

LCV 100W 24V 1-4CH DMX SR

LED Driver Constant Voltage 24V DMX 1-4 channels

Highlights

- Independent digital dimmable LED-driver for constant voltage 24 VDC
- Select between 1-4 addressable DMX512 channels
- DMX-address can easily be set with integrated display (no programming needed)
- Optimal for White, Tunable White, RGB and RGBW applications
- High resolution dimming range 0.1 – 100 %
- Max. output power 100 W (24 VDC)
- Typ. efficiency > 90 %
- Nominal lifetime up to 50.000 h
- 5-year warranty

Applications

- General Lighting
- Linear Lighting
- Accent Lighting
- Furniture Lighting

Housing

- Polycarbonate White/Cyan
- Built-in strain relief on primary side
- Screw Terminals 0.5 - 2.5 mm²
- Integrated DMX-address selector and display
- Type of protection IP20

Technical data

Rated supply voltage, AC Ⓢ	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)	90 %
λ (at 230 V, 50 Hz, full load)	0,985
Typ. power input on stand-by	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
No of dimming channels	1 – 4 (selectable)
Max Load per dim channel	1,05 – 4,16 A
Min Load per driver	0,2 A
Dimming frequency (PWM)	500 Hz – 30 kHz (selectable)
PWM Output Resolution	8/16 bit (selectable)
Dimming range	0.1 – 100 %
Selectable Dimming Curve	0.1 – 9.9 γ (selectable)
Asymmetric load permitted	Yes
No-load operation permitted	Yes
Ambient temperature, ta	-20...+45 °C
Max. casing temperature, tc	75 °C
Humidity	20 – 90 %
Storage temperature	-40...+80 °C
Weight	440 g
Dimensions LxWxH	244 x 64 x 32 mm

Ⓢ 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.



Dimming Control Interfaces

- DMX512 with RDM bi-directional communication support
- 1-4 DMX addresses

Standards

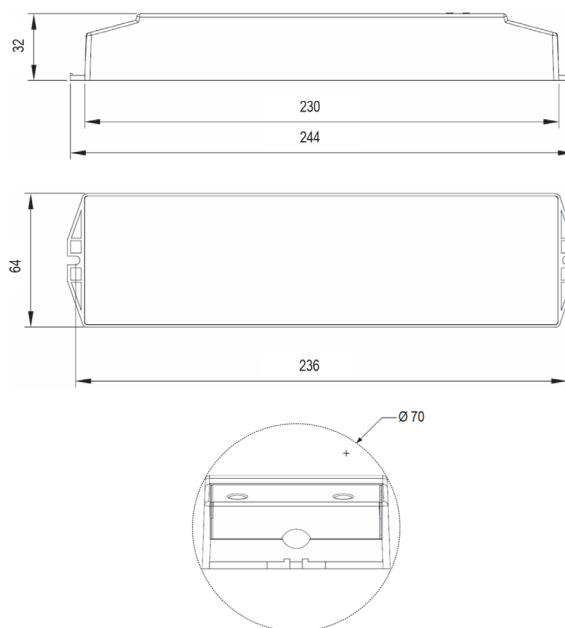
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Wiring & Configuration

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Ordering data

Type	Article code	Packaging Carton	Pallet
LCV 100W 24V 1-4CH DMX SR	W7103	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

Lifetime

Ambient Temperature (Ta)	Reference Temperature (Tc)	Lifetime
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 lifetime 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.

Electrical Protection & Troubleshooting

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.

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. The restart is done via supply voltage reset.

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. The restart is done via supply voltage reset.

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. The restart is done via supply voltage reset.

OVERTEMPERATURE 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 approx. +5 °C above tc max.

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 $\leq 4,16$ A.

Wire type and cross section

Stranded wire or solid wire up to 2.5 mm² 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. LiYCY 2 x 2.5 mm².

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.

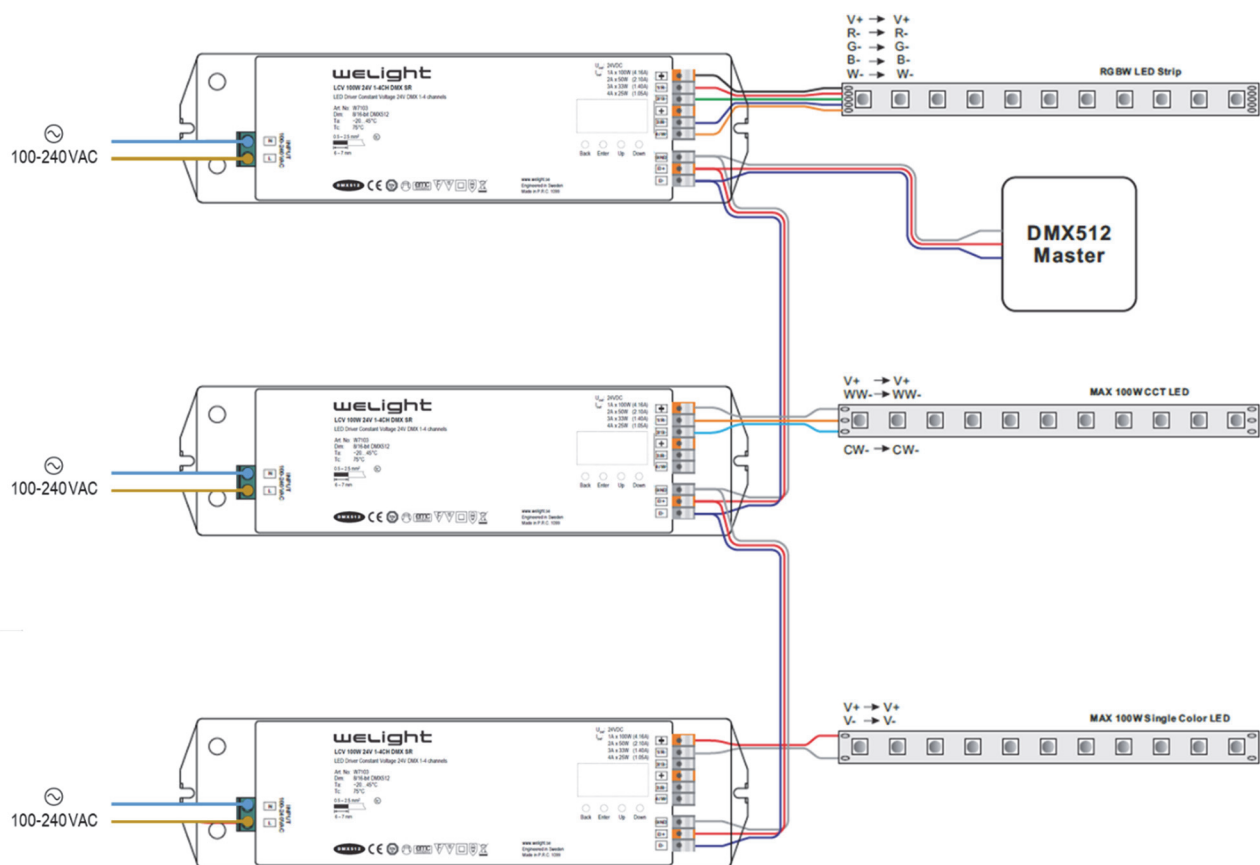
Secondary switching & Hot plug-in

Secondary switching and hot plug-in are 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

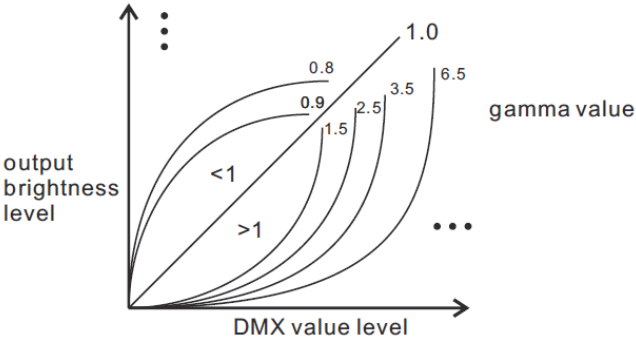
Type	C10	C13	C16	C20
Max no of Drivers	16	20	26	32

Wiring



Configuration

Display	Menu Item	Instruction
	Start Display	After power-on, press the Up-button to select a menu item below and then press Enter to configure settings. Factory Reset: Press and hold Back + Enter together >5 seconds until the displays turns off.
	[A]: DMX Address Setting. Range: 001-512 Factory default: 001	When A is visible in the display, press Enter to configure DMX start address. When the display flashes use Up / Down buttons to set the address. Press Back to save the selected value.
	[CH] DMX Channel Quantity Range: 001-004 Factory default: 004	When CH is visible in the display, press Enter to configure DMX channel quantity. When the display flashes use Up / Down buttons to set the no of channels. Press Back to save the selected value. <u>Example with A = 001:</u> CH01=1 DMX address for all the output channels, output 1-4 has address 001. CH02=2 DMX addresses , output 1, 3 has address 001, output 2, 4 has address 002 CH03=3 DMX addresses, output 1, 2 has address 001, 002, output 3, 4 has address 003 CH04=4 DMX addresses, output 1, 2, 3, 4 has addresses 001, 002, 003, 004
	[bt] DMX Resolution Range: 08 or 16bit Factory default: 16bit	When bt is visible in the display, press Enter to configure DMX resolution. When the display flashes use Up / Down buttons to select 08 or 16 bit. Press Back to save the selected value.

	[PF] PWM Frequency Range: 00 = 500Hz 01 = 1kHz 02 = 2kHz ... 30 = 30kHz Factory default: 1kHz	When PF is visible in the display, press Enter to configure the PWM Frequency. When the display flashes use Up / Down buttons to select the desired value. Press Back to save.
	[gA] Dimming Curve Gamma Value Range: 0.1-9.9 Factory default: 1.5	When gA is visible in the display, press Enter to configure the dimming curve. When the display flashes use Up / Down buttons to select the desired dimming curve. Press Back to save. 
	[dP] DMX Decoding Mode Range: 11-64 Factory default: 11	Only for advanced DMX users. Do not change the setting.

SAFETY INSTRUCTIONS

- EN** Read these instructions carefully before starting the installation and save for future reference. All connections to the device must be made by a qualified electrician or person with the necessary expertise in electrical installation in accordance with relevant rules and standards. Make sure that the mains voltage is disconnected before installation or maintenance.
- SE** Läs dessa instruktioner innan installationen påbörjas och lämna dem vidare till brukaren av anläggningen. All anslutning till enheten får endast utföras av behörig elektriker eller person med kännedom om elektrisk installation i enlighet med gällande regler och standard. Se till att spänningen är frånslagen före installation eller underhåll.
- FI** Lue nämä ohjeet ennen asentamista ja luovuta ohjeet valaisimen seuraavalle käyttäjälle. Kytkenät ohjaimen saa tehdä ainoastaan pätevä sähköasentaja tai sähköasennukset hallitseva henkilö voimassa olevien määräysten ja standardien mukaisesti. Varmista, että jännite on kytketty päältä ennen asennusta ja huoltoa.
- NO** Les disse instruksjonene før du starter installeringen, og gi den deretter videre til anleggets bruker. All tilkobling til enheten skal utføres av godkjent elektriker eller person med nødvendig kunnskap om elektrisk installasjon i henhold til gjeldende forskrifter og standard. Sørg for at strømmen er koblet fra før installering og ved vedlikehold.
- DK** Læs disse anvisninger før du starter installationen og aflever vejledningen til anlæggets bruger. Alle tilslutninger på enheden skal udføres af en autoriseret elinstallatør i overensstemmelse med gældende regler og standarder. Afbryd spænding før installation og vedligeholdelse.