

# DigiLED Slave CA

WU-ST-002-DigiLED-Slave CA (Ref. No.: 186142)

## 1 Introduction

### 1.1 Product Description

DigiLED Slave CA units form part of 24 V CA LED assembly systems and are designed to increase the output of "common anode (CA)" RGB(W) LED modules.

The active slave outputs are particularly suitable for low-power LED modules (e.g. LEDLine Flex RGB CA) that use the individual channels (RGBW) for power supply purposes.

## 2 Description of Functions

### 2.1 Functional Characteristics

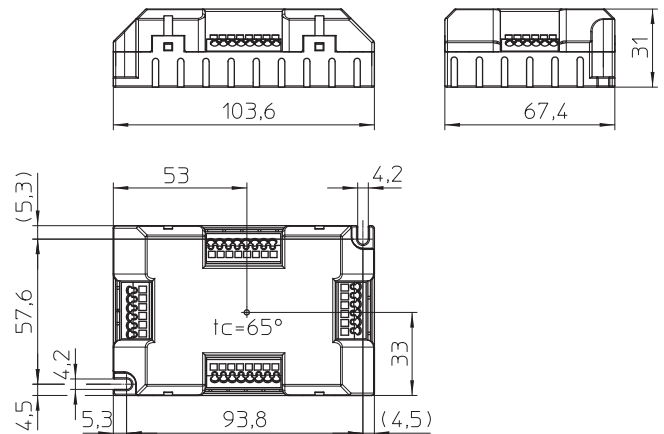
A DigiLED Slave CA unit processes four PWM input control signals to enable colour control of LED modules within a 24 V CA LED assembly system.

The control signals can be used by every model of the DigiLED CA series.

The four PWM signals are internally amplified and supplied to two slave outputs. Amplification is achieved by additional 24 V converters that supply the power for the slave outputs.

In addition, the input signal is connected directly through (i.e. without further conversion or amplification) to the output terminal.

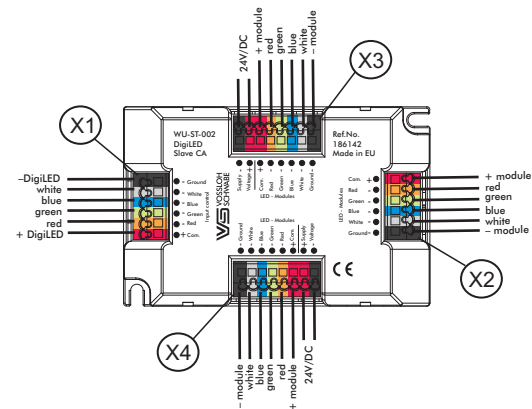
Each of the two slave outputs is capable of delivering an output current of 1.25 A per channel. The power output per channel at the respective output terminals must not exceed the maximum rating of 30 W.



## 3 Technical Specifications

Operating voltage	23 to 25 V DC
Current draw	at Slave terminals (X2/X3): max. 5 A ± 5 %
Fuse	T5 A 250 V microfuse
Connection	6-pin push-in terminal for input and output signal (see Table of Terminal Connections) 8-pin push-in terminal for Slave operation voltage and LED assembly modules of 24 V CA system (see Table of Terminal Connections)
Ambient temperature	-20 °C to +45 °C
T <sub>c</sub> point	max. 65 °C
Degree of protection	IP20
Casing	Plastic, PC, white
Dimensions (LxWxH)	103.6 x 67 x 31 mm
Weight	100 g

## 4 Terminal connections



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## 4.1 Terminal Strip for 24 V (X1)

Pole	Colour Coding	Max. Current-carrying Capacity	Function	Recommended Lead	Connection
1	• Red	5 A	Common anode of CA system (+24 V)	Standard six-strand lead (e.g.: IYY 6x0.75 mm <sup>2</sup> )	DigiLED CA output signal  or Signal of PCB distributor or Slave PCB for 24 V CA system
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		
5	• Grey	1.25 A	PWM signal line for channel 4/White		
6	• Black	5 A	Cathode of CA system		

## 4.2 Terminal Strip Output (X2)

Pole	Colour Coding	Max. Current-carrying Capacity	Function	Recommended Lead	Connection
1	• Red	5 A	= Signal to X1 (Common anode of CA system (+24 V))	High Power feed in cable (Ref. No.: 535900)  or Standard six-strand lead (e.g.: IYY 6x0.75 mm <sup>2</sup> )	LED assembly modules or module group for 24 V CA system, esp. LEDLine Flex RGB2  or PCB Distributor or Slave PCB for 24 V CA system
2	• Orange	1.25 A	= Signal to X1 (PWM signal line for channel 1/Red)		
3	• Green	1.25 A	= Signal to X1 (PWM signal line for channel 2/Green)		
4	• Blue	1.25 A	= Signal to X1 (PWM signal line for channel 3/Blue)		
5	• Grey	1.25 A	= Signal to X1 (PWM signal line for channel 4/White)		
6	• Black	5 A	= Signal to X1 (Cathode of CA system) Must not be used with LED modules that use the individual channels (RGBW) for power transmission purposes (e.g. LEDLine Flex RGB2 CA).		

## 4.3 Terminal Strip Slave 1 (X3)

Pole	Colour Coding	Max. Current-carrying Capacity	Function	Recommended Lead	Connection
1	• Black	5 A	Supply line for optional 24 V converter (GND)	Standard two-strand supply lead 0.5–1.5 mm <sup>2</sup>	24 V DC converter
2	• Red	5 A	Supply line for optional 24 V converter (+24 V)		
3	• Red	5 A	Supply line/Common anode for LED assembly module (+24 V)	Standard six-strand lead (e.g.: IYY 6x0.75 mm <sup>2</sup> )	LED assembly modules or module group for 24 V CA system, esp. LEDLine Flex RGB2  or PCB Distributor or Slave PCB for 24 V CA system
4	• Orange	1.25 A	PWM signal line for channel 1/Red		
5	• Green	1.25 A	PWM signal line for channel 2/Green		
6	• Blue	1.25 A	PWM signal line for channel 3/Blue		
7	• Grey	1.25 A	PWM signal line for channel 4/White		
8	• Black	5 A	Supply line/cathode for LED assembly module (GND) Must not be used with LED modules that use the individual channels (RGBW) for power transmission purposes (e.g. LEDLine Flex RGB2 CA).		

## 4.4 Terminal Strip Slave 2 (X4)

Pole	Colour Coding	Max. Current-carrying Capacity	Function	Recommended Lead	Connection
1	• Black	5 A	Supply line for optional 24 V converter (GND)	Standard two-strand supply lead 0.5–1.5 mm <sup>2</sup>	24 V DC converter
2	• Red	5 A	Supply line for optional 24 V converter (+24 V)		
3	• Red	5 A	Supply line/Common anode for LED assembly module (+24 V)	Standard six-strand lead (e.g.: IYY 6x0.75 mm <sup>2</sup> )	LED assembly modules or module group for 24 V CA system, esp. LEDLine Flex RGB2  or PCB Distributor or Slave PCB for 24 V CA system
4	• Orange	1.25 A	PWM signal line for channel 1/Red		
5	• Green	1.25 A	PWM signal line for channel 2/Green		
6	• Blue	1.25 A	PWM signal line for channel 3/Blue		
7	• Grey	1.25 A	PWM signal line for channel 4/White		
8	• Black	5 A	Supply line/cathode for LED assembly module (GND) Must not be used with LED modules that use the individual channels (RGBW) for power transmission purposes (e.g. LEDLine Flex RGB2 CA).		

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## 5 DigiLED Slave CA Connections

### 5.1 Input X1

The X1 input terminal (terminal connections in accordance with the table at 4.1) serves to supply the signals of an existing DigiLED CA (see example of a system shown at 5.3). Input signals can also stem from a different DigiLED Slave CA.

### 5.2 Output X2

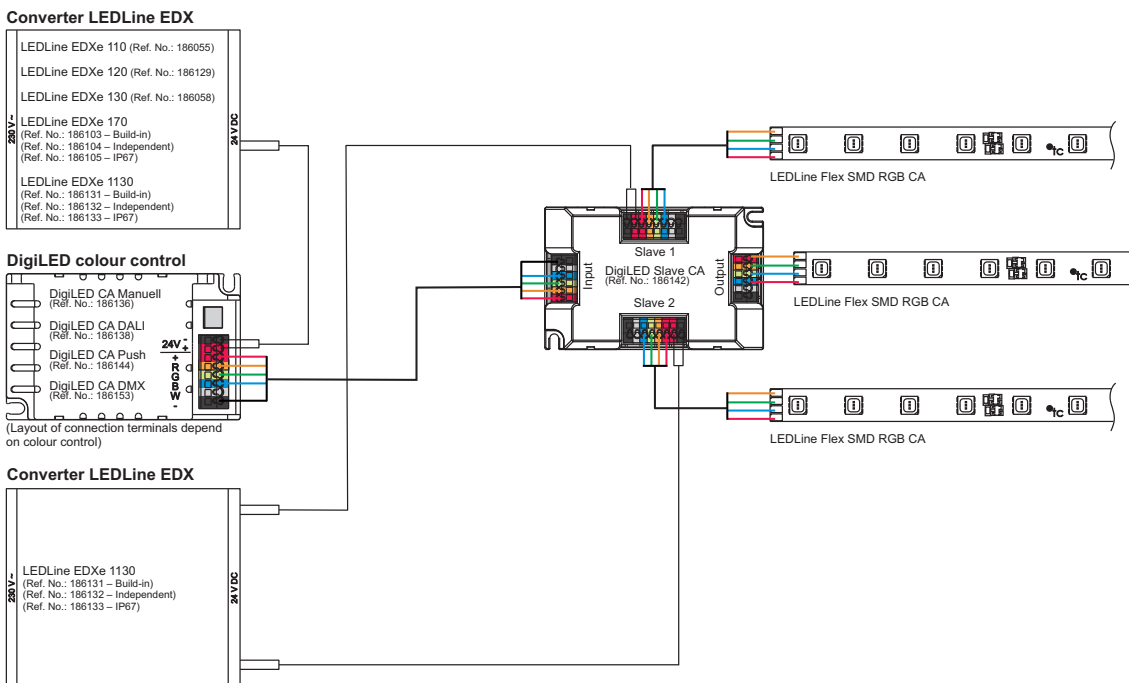
Output X2 supplies the same signals that are at input X1 in unchanged (i.e. not amplified) form to terminal X2: Input = Output.

### 5.3 Slave 1 (X3) and Slave 2 (X4)

The X3 and X4 slave terminals amplify the power of the signals supplied to X1. The power can be amplified up to 1.25 A per colour channel (see terminal connections in accordance with the tables at 4.3 and 4.4).

Suitable 24 V converters need to be used to make the additional power available at the slave terminals (X3 and X4). To this end, the installed 24 V converter must supply the power of the installed LED load (max.  $4 \times 1.25 \text{ A} \times 24 \text{ V} = 120 \text{ W}$ ). The maximum permissible currents per individual terminal in accordance with the tables shown at 4.2 and 4.3 must not be exceeded.

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. The power and current draw values of the connected LED assembly modules can be found in the respective data sheets at [www.vs-optoelectronic.com](http://www.vs-optoelectronic.com).



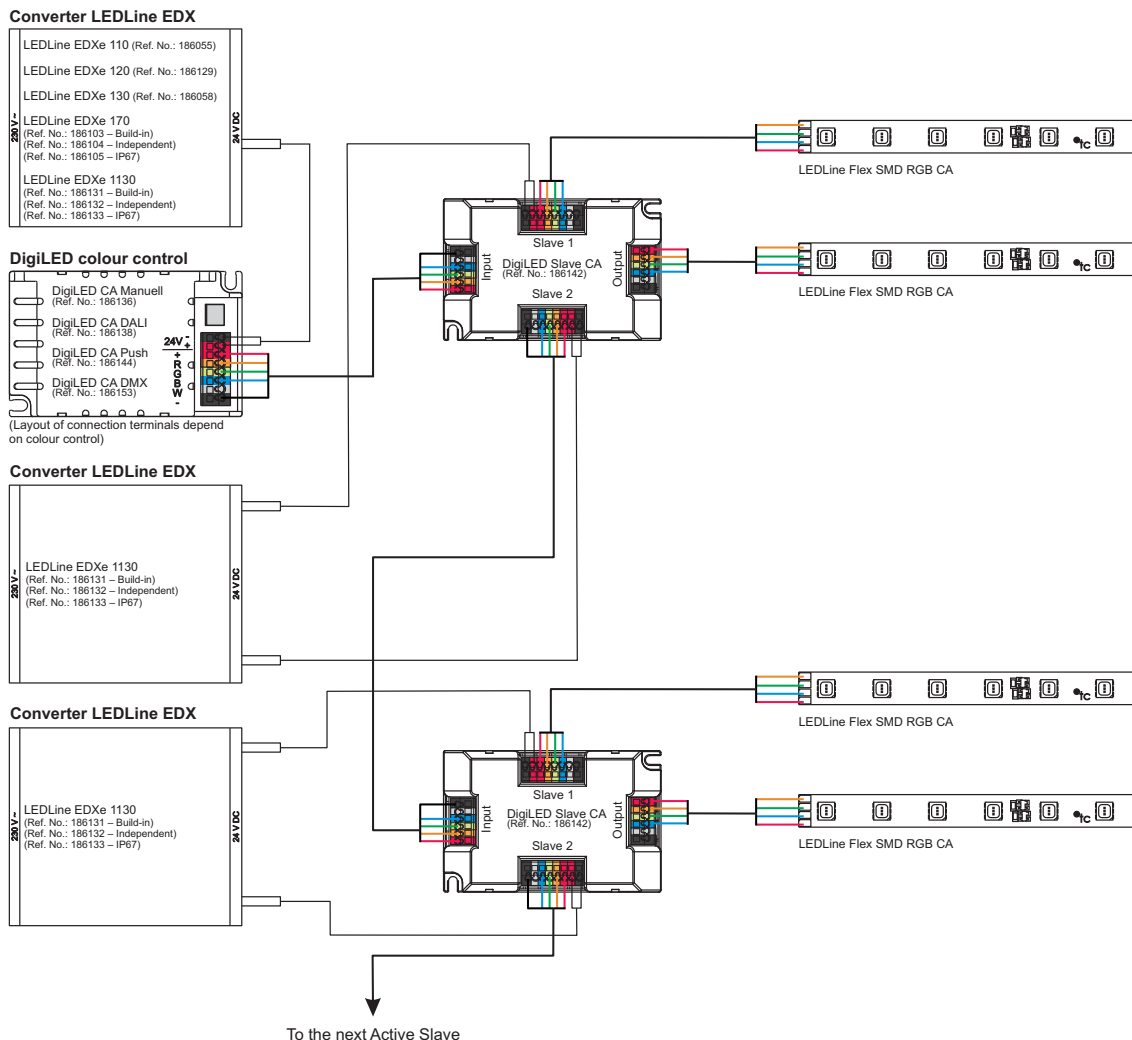
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## 5.3 Slave 1 (X3) and Slave 2 (X4)

Overall system rating can be increased by adding further DigiLED Slave CA modules. As shown in the diagram, each further slave must be connected to an amplifying output (X3 or X4) of the preceding slave.



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## 6 Notes on Installation and Safe Operation

### 6.1 Installation

Installation must be carried out under observation of the relevant regulations and standards. The components of the 24 V CA system 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 Slave CA is exclusively designed for operating 24 V Common-Anode LED modules.
- The load range of the connected 24 V converter must be observed.
- The maximum output currents specified in topic 4 must not be exceeded.
- The temperature measured at the  $t_c$  point must not exceed the specified limit ( $t_c \text{ max.} = 65^\circ\text{C}$ ) during operation.

### 6.2 Assembly

- Installation any way up
- Installation only in dry rooms or luminaires, box casings or similar. If DigiLED Slave CA is to be installed outdoors or in a damp location, a casing of a suitable protection class (IP) must be used
- Attach using 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

amp 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