

zencontrol

DALI-2 vs KNX

Understanding the differences

KNX and DALI

- are brandnames of published standards

- KNX is defined as ISO/IEC 14543-3 as well as an EN standard (CENELEC EN 50090 and CEN EN 13321-1) and Chinese standard (GB/T 20965)
- DALI is defined by the IEC as the IEC62386 set of standards

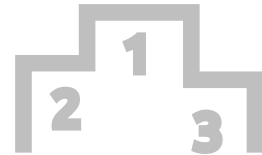


KNX and DALI

- have a certification body

- DIIA is the industry association for DALI and is involved with the certification of products under the DALI and DALI-2 trademarks
- KNX association is the body who controls the certification and use of the KNX trademarks





DALI and KNX have a number of benefits which need to be considered based on the application, however in most installations even if KNX is used, DALI will also be used

KNX

- KNX provides a interoperable solution against proprietary products such as
 - Lutron
 - Clipsal C-bus
 - CP electronics
 - Philips Dynalite
 - Simtronic, etc
- However both KNX and proprietary solutions use the DALI protocol to control DALI lighting products found in commercial buildings



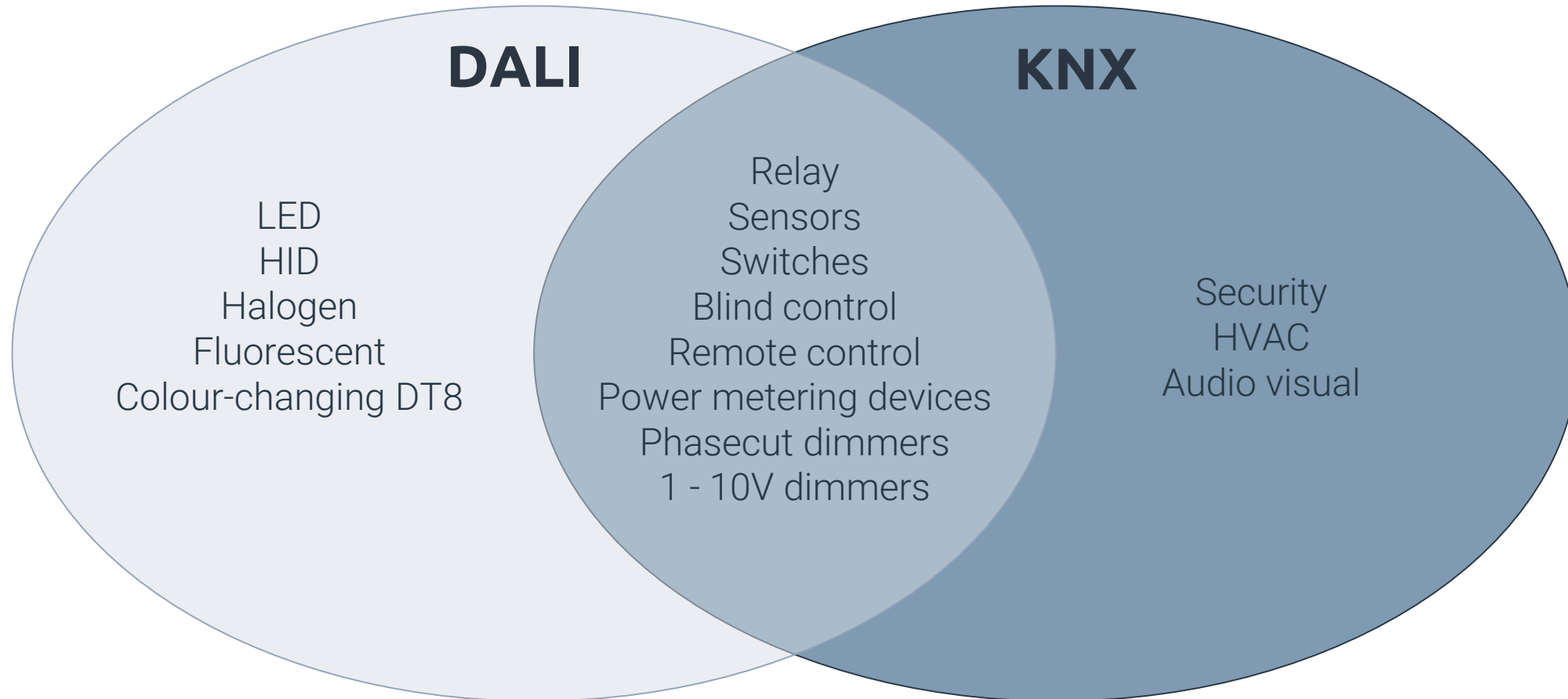
DALI-2

- DALI version 2 was first published in 2016 as an IEC standard
- DALI-2 introduced control devices, such as switches, sensors and controllers to the protocol
- With this introduction, many features which would normally be supplied by KNX or proprietary solutions now can be added to the DALI installation

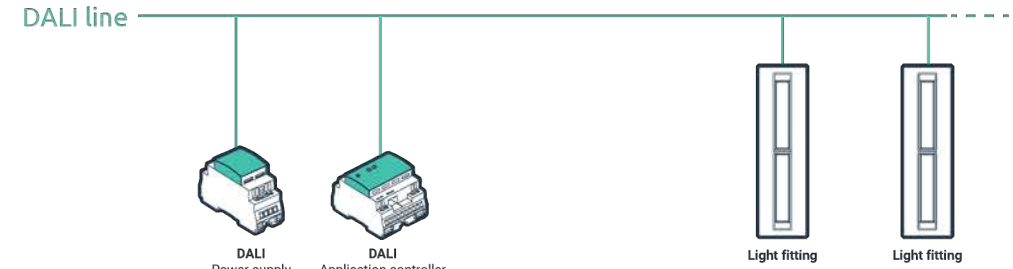
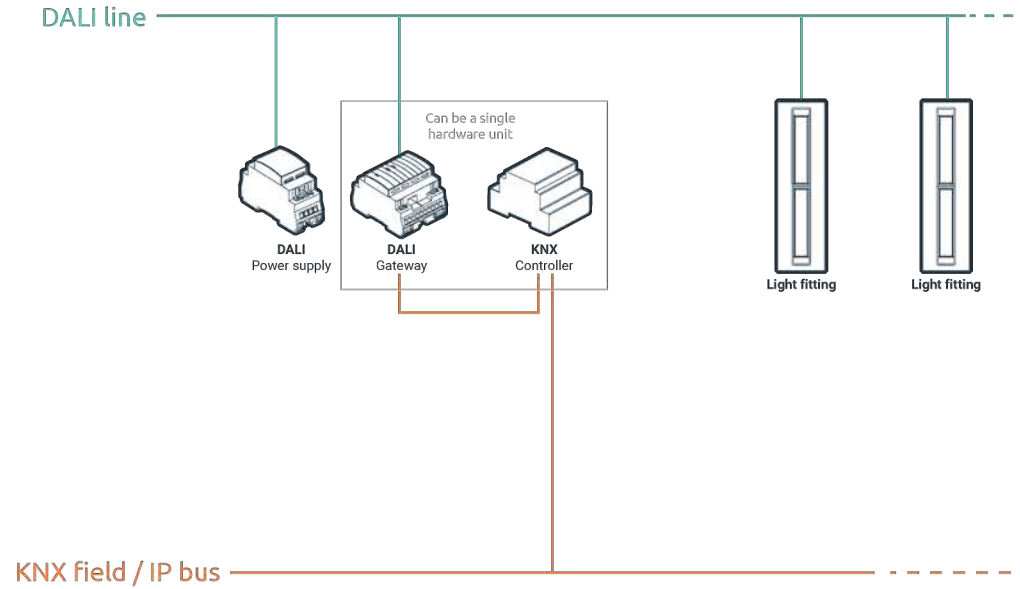


DALI vs KNX

features

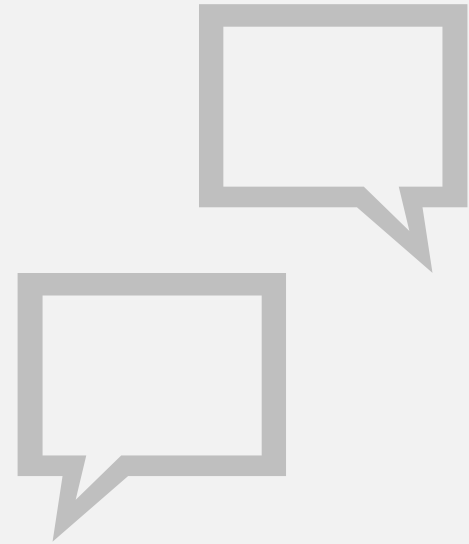


Example: LED control comparison

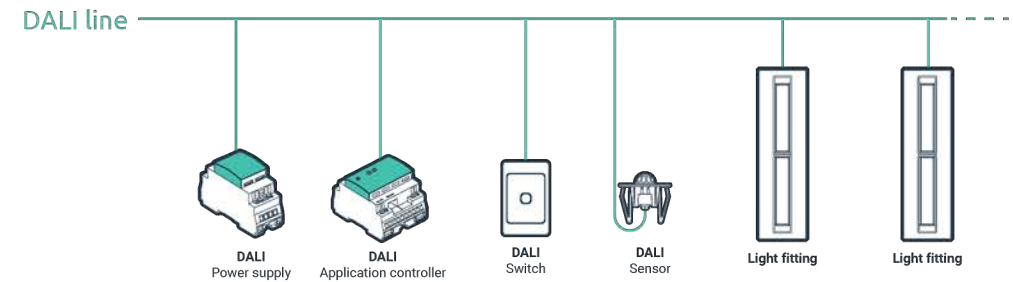
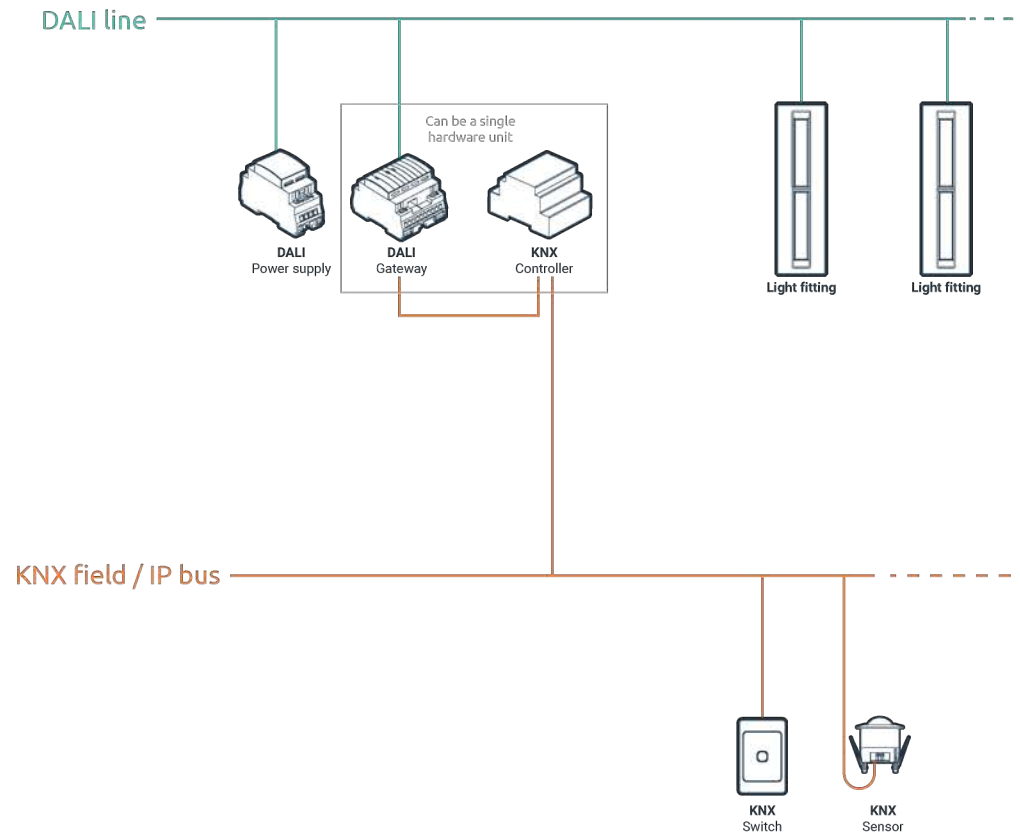


LED drivers use the DALI protocol

- LED drivers typically use the DALI protocol and are available from a wide range of manufacturers
- KNX systems use a gateway or interface to talk to the DALI devices on a DALI line with a DALI power supply



Example: Switch / sensor control comparison



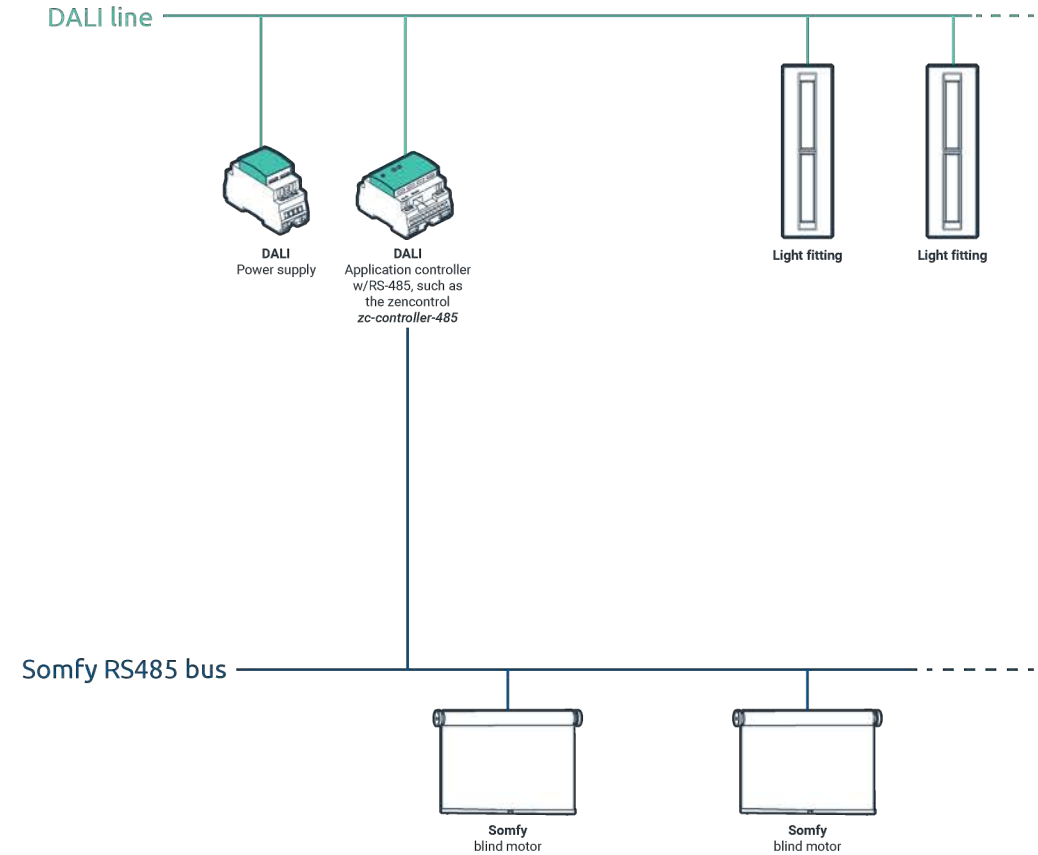
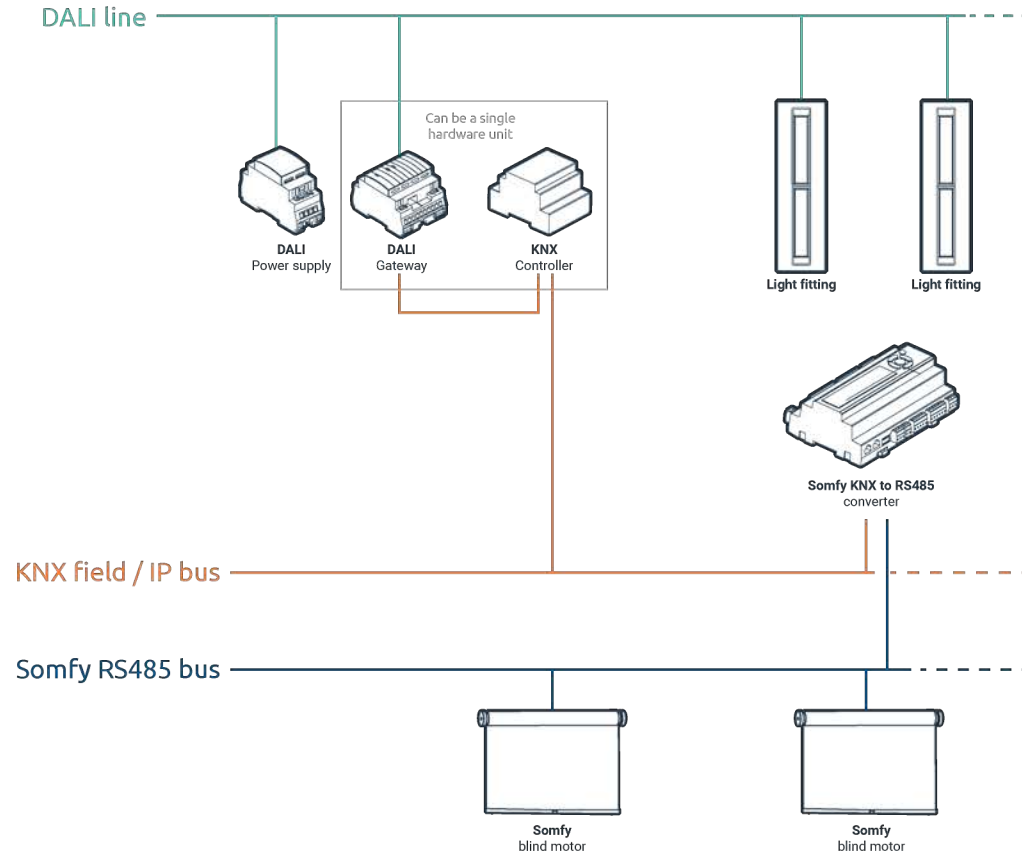
KNX and DALI

- have switches and sensors

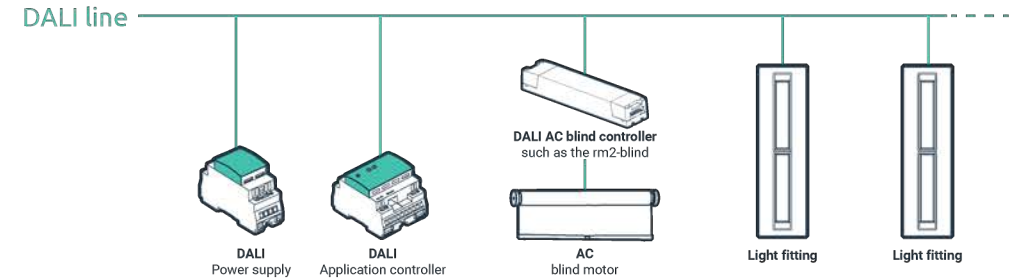
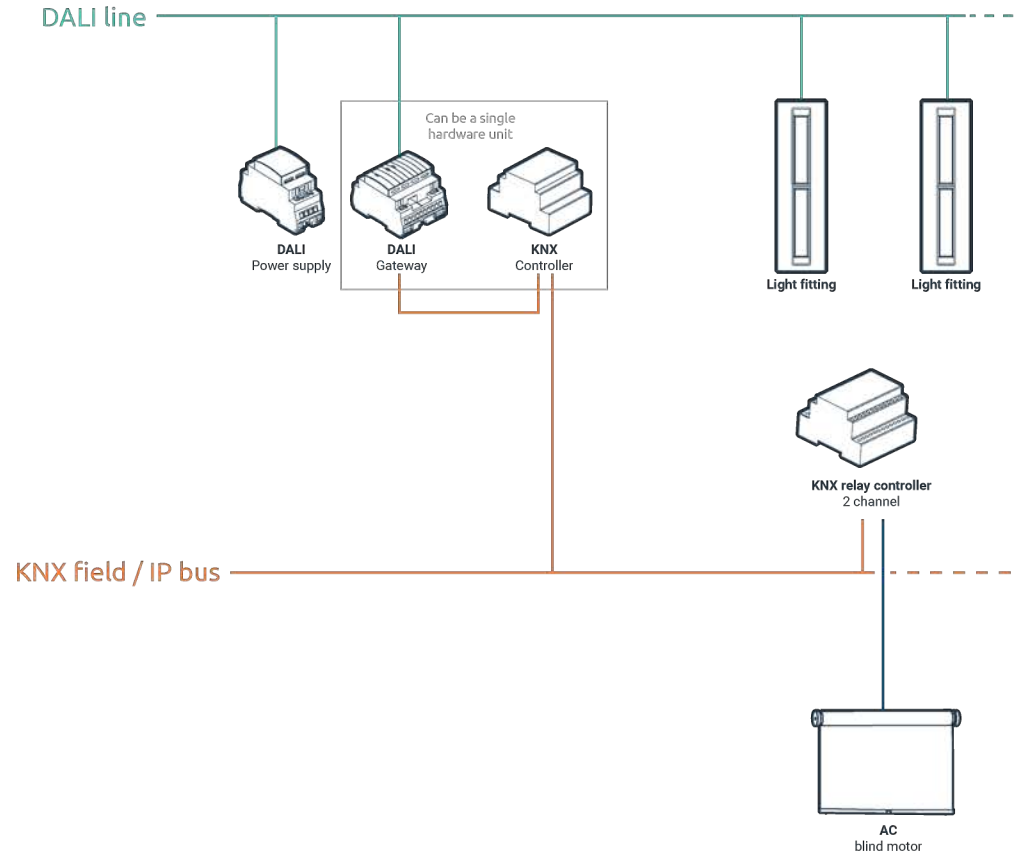
- KNX systems will use KNX sensors and switches connected to the KNX field bus
- The KNX field bus will talk to a KNX controller and send commands to the DALI lighting
- A DALI switch/ sensor is wired onto the DALI line
- In a KNX installation two buses are required (one DALI and one KNX)
- In a DALI installation a single bus is required. This reduces the cost and complexity of installation



Example: Blind control comparison (somfy)

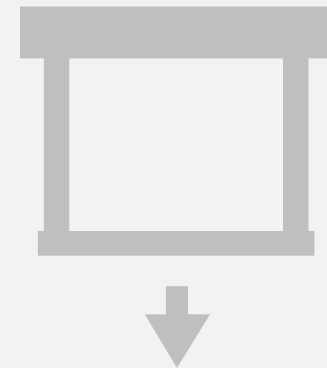


Example: Blind control comparison (AC motor)

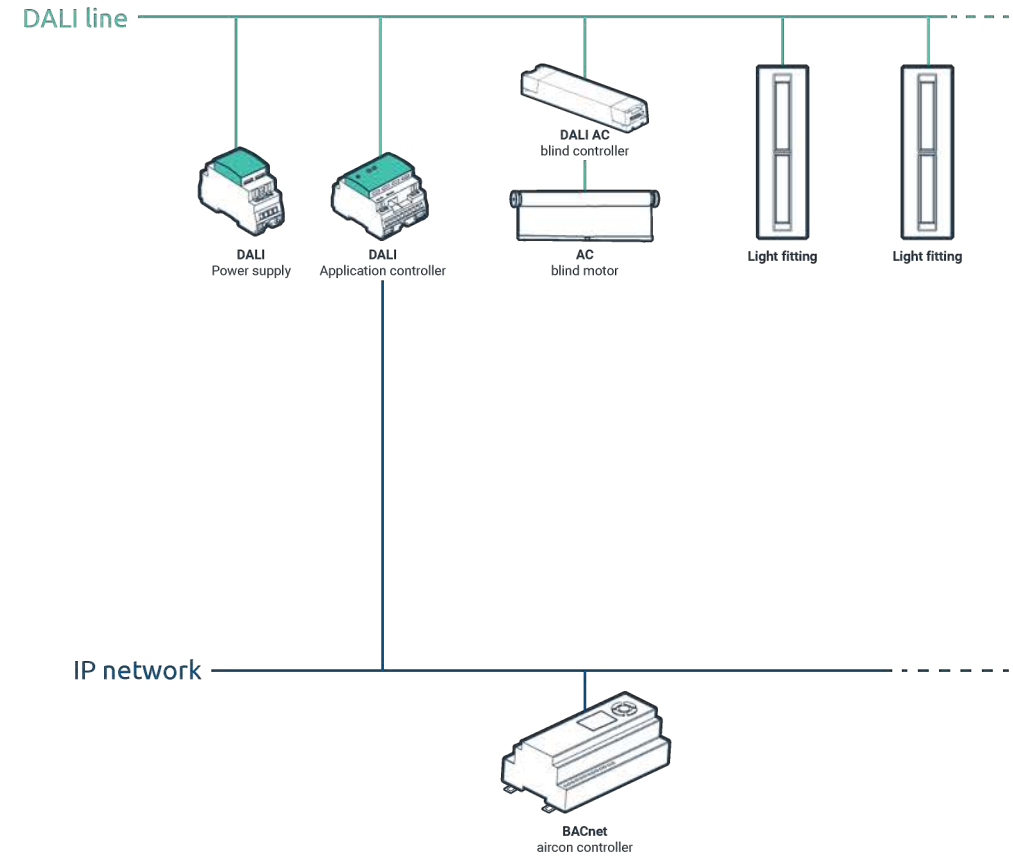
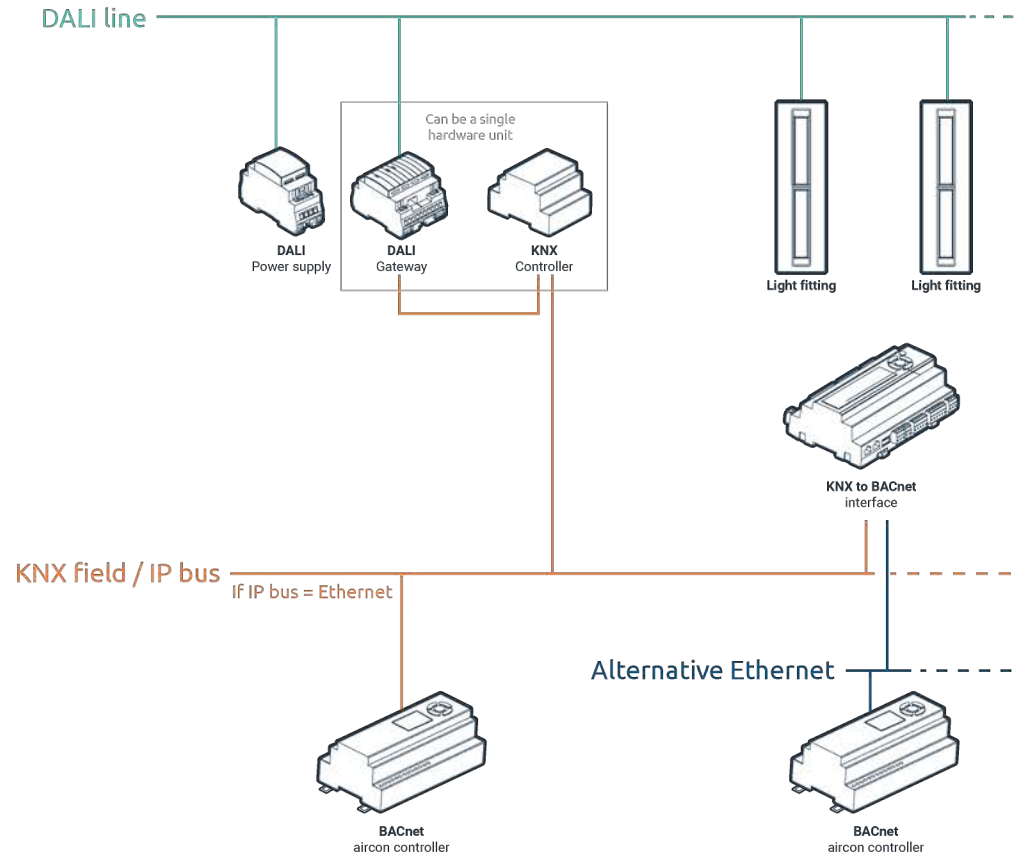


Blind control

- Blind and shutter control can be controlled by DALI or KNX
- For AC motor control,
 - A DALI relay or blind controller can be used
 - A KNX blind controller can be used
- For DC motor control, Brands like Somfy have their own protocol for control
 - A KNX to Somfy blind controller can be used
 - A DALI Application controller with Somfy interface can be used (like zencontrol zc-controller-485)



Example: Air-condition comparison

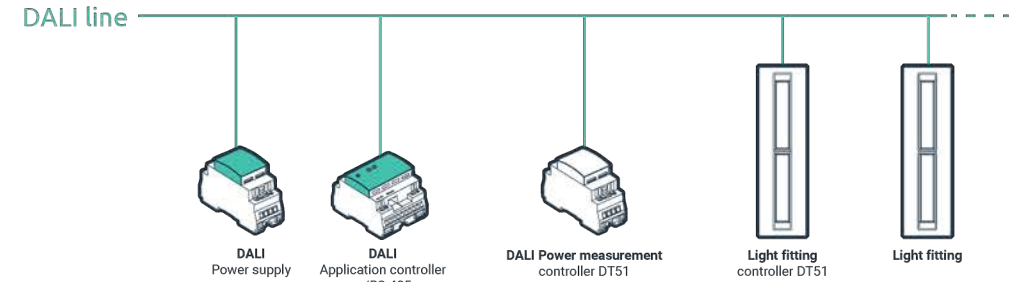
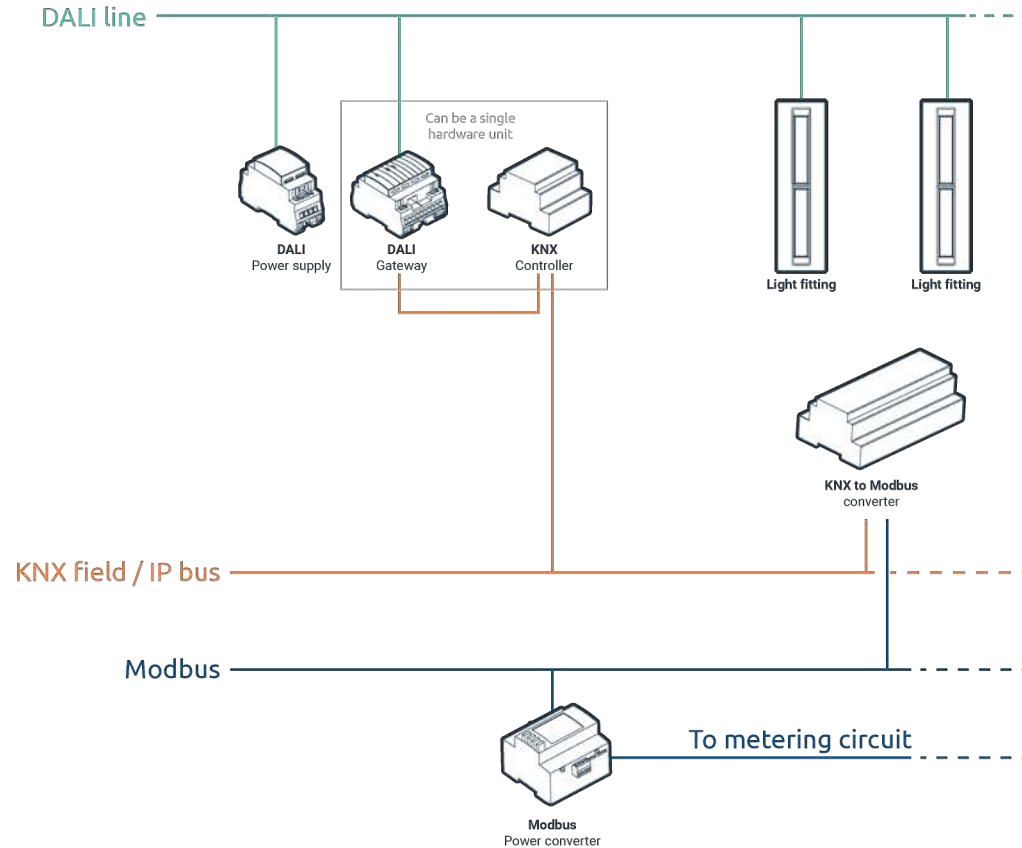


Air-conditioning control

- Both KNX and Native DALI systems can support air-condition control
- Many air conditioners have their own interfacing protocol
- Commonly BACnet is used
 - A DALI application controller with BACnet interface can be used (any zencontrol AC/RCM/LCM)
 - For KNX a dedicated gateway and separate bus is required



Example: Power measurement comparison

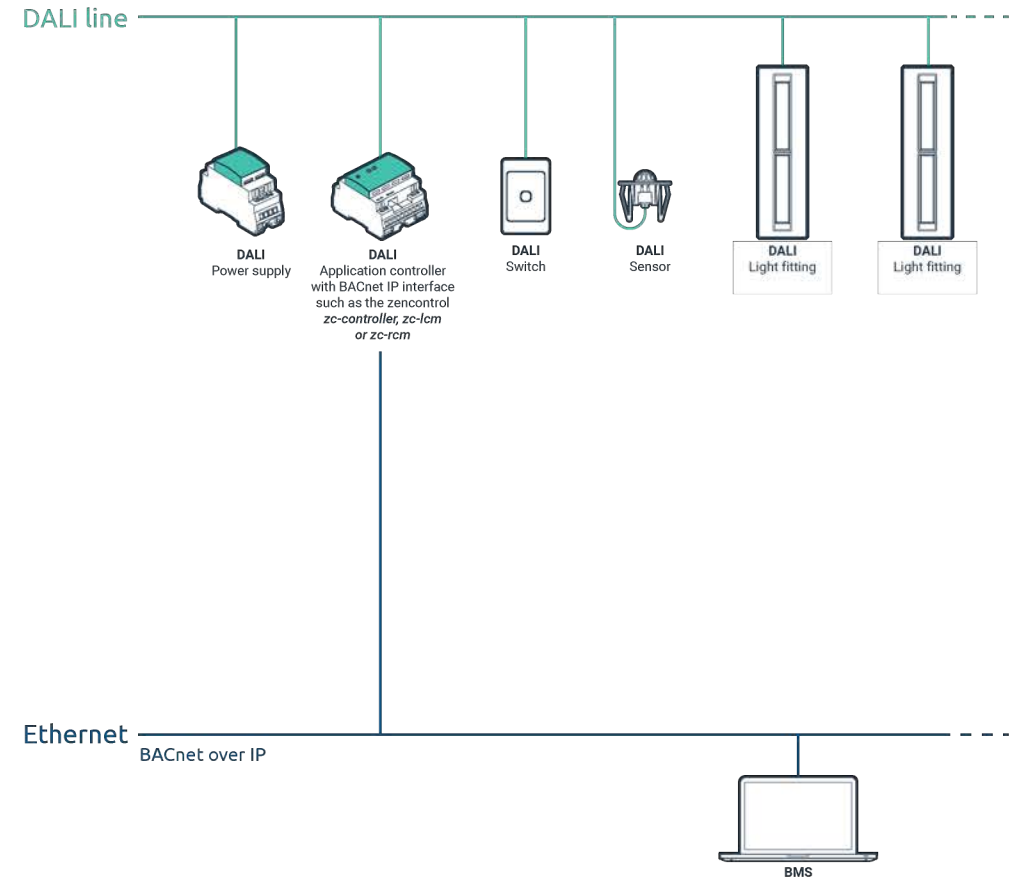
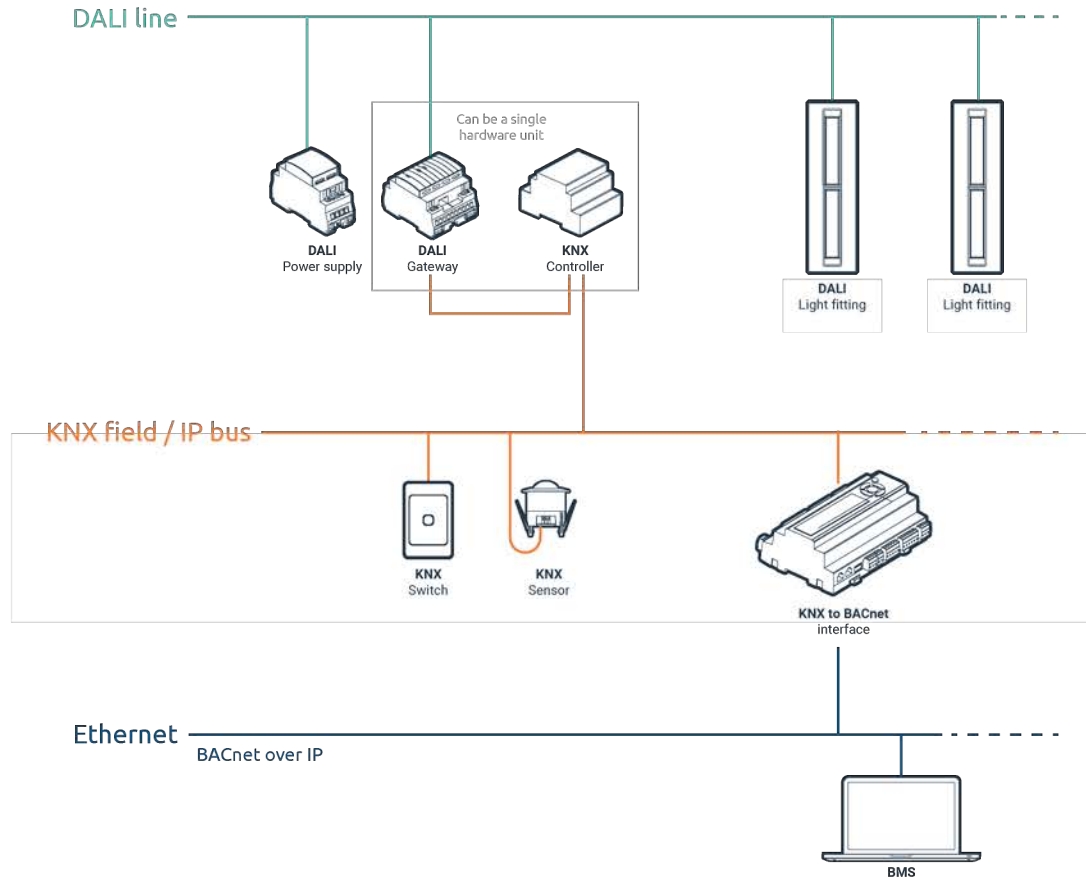


Power measurement

- Both KNX and native DALI systems support power measurement
- KNX requires separate hardware to measure power
- DALI devices supporting DT51 self report power usage and do not require any other hardware
- DALI installation cost is greatly reduced when compared to KNX
- Very easy to give per-fitting power consumption using DALI/greater information
- KNX power consumption is normally for a supply line



Example: BMS connectivity



Benefits of DALI-2

- DALI-2 simplifies wiring in a building
- Most lighting control installations can be done using DALI-2 **without KNX**
- Switches and sensors are connected to the same bus as the lighting and emergency lighting
- Less parts are required (less gateways or interfaces)
- Device type 51 devices bring native power measurements to DALI
- Typically lower cost for installation and maintenance
- Ability to use KNX **if needed**



zencontrol

zencontrol provides lighting control based on DALI-2

- Can be used with DALI-2 compliant devices (switches/sensors etc)
- Can be used with DALI-2 compliant ECGs (LED drivers, relays etc)

zencontrol uses DALI-2 to give customers cutting edge performance and features at a Value Position

- Heatmaps
- Better control
- Ability for smart luminaires
- Power measurements etc.

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DALI-2 can be used in conjunction with KNX, however due to the increased functionality, many installations can be simplified with a native DALI option

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