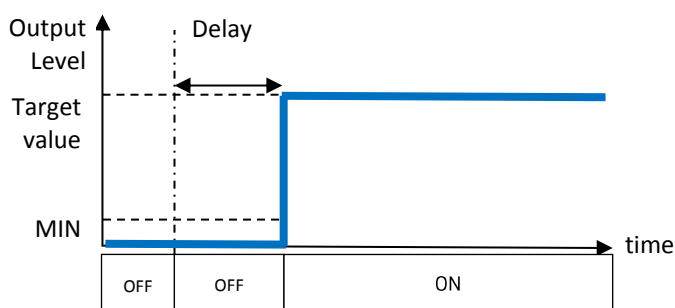


Figure 26: Delay before exiting OFF (timing)

## 2.2.3.4 Delay before entering OFF

The switch-off delay is set with this parameter.

Delay before enter in OFF-State  
(0 = no delay)  0-65535 10ms

Figure 27: Delay before entering OFF

0 corresponds to immediate off, otherwise the time can be selected in intervals of 10 milliseconds (ms). The following table is designed to simplify entry in the menu window:

Value	Millisec- onds	Seconds	Minutes	Hours
1	10			
5	50			
10	100			
100	1000	1		
500	5000	5		
3000	30000	30	$\frac{3}{4}$	
6000	60000	60	1	
30000	300000	300	5	
...		...	...	
65535	655350	655	11	

Table 5: Delay before entering OFF (time table)

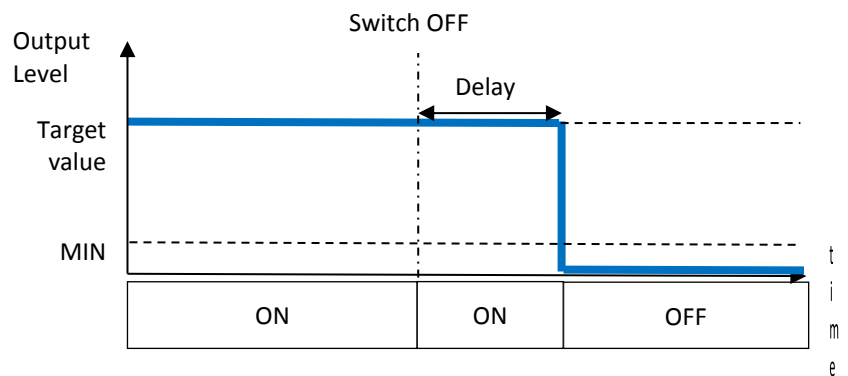


Figure 28: Delay before entering OFF (timing)

## 2.2.3.5 Switching on

With this parameter, you can set whether the BILTON LED-Dimmer jumps or dims to the target value after the ON command.

Switch on

☐ via Dimming ☒ via Jump

Figure 29: Switching on

If the parameter is set to "By dimming", the two parameters for dimming up and down can be set separately for the on and off processes.

Switch on

☒ via Dimming ☐ via Jump

Dimming speed for switch ON

1

1-65535 s

Dimming speed for switch OFF

1

1-65535 s

Figure 30: Switching of "By dimming" enhanced parameters

## 2.2.3.6 Dimming speed for ON command

This parameter defines the length of dimming to the switching on target value.

Dimming speed for switch ON

1

1-65535 s

Figure 31: Dimming speed for ON command



The following table is designed to simplify entry in the menu window:

Seconds	Minutes	Hours
30	½	
60	1	
120	2	
300	5	
600	10	
900	15	
1800	30	½
2700	45	¾
3600	60	1
4800	90	1 ½
7200	120	2
10800	180	3
14400	240	4
18000	300	5
...	...	...
64800	1080	18

Table 6: Dimming speed for ON command (time table)

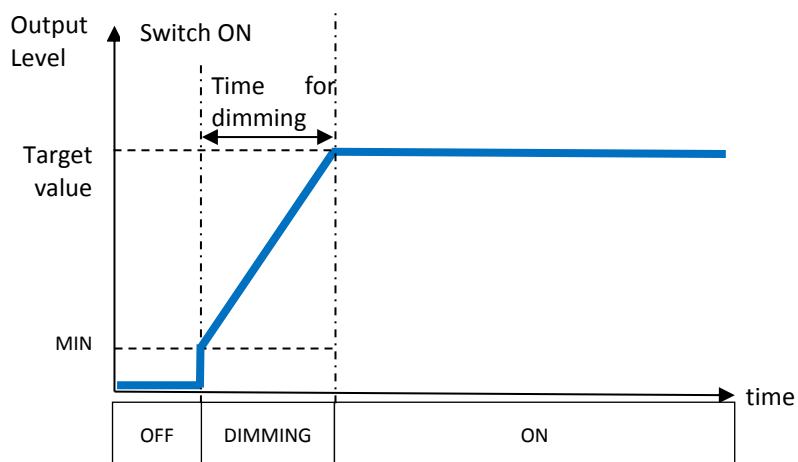


Figure 32: Dimming speed for ON command (timing)

This parameter is only enabled if Switching on (2.2.3.5) is set to "By dimming".

### 2.2.3.7 Dimming speed for OFF command

This parameter defines the length of dimming to switching off.

Dimming speed for switch OFF  1-65535 s (~18,2 h)

Figure 33: Dimming speed for OFF command

The following table is designed to simplify entry in the menu window:

Seconds	Minutes	Hours
30	½	
60	1	
120	2	
300	5	
600	10	
900	15	
1800	30	½
2700	45	¾
3600	60	1
4800	90	1 ½
7200	120	2
10800	180	3
14400	240	4
18000	300	5
...	...	...
64800	1080	18

Table 7: Dimming speed for OFF command (time table)

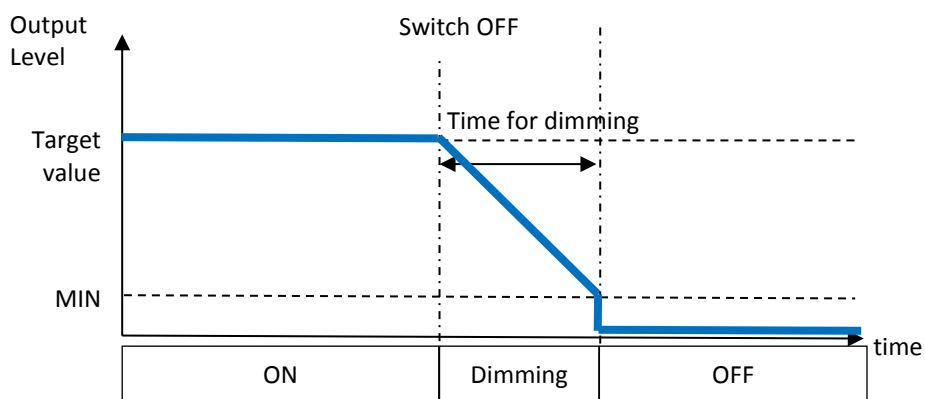


Figure 34: Dimming speed for OFF command (timing)

This parameter is only enabled if Switching on (2.2.3.5) is set to "By dimming".

## 2.2.3.8 Switching on/off with delay and dimming

The two functions Delay before exiting OFF (2.2.3.3) and Dimming speed for ON command (2.2.3.6) as well as Delay before entering OFF (2.2.3.4) and Dimming speed after OFF command (2.2.3.7) can be set together. The following two illustrations show the procedure for dimming when there is a combination of the parameters.

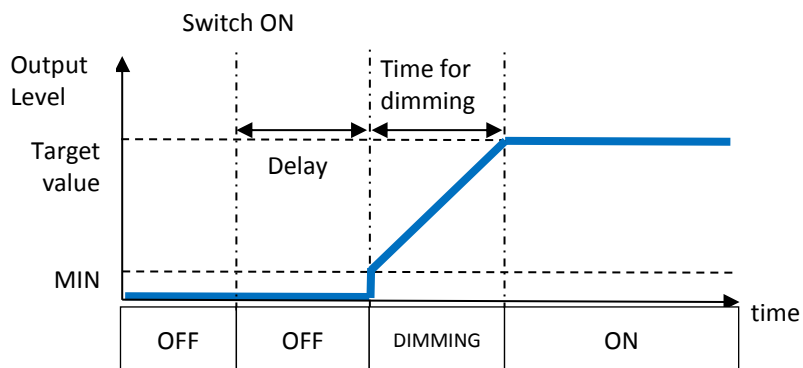


Figure 35: Delay when switching on and dimming to the target value

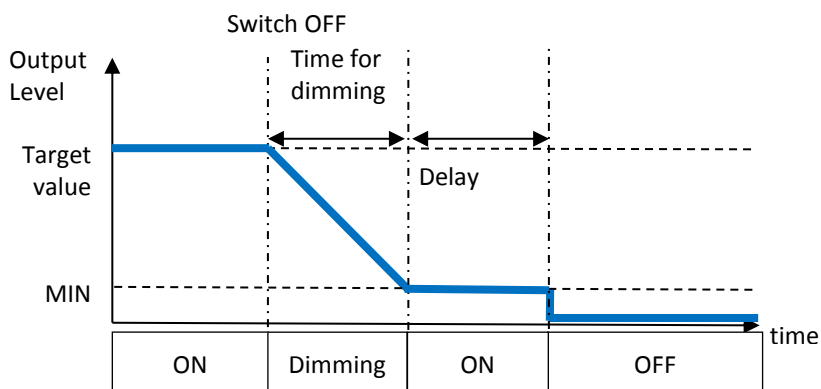


Figure 36: Dimming and delay when switching off

## 2.2.4 Dimming parameters

In this window, the parameters for the behaviour during Relative and Absolute Dimming can be set.

1.1.1 BILTON BASIC KNX LED-Dimmer > Dimming Control Parameters

Global Parameters	Dimming mode selection for absolute set value <input type="radio"/> via Dimming <input checked="" type="radio"/> via Jump
Status Parameters	Dimming speed relative via <input type="radio"/> Parameter by Bus <input checked="" type="radio"/> Parameter by ETS
Switching Parameter	Dimming speed relative <input type="text" value="10"/> 1-65535 s
	Relative OFF-Enable <input type="radio"/> Yes <input checked="" type="radio"/> No

Dimming Control Parameters

Bus Power Down/Up Parameter

Special Features

Figure 37: Dimming parameters

### 2.2.4.1 Dimming mode selection for absolute value

When setting an absolute value, you can jump or dim to this target value.

Dimming mode selection for absolute set value ☐ via Dimming ☒ via Jump

Figure 38: Dimming mode selection for absolute value

If "By dimming" is selected, the dimming speed can be set for the absolute value. (Additional parameters)

Dimming mode selection for absolute set value ☒ via Dimming ☐ via Jump

Dimming speed absolute via ☐ Parameter by Bus ☒ Parameter by ETS

Dimming speed absolute  1-65535 s

Figure 39: Dimming mode selection for absolute value by dimming (additional parameters)

### 2.2.4.2 Dimming speed absolute by

If Dimming mode selection for absolute value (2.2.4.1) is set to "By dimming", how the dimming speed of the BILTON LED-Dimmers should be set can be set.

Dimming speed absolute via ☐ Parameter by Bus ☒ Parameter by ETS

Figure 40: Dimming speed absolute by

The dimming speed can be set either directly in the ETS or via the communication object "25: Dimming speed". This parameter is only enabled if Dimming mode selection for absolute value (2.2.4.1) is set to "By dimming".

### 2.2.4.3 Dimming speed absolute

With this parameter the dimming speed is set when setting an absolute value.

Dimming speed absolute  1-65535 s

Figure 41: Dimming speed absolute

The following table is designed to simplify entry in the menu window:

Seconds	Minutes	Hours
30	½	
60	1	
120	2	
300	5	
600	10	
900	15	
1800	30	½
2700	45	¾
3600	60	1
4800	90	1 ½
7200	120	2
10800	180	3
14400	240	4
18000	300	5
...	...	...
64800	1080	18

Table 8: Dimming speed for OFF command (time table)

This parameter is only enabled if Dimming speed absolute by (2.2.4.2) is set to "Parameter via ETS".

#### 2.2.4.4 Dimming speed relative by

This parameter allows to set whether the speed for the relative dimming is set directly in the ETS or via the bus with communication object "26: Dimming speed".

Dimming speed relative via

☐ Parameter by Bus ☒ Parameter by ETS

Figure 42: Dimming speed relative by

#### 2.2.4.5 Dimming speed relative

With this parameter, the dimming speed for relative dimming is set.

Dimming speed relative

10 1-65535 s

Figure 43: Dimming speed relative

This parameter is only enabled if Dimming speed relative by (2.2.4.4) is set to "Parameter via ETS".

#### 2.2.4.6 Allow Relative OFF

If the option "Yes" is selected, the communication object for the relative dimming of the BILTON LED-Dimmer can be switched off.

Relative OFF-Enable

☐ Yes ☒ No

Figure 44: Allow Relative OFF

## 2.2.5 Bus voltage failure/restoration parameters

In this window the parameters for the behaviour after failure and restoration of the bus voltage can be set.

1.1.1 BILTON BASIC KNX LED-Dimmer > Bus Power Down/Up Parameter

Global Parameters	Bus power up message delay (0 = no delay)	100	0-65535 10ms
Status Parameters	Bus power up Value Select	Last used Color	
Switching Parameter	Bus power down Value Select	Last used Color	
Dimming Control Parameters			

[Bus Power Down/Up Parame...](#)

Special Features

Figure 45: Bus voltage failure/-restoration parameters

### 2.2.5.1 Bus voltage restoration message delay

So that not all devices start to broadcast simultaneously when voltage is restored (possible overload of the BUS), a delay can be set for the broadcasting by means of this parameter.

Bus power up message delay  
(0 = no delay)

100

0-65535 10ms

Figure 46: Bus voltage restoration message delay

### 2.2.5.2 Bus voltage restoration value selection

The behaviour after restoration of the bus voltage can be set via this parameter.

Bus power up Value Select

Bus power down Value Select

Last used Color

Last used Color

All channels 100%

All channels 0 %

All channels 1 Parameter

Parameter per Channel

Figure 47: Bus voltage restoration value selection

Either all channels can be set to 100%, 0%, via 1 parameter or each channel can be set via its own parameter. (See: Bus voltage restoration value all channels (2.2.5.3) and Bus voltage restoration value selection (2.2.5.2))

### 2.2.5.3 Bus voltage restoration value all channels

This parameter sets the target value to be set at all channels after restoration of the bus voltage.

Bus power up Value Select

Bus power up set value all channels

All channels 1 Parameter

50

0-255

Figure 48: Bus voltage restoration value all channels

This parameter is only enabled if Bus voltage restoration value selection (2.2.5.2) is set to "All channels via 1 parameter".

2.2.5.4 Bus voltage restoration value channel 1-4

These parameters set the target value to be set at each individual channel after restoration of the bus voltage.

Bus power up Value Select

Parameter per Channel

Bus power up set value for channel 1	20	0-255
Bus power up set value for channel 2	20	0-255
Bus power up set value for channel 3	20	0-255
Bus power up set value for channel 4	20	0-255

Figure 49: Bus voltage restoration value channel 1-4

This parameter is only enabled if Bus voltage restoration value selection (2.2.5.2) is set to "Parameter per channel".

2.2.5.5 Bus voltage failure value selection

The behaviour after bus voltage failure can be set via this parameter.

Bus power down Value Select

Last used Color

Last used Color

All channels 100%

All channels 0 %

All channels 1 Parameter

Parameter per Channel

Figure 50: Bus voltage restoration value selection

Either all channels can be set to 100%, 0%, via 1 parameter or each channel can be set via its own parameter. (See: Bus voltage failure value all channels (2.2.5.6) and Bus voltage failure value channel 1-4 (2.2.5.7))

2.2.5.6 Bus voltage failure value all channels

This parameter sets the target value to be set at all channels after a failure of the bus voltage.

Bus power down Value Select

All channels 1 Parameter

Bus power down set value all channels

50

0-255

Figure 51: Bus voltage failure value all channels

This parameter is only enabled if Bus voltage failure value selection (2.2.5.5) is set to "All channels via 1 parameter".

2.2.5.7 Bus voltage failure value channel 1-4

These parameters set the target value to be set at each individual channel after failure of the bus voltage.



Bus power down Value Select	Parameter per Channel ▼	
Bus power down set value for channel 1	20 ▲▼	0-255
Bus power down set value for channel 2	20 ▲▼	0-255
Bus power down set value for channel 3	20 ▲▼	0-255
Bus power down set value for channel 4	20 ▲▼	0-255

Figure 52: Bus voltage failure value channel 1-4

This parameter is only enabled if Bus voltage failure value se-  
lection (2.2.5.5) is set to "Parameter per channel".Specific  
functions

## 2.2.6 Special Features

The following functions can be enabled in this window:

```
// Scenes
// Colour wheel
// Sequence
// Flash control
```

**1.1.1 BILTON BASIC KNX LED-Dimmer > Special Features**

Global Parameters	Enable Scenes	<input type="radio"/> Yes <input checked="" type="radio"/> No
Status Parameters	Enable Color Cycle Function	<input type="radio"/> Yes <input checked="" type="radio"/> No
Switching Parameter	Enable Sequence Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dimming Control Parameters	Enable Blink Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Bus Power Down/Up Parameter		

[Special Features](#)

Figure 53: Specific functions

### 2.2.6.1 Enable scenes

With this parameter the menu "Scene control" and communication object "29: Scene numbers" can be enabled.

**Enable Scenes** ☐ Yes ☒ No

Figure 54: Enable scenes

### 2.2.6.2 Enable scenes control

In order to save scenes using a button, this parameter has to be set to "Yes". This enables communication object "30 scene control".

**Enable Scene Control** ☐ Yes ☒ No

Figure 55: Enable scenes control

This parameter is only enabled if Enable scenes (2.2.6.1) is set to "YES".

### 2.2.6.3 Enable colour wheel

With this parameter the menu "Enable colour wheel" and communication object "31: Colour wheel control" can be enabled.

**Enable Color Cycle Function** ☒ Yes ☐ No

Figure 56: Enable colour wheel

### 2.2.6.4 Enable sequences

With this parameter, the menu "Sequence parameter" is enabled.

**Enable Sequence Control** ☐ Yes ☒ No

Figure 57: Enable sequences

## 2.2.6.5 Enable flash control

With this parameter the menu "Enable flash control " and communication object "38: Colour wheel control" can be enabled.

Enable Blink Control

☐ Yes ☒ No

Figure 58: Enable flash control



## 2.2.7 Scene Control

The 64 scenes can be set individually in this window.

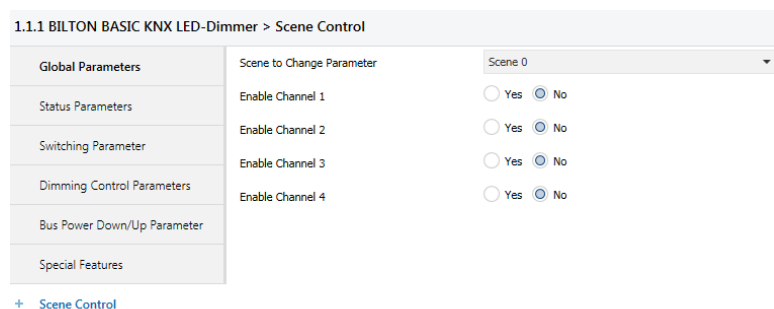


Figure 59: Scene Control

To set all scenes at once, the menu "1.1.1.1 Scenes control of all parameters" can be used.

The following table should help you as a tool for finding/inputting your colours. Other colours and the accompanying RGB codes can be found on the web (e.g. at: <http://www.uize.com/examples/sortable-color-table.html>).





















Colour	R	G	B		Colour	R	G	B	
Red	255	0	0		Blue	0	0	255	
Dark red	139	0	0		Dark blue	0	0	139	
Brick-red	178	34	34		Royal blue	65	105	225	
Orchid	218	112	214		Cyan	0	255	255	
Violet	238	130	238		Turquoise	64	224	208	
Green	0	255	0		White	255	255	255	
Dark green	0	100	0		Yellow	255	255	0	
Spring green	0	255	127		Orange	255	165	0	
Green-yellow	127	255	0		Light pink	255	182	193	
Sea-green	32	178	170		Pink	255	20	147	

Table 9: Colour table scenes

## 2.2.7.1 Scene for parameter change

The scene to be changed can be selected here.

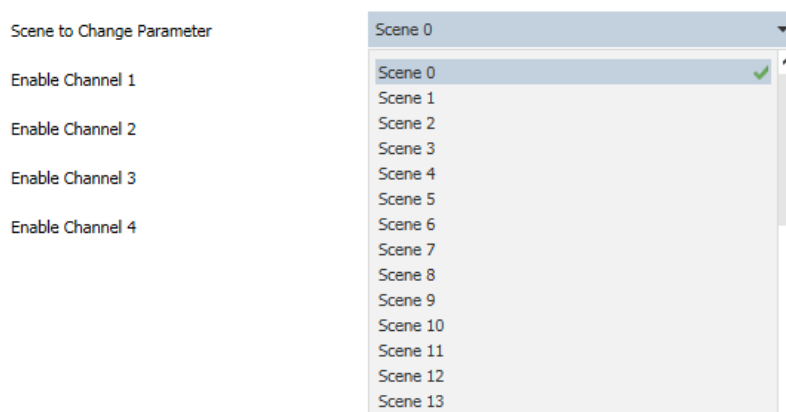


Figure 60: Scenes for parameter change

## 2.2.7.2 Enable channel 1-4

With this parameter the channel in the scene can be enabled/disabled.



Figure 61: Enable channel 1-4

If a channel has been disabled and the associated scene is opened, the current value of the disabled scene is not changed.

## 2.2.7.3 Channel 1-4 with enabled scene

The value for the individual channels in the selected scene can be changed here.



Figure 62: Channel 1-4 in scene

This parameter is only enabled if the respective channel in Enable channel 1-4 (2.2.7.2) is set to "YES".

## 2.2.7.4 Scenes control of all parameters

All scenes can be changed in this menu.

1.1.1 BILTON BASIC KNX LED-Dimmer > Scene Control > Scene Control of all Parameter

Global Parameters	----- Scene 0 -----	
Status Parameters	Enable Channel 1	<input type="radio"/> Yes <input checked="" type="radio"/> No
Switching Parameter	Enable Channel 2	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dimming Control Parameters	Enable Channel 3	<input type="radio"/> Yes <input checked="" type="radio"/> No
Bus Power Down/Up Parameter	Enable Channel 4	<input type="radio"/> Yes <input checked="" type="radio"/> No
Special Features	----- Scene 1 -----	
Scene Control	Enable Channel 1	<input type="radio"/> Yes <input checked="" type="radio"/> No
	Enable Channel 2	<input type="radio"/> Yes <input checked="" type="radio"/> No
	Enable Channel 3	<input type="radio"/> Yes <input checked="" type="radio"/> No
	Enable Channel 4	<input type="radio"/> Yes <input checked="" type="radio"/> No
	----- Scene 2 -----	
	Enable Channel 1	<input type="radio"/> Yes <input checked="" type="radio"/> No
	Enable Channel 2	<input type="radio"/> Yes <input checked="" type="radio"/> No
	Enable Channel 3	<input type="radio"/> Yes <input checked="" type="radio"/> No

Figure 63: Scenes control of all parameters

The parameters are the same as under Enable channel 1-4 (2.2.7.2) and Channel 1-4 with enabled scene (2.2.7.3).

## 2.2.8 Colour wheel control

The behaviour of the colour wheel can be set in this menu. Depending on the number of channels (see Number of channels (2.2.1.2)), a different menu is displayed.

Colour wheels can be dimmed by up to 25% of the brightness. A colour wheel is stopped either by a master command or by a colour wheel stop command.

When using one channel, the colour wheel is disabled.

When using two channels, the colour wheel is set to White Emotion.

**1.1.1 BILTON BASIC KNX LED-Dimmer > Color Cycle Control**

Global Parameters	Color Cycle Dimming Speed by	<input type="radio"/> Parameter by Bus <input checked="" type="radio"/> Parameter by ETS
Status Parameters	Function of the RGBW Color Cycle	Color Cycle White Emotion
Switching Parameter	Length of Color Cycle for WE	10 10-65535 s
Dimming Control Parameters	Color Cycle Function Description	White Emotion Color Cycle
Bus Power Down/Up Parameter	Set Value after Color Cycle Stop	Actual Color
Special Features		

[Color Cycle Control](#)

Figure 64: Colour wheel control 2 channel

When using three channels, the colour wheel is set to RGB.

**1.1.1 BILTON BASIC KNX LED-Dimmer > Color Cycle Control**

Global Parameters	Color Cycle Dimming Speed by	<input type="radio"/> Parameter by Bus <input checked="" type="radio"/> Parameter by ETS
Status Parameters	Function of the RGBW Color Cycle	Color Cycle RGB
Switching Parameter	Length of Color Cycle	15 15-65535 s
Dimming Control Parameters	Color Cycle Function Description	RGB Color Cycle
Bus Power Down/Up Parameter	Set Value after Color Cycle Stop	Actual Color
Special Features		

[Color Cycle Control](#)

Figure 65: Colour wheel control 3 channel

When using four channels, the behaviour of the colour wheel can be set.

**1.1.1 BILTON BASIC KNX LED-Dimmer > Color Cycle Control**

Global Parameters	Color Cycle Dimming Speed by	<input type="radio"/> Parameter by Bus <input checked="" type="radio"/> Parameter by ETS
Status Parameters	Function of the RGBW Color Cycle	Color Cycle RGBW
Switching Parameter	Length of Color Cycle	20 20-65535 s
Dimming Control Parameters	Color Cycle Function Description	RGBW Color Cycle
Bus Power Down/Up Parameter	Set Value after Color Cycle Stop	Actual Color
Special Features		

[Color Cycle Control](#)

Figure 66: Colour wheel control 4 channel



The following illustrations show the difference of the colour wheel sequence:

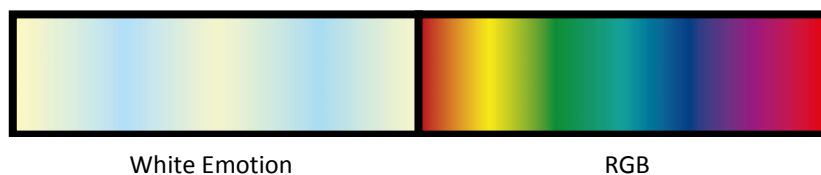


Figure 67: Colour sequence White Emotion / RGB

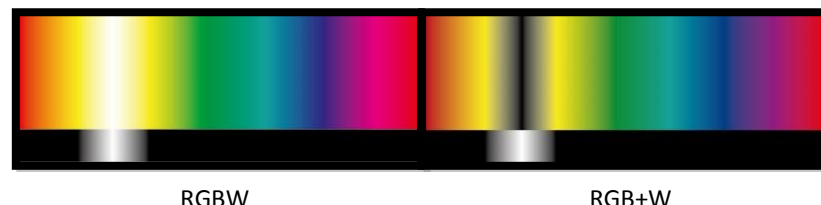


Figure 68: RGBW / RGB+W

In the RGBW sequence, the white channel is also mixed as an additive to the mixed white. In the RGB+W sequence, the white channel is used instead of the added colour mixture.

## 2.2.8.1 Colour wheel dimming speed via

Whether the length of the colour wheel is set directly in the ETS or via the bus with communication object "32: Colour wheel length" can be set with this parameter.

Color Cycle Dimming Speed by ☐ Parameter by Bus ☒ Parameter by ETS

Figure 69: Colour wheel dimming speed via

## 2.2.8.2 Function of the RGBW colour wheel

This parameter sets how the colour wheel with four channels is to work.

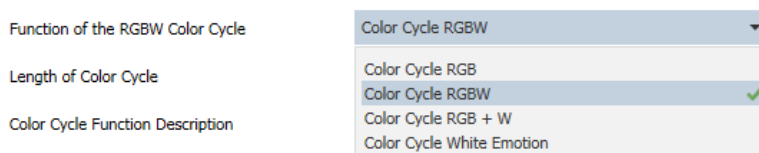


Figure 70: Function of the RGB colour wheel

This parameter is only enabled if "four" channels in Number of channels (2.2.1.2) and Colour wheel dimming speed via (2.2.8.1) are set to "Parameters via ETS".

## 2.2.8.3 Length of the colour wheel

The length of the colour wheel is set with this parameter. Depending on the colour wheel function set, the colour wheel can run for different lengths.

Length of Color Cycle 20 20-65535 s

Figure 71: Length of the RGBW and RGB+W colour wheel

Length of Color Cycle 15 15-65535 s

Figure 72: Length of the RGB colour wheel

Length of Color Cycle for WE 10 10-65535 in s

Figure 73: Length of the White Emotion colour wheel

#### 2.2.8.4 Colour wheel function description

The current function of the colour wheel is set.

Color Cycle Function Description RGBW Color Cycle

Figure 74: Colour wheel function description

#### 2.2.8.5 Setting after the colour wheel stop

The behaviour when the colour wheel stops can be set via this parameter.

Set Value after Color Cycle Stop

Actual Color

- Actual Color
- Last used Color
- All channels 0 %
- All channels 100%
- All channels 1 Parameter
- Parameter per Channel

Figure 75: Setting after the colour wheel stop

The following parameters are available:

Parameter	Description
Current colour	The current colour value is retained
Last set colour	The colour is set before the colour wheel
All channels 0%	All channels are switched off
All channels 1000%	All channels are switched on to 100%
All channels via 1 parameter	See Table 10: Setting after the colour wheel stop
Parameter per channel	Colour wheel stop brightness value all channels
	See 2.2.8.7 Colour wheel stop brightness value channel 1-4

Table 10: Setting after the colour wheel stop

#### 2.2.8.6 Colour wheel stop brightness value all channels

This parameter sets which target value is to be set after the setting of the colour wheel at all channels.

Set Value after Color Cycle Stop	All channels 1 Parameter
Set Value for all Channels	50 0-255

Figure 76: Colour wheel stop brightness value all channels

This parameter is only enabled if setting after the colour wheel stop (2.2.8.5) is set to "All channels via 1 parameter".

## 2.2.8.7 Colour wheel stop brightness value channel 1-4

These parameters set which target value is to be set after the stop of the colour wheel at each individual channel.

Channel 1	255	0-255
Channel 2	255	0-255
Channel 3	255	0-255
Channel 4	255	0-255

Figure 77: Colour wheel stop brightness value channel 1-4

This parameter is only enabled if Setting after the colour wheel stop (2.2.8.5) is set to "Parameter per channel".

## 2.2.9 Sequence parameter

Up to 5 sequences can be enabled in this menu. The sequences are colour wheel, which can be combined individually. Each sequence comprises up to 16 scenes, which can be set using the parameters (see Sequence X parameter (1.1.1) and 2.2.10.6 Scene 1-16 in sequence X). It is possible here to set the time between the individual scenes (see Time of dimming to next scene 1-16 in sequence X (2.2.10.9)) and the time in the scenes (see Time in scene 1-16 in sequence X (2.2.10.8)). This means that not only can the colour be set for the sequences, but also the duration of the individual colours.

A sequence can be ended either with a master command or with a stop command.

Note: the first scene of a sequence must always have a time value (0 is not permitted = the sequence does not start/is not loaded). Only scenes are loaded, which also have a defined time value.

**1.1.1 BILTON BASIC KNX LED-Dimmer > Sequence Control**

Global Parameters	Enable Sequence 1 Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Status Parameters	Enable Sequence 2 Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Switching Parameter	Enable Sequence 3 Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Dimming Control Parameters	Enable Sequence 4 Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Bus Power Down/Up Parameter	Enable Sequence 5 Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Special Features		

[Sequence Control](#)

Figure 78: Sequence parameter

### 2.2.9.1 Enable sequence X

The sequences are enabled with this parameter.

Enable Sequence 1 Control	<input checked="" type="radio"/> Yes <input type="radio"/> No
Enable Sequence 2 Control	<input checked="" type="radio"/> Yes <input type="radio"/> No
Enable Sequence 3 Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Enable Sequence 4 Control	<input type="radio"/> Yes <input checked="" type="radio"/> No
Enable Sequence 5 Control	<input type="radio"/> Yes <input checked="" type="radio"/> No

Figure 79: Enable sequence

## 2.2.10 Sequence X parameter

The parameters for the selected sequence are set in this menu.

1.1.1 BILTON BASIC KNX LED-Dimmer > Sequence Control > Sequence 1

Global Parameters	Number of scene in Sequence 1	2	2-16 Scenes
Status Parameters	Enable Channel 1	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Switching Parameter	Enable Channel 2	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Dimming Control Parameters	Enable Channel 3	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Bus Power Down/Up Parameter	Enable Channel 4	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Special Features	Set Value after Sequence Stop	Actual Color	

Sequence Control

- + Sequence 1
- + Sequence 2

Figure 80: Sequence X parameter

### 2.2.10.1 Number of scenes in sequence X

Up to 16 scenes can be set for each sequence.

Number of scene in Sequence 1: 2 (2-16 Scenes)

Figure 81: Number of scenes in sequence X

### 2.2.10.2 Enable channel 1-4 in sequence X

Channels can be enabled and disabled in the individual sequences. Channels that have been disabled can still be controlled via the corresponding communication objects ON/OFF/DIM. Active channels can only be controlled via the scenes in the sequences (see 2.2.10.6 Scene 1-16 in sequence X).

Enable Channel 1: ☐ Yes ☒ No

Enable Channel 2: ☐ Yes ☒ No

Enable Channel 3: ☐ Yes ☒ No

Enable Channel 4: ☐ Yes ☒ No

Figure 82: Enable channel 1-4 in sequence X

### 2.2.10.3 Setting after stopping the sequence

The behaviour when the sequence stops can be set via this parameter.

Set Value after Sequence Stop

- Actual Color
- Last used Color
- All channels 0 %
- All channels 100%
- All channels 1 Parameter
- Parameter per Channel

Figure 83: Setting after stopping the sequence

The following parameters are available:

Parameter	Description
Current colour	The current colour value is retained
Last set colour	The colour before the colour wheel is set
All channels 0%	All channels are switched off
All channels 100%	All channels are switched on to 100%
All channels via 1 parameter	See 2.2.11.8 Flash stop brightness value all channels
Parameter per channel	See 2.2.11.9 Flash stop brightness value channel 1-4

#### 2.2.10.4 Sequence stop brightness value all channels

This parameter sets which target value is to be set after the setting of the sequence at all channels.

Set Value after Color Cycle Stop: All channels 1 Parameter

Set Value for all Channels: 50 (range 0-255)

Figure 84: Colour wheel stop brightness value all channels

This parameter is only enabled if Setting after stopping the sequence (2.2.10.3) is set to "All channels via 1 parameter".

#### 2.2.10.5 Sequence stop brightness value channel 1-4

These parameters set which target value is to be set after the stop of the sequence at each individual channel.

Set Value after Color Cycle Stop: Parameter per Channel

Set Value Channel 1: 0 (range 0-255)

Set Value Channel 2: 0 (range 0-255)

Set Value Channel 3: 0 (range 0-255)

Set Value Channel 4: 0 (range 0-255)

Figure 85: Colour wheel stop brightness value channel 1-4

This parameter is only enabled if Setting after stopping the sequence (2.2.10.3) is set to "Parameter per channel".

#### 2.2.10.6 Scene 1-16 in sequence X

In this menu, the parameters can be set for up to 16 scenes (see Number of scenes in sequence X (2.2.10.1)).

1.1.1 BILTON BASIC KNX LED-Dimmer > Sequence Control > Sequence 1 > Scene 0

Global Parameters	----- Scene 0 -----	
Status Parameters	Channel 1	0 0-255
Switching Parameter	Channel 2	0 0-255
Dimming Control Parameters	Channel 3	0 0-255
Bus Power Down/Up Parameter	Channel 4	0 0-255
Special Features	Time to stay in scene	0 0-255 s
Sequence Control	Time for dimming to next scene	0 0-255 s
Sequence 1		
Scene 0		
Scene 1		
Sequence 2		

Figure 86: Scene 1-16 in sequence X

## 2.2.10.7 Channel 1-4 scene 1-16 in sequence X

These parameters set the brightness values of the individual channels in the respective scenes.

----- Scene 0 -----	
Channel 1	0 0-255
Channel 2	0 0-255
Channel 3	0 0-255
Channel 4	0 0-255

Figure 87: Channel 1-4 scene 1-16 in sequence X

The following table should help you as a tool for finding/inputting your colours. Other colours and the accompanying RGB codes can be found on the web (e.g. at:

<http://www.uize.com/examples/sortable-color-table.html>).

Colour	R	G	B	Colour	R	G	B
Red	255	0	0	Blue	0	0	255
Dark red	139	0	0	Dark blue	0	0	139
Brick-red	178	34	34	Royal blue	65	105	225
Orchid	218	112	214	Cyan	0	255	255
Violet	238	130	238	Turquoise	64	224	208
Green	0	255	0	White	255	255	255
Dark green	0	100	0	Yellow	255	255	0
Spring green	0	255	127	Orange	255	165	0
Green-yellow	127	255	0	Light pink	255	182	193
Sea-green	32	178	170	Pink	255	20	147

Table 11: Colour table Scenes 1-16 in sequence X<sup>1</sup>

<sup>1</sup> <http://www.uize.com/examples/sortable-color-table.html>

## 2.2.10.8 Time in scene 1-16 in sequence X

With this parameter the duration in the scene can be set. 0 means that either the next is jumped to or dimmed immediately (see Time of dimming to next scene 1-16 in sequence X (2.2.10.9)).

Time to stay in scene  0-255 s

Figure 88: Time in scene 1-16 in sequence X

The following table is designed to simplify entry in the menu window:

Seconds	Minutes
30	½
60	1
120	2
180	3
240	4
255	4,25

Table 12: Time in scene 1-16 in sequence X (time table)

## 2.2.10.9 Time of dimming to next scene 1-16 in sequence X

The time of dimming to the next scene can be set with this parameter. 0 means the next scene is jumped to.

Time for dimming to next scene  0-255 s

Figure 89: Time of dimming to next scene 1-16 in sequence X

Seconds	Minutes
30	½
60	1
120	2
180	3
240	4
255	4,25

Table 12: Time in scene 1-16 in sequence X (time table) makes inputting easier in the menu window.

## 2.2.10.10 Timing example for a sequence

This easy example is designed to show the behaviour of a sequence (see Figure 90: Timing example for a sequence). Only one channel is used and the individual times are either 0 (= no time) or 1 (= time).



Scene	Channel 1	Time in the scene	Time to dimming to the next scene
1	255	1	0
2	0	1	1
3	10	0	1
4	20	1	1
5	100	1	0

Table 13: Timing example for a sequence

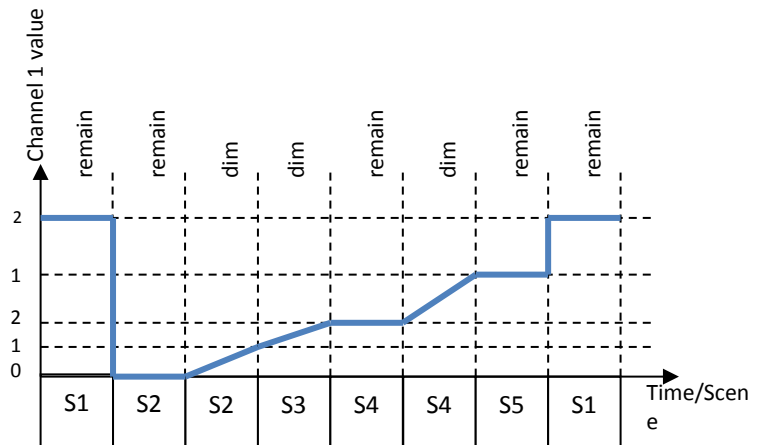


Figure 90: Timing example for a sequence

## 2.2.11 Flash control parameters

The behaviour of the flashing can be set in this menu. The time for the first colour (see 2.2.11.2 Flash ON time (1st colour)) and for the second colour (see 2.2.11.3 Flash OFF time (2nd colour)) as well as the number of flashes (see 2.2.11.1 Number of flashes) can be set.

If status saving has been enabled, the flashing also remains enabled after a voltage failure. Flashing can only be disabled by the Flash Stop command.

**1.1.1 BILTON BASIC KNX LED-Dimmer > Blink Control Parameter**

Global Parameters	Amount of Blink Counts (0=infinite)	0	0-65535
Status Parameters	Blink ON Duration (1. Color)	10	1-65535 10ms
Switching Parameter	Blink OFF Duration (2. Color)	10	1-65535 10ms
Dimming Control Parameters	Channel 1	255	0-255
Bus Power Down/Up Parameter	Channel 2	255	0-255
Special Features	Channel 3	255	0-255
	Channel 4	255	0-255

2. Color via ☐ Preferred Color ☒ Last Color

Actual Color

Figure 91: Flash control parameters

### 2.2.11.1 Number of flashes

This parameter defines the number of flashes. 0 means keep flashing until the Stop command.

Amount of Blink Counts (0=infinite) 0 0-65535

Figure 92: Number of flashes

### 2.2.11.2 Flash ON time (1st colour)

The duration of the first colour is set with this parameter.

Blink ON Duration (1. Color) 10 1-65535 10ms

Figure 93: Flash ON time (1st colour)

### 2.2.11.3 Flash OFF time (2nd colour)

The duration of the second colour is set with this parameter.

Blink OFF Duration (2. Color) 10 1-65535 10ms

Figure 94: Flash OFF time (2nd colour)

### 2.2.11.4 1st colour channel 1-4

The 1st colour for the flashing can be set here.

Channel 1	255	0-255
Channel 2	255	0-255
Channel 3	255	0-255
Channel 4	255	0-255

Figure 95: 1. Colour channel 1-4

## 2.2.11.5 2. Colour through

Either the last colour before the flashing or a colour defined by you can be used for the 2nd colour.

2. Color via ☒ Preferred Color ☐ Last Color

2. Color Channel 1  0-255

2. Color Channel 2  0-255

2. Color Channel 3  0-255

2. Color Channel 4  0-255

Figure 96: 2. Colour through

## 2.2.11.6 2nd colour channel 1-4

The 2nd colour is set with this parameter.

Channel 1  0-255

Channel 2  0-255

Channel 3  0-255

Channel 4  0-255

Figure 97: 2. Colour channel 1-4

This parameter is only enabled if "2nd colour by" (2.2.11.5) is set to "Preferred colour".

## 2.2.11.7 Setting after flash

The behaviour when the flashing stops can be set via this parameter.

Set Value after BLINK

Actual Color

Actual Color ☒

Last used Color

All channels 0 %

All channels 100%

All channels 1 Parameter

Parameter per Channel

Figure 98: Setting after stopping the flashing

The following parameters are available:

Parameter	Description
Current colour	The current colour value is retained
Last set colour	The colour before the colour wheel is set
All channels 0%	All channels are switched off
All channels 100%	All channels are switched on to 100%
All channels via 1 parameter	See 2.2.11.8 Flash stop brightness value all channels
Parameter per channel	See 2.2.11.9 Flash stop brightness value channel 1-4

## 2.2.11.8 Flash stop brightness value all channels

This parameter sets which target value is to be set after the stopping of the flash at all channels.

Set Value after BLINK	All channels 1 Parameter ▼	
Set Value for all Channels	50	0-255

Figure 99: Flash stop brightness value all channels

This parameter is only enabled if Setting after flash (2.2.11.7) is set to "All channels via 1 parameter".

## 2.2.11.9 Flash stop brightness value channel 1-4

These parameters set which target value is to be set after the stop of the flashing at each individual channel.

Set Value after BLINK	Parameter per Channel ▼	
Set Value Channel 1	0	0-255
Set Value Channel 2	0	0-255
Set Value Channel 3	0	0-255
Set Value Channel 4	0	0-255

Figure 100: Flash stop brightness value channel 1-4

This parameter is only enabled if Setting after flash (2.2.11.7) is set to "Parameter per channel".

### 3 COMMUNICATION OBJECTS

Section	KNX Standard Name	Number	Size	IN/OUT	Flags	Name	Function	DPT	Description
Switch ON/OFF	Switch ON/OFF (SOO)	1	1 Bit	I	WC	Channel 1 switch On/Off	Binary control of the set value	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
		6	1 Bit	I	WC	Channel 2 switch On/Off	Binary control of the set value	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
		11	1 Bit	I	WC	Channel 3 switch On/Off	Binary control of the set value	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
		16	1 Bit	I	WC	Channel 4 switch On/Off	Binary control of the set value	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
		21	1 Bit	I	WC	Master ON/OFF	Binary control of the set value for all channels	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
Relative Dimming	Relative Setvalue Control (RSC)	4	4 Bit	I	WC	Channel 1 dimming relative	Relative control of the set value	[3] 3.xxx, [3.7] DPT_ControlDimming	UP/DOWN 0-100%
		9	4 Bit	I	WC	Channel 2 dimming relative	Relative control of the set value	[3] 3.xxx, [3.7] DPT_ControlDimming	UP/DOWN 0-100%
		14	4 Bit	I	WC	Channel 3 dimming relative	Relative control of the set value	[3] 3.xxx, [3.7] DPT_ControlDimming	UP/DOWN 0-100%
		19	4 Bit	I	WC	Channel 4 dimming relative	Relative control of the set value	[3] 3.xxx, [3.7] DPT_ControlDimming	UP/DOWN 0-100%
		22	4 Bit	I	WC	Master dimming relative	Relative control of the set value for all channels	[3] 3.xxx, [3.7] DPT_ControlDimming	UP/DOWN 0-100%
	Dimming Speed Control Relativ	26	2 Bytes	I	RWC	Dimming Speed Control	Specifies the dimming speed for relative dimming	[7] 7.xxx, [7.5] DPT_TimePeriodSec	1-65535 s

Absolut Dimming	Absolut Setvalue Control (ASC)	3	1 Byte	I	WC	Channel 1 dimming absolute	Absolut control of the set value	[5] 5.xxx, [5.1] DPT_Scaling	0-100%
		8	1 Byte	I	WC	Channel 2 dimming absolute	Absolut control of the set value	[5] 5.xxx, [5.1] DPT_Scaling	0-100%
		13	1 Byte	I	WC	Channel 3 dimming absolute	Absolut control of the set value	[5] 5.xxx, [5.1] DPT_Scaling	0-100%
		18	1 Byte	I	WC	Channel 4 dimming absolute	Absolut control of the set value	[5] 5.xxx, [5.1] DPT_Scaling	0-100%
		25	2 Bytes	I	RWC	Dimming Speed Control	Specifies the dimming speed for absolute dimming	[7] 7.xxx, [7.5] DPT_Time-PeriodSec	1-65535 s
Status Object	Info ON/OFF (IOO)	2	1 Bit	O	CT	Channel 1 info On/Off	Reflects the binary state of the actuator	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
		7	1 Bit	O	CT	Channel 2 info On/Off	Reflects the binary state of the actuator	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
		12	1 Bit	O	CT	Channel 3 info On/Off	Reflects the binary state of the actuator	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
		17	1 Bit	O	CT	Channel 4 info On/Off	Reflects the binary state of the actuator	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
		23	1 Bit	O	CT	LED Driver info On/Off	Reflects the binary state of the LED Driver	[1] 1.xxx, [1.1] DPT_Switch	1 = ON 0 = OFF
	Actual Dimming Value (ADV)	5	1 Byte	O	CT	Channel 1 actual dimming value	Reflects the actual dimming value of the actuator	[5] 5.xxx, [5.1] DPT_Scaling	0-100%
		10	1 Byte	O	CT	Channel 2 actual dimming value	Reflects the actual dimming value of the actuator	[5] 5.xxx, [5.1] DPT_Scaling	0-100%

		15	1 Byte	0	CT	Channel 3 actual dimming value	Reflects the actual dimming value of the actuator	[5] 5.xxx, [5.1] DPT_Scaling	0-100%
		20	1 Byte	0	CT	Channel 4 actual dimming value	Reflects the actual dimming value of the actuator	[5] 5.xxx, [5.1] DPT_Scaling	0-100%
	Output Overload Detection (OVL)	27	1 Bit	0	CT	Overload Detection	indicates load mismatch	[1] 1.xxx, [1.5] DPT_Alarm	1 = Output Overload 0 = No ERROR
	Output Over-temperature Detection	28	1 Bit	0	CT	Over temperature Detection	indicates over temperature or thermal shutdown of the device	[1] 1.xxx, [1.5] DPT_Alarm	1 = Over-temperature 0 = No ERROR
Absolut Setvalue Control RGB	Value RGB	24	3 Bytes	I	WC	RGB dimming absolute	Absolut control of the set value for all channels	[232] 232.xxx, [232.600] DPT_Colour_RGB	1. Byte = Channel 2. Byte = Channel 2 3. Byte = Channel 3
Scene	Input Scene Number (SN)	29	1 Byte	I	WC	Scene Number	Recall the set value related to the encoded scene number	[17] 17.xxx, [17.1] DPT_Scene-Number	Scene Number 0-63
	Input Scene Control (SC)	30	1 Byte	I	WC	Scene Control	Recall or learn the set value related to encoded scene number	[18] 18.xxx, [18.1] DPT_Scene-Control	Recall/ Learn Scene Number 0-63
Color Cycle	Start/Stop Color Cycle	31	1 Bit	I	WC	Color Cycle Control	Start or Stop the Color Cycle	[1] 1.xxx, [1.10] DPT_Start	1 = Start 0 = Stopp
	Color Cycle Speed Control	32	2 Bytes	I	RWC	Color Cycle Length	Length of Color Cycle	[7] 7.xxx, [7.5] DPT_Time-PeriodSec	White Emotion = 10 - 65535 s RGB = 15 - 65535 s RGBW & RGB+W = 20-65535 s
Se-quence	Start/Stop	33	1 Bit	I	WC	Se-quence 1 Control	Start or Stop Sequence 1	[1] 1.xxx, [1.10] DPT_Start	1 = Start 0 = Stopp

	Se- quence	34	1 Bit	I	WC	Se- quence 2 Control	Start or Stop Sequence 2	[1] 1.xxx, [1.10] DPT_Start	1 = Start 0 = Stopp
		35	1 Bit	I	WC	Se- quence 3 Control	Start or Stop Sequence 3	[1] 1.xxx, [1.10] DPT_Start	1 = Start 0 = Stopp
		36	1 Bit	I	WC	Se- quence 4 Control	Start or Stop Sequence 4	[1] 1.xxx, [1.10] DPT_Start	1 = Start 0 = Stopp
		37	1 Bit	I	WC	Se- quence 5 Control	Start or Stop Sequence 5	[1] 1.xxx, [1.10] DPT_Start	1 = Start 0 = Stopp
Blink	Start/ Stopp Blink	38	1 Bit	I	WC	Blink Control	Start or Stop of Blink	[1] 1.xxx, [1.10] DPT_Start	1 = Start 0 = Stopp

Table 14: Overview of communication objects



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