

DigiLED Push CA

WU-ST-006-DigiLED-Push CA (Ref. No.: 186144)



A New Lighting Experience

1 Introduction

1.1 Product Description

DigiLED Push CA is designed to enable individual colour control of LED modules used in the CA assembly system. An externally connected push-button enables simple operation. The DigiLED Push CA system control unit forms part of the CA LED assembly system and enables colour and light control of High- and/or Low Power RGB LED assembly modules that are constructed according to the "Common Anode (CA)" principle.

2 Description of Functions

2.1 Functional Characteristics

DigiLED Push CA generates three PWM signals for colour control of LED modules.

The three PWM signals are addressed using an externally connected bush-button and a pre-programmed colour sequence.

The following DigiLED Push CA functions can be adjusted:

- Calling up a colour sequence with three freely adjustable colour sequence speeds
- Calling up and saving a colour value (chromaticity) of the colour sequence

After mains voltage dis- and reconnection, DigiLED Push will restart with the last saved function (colour sequence or set colour value).

2.2 Description of push-button functions

DigiLED Push CA can be connected to a standard external push-button to enable the following functions:

a) Push < 1sec:

- Switches the device on: the colour that was last saved will be activated.
- Stops the colour sequence and saves the current colour value: briefly pushing the push-button during the course of a colour sequence (see b) will stop the sequence so that the current colour is saved.
- Switching the device off: after pausing the colour sequence the device can be switched off by again briefly pressing the keypad.

b) Push and hold > 2sec:

Pushing and holding (>2s) causes the connected LED module to flash twice in succession (2 x 0.75s) in the single colours red (channel 1), green (channel 2) and blue (channel 3).

If the key is released while the individual colours are flashing, the programmed colour sequence will be activated (see Fig. 1) with the cycle time allocated to the respective flashing colour.

red: 40s colour sequence cycle time

green: 120s colour sequence cycle time

blue: 240s colour sequence cycle time

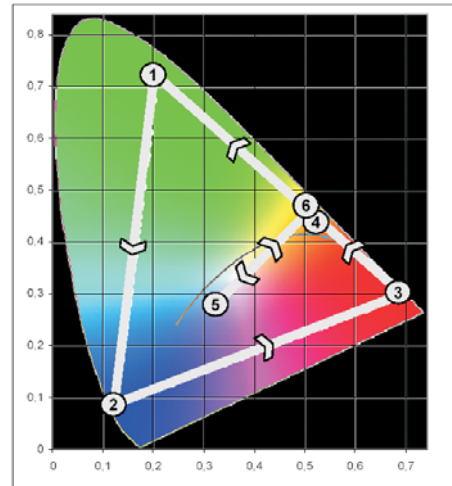
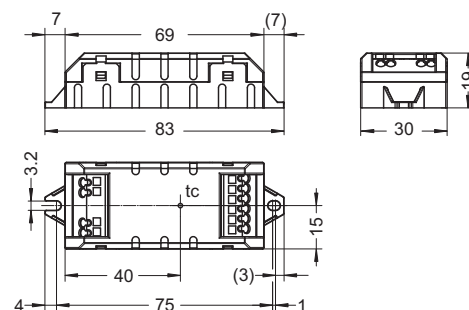


Fig. 1

3 Technical Specifications

Operating voltage	11 to 25 V DC, $U_{OUT} = U_{IN}$
Current draw	max. 5 A \pm 5%
Fuse	T4 A 250 V microfuse
Connection	4-pin push-in terminal for LED assembly modules 2-pin push-in terminal for operating voltage 2-pin push-in terminal for bush-button
Ambient temperature	-20°C to +45°C
tc point	max. 55 °C
Humidity	Protection class IP 20
Casing	Plastic, PA, white
Dimensions (LxWxH)	90 x 30 x 19 mm
Weight	21g

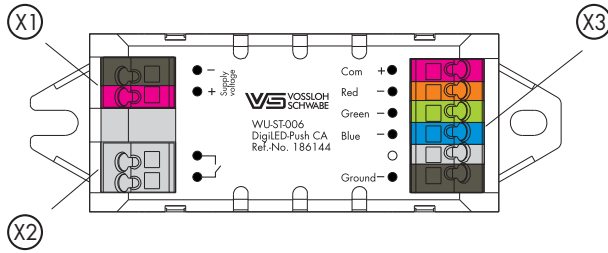


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4 Terminal Connections



4.1 Terminal Strip Input Voltage (X1)

Pole	Colour Coding	Max. Current-Carrying Capacity	Function	Recommended Lead	Connection
1	• Black	5 A	Supply line converter (GND)	Standard two-strand lead	DC converter
2	• Red	5 A	Supply line converter (+)	(0.25–1.5 mm ²)	

4.2 Terminal Strip for Keypad (X2)

Pole	Colour Coding	Max. Current-Carrying Capacity	Function	Recommended Lead	Connection
1	• Grey	n.a.	Connecting terminal for external keypad	Standard two-strand lead	Keypad*
2	• Grey	n.a.	Connecting terminal for external keypad	(0.25–1.5 mm ²)	

* Push-button specification: $U_{max} = 24\text{ V}$; $I_{max} = 5\text{ mA}$; total resistance push-button + cable: $R < 1\text{ k}\Omega$

4.3 Terminal Strip for Module Connection (X3)

Pole	Colour Coding	Max. Current-Carrying Capacity	Function	Recommended Lead	Connection
1	• Red	5 A	Supply line for LED modules (+)	Standard four-strand lead (0.25–1.5 mm ²) e.g. LIYY 4x0,75 mm ² or	LED assembly modules or module groups: EasyLED RGB, MarkerLED RGB LEDLine Flex RGB LEDLine 300/150 RGB
2	• Orange	1,25 A	PWM signal line for channel 1/Red		
3	• Green	1,25 A	PWM signal line for channel 2/Green		
4	• Blue	1,25 A	PWM signal line for channel 3/Blue	Direct connection to LED modules	
5	• Grey	Unassigned	Unassigned		
6	• Black	5 A	Supply line for LED modules (GND)		

5 DigiLED Push Connections

5.1 Input

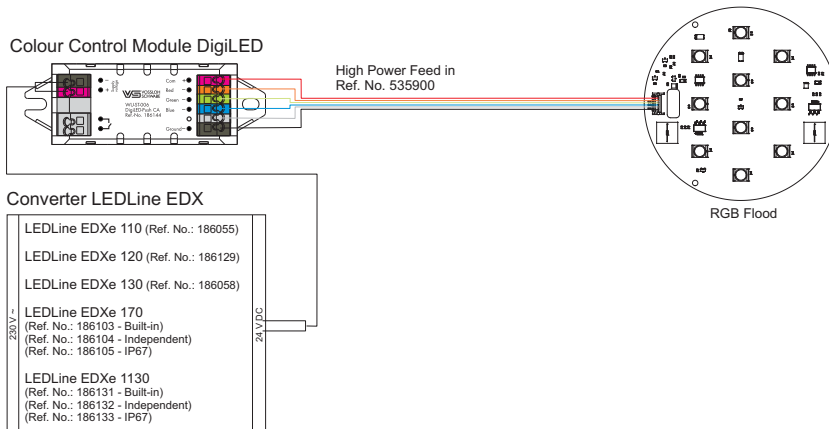
Voltage supply: DigiLED Push CA must be supplied with voltage via terminal X1.

Keypad connection: the external push-button is connected to terminal X2 (polarity insensitive).

5.2 Output

5.2.1 Connection of HighPower 24 V RGB(W) LED Assembly Modules

a) The feed in cable (Ref. No. 535900) must be used to connect a HighPower RGB LED assembly module. For direct connection, use terminals 1–6 at X3 of the DigiLED Push CA. Correct polarity (colour coding) must be ensure in accordance with table 4.3



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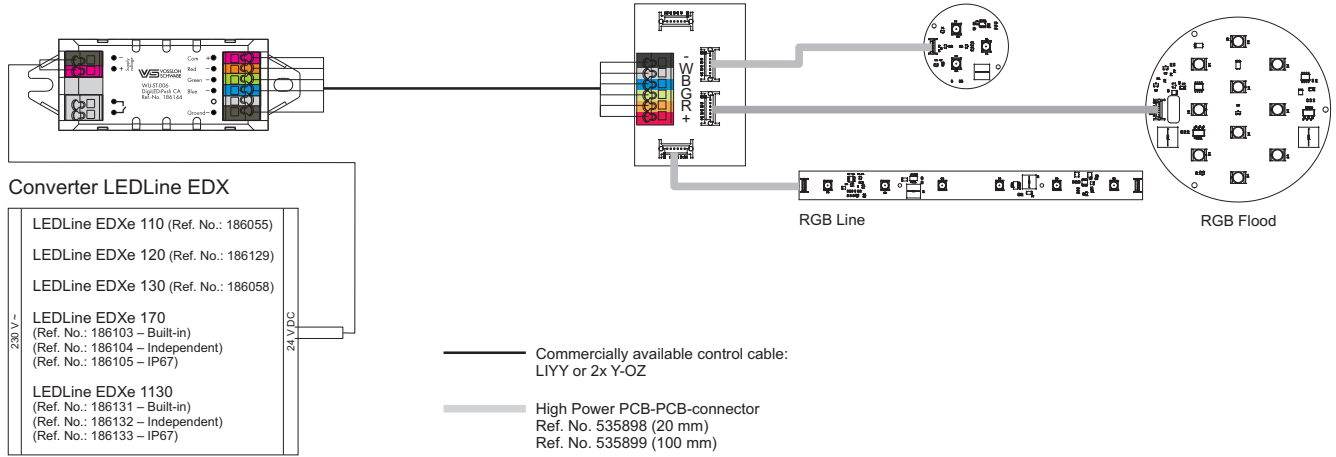
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b) To connect several HighPower RGB LED assembly modules, the PCB distributor (Ref. No. 186141) must be connected to DigiLED Push CA using a standard six-strand lead (LIYY 6X0.75 mm²).

Correct polarity (colour coding) must be ensured in accordance with table 4.3. LED assembly modules are connected to the PCB distributor using flatband cables (Ref. No. 535898 or 535899).

Colour Control Module DigiLED Push CA



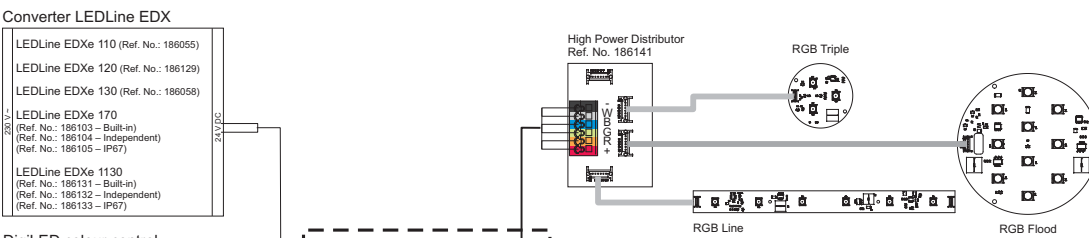
The maximum number of connected LED assembly modules is limited by the power rating of the converter and by the max. current load of the outputs in accordance with table 4.3. The power and current draw values of the connected LED assembly modules as well as connection cable and PCB distributor data can be found in the respective data sheets at www.vsoptoelectronic.com.

The maximum power rating for a DigiLED Push CA unit totals 120 W.

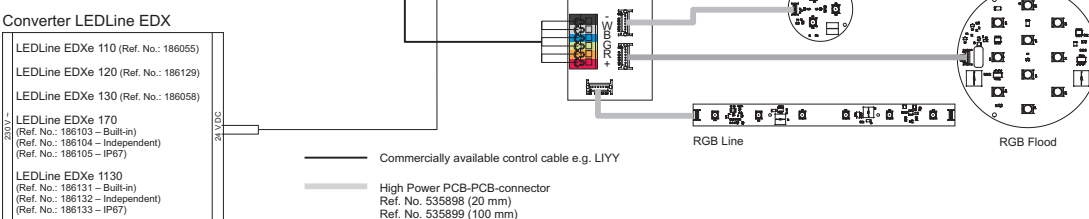
c) System performance can be extended beyond 120 W using slave boards to feed in additional power.

Functional descriptions and terminal connections for slave boards can be found in the respective data sheets at www.vsoptoelectronic.com.

Voltage Supply by first Converter



System Expansion by High Power Slave PCB and additional Converter



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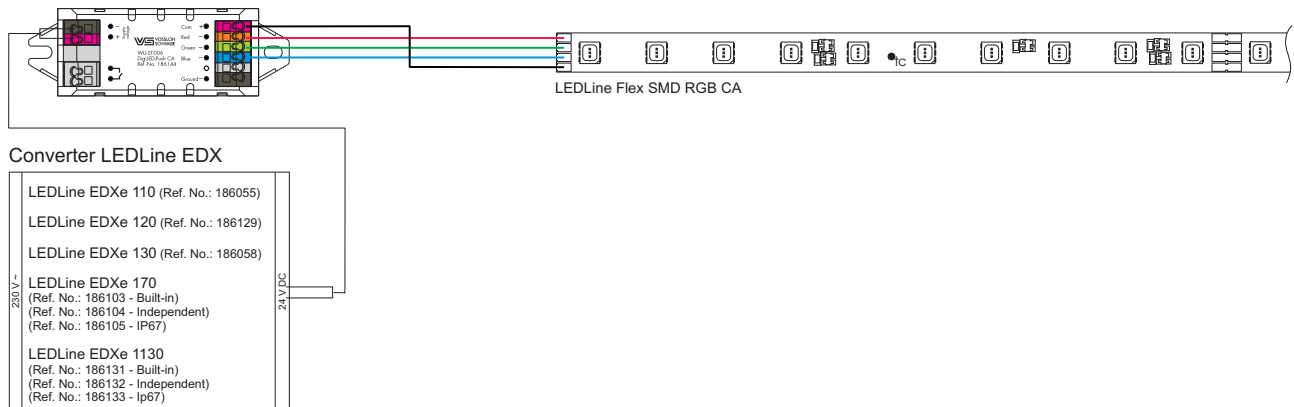
5.2.2 Connection of LowPower RGB CA Assembly Modules

LowPower RGB CA LED assembly modules with four connection elements (+RGB) can be directly connected to DigiLED Push CA via poles 1–4 at X3 under observation of the permissible power rating. Compliance with the colour coding (polarity) detailed in table 4.3 must be ensured.

The maximum number of connected LowPower LED assembly modules is limited by the power rating of the connected converter and the maximum current load of pole 1–4 at X3 (sum: 90 W) in accordance with table 4.3. The power and current draw values of the connected LED assembly modules can be found at www.vs-optoelectronic.com.

The maximum power rating with which a DigiLED Push CA unit can be operated totals 90 W. System performance can be extended by connecting further DigiLED Push CA units.

Colour Control Module DigiLED Push CA



6 Notes on Installation and Safe Operation

6.1 Installation

Installation must be carried out under observation of the relevant regulations and standards. DigiLED Push CA devices are designed for operation within a casing or luminaire. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advice must be observed; non-observance can result in the destruction of the components, fire and/or other hazards:

- DigiLED Push CA is exclusively designed for operating common cathode LED modules.
- The load range of the connected converter must be observed
- The maximum output currents specified in table 4.3 must not be exceeded
- The temperature measured at the t_c point must not exceed the specified limit ($t_{c,max} = 55^\circ\text{C}$) during operation.

6.2 Assembly

- Installation any way up
- Installation only in dry rooms or luminaires, box casings or similar. If DigiLED Push CA is to be installed outdoors or in a damp location, a casing of a suitable protection class (IP) must be used
- Attach using 3 mm or 4 mm screws
- Ensure solid and even surface for unit to rest on.

7 Standards

7.1 Applied standards

- EN 61347-1
- Lamp controlgear – Part 1: General requirements and tests (IEC 61347-1:2000);
- German Version EN 61347-1:2001
- EN 61347-2-11
- Lamp controlgear – Part 2-11: Particular requirements for miscellaneous electronic circuits used with luminaires (IEC 61347-2-11:2001);
- German Version EN 61347-2-11:2001
- EN 55015
- Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

7.2 Standards to adhere

- EN 61347-2-13
- Lamp controlgear – Part 2-13: Particular requirements for D.C. or A.C. supplied electronic controlgear for LED modules
- EN 62384
- D.C. or A.C. supplied electronic control gear for LED modules – Performance requirements