

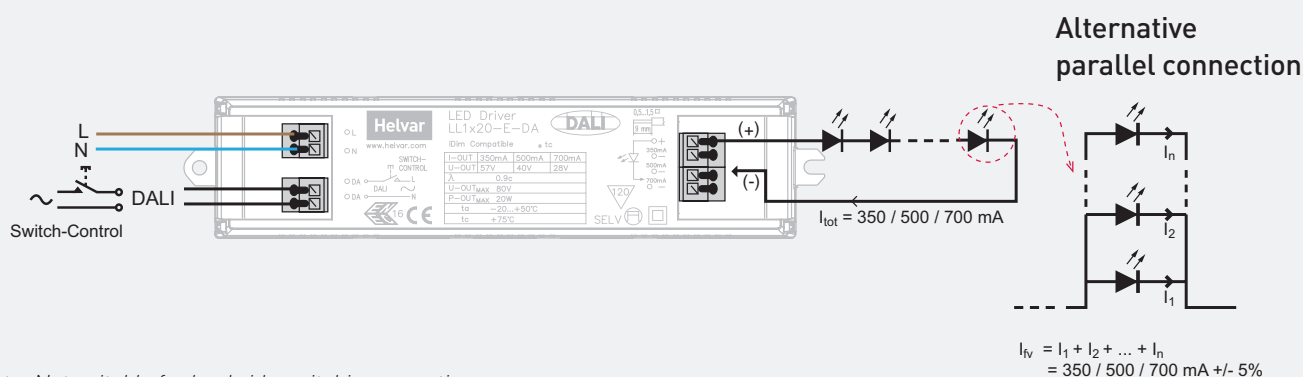
1x20 W Dimmable DALI LED driver

- Selectable constant current output: 350 / 500 / 700 mA
- Maximum 20 W load
- DALI control input, 1 %-100 % dimming range
- Protected up to 4 kV power network fast transients
- High efficiency, 0.88
- iDim compatible

20 W 220 - 240 V, 50 - 60 Hz



Connections



Note: Not suitable for load side switching operation.

Mains Characteristics

Voltage range	198 - 264 VAC
DC range	176 - 280 VDC,
	starting voltage > 190 VDC
Max mains current at full load	0.10 - 0.14 A
Frequency	0 / 50 - 60 Hz
U-OUTmax (abnormal)	80 V
Stand-by power	< 1 W

Load Output

Output current	350 / 500 / 700 mA
Max output power	20 W
Efficiency, at full load, typical	≥ 0.88

I-OUT	350 mA	500 mA	700 mA
P-out (max)	20 W	20 W	19.6 W
U-OUT	10-57 V	10-40 V	10-28 V
λ	0.90c	0.90c	0.90c
$\eta @ \text{max}$	0.88	0.85	0.84

Operating Conditions and Characteristics

Max. temperature at tc point	75 °C
Ambient temperature range	-20...+50 °C
	(* Independent use $t_{a \text{ max}} = +45 \text{ °C}$)
Storage temperature range	-40...+80 °C
Maximum relative humidity	no condensation
Life time	50 000 h, at TC max
	(90 % survival rate)

Connections and Mechanical Data

Wire size	0.5 - 1.5 mm ²
Wire type	solid core and fine-stranded
Maximum driver to LED wire length	5m
Weight	110 g
IP rating	IP20

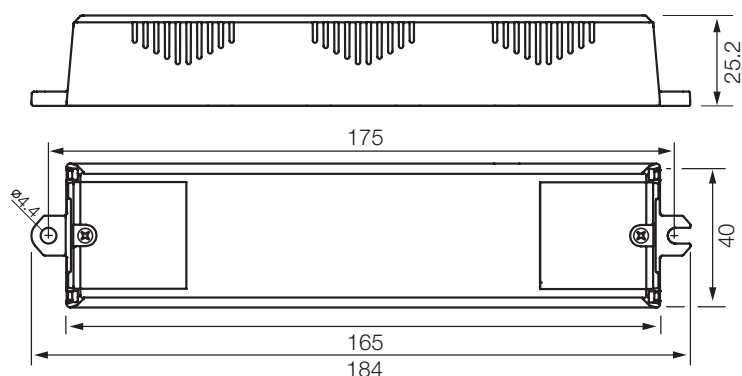
Conformity & Standards

General and safety requirements	EN 61347-1
Particular safety requirements for d.c. or a.c. supplied electronic controlgear for LED modules, acc. to	EN 61347-2-13
Thermal protection class	EN61347, C5e
Mains current harmonics, acc. to	EN 61000-3-2
Limits for Voltage Fluctuations and Flicker, acc to	EN 61000-3-3
Radio Frequency Interference, acc. to	EN 55015
Immunity standard, acc. to	EN 61547
Performance requirements, acc to	EN 62384
Digital addressing lighting interface (DALI) **	EN62386-207

Compliant with relevant EU directives
 ENEC, CE & SELV marked

** with additional extensions

Note: See page 2 for dimensions



The LL1x20-E-DA LED driver is suited for either in-built and independent luminaire usage. In order to have safe and reliable LED driver 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 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. 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. Earth connection can be left out if luminaire safety is guaranteed by its construction.
- When using a SELV-rated LED driver, then the SELV driver output has to be insulated from the luminaire earth connection (ref. EN60598-1 luminaire standard).

Installation & operational considerations

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 LL1x20-E-DA LED driver allow use both inside the luminaire and outside the luminaire. Built-in strain relief provides reliable fastening method for the mains and LED output wiring.
- Ensure that the LED driver does not exceed temperature higher than specified on the product datasheets.
- The general preferred installation position of LED drivers is to have the top cover facing upwards.