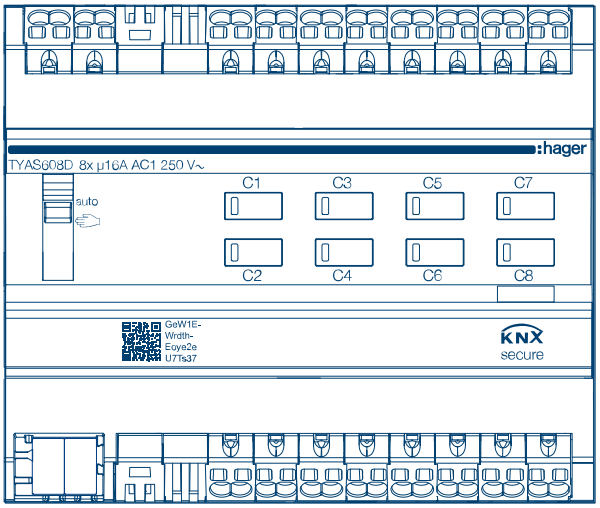
Operating and assembly instructions

KNX building management system

KNX switch-ing/blind actua-tor



KNX Secure switching/blind actuator 8/4-gang, 16 A, C load

TYAS608D

UK CA

:hager

EN

Table of contents

1 Introduction

These instructions describe the safe and correct installation and commissioning of the KNX Secure switching/blind actuators. These instructions are an information unit of the device in additional to the operating and installation instructions included with the product.

Symbols used

☑ Requirement. This requirement must have been met before continuing with the next assembly step.

● Single-step instruction or any sequence

1. 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		
	Installation terminal with actuation opening		Compatibility with KNX S-mode (ETS)		Compatibility with Hager Easytool
	Suitable for use in China		Suitable for use in Morocco		Suitable for use in Australia and New Zealand
	Suitable for use throughout Europe and Switzerland		Manufacturer's information is in accordance with § 18 Para. 4 of the German Electrical and Electronic Equipment Act.		Suitable for use in England, Wales and Scotland

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.

Target group

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.

2 Safety instructions

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

Danger due to electric shock. Disconnect mains supply before working on the device or load. Take into account all circuit protection devices that supply dangerous voltages to the device or load.

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

Danger due to electric shock. The device is not suitable for safe disconnection or isolation of the mains supply.

Danger due to electric shock on the SELV/PELV installation. Not suitable for switching SELV/PELV voltages.

Connect one motor per output only. If several motors are connected, the motors or device could be destroyed.

Use drives with mechanical or electrical final position switches only. Check final position switches for correct adjustment. Comply with the motor manufacturer's data. The device could get damaged.

Do not connect any three-phase motors. The device could get damaged.

Observe the motor manufacturer's data regarding change-over time and max. switch-on time.

3 Scope of delivery

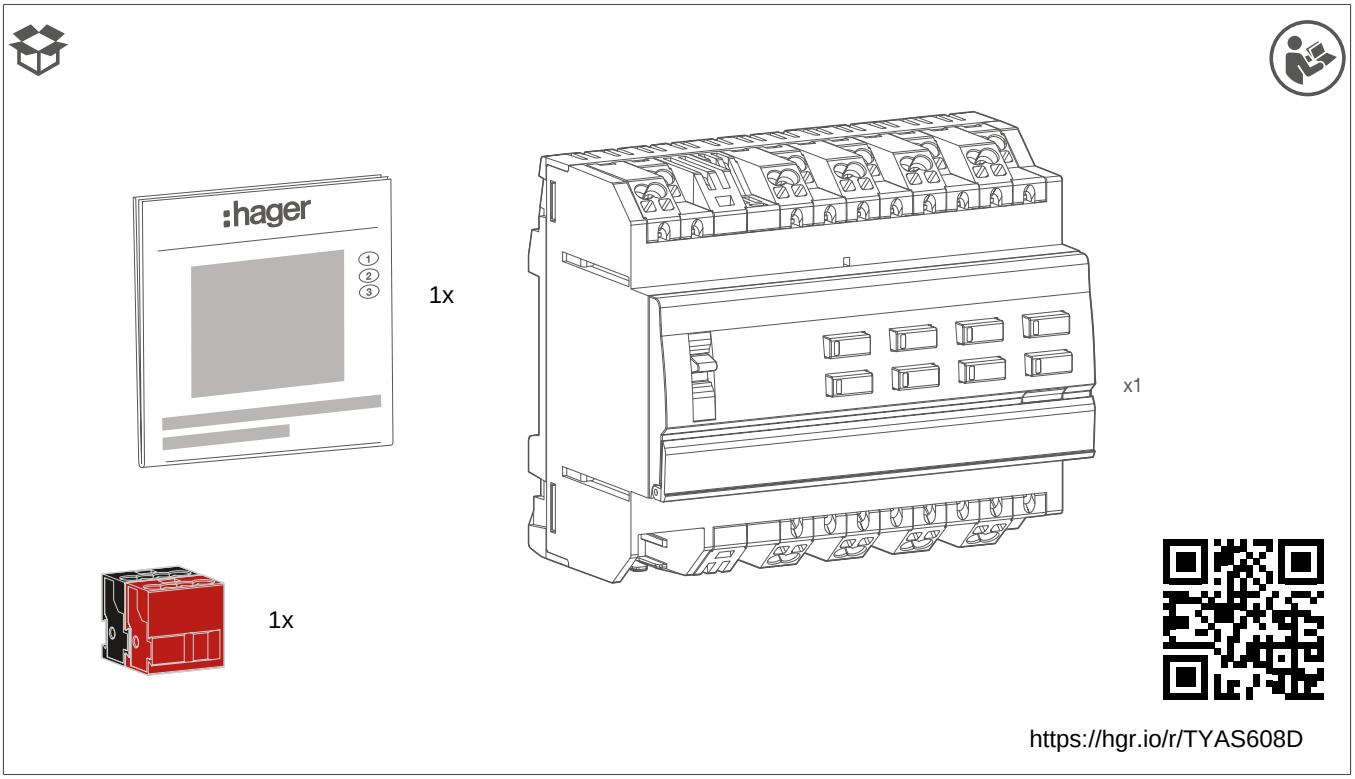


Fig. 1: Scope of delivery TYAS608D

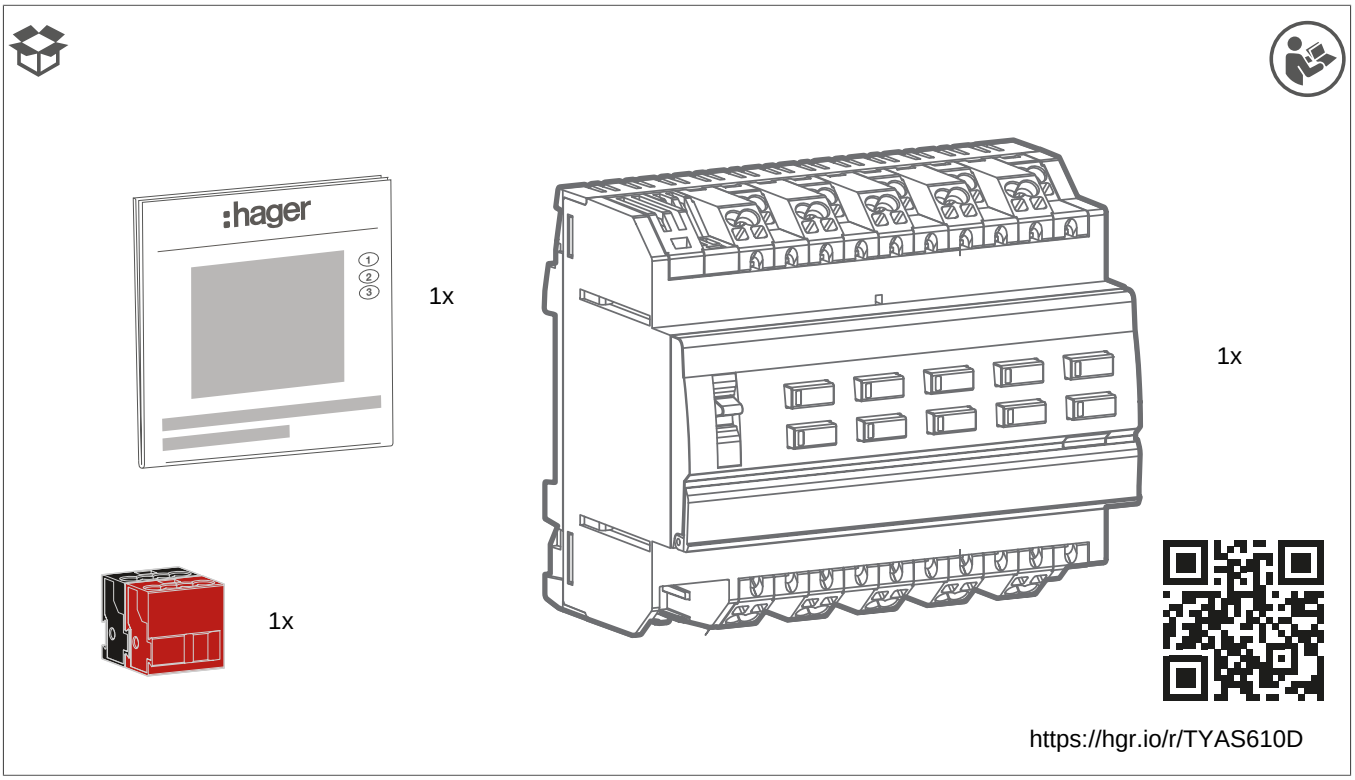


Fig. 2: Scope of delivery TYAS610D

4 Design and layout of the device

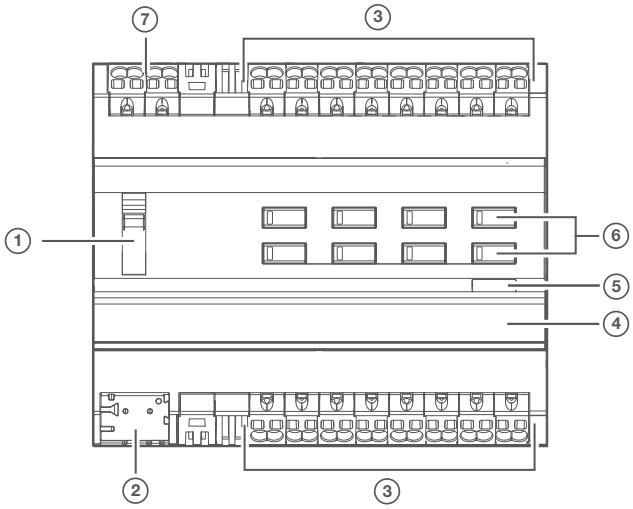


Fig. 3: Design and layout of the device

1. Slide switch auto/ ☜
2. KNX bus connection terminal
3. Connections of loads
4. Labelling field with device cover
5. Illuminated programming button
6. Operation button for manual mode with status LED
7. Connection, 230 V~ power supply

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. For KNX Secure commissioning, a device certificate (FDSK) is required, which is attached to the device (QR code label). 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 easylink system devices. easylink stands for easy, visually supported commissioning. Preconfigured standard functions are assigned to the inputs/outputs by means of a service module.

Functional description

The device receives telegrams from sensors or other controllers via the KNX installation bus and switches electrical loads with its independent relay contacts.

The C load variants are particularly suitable for capacitive loads and are designed for high making currents.

Correct use

- Switching of electrical loads (230 V AC) with potential-free contacts.
- Switching electrically operated motors of 230 V AC for blinds, shutters, awnings and similar hangings.
- Installation on DIN rail according to IEC 60715

Product characteristics

- Compatible with KNX Data Secure products
- Manual activation of the outputs on the device possible, building site operation
- Status indication of the outputs on the device
- Scene function
- Forced position by higher-level controller
- Connection of various external conductors possible

Functions in switch operation:

– NO or NC operation
– Feedback function
– Central switching functions
– Time switching functions: on delay, off delay, stair light switch with pre-warning function
– Scene function
– Operating hour meter

Functions in roller shutter/blind operation:

– Suitable for AC motors 110–230 V
– Position can be started directly
– Slat position directly controllable
– Feedback of operating state, hanging position and slat adjustment
– Forced position by higher-level controller
– Safety function: 3 independent wind alarms, rain alarm, frost alarm
– Sunshade function with automatic heating and cooling
– Disable function
– Scene function
– 3 alarms

Logic properties

– Logic gate
– Converter (conversion)
– Blocking element
– Comparator – limit switch

6 Operation

Switching manual mode on/off

With the variants, control of the outputs is possible even without bus voltage when mains voltage is connected, e.g. for operation at building sites.

☑ The 230 V ~ power supply or bus voltage supply is present.

- Move the switch ((1)) to position ☜.

  Manual mode is switched on; the outputs can be controlled independently of each other via the operation buttons ((6)):

During manual mode, the controller is deactivated via the KNX bus.

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systemlink commissioning:

Depending on the programming, manual mode is activated permanently or for a time period configured using the application software. If manual mode is disabled via the application software, no activation takes place.

Or:

- Move the switch((1)) to position **auto** .

  Manual operation is switched off. Control takes place solely via the KNX bus. The output assumes the position predefined by the bus controller. The switching status is displayed by the status LED of the operation button ((6)).

Operating outputs in manual mode

Operation takes place per output by briefly pressing the operation button repeatedly ((6)).

Caution

Risk of destruction due to simultaneous pressing of the buttons for UP and DOWN if a motor is connected when the motor is in an unprogrammed state!

Motors, hangings and the device may be destroyed!

- Only ever press one button in manual mode when working with unprogrammed devices.

Condition ((6))	Behaviour when briefly pressing the button ((6))
Switching operation	
Load is switched off. Status LED of the button is off.	Switch ON the connected load. Status LED of the button lights up.
Load is switched on, status LED of the button lights up.	Switch OFF the connected load. LED goes out.
Roller shutter/blind operation	

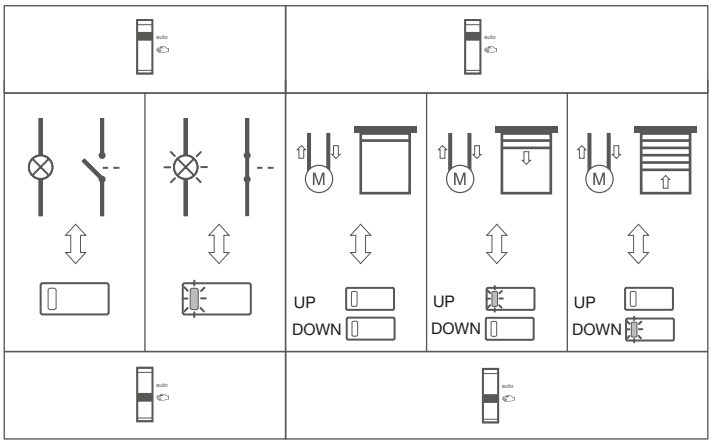
Table 2: Manual operation

Condition ((6))	Behaviour when briefly pressing the button ((6))
Output is in idle state, status LED of the button is off.	Movement operation starts. Status LED of the button lights up.
Output active, status LED of the button lights up.	Movement operation stops, LED goes out.

Table 2: Manual operation

Note

If the roller shutter/blind is in the final position, the button opposite must be pressed in order to move the shutter/blind.



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!

Caution

Impermissible heating if load of the device is too high!

The device and the connected cables may get damaged in the connection area!

- Do not exceed the maximum current carrying capacity!

Caution

Risk of destruction with parallel connection of several motors on one output!

Final position switches could fuse together. Motors, hangings and the device may be destroyed!

- Only connect one motor per output!

Installing the device

Observe temperature range. Provide sufficient cooling.

1. Install the device on a TH 35 7,5-15 DIN rail in accordance with IEC 60715:2017 / EN 60715:2017.

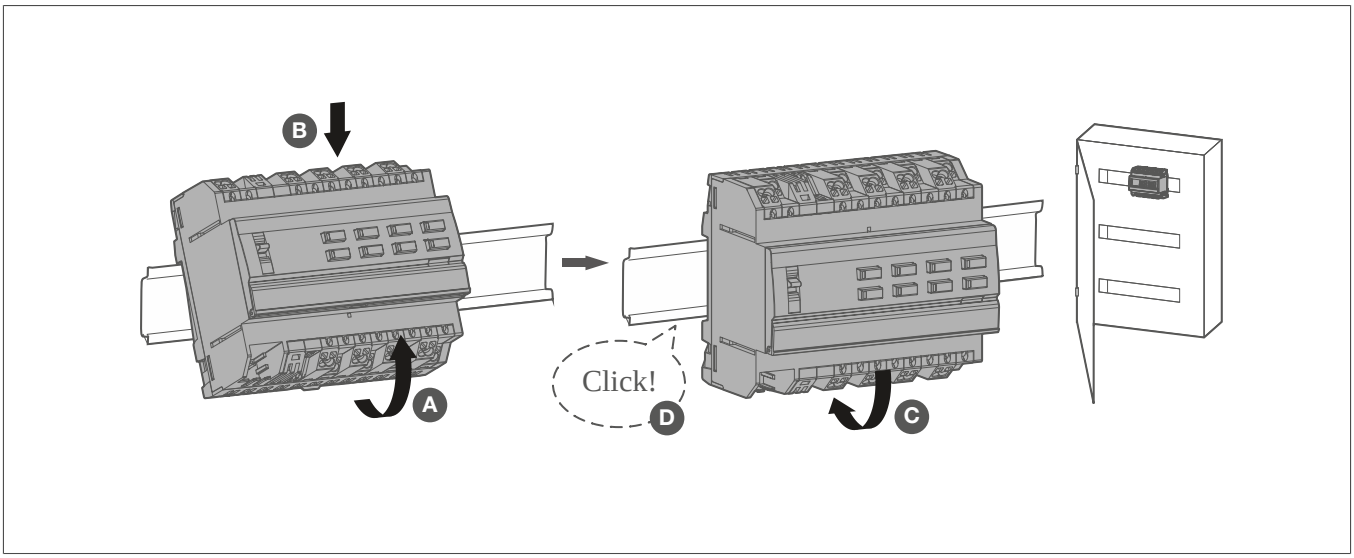


Fig. 4: Installing the device on the DIN rail

Connecting the device

☑ The device is installed on the DIN rail in accordance with ISO 60715.

- Connect the load to the outputs of the device.
- Connect the connection cables for the power supply.

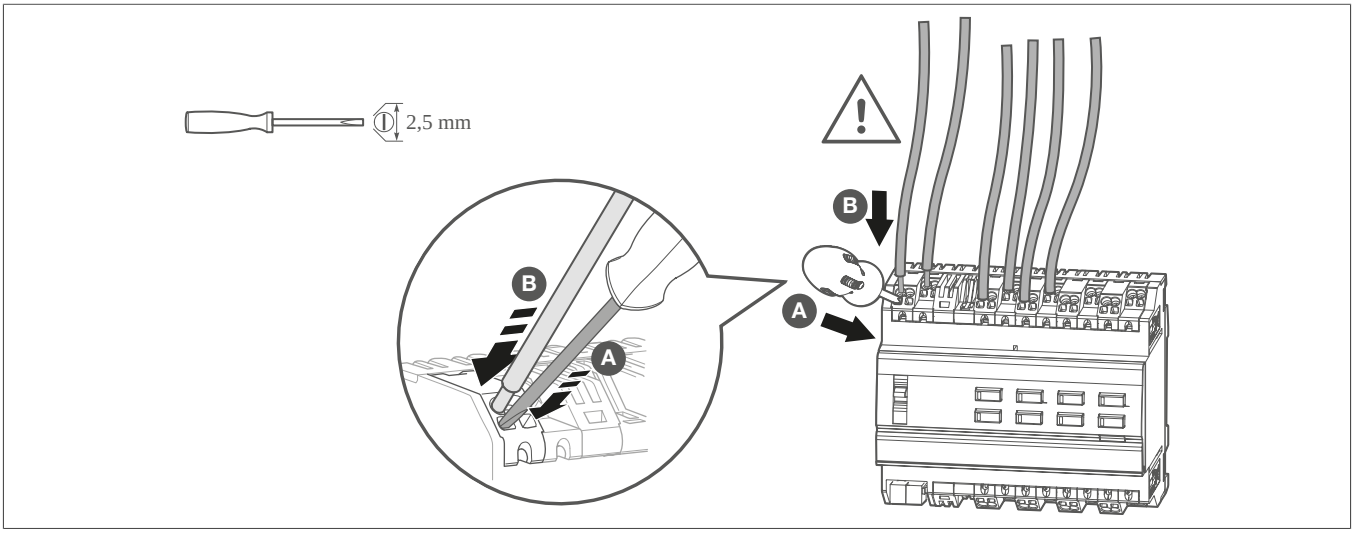


Fig. 5: Connecting the device

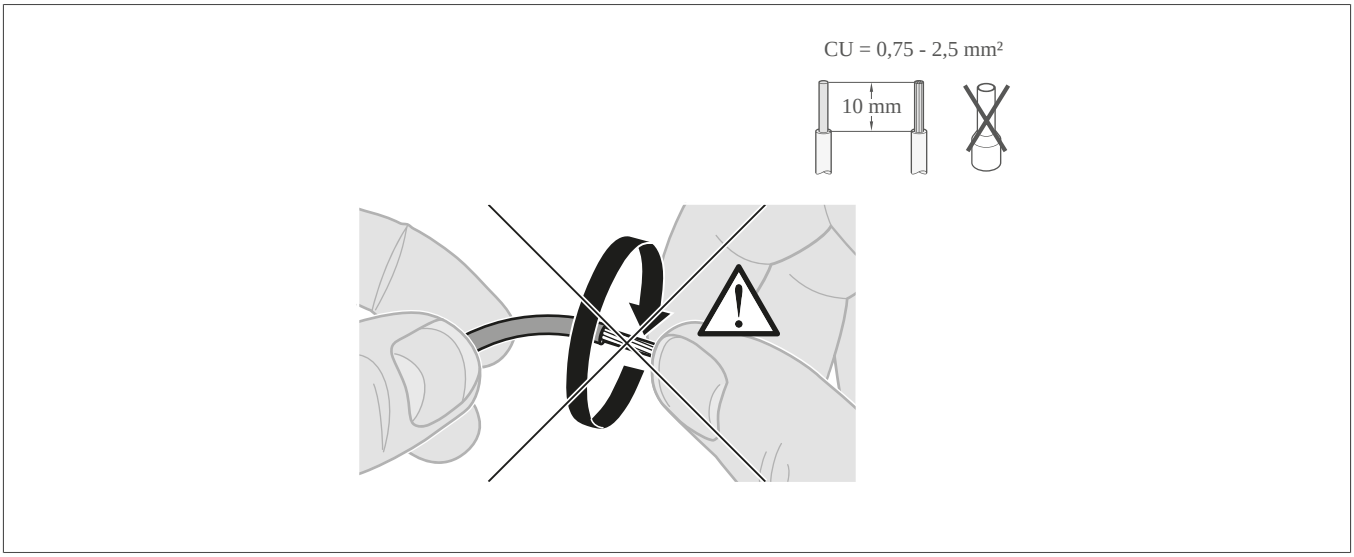


Fig. 6: Stripping length and cable cross-section

Connecting the bus cable

☑ The connection cables for the load and power supply are connected.

1. Connect the bus cable via the bus connection terminal.

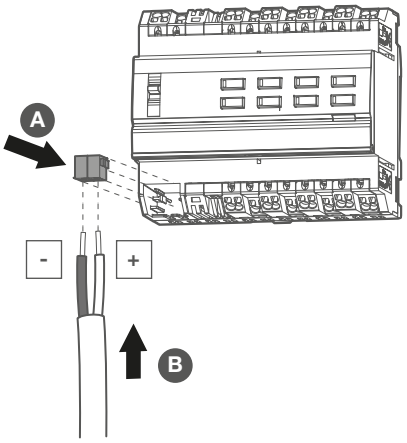


Fig. 7: Connecting the bus connection terminal

7.2 Commissioning

The device can be programmed in three ways:

- KNX systemlink mode (standard ETS programming) see systemlink – loading the physical address and application software , page 14
- KNX Secure mode see , page 14
- KNX easylink mode, see easylink commissioning , page 16

systemlink – loading the physical address and application software

☑ The slide switch for manual mode (Fig. 3/1) is in position **auto**.

1. Switch on the mains voltage.
2. Switch on the bus voltage.
3. Press the programming button ().

   The button 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.

   Status LED of the button goes out.
5. Note down the physical address on the labelling field (Fig. 3/4).
6. Load the application software into the device.

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) (Bild X), scan it (Bild X) or add it to the project in ETS.

Note!

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

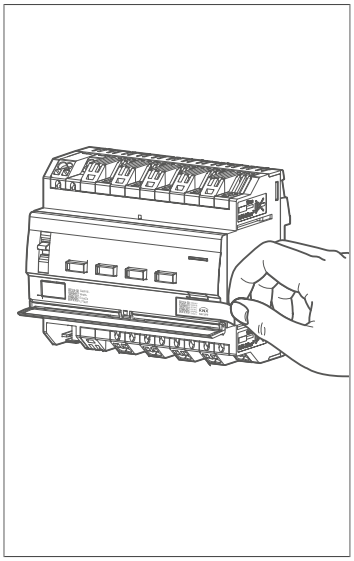


Fig. 8: Removing the device certificate from the device (similar to illustration)

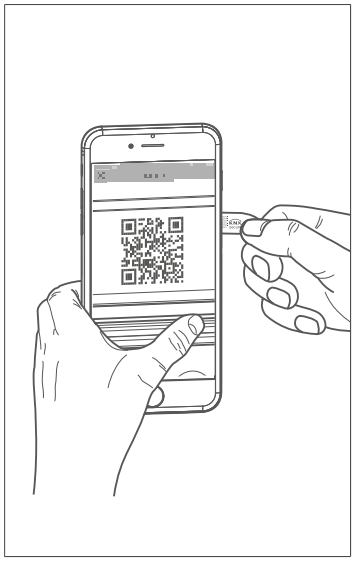


Fig. 9: Scanning the QR code

Fig. 10: 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 product reference in a list.

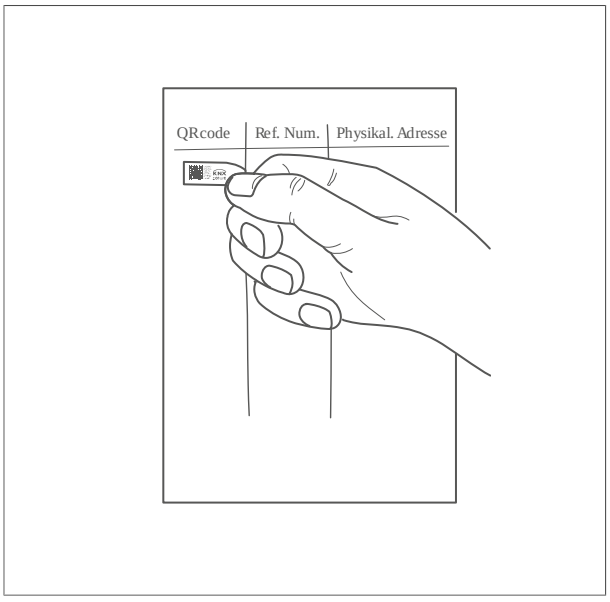


Fig. 11: Storing the device certificate in the project documentation

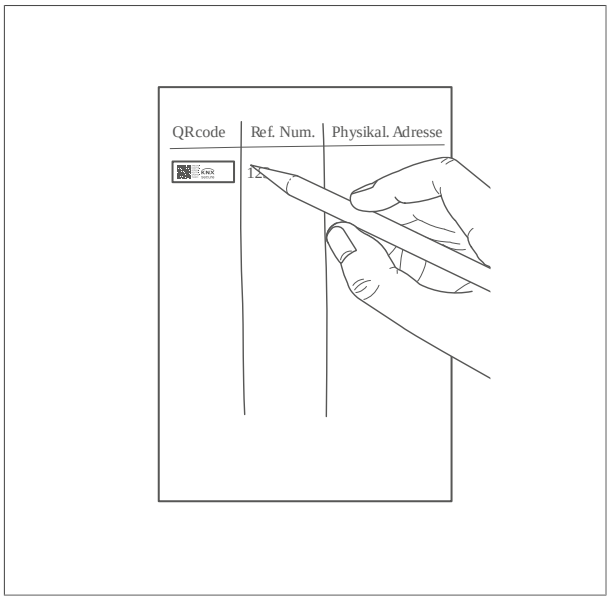


Fig. 12: Noting down the article number and physical address for the device certificate

7.2.1 easylink commissioning

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 easylink system devices. easylink stands for easy, visually supported commissioning. Preconfigured standard functions are assigned to the inputs/outputs by means of a service module.

7.2.2 Commissioning the device

☑ The device has been installed and connected correctly.

1. Switch on the mains voltage at the outputs.
2. Switch on the bus voltage.

   Depending on the parameterisation, the status LEDs of the operation buttons for manual mode light up.

Determine operation time and slat adjusting time

In blind/roller shutter operation, the operation time for positioning the sunshade is important. The position is calculated based on the operation time. The slat adjusting time for slat blinds, determined by the design, is part of the total operation time. The aperture angle of the slats is therefore set as the operation time between the opened and closed position.

The operation time for **UP** is normally longer than the operation time for **DOWN** and must be measured separately if necessary.

1. Measure the UP and DOWN operation time of the hanging.
2. Measure the slat adjusting time between **OPEN** and **CLOSED**.
3. Enter the measured values into the parameter setting – **running time** or **slat step time**.

Functional test

The functionality of the outputs is displayed via the status LED of the operation button (Fig. 3/6).

LED status	Meaning of the signal
Switching operation:	
LED lights up permanently.	Load is activated.
LED flashes.	No load connected
Roller shutter/blind operation:	
LED flashes.	Roller shutter, blind in movement operation
LED lights up permanently.	Roller shutter, blind in final position

Table 3: Output function test

The individual outputs can be switched in manual mode via the operation button (Fig. 3/6).

☑ The device has been installed and connected correctly.
☑ The mains and bus voltage are switched on.

Roller shutter/blind operation

☑ The roller shutter/blind is in the top final position.

- Move the slide switch (Fig. 3/1) to the manual position ☜.
- Press the manual operation button (Fig. 3/6) briefly (jog mode).

  The connected roller shutter/blind gradually moves down and the status LED lights up each time the button is pressed.

OR:

- Hold down the manual operation button (Fig. 3/6) for > 2 s.

  The connected roller shutter/blind moves to the bottom final position and the status LED flashes until the final position is reached.

Switching operation

☑ The connected load is switched off.

- Move the slide switch () to the manual position ☜.
- Press the manual operation button (Fig. 3/6) briefly for < 2 s.

  The connected load is switched on and the status LED of the button lights up.

7.3 Dismantling

Disconnecting the load cables

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!

☑ All the cables delivering voltage to the device are switched off.

1. Disconnecting the connection cables on the device.

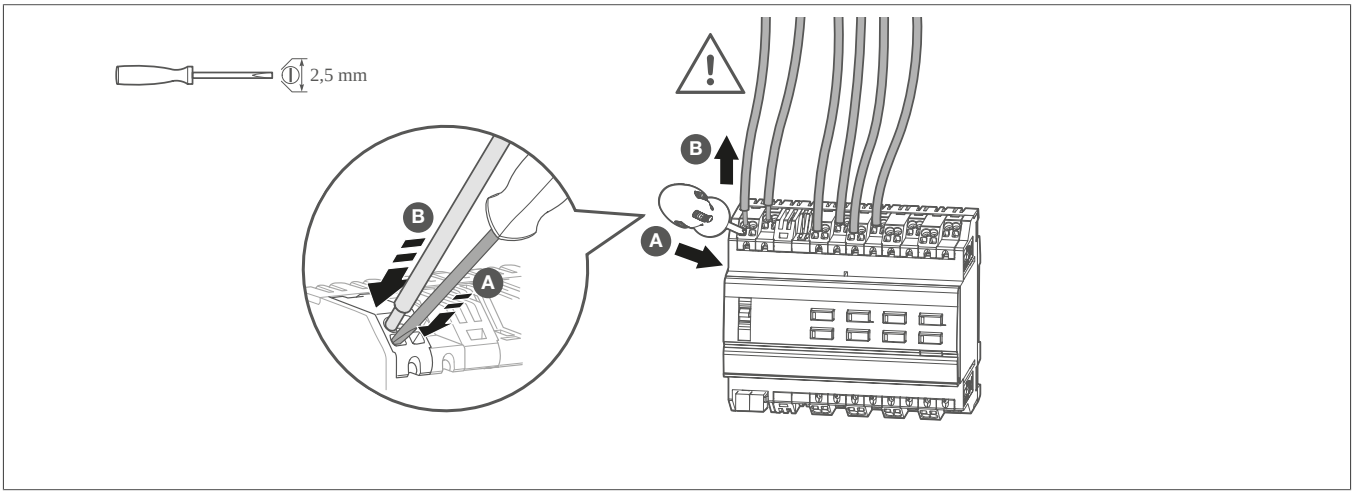


Fig. 13: Disconnecting the connection cables

Removing the bus connection terminal

☑ The bus voltage is switched off.

1. Removing the bus connection terminal from the device.

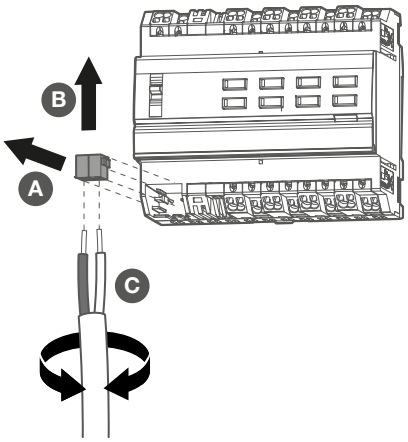
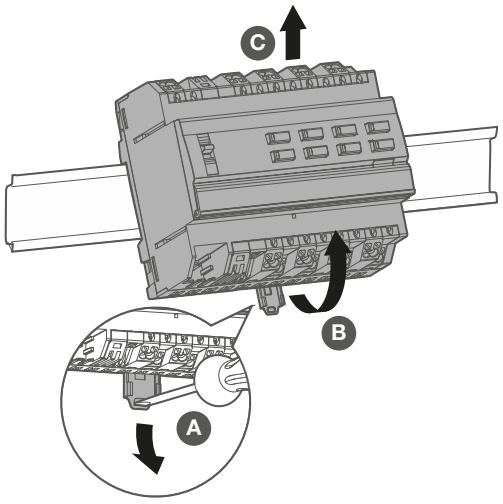


Fig. 14: Removing the bus connection terminal

Dismantling the device

☑ The bus connection cable and the load cables have been disconnected.

1. Removing the device from the DIN rail.



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

8 Appendix

8.1 Technical data

KNX Medium	TP1-256
Commissioning mode	systemlink, easylink
KNX supply voltage	21 ... 32 V ⎓ SELV
BUS connection mode	Connecting terminal
Breaking capacity	µ16 A AC1 230/240 V ~
Incandescent/halogen lamps	2300 W
Conventional transformers	1600 VA
Electronic transformers	1200 W
Fluorescent lamps	
without ballast	1200 W
with electronic ballast (mono or duo)	20 x 36 W
with conventional ballast	1500 W, 200 µF
Energy-saving/LED lamps	18 x 23 W
Switching current at cos ϕ = 0.6	Max. 6 A
Minimum switching current 230 V AC	100 mA
Total load current of neighbouring outputs	Max. 20 A
Interlock time if direction of travel changes	Software-dependent
Operating height	Max. 2000 m
Contamination level	2
Surge voltage	4 kV
Degree of protection of housing	IP20
Degree of protection of housing under front plate	IP30
Impact protection	IK04
Overvoltage class	III
Operating temperature	-5° ... +45°C
Storage/transport temperature	-20° … +70°C
Maximum switching cycle rate at full load	6 switching cycles/minute
Connection capacity	0.75 ... 2.5 mm²
Max. tightening torque	0.5 Nm
Phillips type	PZ1
Standards	EN 50491-3; EN 60669-2-1
Power dissipation	Max. 12 W

Maximum permissible current	Max. 80 A
KNX current consumption	typ. 2 mA
Dimensions	6 modules, 6 x 17.5 mm

8.2 Troubleshooting

Manual operation not possible.

Switch (1) not set to ☜.

- Move the switch to ☜.

Manual operation is not enabled (systemlink).

- Enable manual operation via application software.

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 (5), red LED lights up if bus voltage is present.

Manual mode is active.

- Switch (1) is in position ☜. Move switch (1) to position **auto**.

Roller shutters/blinds do not move to the final position.

Operation time for the roller shutters/blinds is set incorrectly.

- Check operation times. Check measurements and reprogram device if necessary.

8.3 Accessories

Optional accessories

KNX bus connection terminals, 2-pole, red/black	TG008
KNX system cable, Y(ST)Y,2x2x0.8	
100 m	TG018
500 m	TG019
KNX system cable, Y(ST)Y,2x2x0.8, halogen-free	
100 m	TGZ181
500 m	TGZ185

8.4 Regulatory Compliance Australia

8.5 Disposal

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 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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