SIEMENS

RL 513D23 Switching actuator (relay), 3 x 6A

5WG1 513-4DB23

Switching actuator for independent switching of three lighting luminaire groups or other loads

- one relay contact (6A, AC 230V) per output as switching element,
- screwless terminals for connection and through-wiring of untreated single-core, stranded or multi-core conductors, 0.5 … 2.5mm²,
- bus-powered electronics,
- built-in device for mounting in a separately to be ordered Control Module Box AP 118 or Room Control Box AP 641

Functions (configuration with ETS)

- counting of operating hours with threshold monitoring of the operating hours,
- 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

Order number	Type	Applications	KNX PL-Link
5WG1 513-4DB23	RL 513D23	• Switching of lighting circuits or other loads • Installation in an AP 118 Control Module Box or an AP 641 Room Control Box	Yes

Purchased parts package

Module for installation in AP 118 Control Module Box or in AP 641 Room Control Box

Accessories

| Type	Order number	Description
	5WG1 118-4AB01	AP 118 Control Module Box
	5WG1 641-3AB01	AP 641 Room Control Box

Features

The RL 513D23 Switching actuator (relay) with mounting frame is a KNX device with three switching outputs. The device is installed in an AP 118 Control Module Box or an AP 641 Room Control Box. The bus is connected via a bus terminal block. The actuator electronics are supplied via the bus voltage.

Usage

The RL 513D23 can switch resistive loads (e.g. electrical heaters, incandescent lamps, high voltage halogen lamps), inductive loads (e.g. motor, low voltage halogen lamps with intermediate conventional transformers), or capacitive loads (e.g. low voltage halogen lamps with intermediate electronic transformers).

Functions (configuration with ETS)

The actuator output may be configured independently to provide switching, manual override, forced control, logical gate, and status reporting. Furthermore, if required, time-limited switching instead of permanent switching on can be enabled for each channel via an optional "Night mode" object (e.g. for lighting while cleaning), if need be with a warning before switching off by multiple switching the output on and off (flashing).
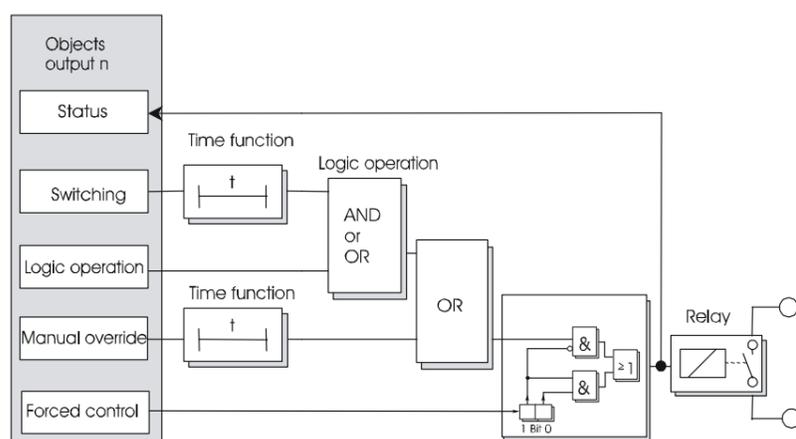
Amongst others, the application program includes optional a switching cycle and operating hours count with threshold monitoring for each output and an integrated 8-bit scene control, in which the output can be incorporated into up to 8 scenes.
Each output of the actuator may be set to one of the following operating modes:
- Normal operation
- Timer operation

Behavior at bus voltage failure / recovery

Because the device electronics are powered by bus voltage a mains power failure only leads to a functional failure of the actuator if the bus voltage fails due to a failure of the mains voltage.

Each actuator output is individually configurable regarding which switching position it shall take on bus voltage failure (Off, On, or No change) and which switching position it shall take on bus voltage recovery (Value prior to bus voltage failure, On, Off, or No change).

On bus voltage failure the current switching status value is saved for restoration on bus voltage recovery.

On bus voltage recovery the configured actions are executed and, if applicable, new status values are reported.

Building site function

The building site function provided ex-factory enables switching the building site lighting on and off via bus wall switches and actuators, even if these devices have not yet been commissioned with ETS.

Factory default state

In the default factory state all channels (outputs) are set to the function "switching" for the building site function.

Behavior on unloading the application program

When the application program is unloaded with ETS the device does not function.

Resetting the device to factory default settings

A very long push of the programming button (> 20 s) affects a reset to factory settings. This is indicated by constant flashing for 8 seconds.

All configuration settings are lost. The building site function is re-activated.

Addressing mode

A short push of learning button (< 2 s) enables the addressing mode. This is indicated by a continuously lit programming mode LED. A second push disables this mode.
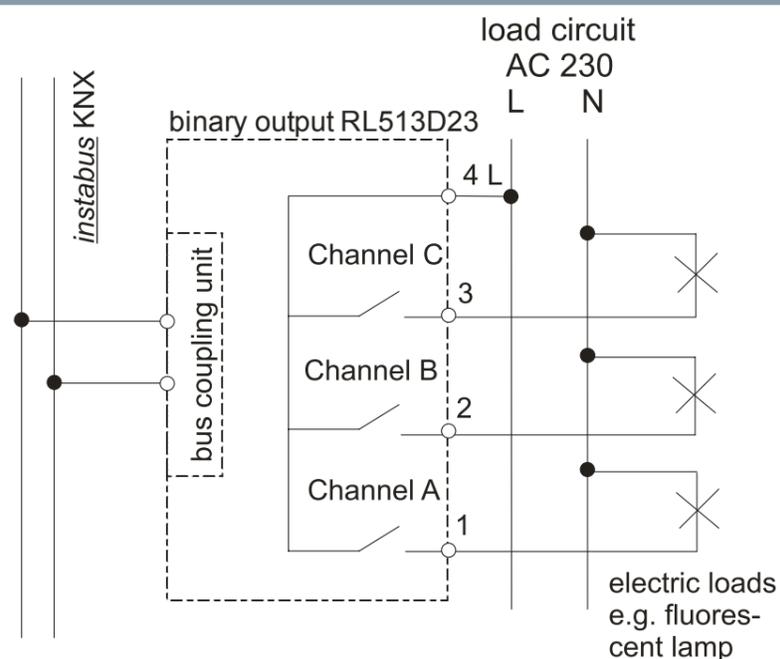
Note

A long push of the learning button (> 5 s and <20 s) enables the Connection Test for commissioning with Desigo. Any time this mode can be disabled by a short push of the learning button.
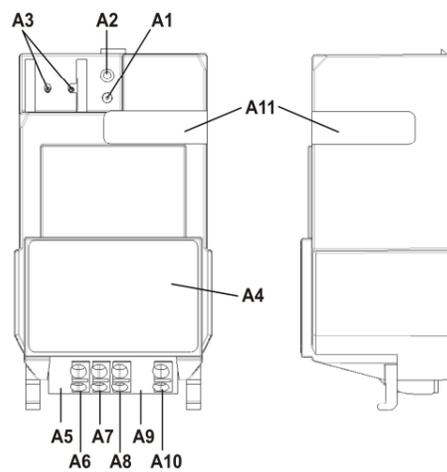
Application programs

The RL 513D23 Switching actuator (relay) needs the application program
"07 B0 A1 Switch actuator 982D02."

The device is configured and commissioned with the ETS (Engineering Tool Software) version ETS3 v3.0f or later.

Example of Operation

A1 LED for indicating normal operating mode (LED off) or addressing mode (LED on); returns to normal operating mode automatically after receiving the physical address

A2 Learning button for switching between normal operating mode and addressing mode and for receiving the physical address
A short push of learning button (< 2 s) enables the addressing mode. This is indicated by a continuously lit programming mode LED. A second push disables this mode.
Note: A long push of the learning button (> 5 s and <20 s) enables the Connection Test for commissioning with Desigo. Any time this mode can be disabled by a short push of the learning button.
Factory settings: A very long push of the learning button (> 20s) affects a reset to factory settings. This is indicated by constant flashing of the addressing LED for 8 seconds.

A3 Bus connection pins of the module for connection of the bus terminal block for single core conductors with 0.6...0.8 mm Ø

A4 Type label (with space for physical address of the actuator)

A5 Distance plate

A6 Terminal Channel A

A7 Terminal Channel B

A8 Terminal Channel C

A9 Distance plate

A10 Terminal L

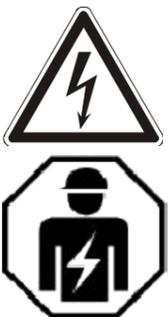A11 Identification number of the device

Product Documentation

Additional information like operating and mounting instruction, application program description, product database, additional software, product image, CE declaration etc. is available here:
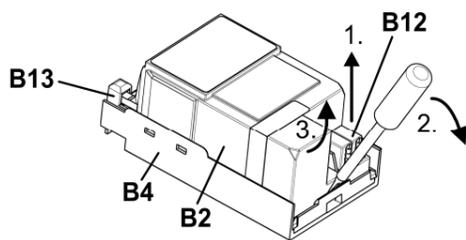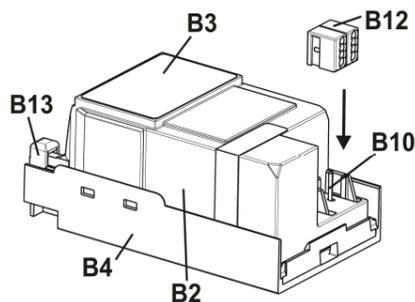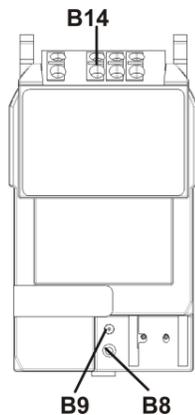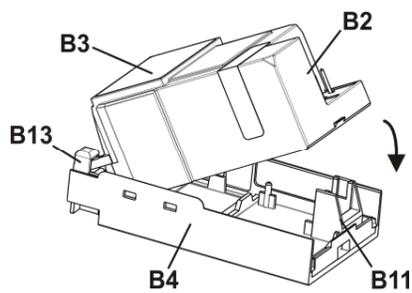
http://www.siemens.com/gamma-td

Installation Notes

Safety

- The device is intended for installation in an AP 118 Control Module Box or an AP 641 Room Control Box.

|	**DANGER**
⚡ 👷	• The device must be mounted and commissioned by an authorized electrician.
	• A safety disconnection of the device must be possible.
	• The device must not be opened.
	• For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
	• **When looping through the L-conductor, take care that the maximum permissible terminal load current of 16A is not exceeded!**

Mounting

RL module

B2   RL module
B3   Type label
B4   Mounting location for RS / RL module in AP 118 Control Module Box or AP 641 Room Control Box
B8   Learning button
B9   LED for indicating
        - normal operating mode (LED off),
        - programming mode (LED on)
B10   Bus connection pins of the module for connection of the associated bus terminal block of the internal bus wire
B11   Insertion point for bus terminal block
B12   Bus terminal block for single core conductors with 0.6 ... 0.8 mm $\varnothing$
B13   Hinge joint for mounting hinge of the RL module
B14   Terminals

Mounting of an RL module

- Remove the lid of the AP 118 Control Module Box respectively of the AP 641 Room Control Box.
- AP 641: Remove the SELV (Clas 2) cover
- Insert the RL module (B2) into the hinge (B13) of the mounting location (B4). The terminals (B14) point away from the insertion point for the bus terminal (B11). The typle label (B3) is on top.
- Swivel the RL module (B2) down until it audibly snapy into the mounting location (B4).
- Insert the bus terminal (B12) of the mounting location (B4) onto the bus connection pins (B10) of the RL module (B2).
- For assignment of the Phyiscal address press the learning button (B8) for a maximum of 2 seconds. The addressing mode is indicated when the LED is on (B9). It returns to normal operating mode (LED off) automatically after receiving the physical address.
- AP 641: Mount the SELV (class 2) cover again.
- Mount the lid again.

Dismounting an RL module

- Remove the lid of the AP 118 Control Module Box respectively of the AP 641 room control box.
- AP 641: Remove the SELV (Class 2) cover.
- Remove the wiring from the terminals (B14).
- Remove the bus terminal (B12).
- To remove the RL module (B2), insert a screw driver between the module and the mounting location on the bus terminal side and push it up to release it from the snap-in hooks.
- Swivel the RL module (B2) up, pull it down out of the hinge (B13) and remove it from the mounting location (B4).
- AP 641: Mount the SELV (class 2) cover again.
- Mount the lid again.
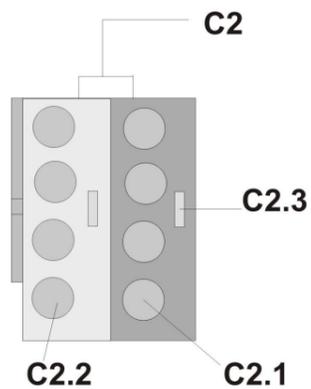
Slipping off/on bus connection blocks

The bus terminal block (C2) consists of two components (C2.1 and C2.2) with four terminal contacts each. Take care not to damage the two test sockets (C2.3) by accidentally connecting them to the bus cable or with the screw driver (e.g. when attempting to unplug the bus terminal block).

Slipping off bus connection blocks

- Carefully put the screw driver to the wire insertion slit of the bus terminal block's grey component (C2.2) and
- pull the bus terminal block (C2) from the module.

Note:
Don't try to remove the bus connection block from the bottom side. There is a risk of shorting-out the device!

Slipping on bus connection blocks

- Slip the bus terminal block (C2) onto the guide slot of the module and
- press the bus terminal block (C2) down to the stop.
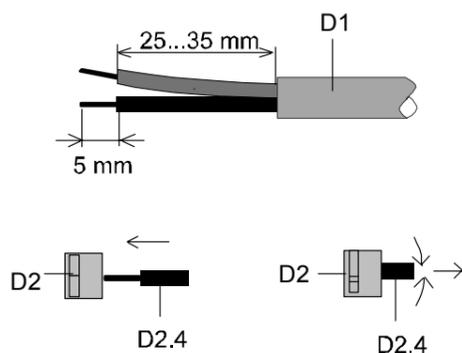
Connecting bus cables

- The bus terminal block (D2) can be used with single core conductors Ø 0.6 ... 0.8 mm.
- Remove approx. 5 mm of insulation from the conductor (D1) and plug it into the bus terminal block (D2) (red = +, grey = -)

Disconnecting bus cables

- Unplug the bus terminal block (D2) and remove the bus cable conductor (D2.4) while simultaneously wiggling it.

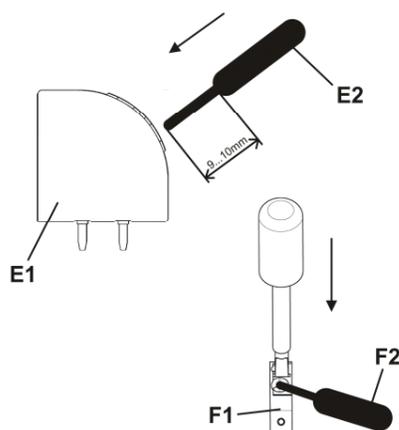## Connecting/disconnecting mains and load circuit

Connect wires

- The load circuits are connected via screwless plug-in terminals (E1).
- Remove approx. 9...10 mm of insulation from the wire (E 1.1) and plug it into the terminal (E1).
- The terminals are designed for connection of two wires allowing to loop through the terminal block.

Note: The maximum permissible terminal load current is 16A.

Remove wires

Press the terminal interlocking of the terminal (F1) with a screw-driver and remove the wire (F2) from the terminal (F1).

Power Supply	
Power Supply	via the bus line
KNX bus voltage	DC 24V (DC 21...30V) via KNX/EIB bus line
KNX bus current	< 10 mA
Thermal dissipation los	Device: 0.15 W (=min. total thermal dissipation loss) per output: $0.022 * (I_{eff})^2$ [W] min. total thermal dissipation loss: 0.15 W(load: 0A) max. total thermal dissipation loss: 2.09 W (load: 2x 6A, 1x 4A)

Outputs	
Number	3 outputs
Switching output, potential-free relay contacts	- rated voltage: AC 230V, 50/60 Hz - rated current: 6A (resistive load) - switching current at AC 230V: 0.01 ... 6A resistive load - switching current at DC 24V: 6A resistive load 4A inductive load (4R=7ms) - max. relay position changes per minute: 60
Switching characteristic	Set in parameter list according to application program

| Switching capacity at AC 230V	
For incandescent lamp load	max. 1000W
For fluorescent lamp load (LL)	- uncompensated LL, $\cos\varphi = 0.5$: max. 500W - parallel compensated LL, $\cos\varphi = 1$ (at $C_{ges} <= 14\mu F$): 2 x 58W or 3 x 36W or 6 x 18W - Duo-configuration, $\cos\varphi = 1$: max. 1000W - OSRAM ECG for 58W LL: max. 10 pieces - OSRAM ECG for 36W LL: max. 15 pieces - OSRAM EVG for 18W LL: max. 20 pieces

Display elements	
1 red LED	for monitoring bus voltage and for displaying normal mode / addressing mode

Control elements	
1 learning button	for switching between normal operating mode and addressing mode

Connections	
Bus line	bus connection pins for connection of the screwless bus terminal block (red-black), 0.6 ... 0.8 mm Ø single-core, strip insulation 5mm
Load circuit	screwless terminals 0.5 ... 2.5 mm² single-core, stranded or multi-core, untreated, strip insulation 9 ... 10 mm

Physical specifications	
Housing	plastic
Dimensions (L x W x D)	86.5 x 47.8 x 36.2 mm
Weight	approx. 62 g
Fire load	approx. 2 MJ
Installation	Mounting location for RS / RL module in AP 118 Control Module Box (5WG1 118-4AB01) or AP 641 Room Control Box (5WG1 641-3AB01)

Environment and safety regulations	
Degree of pollution (according to IEC 60664-1) Overvoltage category (according to IEC 60664-1)	2 III
Protection type (in accordance with EN 60529)	IP 20
Electrical Safety Bus Device complies with Relay Electromagnetic compatibility	 safety extra low voltage SELV DC 24V EN 50428 with µ- contact complies with EN 50428
Environmental conditions Climatic conditions Ambient operating temperature Storage temperature Relative humidity (not condensing)	 EN 50090-2-2 -5...+45℃ -25 ... +70℃ 5 % to 93%
Reliability Failure rate	 395 fit at 40 ℃
Markings	KNX *EIB*
CE mark	Complies with the EMC regulations (residential and functional buildings), low voltage regulations, and RoHS Directive

Dimensions in mm
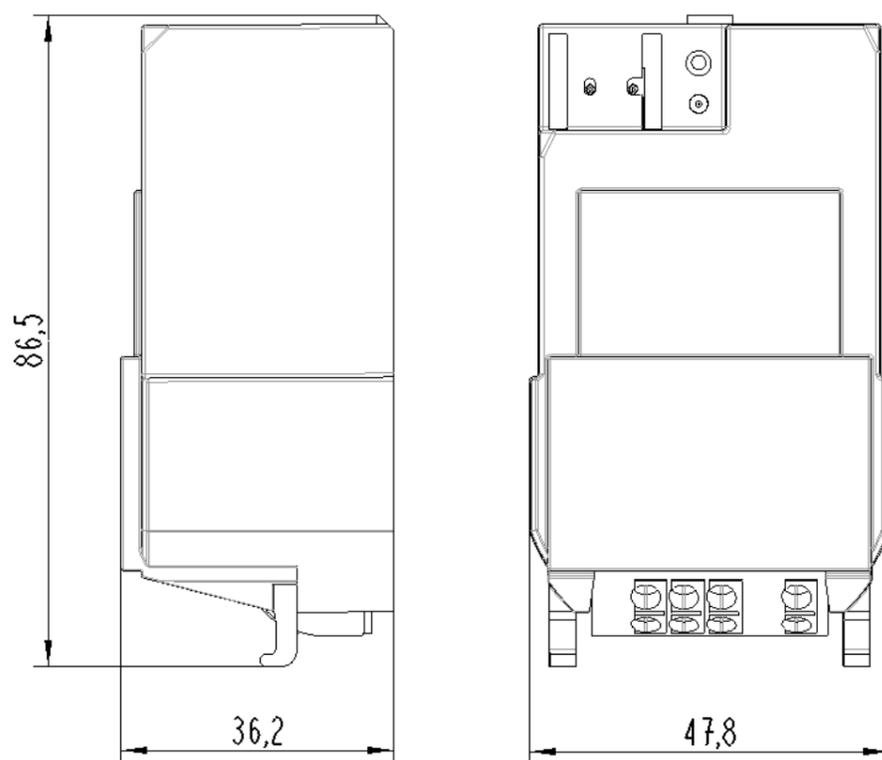
Support

General Notes

- The operating instructions must be handed over to the client.
- A faulty device shall be returned with a Return Good Note for Service provided by the appropriate Siemens sales office.
- If you have further questions concerning the product please contact our technical support.

☎   +49 (911) 895-7222

🖷   +49 (911) 895-7223

✉   support.automation@siemens.com

www.siemens.de/automation/support-request

August 2015