ABB i-bus® KNX
Switch Actuator, x-fold, 16 A-AC1, MDRC
SA/S x.16.2.1, 2CDG 110 0x R0011

2CDC 071 017 S0012

SA/S 8.16.2.1

The 16 A Switch actuators SA/S x.16.2.1 are modular installation devices in Pro *M* Design for installation in the distribution board. The devices are especially suitable for switching resistive loads.

Manual actuation of the switch actuator is possible using a button. This simultaneously indicates the switching state.

The Switch actuators can switch up to 12 independent electrical loads via floating contacts. The connection of the outputs is implemented using universal head screw terminals. Each output is controlled separately via the KNX.

The device does not require an additional power supply and is ready for immediate use, after the bus voltage has been applied. The Switch actuators are parameterized via the ETS. The connection to the KNX is implemented using the bus connection terminal on the front.

Technical data

Supply	KNX bus voltage	21...31 V DC			
	Current consumption via bus	< 12 mA			
	Power consumption via bus	Maximum 250 mW			
Output nominal values	SA/S type	2.16.2.1	4.16.2.1	8.16.2.1	12.16.2.1
	Current detection	no	no	no	no
	Number (floating contacts 2 per group)	2	4	8	12
	U_n rated voltage	250/440 V AC (50/60 Hz)			
	I_n rated current	16 A	16 A	16 A	16 A
	Leakage loss per device at max. load	2.0 W	4.0 W	8.0 W	12.0 W
Output switching current	AC3[1] operation (cos φ = 0.45) EN 60 947-4-1	8 A/230 V AC			
	AC1[1] operation (cos φ = 0.8) EN 60 947-4-1	16 A/230 V AC			
	Fluorescent lighting load AX to EN 60 669-1	16 AX/250 V (70 µF) [2]			
	Minimum switching power	100 mA/12 V AC 100 mA/24 V AC			
	DC current switching capacity (resistive load)	16 A/24 V AC			
Output service life	Mechanical service life	> 3 x 10^6			
	Electronic endurance to IEC 60 947-4-1				
	AC1[1] (240 V/cos φ = 0.8)	> 10^5			
	AC3[1] (240 V/cos φ = 0.45)	> 3 x 10^4			
	AC5a[1] (240 V/cos φ = 0.45)	> 3 x 10^4			
Output switching times [3]		2.16.2.1	4.16.2.1	8.16.2.1	12.16.2.1
	Maximum relay position change of output and minute if all relays are switched simultaneously. The position changes should be distributed equally within the minute.	60	30	15	10
	Maximum relay position change per output and minute if only one relay is switched.	120	120	120	120

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Connections	KNX	Via bus connection terminals 0.8 mm Ø, solid			
	Load current circuits (1 terminal per relay)	Universal head screw terminal (PZ 1) 0.2…4 mm² stranded, 2 x 0.2…2.5 mm² 0.2…6 mm² solid, 2 x 0.2…4 mm²			
	Ferrules without/with plastic sleeves	0.25...2.5/4 mm²			
	TWIN ferrules	0.5...2.5 mm² Contact pin length min. 10 mm			
	Tightening torque	Maximum 0.6 Nm			
Operating and display elements	Programming button/LED	For assignment of the physical address			
	Switch position display	Relay operator			
Enclosure	IP 20	To EN 60 529			
Safety class	II	To EN 61 140			
Insulation category	Overvoltage category	III to EN 60 664-1			
	Pollution degree	2 to EN 60 664-1			
KNX safety extra low voltage	SELV 24 V DC				
Temperature range	Operation	-5 °C…+45 °C			
	Storage	-25 °C…+55 °C			
	Transport	-25 °C…+70 °C			
Ambient conditions	Maximum air humidity	95 %, no condensation allowed			
Design	Modular installation device (MDRC)	Modular installation device, Pro *M*			
	SA/S type	2.16.2.1	4.16.2.1	8.16.2.1	12.16.2.1
	Dimensions	90 x W x 64.5 mm (H x W x D)			
	Width W in mm	36	72	144	216
	Mounting width in space units (modules at 18 mm)	2	4	8	12
	Mounting depth in mm	64.5	64.5	64.5	64.5
Weight	in kg	0.15	0.25	0.46	0.65
Installation	On 35 mm mounting rail	To EN 60 715			
Mounting position	as required				
Housing/colour	Plastic housing, grey				
Approvals	KNX to EN 50 090-1, -2	Certification			
CE mark	In accordance with the EMC guideline and low voltage guideline				

[1] Further information concerning electronic endurance to IEC 60 947-4-1 can be found at in the product manual: AC1, AC3, AX, C-Load specifications.

[2] The maximum peak inrush current may not be exceeded, see product manual: Lamp load output.

[3] The specifications apply only after the bus voltage has been applied to the device for at least 30 seconds. Typical delay of the relay is approx. 20 ms.

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Output lamp load 16 A

Lamps	Incandescent lamp load	2500 W
Fluorescent lamps T5/T8	Uncorrected	2500 W
	Parallel compensated	1500 W
	DUO circuit	1500 W
Low-voltage halogen lamps	Inductive transformer	1200 W
	Electronic transformer	1500 W
	Halogen lamps 230 V	2500 W
Dulux lamps	Uncorrected	1100 W
	Parallel compensated	1100 W
Marcury-vapour lamps	Uncorrected	2000 W
	Parallel compensated	2000 W
Switching capacity (switching contact)	Maximum peak inrush current I_p (150 µs)	400 A
	Maximum peak inrush current I_p (250 µs)	320 A
	Maximum peak inrush current I_p (600 µs)	200 A
Number of electronic ballasts (T5/T8, single element)[1)]	18 W (ABB EVG 1 x 18 CF)	23
	24 W (ABB EVG-T5 1 x 24 CY)	23
	36 W (ABB EVG 1 x 36 CF)	14
	58 W (ABB EVG 1 x 58 CF)	11
	80 W (Helvar EL 1 x 80 SC)	10

[1)] For multiple element lamps or other types, the number of electronic ballasts must be determined using the peak inrush current of the electronic ballasts, see product manual: Ballast calculation.

Device type	Application program	Max. number of communication objects	Max. number of group addresses	Max. number of associations
SA/S 2.16.2.1	Switch 2f 16A/…*	34	254	254
SA/S 4.16.2.1	Switch 4f 16A/…*	64	254	254
SA/S 8.16.2.1	Switch 8f 16A/…*	124	254	254
SA/S 12.16.2.1	Switch 12f 16A/…*	184	254	254

* … = current version number of the application program. **Please observe the software information on our homepage for this purpose.**

Note

For a detailed description of the application program see the "*Switch Actuator SA/S*" product manual. It is available free-of-charge at *www.abb.com/knx*.

The ETS and the current version of the device application program are required for programming.

The current application program is available for download on the internet at *www.abb.com/knx*. After import in the ETS, it is available in the ETS under *ABB/Output/Binary output xf 16A/…** (x = 2, 4, 8 or 12).

The device does not support the locking function of a KNX device in the ETS. If you inhibit access to all devices of the project with a *BCU code*, it has no effect on this device. Data can still be read and programmed.

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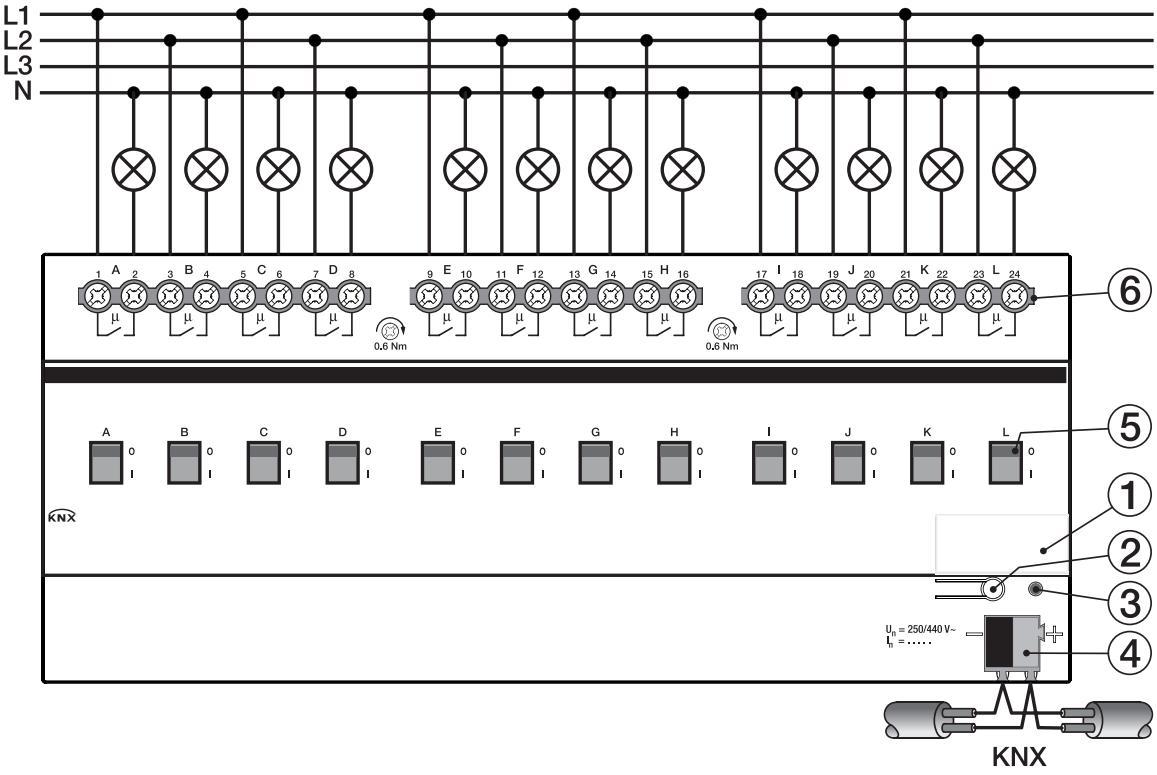
Circuit diagram

SA/S x.16.2.1



2CDC 072 086 F0011

1 Label carrier
2 Button *Programming*
3 LED *Programming* ● (red)
4 Bus connection terminal
5 Switch position display and manual operation
6 Load current circuits, for every 2 connection terminals

Danger

Touch voltages.

Danger of injury.

Observe all-pole disconnection.

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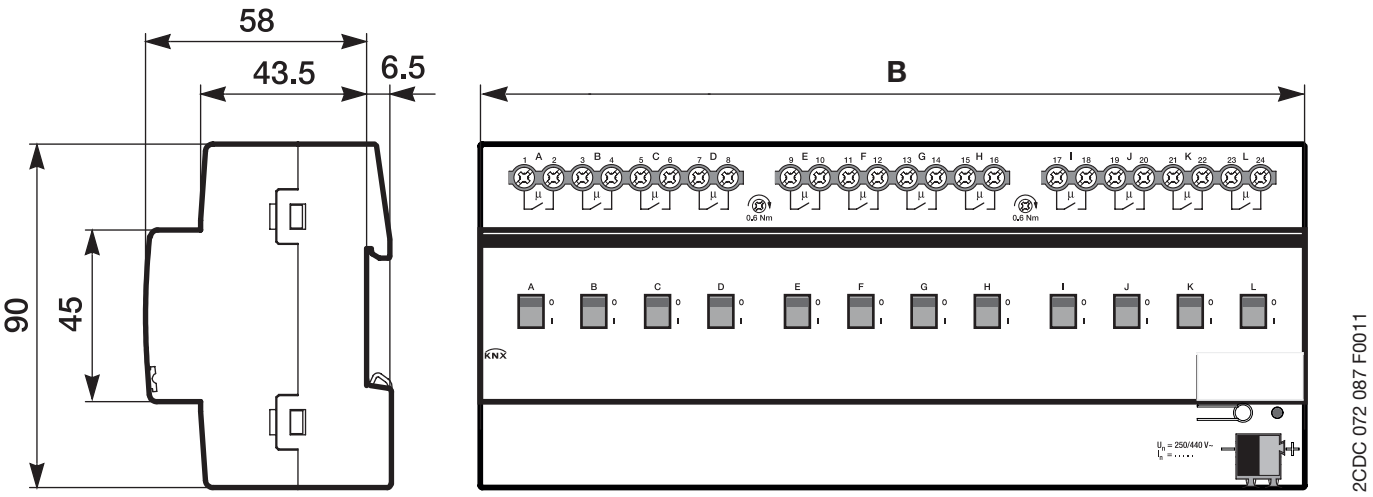
Dimension drawing

SA/S x.16.2.1



	SA/S 2.16.2.1	SA/S 4.16.2.1	SA/S 8.16.2.1	SA/S 12.16.2.1
Width W	36 mm	72 mm	144 mm	216 mm
Mounting width (modules at 18 mm)	2 space units	4 space units	8 space units	12 space units

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Notes