Operating and assembly instructions
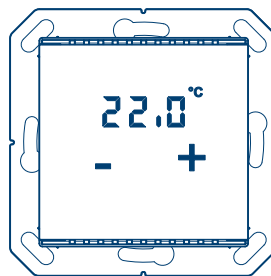
KNX building management system

KNX temperature control

KNX thermostat

8158 2005

systemlink easylink KNX KNX secure UK CA

B.

Berker

Table of contents

2 Introduction

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

Symbols used

• Single-step instruction or any sequence.

┆ Multi-step instruction. Sequence must be maintained.

– 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 stress.
	Warning against damage from electricity.
	Warning against damage from fire.

Electronic devices may only be assembled, installed and configured by a specialist with electrical training and certification in accordance with the relevant installation standards of the country. The accident prevention regulations valid in the appropriate countries must be complied with.

In addition, these instructions are intended for system administrators and electrically trained specialists.

3   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.

4 Scope of delivery
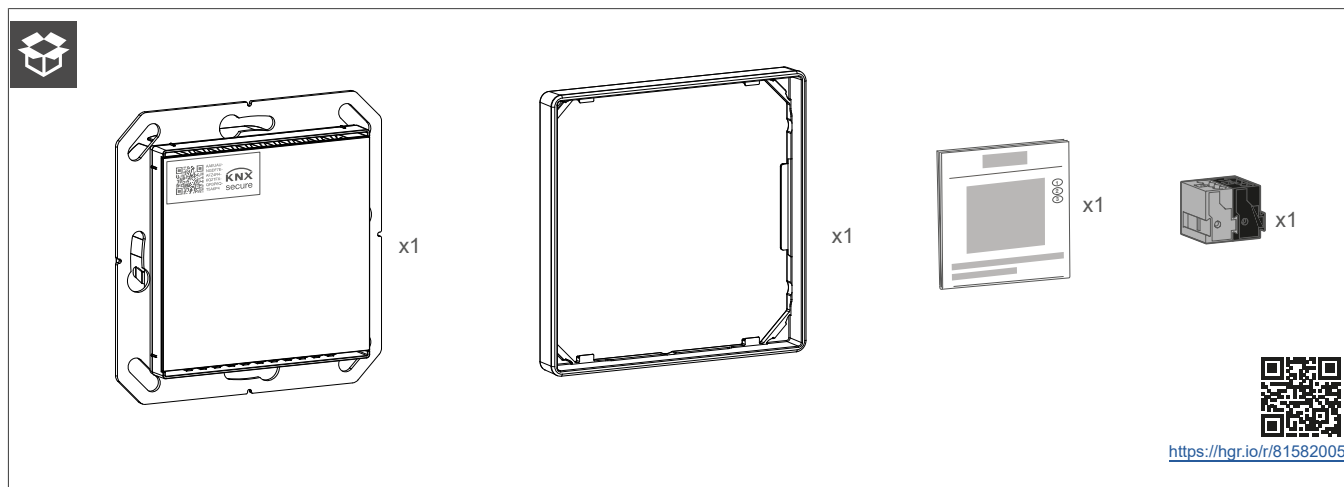
Fig. 1: Scope of delivery

5 Design and layout of the device

Fig. 2: Design and layout of the device
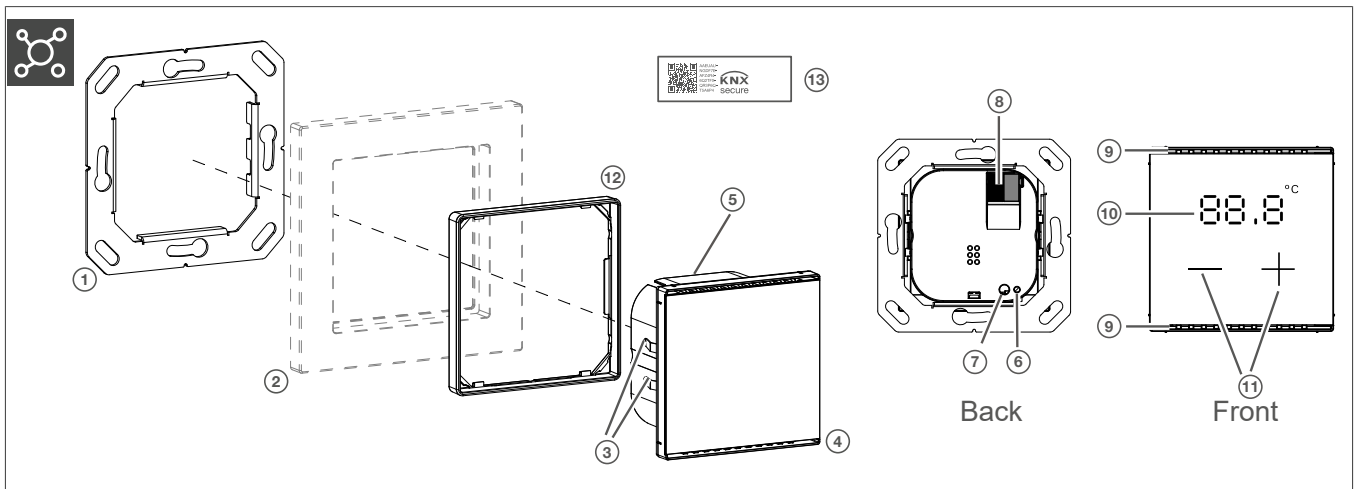
1. Supporting ring
2. Frame (not in scope of delivery)
3. Fixing clamps
4. Display surface (glass)
5. Thermostat inserts
6. Programming LED
7. Programming button
8. KNX bus connection terminal
9. Ventilation slots (top/bottom)
10. Temperature display
11. Touch surface -/ +
12. Intermediate ring (only used for series Q.x)
13. FDSK label

6 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.

6.1 Functional description

The room thermostat measures the room temperature and displays the current value in white illuminated figures. Via the bus, the device can receive an external measured value and process it with own data to overall temperature value (mixed value).

The room thermostat has got an integrated PI controller for a heating and a cooling system (one or two step). The room temperature is adjusted by means of the + and - touch buttons.

Correct use

– Single room temperature control in KNX installations
– Only suitable for indoor applications
– Installation into wall box according to DIN 49073 (recommendation: Windproof wall box)
– Recommended installation height: 1.6 m

6.2   Product characteristics

– LED display (segment display)
– Adjustable display brightness
– Display of set and actual temperature
– Measurement of temperature. Mixed value from own measured value and external values (proportions can be set in percentage)
– Displays the actual value or the target value/basic setpoint shift
– 2 touch buttons (+/-) for adjustment of the room temperature and setpoint
– PI controller for heating (one or two step) and cooling (one or two step) depending on temperature
– Indoor room temperature controller, measuring range -10 to +50°C
– Simple setpoint adjustment via +/- buttons
– 1-bit +/-, 2-byte absolute object for setpoint adjustment
– Storage of setpoints in the event of a bus voltage failure
– Min./max. limit values and value memory, frost alarm
– Switching the operating mode via byte objects
– Temperature sensor
– Installation in switch wall box
– Installation in the S.x and B.x switch series and also using the adapter ring in the Q.x series included in the scope of delivery
– Recommended installation height: 1.6 m
– Integrated bus coupling unit

7   Operation

Depending on the setting of the **Display mode** parameter in the device application, the room thermostat displays the current room temperature value, the setpoint or the offset relative to the basic setpoint. The display can be dimmed and also switched off via the bus, so that **no** value is displayed.

Option A: Displays the actual temperature (room temperature)

The current room temperature is displayed. It is not possible to change the room temperature manually using the +/- buttons.

Option B: Displays the set temperature or offset from basic setpoint

Depending on the setting, the current setpoint or the offset relative to the basic setpoint is displayed. The temperature can be changed by touching the +/- buttons.

Setpoint display (absolute value):

Tap +: Increase room temperature (set temperature is increased)

Tap -: Lower room temperature (set temperature is lowered)
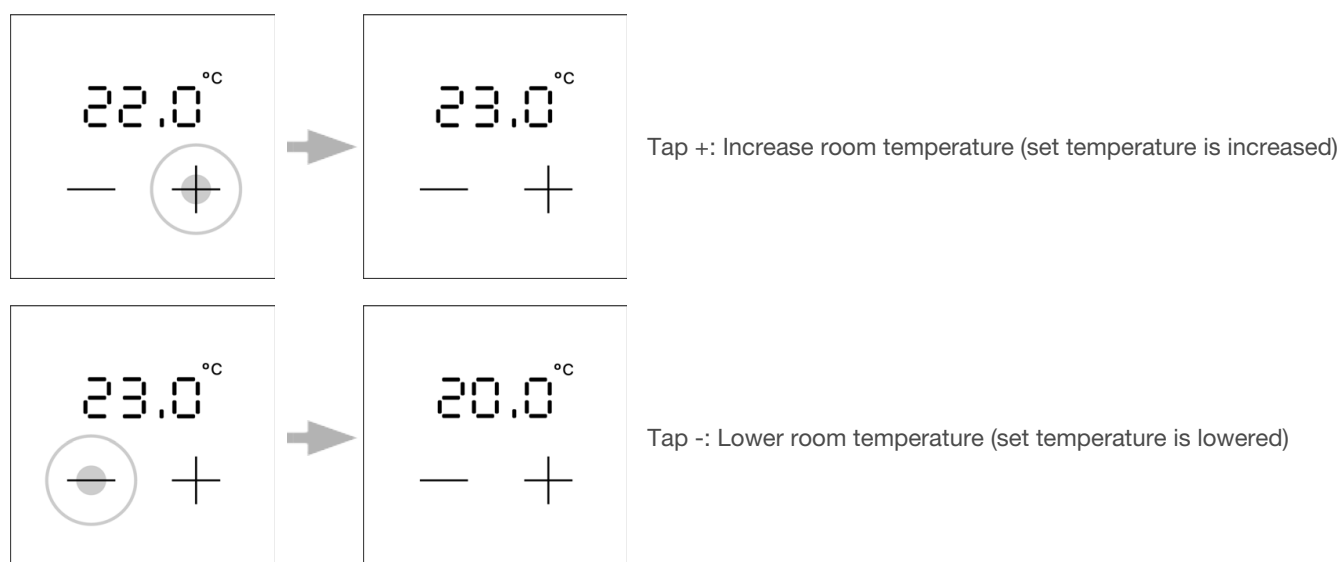
Display of the basic setpoint shift (change from the basic setpoint of the controller):

Tap +: Increase room temperature (basic setpoint shift in PLUS direction)

Tap -: Lower room temperature (basic setpoint shift in MINUS direction)
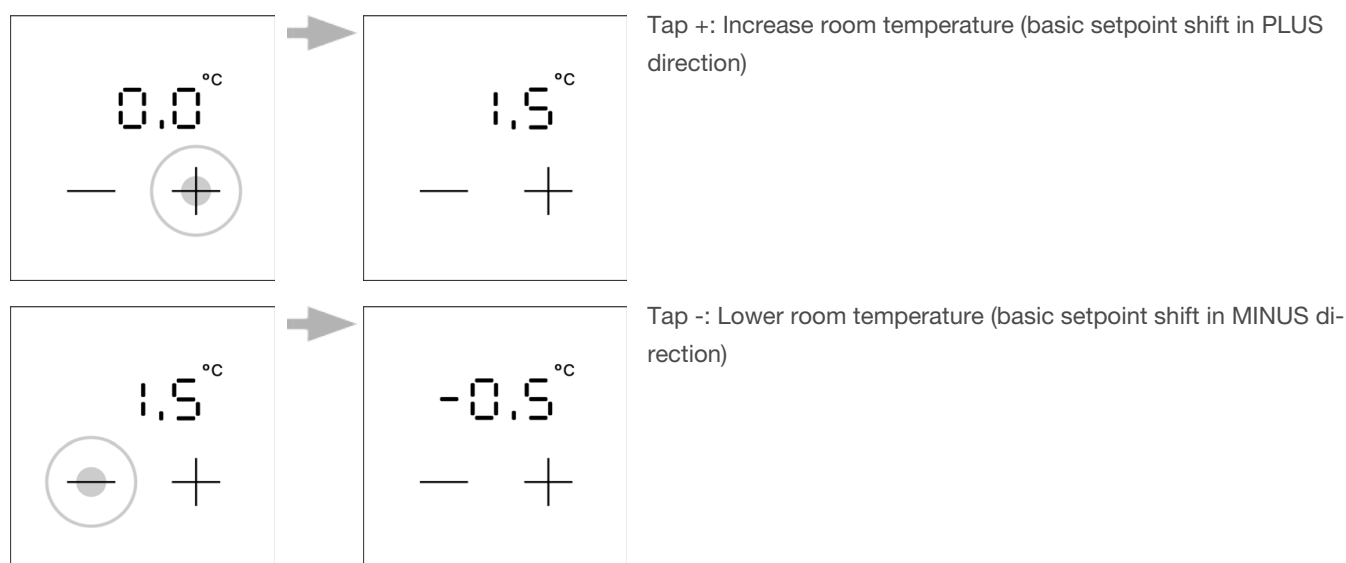
Option C: Displays the actual temperature and the set temperature/basic setpoint shift

During normal operation, the current room temperature is displayed. By touching the buttons, the display jumps to the target temperature or to the basic setpoint shift, depending on the presetting. Changes with + or - are visible. The display returns to room temperature if no button is touched for 7 seconds.
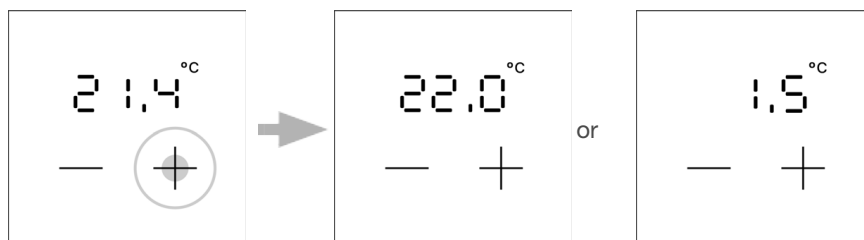
Touch + or - touch briefly:

The current set temperature (or the basic setpoint shift) is displayed.

Tap +:

Increase room temperature (set temperature/basic setpoint shift is increased).

Tap -:

Lower room temperature (set temperature/basic setpoint shift is lowered).

8 Information for qualified electricians

8.1 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!

Mounting and connecting the device in the S.x and B.x design series

• Install the supporting ring in the correct position on a wall box (Fig. 3), observing the alignment of the detent on the supporting ring.
• Run the bus cable with the connecting terminal through the frame and connect it to the back of the thermostat.
• Put the thermostat and frame on the supporting ring until the fastening clamps snap into place, note the 'TOP/OBEN' mark.
• Remove the protective film and FDSK label from the display.

Fig. 3: Fitting the supporting ring

Fig. 4: Mounting the frame and module

Mounting and connecting the device in the Q.x design series

- Install the supporting ring in the correct position on a wall box (Fig. 5), observing the alignment of the detent on the supporting ring.
- Run the bus cable with the connecting terminal through the frame and connect it to the back of the thermostat.
- Put the thermostat with adapter ring and frame on the supporting ring until the fastening clamps snap into place, note the 'TOP/OBEN' mark.
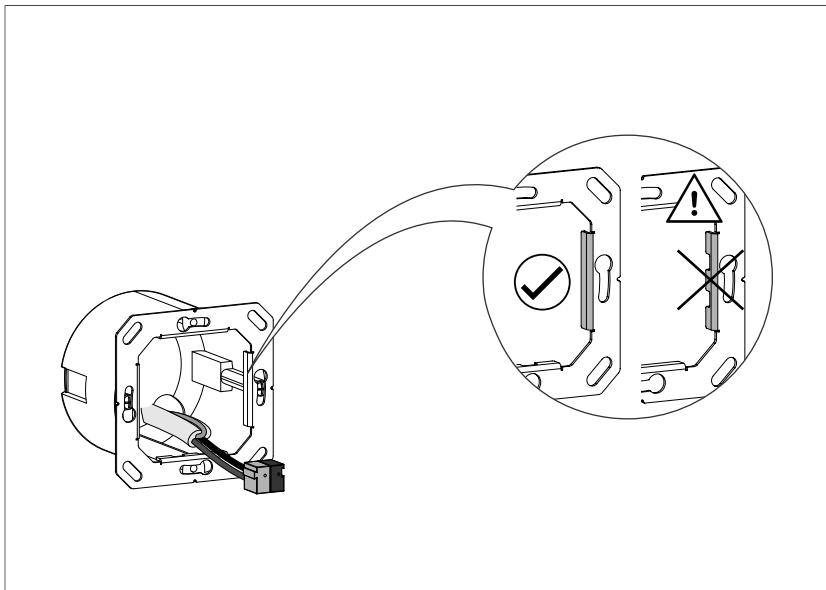- Remove the protective film and FDSK label from the display.
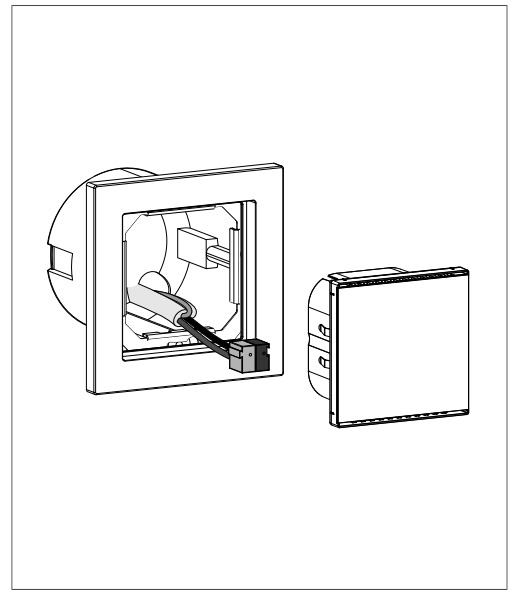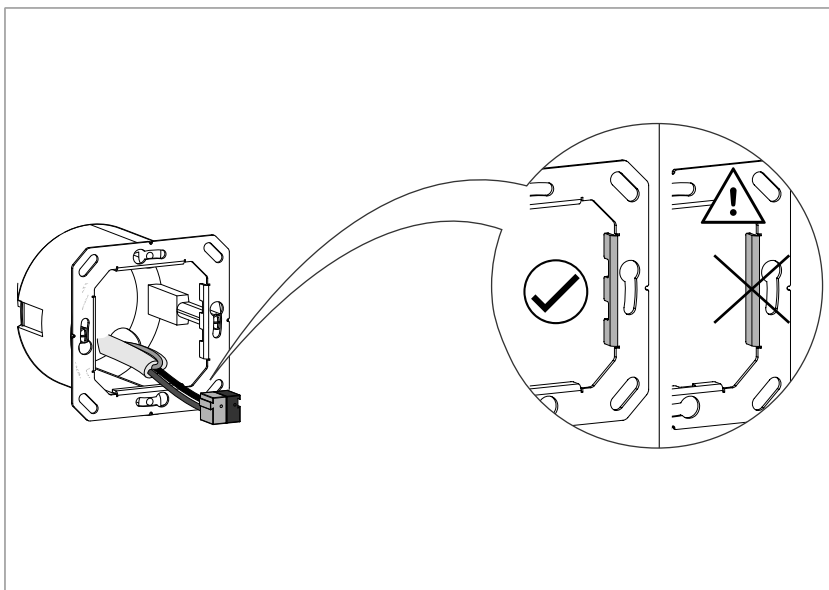

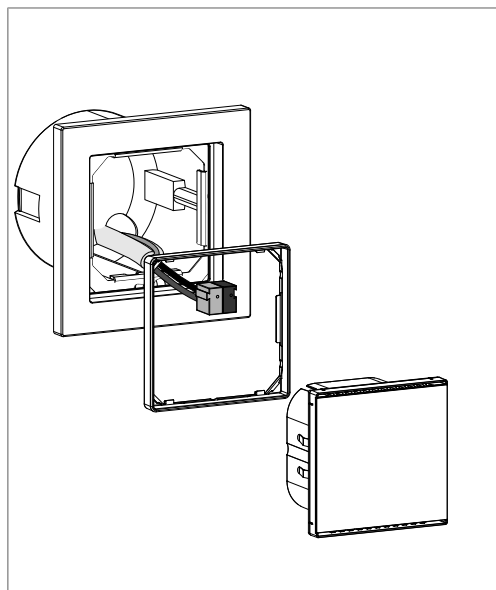Fig. 5: Fitting the supporting ring

Fig. 6: Mounting the frame,
adapter ring, and module

Note

When mounting Q.x series devices, an intermediate ring Fig. 2/12: Design and layout of the device / Fig. 6 must also be fitted.

Pay attention to the different orientation of the supporting ring for the different design lines.

8.2   Commissioning

The device can be programmed in three ways:

– KNX systemlink mode (standard ETS programming) see Commissioning in KNX systemlink mode (ETS) , page 14
– KNX Secure mode see Commissioning in KNX Secure mode , page 15
– KNX easylink mode see Commissioning in KNX easylink mode , page 16

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

> **i** 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.

| Pull the thermostat off the supporting ring while pulling off the frame and adapter ring (Q.x series only).
| Switch on the bus voltage.
| Press the programming button ((Fig. 2/7: Design and layout of the device)).

The programming LED (Fig. 2/6: Design and layout of the device) lights up.
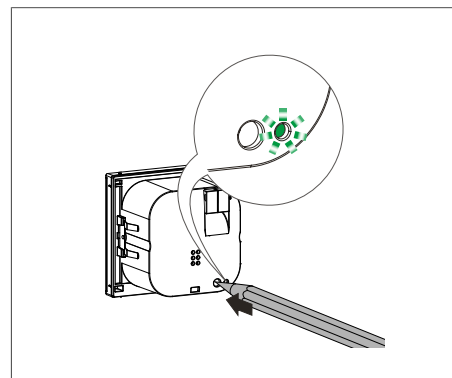
> **i** If the button does not light up, no bus voltage is present on the device.

| Load the physical address into the device.

The programming LED goes out.

| Load the application software into the device.
| Note down the physical address on the labelling field.
| Put the thermostat with frame and adapter ring (Q.x series only) on the supporting ring until the fastening clamps snap into place.

Commissioning in KNX Secure mode

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

⦙ Activate safe commissioning mode in ETS.
⦙ 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.
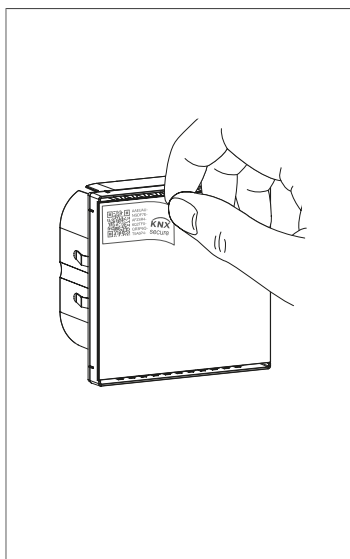
Fig. 7: Removing the device certificate from the device (similar to illustration)
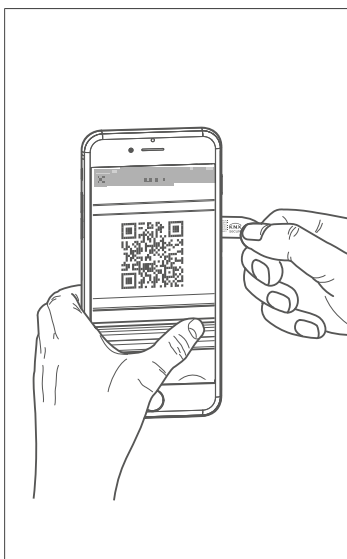
Fig. 8: Scanning the QR code
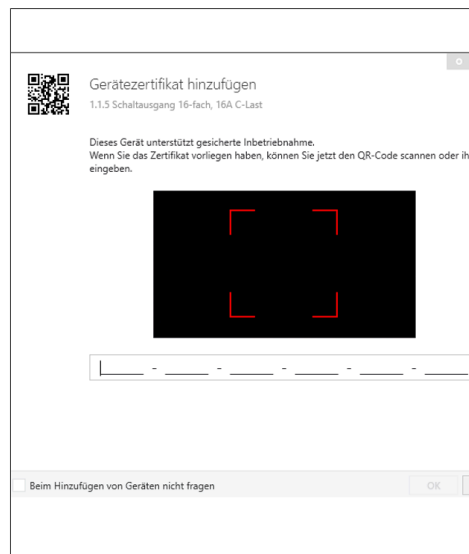
Fig. 9: Entering the QR code manually

⦙ Document all passwords and keep them in a safe place.
⦙ Remove the device certificate (QR code) from the device and store it with the passwords.
⦙ 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
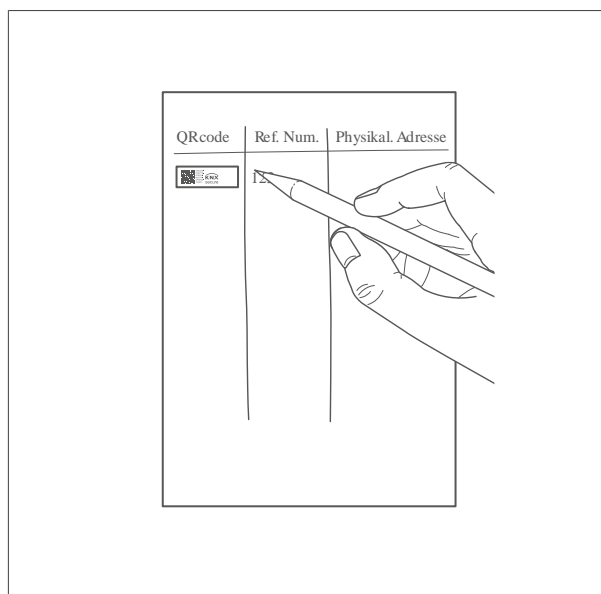
Fig. 11: Noting down the article number and physical address for the device certificate

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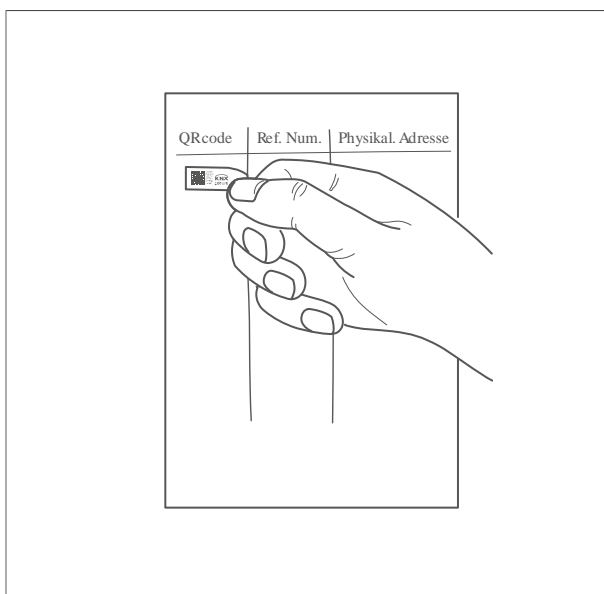
This type of configuration is only possible with devices compatible with the easylink system. easylink stands for easy, visually supported commissioning. Preconfigured standard functions are assigned to the inputs/outputs by means of a service module.

8.2.1 Commissioning the device

☑ The device has been installed and connected correctly.

⋮ 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.

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

8.3 Dismantling

Dismantling the device

> ⚠️ **Danger**
>
> Electric shock when live parts are touched!
>
> An electric shock can lead to death!
>
> • Isolate all connection cables before working on the device and cover any live parts in the area!

Remove the thermostat module from the supporting ring. During this step, hold down the design frame and adapter ring (Q.x series only).

Remove the KNX bus connection terminal from the device.

> ℹ️ Dispose of the device in line with the corresponding guidelines of the country (see Disposal note) or, if you have a warranty claim, contact the point of sale (see Warranty).

9 Appendix

9.1 Technical data

KNX Medium	TP1-256
Configuration mode	S-Mode, E-Controller
KNX supply voltage	21 ... 32 V ⎓ SELV
Current consumption	≤ 19 mA
Temperature measuring range	-5 ... +60 °C
Energy efficiency class	IV (2%)
Operating height	Max. 2000 m
Contamination level	2
Overvoltage category	III
Degree of protection	IP20
Air humidity	0 ... 95 %, non-condensing
Operating temperature	-5 ... +45 °C
Storage/transport temperature	-25 ... +70 °C
Dimensions (W x H x D)	55 x 55 x 35 mm

9.2 Cleaning information

Remove fingerprints on the glass surface with a cloth dampened with water or a microfibre cloth. Do not use scouring/cleaning agents or aggressive care products.

9.3 Accessories

Optional accessories

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

9.4 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. 2/7: Design and layout of the device), red LED lights up if bus voltage is present.

9.5 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.

9.6 Warranty

We reserve the right to implement technical and formal changes to the product in the interest of technical progress.

Our products are under guarantee within the scope of the statutory provisions.

If you have a warranty claim, please contact the point of sale.

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