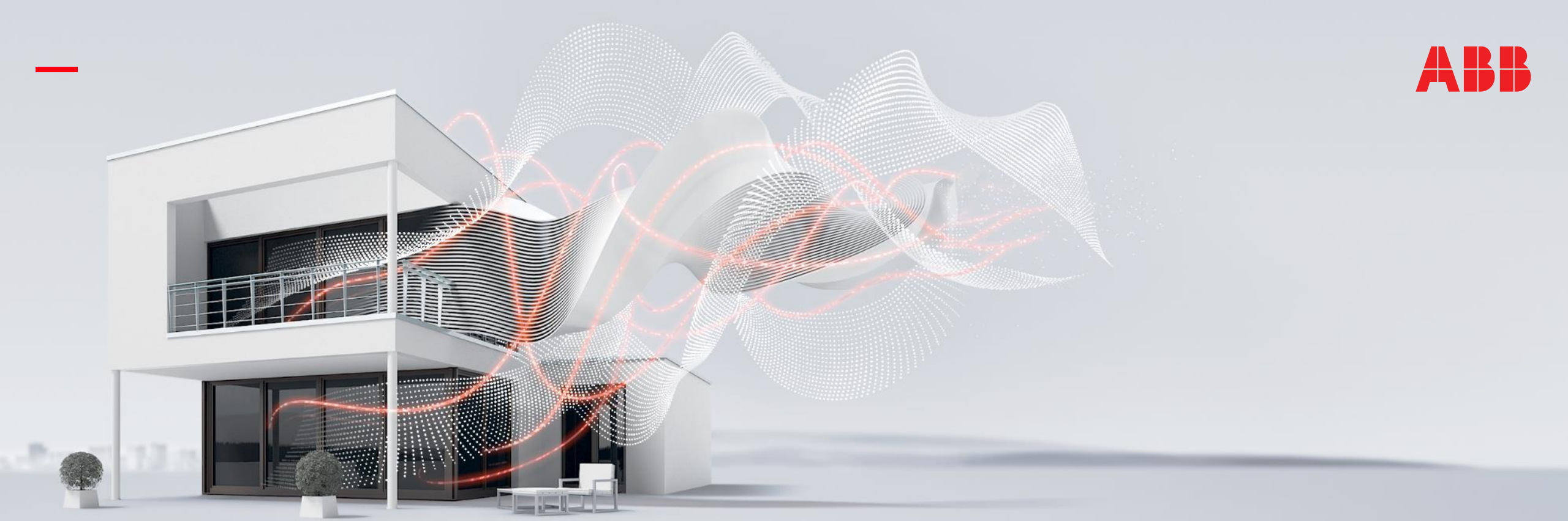


DECEMBER 2020

ABB-free@home® – DALI and Split Unit Gateway

Online Learning Session – Competence Center Europe – Smart Buildings

Thorsten Reibel, Jürgen Schilder, Stefan Grosse, Martin Wichary & Olaf Stutzenberger

 Document ID.: Rev.:

Agenda

ABB-free@home® – DALI and Split Unit Gateway

- Introduction
- Commissioning and Operation

ABB-free@home® – DALI and Split Unit Gateway

Introduction

ABB-free@home® – DALI and Split Unit Gateway

Introduction

Simply smart

ABB-free@home® is an easy-to-use home automation system, which controls:

- Lighting
- Blinds
- Heating, Ventilation and Air-conditioning and
- Door communication

Home Automation easier than ever

ABB-free@home® – DALI and Split Unit Gateway

Introduction

DG-M-1.16.1 – free@home DALI Gateway

SUG-F-1.1 – free@home Split Unit Gateway

Gaining new customers and increasing market share in the Building Automation Business thus strengthening ABB's global market position

ABB-free@home® – DALI and Split Unit Gateway

Introduction DALI Gateway

Argumentation

- Traditionally the strengths of ABB's intelligent installation products portfolio have always been in the field of lighting control. Now we are expanding this competence to the free@home system
- DALI is increasingly gaining relevance in home automation systems
- Enable sales of the free@home system in markets where DALI is a key feature

ABB-free@home® – DALI and Split Unit Gateway

Introduction DALI Gateway

Functions

- Interface between DALI and free@home
- Incorporated DALI power supply
- The DALI Gateway behaves similar to a conventional dimmer in the free@home system.
- Up to 16 DALI devices are assigned to a free@home channel each (“normal” DALI type 0 luminaires)
- “Power-on-Level” and “System-failure level” can be set per Gateway

ABB-free@home® – DALI and Split Unit Gateway

Introduction DALI Gateway

Features

- DIN-rail product, width 4 MW (70 mm)
- Supply voltage 100V - 240V AC/DC, 50/60Hz wide-range input suitable for worldwide use
- 1 complete DALI output, 230 V voltage proof
- Integrated DALI power supply
- 16 DALI devices per output
- DALI-2 certified

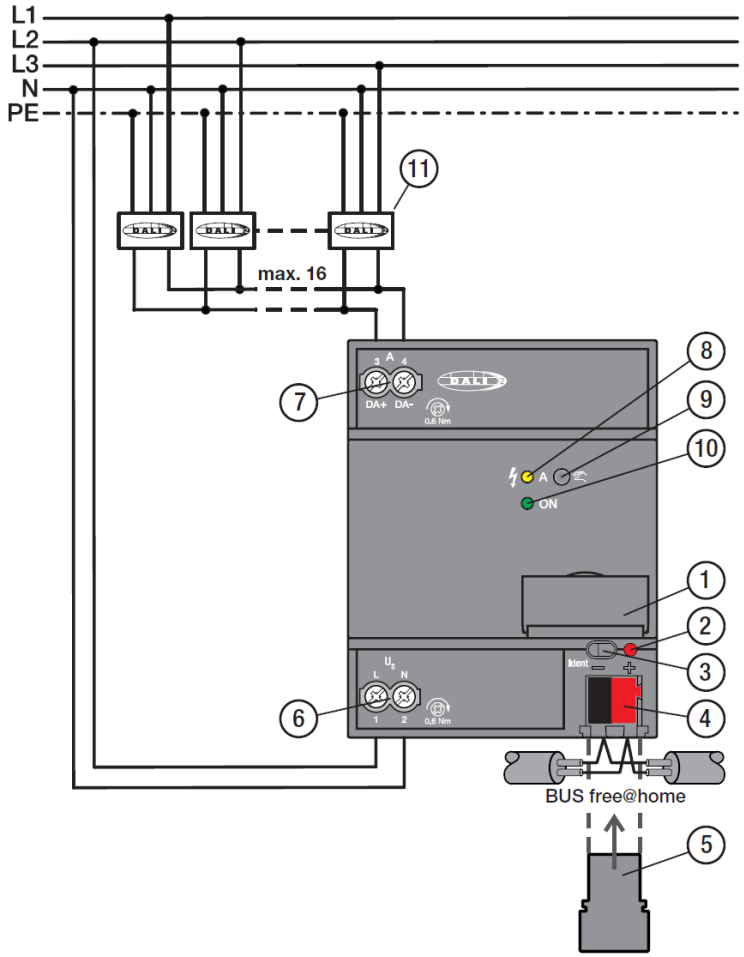


ABB-free@home® – DALI and Split Unit Gateway

Introduction DALI Gateway

Advantages

- Simple installation: no tools required for assembly
- Labeling field: Clear, easy marking
- Supply voltage wide-range input: Flexible use
- 230V proof DALI output: Safe installation
- Combi-head screw 6 mm²: Quick installation
- LED for device ON and DALI error
- - Button: Simple and intuitive manual operation
- ABB has 15 years experience with DALI and integration to ABB i-bus® KNX, a further step was the availability in ABB-free@home®

ABB-free@home® – DALI and Split Unit Gateway

Introduction Split Unit Gateway

Motivation & Goals

- HVAC control is a vital part of home automation systems
- Now we integrate Split Unit control to free@home
- This enables sales of the free@home system in markets where the integration of Split Units is a must have
- Gaining new customers and increasing market share in the Building Automation Business thus strengthening ABB's global market position
- Allow integration of Split Units into the free@home system

ABB-free@home® – DALI and Split Unit Gateway

Introduction Split Unit Gateway

Decentralized air-conditioning systems in buildings

Split units:

- With a decentralized air-conditioning system in the form of a split unit, the refrigerant is compressed outdoors, while the air-treatment processes (air conveyance, filtering and temperature control) are performed in the room to be cooled
- Many small units only recirculate the room air to cool it
- Some devices draw in a small amount of air ahead of the facade (independently of the building's orientation), blow it into the room and usually discharge the same quantity of exhaust air from the room to the outside

Source: WIKIPEDIA

Solution

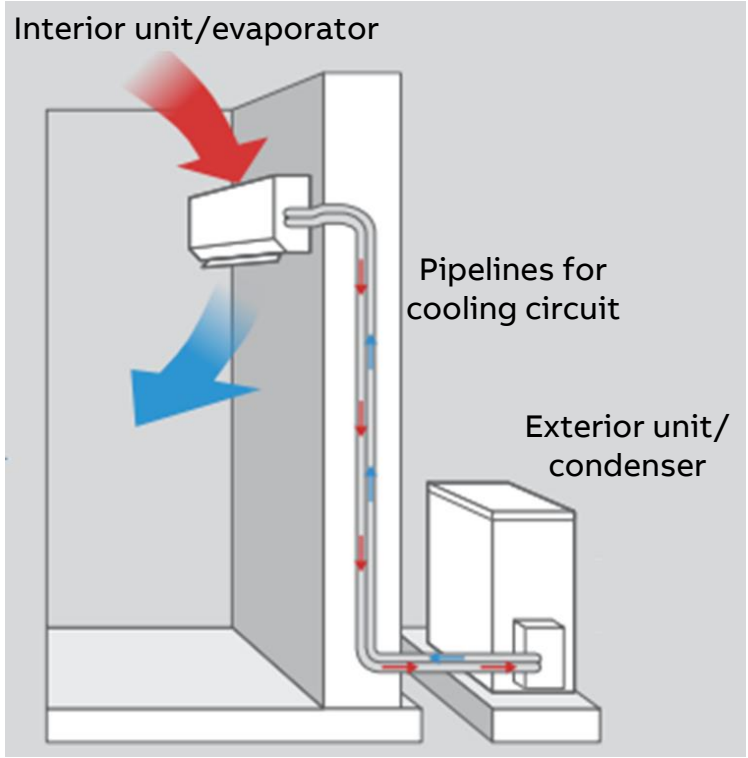


ABB-free@home® – DALI and Split Unit Gateway

Introduction Split Unit Gateway

What is a Split Unit Gateway?

- Many manufacturers' air-conditioning units, so-called split units, are operated using an infrared remote control from the manufacturer
- The Split Unit Gateway now replaces this remote control
- The Split Unit Gateway forms the interface between the free@home system and the air-conditioning systems from many manufacturers, also referred to as split units
- It allows users to integrate the split unit into a free@home system for convenient, energy efficient control

Solution

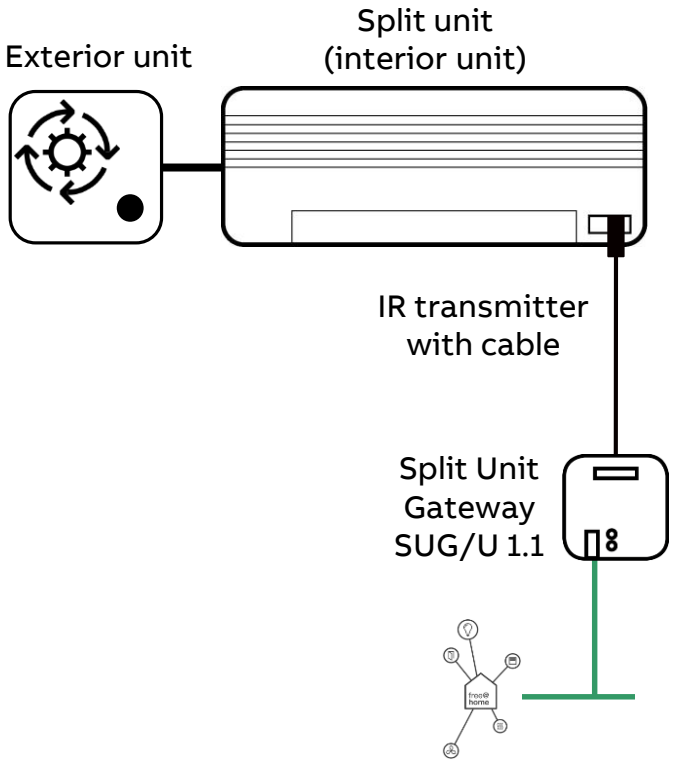


ABB-free@home® – DALI and Split Unit Gateway

Introduction Split Unit Gateway

What is a Split Unit Gateway?

- The Split Unit Gateway is installed near the split unit, and the transmitter of the supplied cable is bonded directly to the receiver of the split unit
- The device converts free@home telegrams to infrared commands and sends them to the split unit
- This makes it possible to control the split unit via free@home commands
- The air-conditioning system then no longer receives the commands from a remote control but instead can be operated via any free@home sensors or via a visual display

Solution

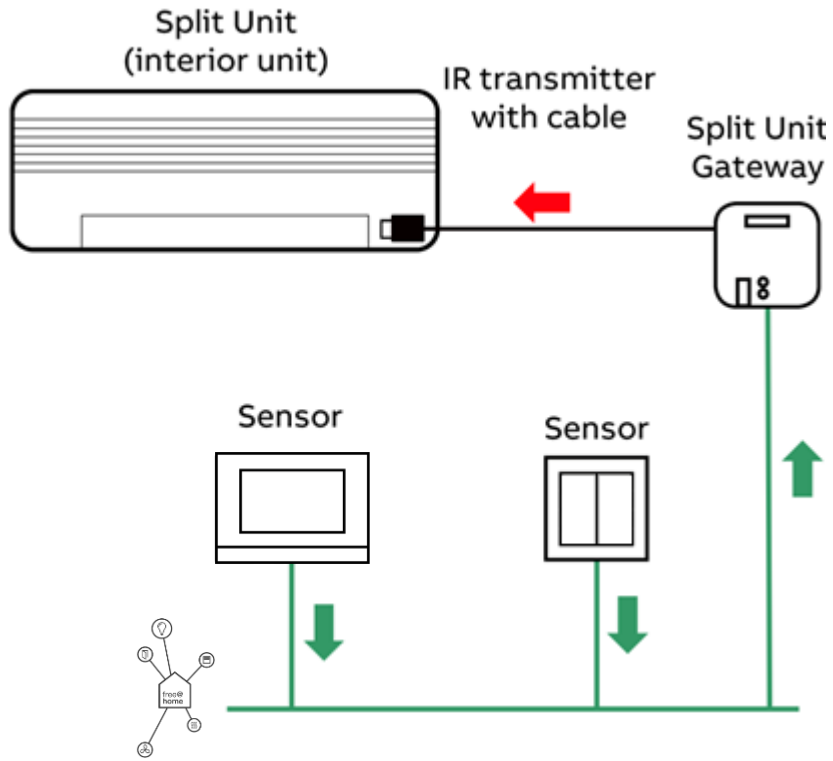


ABB-free@home® – DALI and Split Unit Gateway

Introduction Split Unit Gateway

What is a Split Unit Gateway?

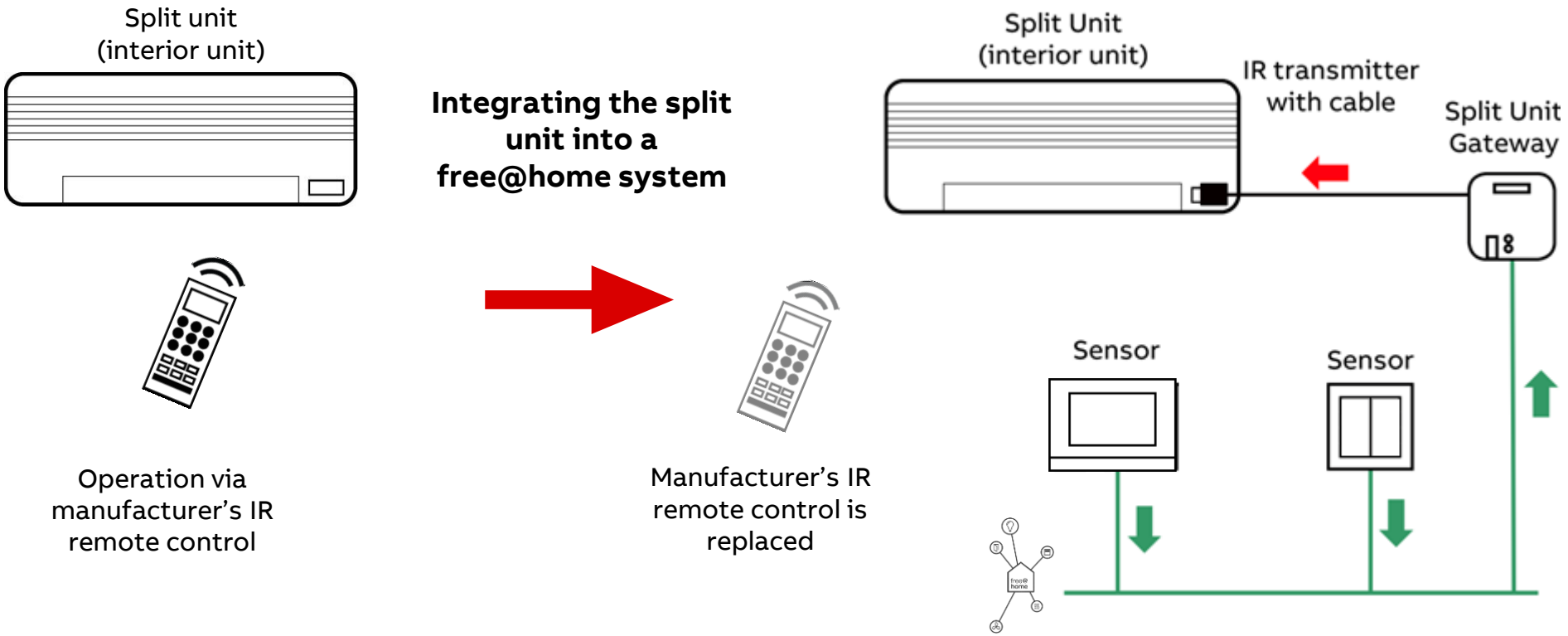


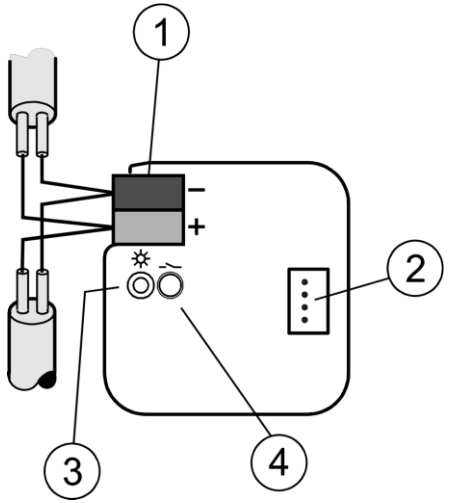
ABB-free@home® – DALI and Split Unit Gateway

Introduction Split Unit Gateway

Product Overview

- Device can be installed in a flush-mounted or surface-mounted installation box
- The transmitter of the supplied IR cable (2m) is bonded to the receiver of the split unit
- No auxiliary voltage necessary (power from free@home)
- Dimensions 39 x 40 x 12 mm (H x W x D)

Solution



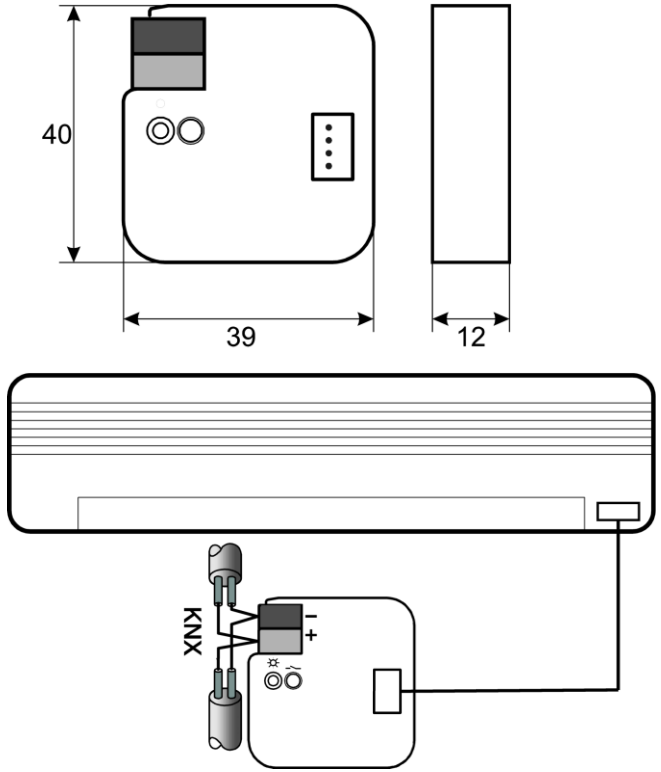


ABB-free@home® - Overview and Installation

Commissioning and Operation – DALI Gateway

ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – DALI Gateway

Functions on Gateway level

- Up to 16 DALI devices are automatically addressed and assigned to a channel of the DALI Gateway each
- Possible settings per Gateway:
  - Setting of “Power-On-Level”
    (Brightness value after a supply voltage recovery of the DALI device)
  - Setting of “System Failure Level”
    (Reaction of the DALI device in case of a free@home voltage failure)

Impression free@home

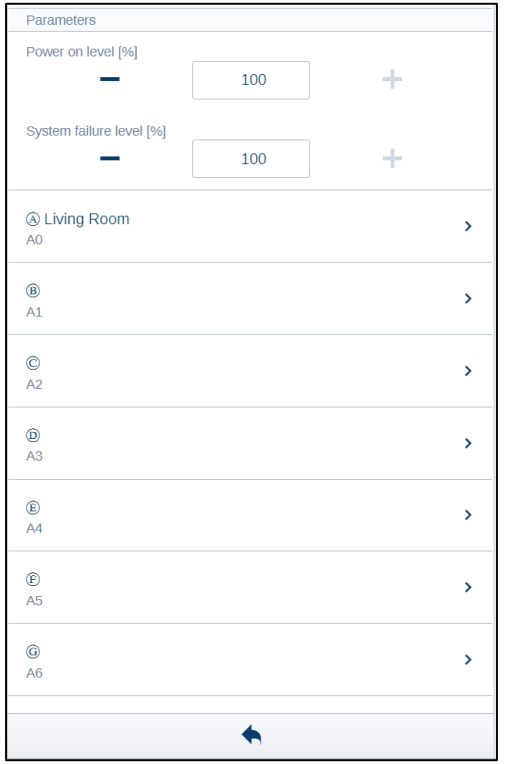


ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – DALI Gateway

Functions on device level

– Available parameters per channel similar to the f@h dimmer:
  - Minimum brightness
  - Maximum switch-on brightness day/night
  - Autonomous switch-off time
  - Switch-on mode

Impression free@home

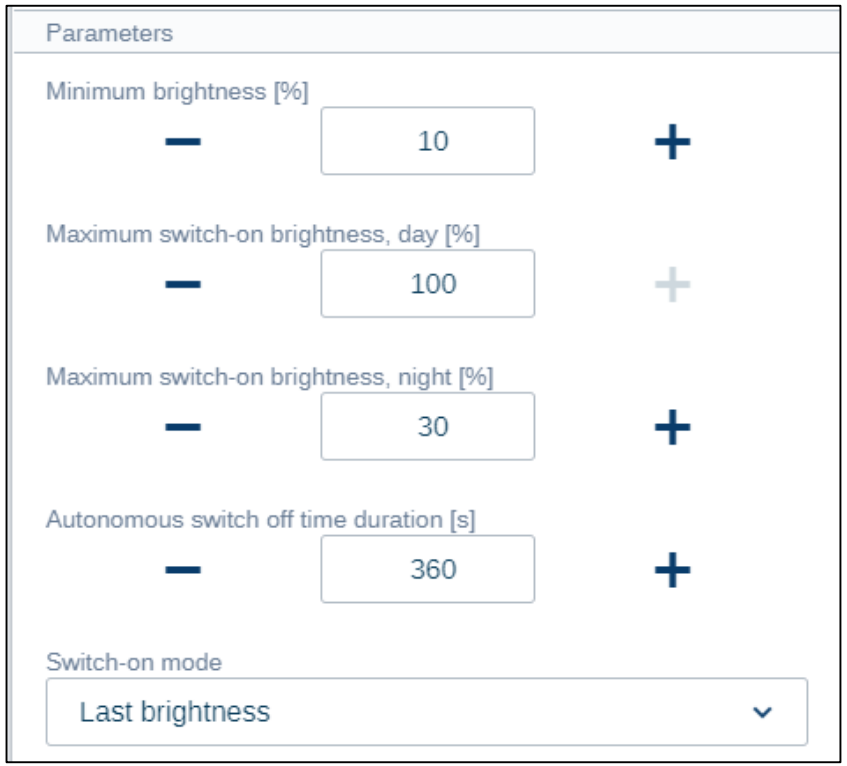


ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – DALI Gateway

Commissioning

- The channels from the DALI Gateway can be linked with a free@home sensor like any other actuator
- Usage in scenes, time schedules and actions possible
- Controllable via panel and app

Impression free@home

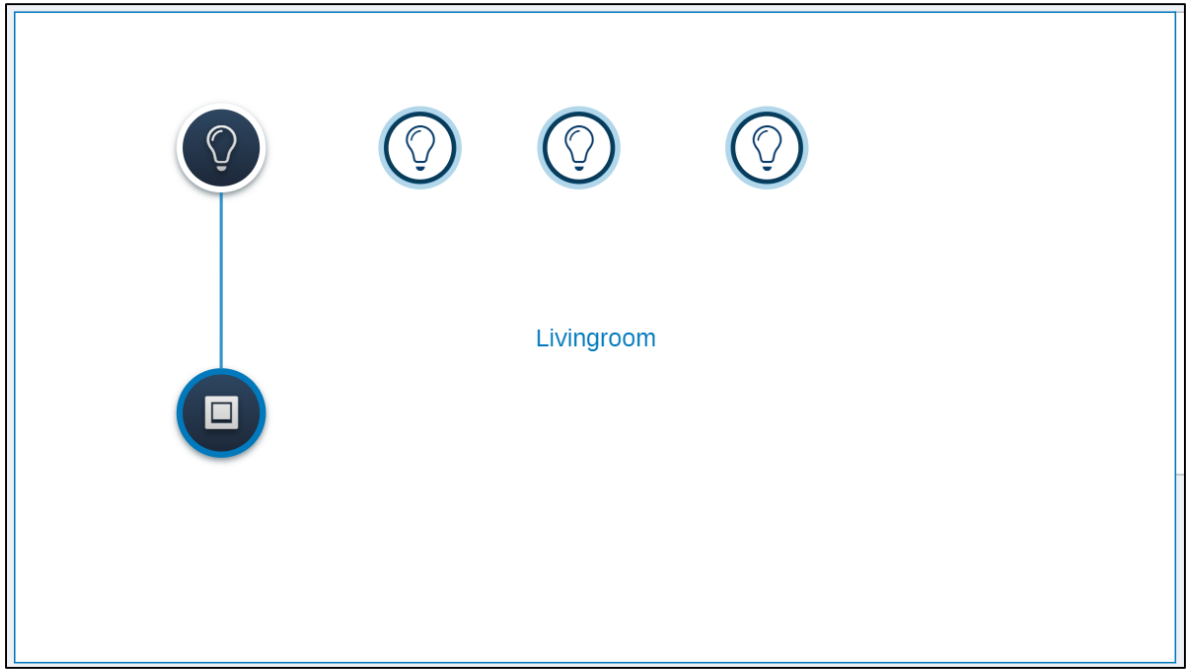


ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – DALI Gateway

Troubleshooting – Addressing DALI ballasts

- All connected DALI lamps will be addressed automatically
- If some lamps are not working correctly or were not addressed correctly the DALI Gateway can be reset to start the addressing process of the connected ballasts again

  →Device Management → DALI Gateway → Maintenance → Reset

Impression free@home

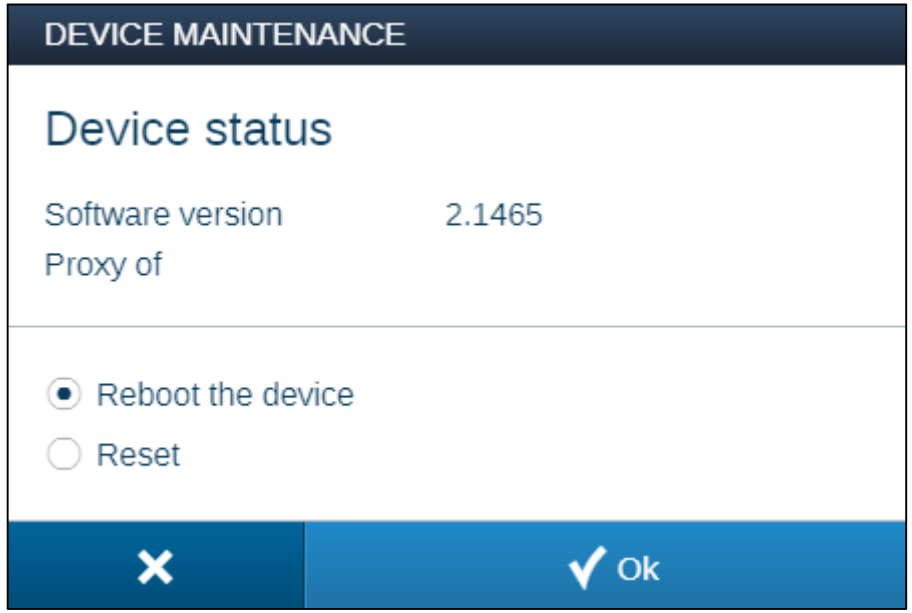


ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – DALI Gateway

Troubleshooting – Minimum brightness

- If the minimum brightness, which is setup in the free@home interface is lower than the physical minimum brightness of the DALI lamp, the DALI lamps will be displayed as “Channel error”
- This error can be avoided by increasing the minimum brightness of the DALI Gateway
- Workaround:
  - Restart the Gateway via the devices menu in free@home. The device will be “available” again as long you don’t dim the affected channel
  - Set the minimum value in all affected channels to a higher minimum level
  - Restart the Gateway via the devices menu in free@home again
  - Test if the ballast is working correctly now

Impression free@home

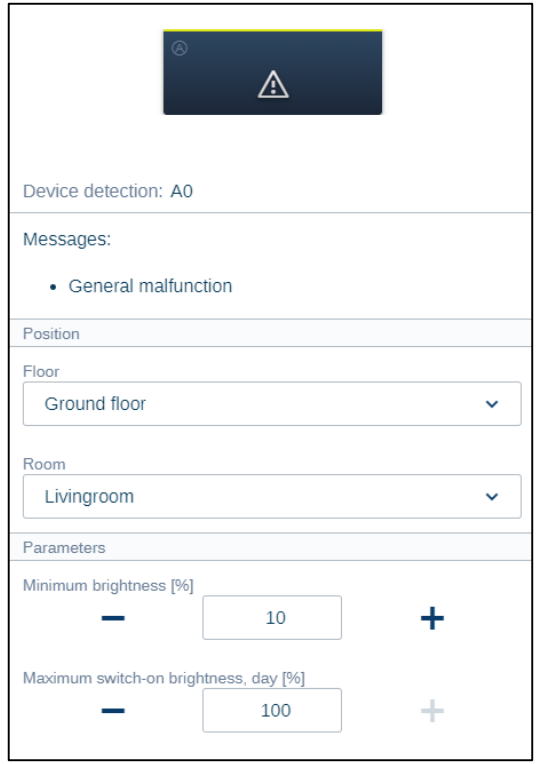


ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – DALI Gateway

Troubleshooting – Lamp faults

- General lamp faults will be displayed by the free@home interface with an error message
- The error message includes an information about which channel signals the error

  →Check the wiring and the DALI lamp

Impression free@home

ABB-free@home® - Overview and Installation

Commissioning and Operation – Split Unit Gateway

ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

Functions

The following functionality* can be controlled via free@home:

- Switching on/off – Switches the Split Unit on or off
- Specifying the setpoint temperature including parameterizable setpoint temperature limit
  - The setpoint is sent to the Split Unit
  - The control is then carried out by the Split Unit
- Setting the operating mode (Automatic, Heating, Cooling, Ventilation, Drying)
- Control of fan speed level
  - The fan speed level can be controlled
  - There are 3 fan speed levels (1, 2, 3) and the fan speed level can also be controlled automatically
  - The Split Unit then adjusts the fan speed level itself
- Slat adjustment horizontal and vertical
  - The movement of the slats can be activated/deactivated for many Split Units
  - The slats adjust the direction of flow
- Activation of silent mode
  - Many of the latest Split Units support this function
  - If this function is activated, the outdoor unit of the Split Unit runs with reduced power, which reduces the creation of noise, e.g. at night

* Only if supported by the specific split unit model

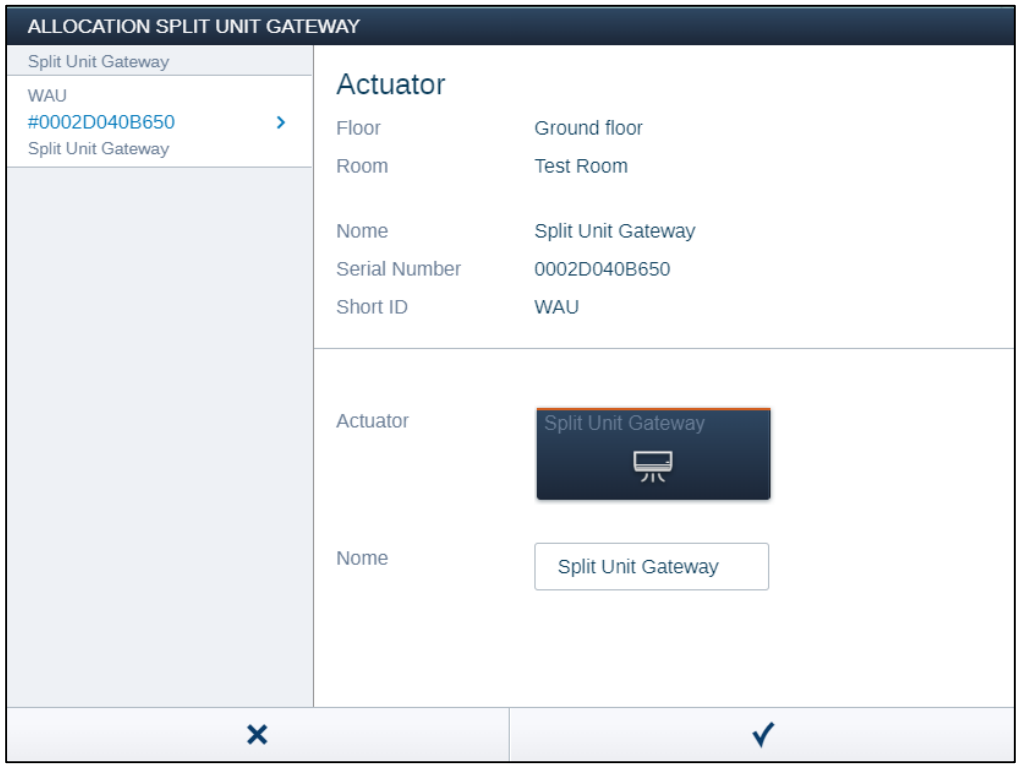
ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

Configuration

- Automatic detection
- Selection of remote model (manufacturer and type)
- Further settings
  - Temperature limitation
  - Max./Min. setpoint temperature
- Silent Mode
- “Send IR always“ (in case of parallel operation with remote control)

Impression free@home



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Impression free@home

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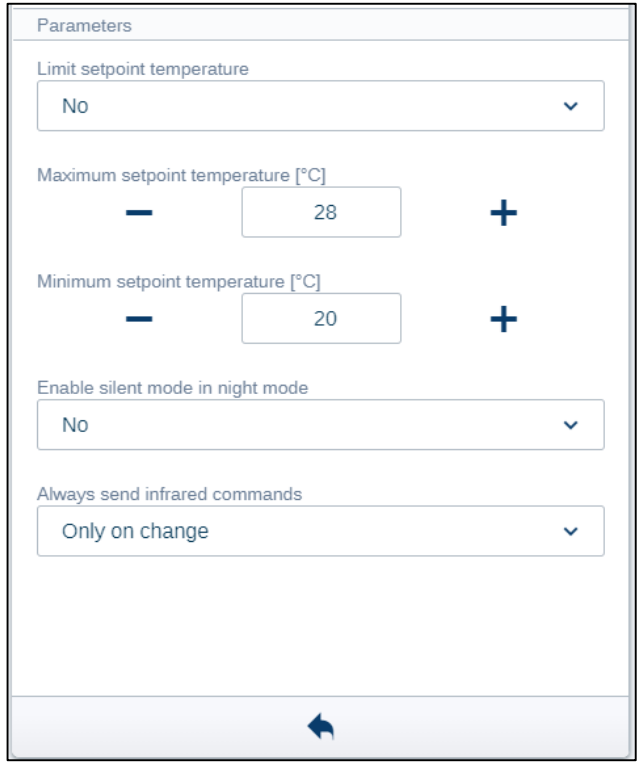

ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

Adding a new Remote Control

General information:

- In general, it is possible to add a new remote control to the database
- Attention: we do not add the Split Unit!
- ABB **doesn't guarantee** that the teach-in process will be successful. Remote controls, which can't be integrated, are also listed in the linked file above.

List of all integrated remote controls: Link

Process

1. The ABB local sales unit (LSU) sends the remote control to Poland
2. …
3. …
4. …
5. The remote control will be sent back to the LSU

ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

Operation via RTC

- The Split Unit Gateway can be controlled with a free@home RTC
- The RTC must be linked with the icon of the Split Unit Gateway
- With the RTC only the setpoint of the RTC can be adjusted
- All further settings must be adjusted with the panel or the app
- As soon as the RTC is connected with the Split Unit Gateway, all most of the further settings of the RTC disappear
- If there is a second HVAC system in the room, a second RTC must be used

Impression free@home

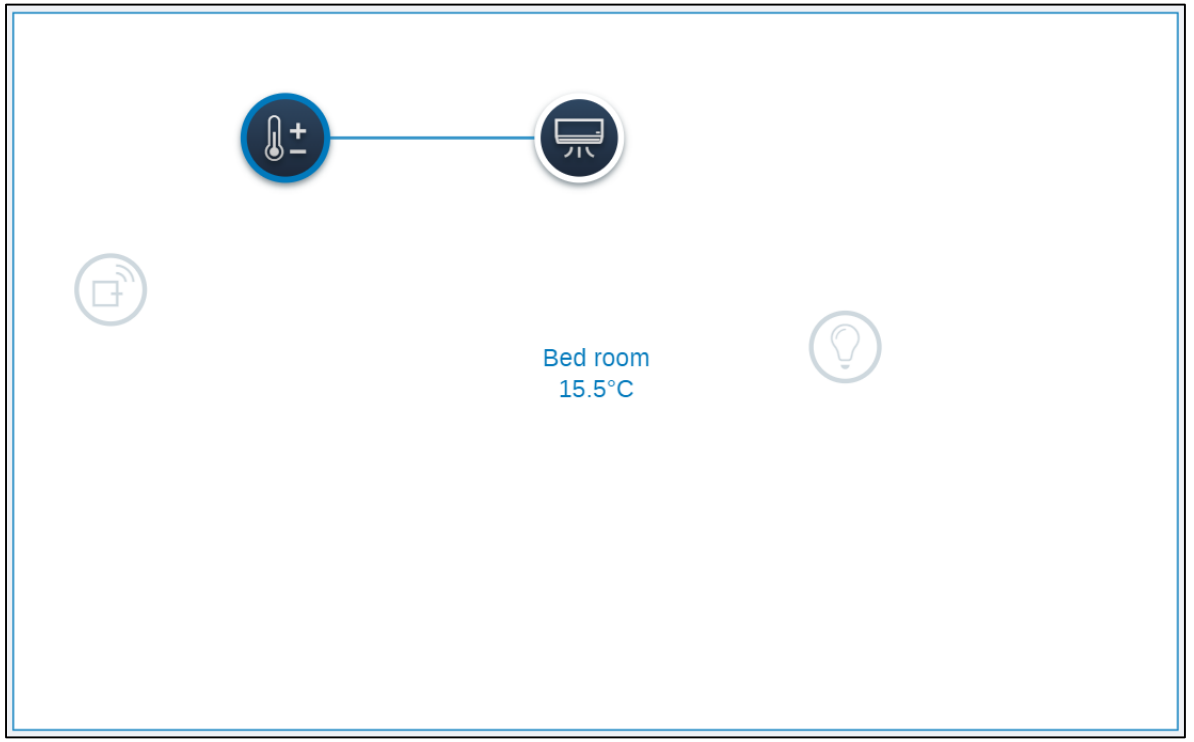

ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

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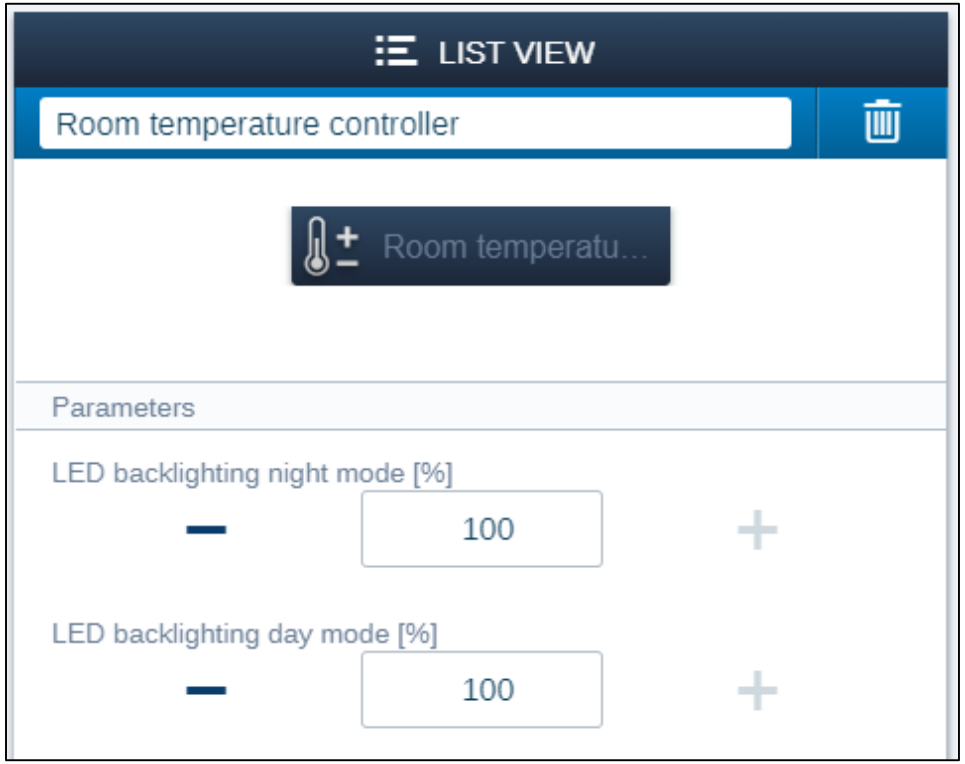

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Impression free@home

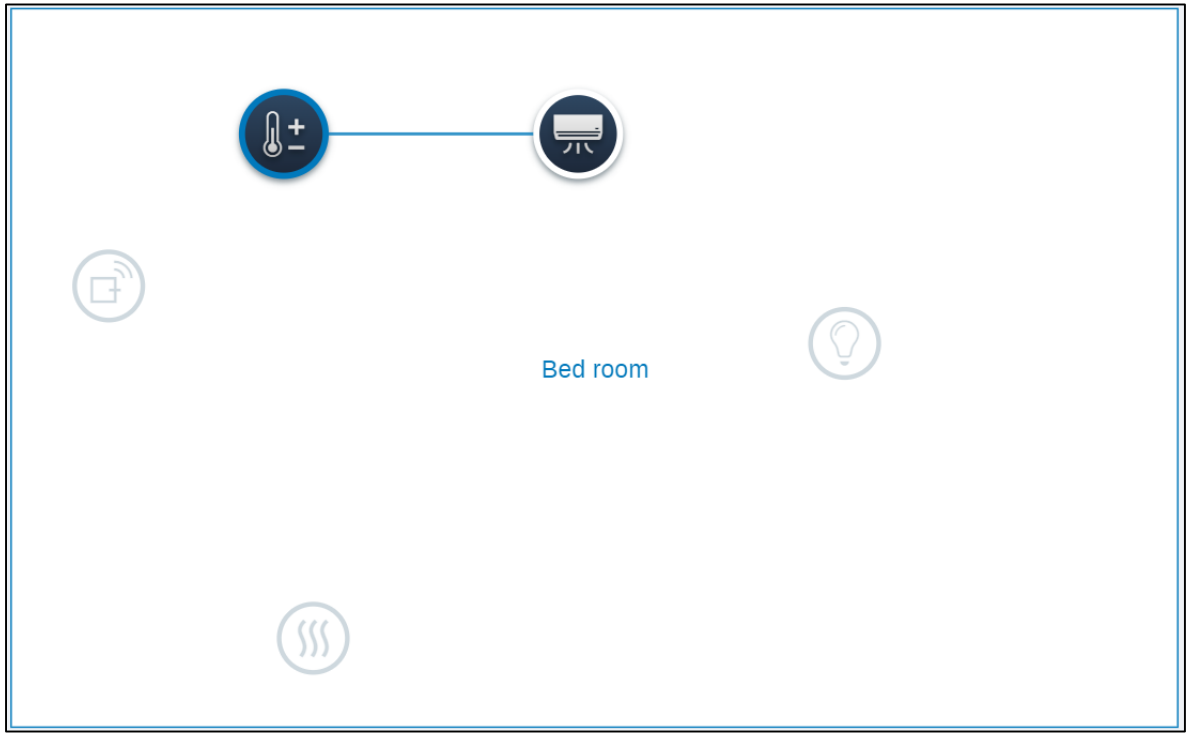

ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

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Impression free@home

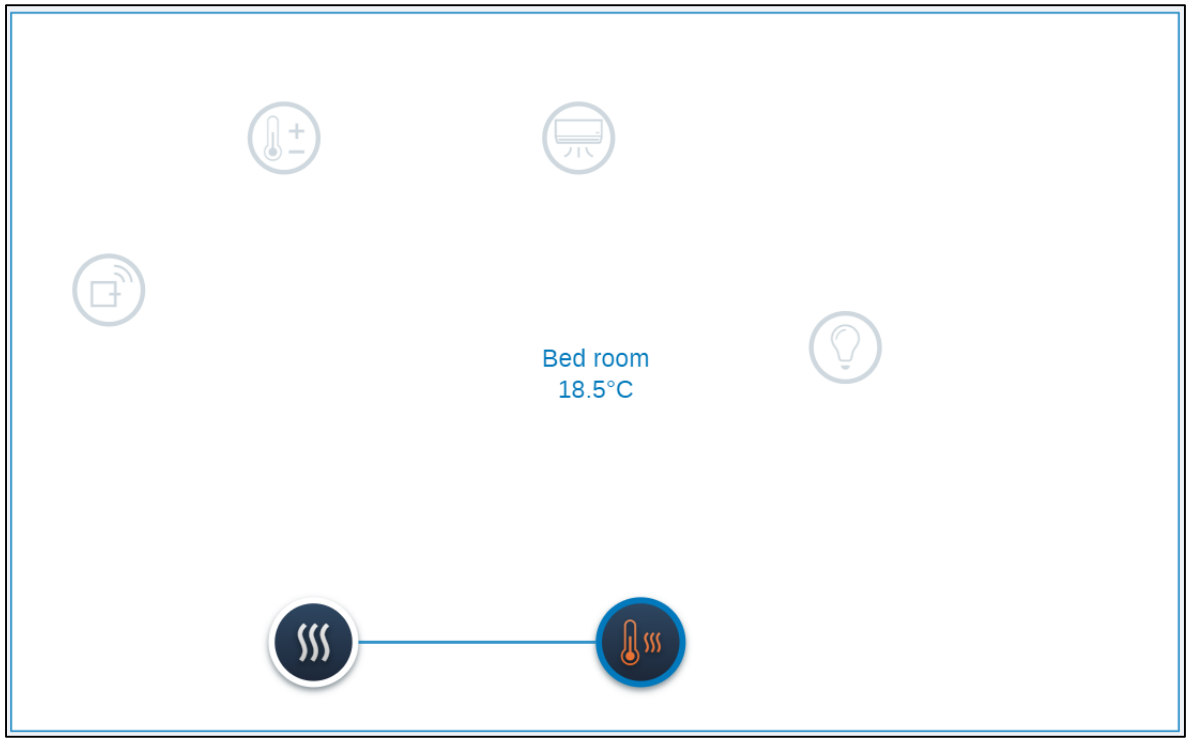


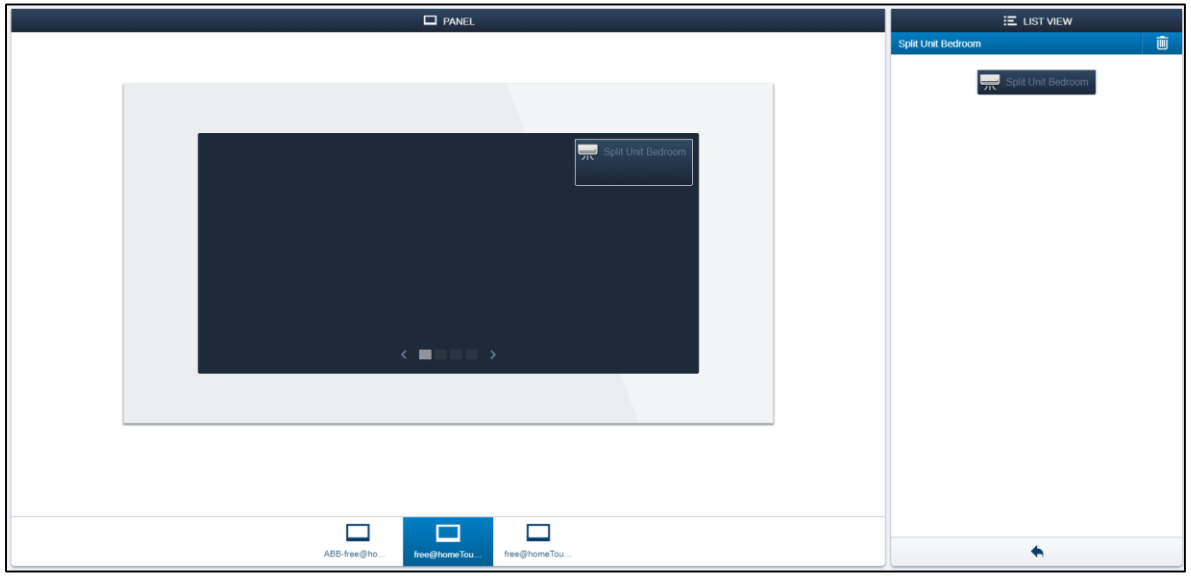
ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

Operation via Panel

- The Split Unit Gateway can be controlled with a free@home panel
- 3 different panels can be used:
  - 4,3’’ free@home panel
  - IP touch 7’’ / 10’’
  - 7’’ free@home panel

Impression free@home



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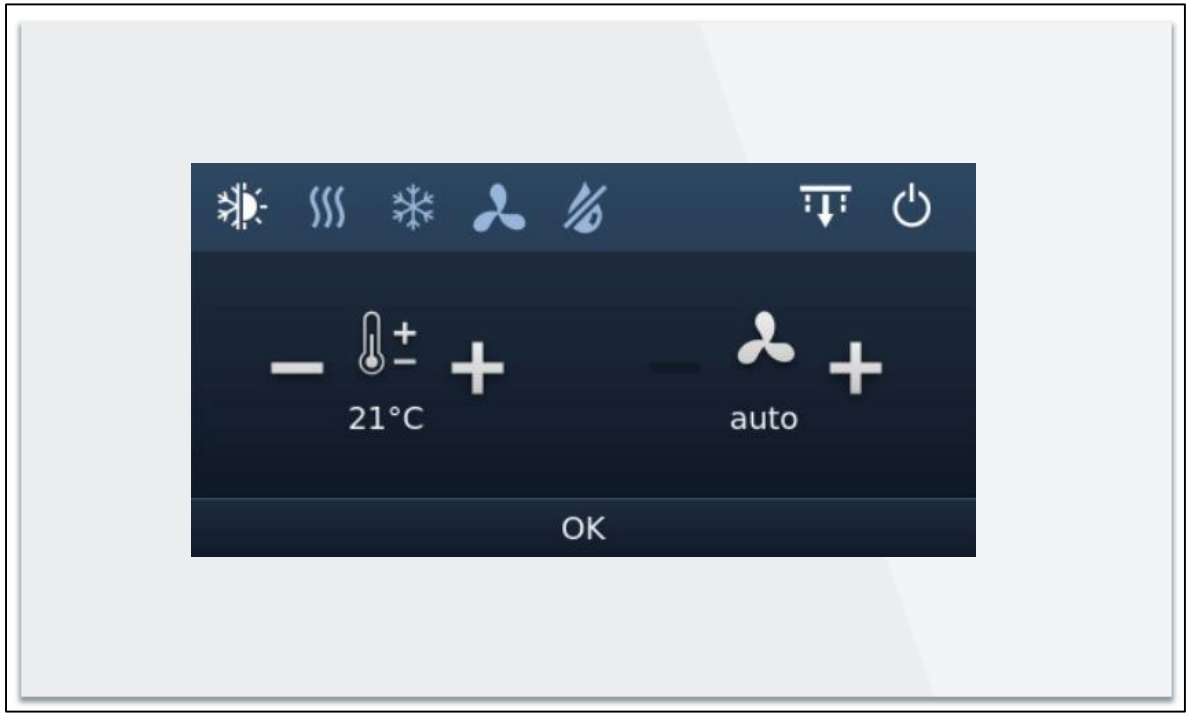


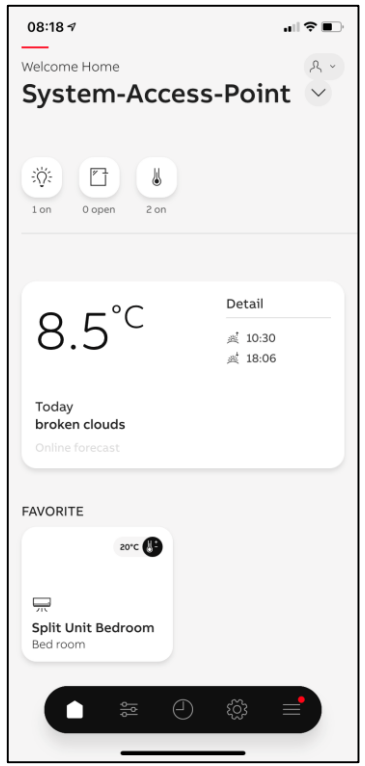
ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

Operation via APP

- Complete control element in the free@home next app
- User friendly and intuitive design
- Adjustments possible

Impression free@home



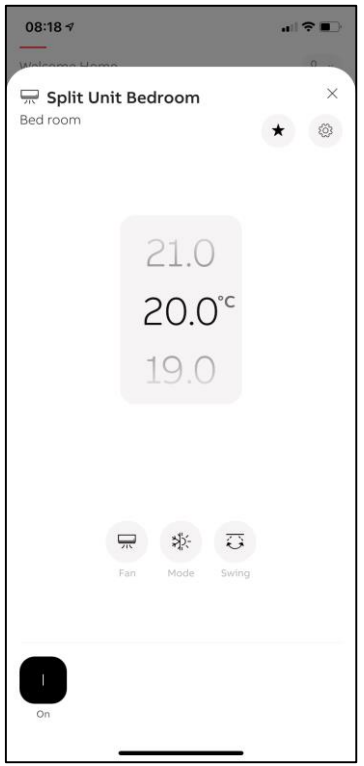
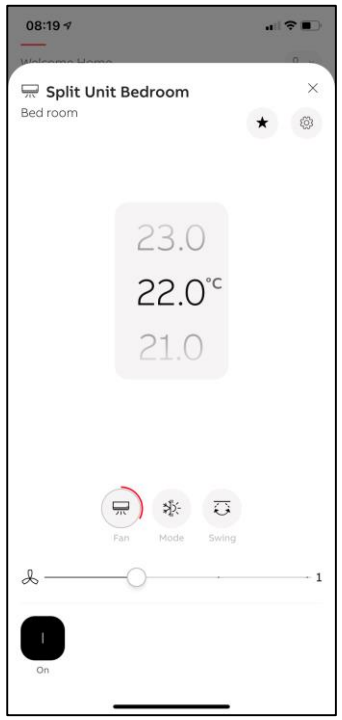


ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

Operation via APP

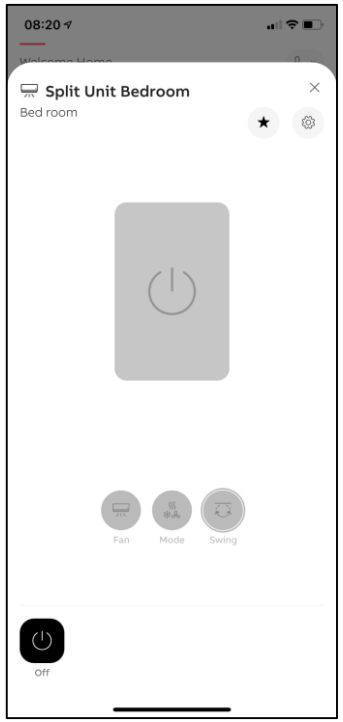
Setpoint adjustment



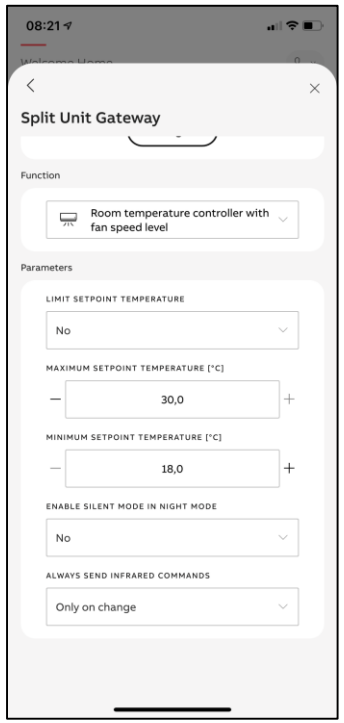
Fan settings

Mode adjustment

Swing mode



Turning off



Adjustment of the settings

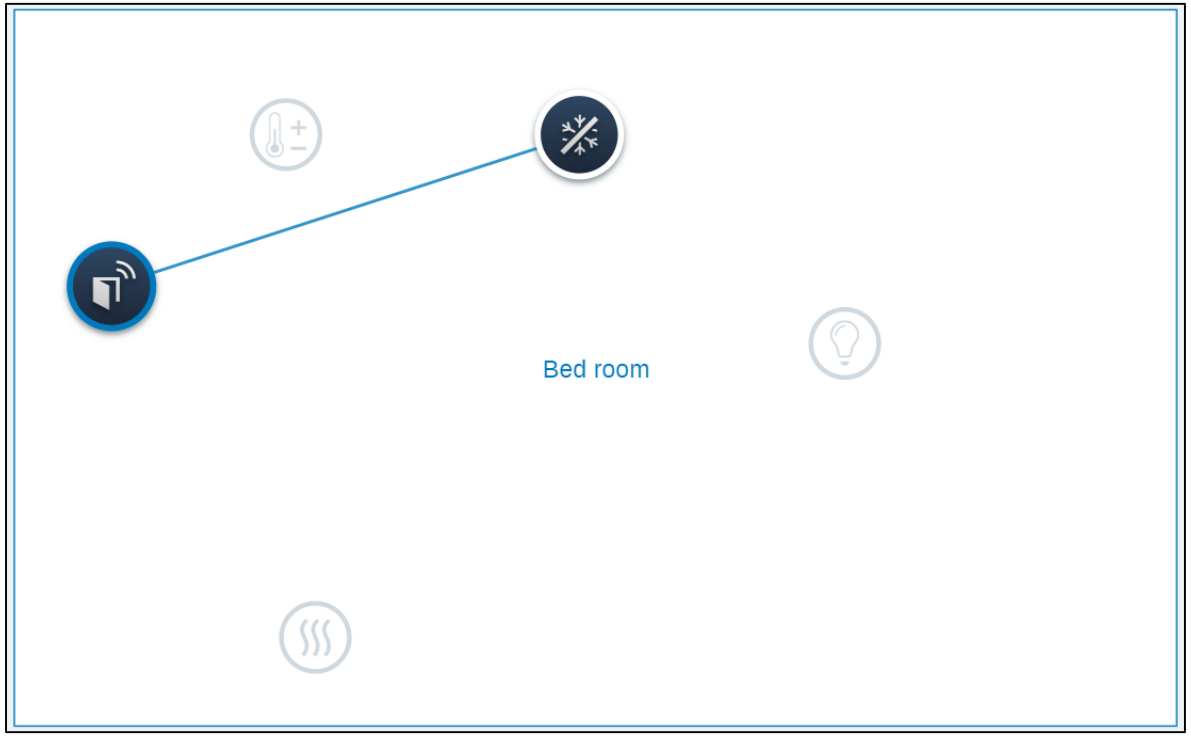
ABB-free@home® – DALI and Split Unit Gateway

Commissioning and Operation – Split Unit Gateway

Further Settings

- The Split Unit Gateway can be connected with a window contact to activate the standby mode automatically
- Usage in scenes

Impression free@home



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Commissioning and Operation – Split Unit Gateway

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Impression free@home

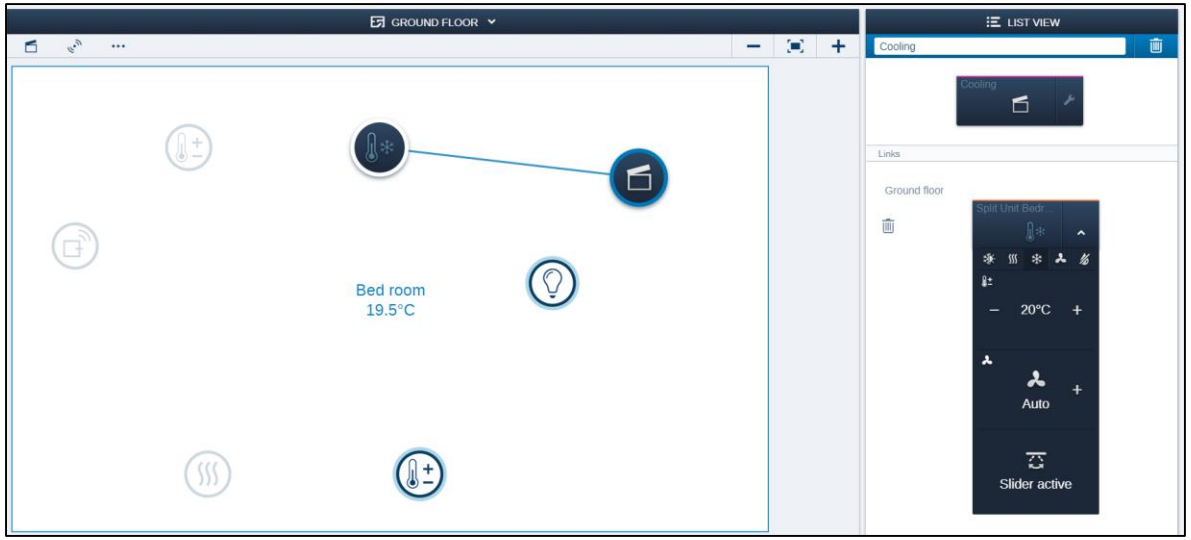


ABB-free@home® – DALI and Split Unit Gateway

Questions?

DG-M-1.16.1 – free@home DALI Gateway

SUG-F-1.1 – free@home Split Unit Gateway

ABB-free@home® – DALI and Split Unit Gateway

Online Learning Session

Homepage

ABB-free@home - Home and Building Automation | ABB

- Products and Downloads
- System Information
- Highlights
- Services and Tools
- Support

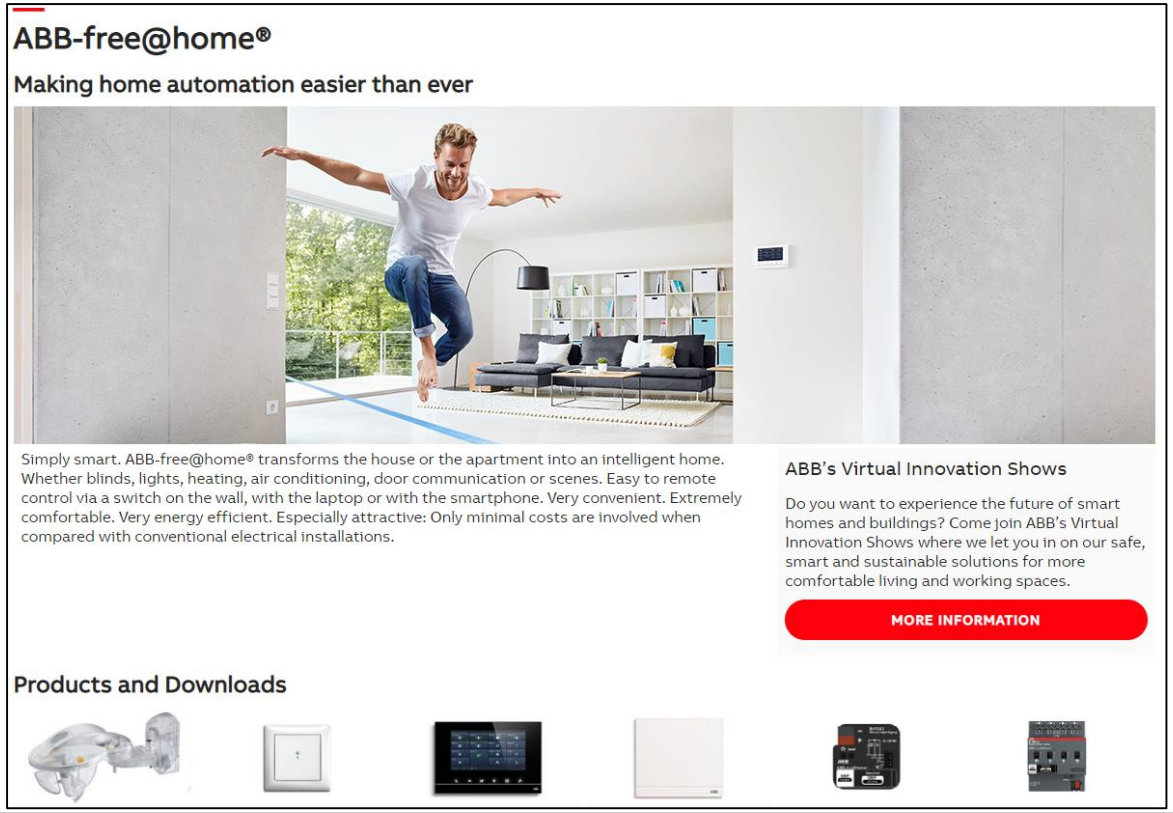


ABB-free@home® – DALI and Split Unit Gateway

Online Learning Session

Training Material

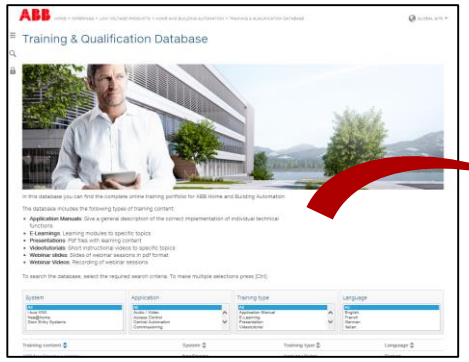
Training & Qualification Database

– The database contains extensive training content
  - Presentations
  - Video tutorials
  - Webinar slides and videos
  - and more …
  - https://go.abb/ba-training
  - ww.abb.com/knx (→ Services & Tools → Training and Qualification → Training Database)

YouTube

– Channel “ABB Home and Building Automation”
  - https://www.youtube.com/user/ABBibusKNX

Training and Qualification



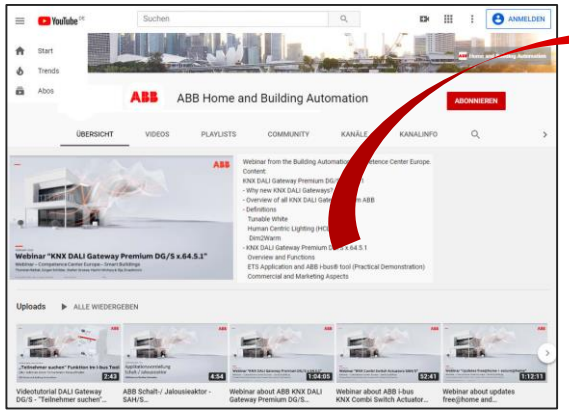


ABB-free@home® – DALI and Split Unit Gateway

Online Learning Session

Training & Qualification Calendar

In addition to the online modules and the traditional training programs offered by your local ABB sales team, we offer a variety of on-site trainings conducted by our specialists at different ABB training facilities

In this Training & Qualification Calendar you can find the educational events that are taking place during 2020

If you are interested in a training please click the training und you will be forwarded to register in “ABB MyLearning”

www.abb.com/knx or https://go.abb/ba-training

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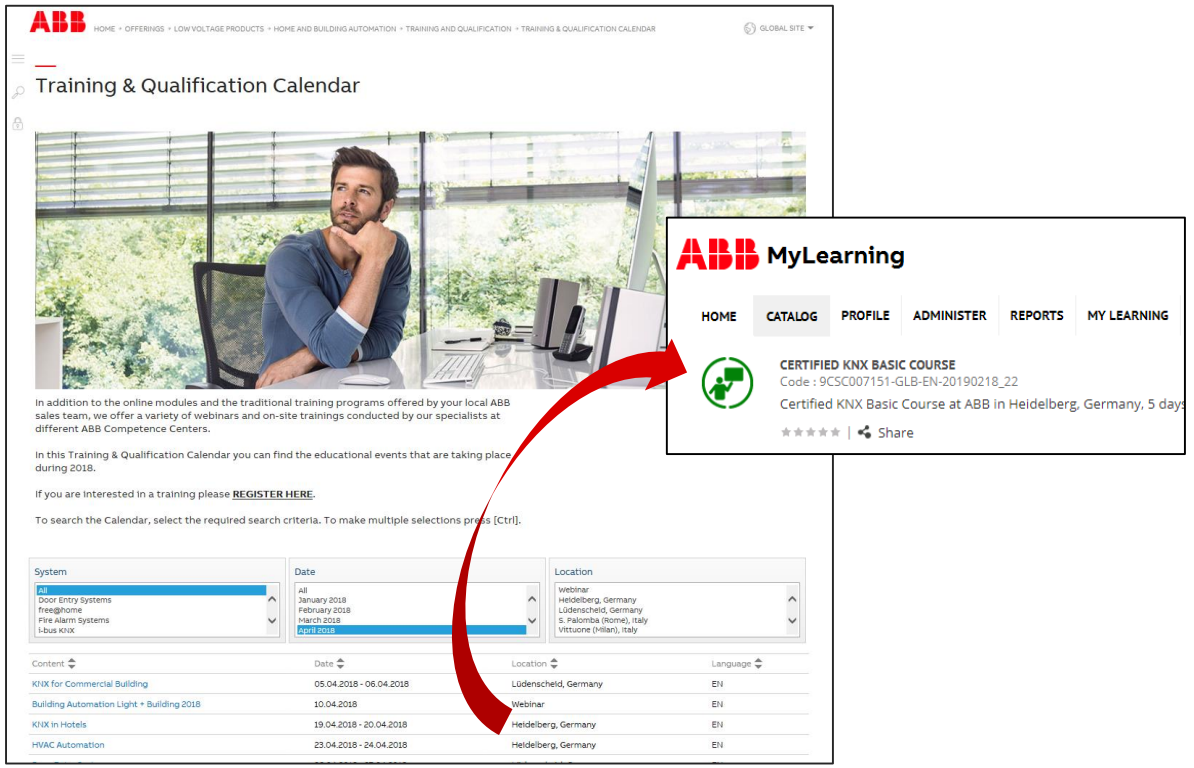
→ Training and Qualification

→ Training Calendar

Training and Qualification



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