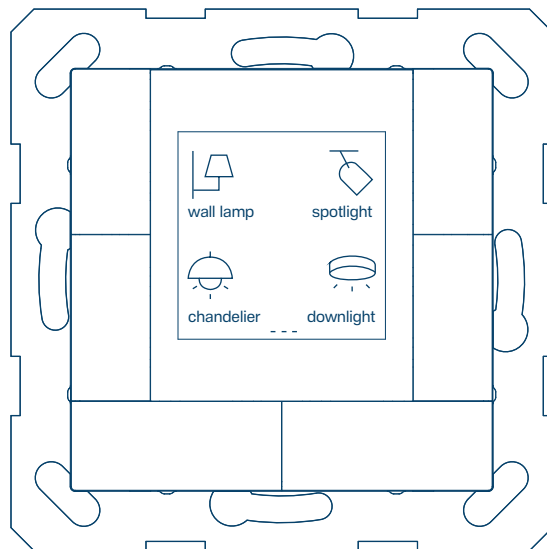


# KNX building automation system Room controller



Room controller KNX Secure, TFT, with integrated bus coupling unit

**WAK5010xx**



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# 1 Introduction

These instructions describe the safe and correct installation and commissioning of the KNX Secure room controller. These instructions are provided as information in addition to the product.

### Symbols used

- Single-step instruction or any sequence.
- ① Multi-step instruction. Sequence must be observed.
- List
- ▶ Reference to additional documents/information















	Scope of delivery		Installation by a qualified electrician		For further information on configuring the device, refer to the application manual
	KNX-certified		Supports KNX Data Secure		
	Compatibility with KNX S-mode (ETS)		Compatibility with Hager Easytool		
	Suitable for use throughout Europe and Switzerland		Directive 2012/19/EU on waste electrical and electronic equipment		

Table 1: Symbols used

Symbol	Warning word	Consequence of non-observance
	Danger	Leads to serious injuries or death.
	Warning	Can lead to serious injuries or death.
	Caution	Can lead to minor injuries.
	Caution	Can lead to device damage.
	Note	Can lead to physical damage.

Symbol	Description
	Warning against electric shock.
	Warning against damage from mechanical load.
	Warning against damage from electricity.
	Warning against damage from excessive temperatures.



### Information

Further information about the software can be found at the following link or by scanning the QR code.

[hgr.io/d/WAK5010WM/ProductApplicationDescription](https://hgr.io/d/WAK5010WM/ProductApplicationDescription)



## **2 Safety instructions**

**Electrical devices must only be installed and assembled by a qualified electrician in accordance with the relevant installation standards, guidelines, regulations, directives, safety and accident prevention directives of the country.**

**Failure to comply with these installation instructions may result in damage to the device, fire or other hazards.**

**When installing and routing cables, always comply with the applicable regulations and standards for SELV electrical circuits.**

**During renovation work, protect the device from contamination from paint, wallpaper paste, dust, etc. The device could get damaged.**

### 3 Scope of delivery

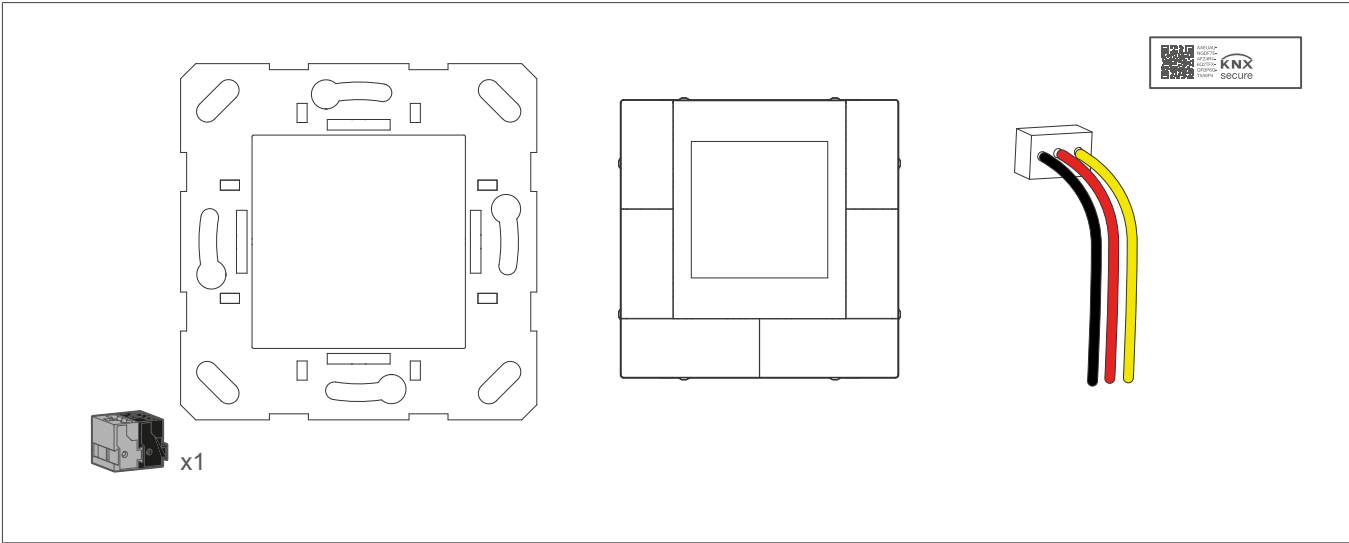


Fig. 1: Scope of delivery

## 4 Design and layout of the device

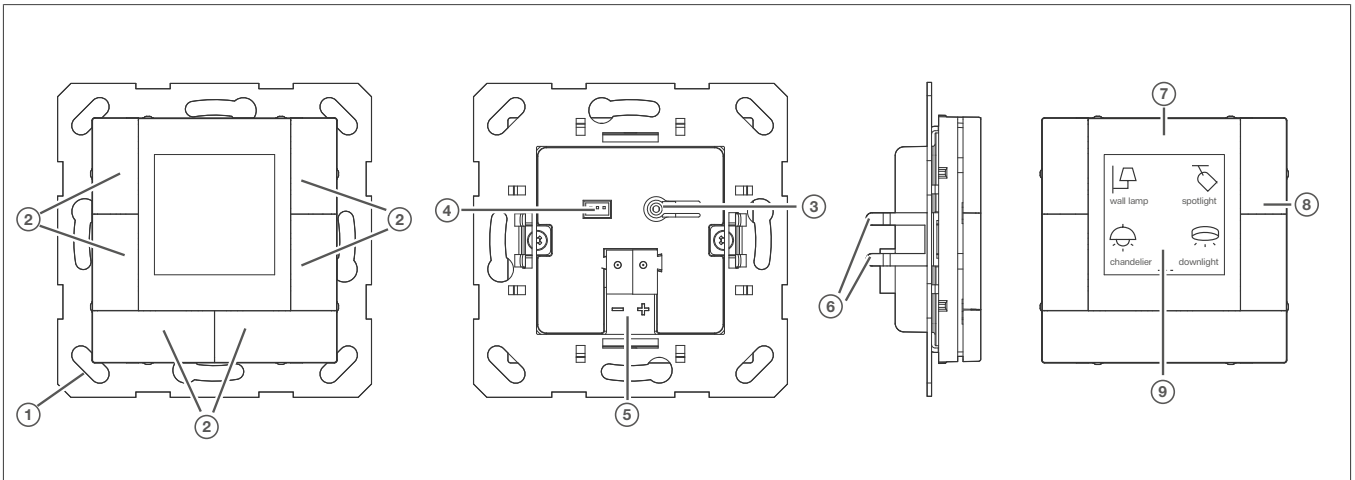


Fig. 2: Design and layout of the device

- ① Supporting ring
- ② Control buttons
- ③ Illuminated programming button
- ④ Plug-in terminal for dry contacts
- ⑤ KNX bus connection terminal
- ⑥ Fixing clamps
- ⑦ Proximity sensor, orientation LED
- ⑧ Internal temperature/humidity sensor
- ⑨ Display

## 5 Function

### System information

This device is a product of the KNX system and corresponds to the KNX guidelines. Detailed specialised knowledge obtained from KNX training courses is required for understanding.

The device is KNX Data Secure-compatible. KNX Data Secure can be configured in the ETS project and offers protection against manipulation in building automation. Detailed knowledge on this subject is required. A device certificate (FDSK), which is attached to the device (QR code sticker), is required for commissioning a KNX Secure device. During installation, the device certificate must be removed from the device and kept in a safe place.

The planning, installation and commissioning of the device are carried out with KNX-certified software.

### systemlink commissioning

The function of the device is software-dependent. The software is to be obtained from the product database. You can find the latest version of the product database, technical descriptions as well as conversion and additional support programmes from our website.

### easylink commissioning

The function of the device is configuration-dependent. The configuration can also be performed using devices developed specially for simple setting and commissioning.

This type of configuration is only possible with devices compatible with the easylink system. easylink stands for easy, visually supported commissioning. Preconfigured standard functions are assigned to the inputs/outputs by means of a service module.

## 5.1 Functional description

The device is a monoblock device with an integrated bus coupling unit and can be used for the following applications.

- Push button with fixed-configured buttons
- Multifunction thermostat
- Audio control

### Push button with fixed-configured buttons

If the fixed-configured buttons function is selected, up to a maximum of 12 buttons can be individually configured in the ETS software. A variety of functions can be assigned to the individual buttons.

Configurable functions, including

- Switching
- Dimming
- Blind
- RGB/RGBW switching/dimming

### Multifunction thermostat

When the multifunction thermostat function is selected, several different heating, cooling and ventilation systems can be controlled in parallel, such as

- Floor heating
- Electric heating

- Radiator heating
- Ventilation
- Fan coil units (FCU)
- Variable refrigerant flow (VRF) heating systems
- Valve drives

### **Audio control**

When the audio control function is selected, an audio device can be controlled. The buttons are already defined in the ETS software and do not require any further configuration.

This function is used to control background music playback, e.g. on/off, play/pause, previous/next track, increase/decrease volume, mute, playback modes, track name, artist name, album name etc.

### **Logic functions**

The device supports up to eight logic channels, with each channel supporting up to eight inputs and one logic output.

The following logic functions are available

- AND
- OR
- XOR
- Gate forwarding
- Threshold comparator
- Format conversion
- Delay function
- Stair lighting.

### **Scene group function**

The device supports up to eight scene groups. Each group supports up to eight configurable outputs. The following object types are supported:

Data types

- 1 bit
- 1 byte
- 2 byte
- RGB
- RGBW

### **Connection options**

The device has a connection terminal on the rear to which binary inputs, dry contacts or an external temperature sensor can be connected.

## **5.2 Correct use**

- Single room temperature control in KNX installations
- Operation of loads, e.g. light ON/OFF, dimming, blind UP/DOWN, saving and opening light scenes, etc.
- Only suitable for indoor applications
- Installation into wall box according to DIN 49073 (recommendation: Windproof wall box)

## 5.3 Product characteristics

### Product characteristics: device in general

- Commissioning and programming in S-mode and E-mode
- Button control panels
- Displays the function and status of the buttons, optionally with symbol, status value, text
- Control panel lock
- Proximity sensor
- Screen saver
- Alarm function
- Internal temperature sensor
- Internal humidity sensor
- Connection for external temperature sensor (see Accessories)
- Connection for external binary input

### Product characteristics: room temperature control

- Setpoint specification by selecting the operating mode
- Operating modes: comfort, standby, economy, frost/heat protection, holiday
- Heating and cooling mode
- Ventilation function
- Measurement of the room temperature and comparison with set temperature
- Heating/cooling (compatible with 2/4-pipe system)
- Support for 2-point and PI control
- Four operating modes
- Control of up to three fan speeds
- Control of different heating, cooling and ventilation systems, such as
  - Floor heating
  - Electric heating
  - Radiators
  - Ventilation
  - Fan coil units (FCU)
  - Variable refrigerant flow (VRF) heating systems
  - Valve drives

### Product characteristics: push button functions

When programmed as an individual button

- Switching, dimming
- RGB, RGBW, colour temperature control
- Value transmitter
- Scene
- Roller shutter and blind function
- Shift register
- Multiple operation
- Delay mode
- RTC operating mode
- String
- Status indicator

When programmed as a rocker

- Switching, dimming
- Setpoint adjustment
- Multifunction thermostat: Room temperature control function (choice of FCU control or VRF control)
- Underfloor heating and ventilation function
- Roller shutter and blind function

**Product characteristics: audio functions**

- Playback of tracks
- Select tracks (previous/next)
- Display track name
- Display artist name
- Display album name
- Adjust volume level
- Mute

**Product characteristics: logic functions**

Eight logic functions

- AND, OR, XOR
- Gate forwarding
- Threshold comparator
- Format conversion
- Gate function
- Delay function
- Stairway lighting

**Product characteristics: scene functions**

- Eight scene group functions
- Eight outputs per scene group

## 6 Operation

The buttons (1...6) on the device can be used as single buttons or rockers (pair of buttons). The device supports up to 12 buttons. For each button, a symbol, text, status indicator etc. can be defined in the ETS software and shown on the display.

### Operating guide

Triggering of functions and operation of electrical loads takes place via the button and can be set individually for each device.

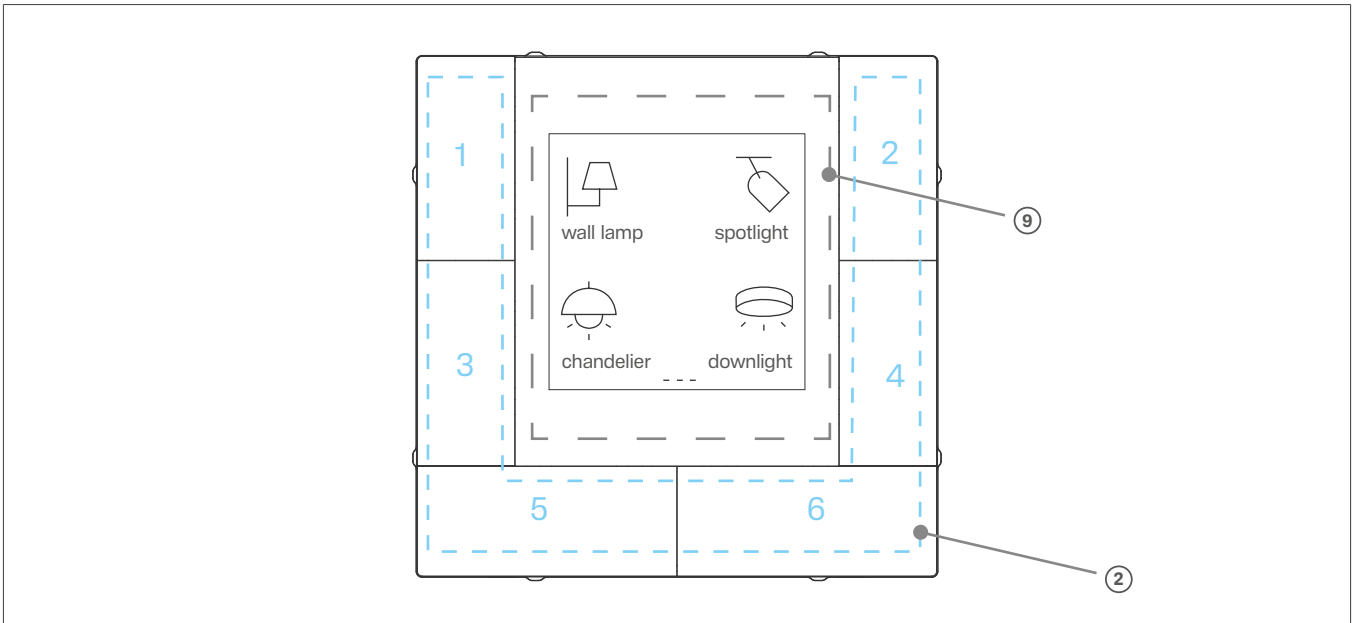


Fig. 3: Push button operation areas

- ② Button(s)
- ⑨ Display area

Operation of the individual button:

- Switching lighting on/off or dimming brighter/darker is carried out alternately by repeated pressing of the same button.



By default, the button(s) are configured in the ETS software to operate individually. This setting can be changed by the system integrator/erection engineer and adapted to the conditions.

Operation as rocker:

- Two opposite buttons form a rocker. For example, touching the left-hand area switches the lighting on/makes it brighter; touching the right-hand area switches it off/makes it darker.

The device differentiates between short and long touches.

Short press operation

- Switching the lighting
- Roller shutter/blind: The device sends the Stop or Slat step command to the bus via the corresponding communication object (slat step).
- Timer: The ON command is transmitted through the Timer object for the time set at the output.

#### Long press operation

- Dimming the lighting
- Roller shutter/blind: The device sends an Up/Down move command via the bus through the corresponding communication object (move).
- Timer: The OFF command interrupts active timer operation through the Timer object and switches the output off directly.
- Scene: Keep the scene button pressed. The outputs in question flash briefly to confirm that the configurations have been saved.

**Note**

The detection time for a long button press is set at 500 ms by default.

## 7 Information for qualified electricians

### 7.1 Installation and electrical connection



#### Danger

Electric shock when live parts are touched!

An electric shock can lead to death!

- Disconnect all connection cables before working on the device and cover any live parts in the area!

#### Connection and installation of the device

- ☑ The flush-mounted or hollow-wall box is installed in the wall and plastered in.
  - ☑ The bus connection cable is routed into the wall box.
- 1 Remove the FDSK label from the device and retain the label (see [Commissioning in KNX Secure mode](#)).
  - 2 Install the supporting ring on an wall box (Fig. X).
  - 3 Run the bus cable with the connecting terminal through the frame and connect it to the back of the device.
  - 4 Optional: Attach the terminal for binary inputs.
  - 5 Attach the device with the frame to the supporting ring until the fixing clamps engage.
  - 6 Remove the protective film from the display.

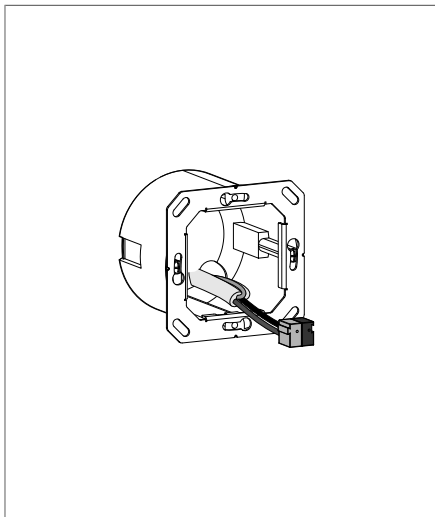


Fig. 4: Fitting the supporting ring

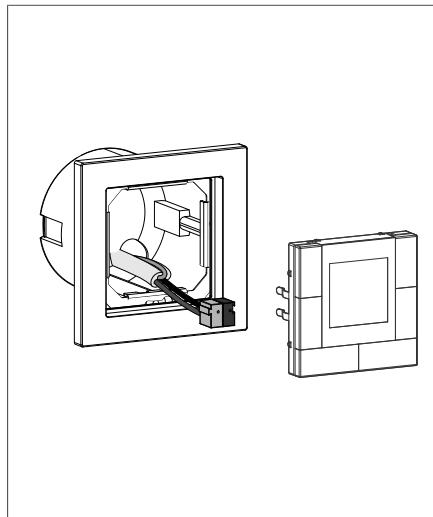


Fig. 5: Mounting the frame and module

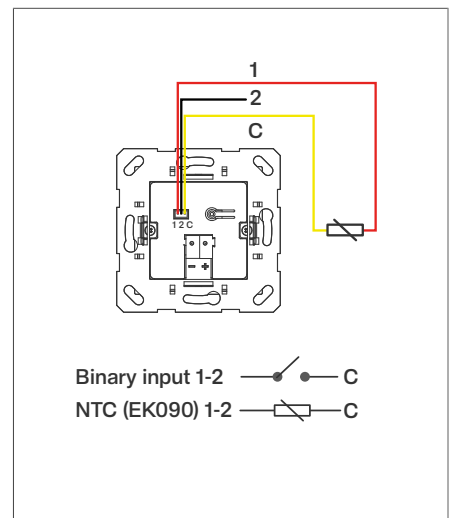


Fig. 6: Connection of binary inputs

#### Optional: Connection of the binary input terminal

- ☑ The flush-mounted or hollow-wall box is installed in the wall and plastered in.
  - ☑ The bus connection cable and the connection cable for binary inputs are fed into the wall box.
- 1 Remove the FDSK label from the device and retain the label (see [Commissioning in KNX Secure mode](#)).
  - 2 Install the supporting ring on an wall box (Fig. 4).
  - 3 Run the bus cable with the connection terminal through the frame and connect it to the back of the device (Fig. 6).

- 4 Attach the terminal for binary inputs.
- 5 Connect the binary input cables to the connecting cable for the binary inputs. Isolate unused connecting cable.
- 6 Attach the device with the frame to the supporting ring until the fixing clamps engage.
- 7 Remove the protective film from the display.

## 7.2 Commissioning

The device can be programmed in three ways:

- KNX systemlink mode (standard ETS programming) [see "Commissioning in KNX systemlink mode \(ETS\)", page 16](#)
- KNX Secure mode [see "Commissioning in KNX Secure mode", page 16](#)
- KNX easylink mode [see "Commissioning in KNX Easylink mode", page 17](#)

### 7.2.1 Commissioning the device

The device has been installed and connected correctly.

- 1 Switch on the bus voltage.

The display lights up.



During commissioning, it may take a few minutes for the correct room temperature to be displayed.

The display lights up. During commissioning, it may take a few minutes for the correct room temperature to be displayed.

- 2 If you have not already done so, remove the protective film from the display.

## 7.2.2 Commissioning in KNX systemlink mode (ETS)

The device is connected and ready for use. The following procedure is usually recommended.

### systemlink – Loading the physical address and application software

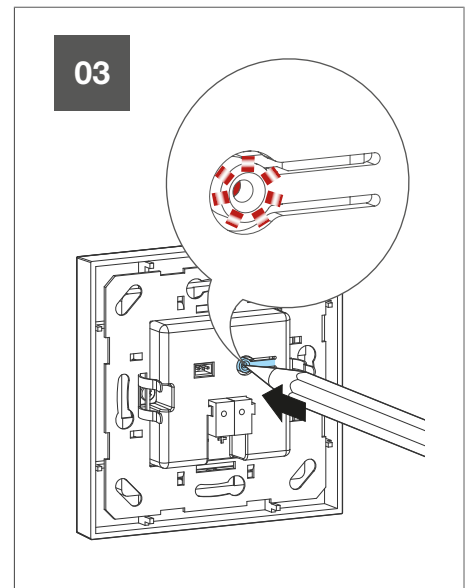


The physical address can only be assigned to one device. Only one device can be in programming mode.

It is recommended to set the physical address before installation.

- 1 Remove the device from the supporting ring while also removing the design frame.
- 2 Switch on the bus voltage.
- 3 Press the illuminated programming button ((Fig. 2/3: Design and layout of the device)).

The programming LED lights up.



If the button does not light up, no bus voltage is present on the device.

- 4 Load the physical address into the device.  
The programming LED goes out.
- 5 Load the application software into the device.
- 6 Note down the physical address on the labelling field.
- 7 Attach the device with the frame to the supporting ring until the fixing clamps engage.

## 7.2.3 Commissioning in KNX Secure mode

The device has been installed and connected so that it is ready for operation.

- 1 Activate safe commissioning mode in ETS.
- 2 Enter the device certificate (QR code) (Fig. 9), scan it (Fig. 8) or add it to the project in ETS.



### Note!

Use a high-resolution camera to scan the QR code.

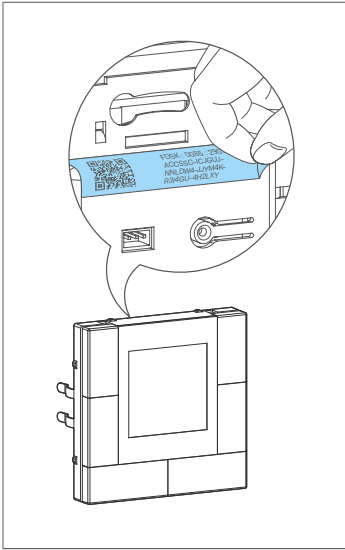


Fig. 7: Removing the device certificate from the device (similar to illustration)

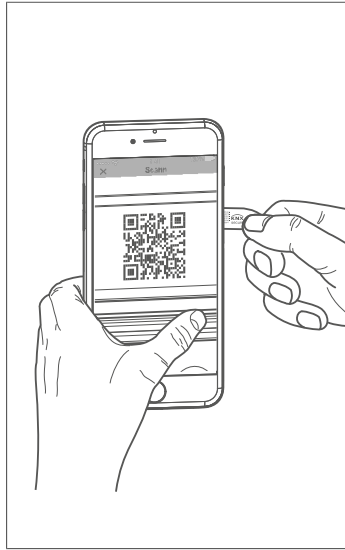


Fig. 8: Scanning the QR code



Fig. 9: Entering the QR code manually

- 3 Document all passwords and keep them in a safe place.
- 4 Remove the device certificate (QR code) from the device and store it with the passwords.
- 5 Note down the device certificate along with the physical address and item reference in a list.

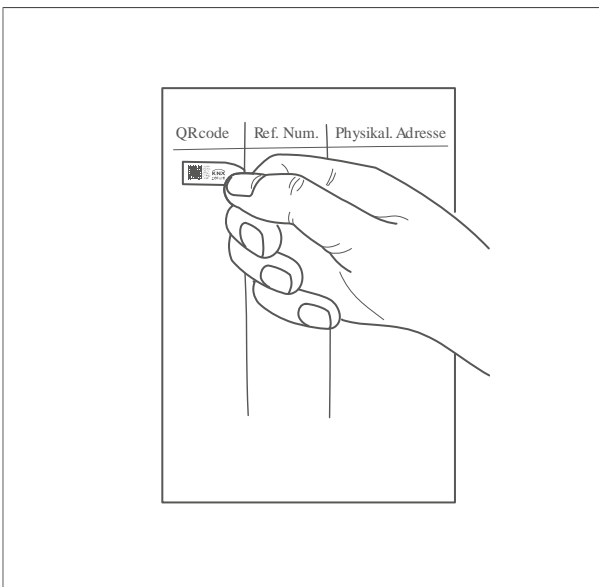


Fig. 10: Storing the device certificate in the project documentation

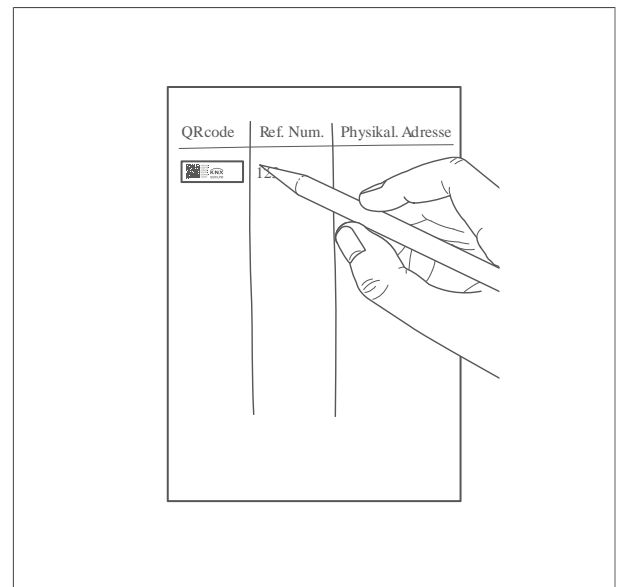


Fig. 11: Noting down the article number and physical address for the device certificate

### 7.2.4 Commissioning in KNX Easylink mode

The function of the device is configuration-dependent. The configuration can also be performed using devices developed specially for simple setting and commissioning.

This type of configuration is only possible with devices compatible with the easylink system. easylink stands for easy, visually supported commissioning. Preconfigured standard functions are assigned to the inputs/outputs by means of a service module.

## 7.3 Dismantling

### 7.3.1 Dismantling the device



#### Danger

Electric shock when live parts are touched!

An electric shock can lead to death!

- Disconnect all connection cables before working on the device and cover any live parts in the area!

- Remove the room controller module insert from the supporting ring while holding the design frame.
- Remove the KNX bus connection terminal from the device.
- Optional: Remove the connection terminal for binary inputs.



Dispose of the device in line with the corresponding guidelines of the country (see [Disposal note](#)) or contact the point of sale for any warranty claim.

## 8 Appendix

### 8.1 Technical data

<b>KNX</b>	
KNX Medium	TP1-256
Configuration mode	S-mode, e-controller
Supply voltage	21 ... 32 V $\overline{\text{SELV}}$
Current consumption	< 15 mA, 30 V
Power consumption	< 450 mW
<b>Environmental conditions</b>	
Operating temperature	-5 °C ... +45 °C
Storage temperature	-25 °C ... +55 °C
Transport temperature	-25 °C ... +70 °C
Air humidity	< 93%, non-condensing
<b>Type of connection</b>	
KNX	Bus connection terminal
Binary inputs	Three-wire connection terminal, cable length <5 m
Operating height	Max. 2000 m
Degree of contamination	2
Overvoltage category	III
Degree of protection	IP20
Installation mode	FM flush-mounted
Dimensions	70.8 x 70.8 x 19.3 mm

### 8.2 Cleaning information

Remove finger marks on the display surface or dirt on the buttons with a damp cloth. Do not use scouring/cleaning agents or aggressive care products.

### 8.3 Troubleshooting

**Bus operation not possible.**

**Bus voltage is not present.**

- 💡 Check bus connection terminals for correct polarity.
- 💡 Check bus voltage by briefly pressing the programming button (Fig. X); red LED lights up if bus voltage is present.

### 8.4 Accessories

**Optional accessories**

KNX bus connection terminals, 2-pole, red/black	TG008
KNX system line Y(ST)Y, 2x2x0.8	TG01x
Floor temperature sensor	EK090

## 8.5 Disposal note



Correct Disposal of this product (Waste Electrical & Electronic Equipment).

(Applicable in the European Union and other European countries with separate collection systems).

This marking shown on the product or its documentation indicates that it should not be disposed of with other household waste at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this device from other types of waste. Recycle the device responsibly to promote the sustainable reuse of material resources.







Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this device for environmentally safe disposal.


Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial waste for disposal.

## 8.6 Symbol overview














### 8.6.1 Symbol overview for push buttons

ETS function	Symbol	ETS function	Symbol
Light ON		General scene 3	
Light OFF		Curtain	
Ceiling lamp		Blind (open/close)	
Recessed downlights		Blind (UP/DOWN)	
Wall lamp		Blind (with slats)	
Spotlight		Blind open	
Chandelier		Blind closed	
Standard lamp		Up arrow	









ETS function	Symbol	ETS function	Symbol
RGB light		Down arrow	
General scene 1		Plus	
General scene 2		Minus	

ETS function	Symbol	ETS function	Symbol
Brighter		Medium	
Darker		Cleaning	
Coming home 1		Comfort	
Leaving home 1		Standby	
Coming home 2		ECO mode	
Leaving home 2		Protection	
Welcome		Alarm	
Meeting (guest)		TV	
Dinner		CHN socket outlet	
Party		Socket outlet	
Sleeping		Fan	
Reading		Door lock	

ETS function	Symbol	ETS function	Symbol
Power supply		Wind speed	
Window 1		Rain	
Window 2		Current meter	
Alarm		Voltage meter	
Heating		Energy meter	
Cooling		Presence	
Temperature		ON	
Colour temperature		OFF	
Air quality (VOC)		Open	
CO2		Closed	
Humidity		Device ON/OFF	
Brightness		Unlocked	

ETS function	Symbol	ETS function	Symbol
Locked		Text	
Not charged		Message	
Charged		Setting	
Volume ON		Room temperature	
Volume OFF		PM2.5 fine dust measurement	
Day		PM10 fine dust measurement	
Night			

### 8.6.2 Symbol overview for temperature controllers

ETS function	Symbol	ETS function	Symbol
Air conditioning system		Heating	
Floor heating		Cooling	
Warm water heating		Heating/cooling system	
Ventilation system		Temperature	



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