# Busch-VoiceControl® KNX

Webinar – Competence Center Europe – Building Automation

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# Agenda

General Introduction

Features

Use-Cases

Commissioning

ABB

# Busch-VoiceControl® KNX

General Information

# Busch-VoiceControl® KNX

## Motivation

### Situation

Voice control is a huge and growing market

Millions of sold devices like Amazon Alexa, Google Assistant and Apple devices based on Siri

Controlling your complete home with your voice is a clear trend

There are three big players on the market for standalone voice control devices:

– Amazon Alexa

– Google Assistant

– Apple Siri


For Apple you have to integrate it in Apple Homekit and then it has to be Apple certified

ABB
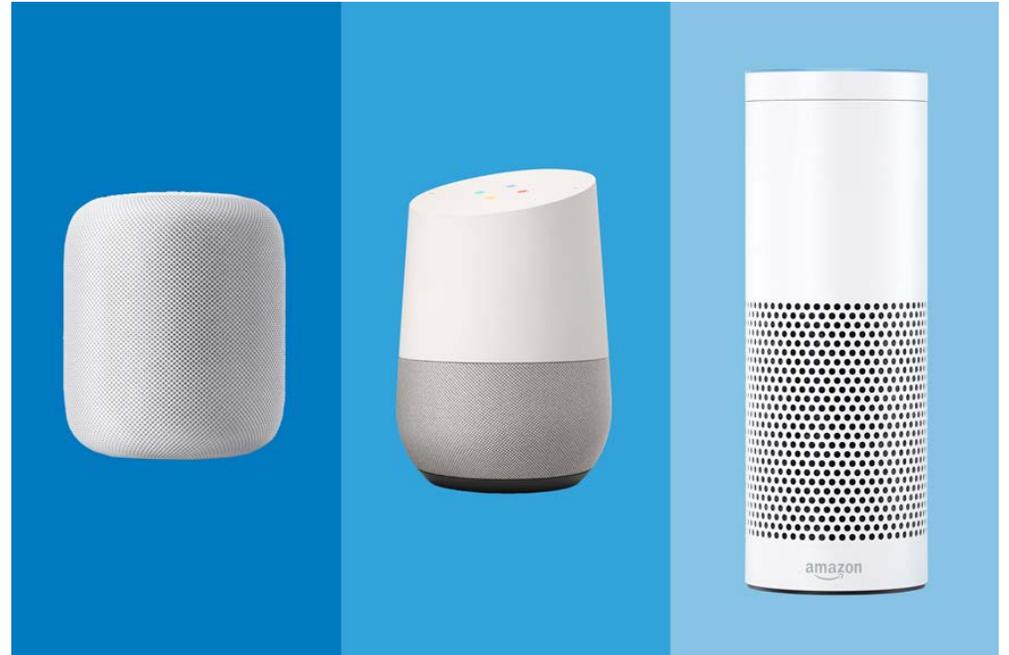
# Busch-VoiceControl® KNX

## Motivation

### Goals

To be the only international company to have a certified solution for all three systems

To re-use the configuration of your Busch-ControlTouch KNX

To control Lights, Blinds, Temperature in your home

To be the Smartest Voice Control Device on the market

To control up to 150 functions

To be integrated in Apple Homekit

To have a complete online configuration

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# Busch-VoiceControl® KNX

## Overview

### Features

One device for all 3 systems (Amazon, Google and Apple), usage even in parallel possible

Control of lights, blinds and room temperature

Read out of various status information

Up to 150 functions are possible

Apple certified product

Simple online configuration
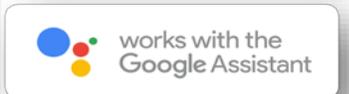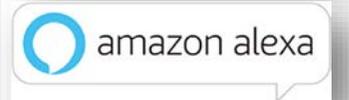
# Busch-VoiceControl® KNX

## Overview

### Use Cases

"You come home with 2 bags and no free hands. Use your smart device to turn on the lights"

"You wake up in the morning, without getting up or searching for a push button shutter/blinds can be opened or light can be switched or dimmed"

"Control your lights/blinds/temperature without leaving your couch"

"AAL - Ambient Assisted Living: For people who have physical disability"

"Define routines for coming home and leaving"

"Architectural rooms, where you don't want to see any switches"

**And:**

**Apple HomeKit Device – Bridge from KNX to other HomeKit devices**

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# Busch-VoiceControl® KNX

## Overview

### Technical Data

Article Code: **VCO/S 99.11**

Connection voltage

- Auxiliary voltage: 5 - 36 VDC

- Power adaptor connector 5 VDC

Power consumption: 250 mA (at 5 VDC)

Additional connections: KNX

Ethernet: 10 / 100 Mbit

Protection type: IP20

Ambient temperature: 0°C to +70°C

Storage temperature: -40°C to +85°C

Dimensions (LxWxH): 70 x 90 x 60 mm
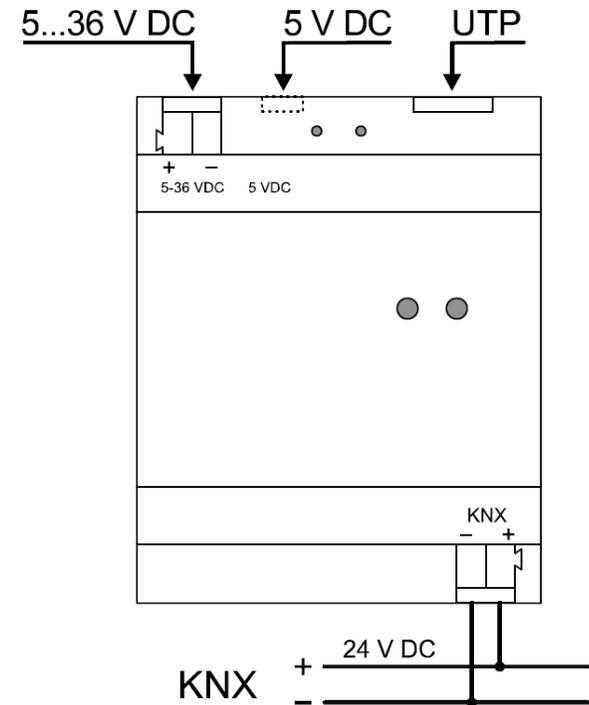
# Busch-VoiceControl® KNX

## Overview

### Operation and Troubleshooting

**A – left button:**

Keep pressed during booting → Return to factory settings

Press briefly → Complete reboot

Press long (> 3 seconds) → Return to factory settings

**A – right button:**

Press briefly →  Reset of the application

**B – left LED:**

Green: Flashes slowly → Booting or shutting down

Green: Lit constantly → Application is ready to start

**B – right LED:**

Green: Flashes slowly → Normal procedure - OK

Yellow: Flashes slowly → No KNX connection

Red: Flashes fast → LAN problem, no network

Red / green: Flashes at intervals → No Internet connection, only LAN
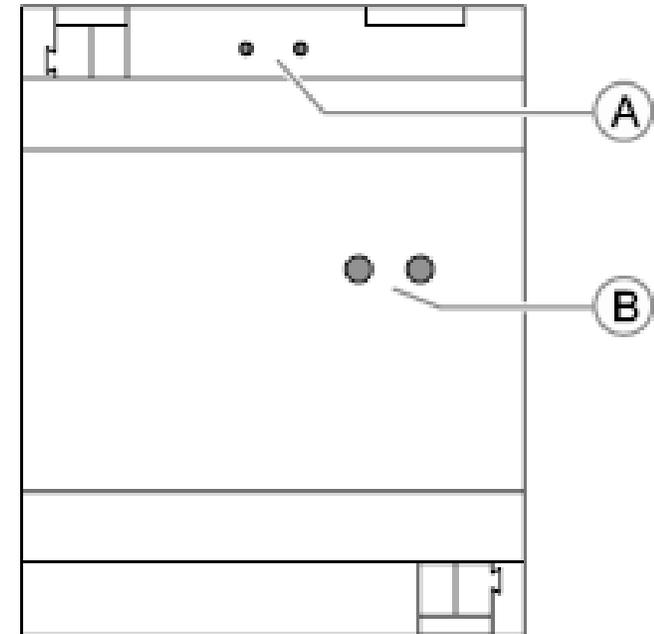
# Busch-VoiceControl® KNX

Features

# Busch-VoiceControl® KNX

## Overview of all functions

**Features**
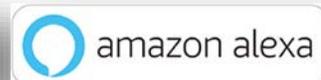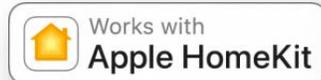
| Function | APPLE HOMEKIT | AMAZON ALEXA | GOOGLE HOME |
|---|:---:|:---:|:---:|
| Switching light | ✓ | ✓ | ✓ |
| Dimming light | ✓ | ✓ | ✓ |
| Temperature sensor [status] | ✓ | ✓ | |
| Blinds | ✓ | ✓ | |
| Thermostat | ✓ | ✓ | ✓ |
| Pushbutton / switch | ✓ | ✓ | ✓ |
| Motion sensor [status] | ✓ | | |
| Occupancy sensor [status] | ✓ | | |
| Brightness sensor [status] | ✓ | | |
| Humidity sensor [status] | ✓ | | |

# Busch-VoiceControl® KNX

How to talk to my smart device? – Part 1

## Phrases

| | HomeKit, start with: "Hey Siri, .." | Alexa, start with: "Alexa, .." | Google Home, start with: "OK Google, .." |
|---|---|---|---|
| dimming actuator | Turn on/off [light name]<br>Set [light name] to 60%<br>Dim [light name] down by 20%<br>Increase [light name] by 20%<br>What is the current status of [light name]? | Turn on/off [light name]<br>Set [light name] to 60% | Turn on/off [light name]<br>Set [light name] to 60%<br>What lights are on? |
| switch actuator | Turn on/off [light name]<br>What is the current status of [light name]? | Turn on/off [light name] | Turn on/off [light name]<br>What lights are on? |
| switch | Turn on/off [switch name]<br>What is the current status of [switch name]? | Turn on/off [switch name] | Turn on/off [switch name] |
| thermostat | Set the thermostat to 20 degrees<br>Lower the thermostat<br>Increase the thermostat<br>What temperature is [My Home or Room] set to? | Set the thermostat to 20 degrees<br>Lower the thermostat<br>Increase the thermostat<br>What is the temperature of themostat? | Set the thermostat to 20 degrees<br>What is the temperature in my house? |

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# Busch-VoiceControl® KNX

## How to talk to my smart device? – Part 2

**Phrases**

| | HomeKit, start with: "Hey Siri, .." | Alexa, start with: "Alexa, .." | Google Home, start with: "OK Google, .." |
|---|---|---|---|
| **blinds actuator** | Open the blinds<br>Close the blinds<br>Set the blinds to 40%<br>What is the current status of the blinds? | Set the blind to 100%<br>Set the blind to 0% | - |
| **temperature** | What is the current temperature in my home? | What is the temperature of [*room name*]? | - |
| **light intensity** | What is the current light intensity? | - | - |
| **humidity** | What is the current humidity? | - | - |
| **occupancy sensor** | What is the status of the occupancy sensor? | - | - |
| **movement sensor** | What is the status of the motion sensor? | - | - |

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## Function: switching light

The function requires a 1-bit group address "Switching" (DPT 1.x) as sending group address and one or several status group addresses of the same type.

The function is supported by Apple, Amazon and Google.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|------|------|------|------|------|
| – | **Living room** | | | | | |
| Switching light | Table lamp living room | ✓ | ✓ | ✓ | 0/0/13 | 0/0/13 |

# Busch-VoiceControl® KNX

## Function: dimming light

The function requires a 1-byte group address "Dimming" (DPT 5.001) as sending group address for dimming values from 0% to 100% and a 1-bit address "Switching" (DPT 1.x) as sending group address. Both group addresses require one or several status group addresses of the same type.

The function is supported by Apple, Amazon and Google.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|------|------|------|------|------|
| – | **Living room** | | | | | ✎ ✕ |
| Dimming light | Ambience light living room | ✓ | ✓ | ✓ | 1/0/5 | 1/0/5 |
| | Switching | | | | 0/0/5 | 0/0/5 |

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## Function: Temperature sensor [status]

The function requires a 2-byte status group address "Temperature" (DPT 9.001) for the relevant floating point value.

The function is supported by Apple and Amazon.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|---------|--------|--------|-----------|-----------|
| – | **Beleuchtung / Schalten** | | | | | |
| Temperature sensor [status] | Temp. Sensor | ✓ | ✓ | | | 3/7/0 |

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## Function: Blinds

The function requires either:

- a 1-bit group address "Switching" (DPT 1.x) as a sending one and status group address for up and down movement and

- a 1-bit status group address "Switch" (DPT 1.x) for starting/stopping.

Or:

- a 1-bit status group address "Switching" (DPT 1.x) for up and down movement and

- a 1-bit status group address "Switch" (DPT 1.x) for starting/stopping and

- a 1-byte group address "Scaling" (DPT 5.001) as a sending one and status group address for position values from 0% to 100%.

The function is supported by Apple and Amazon.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|-------|--------|--------|------------|-----------|
| – | **Living room** | | | | | ☑ ✕ |
| Blinds | Blind east | ✓ | ✓ | | | 3/0/1 |
| | start/stop | | | | | 3/0/2 |
| | position (%) | | | | 3/0/3 | 3/0/3 |

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## Function: Thermostat

The function requires the following group addresses:

- a 2-byte status group address "Temperature" (DPT 9.001) is for the actual temperature.

- a 2-byte group address "Temperature" (DPT 9.001) as a sending one for the setpoint.

- Two 1-bit group addresses "Switching" (DPT 1.x) for the current heating and cooling status (cooling/heating on/off).

Option:

- a 1-byte group address "Offset" as sending group address for the offset (setpoint value confirmation) and a 1-byte status group address for the setpoint value request.

- a 2-byte status group address "Humidity" (DPT 9.007) for the current humidity.

The function is supported by Apple, Amazon and Google.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|-------|--------|--------|-----------|-----------|
| - | **Living room** | | | | | ☑ ✕ |
| Room temperature controller | RTC | ✓ | ✓ | ✓ | | |
| | Current temperature | | | | | 2/0/0 |
| | Set point temperature | | | | 2/0/1 | 2/0/1 |
| | Heating on/off | | | | | 2/0/4 |
| | Cooling on/off | | | | | 2/0/5 |
| | Shift (optional) | | | | 2/0/2 | 2/0/3 |
| | Current humidity (optional) | | | | | |

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## Function: Pushbutton / switch

The function requires a 1-bit group address "Switching" (DPT 1.x) as sending group address and one or several status group addresses of the same type.

The function is supported by Apple, Amazon and Google.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|------|------|------|------|------|
| **–** | **Beleuchtung / Schalten** | | | | | |
| Push-button / switch | Test Switch | ✓ | ✓ | ✓ | 1/0/9 | 1/5/9 |

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Function: Movement detector [status] / Presence detector [status]

Both functions require a 1-bit status group address "Switching" (DPT 1.x) for the movement status.

Both functions are supported by Apple.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|---------------------|--------|--------|-----------|-----------|
| **–** | **Beleuchtung / Schalten** | | | | | |
| Occupancy sensor [status] | Presence | ✓ | | | | 6/0/1 |

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Function: Brightness sensor [status]

The function requires a 2-byte status group address "Lighting intensity" (DPT 9.004) for the relevant floating point value.

The function is supported by Apple.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|---------------------|--------|--------|------------|-----------|
| − ✎ ✕ | **Beleuchtung / Schalten** | | | | ✎ ✕ | |
| Brightness sensor [status] | Brightness Livingroom | ✓ | | | | 6/1/2 |

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# Busch-VoiceControl® KNX

## Function: Humidity sensor [status]

The function requires a 2-byte status group address "Humidity" (DPT 9.007) for the relevant floating point value.

The function is supported by Apple.

| Type | Name | Supported by: Apple | Amazon | Google | Sending GA | Status GA |
|------|------|---------------------|--------|--------|------------|-----------|
| **–**    🖉   ✕ | **Beleuchtung / Schalten** | | | | 🖉 | ✕ |
| Humidity sensor [status] | Humidity Livingroom | ✓ | | | | 6/1/3 |

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# Busch-VoiceControl® KNX

Languages

## Languages
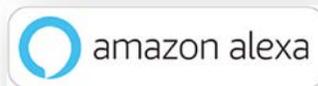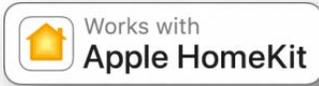
| APPLE HOMEKIT | AMAZON ALEXA | GOOGLE HOME |
|---|---|---|
| English | English | English |
| German | German | German |
| French | French | French |
| Spanish | (Japanese) | Japanese |
| * | | Italian |
| | | Spanish |

*More languages available for your Apple end devices (AppleWatch, AppleTV, iPhone, iPad…)

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# Busch-VoiceControl® KNX

Limitations
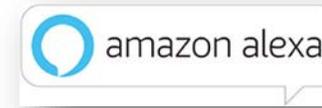
## Limitations

**Possibilities and impossibilities at a glance:**

- **The link between the Alexa or Google account and the VoiceControl is 1-to-1**
→It is not possible to link accounts from multiple Alexa or Google accounts with 1 VoiceControl

- **The link between HomeKit and the VoiceControl is 1-on-n**
→In HomeKit it is also possible to link multiple VoiceControls to one HomeKit account. As you know, you can only connect a VoiceControl one time via HomeKit, but then you can use the HomeKit app to share this link with third parties

- **All home speakers and devices within your account have access to the VoiceControl**
→If you have multiple Home speakers in your Alexa or Google account, and / or more mobile devices, you can of course operate the VoiceControl from all those devices within your account. The same applies to HomeKit

- **All protocols can be used simultaneously**
→Use of Amazon, Apple HomeKit and Google Homepod at the same time

# Busch-VoiceControl® KNX

Commissioning – Live Demonstation

# Busch-VoiceControl® KNX

Commissioning

1. Register your device
2. Create a project
3. Define the functions of the group addresses
4. Initial commissioning of device (direct access)
5. Settings in the device
6. Inviting your customer
7. Coupling of Busch-VoiceControl with voice controls

# Busch-VoiceControl® KNX

Commissioning – direct access

# Busch-VoiceControl® KNX

## Initial commissioning of device (direct access)

After all group addresses and functions are created the device can be installed.

Prerequisite:

- The KNX voice control gateway must be connected to the house network (LAN) with the UTP cable.

- The device must be installed correctly and registered via MyBuildings Portal.

- An Internet connection must be available.

1. Find the device with the program "IP Finder"

# Busch-VoiceControl® KNX

## Initial commissioning of device (direct access)

2. Select the language
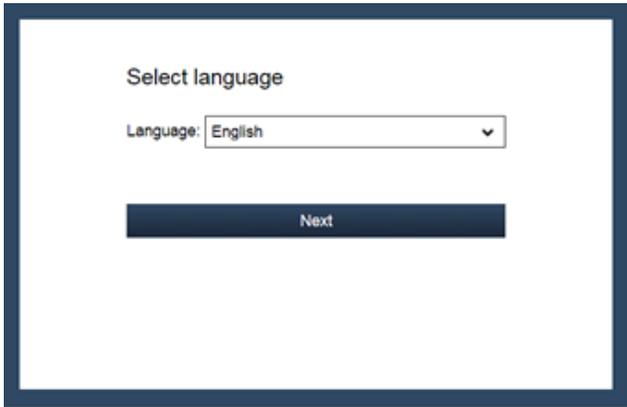


3. Enter the details for the local location.



4. Enter the user name and PW

# Busch-VoiceControl® KNX
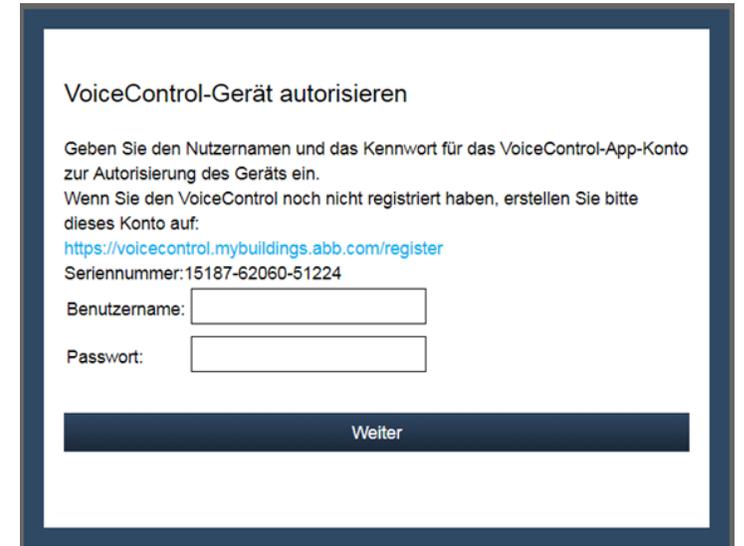
Initial commissioning of device (direct access)

5. Check network settings



6. Configuration is synchronized



7. Finished!

# Busch-VoiceControl® KNX

## Settings in the device (direct access)

In the device you can find different settings.

**Status:**

Here you can find general information about the device (firmware, IP address, …).

You can also check your connection and recheck, if all configured functions have been load into the device.

**General**

| | |
|---|---|
| Version: | 1.0.1 |
| Serialnumber: | 15187-62060-51224 |
| Date / time: | 2018-09-11 12:22:27 |

**Network settings**

| | |
|---|---|
| IP address: | 192.168.0.96 |
| Netmask: | 255.255.255.0 |
| Gateway: | 192.168.0.1 |
| DNS: | 192.168.0.1 |
| DNS (2): | |
| DNS (3): | |
| DNS (4): | |
| MAC address: | c0:d3:91:90:0f:8d |
| Secondary HTTP port: | 8000 |

**Check Internet connection**

**KNX**

KNX protocol: Enabled
Connection method: Direct
Last 6KNX connection messages:

```
2018-09-02 22:47:14 - Ready to connect
2018-09-02 22:47:14 - Connecting
2018-09-02 22:47:15 - Connected
```

**Connect** **Disconnect**

**Supported functions:**

Thermostat [Thermostat]
Ceiling Light [Switching light]

# Busch-VoiceControl® KNX

## Settings in the device (direct access)

In the device you can find different settings.

**Settings - basic:**

To adjust the IP settings and authorize the device (if you haven't done it while the initial commissioning)

**Network settings**

| | | |
|---|---|---|
| DHCP: | ☑ enabled | |

| | IPv4 | ☐ IPv6 |
|---|---|---|
| IP address: | 192.168.0.96 | 2a02:908:1f43:d3e0:c2d3:9 |
| Netmask: | 255.255.255.0 | ffff:ffff:ffff:ffff:: |
| Gateway: | 192.168.0.1 | fe80::3a43:7dff:fe34:25cd |

IPv4 / IPv6

| | |
|---|---|
| DNS: | 192.168.0.1 |
| DNS (2): | |
| DNS (3): | |
| DNS (4): | |

☐ Advanced network settings

**Apply**

**Other settings**

Authorize VoiceControl device    **Authorize**

ABB

# Busch-VoiceControl® KNX

## Settings in the device (direct access)

In the device you can find different settings.

**Settings - protocols:**

To change the KNX settings and activate and deactivate the different speech assistants

Important: After the initial commissioning, all devices are deactivated! To use one or more devices please activate them in this menu.

**KNX settings**

| | |
|---|---|
| KNX protocol: | Enabled |
| KNX physical address: | 1.1.254 |
| Connection method: | Direct |

Apply

**HomeKit**

| | |
|---|---|
| Remove the HomeKit pairing: | Remove |

**Amazon Alexa**

| | |
|---|---|
| Amazon Alexa: | Enabled (with status) |

Please note: Alexa requires a continues Internet connection and all data is passed through the Amazon cloud.

Apply

**Google Home / Google Assistant**

| | |
|---|---|
| Google Home / Google Assistant: | Disabled |

Please note: Google Home requires a continues Internet connection and all data is passed through the Google cloud.

Apply

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# Busch-VoiceControl® KNX

## Settings in the device (direct access)

In the device you can find different settings.

**Settings - system:**

On this page location settings can be made, configurations exported or imported as well as log and configuration files sent to the Help desk.

Settings system

**Location**

| | |
|---|---|
| Language | English |
| Timezone | UTC +1:00 |
| European daylight saving time | ☑ Automatic |
| Latitude: | 51.22 |
| Longitude: | 7.62 |
| Location: | Germany — Lüdenscheid |

| Change settings |
|---|

**Configuration**

| | |
|---|---|
| Load personal configuration | Load |
| Export configuration | Save |
| Import configuration | Datei auswählen  Keine ausgewählt |
| | Load |
| | Load |
| Delete all configuration | Delete |

**Diagnostics**

| | |
|---|---|
| Send log files to support helpdesk | Send |
| Send configuration to support helpdesk | Send |

**Firmware**

| | |
|---|---|
| Reboot the device | Reboot |
| Reset to factory default | Reset |
| Check for firmware updates | Check |
| Download license agreement | Load |

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# Busch-VoiceControl® KNX

## Inviting your customer

After all settings are made you can invite your customer to register the device on his account.

The customer will receive an email. Now he also has to register the device in this account.

After finishing the registration process he can deregister the specialists user account.

→

| Restrict access for the professional | Not restricted |
| Deregister professional user | Deregister |

Last step:

Coupling of Busch-VoiceControl® KNX with voice controls

Device 11000-00011-45801

+ Register new device
> 11000-00011-45801
   Local users
   Access rights

| Name | 11000-00011-45801 |
| Serial number | 11000-00011-45801 |
| Mac address | 00:50:00:00:00:01 |
| Firmware version | 1.0.0    ⓘ (out of date) |
| Firmware active since | 2018-03-16 |
| Project in device | No project |

✓ Save

ⓘ The other settings must be made on the device, by logging onto the webserver of the device.

| Email | |

Send Invite

# Busch-VoiceControl® KNX

## Coupling of Busch-VoiceControl® KNX with voice controls

**Coupling with Apple HomeKit**

1. Install and open the Apple Home-App on a tablet or smartphone.

2. Open the Home-App.

3. Select "Add device".

4. Scan the eight-digit HomeKit code of the device with the camera of the iOS device.

- The code is located on the interior side of the lid of the device carton.
- The code is also on the side of the device.
- The code can also be entered manually.
- The connection is established after the entry of the code.

5. Add the available components and functions of the KNX voice control gateway in the Home-App.

- Added switching contacts and dimmers briefly switch on and off and in this way signal that they are activated.
- New components that have been added later are automatically recognized by the Home-App and added directly.

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Coupling of Busch-VoiceControl® KNX with voice controls
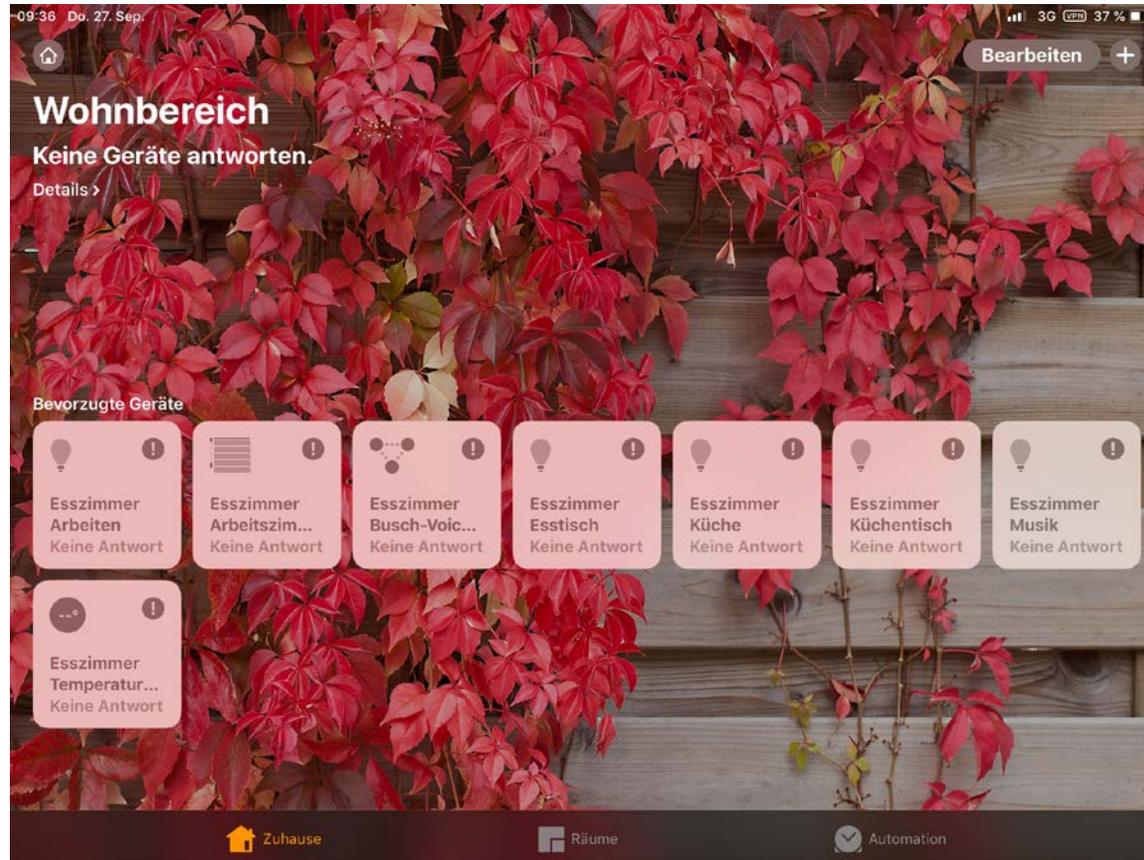
# Busch-VoiceControl® KNX

## Coupling of Busch-VoiceControl® KNX with voice controls

**Coupling with Amazon Alexa**

1. Install and open the Alexa app on a tablet or smartphone.

2. Open Alexa.

3. Tap on the menu icon and then select "Skills".

4. Add the KNX voice control gateway via the Smart-Home control as "Smart Home Skill".

> → The login window of MyBuildings Portal opens.

5. Enter the user name and the password for the end customer access in the login window.

6. Select the KNX voice control gateway that is automatically recognized in the user account.

- The connection is established and all components and functions that are made available by the KNX voice control gateway, can be controlled via Alexa.

- All available components are listed in the Alexa app under "Smart Home devices".

- New components that are added later can be made available for Alexa in the Alexa app in area "Smart-Home" via function "Add device".

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Coupling of Busch-VoiceControl® KNX with voice controls
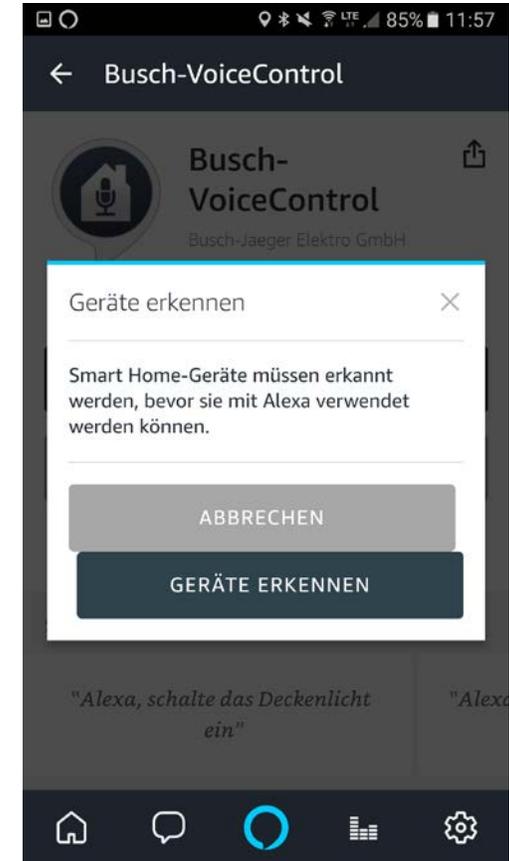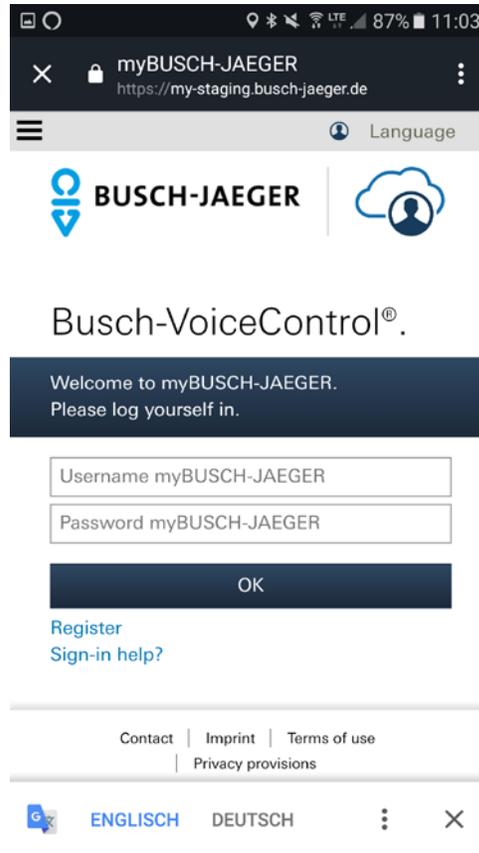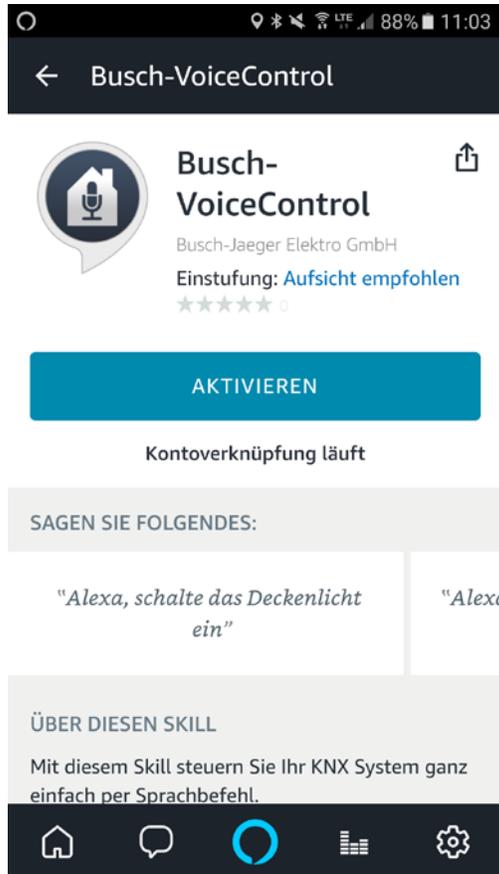
# Busch-VoiceControl® KNX

Coupling of Busch-VoiceControl® KNX with voice controls
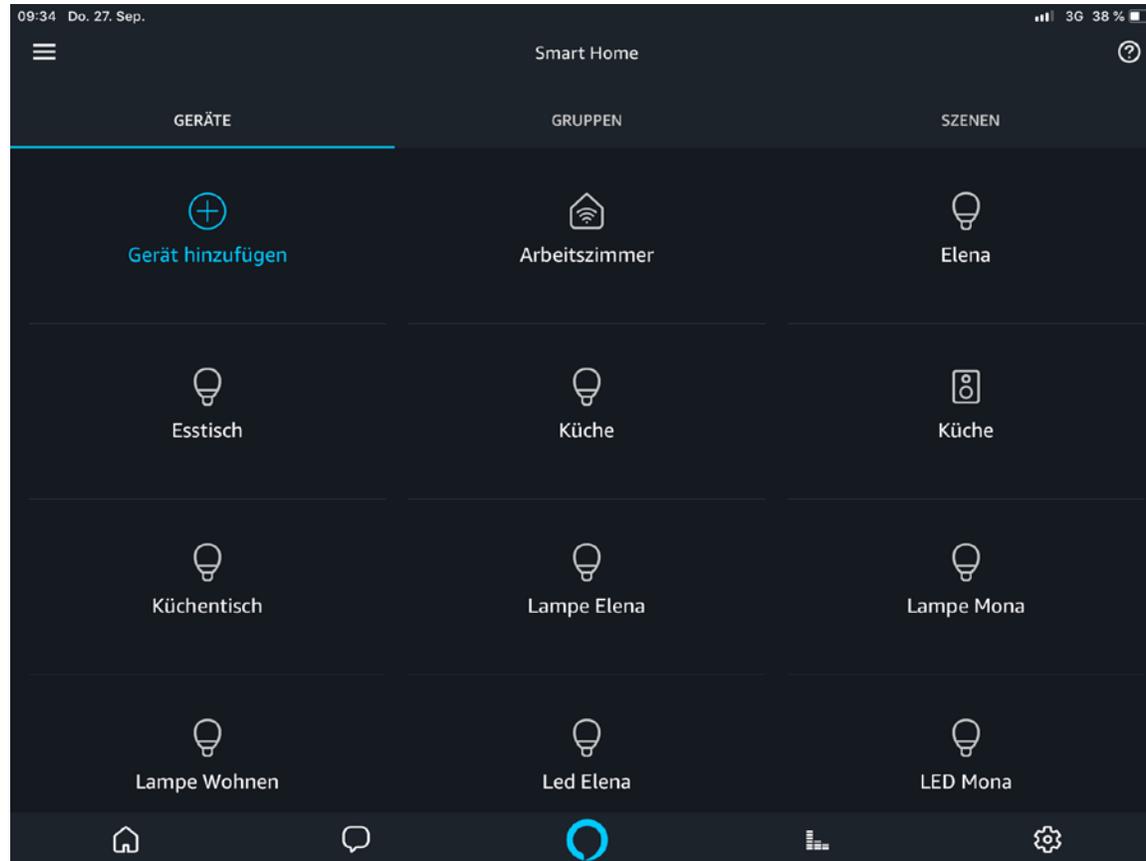
# Busch-VoiceControl® KNX

## Coupling of Busch-VoiceControl® KNX with voice controls

**Coupling with Google Home**

1. Install and open the "Google Home" app on a tablet or smartphone.

2. Open Google Home.

3. Open the "Devices" menu. To do this, tap on the following icon at the top right:

4. Tap on the three points at the top right on the card of the Google Home device.



5. Select "Settings".

6. Select item "Smart-Home control" in the menu.

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# Busch-VoiceControl® KNX

Coupling of Busch-VoiceControl® KNX with voice controls

**Coupling with Google Home**

7. Add the KNX voice control gateway via "Devices" and the plus icon.

→The login window of MyBuildings Portal opens.

8. Enter the user name and the password for the end customer access in the login window.

9. Select the KNX voice control gateway that is automatically recognized in the user account.

- The connection is established and all components and functions that are made available by the KNX voice control gateway, can be controlled via Google Home.

- All available components are listed in the Google Home app under "Smart Home devices".

- New components that have been added later are automatically recognized by the Google Home app and added directly.

**ABB**

# Busch-VoiceControl® KNX

Coupling of Busch-VoiceControl® KNX with voice controls
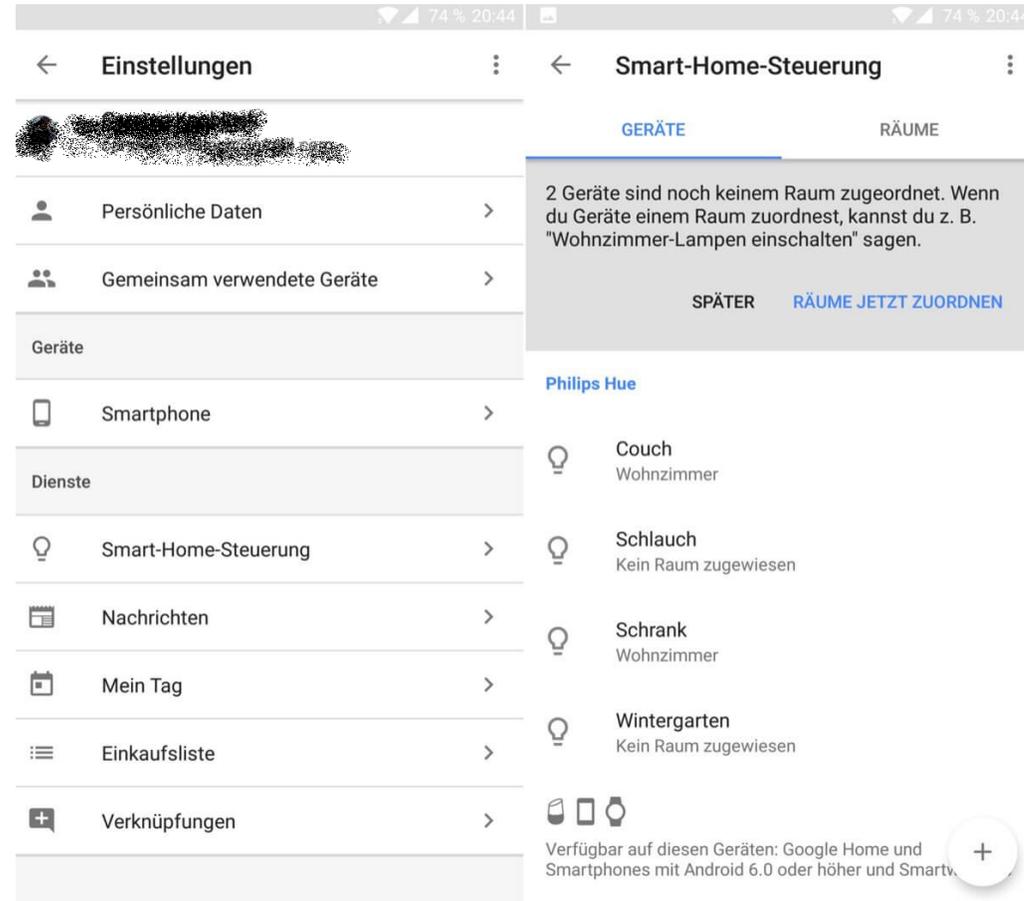
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