

DECEMBER 2020

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

Online Learning Session – Competence Center Europe – Smart Buildings

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# Agenda

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

Introduction

Commissioning and Operation



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# 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



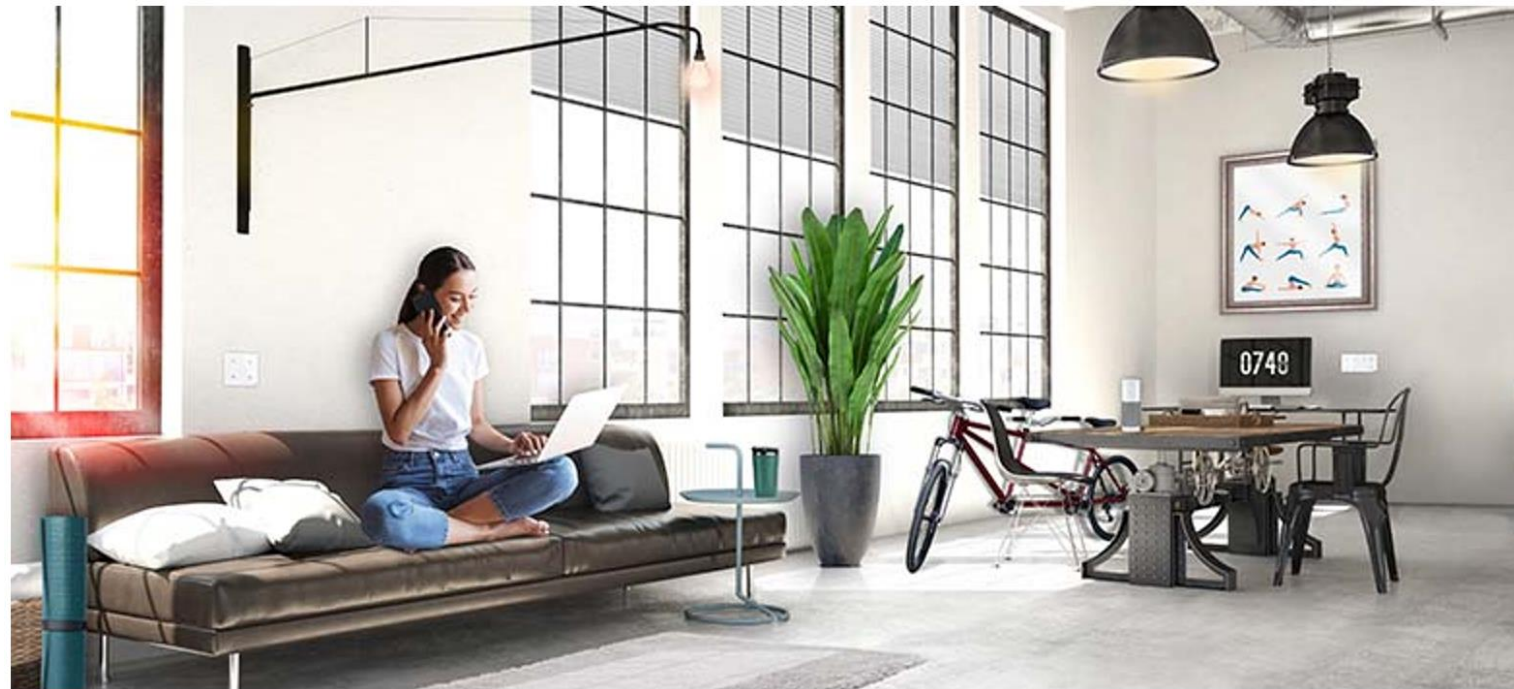
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# ABB-free@home® – DALI and Split Unit Gateway

## 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

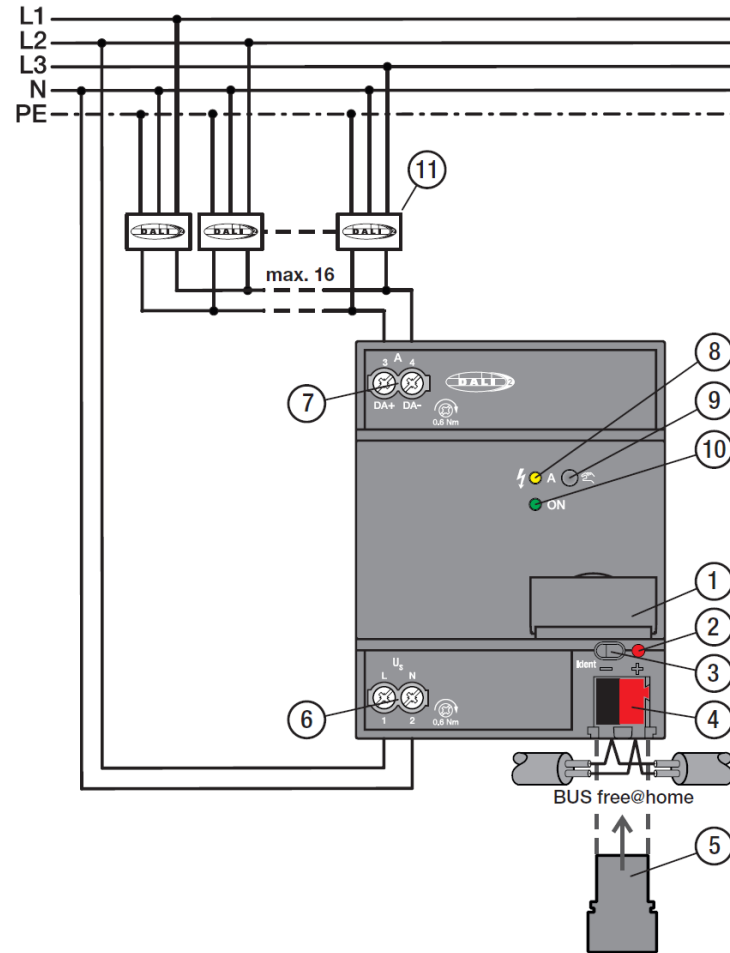


# ABB-free@home® – DALI and Split Unit Gateway

## 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 mm<sup>2</sup>: 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

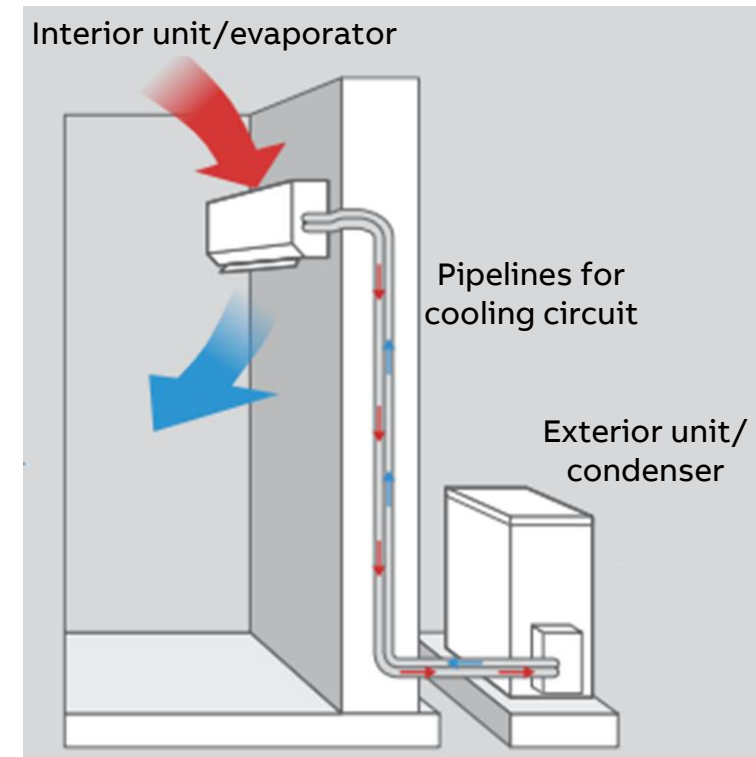
### Decentralized air-conditioning systems in buildings

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



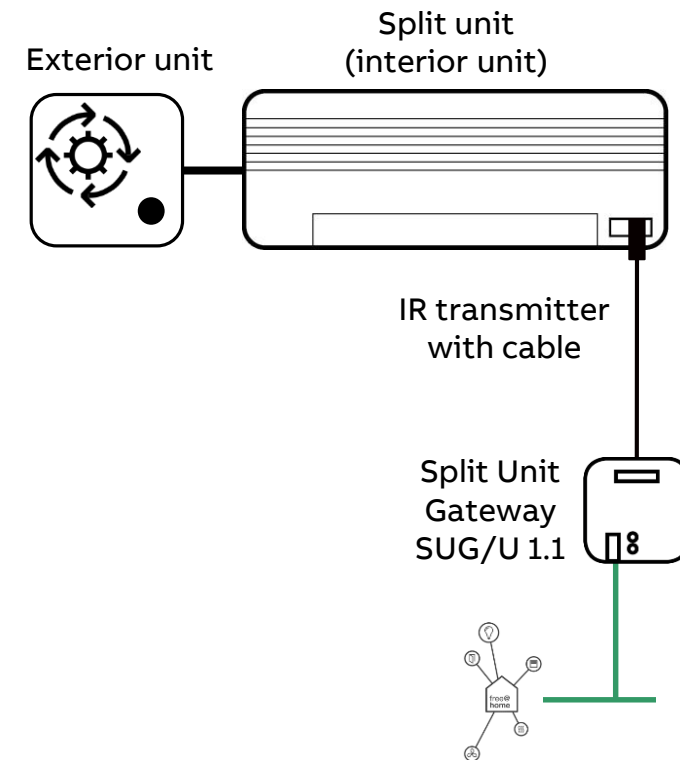
# ABB-free@home® – DALI and Split Unit Gateway

## 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



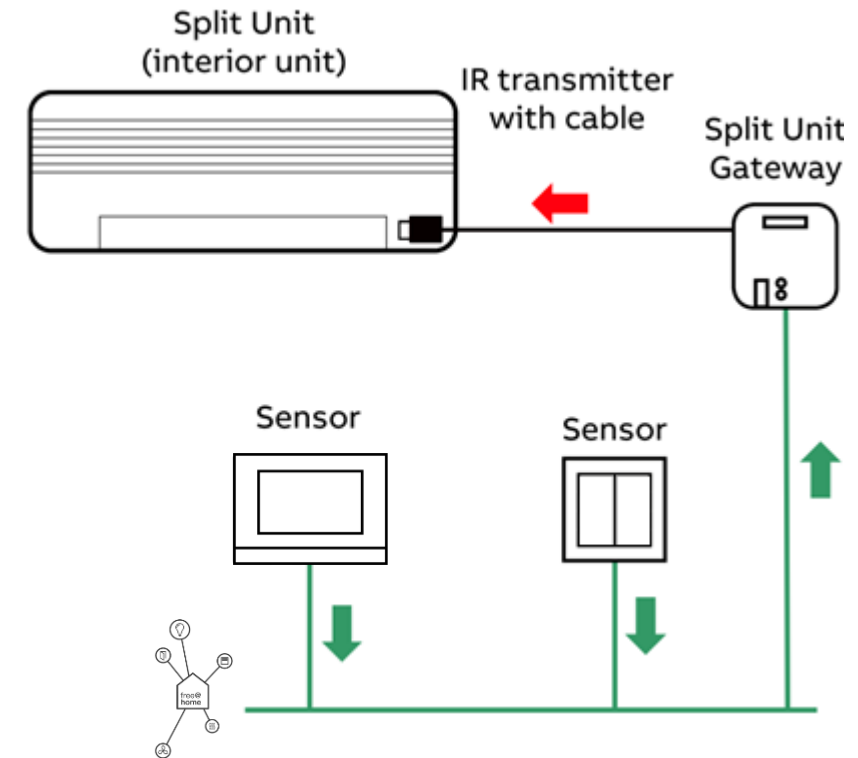
# ABB-free@home® – DALI and Split Unit Gateway

## 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

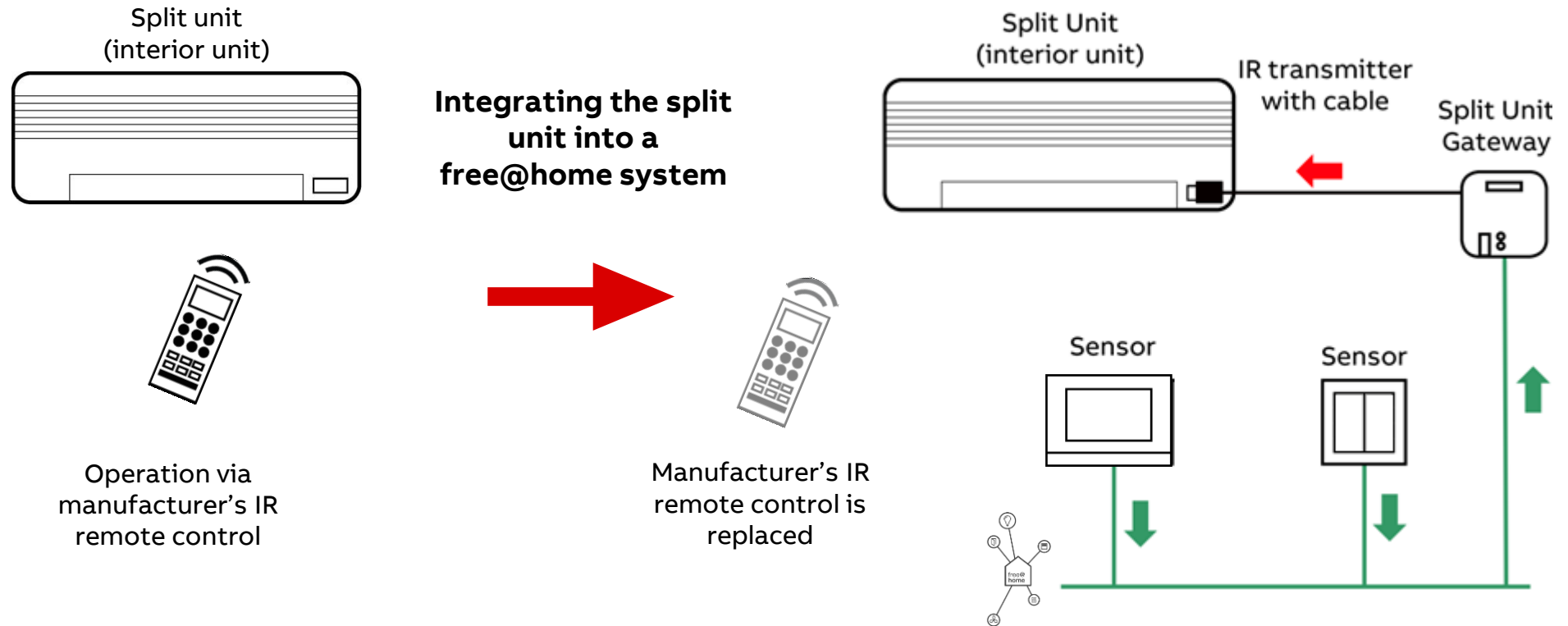
### Solution



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

## Introduction Split Unit Gateway

### What is a Split Unit Gateway?





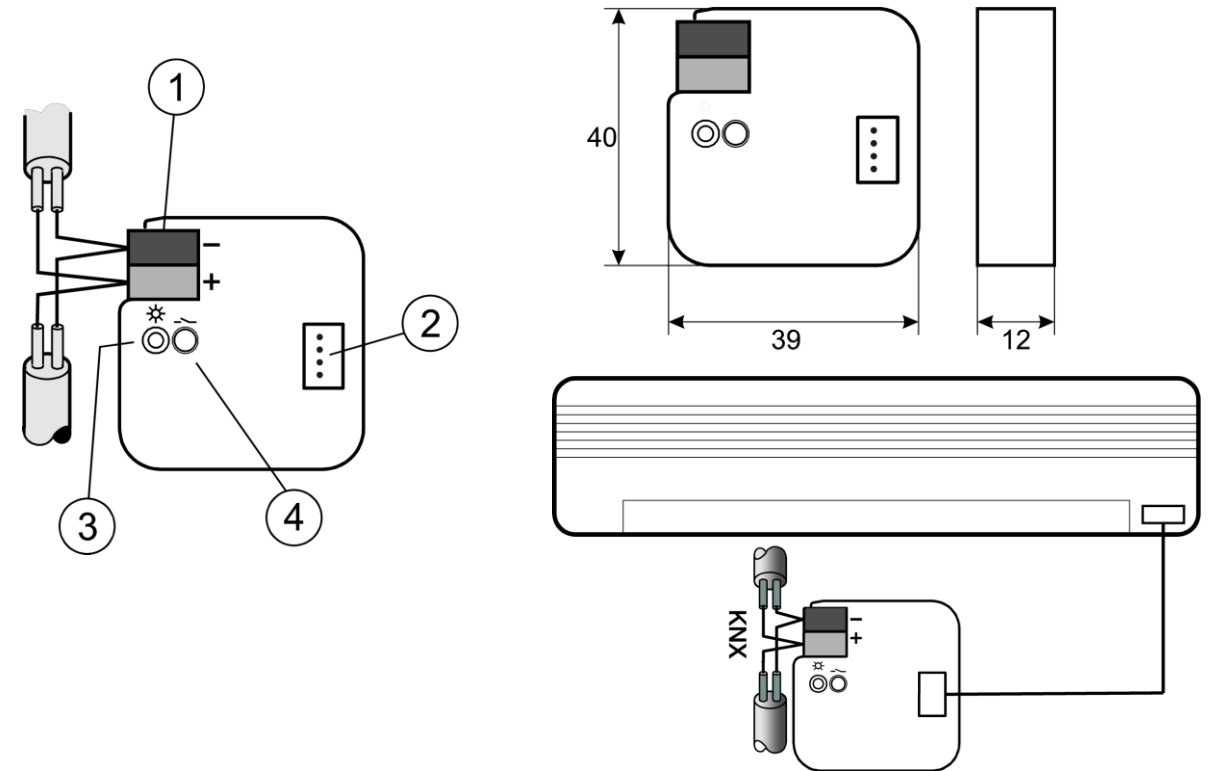
# ABB-free@home® – DALI and Split Unit Gateway

## 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



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# 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

The screenshot displays the 'Parameters' section of the free@home mobile application. It features two adjustable settings: 'Power on level [%]' and 'System failure level [%]', both currently set to 100. Below these are seven channels, each with a circled letter icon and a label: A0 (Living Room), A1, A2, A3, A4, A5, and A6. Each channel has a right-pointing chevron for further configuration. A blue back arrow is located at the bottom center of the screen.

Parameters	
Power on level [%]	100
System failure level [%]	100
Ⓐ Living Room A0	>
Ⓑ A1	>
Ⓒ A2	>
Ⓓ A3	>
Ⓔ A4	>
Ⓕ A5	>
Ⓖ A6	>

# 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

Parameters		
Minimum brightness [%]	<div><div>—</div><div>10</div><div>+</div></div>	
Maximum switch-on brightness, day [%]	<div><div>—</div><div>100</div><div>+</div></div>	
Maximum switch-on brightness, night [%]	<div><div>—</div><div>30</div><div>+</div></div>	
Autonomous switch off time duration [s]	<div><div>—</div><div>360</div><div>+</div></div>	
Switch-on mode	<div>Last brightness</div> <div>▼</div>	

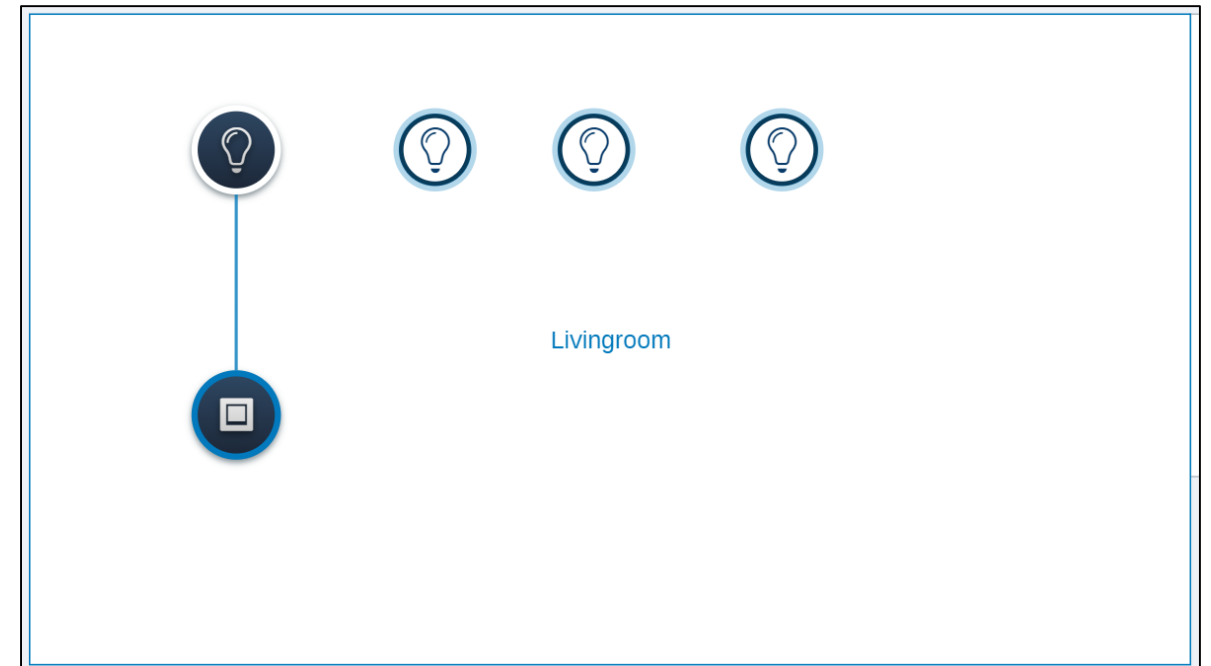
# ABB-free@home® – DALI and Split Unit Gateway

## 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

**DEVICE MAINTENANCE**

**Device status**

Software version

2.1465

Proxy of

☒ Reboot the device

☐ Reset

×

✓ Ok



# 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

Device detection: A0

Messages:

- General malfunction

Position

Floor

Ground floor

Room

Livingroom

Parameters

Minimum brightness [%]

10

Maximum switch-on brightness, day [%]

100

# 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

**CHANNEL ERROR DETECTED**



The device DALI Gateway (00F0FCFE6846) signals an erroneous channel 'A':

- General malfunction



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# ABB-free@home® - Overview and Installation

Commissioning and Operation – Split Unit Gateway

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

## Commissioning and Operation – Split Unit Gateway

### Functions

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**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

# 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

ALLOCATION SPLIT UNIT GATEWAY	
Split Unit Gateway	
WAU	
#0002D040B650	>
Split Unit Gateway	
Actuator	
Floor	Ground floor
Room	Test Room
Nome	Split Unit Gateway
Serial Number	0002D040B650
Short ID	WAU
Actuator	
Nome	<input type="text" value="Split Unit Gateway"/>
<div>✕</div> <div>✓</div>	

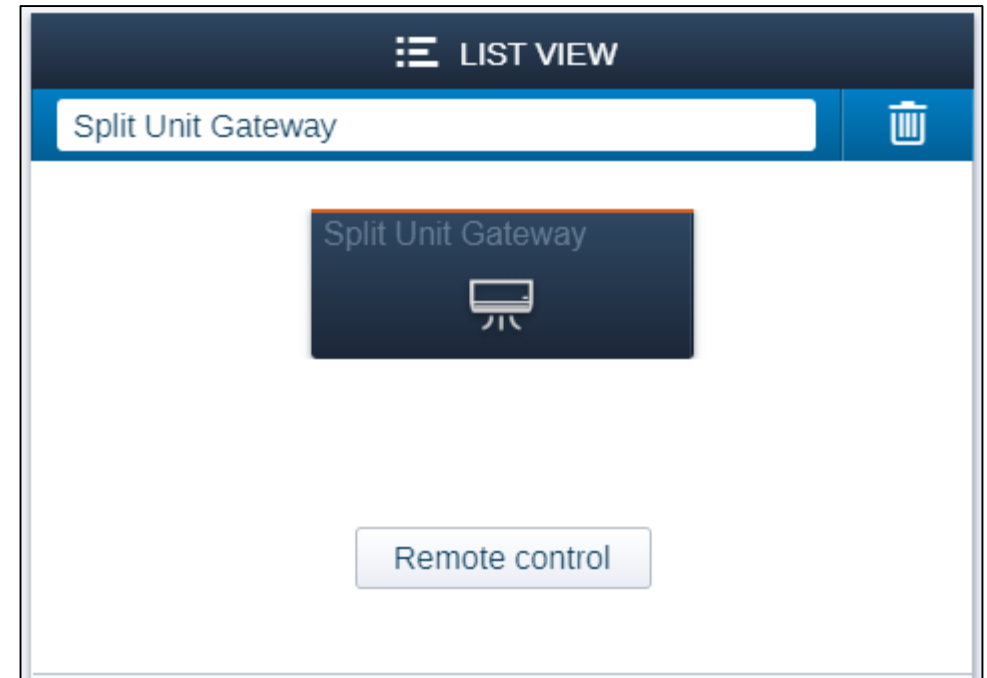
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### Impression free@home





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

## Commissioning and Operation – Split Unit Gateway

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  - Max./Min. setpoint temperature
- Silent Mode
- “Send IR always” (in case of parallel operation with remote control)

### Impression free@home

**SPLIT UNIT GATEWAY IR CONFIGURATION**

Please select the manufacturer and the remote control to configure the Split Unit Gateway.

Manufacturer	DAIKIN	▼
Device	ARC433A24	▼



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

## Commissioning and Operation – Split Unit Gateway

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

### Impression free@home

The screenshot displays a 'Parameters' configuration window. It includes the following settings:

- Limit setpoint temperature:** A dropdown menu set to 'No'.
- Maximum setpoint temperature [°C]:** A numeric input field set to '28', flanked by minus and plus buttons.
- Minimum setpoint temperature [°C]:** A numeric input field set to '20', flanked by minus and plus buttons.
- Enable silent mode in night mode:** A dropdown menu set to 'No'.
- Always send infrared commands:** A dropdown menu set to 'Only on change'.

A back arrow icon is located at the bottom center of the screen.

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

## Commissioning and Operation – Split Unit Gateway

### Adding a new Remote Control

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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

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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

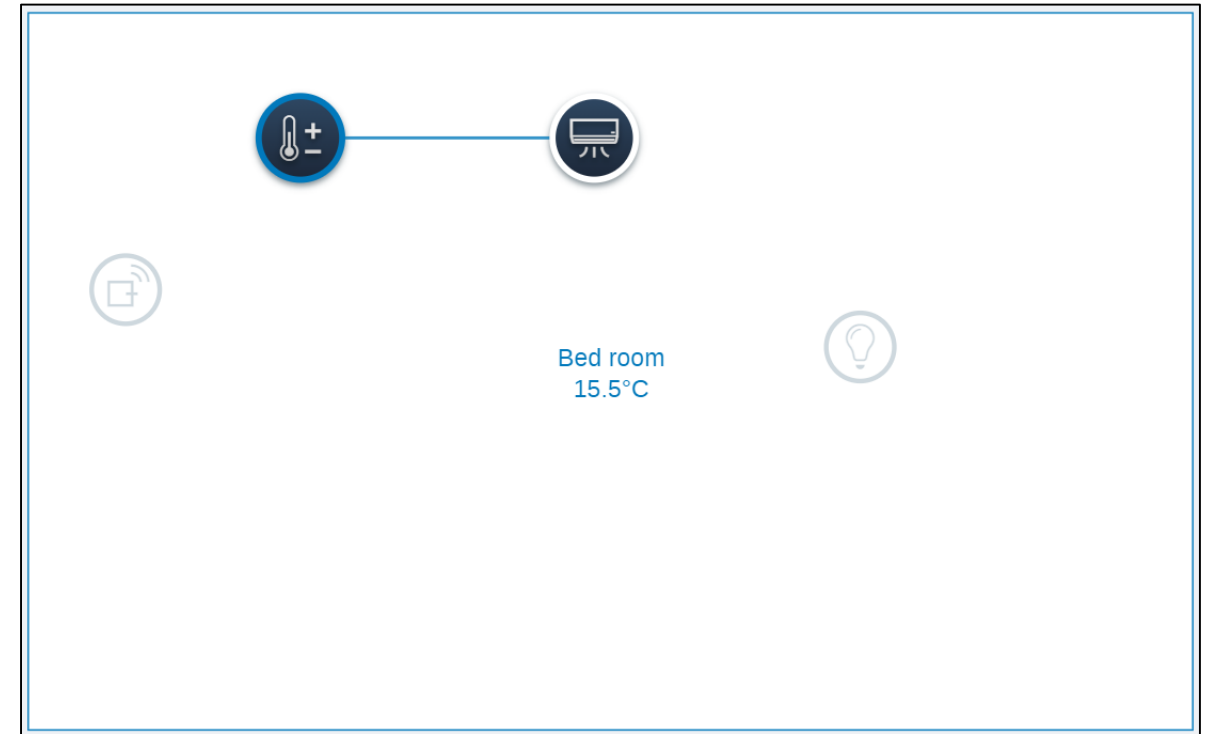
# ABB-free@home® – DALI and Split Unit Gateway

## 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



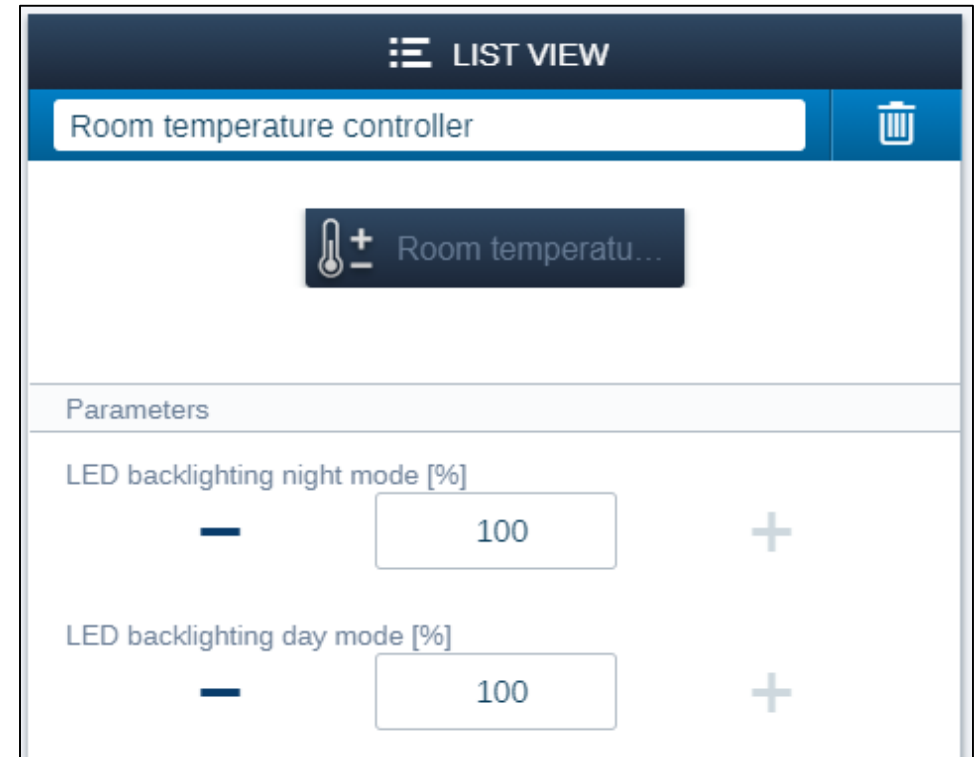
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### Impression free@home



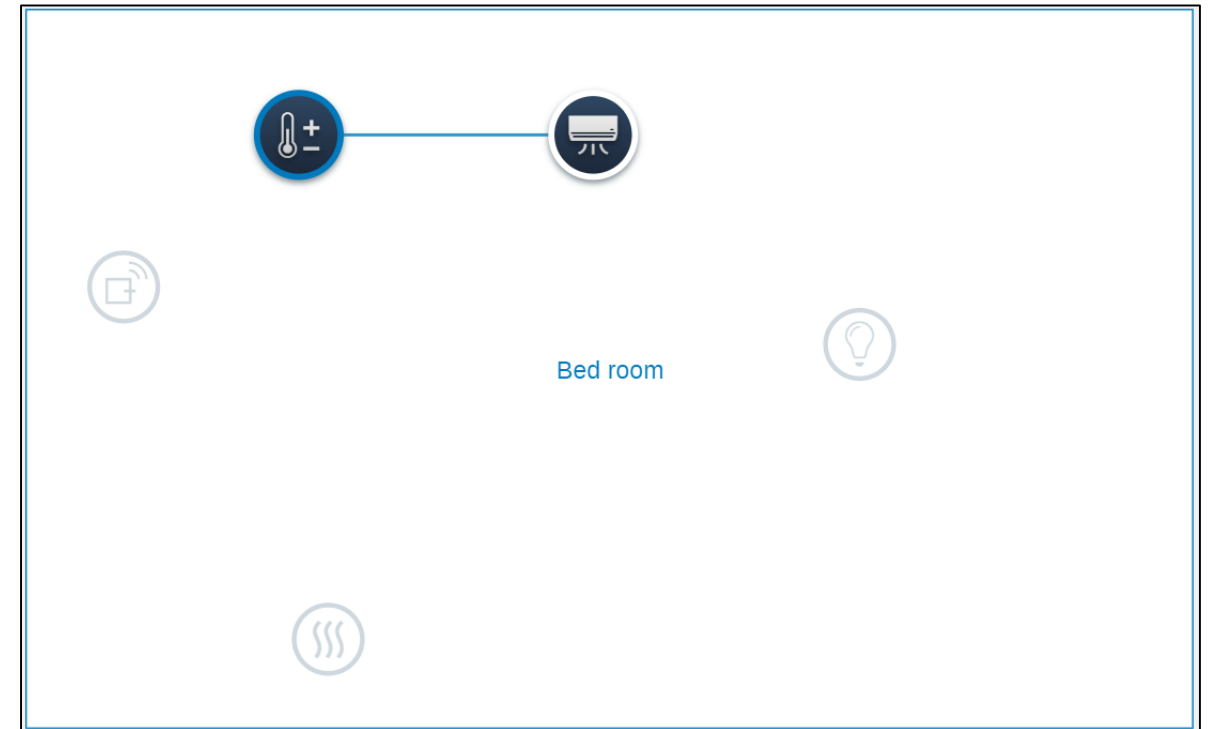
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### Impression free@home





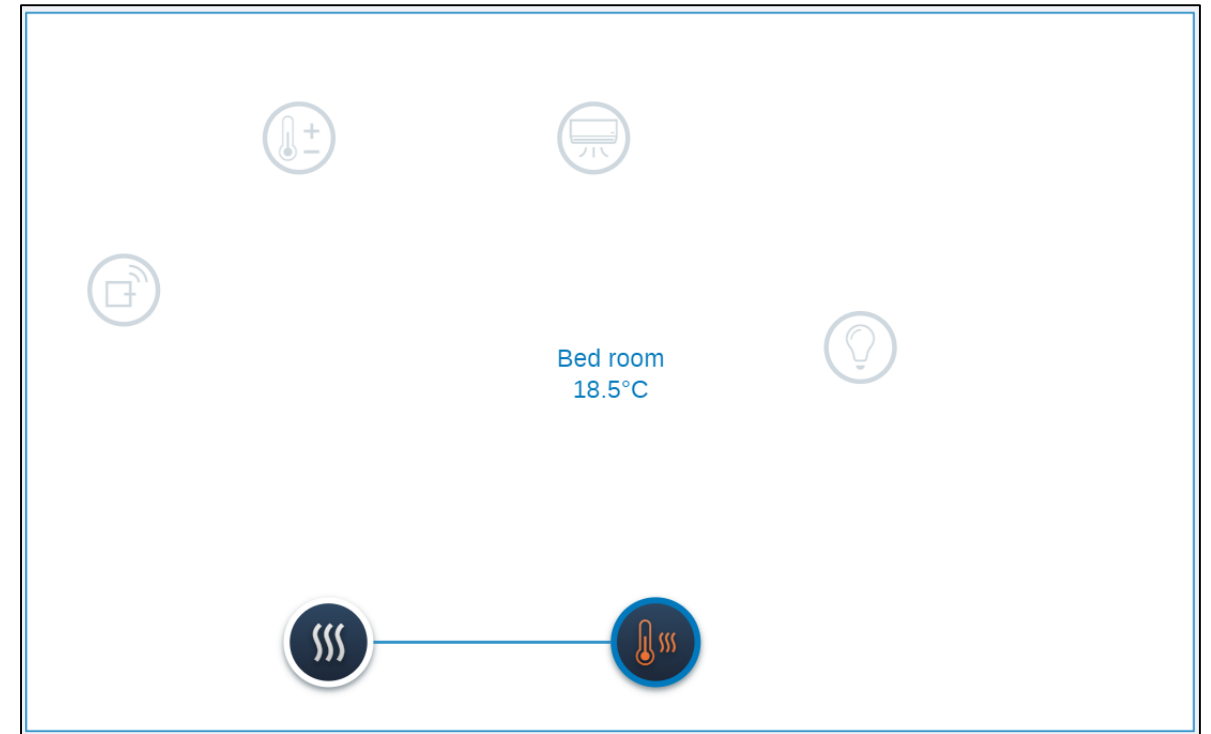
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### Impression free@home



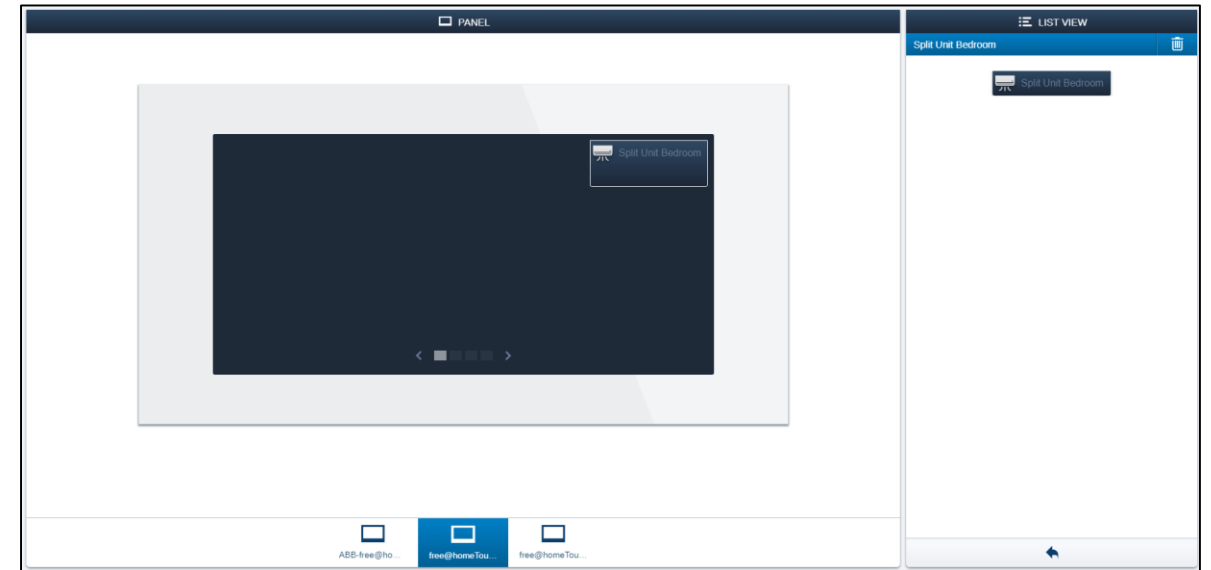
# ABB-free@home® – DALI and Split Unit Gateway

## 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



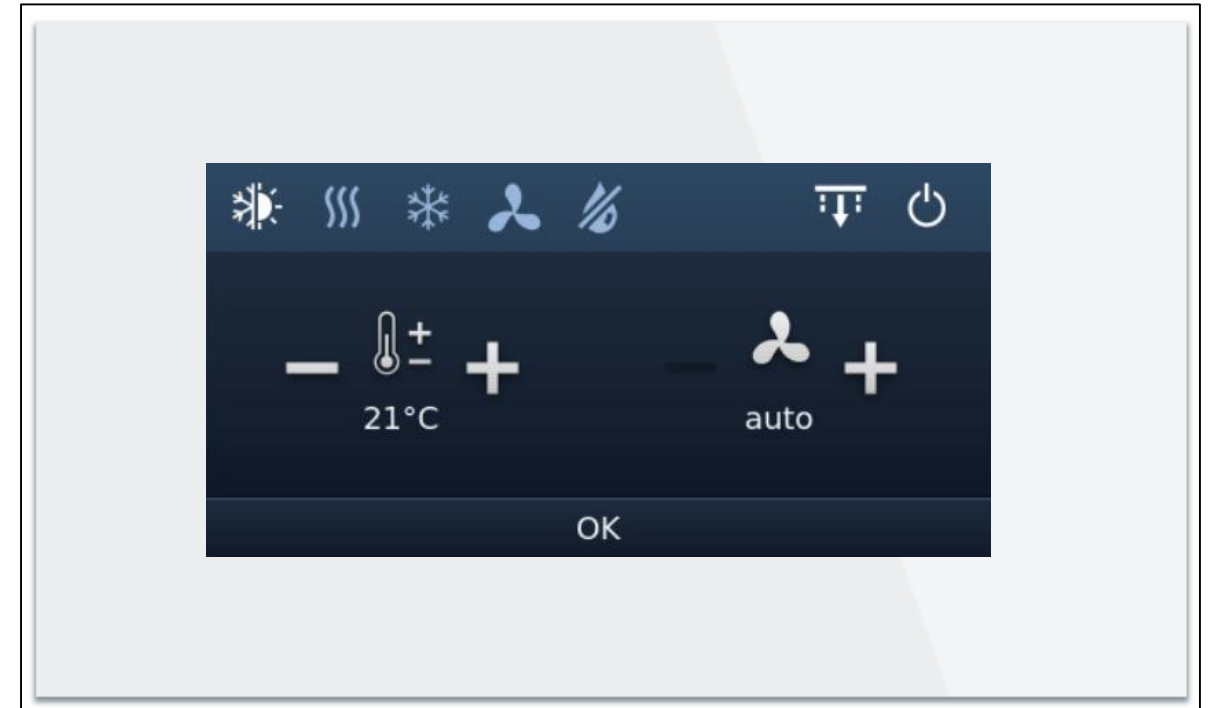
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### Impression free@home



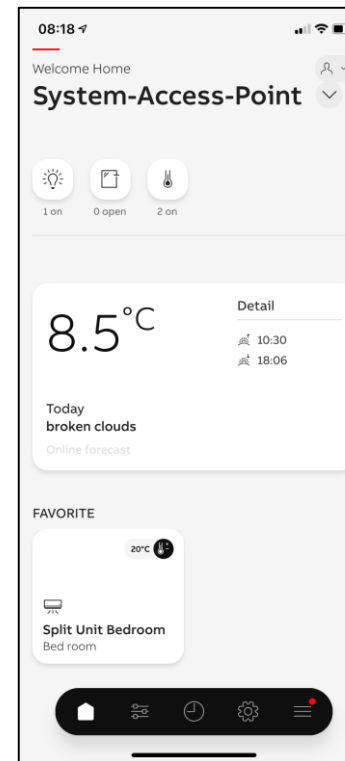
# ABB-free@home® – DALI and Split Unit Gateway

## 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



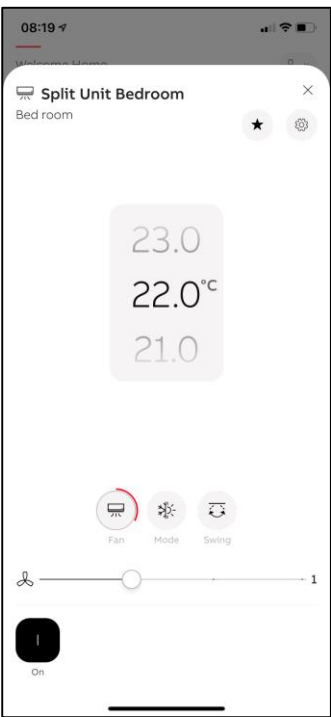
# ABB-free@home® – DALI and Split Unit Gateway

## Commissioning and Operation – Split Unit Gateway

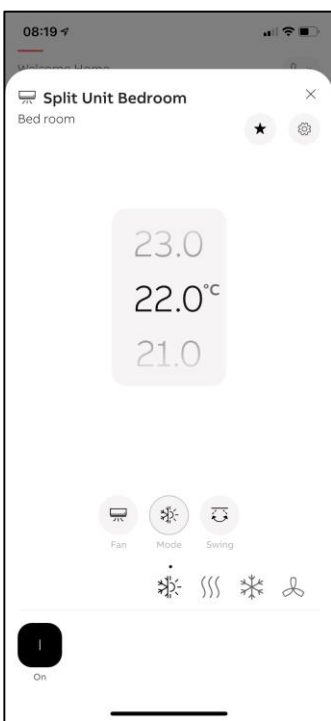
### Operation via APP



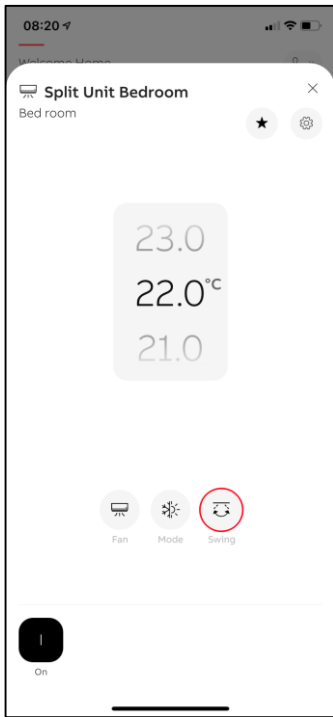
Setpoint adjustment



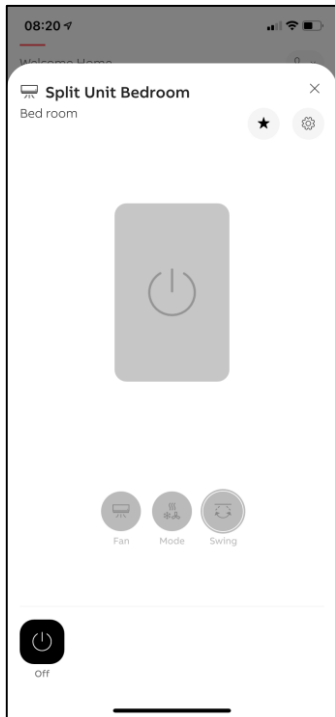
Fan settings



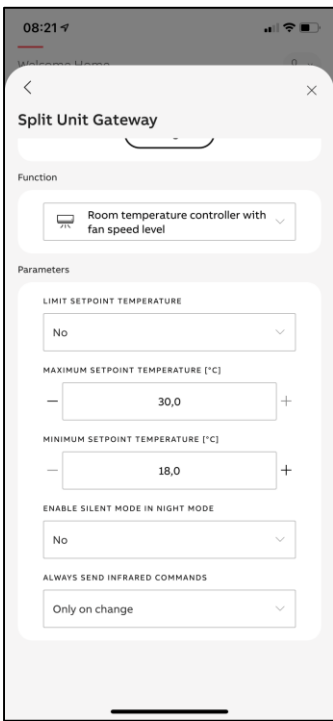
Mode adjustment



Swing mode



Turning off



Adjustment of the settings

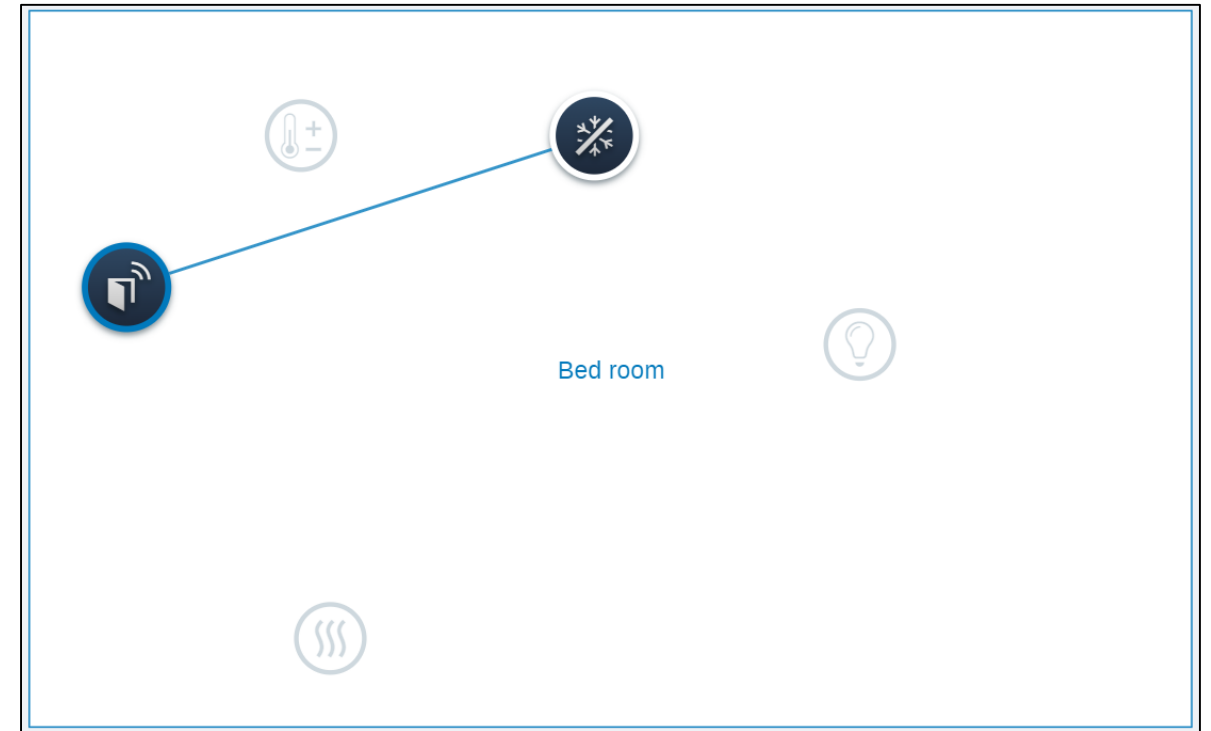
# ABB-free@home® – DALI and Split Unit Gateway

## 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



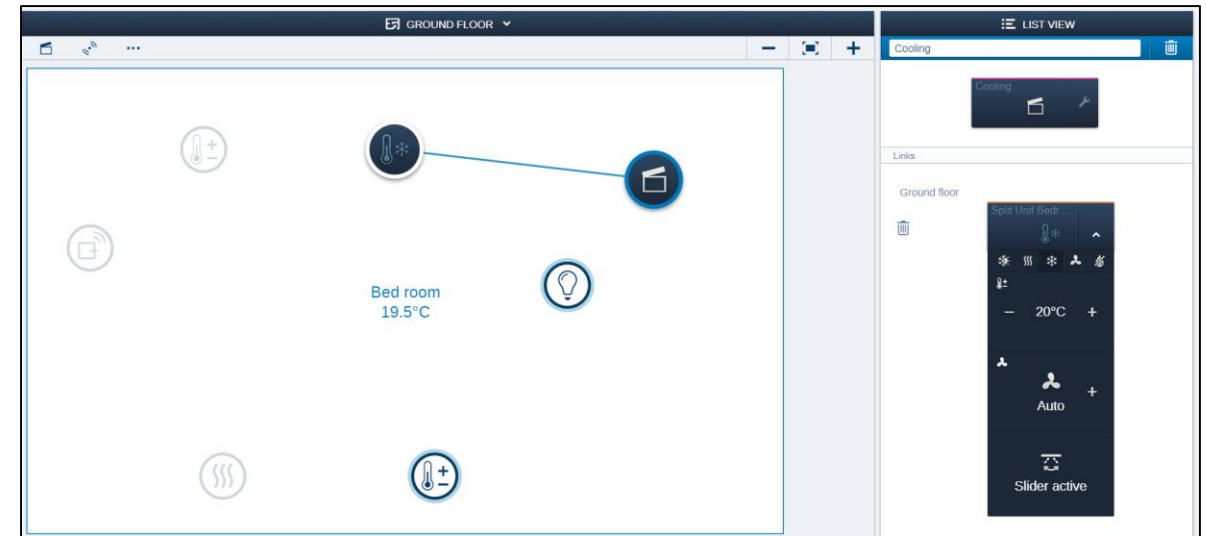
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## Commissioning and Operation – Split Unit Gateway

### Further Settings

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

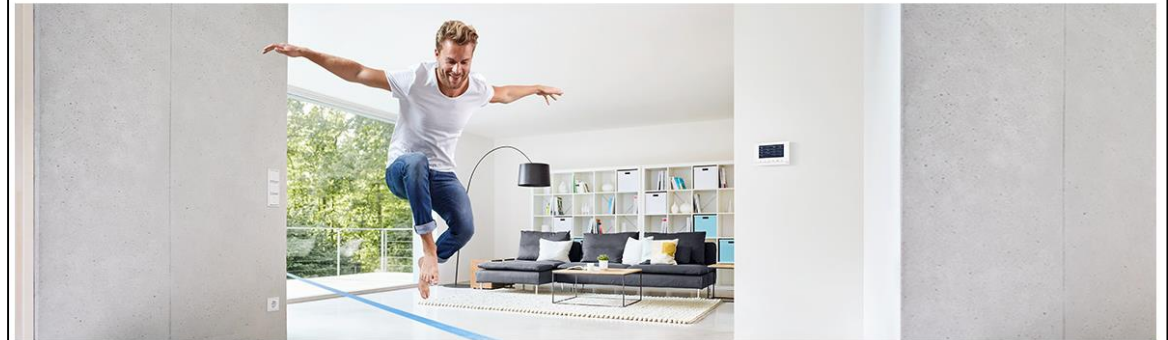
### Homepage

[ABB-free@home - Home and Building Automation | ABB](#)

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

#### ABB-free@home®

Making home automation easier than ever



Simply smart. ABB-free@home® transforms the house or the apartment into an intelligent home. Whether blinds, lights, heating, air conditioning, door communication or scenes. Easy to remote control via a switch on the wall, with the laptop or with the smartphone. Very convenient. Extremely comfortable. Very energy efficient. Especially attractive: Only minimal costs are involved when compared with conventional electrical installations.

#### ABB's Virtual Innovation Shows

Do you want to experience the future of smart homes and buildings? Come join ABB's Virtual Innovation Shows where we let you in on our safe, smart and sustainable solutions for more comfortable living and working spaces.

[MORE INFORMATION](#)

#### Products and Downloads



# 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 ...

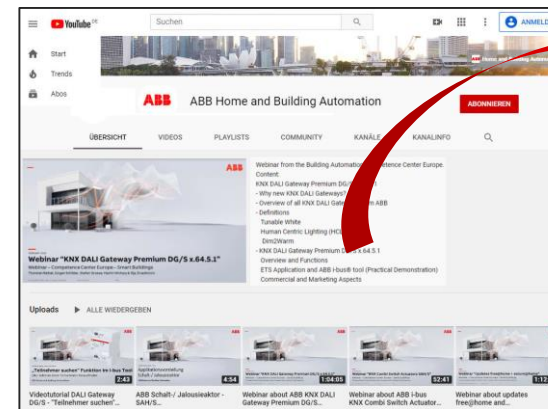
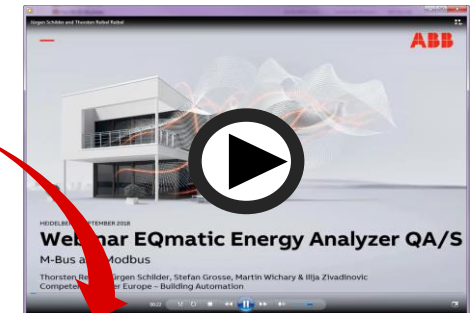
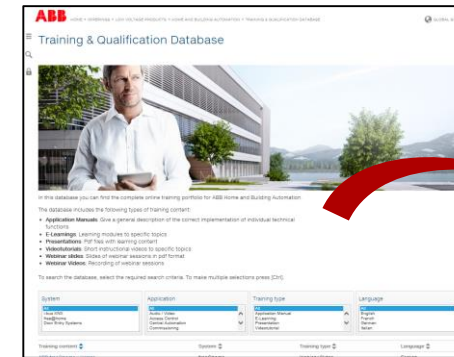
• <https://go.abb/ba-training>

• [www.abb.com/knx](http://www.abb.com/knx) (→ Services & Tools → Training and Qualification → Training Database)

#### YouTube

– Channel “ABB Home and Building Automation”

• <https://www.youtube.com/user/ABBibusKNX>



# 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](http://www.abb.com/knx) or <https://go.abb/ba-training>

→ Services & Tools

→ Training and Qualification

→ Training Calendar

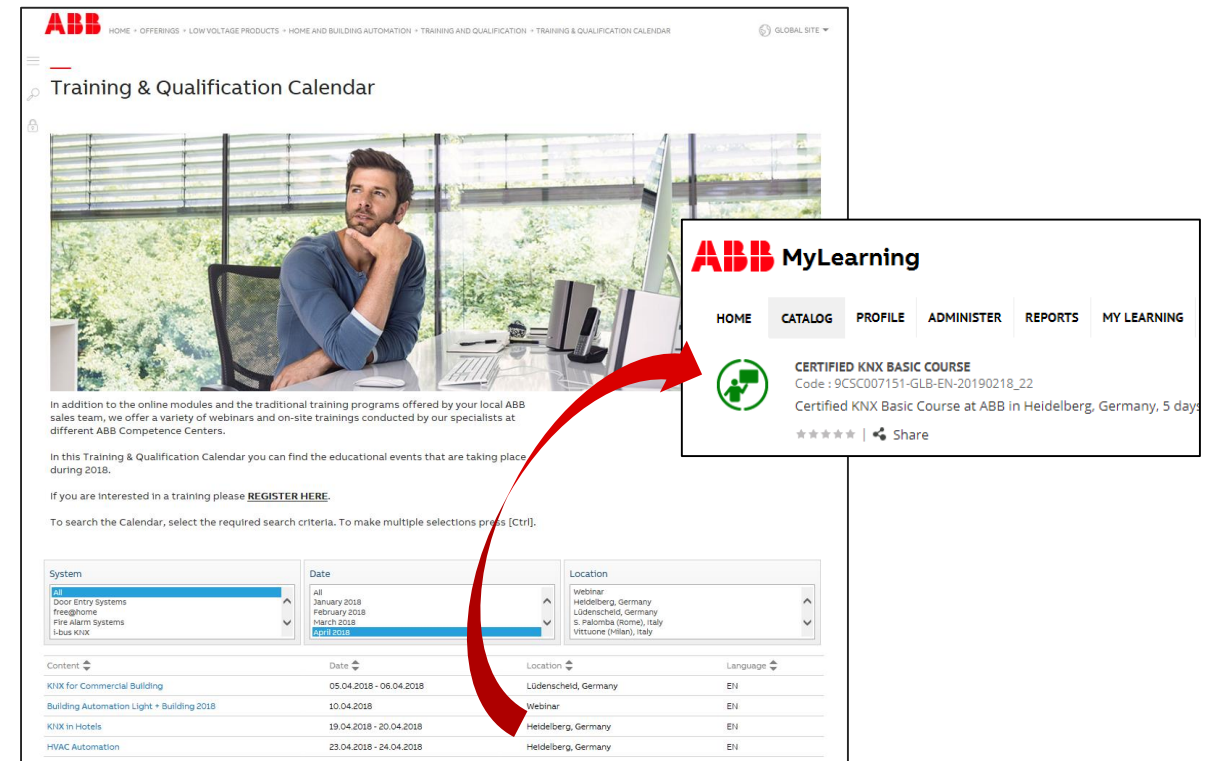


ABB HOME • OFFERINGS • LOW VOLTAGE PRODUCTS • HOME AND BUILDING AUTOMATION • TRAINING AND QUALIFICATION • TRAINING & QUALIFICATION CALENDAR GLOBAL SITE

### 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 webinars and on-site trainings conducted by our specialists at different ABB Competence Centers.

In this Training & Qualification Calendar you can find the educational events that are taking place during 2018.

If you are interested in a training please [REGISTER HERE](#).

To search the Calendar, select the required search criteria. To make multiple selections press [Ctrl].

System	Date	Location
ABB	all	webinar
Door Entry Systems	January 2018	Heidelberg, Germany
Fire alarm Systems	February 2018	Lüdenscheld, Germany
I-bus KNX	March 2018	S. Palomba (Rome), Italy
	April 2018	Vittuone (Milan), Italy

Content	Date	Location	Language
KNX for Commercial Building	05.04.2018 - 06.04.2018	Lüdenscheld, Germany	EN
Building Automation Light + Building 2018	10.04.2018	Webinar	EN
KNX in Hotels	19.04.2018 - 20.04.2018	Heidelberg, Germany	EN
HVAC Automation	23.04.2018 - 24.04.2018	Heidelberg, Germany	EN

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**CERTIFIED KNX BASIC COURSE**  
Code : 9CSC007151-GLB-EN-20190218\_22  
Certified KNX Basic Course at ABB in Heidelberg, Germany, 5 days  
★★★★★ | Share

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