SBDb
LIGHTING CONTROL UNIT
via DALI - CAN

Quick Facts

- An advanced and cost-effective lighting solution for optimizing comfort and energy usage.
- Integration with the LINDINSPECT® web interface for visualization with floor plans and other climate control in the building.
- Supported by a graphical tool forlinking and managing lighting control rules.
- Bluetooth® for configuration via the LINDINSIDE mobile app.

Presence-controlled and daylight-compensated lighting saves energy. With SBDb, you can control DALI luminaires and use switches and sensors as slaves. Everything is visualized in the LINDINSPECT® web interface.

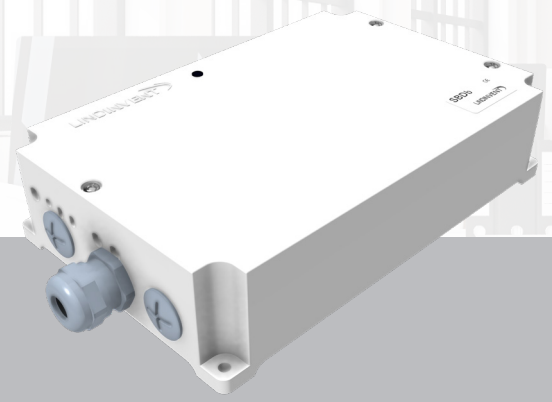
LINDINVENT®

Function

SBDb* functions both as a DALI master for a DALI loop of luminaires and as a DALI bridge to Lindinvent's communication loop (CAN).

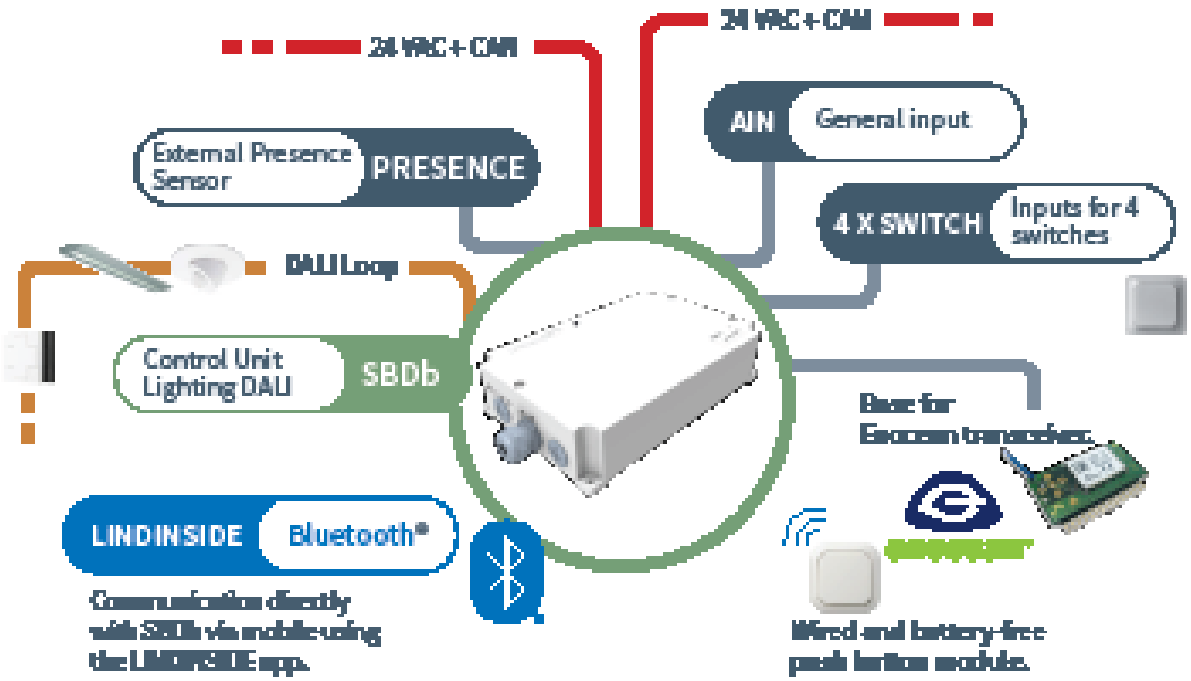
- DALI functionality allows, based on selected rules or conditions, individual, group, or "Broadcast" control of lighting to:
  - Go to max
  - Turn off
  - Dim up
  - Dim down
- DALI-functionality also allows lighting control via pre-programmed scene selections.

**According to DALI-Alliance: "SBD/SBDb v2 is a control device whose purpose is to send commands to registered or certified DALI-compliant control gear."*



Content

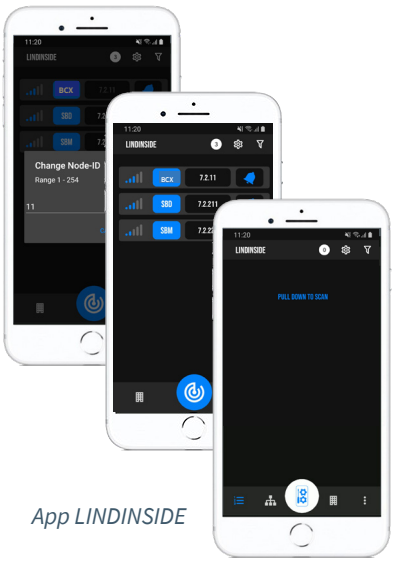
Connection Diagram



SBDb is powered via the combined 24VAC and communication loop (CAN).

User Interface LINDINSIDE

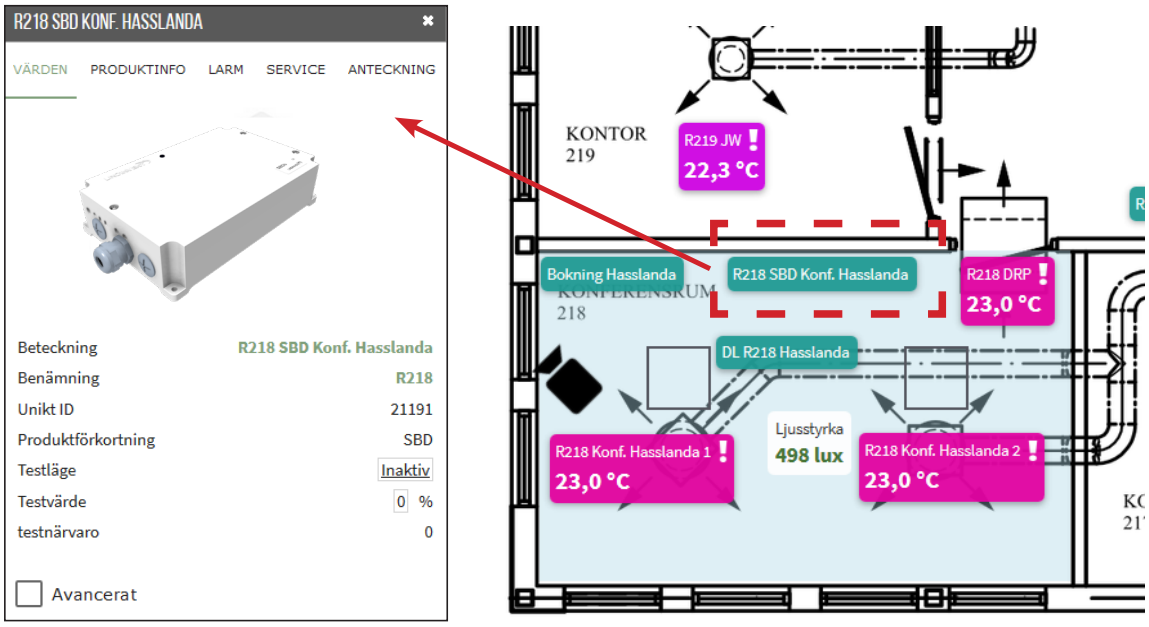
The LINDINSIDE mobile application allows connection via Bluetooth® directly to individual control units. Authorized personnel can use the app to identify control units for easy settings adjustments or to read values using a smartphone. All data is stored in the cloud for easy access.



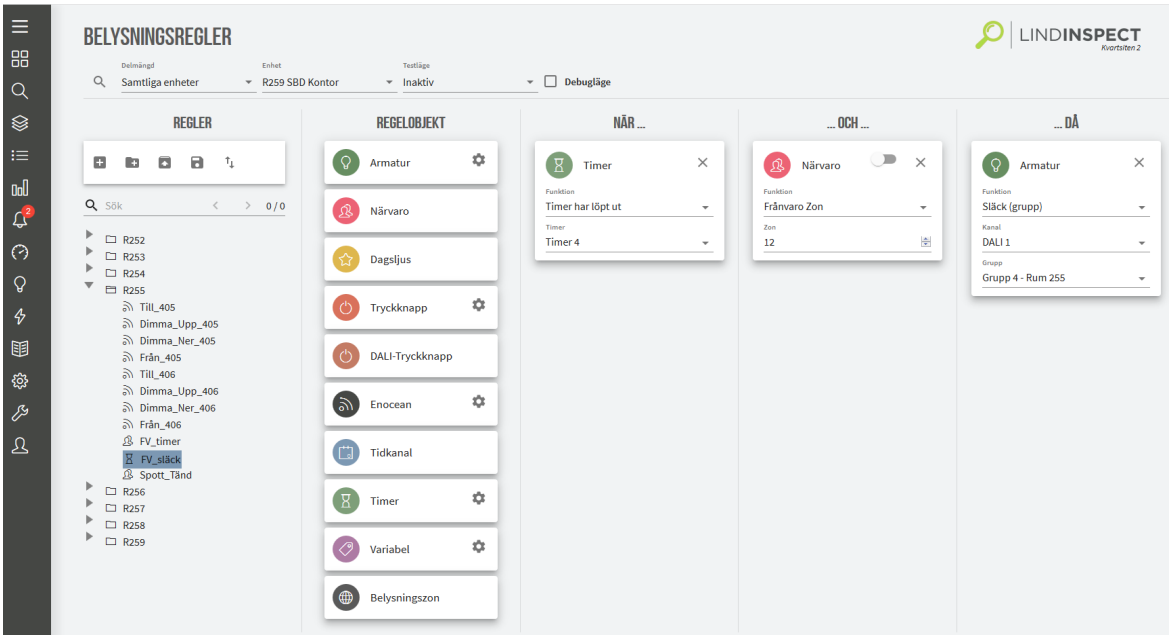
App LINDINSIDE

LINDINSPECT® with INCONTROL Tool

LINDINSPECT® is a powerful web tool included in the system software that enables centralized and coordinated optimization, administration, and visualization of everything from control units to complementary systems for comfort and sustainable energy use in buildings.



Through the LINDINSPECT® web tool, users can overview or display current lighting conditions in detail via floor plans.

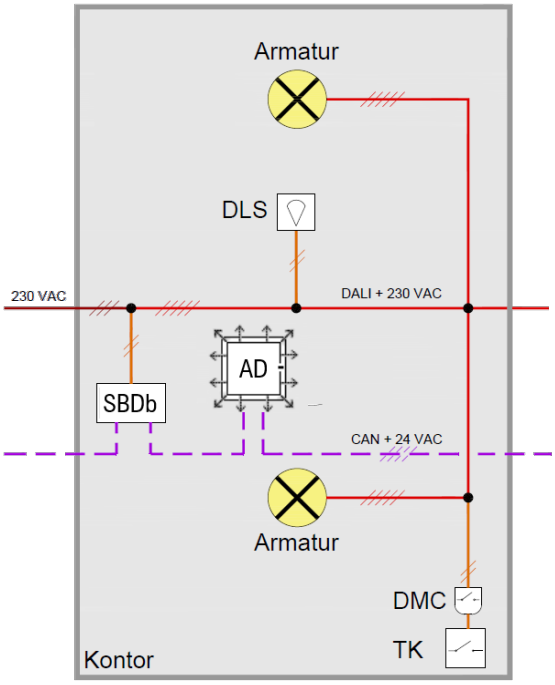


The graphical INCONTROL tool within LINDINSPECT® allows users to link rules to DALI-nodes.

Addressed DALI

SBDb with Addressed Units:

- SBDb is powered with 24 VAC.
- SBDb connects to the communication loop (CAN) and 24 VAC via Lindinvent's shielded four-wire cable.
- All units on the DALI loop are assigned unique addresses via a function in LINDINSIDE.
- All units are assigned Node-ID on the CAN loop. Support for Node-ID assignment is available in the LINDINSIDE mobile app.
- Units in the same room are assigned a common group number via the INCONTROL tool in LINDINSPECT®.
- Presence sensors in the active unit (AD) can be used to turn on lighting upon presence and turn off after a set time of absence.
- Light sensor (DLS) controls light intensity via SBDb when presence is detected.
- With a switch (TK) connected to the I/O module (DMC), the lighting can be manually controlled (Max/Off or Dim Up/Down). The same functionality can be achieved with wireless switches (Enocean).

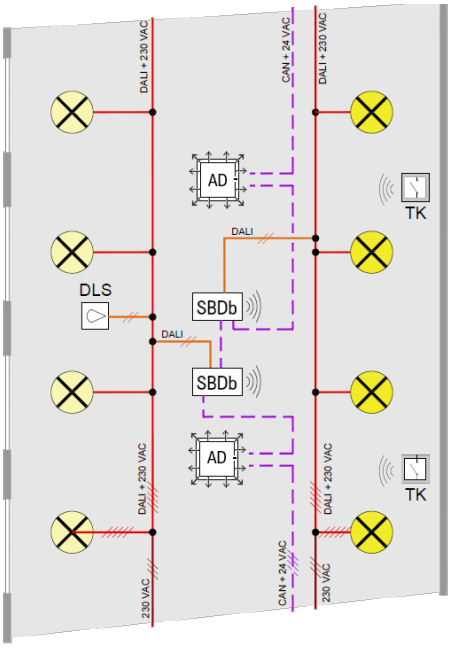


Example Operating Card with SBDb for Addressed DALI with Wired Switch (TK).

Addressed DALI with "Broadcast Rules"

Fixtures connected to the same DALI loop are controlled via a common command:

- A DALI loop with fixtures and control devices is connected to each SBDb.
- SBDb is powered with 24 VAC.
- SBDb connects to the communication loop (CAN) and 24 VAC via Lindinvent's shielded four-wire cable.
- Each wireless switch (Enocean) is linked to the designated SBDb via the LINDINSIDE mobile app.
- All units on the DALI loop are assigned unique addresses via a function in LINDINSIDE.
- One fixture is assigned a Node-ID on the CAN loop to represent the "Broadcast group" of fixtures during visualization in LINDINSPECT®.
- All control devices, such as switches, are assigned Node-ID on CAN to also be visualized.
- Presence sensors in active units (AD) are configured to belong to the same lighting zone, turning on the lighting upon presence and off after a set time of absence.
- Light sensor (DLS) controls light intensity along the facade when presence is detected.
- Fixtures in the inner zone remain on as long as there is presence in the zone.
- Lighting can be controlled via switches (TK). Dimming is possible for fixtures on individual/local DALI loops.



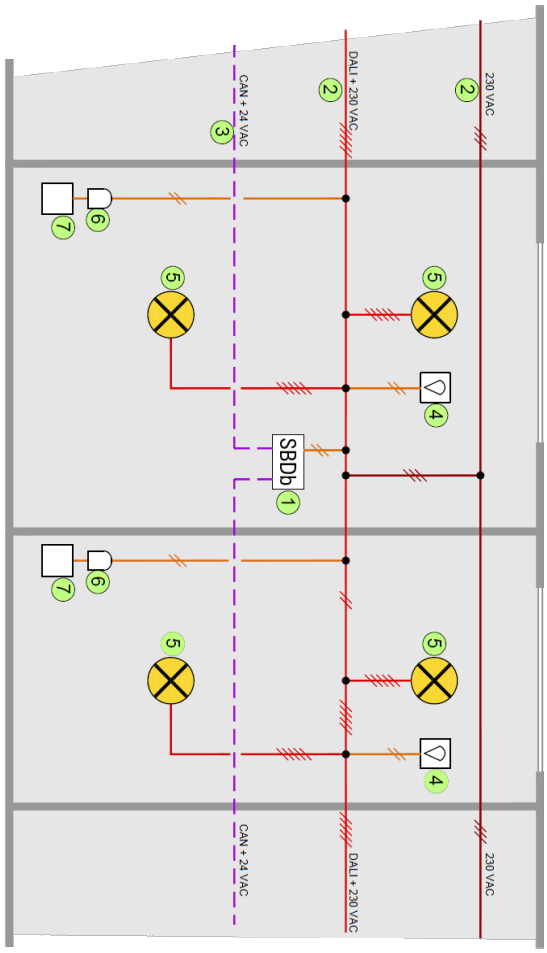
Example Operating Card with Wireless Switches (TK) "Enocean" and "Broadcast" Functionality. For more examples, see Lindinvent's project planning instructions for lighting control.

Example Boundaries

Below is an example of how boundaries between Electrical Contractor (EE) and Ventilation Contractor (VE) can be divided. Lindinvent installations are often part of the ventilation contract but can also be performed as a separate contract.

Object	Delivery	Installation	Connection
1. Lighting Control Unit, SBDb	VE	VE	VE/EE
2. DALI + 230 VAC Cabling	EE	EE	EE
3. 24 VAC + CAN Cabling	VE	VE	VE
4. DALI Light Sensor, DLS	VE	EE	EE
5. DALI Lighting Fixture	EE	EE	EE
6. DALI I/O Module, DMC	VE	EE	EE
7. Spring-Return Switch	EE	EE	EE

Example Boundaries Between Electrical Contractor (EE) and Ventilation Contractor (VE)



Responsibilities

The Electrical Contractor (EE) performs self-inspection of their installation while the Ventilation Contractor (VE) energizes the 24 VAC. VE addresses DALI components, calibrates light sensors, programs scenes, and other settings for the DALI system.

Technical Specifications

General

Dimensions (mm): 200 x 125 x 45 (LxBxH)

Temperature Limits

Operation: 10°C till 40°C; <85% RF
Storage: -20°C till 50°C; <90% RF

Material: Polystyrene enclosure

Net Weight: 0,6 kg

Color: RAL 9003

IP Rating: Enclosure holds IP53

Electrical System

Supply Voltage: 24 VAC

Power: Max 10W

CE Marking: Complies with EMC and Low Voltage Directive

Connection Instructions

Connection to the CAN network is made with Lindinvent's shielded four-wire cable for 24 VAC and communication loop (CAN).

Types of Equipment on DALI Loop

Actuators (fixtures) and control devices following the DALI protocol are installed on a DALI loop.

Restrictions for Addressed DALI

- One DALI loop per SBDb
- Maximum number of DALI nodes (actuators and control devices): 64
- Introduced limitation on total number of control devices:
  - DALI Switch or DALI I/O Module: 8
  - Presence and/or Light Sensors: 8
- Maximum number of groups: 16
- Maximum number of scenes: 16
- Maximum total current consumption on the DALI loop: 250 mA

Connections for Peripheral Equipment:

- Wired, potential-free switches: 4
- PIR: Wired presence sensors
- General analog input, 0-10 VDC: 1
- Maximum number of wireless, battery-free switches: 16
- Maximum distance to wireless switch: 15 m radius from SBDb

Other Connections:

- 2 terminals for 24 VAC + CAN (CAN loop connection)
- 1 socket for Enocean transceiver
- 1 terminal for DALI loop
- Bluetooth® for connection via the LINDINSIDE app

Complementary Documentation SBDb

Documents can be accessed via the product page on www.lindinvent.com

Document	Comment
Installation Instructions	Screw it onto an electrical ladder or centrally in the service area. See the external connection diagram for equipment connections. The screen should be isolated.
Commissioning Instructions	Shows steps for commissioning. The LINDINSIDE mobile app guides the setup of functions and configuration of the DALI loop. See the INCONTROL tool in LINDINSPECT® for assigning lighting control rules.
Maintenance Instructions	Considered maintenance-free.
External Connection Diagram	Shows connections on the circuit board.
Environmental Product Declaration	For assessment by the Byggvarubedömningen in Sweden.
Modbus List	Addresses for available symbols/variables.
AMA Text	AMA codes for DALI equipment including SBDb.