

Window actuator flush-mounted Order-No. : 2164 00 Blind actuator 1-gang flush-mounted Order-No. : 2165 00 Heating actuator 1-gang flush-mounted Order-No. : 2166 00

Operating instructions

1 Safety instructions

Electrical equipment may only be installed and fitted by electrically skilled persons.

Failure to observe the instructions may cause damage to the device and result in fire and other hazards.

The device is not suitable for disconnection from supply voltage.

The connected actuators are not electrically isolated from the mains – even when switched off.

Do not connect any external voltage to the inputs, since doing so may damage the device(s), and the SELV potential on the KNX bus line will no longer be available.

For parallel connection of several drives to an output it is essential to observe the corresponding instructions of the manufacturers, and to use a cut-off relay if necessary. There is otherwise risk of irreparable damage to the drives.

Use only shutter drives with mechanical or electronic limit switches. Check the limit switches for correct adjustment. Observe the specifications of the motor manufacturers.

These instructions are an integral part of the product, and must remain with the end customer.

2 Device components



Figure 1: Window actuator



Figure 2: Venetian blind actuator



Figure 3: Heating actuator

- (1) Control cable
- (2) Programming button and LED
- (3) Connection of mains and power cables

Connection assignment, power cables

- BK, black: connection L
- BN, brown: connection of Venetian blind, up
- PK, pink: connection of Venetian blind, down
- GY, grey: actuator connection



Figure 4

Connection assignment of control cable

RD, red: KNX+

BK, black: KNX-

GN, green: input 1

YE, yellow: input 2

WH, white: input 3

BN, brown: COM inputs 1...3

3 Function

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.

Planning, installation and commissioning of the device are carried out with the aid of KNXcertified software. Full functionality with KNX commissioning software version ETS3.0d onwards.

An updated version of the product database, technical descriptions and conversion programs and other auxiliary programs are available on our Internet website.

Intended purpose

Window actuator (Figure 1):

- Switching of electrically-driven Venetian blinds, awnings and similar blinds for AC 230 V mains voltage.
- Switching of electrothermal actuators
- Installation in appliance box to DIN 49073
- Connection with enclosed terminals

Venetian blind actuator (Figure 2):

- Switching of electrically-driven Venetian blinds, awnings and similar blinds for AC 110...230 V mains voltage.
- Installation in appliance box to DIN 49073
- Connection with enclosed terminals

Heating actuator (Figure 3):

- Switching of electrothermal actuators
- Installation in appliance box to DIN 49073
- Connection with enclosed terminals

Product characteristics

Depending on the equipment:

- Control of Venetian blinds, awnings and similar blinds
- Control of electrothermal actuators



- Three binary inputs for potential-free contacts, usable as extension inputs for local operation
- Supply via bus, no additional power supply necessary

Blind function

- Blind position directly controllable
- Slat position directly controllable
- Feedback of movement status, blind position and slat position
- Forced position through higher-level controller
- Safety function: 3 independent wind alarms, rain alarm, frost alarm
- Sun protection function

Actuator function

- Switching operation or PWM operation
- Actuators with characteristics opened or closed without power
- Overload-protected, short circuit-protected
- Protection against jamming valves
- Forced position
- Cyclical monitoring of the input signals configurable.
- i PWM operation: electrothermal actuators only have the positions Open and Closed. In PWM operation, switch-on and switch-off during the drive's cycle time achieves an almost constant behaviour.

4 Information for qualified electricians

4.1 Fitting and electrical connection



DANGER!

Electrical shock when live parts are touched.

Electrical shocks can be fatal.

Before working on the device, disconnect the power supply and cover up live parts in the working environment.

Connecting and mounting the device



DANGER!

When connecting the bus/extensions and mains' voltage wires in a shared appliance box, the KNX bus cable may come into contact with the mains voltage.

The endangers the safety of the entire KNX installation. People at remote devices may also receive an electric shock.

Do not place bus/extensions and mains voltage terminals in a shared connection compartment. Use an appliance box with a fixed partition wall (Figure 5) or separate boxes.



Figure 5

- (4) Appliance box
- (5) Partition
- (6) Potential-free contacts, e.g. for window contact or installation pushbuttons



Figure 6

Minimum spacing between the mains voltage and bus/extension wires: 4 mm (Figure 6).

- Connect the load (Figure 7). Use the supplied sprung screwless terminals. Flexible cable ends must be tin-plated.
- Connect the device to KNX.
- If necessary, connect potential-free contacts (6) to inputs (Figure 4).
- Install the device in the appliance box.



Figure 7

i In the as-delivered state, Inputs 1 and 2 operate the Venetian blind output. Input 3 has no function.

Function of Inputs 1 and 2 in the as-delivered state

Input	NO contact	Blind
1	Press briefly	Adjust slats Up / Stop
1	Press for a long time	Move up
2	Press briefly	Adjust slats Down / Stop
2	Press for a long time	Move down

4.2 Commissioning

Load the address and the application software

- Switch on the bus voltage
- Assign physical addresses and load application software into the device.
- Note the physical address on the device label.

5 Appendix

5.1 Technical data

Window actuator flush-mounted, Order-No. 2164 00

Supply Rated voltage Mains frequency Switching voltage	AC 230 / 240 V ~ 50 / 60 Hz AC 250 V ~
Ambient conditions Ambient temperature Storage/transport temperature	-5 +45 °C -25 +70 °C
Venetian blind output Contact type Switching current AC1 Minimum switching current AC Motors 230 V Motors 110 V	μ 3 A 100 mA 600 VA —

Heating output Output type Semi-conductor (Triac), ε Switching current 5 ... 25 mA max. 600 mA (2 sec) Switch-on current Number of drives per output max. 2 Control cable and inputs Control cable (preterminated) YY6x0.6 Input type Potential-free Total length of extension unit cable max. 5 m Poll voltage, extension inputs approx. 5 V Dimensions Ø×H 53×28 mm Connection mode Terminal (enclosed) Single stranded 1.0 ... 2.5 mm² **KNX** KNX medium TP 1 Commissioning mode S-mode Rated voltage KNX DC 21 ... 32 V SELV Power consumption KNX max. 240 mW Connection mode KNX Connection terminal on control cable Blind actuator 1-gang flush-mounted, Order-No. 2165 00 Supply Rated voltage AC 110 ... 240 V ~ Mains frequency 50 / 60 Hz Switching voltage AC 250 V ~ Ambient conditions -5 ... +45 °C -25 ... +70 °C Ambient temperature Storage/transport temperature Venetian blind output Contact type Switching current AC1 3Å Minimum switching current AC 100 mA Motors 230 V 600 VA Motors 110 V 300 VA Heating output Output type Switching current Switch-on current Number of drives per output Control cable and inputs Control cable (preterminated) YY6x0.6 Potential-free Input type Total length of extension unit cable max. 5 m Poll voltage, extension inputs approx. 5 V Dimensions Ø×H 53×28 mm Terminal (enclosed) Connection mode 1.0 ... 2.5 mm² Single stranded KNX KNX medium TP 1 Commissioning mode S-mode DC 21 ... 32 V SELV

Heating actuator 1-gang flush-mounted, Order-No. 2166 00

Supply Rated voltage Mains frequency Switching voltage Ambient conditions

Rated voltage KNX Power consumption KNX

Connection mode KNX

AC 230 / 240 V ~ 50 / 60 Hz AC 250 V ~

max. 240 mW

Connection terminal on control cable

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Ambient temperature Storage/transport temperature

Venetian blind output Contact type Switching current AC1 Minimum switching current AC Motors 230 V Motors 110 V

Heating output Output type Switching current Switch-on current Number of drives per output

Control cable and inputs Control cable (preterminated) Input type Total length of extension unit cable Poll voltage, extension inputs

Dimensions Ø×H Connection mode Single stranded

KNX KNX medium Commissioning mode Rated voltage KNX Power consumption KNX Connection mode KNX Semi-conductor (Triac), ε 5 ... 25 mA max. 600 mA (2 sec) max. 2

> YY6x0.6 Potential-free max. 5 m approx. 5 V

53×28 mm Terminal (enclosed) 1.0 ... 2.5 mm²

TP 1 S-mode DC 21 ... 32 V SELV max. 240 mW Connection terminal on control cable

5.2 Warranty

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

Please submit or send faulty devices postage paid together with an error description to your responsible salesperson (specialist trade/installation company/electrical specialist trade). They will forward the devices to the Gira Service Center.

Gira

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