

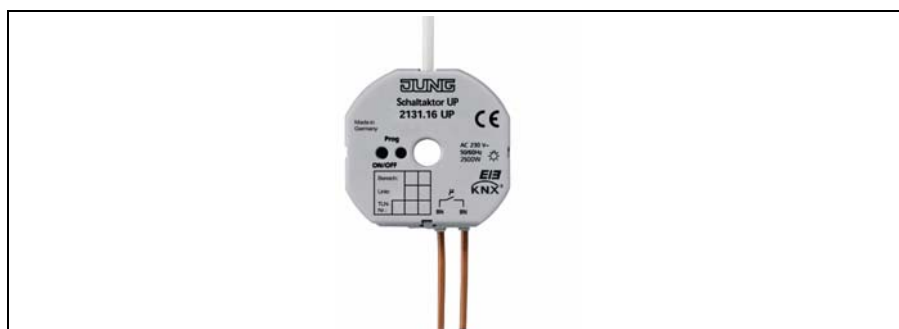
Operating Instructions

1-channel switching actuator 16A UP

2-channel switching actuator 6A UP

1-channel shutter actuator 2231 UP

1-channel universal dimming actuator UP



1. System information

This device is a product of the *instabus*-KNX/EIB system and complies with KNX directives. Detailed technical knowledge obtained in *instabus* training courses is a prerequisite to proper understanding. The functionality 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 unit is effected by means of the KNX software. An updated version of the product database and the technical descriptions are available in the Internet at www.jung.de

2. Safety warnings



Electrical equipment must be installed and fitted by qualified electricians only and in strict observance of the relevant accident prevention regulations.

- **To prevent electric shocks, disconnect the mains supply (by cutting out the circuit breaker) before working on the device.**
- **Failure to observe any of the installation instructions may result in fire or in other hazards.**
- **Risk of irreparable damage!**
- **It is forbidden to connect the 230 V mains voltage to the extension inputs. Connecting the inputs to this voltage endangers the safety of the whole EIB system with a risk of irreparable damage to devices and equipment.**

Safety warnings universal dimming actuator

Attention

- **Not suitable for safe disconnection of the mains. Switching off the dimming actuator does not isolate the load electrically from the mains.**
- **When conventional transformers are used, each of these transformers must be fuse-protected on the primary side in accordance with the manufacturer's instructions. Use only safety transformers as per EN 61558-2-6.**
- **Risk of irreparable damage: Do not connect capacitive loads (electronic transformers) together with inductive loads (e.g. conventional transformers) to the dimmer output.**

3. Function

Switching actuators are used for activating electrical consumers via KNX/EIB. The switching commands come, for instance, from touch sensors or from binary inputs of the KNX/EIB system.

Two extension inputs can be used for local control by means of conventional pushbuttons/switches or as binary inputs for potential-free contacts (only with bus voltage applied).

The devices are supplied from KNX/EIB and do not need a supplementary power supply.

After the connection, the universal dimming actuator autodetects the type of load connected and selects either the phase cut-on or the phase cut-off principle as the appropriate dimming mode.

Notes for 1- and 2-channel switching actuators UP

- On reception of a central telegram, the relay outputs of the 2-channel switching actuator are activated with a short delay.
- Do not connect the 2-channel switching actuator to different phase conductors.

Notes for shutter actuator UP

- Do not connect three-phase AC motors to shutter actuators.
- The outputs of the shutter actuator are mechanically interlocked.
- Observe the instructions of the motor manufacturers if motors are to be connected in parallel. Otherwise risk of irreparable damage to the motors.
- Use only blinds or shutters with limit switches (mechanical or electronic). The limit switches of the connected motors must be checked for correct adjustment.

Notes for universal dimming actuator UP

- After the installation and after switching on of the mains supply, the universal dimming actuator automatically detects the load and selects the appropriate dimming mode (phase cut-on or phase cut-off principle). The load detection process may be accompanied by short flickering of the lamps and lasts between 1-10 s, depending on mains conditions. Control commands received during load detection will be executed after the procedure.

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- Mains failures of more than 0.7 s will cause the dimming actuator to shut off. After return of the mains supply, the dimming actuator repeats the load detection procedure.

Notes for universal dimming actuator UP

- After full utilization of the dimmer capacity, the load rating can be increased by connecting power boost units to the dimmer.
- Tronic power boost unit (built-in type) for Tronic dimmer 50-700W, Art. no. 247 EB
- – LV power boost unit (built-in type) for H-dimmer 100-600W/VA, Art. no. 246 EB

Select a boost unit suited to the dimmer and to the load. Further details can be found in the operating instructions of the respective boost unit.

Load types for universal dimming actuator UP

- – 230 V incandescent lamps,
- – 230 V halogen lamps
- – LV halogen lamps with electronic transformers
- – LV halogen lamps with conventional transformers
- – Mix of the specified load types

Attention: Do not connect capacitive loads (e.g. electronic transformers) together with inductive loads (e.g. conventional transformers) to the dimming output.

The connected load including transformer losses must not exceed the total admissible load.

At least 85 % of the total load connected to conventional transformers must consist of lamps..If mixed loads are used with conventional transformers, the share of resistive loads must not exceed 50%.

Short-circuit protection

(universal dimming actuator UP only)

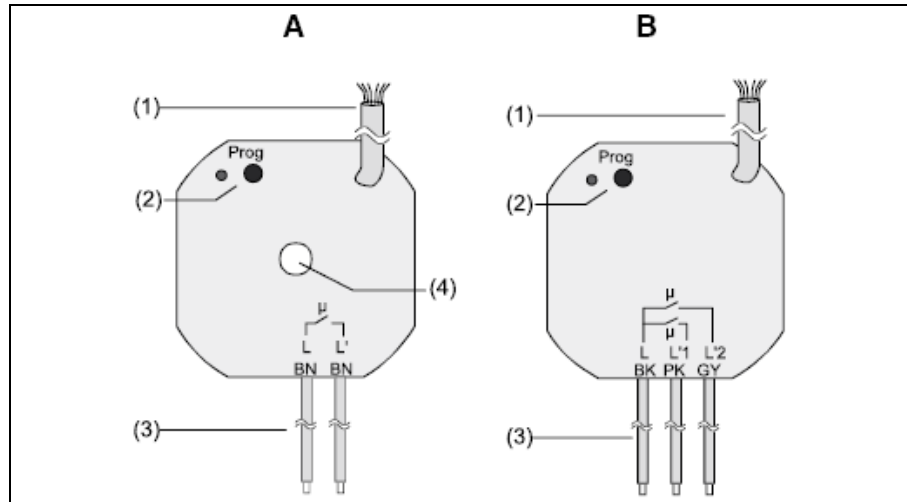
In the event of short-circuits, the output is shut off permanently. After removal of the short circuit, the dimming actuator must at first be switched off (or disconnected from the mains) before it can be switched on again.

Over-temperature protection

(universal dimming actuator UP only)

The output shuts off when the ambient temperature is too high. After cooling, the dimming actuator repeats the automatic detection of the load and adopts the brightness level set by the KNX/EIB.

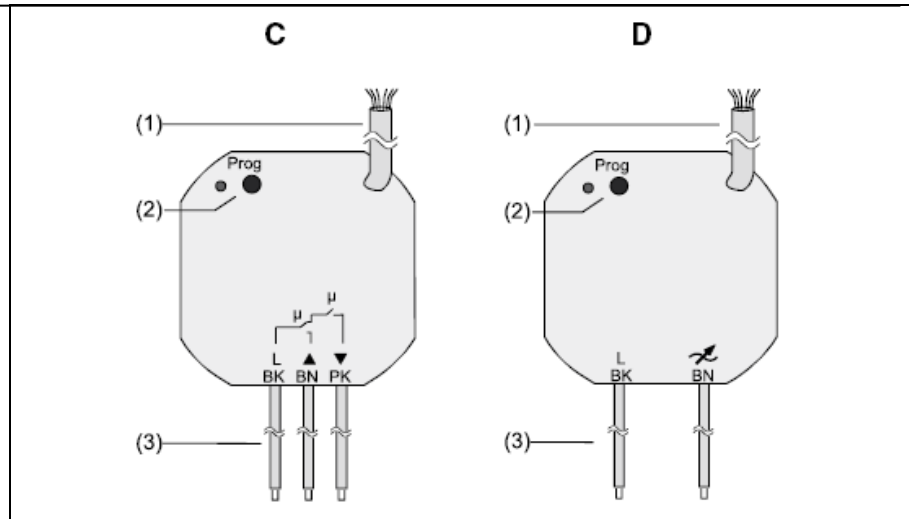
4. Controls and load line connections



- (1) Control line (bus connection and binary inputs)
- (2) Programming button and LED
- (3) Load lines
- (4) Opening for ceiling rose (only 1-channel switching actuator)

1-channel switching actuator 16 A UP (Fig. A):		
L, L'	brown	(BN)
2-channel switching actuator 6 A UP (Fig. B):		
L	black	(BK)
L'1	pink	(PK)
L'2	grey	(GY)

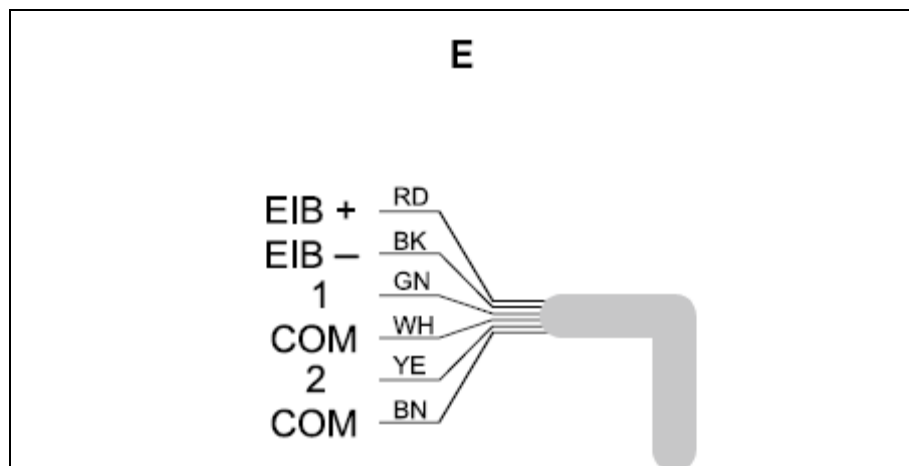
Length of load lines: approx. 20 cm.



- (1) Control line (bus connection and binary inputs)
- (2) Programming button and LED
- (3) Load lines

1-channel shutter actuator UP (Fig. C):		
L	black	(BK)
▲	brown	(BN)
▼	pink	(PK)
1-ch. universal dimming actuator UP (Fig. D):		
L	black	(BK)
↗	brown	(BN)

Length of load lines: approx. 20 cm.



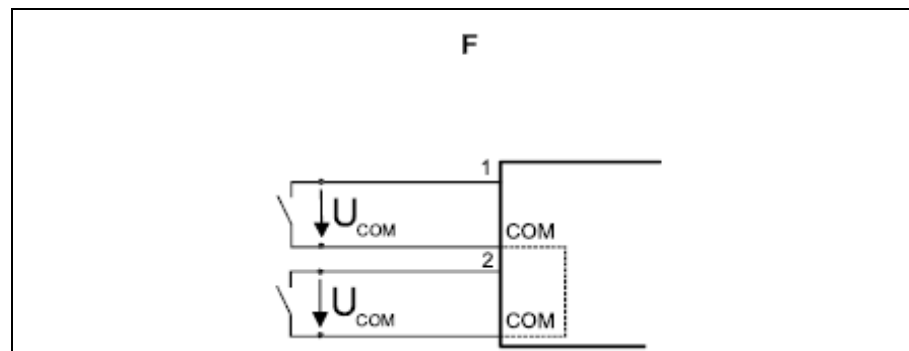
Control line connection

The control line ensures the connection of the bus and extension inputs. Non-used wires of the control line must be insulated.

Control line connection (Fig. E):		
EIB+	red	(RD)
EIB-	black	(BK)
Binary input 1	green	(GN)
COM	white	(WH)
Binary input 2	yellow	(YE)
COM	brown	(BN)

Length of load lines: approx. 33 cm.

The connecting line for the binary inputs may be prolonged by 5 m max.



5. Function of extension units /binary inputs



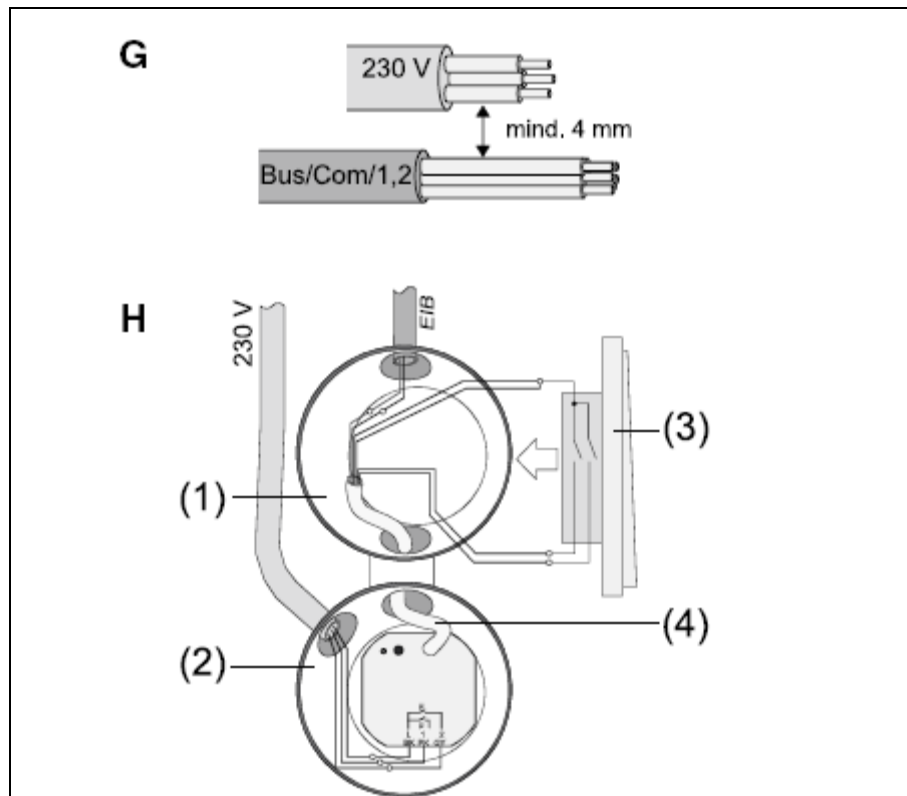
Safety warnings

It is forbidden to connect the 230 V mains voltage to the extension inputs. Connecting the inputs to this voltage endangers the safety of the whole KNX/EIB system. Risk to persons and risk of irreparable damage to devices and equipment.

Two extension inputs can be used for the connection of potential-free contacts for local control or as binary inputs (Fig. F).

i Important:

- The extension inputs must not be connected to external voltages.
- Extension inputs and COM of different devices must not be interconnected. Proper functioning is otherwise not guaranteed.



6. Installation

During the installation, sufficient insulation between 230 V and the bus or extensions must be ensured!

Minimum spacing between bus / extension unit conductors and 230 V conductors: 4 mm (Fig. G).

Recommendation(Fig.H):

Install two mounting boxes. The first box (1) can then be equipped with a two-circuit switch (3) in addition to the bus and the extension line connection; the other box (2) is equipped with the actuator and the 230 V terminals. The control lines pass through the box connecting duct. |

6.1. State of delivery for switching actuators

- When delivered, the switching state of the outputs is undefined.
- On application of the bus voltage, the relays will switch off.
- With the bus voltage applied, the extension inputs control the relays of the switching actuators as follows:

Input	Contact	1-channel switching actuator	2-channel switching actuator
1	closed	switch over	relay 1 switch over
	open	–	–
2	closed	switch over	relay 1 switch over
	open	–	–

6.2. State of delivery for shutter actuator

- When delivered, the switching state of the outputs is undefined.
- On application of the bus voltage, the relays will switch off.
- With the bus voltage applied, the extension inputs control the relays of the shutter actuator as follows:

Input	Contact (n.o.)	1-channel shutter actuator
1	brief contact	slat adjustment Up / Stop
	long contact	move up
2	brief contact	slat adjustment Down / Stop
	long contact	move down

Simultaneous actuation of 1 and 2 is not possible.

State of delivery for universal dimming actuator

- •When delivered, the dimming actuator is off (no electrical separation!).
- •On application of the bus voltage, the output switches off.
- •With the bus voltage applied, the extension inputs control the dimming output as follows:

Input	Contact (n.o.)	Universal dimming actuator
1	brief contact	lights on 100%
	long contact	increase brightness
2	brief contact	lights off
	long contact	reduce brightness

Simultaneous actuation of 1 and 2 is not possible.

7. Technical Data

General

KNX/EIB supply : 21...32 V DC

KNX/EIB power cons. : typical 150 mW

KNX/EIB connection : ready-made connecting line

Mains connection : ready-made connecting line

Ambient temperature : -5 °C ... +45 °C

Storage temperature : -25 °C ... +70 °C

Dimensions : \varnothing 53 mm, height 28 mm

Control line : YY6x0.6, length approx. 33 cm

Extensions : pushbuttons/switches or
potential-free contacts

Bus connection : via terminal 0.6...0.8 mm

Type of protection

(EN 60529) : IP20

Technical specifications subject to change.

Technical data

1-channel switching actuator 16A UP

230 V switching capacity : 16 A at 230 V AC

Rated power

incandescent lamps : 2500 W

HV halogen lamps : 2200 W

capacitive load : AC 230 V, 10 A, max. 105 μ F

convent. transformers : 1000 VA

Tronic transformers : 1000 W

Inrush current : 400 A / 20 ms

Output contacts : potential-free n.o. contact
(μ -contact)

extension
input voltage : approx. -19V (UCOM)
Opening for
ceiling rose : ∅ approx. 7 mm
Load line connection : with push-lock
terminal supplied

Technical data

1-channel shutter actuator UP

Switching voltage : 230 V AC
Switching capacity 230 V : max. 1 motor 1,000 VA
Output contacts : potential-free n.o. contact
(μ-contact)

extension
input voltage : approx. -19V (UCOM)
Load line connection : with push-lock
terminal supplied

Technical data

1-channel universal dimming actuator UP 50-210W

Nominal voltage : AC 230 V ~, 50/60 Hz
Total dissipated power : max. 2 W
Power rating : 50...210 W/VA
Switching device : semiconductor, ε

Dimmable loads

230-V incandescent lamps : phase cut-off
HV halogen lamps : hase cut-off
LV lamps with TRONIC transformers : phase cut-off
LV lamps with conv. transformers : phase cut-on

Mix of the specified load types

(Do not mix capacitive loads with inductive loads)

If mixed loads are used with conventional transformers, the share of resistive loads (incandescent, HV halogen lamps) must not exceed 50%.

Extension input voltage : approx. + 5 V (UCOM)
Load line connection : with push-lock
erminal supplied

8. Guarantee

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

Please return the unit postage paid to our central service department giving a brief description of the fault:

ALBRECHT JUNG GMBH & CO. KG

Service-Center

Kupferstr. 17-19

D-44532 Lünen

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KNX equipment

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