

## LCV 100W 24V 4CH KNX SR

LED Driver Constant Voltage 24V KNX 4 channels



### Highlights

- Independent dimmable LED-driver for constant voltage 24 VDC
- KNX certified according to requirements of KNX specifications v2.1.
- 4 independent output channels
- Optimal for Tunable White, RGB and RGBW applications
- High resolution dimming range 0.1 – 100 %
- Max. output power 100 W (24 VDC)
- Typ. efficiency > 90 %
- Nominal life-time up to 50,000 h
- 5-year warranty

### Applications

- General Lighting
- Linear Lighting
- Accent Lighting

### Housing

- Polycarbonate White
- Built-in strain relief on primary side
- Screw Terminals 0.5 - 2.5 mm<sup>2</sup>
- Integrated programming buttons
- Status LED
- Type of protection IP20

### Technical data

Rated supply voltage, AC ①	100 – 240 VAC
AC voltage range	90 – 277 VAC
Mains frequency	47 – 63 Hz
Typ. current (at 230 V, 50 Hz, full load)	500 mA
Max input power	115 W
Typ. efficiency (at 230 V / 50 Hz / full load) ②	90%
λ (at 230 V, 50 Hz, full load)	0,985
Typ. power input on stand-by ③	3,4 W
Typ. input current in no-load operation	29 mA
In-rush current (peak / duration)	80 A / μs
Mains surge capability (between L – N)	2 kV
THD (at 230 V, 50 Hz, full load)	< 10 %
Time to light (at 230 V, 50 Hz, full load)	< 2 s
Turn off time (at 230 V, 50 Hz, full load)	< 0,8 s
Output voltage tolerance	0,5 VDC
Output LF voltage ripple (< 120 Hz)	3 %
Max. output voltage (no-load voltage)	24,6 VDC
Dimming frequency (PWM)	500 Hz
No of dimming channels	4
Max Load per dim channel	1,05 – 4,16 A
Min Load per driver	0,2 A
Asymmetric load permitted	Yes
No-load operation permitted	Yes
Dimming range	0.1 – 100 %
KNX Bus Voltage range	21 – 30 VDC
Ambient temperature, t <sub>a</sub>	-20...+45 °C
Max. casing temperature, t <sub>c</sub>	75 °C
Humidity	20 – 90 %
Storage temperature	-40...+80 °C
Weight	440 g
Dimensions LxWxH	244 x 64 x 32 mm

① Valid at 100 % dimming level

② Depending on the KNX traffic at the interface

③ Operating outside the supply voltage window leads to an overload of the driver. This may result in a significant reduction in lifetime or even destruction of the dimmer.



### Standards

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### Application Features

- Switch lights ON / OFF
- Dim lights (Relative & Absolute)
- Timer programming
- Staircase lighting function
- Scene management
- Colour cycle and sequence management
- Status & error reporting

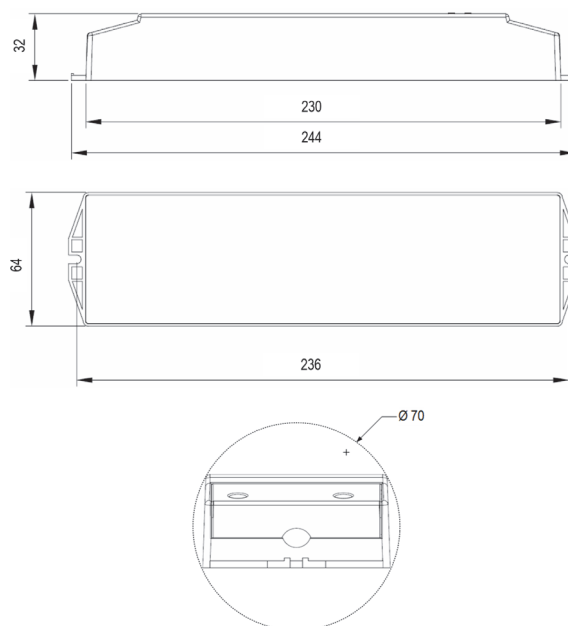
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### Manual & Installation Guidelines

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### Ordering data

Type	Article code	Packaging Carton	Packaging Pallet
LCV 100W 24V 4CH KNX SR	W7102	20	200



## Standards

- EN 55015
- EN 61000-3-2
- EN 61000-3-3
- EN 61347-1
- EN 61347-2-13
- EN 61547

## Thermal behaviour

Storage Temperature	-30/+80 °C
Operating Temperature	-30/+45 °C
Tc max	75 °C

## Life-time

Ambient Temperature (Ta)	Reference Temperature (Tc)	Life-time
25 °C	55 °C	> 80,000 h
30 °C	60 °C	> 70,000 h
35 °C	65 °C	> 60,000 h
45 °C	75 °C	50,000 h

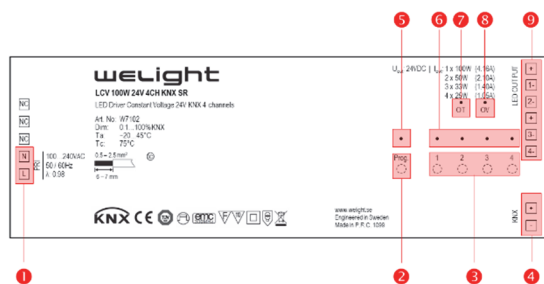
The LED Driver is designed for a life-time stated above under reference conditions and with a failure probability of less than 10 %. The relation of tc to ta temperature depends on the installation conditions.

**⚠** The temperature on the reference point of the LED Driver (tc) may under no circumstances be higher than 75 °C if the expected lifetime of the dimmer is to be met.



Compliance with the maximum permissible reference temperature at the tc point must be checked under operating conditions in a thermally stable state. The maximum value must be determined under worst-case conditions for the relevant application.

## Function & connection elements



- 1 Mains Supply Input. Range 100 – 240 VAC
- 2 Programming Pushbutton. Switch between normal and programming mode.
- 3 Manual Control Pushbuttons. Short press output ON/OFF | Long press DIM.
- 4 KNX Bus Connection terminal. Red = + (positive) | Black = - (negative)
- 5 Operating Mode Indicator. Green = Normal | Red = Programming mode
- 6 Output Status Indicator. ON = Output active | OFF = Output inactive
- 7 Over Temperature Indicator. ON = Too hot (Tc > 75°C) | OFF = OK
- 8 Over Voltage Indicator. ON = Over Voltage or Short-circuit | OFF = OK
- 9 LED Output Terminals 1-4. Load Range 5 – 100 W. Asymmetric loads permitted.

## No-load operation

The LED Driver will not be damaged in no-load operation. The output will be deactivated and is therefore free of voltage. If a LED load is connected the device must be restarted before the output will be activated again.

## Overttemperature protection

The LED Driver is protected against temporary thermal overheating. If the temperature limit is exceeded the LED module(s) are dimmed to reduce operating temperature. The temperature protection is activated at tc max.

## Short-circuit behaviour

In case of a short-circuit at the LED output the LED is switched off. After restart of the LED Driver the output will be activated again.

## Voltage protection

If the supply voltage range is outside the range 100-240 VAC the LED Driver turns off the LED output. After restart of the LED Driver the output will be activated again.

## Overload protection

If the connected load per channel is > 4,16 A and/or the total load per driver is < 0.2 A or > 4,16 A the LED Driver turns off the LED output. After restart of the LED Driver the output will be activated again.

## Range and asymmetric load

The LED Driver supports asymmetric load between channel 1-4 on the secondary side if the total load per driver is ≥ 0.2 A and ≤ 4,16 A.

## Wire type and cross section

Stranded wire or solid wire up to 2.5 mm<sup>2</sup> may be used for wiring. Strip 6-7 mm of insulation from the cables to ensure perfect operation of the push terminals. Use one wire for each terminal connector only. For the strain relief to work properly the outer dimension of the cable should be between 7 – 12 mm. The LED wiring should be kept as short as possible to ensure good EMC. If the secondary cable length is longer than 2 m (4 m circuit), it is recommended to use a screened cable type, e.g. LiCY 2 x 2.5 mm<sup>2</sup>.

## Calculating Voltage Drop

When calculating the recommended cable area for your low-voltage connections the maximum permitted voltage drop is 1 V. Please make sure you consider the total length, i.e. including the length of your LED-strip in your voltage drop calculation.

## Secondary switching & Hot plug-in

Secondary switching and hot plug-in is not allowed due to the risk of arcing effects on the secondary side which can lead to malfunction or irreparable damage.

## Maximum loading of automatic circuit breakers

Type	C10	C13	C16	C20
Max no of Drivers	16	20	26	32

## KNX Configuration & Commissioning

Configuration and commissioning of the device require the use of the ETS® (Engineering Tool Software) program V4 or later releases. These activities must be carried out according to the design of the building automation system done by a qualified planner.

## CONFIGURATION

For the configuration of the device parameters the corresponding application program must be loaded in the ETS program. The ETS program is available for download at [www.knx.org](http://www.knx.org). To configure and commission the device you need ETS4 or later releases and the proper [weight@application-program](mailto:weight@application-program) (named `weight_W7102_led_driver_4ch.vd4`); this can be downloaded from the WLK® website [www.wlk.eu](http://www.wlk.eu).

The application program allows the configuration of all working parameters for the device. The device specific application program must be loaded into ETS; at this point, all the instances of the selected device type can be added to the project. For every single device, ETS allows to set the operating parameters individually for each input as described in detail in the chapter <KNX Device Parameters>. The configuration can, and usually will, be performed completely offline; the actual transfer of the programmed configuration to the device takes place in the commissioning phase as described in the next paragraph.