

# LED Chain – Installation Instructions

**hansen**

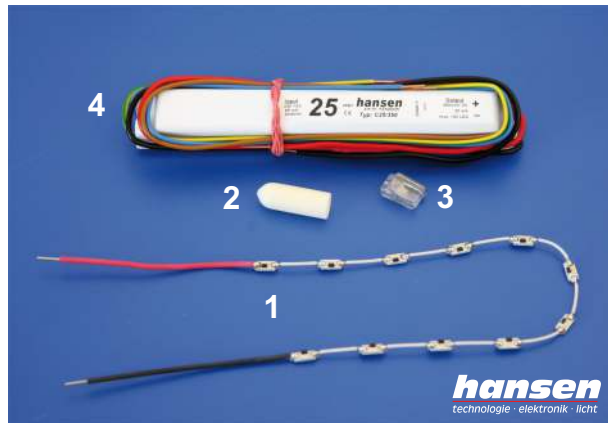
## Safety notes

- The electrical connection must be carried out by qualified electricians only. Make sure that the circuit is de-energized before connecting.
- Only use original parts from the manufacturer for maintenance and repair.
- The manufacturer accepts no liability for damage caused by improper use.
- Keep these instructions with the inspection documentation.

## Intended use

- The **hansen** LED Chain is a semi-finished product which fulfills its final function after further processing (e.g. installation) by the customer or third parties.
- The LED Chain is designed for the illumination of acrylic letters inside and outside dry rooms.
- Proper operation, storage and processing of the LED Chain is only possible in still natural air, free of chemically reactive gases, vapours, aerosols, liquids or solids, within the temperature range between -10 °C and +50 °C, at humidity levels below dew point (no condensation), free of UV radiation or ionizing radiation with wavelengths below 380 nm. Any use of the product outdoors outside suitable acrylic bodies or under water is not permitted.
- Observance of the data sheet and the operating and installation instructions is part of the intended use.

## LED Chain and accessories



### 1 LED Chain

**Accessories** (picture shows example):  
not included in the scope of delivery, depends on the order, quantity and scope stated in the delivery note

- 2 Insulating cap (optional)
- 3 WAGO connector (optional)
- 4 LED converter (optional)

## Unpacking and checking the content

The packaging must be opened in such a way that the content is not damaged. Particular care must be taken when using sharp tools. After unpacking, immediately check the content for damage and compliance with the delivery note. Any defects or deficiencies must be notified to us immediately.

## Preparing the surface

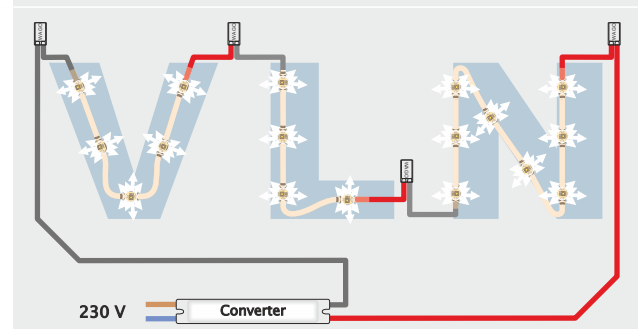
- Clean the groove after milling. The inner surface of the groove must be dry, free of grease, dust and oil as well as free of any separating agents and other contaminations.
- Clean the surfaces with detergents suitable for the base material immediately prior to inserting and embedding the LED Chain.
- Allow the surface to dry after cleaning.

## Processing the LED Chain

- The LEDs inside the letters and the letters themselves are connected in series, i.e. the negative “-” end of one chain section is connected to the positive “+” end of the next chain section. The polarity is marked with “+” and “-” on the rear of the circuit boards. The converters, however, are connected to the two main ends of the entire system negative “-” to negative “-” and positive “+” to positive “+”!

### Connecting one LED Chain with another:

RED (+) to BLACK (-) or vice versa



- The LED must be placed into the groove with great care. Make sure not to exert any pressure onto the LEDs when inserting the chain. Only push down the LED circuit boards in the area of the soldering points using great care. The LED Chain must not be subjected to any mechanical stresses during processing and operation. Make sure the LEDs are properly aligned when placing the chain into the letter.

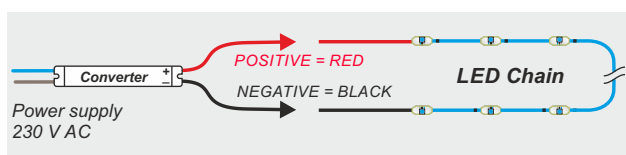
## Processing the LED Chain (continued)

- We recommend using low-temperature hot-melt adhesive to fix the LED circuit boards. Make sure the LED Chain is de-energized (i.e. not shining) when applying the adhesive. Do not use ordinary hot-melt adhesive (the thermal stress on the LEDs is too high) or instant adhesive as this would damage the LEDs. The fixing of the circuit boards prevents the LED Chain from “buoying upwards” during embedding.
- For electrical wire connections inside the groove we recommend using soldered connections on the cables between the LED circuit boards. Making soldered connections directly on the circuit boards or their contact surfaces/soldering points is not permitted.
- Use an insulated solid or stranded wire to lead the positive “+” and negative “-” end out of the groove. The dielectric strength of the cable’s insulation must be sufficient for the converter’s open-circuit voltage. The design of the cable must comply with the intended type of luminaire installation.

## Connecting the LED Chain

- We strongly recommend checking the position and function of the LEDs prior to embedding. This requires the converter to be connected.
- We recommend using two-pole screwless, releasable WAGO connectors (with clamping lever, article no. 5 0004 010) for all temporary electrical connections within the LED circuit (outside the letters).
- The cable types used for the electrical connection to the converters must be selected in accordance with the respective type of installation and voltage level. Please refer to the luminaire standard EN 60598.
- The connection of the LEDs to the converters must only be made when the system is de-energized. Establish and check the connection between the LEDs and the converter first before switching on the mains voltage. The converters are connected to the two main ends of the entire system negative “-” to negative “-” and positive “+” to positive “+”!
- The circuit must not be interrupted while the system is operational.

The electrical connections must be made in accordance with the below scheme:



## Embedding the LED Chain

- After checking the electrical connections, the LEDs can be embedded. For this purpose it is imperative to de-energize the entire circuit again. The embedding itself must be carried out in accordance with the instructions of the casting compound manufacturer. The casting compound must enclose the LED Chain on all sides without any remaining voids and air bubbles. The LED Chain must not be taken into operation before the casting compound has cured completely.
- Suitable casting compounds: “Soft” compounds based on polyurethane or silicone are generally suitable for embedding LEDs, but with the limitation of possible colour shift (when using LED Chains with DOMELESS LEDs).
- Use cold-curing compounds only. The heat at the LEDs caused by the chemical reaction during the curing process must not exceed 70 °C.
- We recommend the casting compound VT 3402 KK-NV-UVP from Lackwerke Peters. When using other casting compounds, check the compatibility with the LED Chain by experiments first.
- Unsuitable casting compounds: “Hard” casting compounds based on acrylic (e.g. Acryfix, Araldite) or epoxide are generally unsuitable for embedding LEDs as the LEDs may become damaged during curing.
- Please note that an irregular colour shift of up to +4,000 K may occur when embedding LED Chains with white, flat-top (domeless) LEDs. Any complaints derived from this fact cannot be accepted.

## Advice for safe and trouble-free operation

- The specified maximum number of LEDs for the converter must not be exceeded.
- The LEDs must not be operated with a current higher than the specified rated current.
- Individual sections of the LED Chain must only be connected with cables approved for the maximum open-circuit voltage of the converter used.
- The circuit must not be interrupted while the system is operational.
- For the installation of the LED converters please refer to the respective installation instructions.