hansen

technologie · elektronik · licht


# SMART DIMMING

Saving energy
with smart controllers and dimmers

MADE IN GERMANY

www.hansen-led.com

# The “TOOLBOX” for SMART DIMMING

# Controllers for LED lighting systems

## Light-sensitive controllers

The light-sensitive controller can be used to dim illuminated advertising signs depending on the ambient light conditions and prevent outshining effects during the night. This reduces the energy consumption and increases the lifetime of any illuminated advertising system. Furthermore, the brightness contrast between the illuminated sign and the surrounding is improved, enhancing the legibility of the sign.

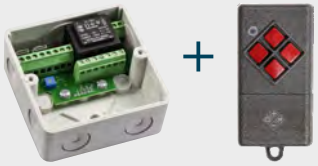
Light sensor

- Adjustable “switch-on brightness” and “night-time dimming”
- Controller can also be used as a permanent dimmer
- **Series connection:** up to 50 converters can be controlled
- **12 volts / 24 volts:** up to 0–10 V dimmers can be controlled

Besides the installation version shown on the left, the following variants are available:

- **DIN rail mounting**
  **with optional integrated clock**

- **With radio remote control**

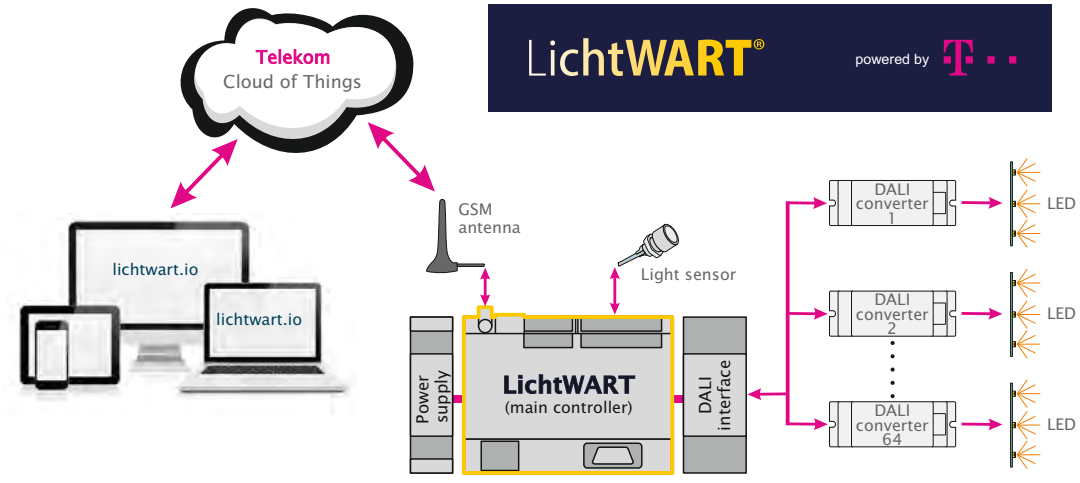


## LichtWART

The LichtWART is an innovate solution allowing lighting and illuminated advertising systems to be digitally controlled and monitored. In the era of Industry 4.0 and digitalization, the LichtWART module in connection with the Telekom “Cloud of Things” ensures proper system operation for the customer and fast and simple troubleshooting for technicians.


**Same functions as with the Light-sensitive Controller**
(see above)
**plus:**

- Monitoring of the system with notification in case of disturbances, logging
- Dimming or switching of individual parts of the system



# Dimming LEDs with extra low voltage

## LED modules with 12 or 24 volts

## Dimmers

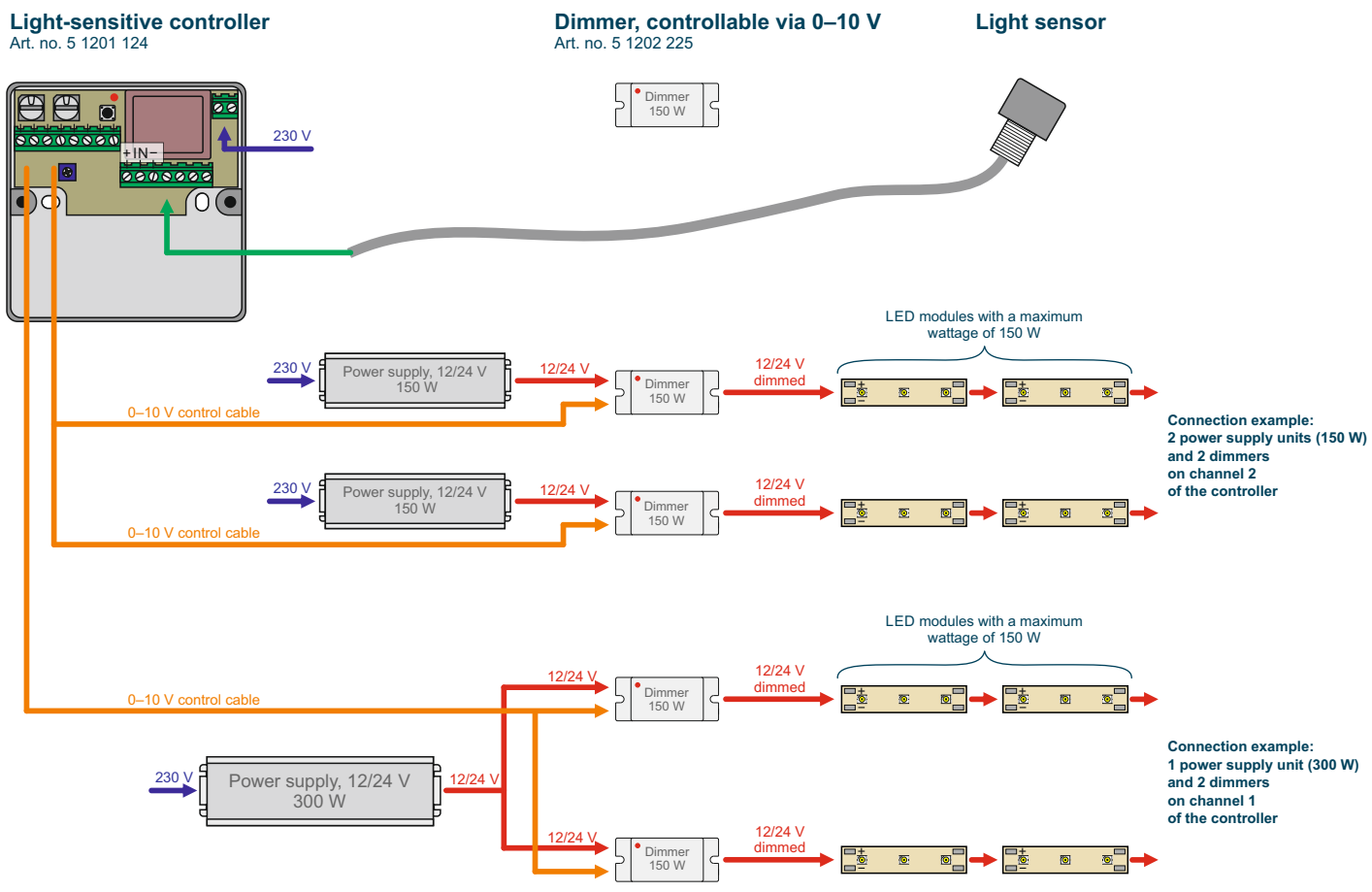
LED modules operated with extra low voltage can be dimmed using special dimming devices.
The 12/24 V input voltage (DC voltage) is converted by the device into a pulsed DC voltage by pulse-width modulation (PWM).
The dimmers are controlled with a 0–10 V control signal generated by the light-sensitive controller.


| | |
|---|---|
| Input voltage: | 12 V \| 24 V |
| Output voltage (PWM): | 12 V \| 24 V |
| Control voltage: | 0–10 V |
| Max. output current (12 V): | 12.5 A |
| Max. output current (24 V): | 6.25 A |
| **Max. output power:** | **150 W** |

## Connection examples

**For correct dimensioning of the dimmers, the wattage of the connected LED load is always the defining factor. This load must not exceed 150 W.**

When a power supply module with more than 150 W is used, several dimmers can be connected in parallel.



# Dimming series-connected LEDs

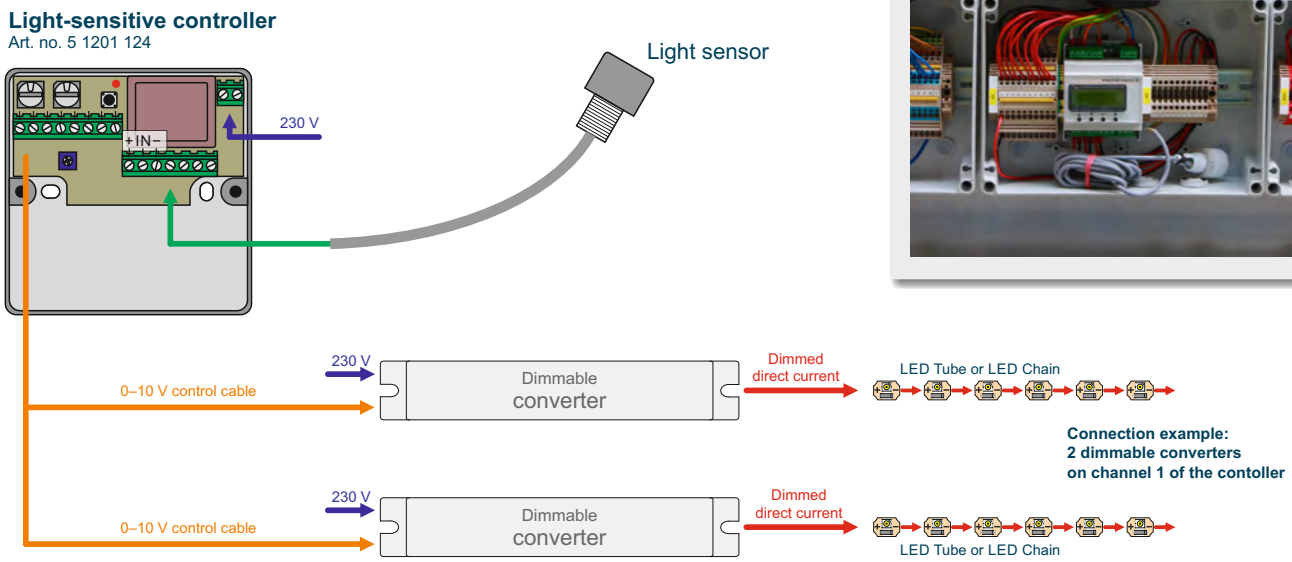
## LED Tube or LED Chain

## Dimmable converters

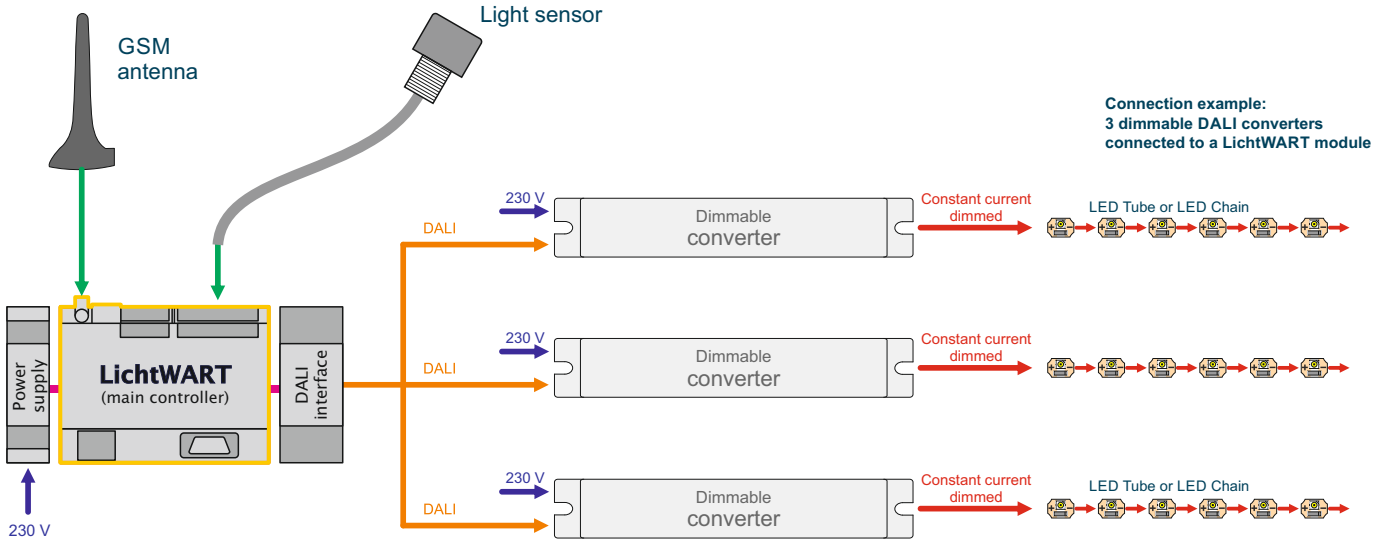
The LED Tube, LED Chain and other products with series-connected LEDs can directly be dimmed using the dimmable **hansen** converters.
This means that no additional converters are required.
The control voltage is supplied via the 0–10 V control input.
The converter supplies a (dimmed) direct current on its output.
There is no PWM.


**Light-sensitive controller**
for DIN rail mounting
**with dimmable converters**
**in a converter cabinet**
**pre-assembled**
**ready for delivery**

## Connection example with light-sensitive controller




## Connection example with LichtWART




**Depending on the system configuration, up to 64 converters can be connected to one LichtWART module.**

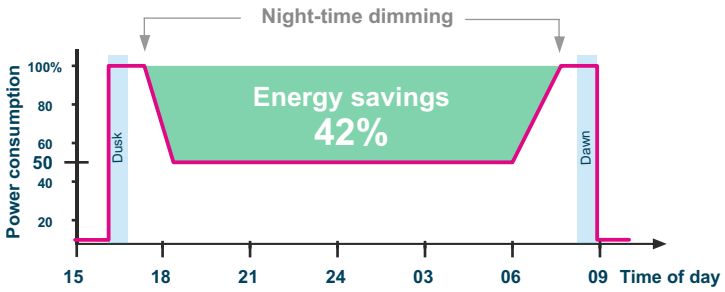
# SMART DIMMING

We are living in a time when saving (electrical) energy is a top priority.

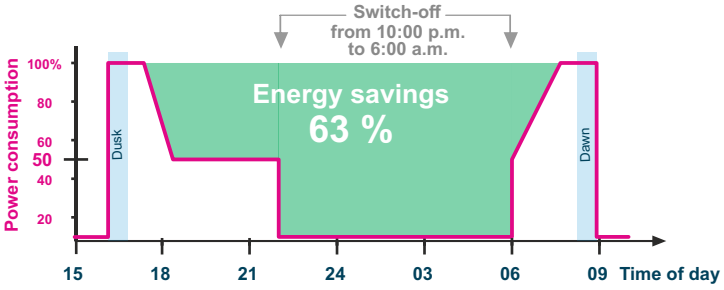
When it comes to lighting systems, there a two main ways to save energy:
**Dimming or switching off ...** or a combination of both. The latter way is of course the best as it provides the highest energy savings.

The two diagrams below show how the energy consumption can be reduced by using our light-sensitive controller or the LichtWART module.

**Example of an illumination**
**with night-time dimming**
winter operation




**Example of an illumination**
**with night-time dimming and automatic switch-off**
winter operation - according to German energy saving ordinance dated 28 September 2022




## All hansen products are available as dimmable versions!

Whether LED Tube, Luminous Panels, Facade Profiles, Mini Profiles etc., we can supply all our products in a dimmable version.

For products using series-connected LEDs, we offer a range of dimmable converters.
For products using 12 V/24 V extra low voltage, we have a selection of dimmers and power supply units available.

**Another aspect of dimmable systems that must not be underestimated is the significant reduction of light emissions.**

## A competent partner at your side

We have many years of experience in controllable illumination systems and have been involved in numerous projects. Our sales team will be happy to advise you in choosing the right control technology for your needs.

**NEW is our energy cost calculator** that allows us to calculate the potential electricity cost savings based on the power consumption of an installation.

You already have a controller in your project, and you want to connect your LED lighting to the existing system? We can provide you with the necessary interfaces, for example for **DALI, DALI DT8, DMX, KNX, etc.**

**Existing installations can of course be retrofitted with SMART DIMMING capability.**

Please do not hesitate to contact us, we will be happy to support you with your project.

## Production, service and sales


For more than 35 years the name Hansen GmbH has stood for high-quality lighting and control technology products. With a team of 80 employees, the entire value creation and production takes place in Haselund, Northern Germany. Our in-house development department designs tailor-made LED products and converters for various applications. All our products are manufactured exclusively at our head-quarters in Haselund.

**Made by Hansen = quality made in Germany**

# Sustainability – facts & figures

**We use renewable energy sources in the form of photovoltaics, regional district heating and our own geothermal heating system.**

- In 2021 our degree of self-sufficiency (only self-generated electricity) was 51% in total and up to 70% during the summer months.
- Approx. half of the electricity generated (the excess power we cannot use ourselves) is fed into the grid.
- The total production of the PV plant in 2021 was 171,000 kWh
- The PV plant is rated at 240 kWp, with its east/west split making it ideal for a production facility.

**We promote the use of bicycles and support electromobility**
Since summer 2019 we have been using “JobRad”, a leasing scheme giving our employees access to company bicycles and pedelecs. Employees can use their bikes whenever they wish: on the way to work, in their spare time, on holiday or for sport. JobRad makes sure that everything runs smoothly. This is made possible by German legislation, offering tax benefits for company bicycles in order to reduce traffic and protect the environment. By July 2022, 40 members of staff had applied for a bike, wanting to do something for their health and be sustainably mobile. This is fun and 100% $CO_2$-fee!

The company car fleet currently includes 20 electric vehicles, and all our employees and customers with an electric vehicle can charge their cars at our five charging stations.

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KLIMANEUTRALES UNTERNEHMEN



The quality management system of Hansen GmbH is certified to DIN EN ISO 9001:2015.