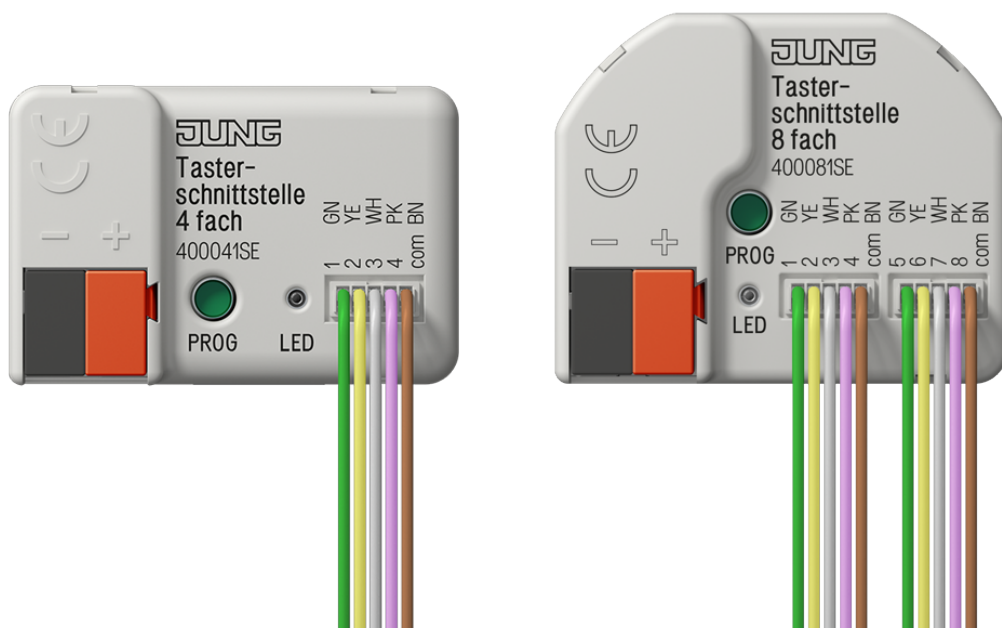# Operating instructions

Push-button interface, 2-gang
Art. no. 400021SE

Push-button interface, 4-gang
Art. no. 400041SE

Push-button interface, 8-gang
Art. no. 400081SE

Product image non-binding

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Table of contents

1 Safety instructions

To avoid potential damage, read and follow the following instructions:

Electrical devices may be mounted and connected only by electrically skilled persons.

Danger of electric shock. During installation and cable routing, comply with the regulations and standards which apply for SELV circuits.

Danger of electric shock. Make sure during the installation that there is always sufficient insulation between the mains voltage and the bus. A minimum distance of at least 4 mm must be maintained between bus conductors and mains voltage cores.

Danger of electric shock on the installation. Do not connect any external voltage to the inputs. The device might be damaged, and the SELV potential on the bus line will no longer be available.

This manual is an integral part of the product, and must remain with the customer.

2 System information

This device is a product of the KNX system and complies with the KNX directives. Detailed technical knowledge obtained in KNX training courses is a prerequisite to proper understanding.

The function of this device depends upon the software. Detailed information on loadable software and attainable functionality as well as the software itself can be obtained from the manufacturer´s product database.

The device can be updated. Firmware can be easily updated with the Jung ETS Service App (additional software).

The device is KNX Data Secure capable. KNX Data Secure offers protection against manipulation in building automation and can be configured in the ETS project. Detailed technical knowledge is required. A device certificate, which is attached to the device, is required for safe commissioning. During mounting, the device certificate must be removed from the device and stored securely.

Planning, installation and commissioning of the device are carried out with the aid of the ETS, version 5.7.7 and higher or 6.1.0.

3 Intended use

– Outputs for polling of conventional, potential-free contacts in KNX systems and for sending telegrams to the KNX bus for reporting of states, meter levels, operation of loads, etc.

– Outputs for activation of LEDs

– Mounting in appliance box with dimensions according to DIN 49073 in combination with a suitable cover

– When mounting behind switch inserts and push-button inserts, use an appliance box with sufficient installation depth

4 Product characteristics

Product characteristics

– Depending on the variant, two, four or eight independent channels, which work as inputs or as outputs, depending on the ETS configuration

– Common reference potential for all channels

– Disabling of individual channels

– Supply via the KNX bus, no additional supply voltage necessary

Outputs

– Connection of LEDs, e.g. LED lamp, 5 V DC, 2.2 mA

– Short-circuit resistant, overload-protected and reverse-polarity protected

– Switching outputs in parallel possible, for loads with higher energy consumption

Inputs

– Connection of potential-free contacts such as push-buttons, switches or Reed contacts

– Polling with an impulse current avoids contact fouling (image of an oxide layer) at the connected contacts

– Operating functions: switching, dimming, controlling of Venetian blinds, moods or room temperature

– Value transmitter for dimming, colour temperature, RGBW, temperature and brightness values

– Transmission of the current input state after bus voltage failure

– Connection of door or window contacts for the evaluation of the status open, closed, tilted and grip position

– Connection of Motion detector mini basic, leakage, condensation and temperature sensors (see accessories)

– Pulse counter with main counter and intermediate counter

– Combination of adjacent input channels for connection of push-button, door contact and window contact

– Logic functions

5 Mounting and electrical connection

Mount device

In secure operation (preconditions):

– Secure commissioning is activated in the ETS.

– Device certificate entered/scanned or added to the ETS project. A high resolution camera should be used to scan the QR code.

– Document all passwords and keep them safe.

■ In secure operation: device certificate must be removed from the device and stored securely.

■ Mounting in suitable appliance box. Observe cable routing and spacing

Bus connection

■ Connect bus with a KNX device connection terminal to KNX connection (1) (see figure 1).
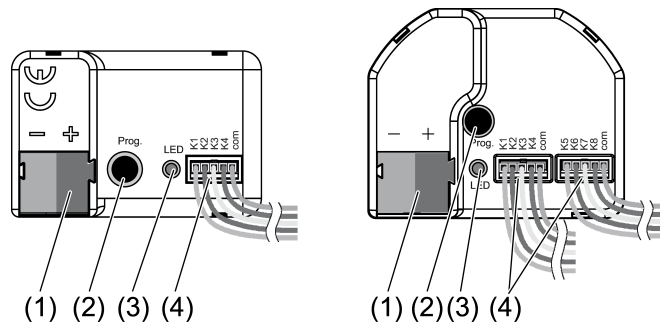

Figure 1: Device components

(1)   KNX connection
(2)   Programming button
(3)   Programming LED
(4)   Connection cables

Installation instructions

– To avoid interference from EMC radiation, the cables of the inputs should not run parallel to cables carrying mains voltage or to load cables.

– The voltage potentials of the connecting cables for the inputs and outputs are not galvanically isolated from the bus voltage.
The connecting cables actually lengthen the bus cable. The specification for the bus cable length (max. 1000 m) must be observed.

– Do not connect the **com** connections of multiple push-button interfaces.

– Use channels 1 and 2 for NTC temperature sensors (see chapter "Accessories" ▸ Page 10).

– No series resistance required for the connection of LEDs.

ℹ️ For the extension of the enclosed cable set (see figure 2), observe the maximum cable length (see chapter "Technical data" ▸ Page 10). The following applies: the com cable for each cable set may not have a total length beyond 30 m in length.
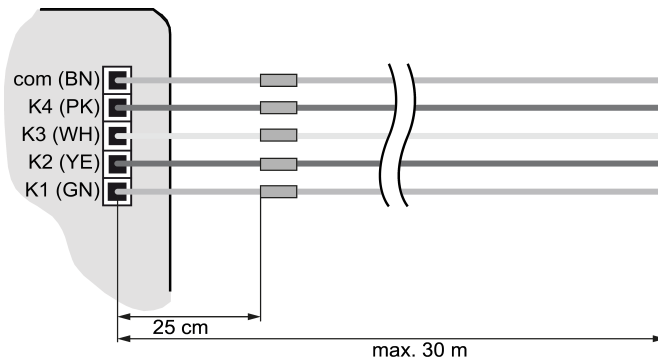
Figure 2: Maximum cable length

⚠ DANGER!

Danger of electrical shock when mains voltage 230 V or other external voltages are connected!

Electric shocks can be fatal.

Device may be destroyed.

Only connect potential-free push-buttons, switches or contacts.

▪ Connect push-buttons, switches, contacts, LED or NTC to enclosed connecting cables (4) according to the connection examples; (see figure 3) to (see figure 7). The connection examples show the use with inputs and outputs.
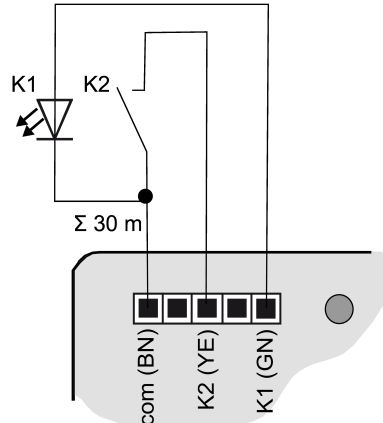

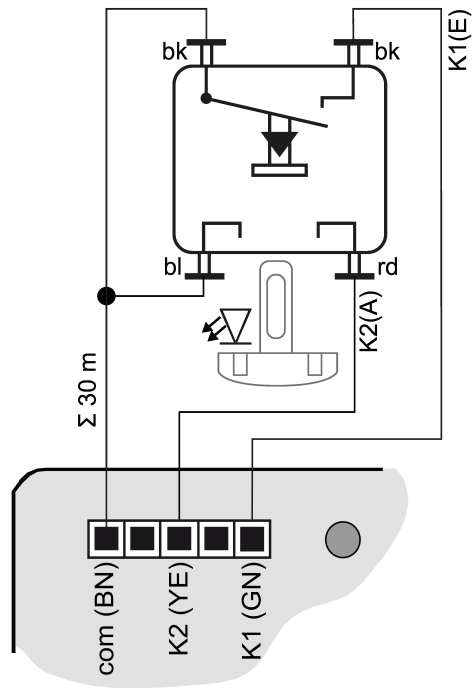Figure 3: Connection example: push-button interface 2-gang

Figure 4: Connection example: push-button interface 2-gang with rocker lever with separate signal contact
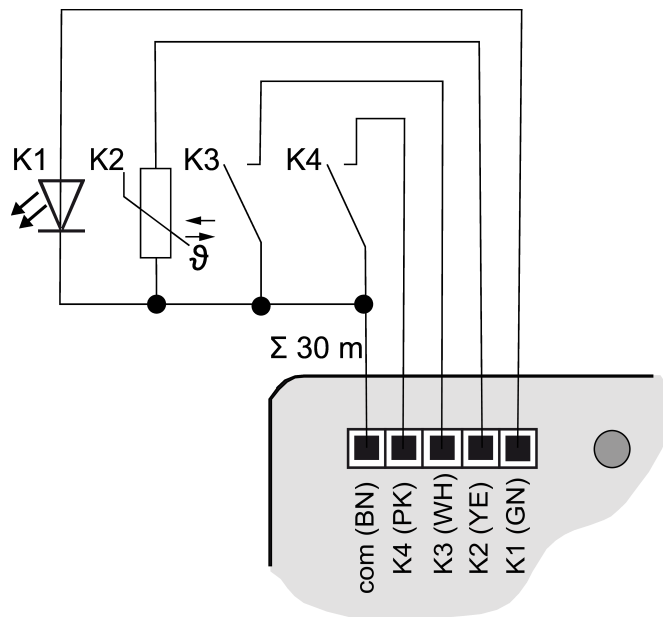

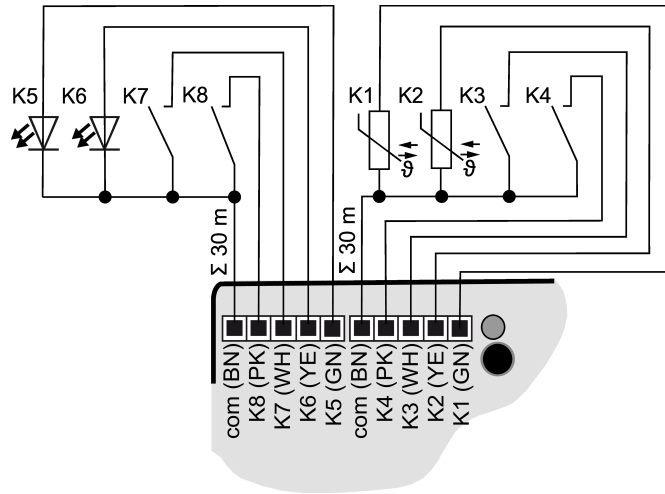Figure 5: Connection example: push-button interface 4-gang

Figure 6: Connection example: push-button interface 8-gang

ℹ️ To increase the output current, outputs can also be switched parallel to each other with the same parameterization; in the example here, (see figure 7) **K1-K3** are switched in parallel.
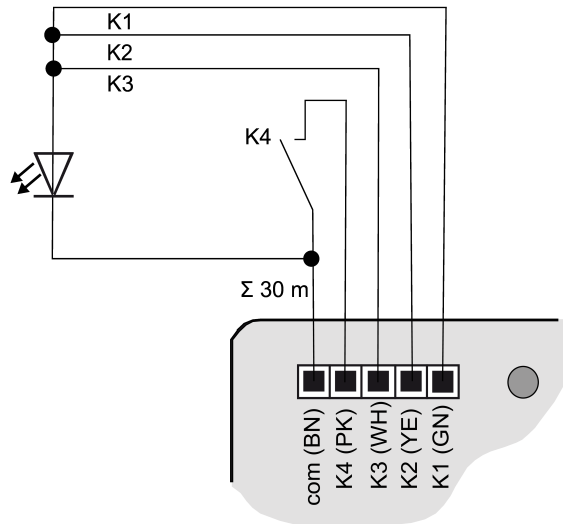

Figure 7: Connection example with outputs switched in parallel

6 Commissioning

Programming the physical address and application program

- Switch on the bus voltage.
- Press the programming button (2).
  The programming LED (3) lights up.

- Program the physical address with the ETS.
  The programming LED goes out.

- Program the application program with the ETS.

6.1   Safe-state mode and master reset

Safe-state mode

The safe-state mode stops the execution of the loaded application program.

i   Only the system software of the device is still functional. ETS diagnosis functions and programming of the device are possible.

Activating safe-state mode

■   Switch off the bus voltage or remove the KNX device connection terminal.

■   Wait approx. 10 seconds.

■   Press and hold down the programming button.

■   Switch on the bus voltage or attach the KNX device connection terminal.

■   Wait until the programming LED flashes slowly.

■   Release the programming button.

The safe-state mode is activated.

By briefly pressing the programming button again, the programming mode can also be switched on and off in the safe-state mode as usual. If the programming mode is active, the programming LED stops flashing.

Deactivating safe-state mode

■   Switch off bus voltage (wait approx. 10 seconds) or carry out ETS programming.

Master reset

The master reset restores the basic device settings (physical address 15.15.255, firmware remains in place). The device must then be recommissioned with the ETS.

In secure operation: A master reset deactivates device security. The device can then be recommissioned with the device certificate.

Performing a master reset

Precondition: The safe-state mode is activated.

■   Press and hold down the programming button for > 5 s.

The programming LED flashes quickly.

■   Release the programming button.

The device performs a master reset, restarts and is ready for operation again after approx. 5 s.

Restoring the device to factory settings

The device can be reset to factory settings with the Jung ETS Service App. This function uses the firmware contained in the device that was active at the time of delivery (delivered state). Restoring the factory settings causes the device to lose its physical address and configuration.

7 Technical data

Ambient temperature	-5 ... +45°C
Storage/transport temperature	-25 ... +75°C
Degree of protection	IP20
Protection class	III
Number of channels	
400021SE	2
400041SE	4
400081SE	8
Output voltage	DC 5 V SELV
Output current per channel	max. 3.2 mA
LED current (red LED with 1.7 V current voltage)	2.2 mA per output
Connection of channels	
400021SE	3-core wiring harness
400041SE	5-core wiring harness
400081SE	2x 5-core wiring harness
Length, wiring harness	25 cm, can be extended to max. 30 m
Recommended cable	J-Y(St)Y 2×2×0.8
Dimensions (LxWxH)	
400021SE, 400041SE	43.0 x 28.5 x 15.4 mm
400081SE	43.5 x 35.5 x 15.4 mm
KNX medium	TP256
Commissioning mode	S mode
Rated voltage KNX	DC 21 ... 32 V SELV
Current consumption KNX	
400021SE	5 ... 10 mA
400041SE	5 ... 12 mA
400081SE	5 ... 18 mA
Connection mode KNX	Device connection terminal

8 Accessories

External temperature sensor	Art. no. FFNTC
Leakage sensor	Art. no. LES01

Condensation sensor	Art. no. BTS01
Motion detector mini basic	Art. no. BM360MBWW
Motion detector mini basic	Art. no. BM360MBWW-270
LED lamp, 5 V DC, 2.2 mA	Art. no. 9605LEDxx
1-gang push-button, 1-pole, 1-way NO contact with separate contacts for indicator light	Art. no. 534U, K534EU
Magnet contact	Art. no. FUS4410..

9 Warranty

The warranty is provided by the specialist trade in accordance with statutory requirements.

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