

KT200 Sensor DALI Extender Kit

Design-in Guide

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Purpose of the document

This guide provides kit installers with the information required to assemble the kit, connect it to the luminaires or hardware, and perform the necessary electrical wiring and testing to ensure correct operation.

Safety warnings

- Avoid touching live parts.
- Do not use DALI Extender or connected drivers with damaged housing, wiring, or connectors.
- Do not use damaged products.
- Do not short DALI Extender output wires.
- Ensure luminaire design complies with all applicable safety standards.
- DALI Extenders are suitable for Class I and II only; prevent exposure to moisture, chemicals, or corrosive environments.
- Do not service the kit while mains voltage is connected.
- Install the kit according to local/national electrical codes.
- Maintain a minimum of 20 mm clearance around the DALI Extender for thermal dissipation.
- Do not exceed the rated ambient operating temperature.

Compatible hardware/devices

- All DALI-2 luminaires, including luminaires not Interact ready
- Drivers supporting Device Type 6 (LED control gear)
- Drivers supporting Device Type 8 (DT8 – Tc, Tunable White)
- Luminaires using DALI-2 drivers with or without DALI Parts 251, 252, and 253. When DALI-2 drivers are equipped with DALI Parts 251, 252, and 253, energy-metering and diagnostic functions are supported in PRE and PRA

DC emergency compatibility

The DALI Extender may be connected to an AC mains circuit that switches to DC supply in emergency operation. In this operating mode, all LED drivers connected to the DALI port will be EL -marked and will provide a fixed light output level during DC operation, independent of DALI control commands. As a result, the light output is not impacted by the sensor during emergency operation.

KT200 kit connection to the luminaire

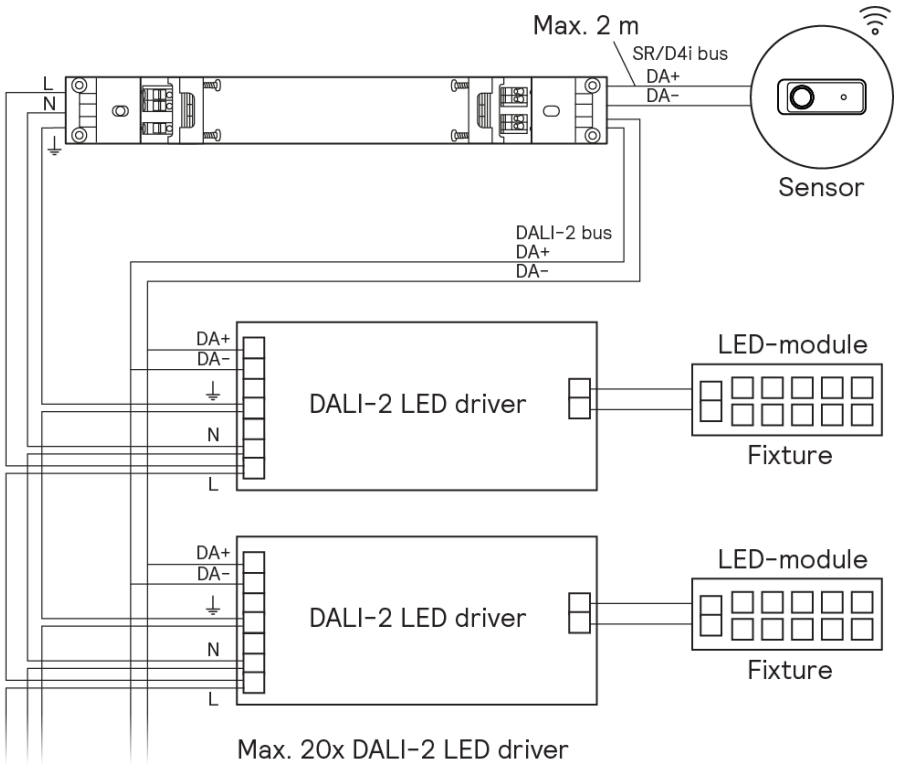
- A maximum of 20 DALI-2 LED drivers can be connected via the DALI Extender.
- Maximum DALI cable length can be up to 100 meters, and DALI and mains cable can be combined into a single cable.
- Maximum Sensor Ready (SR) wire length is 2 meters; keep the SR wire separate from mains wiring.
- Do not route SR and mains wiring in the same conduit.
- Sensor port supports one SR sensor; driver port allows field bus wiring.
- The DALI driver port is protected against accidental mains miswiring and includes surge protection to prevent damage.

Electrical connections

The KT200 kit includes electrical components with the following specifications:

Input voltage (AC)	220–240 V ±10%
Emergency DC input	186–250 V_{dc}
SR port output	12–20.5 V_{dc}, 92–125 mA
DALI port output	12–20.5 V_{dc}, 52–70 mA
Surge protection (input)	2 kV differential, 4 kV common mode
Surge protection (SR)	0.03 kV differential, 0.25 kV common mode
Surge protection (DALI)	0.5 kV differential, 1.0 kV common mode

Wiring diagram



Inrush current

During power up, the KT200 DALI Extender generates a short-duration inrush current having a peak value of approximately 25 A (ampere) and a pulse width of 80 µs (microsecond) measured at 50% of the peak current.

Due to the short duration of inrush pulse, a Type B 16 A Miniature Circuit Breaker (MCB) can support many KT200 DALI Extenders when no additional DALI loads are present.

When KT200 DALI Extenders are installed in a circuit shared with LED drivers, a safety margin will be applied to account for the cumulative inrush current of all connected devices. In this case, the maximum number of LED drivers permitted in the circuit breaker will be reduced by one LED driver per KT200 DALI Extender connected to the same circuit.

Example

If the LED driver specification sheet specifies that 20 LED drivers can be connected to a given circuit breaker:

- With one KT200 DALI Extender, a maximum of 19 LED drivers can be connected
- With two KT200 DALI Extenders, a maximum of 18 LED drivers can be connected

This approach ensures an appropriate safety margin and supports reliable operation of the circuit during power up conditions.

Sensor overview

The KT200 kit includes an SC200 sensor with the following sensing characteristics and installation guidelines:

- Occupancy sensing uses passive infrared (PIR) detection; effectiveness varies with ambient and surface temperature differences.
- Ambient Light Sensing (ALS) uses a high accuracy ambient light sensor with Zigbee communication.
- The minimum distance from the window should be 0.6 meters.
- Supports Dynamic Daylight Regulation (DDR).

Testing procedure

Once the kit is connected to the luminaire, contact a local Signify representative to ensure the correct connection and operation of the kit.

References

For more details on the kit, refer to the specification sheet and installation instruction documents available at www.signify.com/products.

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