C

Modular installation system, room control box



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Overview and selection tools

Flexible installation concepts with the modular installation system

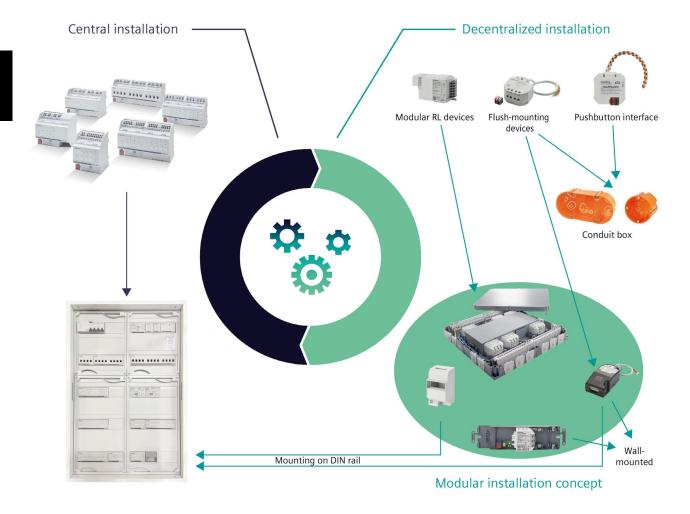
Decentralized and yet modular room automation with its own KNX components for flexible use in the room, based on one platform – regardless of installation location and type.

The different mounting forms allow a flexible installation in different

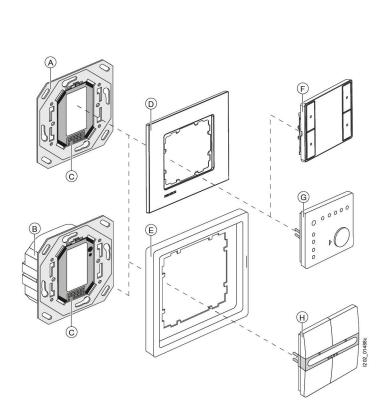
locations in the room: in installation ducts, under a raised floor, above a suspended ceiling, and in wall boxes. The system presented here offers a great functional variety for installation in-wall, on-wall, in parapet ducts, in suspended ceilings, and under raised floors. The Room Control Box AP 641, the Control Module Box AP 118, and the in-wall mounted UP devices enable distributed room control with a few devices, high flexibility, great adaptability and modularity. Both control boxes are assembled with RS or RL sensor/actuator modules in a special quick-mount design. The available modules are full KNX bus participants functioning as binary inputs and outputs, as well as blind actuators, universal dimmer, switch actuators, switch-/dim actuators and as thermal drive actuators. The RS and RL modules have the same functionality as the flush-mounting UP actuators. Therefore identical functionality is available for different installation types or locations featuring the same configuration possibilities. As a result, the devices use a common application program regardless of mounting variant – i.e. devices for installation in the Room Control Box and automation control box as well as flush-mount with or without mounting frame.

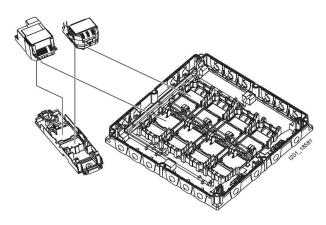
Advantages of the modular installation systems

- with maintenance-free terminals for connection and through-wiring of untreated single-core, stranded or multi-core conductors,
- the actuator can be placed close to where the function is executed, i.e. the user operation interface and the actuator can be installed in the same location,
- Reduced wiring and less wall boxes must be installed. The actuator is accessible under the user operation interface for maintenance.



Decentralized installation





- A Bus transceiver module (BTM)
- B Flush-mounting actuator with bus transceiver module (BTM)
- © BTI interface
- DELTA frames i-system
 E DELTA frames style
 F Pushbutton i-system

- G Temperature controller i-system

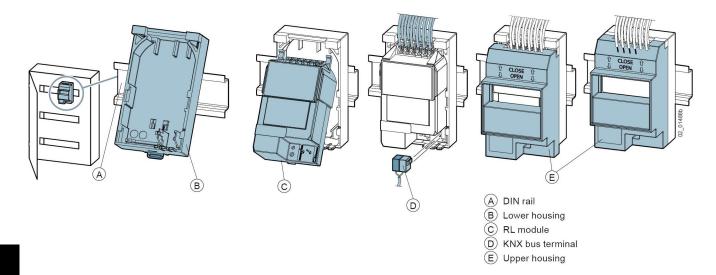
 H Pushbutton style

Overview and selection tools

Central Installation

In the same way, the modular RL modules with the DIN rail housing M 590/01 can be installed centrally in an electrical distributor on a DIN rail. In terms of shape and colour, the M 590/01 DIN rail housing blends harmoniously into the classic in-line installation family. The existing portfolio of in-line devices will thus be supplemented by the modular RL devices with a low channel count.

For the central DIN rail installation of the UP 511S32 switching actuators, the UP 562S32 switching/sun protection actuators or the Universal dimmer UP 525S32, the mounting housing M 592/01 is used.



Modular bus transceiver module and flush-mounting actuator

A key feature of the GAMMA instabus is its uniform bus transceiver-module. The bus transceiver module (BTM) can be used as a standalone unit, as well as a combined version in various devices of the flush-mounting actuator range.

Implementation of the BTI interface (Bus Transceiver Interface) with the bus transceiver module (BTM) ensures maximum flexibility and an impressive range of functions. Bus coupling units (BTM) and flush-mounting actuators with integrated bus transceiver modules (BTM) enable the use of GAMMA display/operator interfaces. Thus, all GAMMA instabus operator interfaces with BTI interface in the design lines i-system and DELTA style can be combined with either a bus trans-

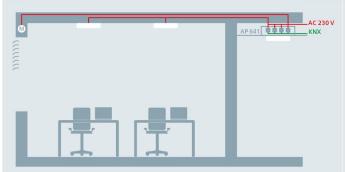
ceiver module (BTM) or a flushmounting actuator with bus transceiver module (BTM).

This reduces planning work and facilitates installation and commissioning. The application programs of the flush-mounting actuators are identical to those of the functionally equivalent devices from the modular room control range. This means that all devices have the same application program - regardless of mounting type - whether flush-mounting, with or without mounting frame - or whether designed for installation in the Room Control Box and Control Module Rox

Modular system for function-oriented installation of room automation

Siemens is the only company marketing a complete range of products for room automation and offering the highest flexibility when it comes to selecting the type and place of installation.

Solution 1: Room Control Box (AP 641) - compact and easy to install



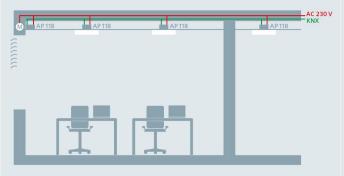
Place of installation:

- In corridors above the false ceiling
- Power and bus lines are run to the Room Control Box AP 641.
- Load lines are run to the lights and the blind motors from the Room Control Box AP 641.

Benefits:

- Space-saving installation in a false ceiling and a raised floor
- Multifunctional, can be combined in a room-oriented way
- Can be flexibly equipped with actuator and sensor modules
- Low wiring costs
- Low fire load

Solution 2: Control Module Box (AP 118) - flexible and function-oriented



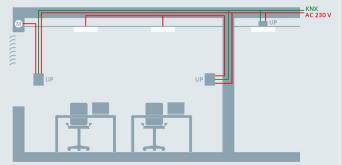
Place of installation:

- In a parapet duct and above the false ceiling (alternatively: in the lamps)
- Power and bus lines are run directly to the Control Module Boxes AP 118.
- The load lines are run to the lamps or the blind motors from the respective Control Module Box AP 118.

Benefits:

- Decentralized installation in false ceiling, cable duct and lamp housing
- Function-oriented installation
- Free choice of room-related functions
- Low fire load

Solution 3: Flush mounting (UP) - conventional and smart



Place of installation:

- In flush-mounting boxes or parapet ducts
- Power and bus lines are run to the flush-mounting boxes.
- The load lines are run to the lamps or the blind motors from the respective flush-mounting actuator.

Benefits:

- Flexible combination of user interfaces and actuators
- Function-oriented installation
- Straightforward upgrading from conventional to KNX installations (e.g. for modernization)

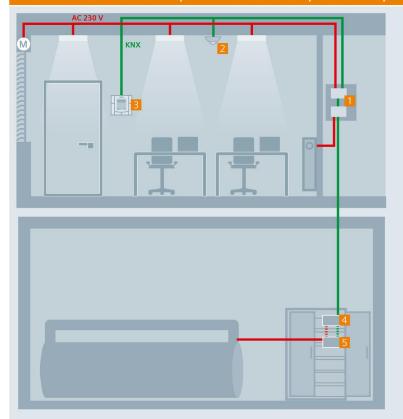
Overview and selection tools

Blinds, windows and radiators Lighting groups 1 2 Pushbutton 2 2 Pushbutton 1 Door

A decentrally installed Room Control Box for room functions

In an office with four workplaces, a window facade with two windows, three lighting groups, two blinds, two switched outlets, two radiators and two pushbuttons, the room function controls are to be installed simply, flexibly and decentralized. This is done by equipping a Room Control Box with two switching actuators RL 513/23 for the two groups of three lights, a shutter blind actuator RL 521/23 for the two blinds, two switching actuators RL 512 for two outlets, a thermo drive actuator RL 510K23 for the two radiators and a decentralized power supply RL 125 for additional island solutions. Seven of the eight slots in the Room Control Box are thus occupied, controlling the room with all of the required functions.

Decentralized solution for a presence- and time-dependent temperature control



Legend:

- Room Control Box AP 641 with actuators and sensors for room automation
- Presence detector
- Room temperature controller
- 4 Central control unit RMB795B
- Heating controller with 0...10 V heating demand input or KNX interface

Optimal use of the thermo drive actuator

A room temperature controller installed in a room controls the thermo drive actuator installed in a Room Control Box to minimize the energy demand in the room. The energy demand is simultaneously transmitted via KNX to the central control unit RMB795, which determines the exact quantity of energy required for heating or cooling in all rooms, compares this demand with the time-controlled demands and transmits it to the heating or cooling controllers. This ensures the highest possible energy efficiency.



Central installation – installation of the RL devices with RL DIN rail housing in the distribution cabinet

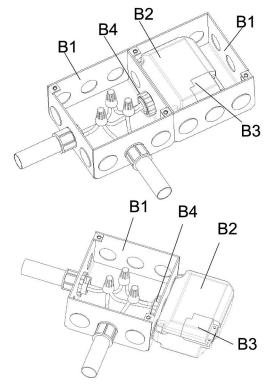
In this office space, the lighting is operated via conventional, non-communicative, buttons. For a cost-effective approach, the already existing, conventional 230 V wiring from the switch to the electrical distributor is to be used. For this purpose, additional binary 230 V KNX inputs are required. The electrical distributor, which was originally designed for a conventional installation, now offers only 3 free partition units after being upgraded with KNX actuators. The binary input RL 260/23 with 4 inputs, AC/DC 12 ... 230 V, finds enough installation space with the installation in the new RL DIN rail housing.

Modular room control for UL/NEMA markets

The modular installation system is also available for installation in standard 4" x 4" UL/NEMA junction boxes.

The full range of control devices comprises of a decentralized power supply, binary input, binary outputs (single, dual, triple), switching/dimming actuators, solar protection actuators, and universal dimmer.

These devices can either be mounted inside a standard 4" x 4" junction box or attached to a standard 4" x 4" junction box.



- B1 4" x 4" Junction Box
- B2 Device
- B3 Bus terminal block for single core conductors with 0.6...0.8 mm \emptyset
- B4 1/2 inch screw nut

The decentralized power supply unit JB 125 provides the system power necessary for the KNX.

For each bus line, at least one decentralized power supply unit JB 125/23 is needed. The decentralized power supply provides 160 mA bus current.

With the decentralized power supply independently operating control zones can be designed.

Placing the control devices close to the point of control allows for minimized wiring and thus significant installation cost reduction.

Room control box Module boxes

AP 118/01





Control Module Box

- 1 slot for a sensor/actuator module, type RS or RL
- Separate connection compartment and strain relief for bus cable and functional lines
- Modular installation device with screw fixing for installation in linking ducts, under raised floors or for surface mounting on the ceiling
- Enclosure: Plastic
- Degree of protection: IP20

 Data sheet
 A6V11438329

 Dimensions (W x H x D)
 180 x 50 x 41.1 mm

 Warranty
 24 Months

 Stock no.
 Product no.

 5WG1118-4AB01
 AP 118/01

AP 641/01





KNX Room Control Box

- 8 slots for a sensor/actuator module, type RS or RL
- Internal bus cable for connection of the sensor/actuator module to the bus
- Separate connection compartment and strain relief for functional lines
- Two PE/N bars for accommodation of the PE and neutral conductor of the functional lines
- Bus connection via bus terminal
- Modular installation device with screw fixing for installation under raised floors, on the wall or ceiling or in wet rooms
- Enclosure: Plastic
- Degree of protection: IP54

 Data sheet
 A6V10416220

 Dimensions (W x H x D)
 300 x 300 x 50 mm

 Warranty
 24 Months

 Stock no.
 Product no.

 5WG1641-3AB01
 AP 641/01

M 590/01



RL-DIN rail housing

- One mounting location for a Room Control Module type RL
- Separate wiring space for bus cable
- Separate wiring space for functional wiring
- Housing for mounting on DIN rail TH35 DIN EN 60715
- Housing: plastic
- Type of protection: IP 20

Dimensions (W x H x D) 52.7 x 90 x 55 mm

Dimension width (1 MW = 18 mm) 3 MW Warranty 24 Months

 Stock no.
 Product no.

 5WG1590-8AB01
 M 590/01

KNX Decentralized power supply, 80 mA, AC 230 V

RL 125/23

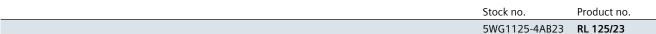
- Integrated choke
- Output voltage DC 29 V
- Output current 80 mA
- · Connection of choke-protected output voltage via a plug-in extra-low voltage terminal or bus terminal
- Type of protection: IP 20 (installed)
- Rated operational voltage AC 120...230 V, 50...60 Hz, DC 220 V
- For mounting in AP 118 automation module box or AP 641 room control box

The AP 641 room control box and AP 118 automation module box must be ordered separately. See Chapter Modular Installation System - Room control box - Module boxes.

 Data sheet
 A6V11535388

 Dimensions (W x H x D)
 48 x 87 x 36 mm

 Warranty
 24 Months



KNX Binary Input 4 x AC/DC 12...230 V

- 4 Inputs for AC/DC 12...230 V
- Max. cable length, unshielded, twisted 100 m
- Bus-powered electronics
- Integrated bus coupling unit, with bus connection via bus terminal block
- Type of protection: IP 20
- Screw-less terminals for connection and through-wiring of untreated single-core, stranded or multicore conductors, 0.5...2.5 mm²
- For mounting in AP 118 automation module box or AP 641 room control box
- The following functions can be selected per input:
- Switching state/send binary value/Transmission of the input objects after change
- Switch edge, short/long switch, 8-bit value edge, 8-bit value short/long
- Dimming, shading control, single button group control
- 1/8-bit scene control
- 16-bit floating-point value edge and 16-bit floating-point short/long
- Pulse counting with/without limit value monitoring (8/16/32 Bit)
- The following functions can be selected per input pair:
- 2-pushbutton dimming with stop telegram and 2-pushbutton shading control
- Optional blocking of each input by means of the respective blocking object
- Optional cyclic transmission of input objects

The AP 641 room control box and AP 118 automation module box must be ordered separately. See Chapter Modular Installation System - Room control box - Module boxes.

Data sheet A6V10416114

Number of inputs potentialfree 4

Warranty 24 Months

Stock no.	Product no.
5WG1260-4AB23	RL 260/23







RL 260/23

Room control box Modules

RL 512/23





KNX Switching actuator 1 x AC 230 V, 16 AX, C load

- One relay contact as switching element
- Bus-powered electronics
- Integrated bus coupling unit, Bus connection via bus terminal block
- Type of protection: IP 20
- Rated contact voltage AC 230 V
- Rated contact frequency: 50/60 Hz
- Rated contact current 16 AX / 20 A
- Screw-less terminals for connection and through-wiring of untreated single-core, stranded or multicore conductors, 0.5...2.5 mm²
- For mounting in AP 118 automation module box or AP 641 room control box
- Selectable operating mode (normal mode, time switch mode)
- Selectable relay mode (NO contact / NC contact)
- Status object as an optional addition
- Variable On and Off delay times
- Selectable logic operation (AND/OR) of two communication objects
- Selectable switching state at bus voltage failure and recovery
- Optional addition of a night mode object for time-limited switching On of the output (and hence the illumination) at night
- Variable On period at night or time switch mode
- Selectable post-triggering of the On period (On period extension) in time switch mode
- Selectable warning signal prior to imminent switching-off by means of three-times short off and on switching (flashing) at night or in time switch mode
- Selectable function:
- Including additional communication object for manual override of an output
- Selectable forced control, including additional communication object for switching an output on or off in forced mode
- Selectable counting of operating hours with threshold monitoring of the operating hours
- Selectable counting of load cycles with threshold monitoring of the load cycles
- Integrated 8-bit scene control and linking of each output into up to 8 scenes

The AP 641 room control box and AP 118 automation module box must be ordered separately. See chapter Modular Installation System - Room control box - Module boxes.

Data sheet A6V10416159
Rated voltage AC 230 V
Rated current 16 A
Number of channels 1

Dimensions (W x H x D) 48 x 87 x 36 mm Warranty 24 Months

 Stock no.
 Product no.

 5WG1512-4AB23
 RL 512/23

KNX Binary Output 3 x 6 A, AC 230 V

- 3 floating relay contact
- One relay contact per output as switching element
- Contact rated current according to DIN EN 60669-1: 6 A (resistive load)
- Bus-powered electronics
- Integrated bus coupling unit, bus connection via bus terminal block
- Type of protection: IP 20
- Rated contact operating voltage AC 230 V
- Rated contact frequency: 50/60 Hz
- Screw-less terminals for connection and through-wiring of untreated single-core, stranded or multicore conductors, 0.5...2.5 mm²
- For mounting in AP 118 automation module box or AP 641 room control box
- For each output:
- Selectable operating mode (normal mode, time switch mode)
- Selectable relay mode (NO contact / NC contact)
- Status object as an optional addition
- Variable On and Off delay times
- Selectable logic operation (AND/OR) of two communication objects
- Selectable switching state at bus voltage failure and recovery
- Optional addition of a night mode object for time-limited switching On of the output (and hence the illumination) at night
- Variable On period at night or time switch mode
- Selectable post-triggering of the On period (On period extension) in time switch mode
- Selectable warning signal prior to imminent switching-off by means of three-times short off and on switching (flashing) at night or in time switch mode
- Selectable function:
- Including additional communication object for manual override of an output
- Selectable forced control, including additional communication object for switching an output on or off in forced mode
- Selectable counting of operating hours and with threshold monitoring of the operating hours
- Selectable counting of load cycles and with threshold monitoring of the load cycles
- Integrated 8-bit scene control and linking of each output into up to 8 scenes

The AP 641 room control box and AP 118 automation module box must be ordered separately. See chapter Modular Installation System - Room control box - Module boxes.

Data sheet A6V11375522
Rated voltage AC 230 V
Rated current 6 A
Number of channels 3

Dimensions (W x H x D) 48 x 87 x 36 mm Warranty 24 Months

Stock no. Product no.

5WG1513-4DB23 RL 513D23



RL 513D23



Room control box Modules

RL 526D23





KNX Switch/dim actuator, 2 x AC 230 V, 6 A, 1...10 V

- One relay contact per output as switching element
- Rated contact operating voltage AC 230 V
- Rated contact frequency: 50/60 Hz
- Rated contact current: 6 A
- Control voltage output DC 1-10 V (passive) per channel for controlling dimmable electronic ballasts
- Maintenance-free terminals for connection and through-wiring of untreated single-core, stranded or multi-core conductors, 0.5 ... 2.5 mm²
- Bus-powered electronics
- Housing: plastic
- Dimensions (L x W x H): 86,5 x 47,8 x 36,2 mm
- As built-in device for mounting in a separately to be ordered Control Module Box AP 118 or Room Control Box AP 641
- Type of protection: IP 20
- One switching, one dimming and status object per output
- Selectable operation mode (normal mode, time switch mode, blinking)
- · Adjustable ON- and OFF-delay, control value input object, central switching
- Two logic operation (AND/OR/NAND/NOR/EXOR/FILTER/TRIGGER)
- Adjustable dimming time for switching and dimming
- Switch an output on or off by dimming
- Configurable dimming curves
- Maximum and minimum dimming value
- Configurable sending of status objects on request, cyclically, and I or automatically after a change
- Configurable state on bus voltage failure and dimming value on bus voltage recovery
- Night mode for time-limited switching the output, i.e. the lighting, at night,
- Variable On period at night or time switch mode, time limit in timer switch mode, warning signal prior to imminent switching-off
- Manual override, permanent OFF switching, forced control, locking mode
- Counting of operating hours and counting of load cycles with threshold monitoring
- Integrated 8-bit scene control and linking of each output into up to 8 scenes
- Surveillance of device function

Data sheet A6V12021343

Rated current 6 A Number of channels 2

Dimensions (W x H x D) 48 x 87 x 36 mm Warranty 24 Months

 Stock no.
 Product no.

 5WG1526-4DB23
 RL 526D23

KNX Shutter Blind Actuator, 2 x AC 230 V, 6 A

RL 521/23

- · 2 channels
- Electrically interlocked relays to reverse the direction of rotation
- Integrated electronics for detection of the actuation of an electromechanical limit switch and with auto-calibration of the travel time from one limit switch to the other
- Bus-powered electronics
- Integrated bus coupling units, bus connection via bus terminal
- Type of protection: IP 20
- For the separate control per actuator channel of a sun protection, damper, door or window drive with a motor for AC 230 V and electromechanical limit switches
- Screw-less terminals for connection and through-wiring of untreated single-core, stranded or multicore conductors, 0.5 ... 2.5 mm²
- For mounting in AP 118 automation module box or AP 641 room control box
- Communication objects per actuator channel for moving the sun protection to limit positions or to stop travel and for step-by-step adjustment of blind slats
- Communication objects for moving the sun protection and adjusting blind slats directly to a new position by positioning commands as percentage values
- Automatic opening of blind slats up to a set position after the blinds have been lowered without any stop from upper to lower limit position
- Integrated 1-bit scene control for programming/recalling of 2 favored positions of blind and slats
- Integrated 8-bit scene control and assignment of up to 8 scenes per channel
- An optional object "Sunshine" for activation/deactivation of sunlight tracking of the slats for shading
 with greatest possible daylight component
- Differentiation between automatic and manual mode and with automatic switch-over from automatic to manual mode of the respective actuator channel on activation of a bus pushbutton for manual control of the sun blind
- Priority of manual mode over automatic positioning commands
- Optional central command object for switching-over of all actuator channels to automatic mode and for moving the sun blinds to the upper or lower limit position
- Alarm object wind/rain/frost per channel for moving the sun protection to the configured safety
 position in the event of an alarm and with blocking of travel to another position as long as alarm
 pending
- Travel blocking object per device or per channel for blocking the sun protection in its current position (e.g. during cleaning of an outdoor Venetian blind)
- Status objects per actuator channel for query or automatic transmission of sun blind and slat position as percentage values
- Optional status objects for signalling that the lower or upper limit position has been reached

The AP 641 room control box and AP 118 automation module box must be ordered separately. See chapter Modular Installation System - Room control box - Module boxes.

Data sheet A6V10416169
Rated voltage AC 230 V
Rated current 6 A
Number of channels 2

Dimensions (W x H x D) 48 x 87 x 36 mm Warranty 24 Months





 Stock no.
 Product no.

 5WG1521-4AB23
 RL 521/23

Room control box Modules

RL 524D23





KNX Solar protection actuator 2 x DC 24 V, 6 A

- For control of drives with a DC motor for DC 24 V
- Two relays per output for polarity switching of the output voltage
- Rated contact operating voltage DC 24 V
- Rated contact current: 6 A
- Electronics for detection of the actuation of an electromechanical and electronic limit switches
- Automatic travel time determination via current detection
- Maintenance-free terminals for connection and through-wiring of untreated single-core, stranded or multi-core conductors, 0.5 ... 2.5 mm²
- Two terminals per actuator channel for motor connection (up, down)
- Two terminals on the device to connect the DC 24 V (+/-) to supply the load circuits
- Bus-powered electronics
- Housing: plastic
- As built-in device for mounting in a separately to be ordered Control Module Box AP 118
- Type of protection: IP 20
- Selectable operation mode blinds, shutter/awning, ventilation flap
- Per actuator channel motion commands for moving and stopping the solar protection or for adjustment of blind slats
- Per actuator channel direct movement to a position of the sunblind and the blind slats
- Per actuator channel central movement of the solar protection in manual mode and automatic mode and delay time for Up / Down
- Distinction between automatic and manual mode (position of the sunblind and blind slats) and adjustable behaviour in sunshine
- Programming and recalling preset positions 1-4 and 8-bit scene control
- Adjustable behaviour in case of override (wind, rain, frost, lock, forced position, forced control, range limitation)
- Adjustable reverse pause time and delay times of the drives
- Per actuator channel configurable state on bus voltage failure and start value on bus voltage recovery
- Adjustable transmission of status objects (automatic operation, curtain and slat position, travel, calibration travel time to end positions, overriding) on request, cyclically and/or upon change
- Adjustable transmission time of the status objects after bus voltage recovery and transmission delay between the status objects
- Surveillance of device function

The automation module box AP 118 must be ordered separately. See chapter Modular installation system, Room automation box - Housing.

Data sheet A6V12883340

Rated current 6 A Number of channels 2

Dimensions (W x H x D) 48 x 87 x 36 mm Warranty 24 Months

Stock no. Product no.

5WG1524-4DB23 RL 524D23

KNX Thermal drive actuator, 2 x AC 24...230 V, with 2 integrated room temperature controllers

- For control of electrothermal valve drives for AC 24...230 V in heating/cooling systems via 2 noiseless semiconductor outputs
- With electronic protection of the outputs against short circuit and overload
- Rated current: 0.45 A per channel
- Max. inrush current (2 sec.): 2.75 A per channel
- Max. inrush current (2 min.): 0.75 A per channel
- Maintenance-free terminals for connection and through-wiring of untreated single-core, stranded or multi-core conductors, 0.5 ... 2.5 mm²
- 2 terminals per channel for connecting the electrothermal valve drives
- 2 terminals on the unit for supply of the valve voltage AC 24...230 V
- Bus-powered electronics
- · Housing: plastic
- Built-in device for mounting in a separately to be ordered Control Module Box AP 118 or Room Control Box AP 641
- Type of protection: IP 20
- Per channel setting of the valve operation direction de-energised open or closed
- Per channel optional control via switching commands or continuous positioning commands
- Per channel control value limitation and adjustment of the valve characteristic for continuous control values
- Per channel control value monitoring
- Adjustable behaviour in case of override (lock, service mode, forced position, forced control)
- Per output automatic, demand-oriented or manual valve rinsing
- Per output operating hours counting and switching cycle counting with limit value monitoring
- Evaluation of the control values for heating or cooling demand requirements on a primary system and for controlling heating or cooling circuit pumps
- 2 room temperature controllers for 2-pipe or 4-pipe systems, adjustable as 2-position control or continuous control, for heating-only mode, cooling-only mode, heating and cooling mode, with twostage heating or cooling
- Output of the control values optionally as switching command On/Off or as continuous control command
- 5 min., max. and weighted value calculators
- 6 logical operations (AND/OR/XOR/TRIGGER/LOCK)
- Surveillance of device function

Data sheet A6V13488292
Rated current 0.45 A
Triac output, switching voltage 24...230 V
Dimensions (W x H x D) 48 x 87 x 36 mm
Warranty 24 Months



RL 605D23



Stock no. Product no.

5WG1605-4DB23 RL 605D23

Room control box Modules

RS 510/23





KNX Binary Output, 2 x AC 230 V, 10 A (resistive load)

- Rated contact frequency: 50/60 Hz
- 2 floating relay contacts
- Contact rated current according to DIN EN 60669-1: 10 A (resistive load)
- Bus-powered electronics
- Integrated bus coupling unit, bus connection via bus terminal
- Type of protection: IP 20
- Rated contact voltage AC 230 V
- Screw-less terminals for connection and through-wiring of untreated single-core, stranded or multicore conductors, 0.5 ... 2.5 mm²
- With bus connection module
- Modular installation device for mounting in AP 118 automation module box or AP 641 room control box
- For each output:
- Selectable operating mode (normal mode/time switch mode)
- Selectable relay mode (NO contact/NC contact)
- Status object as optional addition
- Variable On and Off delay times
- Selectable logic operation (AND/OR) of two communication objects
- Selectable switching state at bus voltage failure and recovery
- Optional addition of night mode object for time-limited switching On of the output (and hence the illumination) at night
- Variable On period at night or time switch mode
- Selectable post-triggering of the On period (On period extension) in time switch mode
- Selectable warning signal prior to imminent switching-off by means of three-times short off and on switching (flashing) at night or in time switch mode
- Selectable function:
- Including additional communication object for manual override of an output
- Forced control, including additional communication object for switching an output on or off in forced mode
- Counting of operating hours and with threshold monitoring of the operating hours
- Counting of load cycles and with threshold monitoring of the load cycles
- Integrated 8-bit scene control and linking of each output into up to 8 scenes

The AP 641 room control box and AP 118 automation module box must be ordered separately. See chapter Modular Installation System - Room control box - Module boxes.

Data sheet A6V10416153
Rated voltage AC 230 V
Rated current 10 A
Number of channels 2

Dimensions (W x H x D) 50.2 x 48.8 x 35.5 mm

Warranty 24 Months

Stock no. Product no.

5WG1510-2AB23 RS 510/23

KNX Universal dimmer 1 x AC 230 V, 10...250 VA, (R,L,C load)

- Output for switching and dimming resistive, inductive or capacitive loads
- Automatic adjustment to leading edge or trailing edge control, depending on the type of load
- Rated frequency 50...60 Hz
- Electronic protection of the output against overload, short circuit and temperature rise
- Bus-powered electronics
- Integrated bus coupling unit, Bus connection via bus terminal block
- Type of protection: IP 20
- Rated operational voltage AC 230 V
- Rated power at +35°C ambient temperature: 10...250 VA
- Screw-less terminals for connection and through-wiring of untreated single-core, stranded or multicore conductors, 0.5 ... 2.5 mm²
- With bus connection module
- Modular installation device for mounting in AP 118 automation module box or AP 641 room control
- Selectable mode for each output (normal mode, one- or two-level timer mode, blinking)
- Adjustable on- and off-delay
- Separately adjustable dimming time from 0...100 % for switching on / off and dimming brighter /
- Two dimming value objects, each with individually adjustable dimming time from 0...100 %
- The ability to switch an output on or off by dimming brighter/darker
- Adjustable dimming value when switching on
- Immediate activation (jumping) or dimming to a new dimming value
- Selectable additional status object switching and / or status object dimming value for each output
- Additional object for each output for blocking / releasing the output
- Sending of status objects on request and / or automatically after a change
- Adjustable blocking time for sending status objects after restart and bus voltage recovery
- · Adjustable dimming value for each output in the event of bus voltage failure and recovery, as well as for mains voltage recovery
- Additional night mode object for time-limited switching on the output (and hence illumination) at
- Adjustable on period at night or with timer mode
- Selectable warning of imminent switching off the illumination by dimming to 50 % of the previous dimming value during night mode or timer mode
- Integrated 8-bit scene control and integration of each output in up to 8 scenes
- Separately adjustable dimming time for scene control
- Selectable counting of operating hours and with threshold monitoring of the operating hours
- Selectable counting of load cycles and with threshold monitoring of the load cycles

The AP 641 room control box and AP 118 automation module box must be ordered separately. See chapter Modular Installation System - Room control box - Module boxes.

Data sheet A6V10416181 Rated voltage AC 230 V Rated current 1 A Number of channels

Dimensions (W x H x D) 50.2 x 48.8 x 35.5 mm

Warranty 24 Months

> Stock no. Product no. 5WG1525-2AB23 RS 525/23



RS 525/23



Room control box Modules

RS 520/23





KNX Shutter Blind Actuator RS, 1 x AC 230 V, 6 A

- 1 channel
- Electrically interlocked relays to reverse the direction of rotation
- Integrated electronics for detection of the actuation of an electromechanical limit switch and with auto-calibration of the travel time from one limit switch to the other
- Bus-powered electronics
- Integrated bus coupling unit, Bus connection via bus terminal block
- Type of protection: IP 20
- For the separate control per actuator channel of a sun protection, damper, door or window drive with a motor for AC 230 V and electromechanical limit switches
- Screw-less terminals for connection and through-wiring of untreated single-core, stranded or multicore conductors, 0.5 ... 2.5 mm²
- With bus connection module
- Modular installation device for mounting in AP 118 automation module box or AP 641 room control box
- Configurable behavior in the event of a bus voltage failure/recovery
- Automatic mode for sunlight tracking control
- Manual and standard mode
- Status: Transmitting status per channel, status position of sun protection, 8-bit, status position of slats, 8-bit
- Integrated 1-bit/8-bit scene control
- 8 scenes to be integrated per channel
- Travel lock (e. g. for cleaning the outer shutter/blinds)
- Separate raising/lowering protection
- Alarm (Wind, Rain, Frost): Move to safety position, locking in this position for as long as alarm is active
- Individual configuration of actuator channels
- Adaptation of objects and functions to drive type
- Suitable for integration in a sunlight tracking control system
- End position detection
- Using position data (8-bit value) for sun protection control (up/down) and slat control (open/closed)

The AP 641 room control box and AP 118 automation module box must be ordered separately. See chapter Modular Installation System - Room control box - Module boxes.

Data sheet A6V10416164
Rated voltage AC 230 V
Rated current 6 A
Number of channels 1

Dimensions (W x H x D) 50.2 x 48.8 x 35.5 mm

Warranty 24 Months

 Stock no.
 Product no.

 5WG1520-2AB23
 RS 520/23

KNX Thermo Drive Actuator, 2 x 1.5 A, AC 24...230 V / DC 24 V

- 2 switching outputs for control of electro-thermal drives for heating radiator and cooling ceiling valves
- Per output up to 4 connected electro-thermal drives with in total up to 1.5 A in the on-state and up to 58 W power consumption when switched on
- One relay contact per output as switching element
- Rated contact operating voltage AC 24...230 V or DC 24 V
- Rated contact frequency: 50/60 Hz
- Contact rated current according to DIN EN 60669-1: 1.5 A (resistive load)
- Screw-less terminals for connection and through-wiring of untreated single-core, stranded or multicore conductors, 0.5...2.5 mm²
- With bus connection module
- Bus-powered electronics
- Integrated bus coupling unit, bus connection via bus terminal
- Modular installation device for mounting in AP 118 automation module box or AP 641 room control box
- Selectable control via switching commands (on-off control) or via contol commands in percent (continuous control)
- · Conversion of control commands in percent into pulse width modulated (PWM) switching commands
- Additional functions for avoiding calcification of a valve and forced position as well as a status object
 per output
- Status object as an optional addition for each output
- Selectable switching state for each output on bus voltage failure and recovery

The AP 641 room control box and AP 118 automation module box must be ordered separately. See chapter Modular Installation System - Room control box - Module boxes.

Data sheet	A6V10532363
Rated voltage	AC 24 V
Rated current	1.5 A
Number of channels	2
Relay outputs, number	2
Triac outputs, number	0

Dimensions (W x H x D) 51 x 49 x 36 mm Warranty 24 Months





 Stock no.
 Product no.

 5WG1510-2KB23
 RS 510K23





KNX Power Supply, 160 mA, AC 110 ... 277 V

- Integrated choke
- Output voltage DC 29 V
- Output current 160 mA
- Connection of choke-protected output voltage via bus terminal
- Rated operational voltage AC 110 ... 277 V, 50...60 Hz
- Built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector

 Data sheet
 A6V12688327

 Dimensions (W x H x D)
 92 x 76 x 45 mm

 Warranty
 24 Months

 Stock no.
 Product no.

 5WG1125-4CB33
 JB 125C33

JB 260C23





KNX Binary Input 4 x AC/DC 12...230 V

- 4 Inputs for AC/DC 12...230 V
- Max. cable length, unshielded, twisted 100 m
- Bus-powered electronics
- Integrated bus coupling unit, with bus connection via bus terminal block
- Type of protection: IP 20
- As built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector
- The following functions can be selected per input:
- Switching state/send binary value/Transmission of the input objects after change
- Switch edge, short/long switch, 8-bit value edge, 8-bit value short/long
- Dimming, shading control, single button group control
- 1/8-bit scene control
- 16-bit floating-point value edge and 16-bit floating-point short/long
- Pulse counting with/without limit value monitoring (8/16/32 Bit)
- The following functions can be selected per input pair:
- 2-pushbutton dimming with stop telegram and 2-pushbutton shading control
- Optional blocking of each input by means of the respective blocking object
- Optional cyclic transmission of input objects

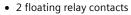
Data sheet A6V11786003 Warranty 24 Months

 Stock no.
 Product no.

 5WG1260-4CB23
 JB 260C23

KNX Binary Output, 2 x AC 120...277 V, 10 A (resistive load)

JB 510C23



- Rated contact frequency: 50/60 Hz
- Contact rated current according to DIN EN 60669-1: 10 A (resistive load)
- Bus-powered electronics
- Integrated bus coupling unit, bus connection via bus terminal
- Type of protection: IP 20
- Rated contact operating voltage AC 120...277 V
- As built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector
- For each output:
- Selectable operating mode (normal mode/time switch mode)
- Selectable relay mode (NO contact/NC contact)
- Status object as optional addition
- Variable On and Off delay times
- Selectable logic operation (AND/OR) of two communication objects
- Selectable switching state at bus voltage failure and recovery
- Optional addition of night mode object for time-limited switching On of the output (and hence the illumination) at night
- Variable On period at night or time switch mode
- Selectable post-triggering of the On period (On period extension) in time switch mode
- Selectable warning signal prior to imminent switching-off by means of three-times short off and on switching (flashing) at night or in time switch mode
- Selectable function:
- Including additional communication object for manual override of an output
- Forced control, including additional communication object for switching an output on or off in forced
- Counting of operating hours and with threshold monitoring of the operating hours
- Counting of load cycles and with threshold monitoring of the load cycles
- Integrated 8-bit scene control and linking of each output into up to 8 scenes

A6V11786004 Data sheet 70 x 90 x 44.6 mm Dimensions (W x H x D) 24 Months Warranty

Stock no.

Product no.

5WG1510-4CB23 JB 510C23

JB 512C23





KNX Switching actuator 1 x AC 120...277 V, 20 A or 1 x AC 347 V, 15 AX, C load

- One relay contact as switching element
- Bus-powered electronics
- Integrated bus coupling unit, Bus connection via bus terminal block
- Type of protection: IP 20
- Rated contact operating voltage AC 120...277 V, AC 347 V
- Rated contact frequency: 50/60 Hz
- Fluorsecent lamp load acc. to DIN EN 60669-1: 20 AX (200 μ F) at AC 120/277 V, 15 AX (200 μ F) at AC 347 V
- As built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector
- Selectable operating mode (normal mode, time switch mode)
- Selectable relay mode (NO contact / NC contact)
- Status object as an optional addition
- Variable On and Off delay times
- Selectable logic operation (AND/OR) of two communication objects
- Selectable switching state at bus voltage failure and recovery
- Optional addition of a night mode object for time-limited switching On of the output (and hence the illumination) at night
- Variable On period at night or time switch mode
- Selectable post-triggering of the On period (On period extension) in time switch mode
- Selectable warning signal prior to imminent switching-off by means of three-times short off and on switching (flashing) at night or in time switch mode
- Selectable function:
- Including additional communication object for manual override of an output
- Selectable forced control, including additional communication object for switching an output on or off in forced mode
- Selectable counting of operating hours with threshold monitoring of the operating hours
- Selectable counting of load cycles with threshold monitoring of the load cycles
- Integrated 8-bit scene control and linking of each output into up to 8 scenes

 Data sheet
 A6V11786007

 Dimensions (W x H x D)
 70 x 90 x 44.6 mm

 Warranty
 24 Months

 Stock no.
 Product no.

 5WG1512-4CB23
 JB 512C23

9

KNX Binary Output 3 x 6 A, AC 120...277 V

JB 513C23

- 3 floating relay contact
- One relay contact per output as switching element
- Contact rated current according to DIN EN 60669-1: 6 A (resistive load)
- Bus-powered electronics
- Integrated bus coupling unit, bus connection via bus terminal block
- Type of protection: IP 20
- One relay contact per output as switching element
- Rated contact operating voltage AC 120...277 V
- Rated contact frequency: 50/60 Hz
- As built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector



- For each output:
- Selectable operating mode (normal mode, time switch mode)
- Selectable relay mode (NO contact / NC contact)
- Status object as an optional addition
- Variable On and Off delay times
- Selectable logic operation (AND/OR) of two communication objects
- Selectable switching state at bus voltage failure and recovery
- Optional addition of a night mode object for time-limited switching On of the output (and hence the illumination) at night
- Variable On period at night or time switch mode
- Selectable post-triggering of the On period (On period extension) in time switch mode
- Selectable warning signal prior to imminent switching-off by means of three-times short off and on switching (flashing) at night or in time switch mode
- Selectable function:
- Including additional communication object for manual override of an output
- Selectable forced control, including additional communication object for switching an output on or off in forced mode
- Selectable counting of operating hours and with threshold monitoring of the operating hours
- Selectable counting of load cycles and with threshold monitoring of the load cycles
- Integrated 8-bit scene control and linking of each output into up to 8 scenes

 Data sheet
 A6V11786008

 Dimensions (W x H x D)
 70 x 90 x 44.6 mm

 Warranty
 24 Months

Stock no. Product no.

5WG1513-4CB23 **JB 513C23**

JB 525C23





KNX Universal Dimmer, 1 x AC 120 V, 10...125 VA (R,L,C load)

- Output for switching and dimming resistive, inductive or capacitive loads
- Automatic adjustment to leading edge or trailing edge control, depending on the type of load
- Rated frequency 50...60 Hz
- Electronic protection of the output against overload, short circuit and temperature rise
- Bus-powered electronics
- Integrated bus coupling unit, Bus connection via bus terminal block
- Type of protection: IP 20
- Rated operational voltage AC 120 V
- Rated power at +35°C ambient temperature: 10...125 VA
- Selectable mode for each output (normal mode, one- or two-level timer mode, blinking)
- As built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector
- Selectable mode for each output (normal mode, one- or two-level timer mode, blinking)
- Adjustable on- and off-delay
- Separately adjustable dimming time from 0...100 % for switching on / off and dimming brighter / darker
- Two dimming value objects, each with individually adjustable dimming time from 0...100 %
- The ability to switch an output on or off by dimming brighter/darker
- Adjustable dimming value when switching on
- Immediate activation (jumping) or dimming to a new dimming value
- Selectable additional status object switching and / or status object dimming value for each output
- Additional object for each output for blocking / releasing the output
- Sending of status objects on request and / or automatically after a change
- · Adjustable blocking time for sending status objects after restart and bus voltage recovery
- Adjustable dimming value for each output in the event of bus voltage failure and recovery, as well as for mains voltage recovery
- Additional night mode object for time-limited switching on the output (and hence illumination) at night
- Adjustable on period at night or with timer mode
- Selectable warning of imminent switching off the illumination by dimming to 50 % of the previous dimming value during night mode or timer mode
- Integrated 8-bit scene control and integration of each output in up to 8 scenes
- Separately adjustable dimming time for scene control
- Selectable counting of operating hours and with threshold monitoring of the operating hours
- Selectable counting of load cycles and with threshold monitoring of the load cycles

 Data sheet
 A6V11808810

 Dimensions (W x H x D)
 70 x 90 x 44.6 mm

 Warranty
 24 Months

Stock no. Product no.

5WG1525-4CB23 **JB 525C23**

9

KNX Switch/dim actuator, 2 x AC 277 V, 20 A, 1...10 V

KNX SWITCH/AITH actuator, 2 x AC 2// V, 20 A, 1...10 V

- Protruding wires stranded AWG 12
- A phase connection for an output that is equipped with a relay contact per output as a switching element
- Contact rated operational voltage AC 120 V, AC 230 V, AC 277 V, AC 347 V
- Contact rated operational voltage AC/DC 24 V
- Contact rated current according to DIN EN 60669-1: 16 A / 20 A (resistive load)
- Fluorescent lamp load according to DIN EN 60669-1: 16 AX / 20 AX (200 μ F) at AC 230 V
- Bus-powered electronics
- Integrated bus coupling unit
- Bus connection via bus terminal
- Red LED for display of the activation of the addressing mode as well as the operational readiness
- Housing: plastics
- For installation in 4" x 4" Junction box (UL/NEMA)
- Degree of protection IP 20
- For switching and dimming of fluorescent lamps with dimmable electronic ballasts
- Independent control voltage DC 0/1...10 V per output

Per output

- command objects for switching on/off, dimming brighter/darker and setting dimming value
- adjustable ON- and OFF-delay
- switching status object and/or dimming value status object as an optional addition
- adjustable sending of status objects on demand, cyclically and/or automatically after modification
- adjustable ON period during night and/or time switch operation
- selectable counting of operating hours and threshold monitoring of the operating hours
- aelectable counting of load cycles and threshold monitoring of the load cycles
- selectable function blocking of the output
- aelectable mode (normal mode, night mode, one- or two-level timer mode, flashing)
- separately adjustable dimming time from minimum to 100% for switching on/off, brighter/darker dimming and dimming value setting
- selectable sending of status objects on request, cyclically and / or automatically after a change or bus voltage recovery
- selectable warning of impending OFF by dimming to 50% of the previous dimming value during night mode or timer mode
- separately adjustable dimming time for scene control
- adjustable dimming curve correction
- construction site function for switching the construction site lighting on and off even if the bus devices have not yet been commissioned with ETS
- Integrated 8-bit scene control and integration of each output in up to 8 scenes
- Optional disabling of the ripple control compensation in an electrical grid with frequency fluctuations

 $\begin{array}{ll} \text{Data sheet} & \text{A6V11786012} \\ \text{Dimensions (W x H x D)} & \text{70 x 90 x 44.6 mm} \\ \text{Warranty} & \text{24 Months} \end{array}$

Stock no.

5WG1526-4CB23

Product no.

JB 526C23



JB 526C23



JB 527C23





KNX Switch/dim actuator, 1 x AC 277 V, 20 A, 1...10 V

- Protruding wires stranded AWG 12
- A phase connection for an output that is equipped with a relay contact per output as a switching element
- Contact rated operational voltage AC120 V, AC 230 V, AC 277 V, AC 347 V
- Contact rated operational voltage AC / DC 24 V
- Contact rated current according to DIN EN 60669-1: 16 A / 20 A (resistive load)
- Fluorescent lamp load according to DIN EN 60669-1: 16 AX / 20 AX (200 μ F) at AC 230 V
- Bus-powered electronics
- Integrated bus coupling unit
- Bus connection via bus terminal
- Red LED for display of the activation of the addressing mode as well as the operational readiness
- Housing: plastics
- For installation in 4" x 4" Junction box (UL/NEMA)
- Degree of protection IP 20
- For switching and dimming of fluorescent lamps with dimmable electronic ballasts
- Independent control voltage DC 0/1...10 V per output

Per output

- command objects for switching on/off, dimming brighter/darker and setting dimming value
- adjustable ON- and OFF-delay
- switching status object and/or dimming value status object as an optional addition
- adjustable sending of status objects on demand, cyclically and/or automatically after modification
- adjustable ON period during night and/or time switch operation
- selectable counting of operating hours and threshold monitoring of the operating hours
- selectable counting of load cycles and threshold monitoring of the load cycles
- selectable function blocking of the output
- selectable mode (normal mode, night mode, one- or two-level timer mode, flashing)
- separately adjustable dimming time from minimum to 100% for switching on/off, brighter/darker dimming and dimming value setting
- selectable sending of status objects on request, cyclically and / or automatically after a change or bus voltage recovery
- selectable warning of impending OFF by dimming to 50% of the previous dimming value during night mode or timer mode
- separately adjustable dimming time for scene control
- adjustable dimming curve correction
- construction site function for switching the construction site lighting on and off even if the bus devices have not yet been commissioned with ETS
- integrated 8-bit scene control and integration of each output in up to 8 scenes
- optional disabling of the ripple control compensation in an electrical grid with frequency fluctuations

 Data sheet
 A6V11786013

 Dimensions (W x H x D)
 70 x 90 x 44.6 mm

 Warranty
 24 Months

Stock no. Product no.

5WG1527-4CB23 JB 527C23

288

9

KNX Shutter Blind Actuator, 1 x AC 120 V, 6 A

JB 520C23

- 1 channel
- Electrically interlocked relays to reverse the direction of rotation
- Integrated electronics for detection of the actuation of an electromechanical limit switch and with auto-calibration of the travel time from one limit switch to the other
- Bus-powered electronics
- Integrated bus coupling unit, Bus connection via bus terminal block
- Type of protection: IP 20
- For control of sun protection, door or window drive with a motor for AC 120 V and electromechanical
 or electronic limit switches per actuator channel
- Relay contacts rated for nominal voltage AC 120 V, 6 A (resistive load)
- As built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector
- Configurable behavior in the event of a bus voltage failure/recovery
- Automatic mode for sunlight tracking control
- Manual and standard mode
- Status: Transmitting status per channel, status position of sun protection, 8-bit, status position of slats, 8-bit
- Integrated 1-bit/8-bit scene control
- 8 scenes to be integrated per channel
- Travel lock (e. g. for cleaning the outer shutter/blinds)
- Separate raising/lowering protection
- Alarm (Wind, Rain, Frost): Move to safety position, locking in this position for as long as alarm is active
- Individual configuration of actuator channels
- Adaptation of objects and functions to drive type
- Suitable for integration in a sunlight tracking control system
- End position detection
- Using position data (8-bit value) for sun protection control (up/down) and slat control (open/closed)

 Data sheet
 A6V11786009

 Dimensions (W x H x D)
 70 x 90 x 44.6 mm

 Warranty
 24 Months







JB 521C23





KNX Shutter Blind Actuator, 2 x AC 120 V, 6 A

- · 2 channels
- Electrically interlocked relays to reverse the direction of rotation
- Integrated electronics for detection of the actuation of an electromechanical limit switch and with auto-calibration of the travel time from one limit switch to the other
- Bus-powered electronics
- · Integrated bus coupling units, bus connection via bus terminal
- Type of protection: IP 20
- For separate control of a sun protection, door or window drive with a motor for AC 120 V and electromechanical or electronic limit switches per actuator channel
- Relay contacts rated for AC 120 V, 6 A (resistive load)
- As built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector
- Communication objects per actuator channel for moving the sun protection to limit positions or to stop travel and for step-by-step adjustment of blind slats
- Communication objects for moving the sun protection and adjusting blind slats directly to a new position by positioning commands as percentage values
- Automatic opening of blind slats up to a set position after the blinds have been lowered without any stop from upper to lower limit position
- Integrated 1-bit scene control for programming/recalling of 2 favored positions of blind and slats
- Integrated 8-bit scene control and assignment of up to 8 scenes per channel
- An optional object "Sunshine" for activation/deactivation of sunlight tracking of the slats for shading with greatest possible daylight component
- Differentiation between automatic and manual mode and with automatic switch-over from automatic to manual mode of the respective actuator channel on activation of a bus pushbutton for manual control of the sun blind
- Priority of manual mode over automatic positioning commands
- Optional central command object for switching-over of all actuator channels to automatic mode and for moving the sun blinds to the upper or lower limit position
- Alarm object wind/rain/frost per channel for moving the sun protection to the configured safety
 position in the event of an alarm and with blocking of travel to another position as long as alarm
 pending
- Travel blocking object per device or per channel for blocking the sun protection in its current position (e.g. during cleaning of an outdoor Venetian blind)
- Status objects per actuator channel for query or automatic transmission of sun blind and slat position as percentage values
- Optional status objects for signalling that the lower or upper limit position has been reached

 Data sheet
 A6V11786010

 Dimensions (W x H x D)
 70 x 90 x 44.6 mm

 Warranty
 24 Months

Stock no. Product no.

JB 521C23

5WG1521-4CB23

290