

Switch actuator wave GE 561/01

5WG3 561-4AB01

Product- and Application Description



The switch actuator wave GE 561/01 is a 2-channel actuator with integrated KNX radio receiver/ transmitter and a rating current of 2x16A for switching electric loads. It can be controlled by up to 40 radio sensors that are equipped with GAMMA wave radio technology and incorporated into a scene control with up to 16 scenes.

The switch actuator is connected to the 230-V network and supplied with current via an integrated power supply. The connected loads are each switched via a relay contact, it being adjustable whether the loads are to be permanently switched on or off (normal operation) or whether the actuator should function in time-switch operation with an adjustable on-period from 1 to 60 minutes.

In the event of a failure of operational power the switch state of both relays is maintained.

The GE device is embodied in an elongated design and is suitable for installation in housing or under covers.

The switch actuator is put into operation without additional auxiliaries via a pushbutton installed on the top of the device and an LED to display the operation conditions in the "special function" operating mode.

The "Special Function" operating mode includes the following functions:

- Connecting radio sensors with the function switching "ON/OFF" or scene
- Activating/deactivating the time switch function
- Clearing connections to radio sensors
- Resetting the device to the supplied state

Technical Specifications

Frequency band

- 868 MHz (transmission is not susceptible to interference; frequency band reserved for system and security applications)

Range of radio control

- Approx. 100 m in clear area

Power supply

- 230V power supply via terminals 2 (L1) and 3 (N)
- Rated voltage: AC 230V, 50 Hz
- Protection via 16A circuit-breaker, characteristic B or C required

Control elements

- 1 pushbutton: to switch between different operation and commissioning conditions

Display elements

- 1 red LED: to display the operation conditions and settings during commissioning

Outputs

- Number: 2 (relay contacts)
- Rated voltage: AC 230V
- Rated current: 16A at cos phi = 1

Connections

- 5 screw terminals for power supply and load supply; wire-stripping length approx. 7 ... 8 mm
- The following conductors or cross sections are permissible:
 - 0.5 to 4 mm² single-wire
 - 0.5 to 2,5 mm² finely stranded

Mechanical specifications

- Housing: plastic
- Dimensions: device installation, 42 x 32 x 274.5 mm (W x H x L)
- Weight: approx. 200 g
- Fire load: approx. 5500 kJ

Electrical safety

- Pollution degree (according to IEC 60664-1): 2
- Protection (according to EN 60529): IP 20
- Overvoltage category (according to IEC 60664- 1) III
- Device complies with EN 60669-2-1
- Relays with μ contact

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Electromagnetic compatibility

- complies with EN 300220, EN 301489, EN 60669-2-1

Environmental specifications

- Climatic conditions: EN 50090-2-2
- Ambient operating temperature: - 5 + 45°C
- Storage temperature: - 25 +70°C
- Relative humidity (non-condensing): 5% to 93%

Certification

- complies with **KNX** - standard
 - radio frequency wave
 - easy mode push button **EP**

**CE norm**

complies with the EMC regulations, low voltage regulations and R&TTE regulations

SIEMENS AG hereby states that the switch actuator wave GE 561/01 is in compliance with the basic requirements and the other relevant provisions of Regulation 1999/5/EC.

The CE declaration can be inspected at:

SIEMENS AG
Siemensstraße 10
93055 Regensburg, Germany

Installation instructions**Caution:**

- Installation of the device in metal walls and ceilings should be avoided, since the range of radio control is thereby substantially reduced.
- Occasionally the transmission range may be influenced by structural factors (e.g., reinforced concrete) or electric/electronic sources of interference.
- A distance of at least 1 m must be maintained between the transmitter and the relevant receivers.
- Although the radio transmission occurs in the safe 868 MHz frequency band, interference in the radio transmission cannot be ruled out.
- The radio transmission used is not suitable for security applications.

DANGER

- The device may be used only in dry interior rooms, for installation in equipment, housings or under covers.
- The device must be mounted and commissioned by an authorized electrician.
- The device must not be opened.
- The prevailing safety and accident regulations must be observed.
- In the planning and installation of electric facilities, the relevant regulations, provisions and terms of the respective country must be observed.
- An insulated tool (e.g. a screwdriver with insulation) should be used to operate the pushbutton.

MountingGeneral description

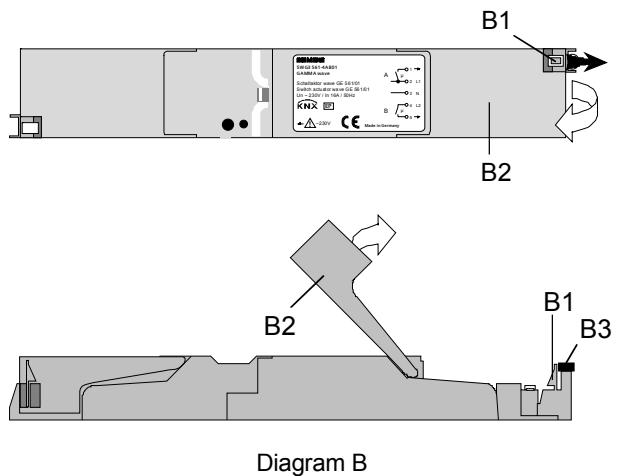
The device is attached with two screws 4 mm Ø (bore spacing 251 mm central).

Opening the terminal chamber (Diagram B)

Press the snap-in lever (B1) down and outwards (black arrow) and flip up the cover of the terminal chamber (B2).

Closing the terminal chamber (Diagram B)

Press down and snap in the cover of the terminal chamber (B2) and screw in the locking screw (B3).



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Connect power supply and load circuit (Diagram C)

- The connections for the power supply and the load circuits are composed of screw terminals (C1).
- Insulate the conductors to be connected approx. 7 ... 8 mm, place in the terminals (C1) and screw in.
- The lead sheath is to be attached with the wire fixing (C2) to the housing of the installation device.

Note: Conductors up to 1.5 mm² single-wire can be looped directly to the terminal. It should be noted with looping that the maximum terminal current of 16 A must not be exceeded!

With installation it should be noted that the outer conductor (L) and the neutral conductor (N) must not be transposed, since otherwise the sensitivity of the radio receiver will be reduced and telegram losses may thereby occur.

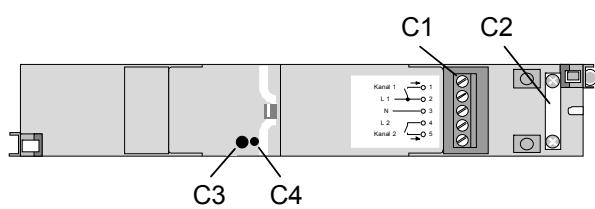


Diagram C

C1 Screw terminals
C2 Wire fixing
C3 Pushbutton
C4 LED

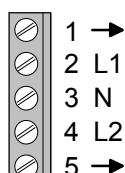


Diagram D

Terminal assignment (Diagram D)

1 → Load output channel A
2 L1 Power supply (L) for actuator electronics and channel A
3 N Power supply (N) for actuator electronics
4 L2 Power supply (L) for channel B
5 → Load output channel B

Note: An outer conductor must always be connected to terminal 2 (L1) even if channel A is not used, since the actuator electronics are supplied with current via terminals 2 and 3.

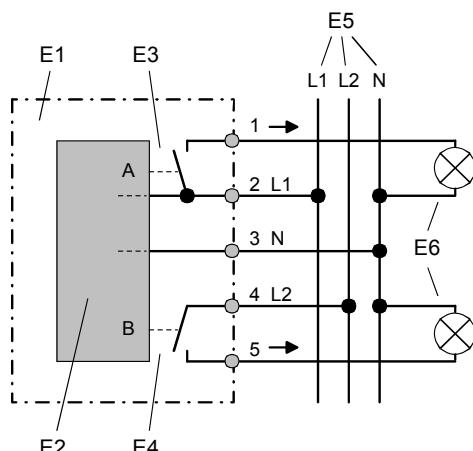


Diagram E

Connection example

E1 Switch actuator wave GE 561/01
E2 Actuator electronics
E3 Switch channel A
E4 Switch channel B
E5 Power supply AC 230V, 50 Hz
E6 Electric loads (e.g., lights)

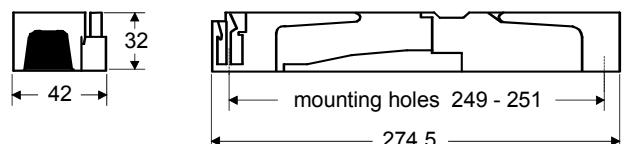
Location and Function of the Display and Operating Elements

Diagram C

C3 Pushbutton to switch over to the "special function" operating mode, to select the commissioning functions and to connect the switch actuator via radio.
C4 LED to display different settings and conditions in the "special function" operating mode during commissioning.

Dimension Diagram

Dimensions in mm



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Commissioning

To control the switch actuator, both channels must first be connected via radio to GAMMA wave radio sensors, such as, e.g., pushbutton wave, transmitter wave, hand-held transmitter wave, binary input wave, etc.

The connection is made by switching on the "special function channel A" or "special function channel B" operating mode on the switch actuator, by correspondingly long actuation of the pushbutton and display via the LED. Subsequently, sending the program telegrams is to be actuated at the GAMMA wave radio sensor to be connected (see operating instructions for the corresponding device).

The two channels of the switch actuator can be connected to a total of up to 40 GAMMA wave radio sensors.

Connection via radio:

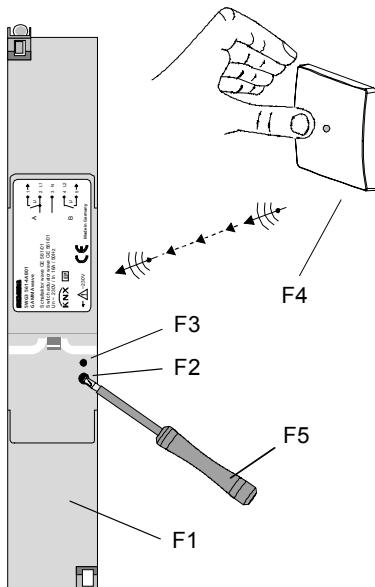


Diagram F

- F1 Switch actuator wave GE 561/01
- F2 Pushbutton
- F3 LED
- F4 Radio button with GAMMA wave radio technology
- F5 Insulated screwdriver

To connect a radio sensor to a channel of the switch actuator wave, the corresponding channel should be switched to the "special function" operating mode.

Special function for channel A:

A brief actuation of the pushbutton (F2) for the duration of up to 3 seconds switches the actuator to the "special function channel A" operating mode. This is displayed by a slow flashing with approx. 0.5 Hz (once in 2 seconds) of the LED (F3).

Special function for channel B:

A long actuation of the pushbutton (F2) for the duration of 3 to 6 seconds switches the actuator to the "special function channel B" operating mode. This is displayed by a steady light of the LED (F3).

Programming a radio sensor.

To program a radio sensor to a channel of the switch actuator wave, carry out the following steps 1A or 1B, 2 and 3 one after the other:

1A. Switch on special function channel A.

- Action: Brief actuation of the pushbutton (F2) for the duration of no more than 3 seconds.
- Display: Within 3 seconds after the release of the push button the LED (F3) begins to flash slowly (once in 2 seconds) with approx. 0.5 Hz.

or

1B. Switch on special function channel B.

- Action: Long actuation of the pushbutton (F2) for the duration of 3 to 6 seconds.
- Display: Within 3 seconds the LED (F3) flashes once briefly (approx. 0.1 sec.). Within 3 to 6 seconds after the release of the pushbutton, the LED shows a steady light.

The switch actuator wave waits for radio telegrams to connect to a radio sensor.

2. Trigger program telegram at the radio sensor wave.

- Action: Trigger the sending of the program telegrams at the radio sensor (F4) to be connected (switch to special function via DIP switch, pushbutton, etc., depending on the device, see operating instructions for the corresponding device).

3. Successful connection.

- Display: After receipt of the program telegrams of the radio sensor (F4) and successful connection, the LED (F3) flashes quickly for the duration of approx. 3 seconds with approx. 2.5 Hz (3 times per sec.). Subsequently the LED clears and the actuator exits the "special function" operating mode.

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Programming the radio sensor to the corresponding channel of the switch actuator is complete.

Note: There is only a limited time available for connection, since the switch actuator wave exits the special function after approx. 2 minutes.

If connection fails (e.g., if the distance between the switch actuator and the radio sensor is too great), the switch actuator wave exits the special function after approx. 2 minutes without confirming success by rapid flashing. The LED clears.

If further radio sensors are to be connected to the two channels of the switch actuator wave, this operation should be repeated.

Deleting a connection:

Deleting a connection is carried out by reassignment (Diagram F).

To delete a connection between a radio sensor and a channel of the switch actuator wave carry out the following steps 1 and 2 one after the other:

1. Activate the "special function channel A" in the switch actuator wave (brief actuation of the pushbutton for (F2) no more than 3 seconds) or "special function channel B" (long actuation of the pushbutton (F2) for the duration of 3 to 6 seconds).
2. Trigger the sending of the program telegrams at the radio sensor to be programmed (see operating instructions for the corresponding device).

The connection of the radio sensor wave to the corresponding channel of the switch actuator wave is thus deleted.

Deleting all the connections and resetting the switch actuator wave to the supplied state:

Action: Very long actuation of the pushbutton (F2) for at least 10 seconds.

Display: After 3 seconds the LED (F3) will flash once briefly (approx. 0.1 sec.). After 10 seconds the LED flashes rapidly for the duration of approx. 3 seconds with approx. 2.5 Hz (3 times per sec.).

All connections to channels A and B of the switch actuator are deleted. The device is in the supplied state.

If the pushbutton remains pushed for a maximum of 3 seconds or for 3 to 6 seconds after resetting to the supplied state, it will be directly switched to the "special function channel A" or "special function channel B".

Time-switch operation (on-period 1 to 60 minutes):

The two channels of the switch actuator wave can be operated respectively as a time switch. The connected loads are thereby switched off automatically after a time that can be set in steps of one minute. The on period can be retriggered and is reset and restarted with each receipt of an "ON" command via radio. With the receipt of an "OFF" command it is switched off immediately.

The time-switch operation is activated or deactivated via the "special function channel A" or the "special function channel B".

Activating the time-switch operation.

To activate the time-switch operation with an on-period that can be set in steps of one minute in the range of 1 to 60 minutes, carry out the following steps 1A or 1B, 2, 3, and 4 one after the other:

1A. Switch on special function channel A.

Action: Brief actuation of pushbutton (F2) for the duration of no more than 3 seconds.

Display: The LED (F3) begins to flash slowly within 3 seconds of the release of the pushbutton with approx. 0.5 Hz (once in 2 seconds).

or

1B. Switch on special function channel B.

Action: Long actuation of the pushbutton (F2) for the duration of 3 to 6 seconds.

Display: After 3 seconds the LED (F3) flashes briefly once (approx. 0.5 sec.). Within 3 to 6 seconds after the release of the pushbutton the LED shows a steady light.

2. Select time-switch operating mode.

Action: Actuate the pushbutton (F2) again for the duration of no more than 9 seconds.

Display: The LED (F3) clears after the actuation of the pushbutton, and after the release of the pushbutton within no more than 9 seconds flashes quickly for the duration of approx. 3 seconds with approx. 2.5 Hz (3 times per sec.).

3. Set on period in steps of 1 minute.

To set the on period in steps of one minute, actuate the pushbutton (F2) again according to the desired on period. Each actuation of the pushbutton extends the on period by 1 minute (e.g., 1 pushbutton actuation = 1 minute on period, 5 actuations of the pushbutton = 5 minute on period, etc.).

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The pushbutton must be actuated each time within approx. 10 seconds.

If the pushbutton is not actuated for the duration of approx. 10 seconds, the present setting for the time switch operation is stored and the special function is ended.

Action: Begin with a short actuation of the pushbutton (F2) within approx. 10 seconds. The 1st actuation sets the on period to 1 minute. Each repeated actuation increases the time by one more minute.

Display: The LED (F3) flashes once briefly (approx. 0.1 sec.) with each actuation of the pushbutton.

4. Activating the time-switch operation.

Action: After the last pushbutton actuation no further operation for the duration of approx. 10 seconds.

Display: After approx. 9 seconds the LED (F3) flashes quickly (3 times per sec.) for the duration of approx. 3 seconds with approx. 2.5 Hz.

The "special function channel A" or "special function channel B" operating mode is ended. The time-switch operation with the desired on-period is activated for the previously selected channel.

Deactivating the time-switch operation.

The time-switch operation is deactivated with the setting "on-period = 0 minutes." This is set if no pushbutton activation occurs within the next 10 seconds after the selection of the time switch operating mode.

To deactivate the time-switch operation, carry out the following steps 1A or 1B, 2 and 3 one after the other:

1A. Switch on special function channel A.

Action: Brief activation of the pushbutton (F2) for the duration of no more than 3 seconds.

Display: The LED (F3) begins to flash slowly (once in 2 seconds) with approx. 0.5 Hz upon release of the pushbutton within 3 seconds.

or

1B Switch on special function channel B.

Action: Long actuation of the pushbutton (F2) for the duration of 3 to 6 seconds.

Display: After 3 seconds the LED (F3) flashes briefly (approx. 0.1 sec.) once. After the release of the pushbutton within 3 to 6 seconds the LED shows a steady light.

2. Select time switch operating mode.

Action: Actuate the pushbutton (F2) again for the duration of no more than 9 seconds.

Display: The LED (F3) clears after the actuation of the pushbutton, and flashes quickly (3 times per sec.) after the release of the pushbutton within no more than 9 seconds for the duration of approx. 3 seconds with approx. 2.5 Hz.

3. Deactivating the time-switch operating mode.

Action: No new actuation of the pushbutton (F2) within approx. 10 seconds.

Display: After approx. 10 seconds the LED (F3) flashes quickly (3 times per sec.) at approx. 2.5 Hz for the duration of approx. 3 seconds.

The "special function channel A" or "special function channel B" operating mode is ended. The time switch operation for the channel previously selected is deactivated.

Exiting the "special function channel A" or "special function Channel B" operating mode:

If the switch actuator wave is in the special function, this condition can be ended and switched back to normal function by one of the following actions:

- Successful connection via radio by receipt of program telegrams of a radio sensor wave.
- Activation or deactivation of the time-switch operation.
- Long actuation of the pushbutton (F2) for at least 10 seconds.
- Time out after approx. 2 minutes (no actuation of the pushbutton (F2) for a period of approx. 2 minutes and no receipt of program telegrams).

General Notes

- The operating instructions should be handed over to the customer.
- Any faulty devices should be returned to the local Siemens office.
- If you have any further queries about this product, please contact our technical support:



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