

The LL1-CV-DA DALI dimmable extension unit is designed to be used with the Helvar constant voltage LED drivers, creating solutions for decorative lighting.

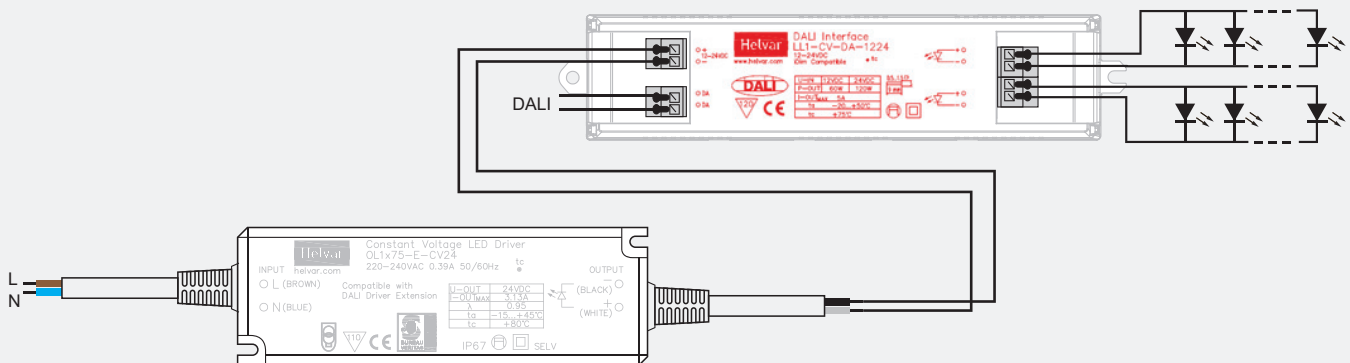
5 A, 12-24 VDC



- DALI control input, 0.1 %-100 % dimming range
- 1 kHz PWM dimming frequency
- Stand-by power < 0.1 W
- Suitable for Class I, II or SELV luminaire and Independent use
- Duplicate terminals for parallel connection
- DALI input is double insulated from input and output



Connections



Note: Output voltage is PWM modulated and equal to CV driver output voltage

Input Characteristics

Voltage range 10.8 - 26.4 VDC

Load Output

Output current (I-OUT) Maximum 5 A*
 Max output power 120 W

	U-IN 12 V	24 V
P-OUT (max)	60 W	120 W
I-OUT (max)	5 A*	5 A*
U-OUT	12 V	24 V

* DALI LED driver extension must be used with power supply with current limiting of max 5A and proper short circuit protection.

Operating Conditions and Characteristics

Max.temperature at tc point 70 °C
 Ambient temperature range -20...+50 °C
 Storage temperature range -40...+80 °C
 Maximum relative humidity no condensation
 Life time 50 000h, at TC max (90 % survival rate)

Connections and Mechanical Data

Wire size 0.5 - 1.5 mm²
 Wire type solid core and fine-stranded
 Maximum driver to LED wire length 5 m
 Weight 70 g
 IP rating IP20

Conformity & Standards

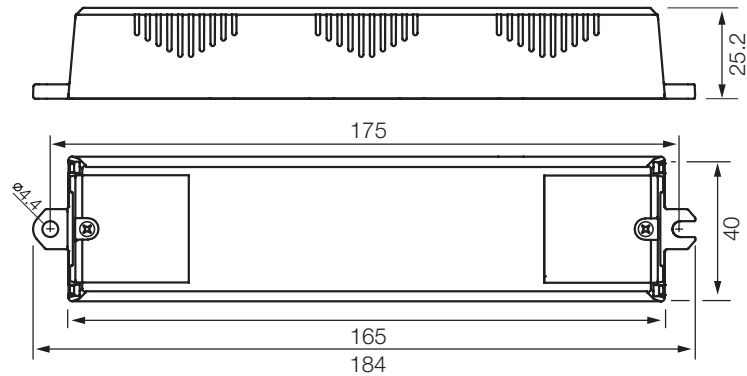
Particular requirements for miscellaneous electronic circuits used with luminaires, acc. to EN 61347-2-11
 Particular safety requirements for d.c. or a.c. supplied electronic controlgear for LED modules, acc. to EN 61347-2-13
 Radio Frequency Interference, acc. to EN 55015
 Immunity standard, acc. to EN 61547
 Performance requirements, acc to EN 62384
 Digital addressing lighting interface (DALI) ** EN 62386-207

Compliant with relevant EU directives
 CE marked

** with additional extensions

CV-driver and LL1-CV-DA compatibility must be checked separately

Note: See page 2 for dimensions



The LL1-CV-DA DALI LED driver extension is suited for either in-built and independent luminaire usage. In order to have safe and reliable LED driver and LED driver extension operation, the LED luminaires will need to comply with the relevant standards and regulations (e.g. IEC/EN 60598-1). The LED luminaire shall be designed to adequately protect the LED driver and the LL1-CV-DA DALI LED driver extension LED driver extension from dust, moisture and pollution. The luminaire manufacturer is responsible for the correct choice and installation of the LED drivers according to the application and product datasheets and with LL1-CV-DA specifications. Specifications of the LED drivers may never exceed the operating conditions as per the product datasheets.

Wiring considerations

Wire type and cross section

- Please refer to datasheets connections & mechanical data

Wiring insulation

- According to recommendations in EN 60598

Maximum wire lengths

- Please refer to datasheets connections & mechanical data

Wire connections

- Please refer to datasheets connections diagram

Miniature Circuit Breakers (MCB)

- Type-C MCB's with trip characteristics in according to EN 60898 are recommended.

LED driver earthing

- LED drivers are designed to support different luminaire classifications, like Class I or Class II fittings (no earth required). Please check the individual LED driver type for its exact safety class rating.
- For Helvar LED drivers to have a reliable operation and EMC performance, the luminaires are expected to have an earth connection.
- When using a SELV-rated LED driver, then the SELV driver output and the LL1-CV-DA output has to be insulated from the luminaire earth connection (ref. EN60598-1 luminaire standard).

Installation & operational considerations

LL1-CV-DA is fully SELV if it is used in combination of SELV rated CV power supply. It is recommended to use Helvar CV power supply.

Maximum tc temperature

- Reliable operation and lifetime is only guaranteed if the maximum tc point temperature is not exceeded under the conditions of use.

Strain Relief for independent use

- The LL1-CV-DA allow use both inside the luminaire and outside the luminaire, via the built-in strain relief. The strain relief provides reliable fastening method for the mains and LED output wiring.
- Ensure that the LL1-CV-DA DALI LED driver extension does not exceed temperature higher than specified on the product datasheets.
- The general preferred installation position of LL1-CV-DA DALI LED driver extension is to have the top cover facing upwards.