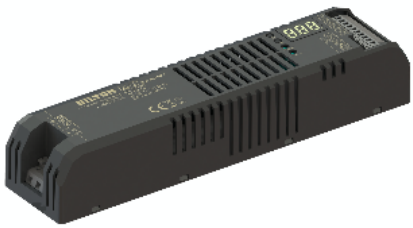
BILTON LEDON TECHNOLOGY

BILTON LED-Dimmer DMX Manual



SXT-24714

Symbolfoto

REG-S24714

S-24714

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1. GENERAL

The BILTON DMX 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 can be controlled via the DMX or 2 analogue inputs. The device is designed for operating multi-channel LED lighting in order to realise coloured lighting.
The following functions can be used for controlling the lights:

// ON/OFF per channel
// Dimming per channel

The BILTON DMX LED-Dimmer represents a DMX slave that executes the commands from the DMX Controller.

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 at all times.

General information:
The BILTON DMX 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 DMX LED-Dimmer is a device in protection class III. BILTON LEDON Technology GmbH is not liable for the operation of incorrect LED modules and lighting.

Correct use:
The BILTON DMX 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.

Particular 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 DMX LED-Dimmer BASIC

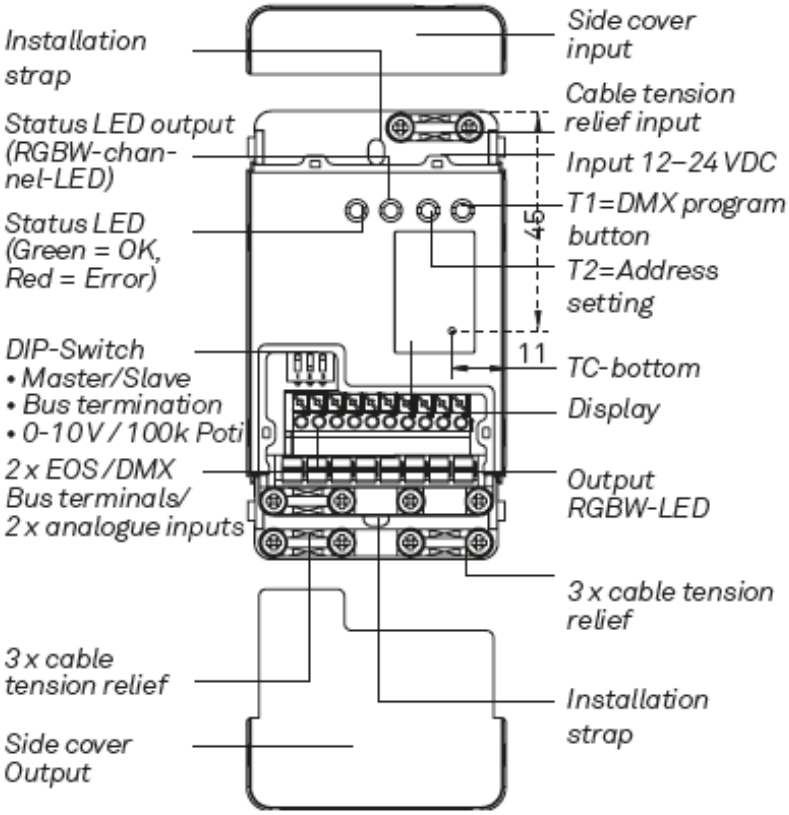

Figure 1: Description of the device DMX LED-Dimmer BASIC

1.2.1 Device connection

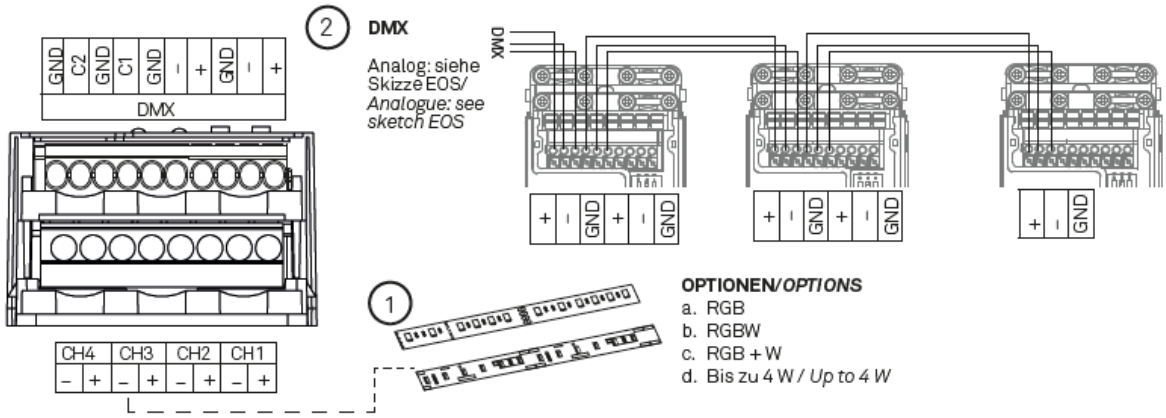

Figure 2: Outputs

1. Connect LED (COM+)
   // RGB
   // RGBW
   // RGB + W
   // Up to 4 W
2. Connect DMX / EOS (+, -, GND1), or analogue input 0-10V / 100k Poti (C1-GND, C2-GND)
3. Connect power supply (12-24 VDC)

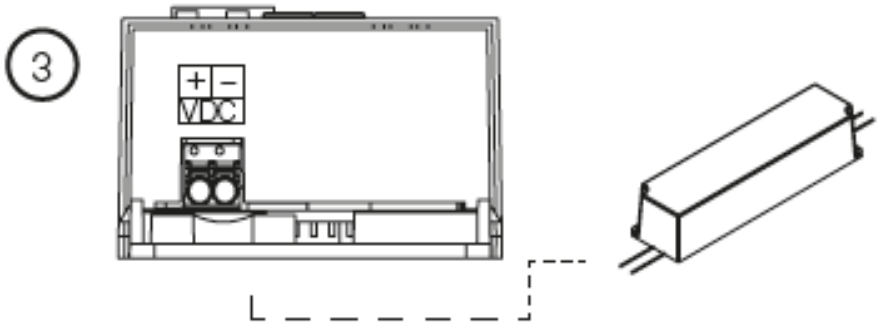

Figure 3: Power supply connection

4. Fit cable strain relief

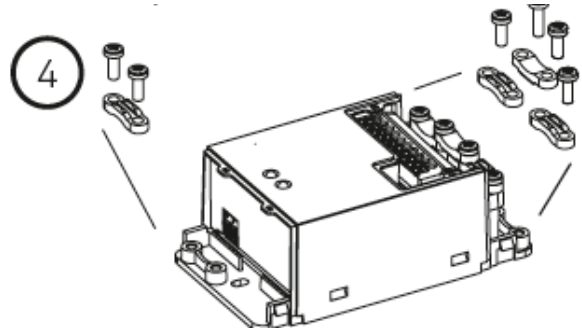

Figure 4: Cable strain relief

1.2.2 Technical Data

Power supply	Power supply for outputs: Max. input voltage:	12-24V DC ±10 %, 30 VDC
outputs	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	DMX:	Spring balancer Single wire 0.25-1.5 mm^2
	EOS:	Spring balancer Single wire 0.25-1.5 mm^2
	Infeed for load current circuit:	Spring balancer Single wire 0.75-1.5 mm^2
	Outputs:	Spring balancer Single wire 0.75-2.5 mm^2 Max. cable length 10m
	DMX Address setting	Press for 1s in DMX mode: Unlock for address input. (Display flashes when address input is possible) Press again for 1s to lock address input.
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 DMX actuator temperature range
Temperature range	Operation: Storage:	-5°C ... +45°C -20°C ... +70°C
Casing	Material	PA black
	Flame resistance	V0
Protection class		IP20
Lifespan		45000h
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	YES
Product safety according to	EN 61347-1 / EN 61347-2-13	YES

1.2.3 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.

1.2.4 Specific operating modes

1.2.4.1 Behaviour after bus voltage failure

The device is inactive and cannot be controlled. The last operating mode at the outputs is saved.

1.2.4.2 Behaviour after bus voltage restoration

The device can be controlled via the DMX bus again.

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

The device does not react to control commands and the LEDs are off. If an output value (colour and brightness) is set more than 5 minutes before the power failure, these values are saved and are automatically set with the next start (unless new settings are entered).

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

Device is active and can execute commands again. If a new setting is not entered, the last output value (colour and brightness) is set, provided this was active for more than 5 minutes.

1.3 Description of the device DMX LED-Dimmer REG

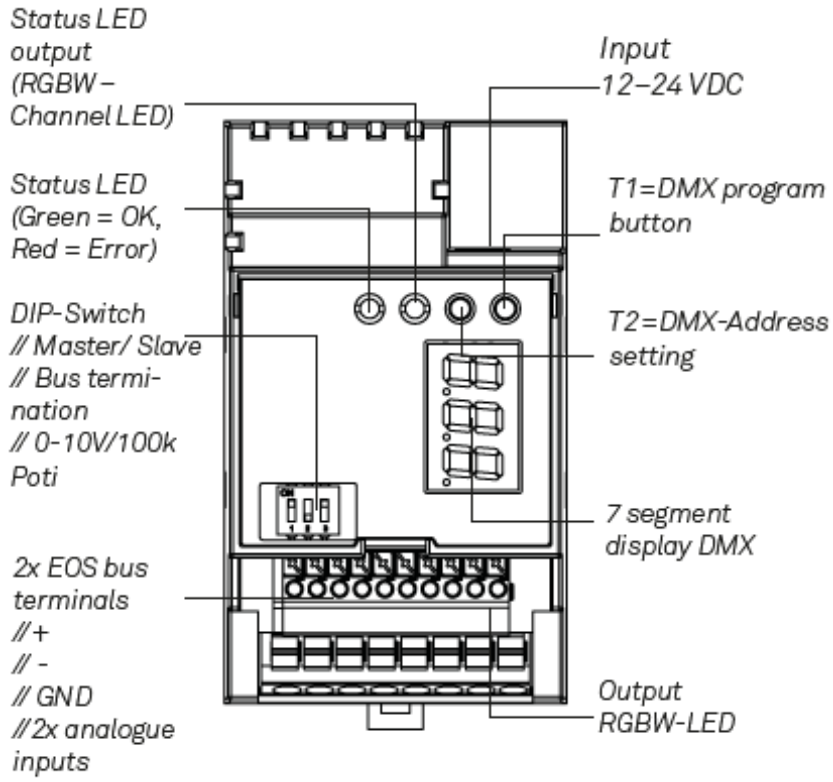

Figure 5: Description of the device DMX LED-Dimmer REG

1.3.1 Device connection

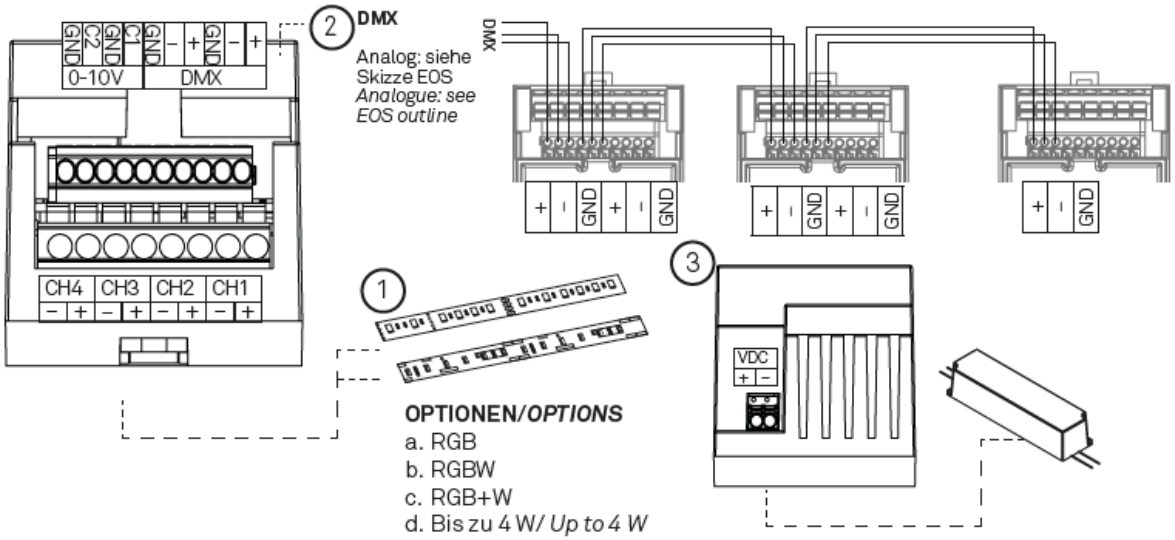

Figure 6: Outputs

1. Connect LED (COM+)
   // RGB
   // RGBW
   // RGB + W
   // Up to 4 W
2. Connect DMX / EOS (+, -, GND1), or analogue input 0-10V / 100k Poti (C1-GND, C2-GND)
3. Connect power supply (12-24 VDC)

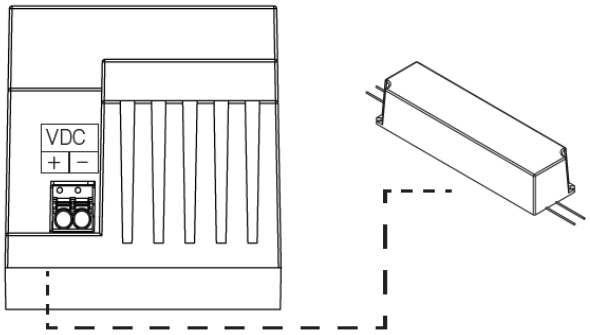

Figure 7: Power supply connection

1.3.2 Technical data

Power supply	Power supply for outputs: Max. input voltage:	12-24V DC ±10 %, 30V DC
outputs	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	DMX:	Spring balancer Single wire 0.25-1.5 mm^2
	EOS	Spring balancer Single wire 0.25-1.5 mm^2
	Infeed for load current circuit:	Spring balancer Single wire 0.75-1.5 mm^2
	Outputs:	Spring balancer Single wire 0.75-2.5 mm^2 Max. cable length 10m
	DMX address setting	Press for 1s in DMX mode: Unlock for address input. (Display flashes when address input is possible) Press again for 1s to lock address input. Single press in unlocked DMX mode (display flashes) = Address change.
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 DMX actuator temperature range
Temperature range	Operation: Storage:	-5°C ... +45°C -20°C ... +70°C
Casing	Material	PA black
	Flame resistance	V0
Protection class		IP20
Lifespan		45,000 hrs
Weight		90 g
Total Dimensions	L x W x H in mm	90 x 52 x 59 mm
Max. casing temp. at +45°C	TC	99°C
EMC according to	EN55015 / EN 61547	YES
Product safety according to	EN 61347-1 / EN 61347-2-13	YES

1.3.3 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.

1.3.4 Specific operating modes

1.3.4.1 Behaviour after bus voltage failure

The device is inactive and cannot be controlled. The last operating mode at the outputs is saved.

1.3.4.2 Behaviour after bus voltage restoration

The device can be controlled via the DMX bus again.

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

The device does not react to control commands and the LEDs are off. If an output value (colour and brightness) is set more than 5 minutes before the power failure, these values are saved and are automatically set with the next start (unless new settings are entered).

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

Device is active and can execute commands again. If a new setting is not entered, the last output value (colour and brightness) is set, provided this was active for more than 5 minutes.

1.4 Description of the device DMX LED-Dimmer SXT

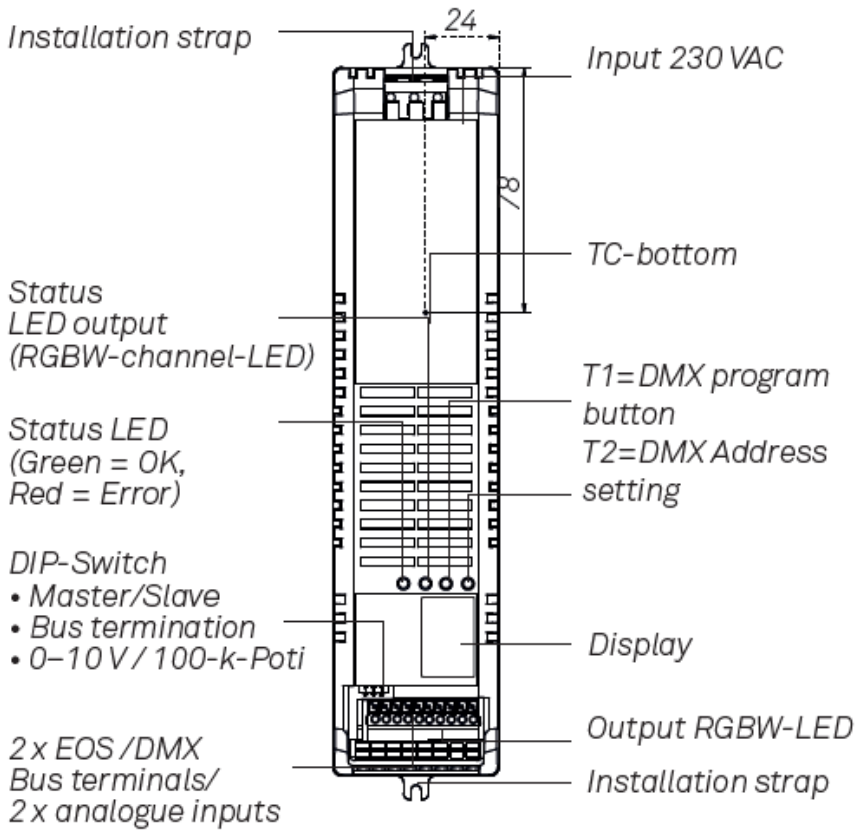

Figure 8: Description of the device DMX LED-Dimmer SXT

1.4.1 Device connection

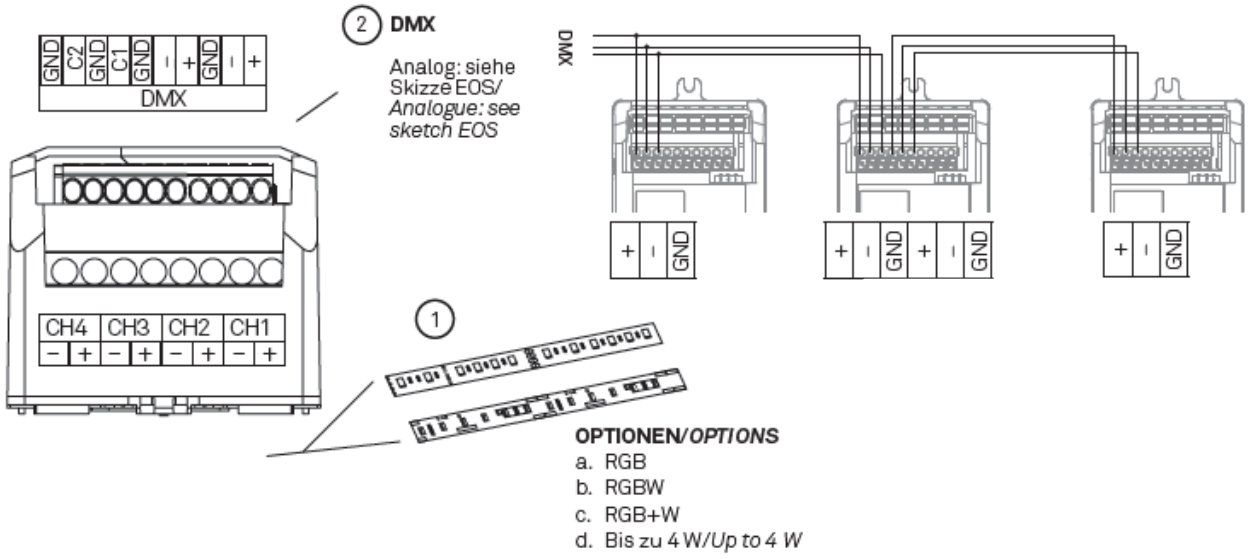

Figure 9: Output connection

1. Connect LED (COM+)
   // RGB
   // RGBW
   // RGB + W
   // Up to 4 W
2. Connect DMX / EOS (+, -, GND1), or analogue input 0-10V / 100k Poti (C1-GND, C2-GND)
3. Connect power supply (230VAC)

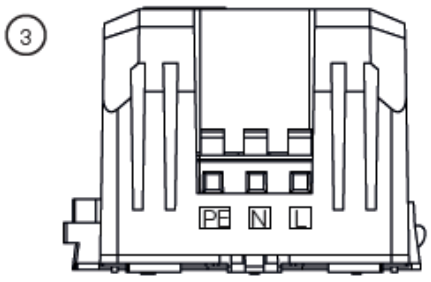

Figure 10: Power supply connection

1.4.2 Technical data

Power supply	Power supply for outputs: Max. input voltage:	24V DC (device-internal), 230V AC ±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	DMX:	Spring balancer Single wire 0.25-1.5 mm^2
	EOS:	Spring balancer Single wire 0.25-1.5 mm^2
	Infeed for load current circuit:	Spring balancer Single wire 0.75-1.5 mm^2
	Outputs:	Spring balancer Single wire 0.75-2.5 mm^2 Max. cable length 10m
Operation	DMX / EOS switching	DMX/EOS switching: Activation of T1 AND T2 >3s!
	DMX address setting	Press for 1s in DMX mode: Unlock for address input. (Display flashes when address input is possible) Press again for 1s to lock address input. Single press in unlocked DMX mode (display flashes) = Address change.
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 DMX actuator temperature range
Temperature range	Operation: Storage:	-5°C ... +45°C -20°C ... +70°C
Casing	Material	PC black
	Flame resistance	V0
Protection class		IP20

Lifespan		45000h
Weight		351.2g
Total dimensions	L x W x H in mm	226 x 53 x 45
Max. casing temperature at +45°C	TC	70°C
EMC according to	EN55015 / EN61547	YES
Product safety according to	EN61347-1 / EN61347-2-13	YES

1.4.3 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.

1.4.4 Specific operating modes

1.4.4.1 Behaviour after bus voltage failure

The device is inactive and cannot be controlled. The last operating mode at the outputs is saved.

1.4.4.2 Behaviour after bus voltage restoration

The device is active and can be controlled normally.

1.4.4.3 Behaviour after power supply failure

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

1.5 EOS function

The BILTON DMX LED-Dimmer has an internal data bus. Several BILTON DMX LED dimmers can communicate with this using the Master-Slave principle. The device, which communicates with the EOS BUS, must be configured as master (for settings, see DIP Switch – Master/Slave switching ON).
The default setting for each DMX LED-Dimmer is SLAVE Mode. The other devices on the EOS BUS must be configured as SLAVE (Master/Slave switching OFF).

The SLAVE devices behave like the master. It is therefore possible to control an entire room with just one DMX address.

The end of the EOS chain must be terminated, this is done via the EOS termination of the DIP switch (EOS termination ON).

1.6 Status LED

Colour	Flash code	Error code
Green	Lights	No error
Red	Lights	-
Red	1x flashing	Initialisation error
Red	2x flashing	Over-temperature fault
Red	3x flashing	Over-temperature switch-off
Red	4x flashing	Overload
Red	5x flashing	EOS-Master error
Red	6x flashing	-
Red	7x flashing	-
Red	8x flashing	Unknown/several errors

1.7 DIP Switch

No.	Description	Factory setting
1	Master / Slave	OFF = Slave
2	Bus termination	OFF
3	0-10V / 100k Poti	OFF = 100k Poti

1.8 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.bltechnology.at

1.9 CONTROLS

A DMX controller is needed to control the BILTON DMX LED-Dimmer.

1.10 Function overview

The four outputs of the BILTON DMX LED-Dimmer can be controlled independently with the DMX-Controller.
Dim (up, down), Switch (on, off) is possible for each channel. Depending on the DMX controller, a colour wheel can also be realised via the RGBW lights connection on the BILTON DMX LED-Dimmer.

1.11 Selecting the operating mode

Different things can be set to operating the controls via the DMX program button (see device description).

1.11.1 EOS function

Pressing the T1 and T2 buttons at the same time for 3s allows the operating mode to be changed between "EOS" and "DMX". If you are in "EOS" mode, this can be seen in the segment display.

The EOS function itself is described in more detail in section "1.5 EOS function".

1.11.2 DMX

The DMX mode can be reached in the same way as the EOS mode. Pressing the T1 and T2 buttons at the same time for 3s changes the operating mode.
If you are in DMX model, the start address can be set.

1.12 Addressing

Addressing can only be done in DMX mode. To be able to set the start address, key 1 + key 2 must be pressed together for 1 second.
By briefly pressing the DMX program key, the start address can be programmed (key 1 = count up, key 2 = count down).
A quick address change (running through) is programmed by pressing the DMX program button for a long time.
You can leave the addressing by pressing button 1 and button 2 simultaneously for approx. 1 second until the address display stops flashing.

If 001 is set as the start address, for example (visible in the segment display), the device's other channels are numbered sequentially.
E.g.: Displayed address = 001

CH1	001
CH2	002
CH3	003
CH4	004

2. LIST OF FIGURES