Switch Actuator, x-fold, 10 AX, MDRC SA/S x.10.1, 2CDG 110 0xx R0011

The 10 A Switch Actuators are modular installation devices in pro*M* design for installation in the distribution board on 35 mm mounting rails.
The connection to the ABB i-bus® EIB / KNX is implemented via a Bus Connection Terminal.

The device does not require an additional power supply.

The actuators switch up to 12 independent electrical loads via potential free contacts. The outputs are connected using screw terminals with combination drive head screws. Each output is controlled separately via the EIB / KNX.

The switch actuators can be manually operated via an operating element which simultaneously indicates the switch status. The actuators are particularly suitable for switching ohmic loads, inductive and capacitive loads as well as fluorescent lamp loads (AX) according to EN 60669.

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Technical data

Power supply	– Operating voltage	21...30 V DC, made available by the bus			
	– Current consumption EIB / KNX	< 12 mA			
	– Power consumption EIB / KNX	Max. 250 mW			
Output nominal values	– SA/S - type	2.10.1	4.10.1	8.10.1	12.10.1
	– Number of contacts (potential free)	2	4	8	12
	– U_n rated voltage	250 / 440 V AC (50/60 Hz)			
	– I_n rated current	10 AX	10 AX	10 AX	10 AX
	– Power loss per device at max. load	1.5 W	2.5 W	4.5 W	6.5 W
Output switching currents	– AC3 operation (cosφ = 0.45) EN 60 947-4-1	8 A / 230 V			
	– AC1 operation (cosφ = 0.8) EN 60 947-4-1	10 A / 230 V			
	– Fluorescent lighting load AX to EN 60669-1	10 AX / 250 V (140 µF) [2]			
	– Minimum switching performance	100 mA / 12 V 100 mA / 24 V			
	– DC current switching capacity (ohmic load)	10 A / 24 V DC			
Output life expectancy	– Mechanical endurance	> 3 x 10^6			
	– Electrical endurance to IEC 60 947-4-1			Operations (state change)	
	– AC1(240 V/cosφ = 0.8)	> 10^5			
	– AC3 (240 V/cosφ = 0.45)	> 3 x 10^4			
	– AC5a (240 V/cosφ = 0.45)	> 3 x 10^4			
Output switching times [1]	– Max. number of relay position changes per output and minute, if all relays are switched simultaneously. The position changes should be distributed equally within the minute.	2.10.1 60	4.10.1 30	8.10.1 15	12.10.1 10
	– Max. number of relay position changes per output, and minute if only one relay is switched	120	120	120	120
Connections	– EIB / KNX	Bus Connection Terminal, 0.8 mm Ø, single core			
	– Load current circuits (2 terminals per contact)	Screw terminal with universal head (PZ 1) 0.2...4 mm² finely stranded, 2x (0.2 – 2.5 mm²) 0.2...6 mm² single core, 2x (0.2 – 4 mm²)			
	– Tightening torque	Max. 0.8 Nm			
Operating and display elements	– Red LED and EIB / KNX push button	for assignment of the physical address			
	– Contact position indication	Relay lever			
Housing	– IP 20	to EN 60 529			
Safety class	– II	to EN 61 140			
Isolation category	– Overvoltage category	III to EN 60 664-1			
	– Pollution degree	2 to EN 60 664-1			

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

[2] The maximum inrush-current peak (see table 2) may not be exceeded.

Table 1 – Part 1: 10 A Switch Actuator SA/S x.10.1, technical data

EIB / KNX voltage	– SELV 24 V DC (safety extra low voltage)				
Temperature range	– Operation	– 5 °C ... + 45 °C			
	– Storage	– 25 °C ... + 55 °C			
	– Transport	– 25 °C ... + 70 °C			
Design	– Modular DIN-Rail Component (MDRC)	Modular installation device, Pro*M*			
	– SA/S - type	2.10.1	4.10.1	8.10.1	12.10.1
	– Dimensions (H x W x D)	90 x W x 64			
	– Width W in mm	36	72	144	216
	– Mounting width (modules at 18 mm)	2	4	8	12
	– Mounting depth in mm	64	64	64	64
Weight	– In kg	0.15	0.25	0.46	0.65
Installation	– On 35 mm mounting rail	EN 60 715			
Mounting position	– As required				
Housing, colour	– Plastic housing, grey				
Approvals	– EIB / KNX nach EN 50 090-2-2	Certification			
CE mark	– In accordance with the EMC guideline and low voltage guideline				

Table 5 – Part 2: 10 A Switch Actuator SA/S x.10.1, technical data

Lamp loads

Lamps	– Incandescent lamp load	2330 W
Fluorescent lamp T5 / T8	– Uncompensated luminaire	2300 W
	– Parallel compensated	1500 W
	– DUO circuit	1500 W
Low-volt halogen lamps	– Inductive transformer	1200 W
	– Electronic transformer	1500 W
	– Halogen lamp 230V	2300 W
Dulux lamp	– Uncompensated luminaire	1100 W
	– Parallel compensated	1100 W
Mercury-vapour lamp	– Uncompensated luminaire	2000 W
	– Parallel compensated	2000 W
Switching performance (switching contact)	– Max. peak inrush-current I_p (150 µs)	400 A
	– Max. peak inrush-current I_p (250 µs)	320 A
	– Max. peak inrush-current I_p (600 µs)	200 A
Number of electronic ballasts (T5/T8, single element) [1]	– 18 W (ABB EVG 1x58 CF)	23
	– 24 W (ABB EVG-T5 1x24 CY)	23
	– 36 W (ABB EVG 1x36 CF)	14
	– 58 W (ABB EVG 1x58 CF)	11
	– 80 W (Helvar EL 1x80 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.

Table 2: Lamp load for SA/S x.10.1

Application programs

Type	Name	Max. number of communication objects	Max. number of group addresses	Max. number of associations
SA/S 2.10.1S	Switch, 2f10/1	24	254	254
SA/S 4.10.1S	Switch, 4f10/1	64	254	254
SA/S 8.10.1S	Switch, 8f10/1	124	254	254
SA/S 12.10.1	Switch, 12f10/1	184	254	254

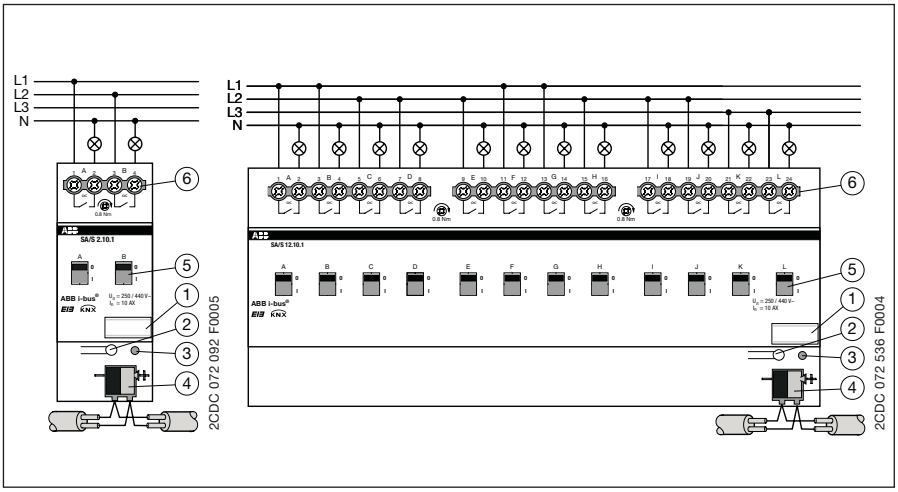
Table 3: Application programs SA/S x.10.1

Note: The programming requires the EIB Software Tool ETS2 V1.3 or higher. If the ETS3 is used a ".VD3" type file must be imported.

The application program is located within the ETS2 / ETS3 in the category ABB/output/Binary output, x-fold/switch, xf10/1 (x = 2, 4, 8 or 12, number of outputs).

Detailed information about the application can be found in the product manual for the "Switch Actuators SA/S".
This manual can be free downloaded under www.abb.de/eib.

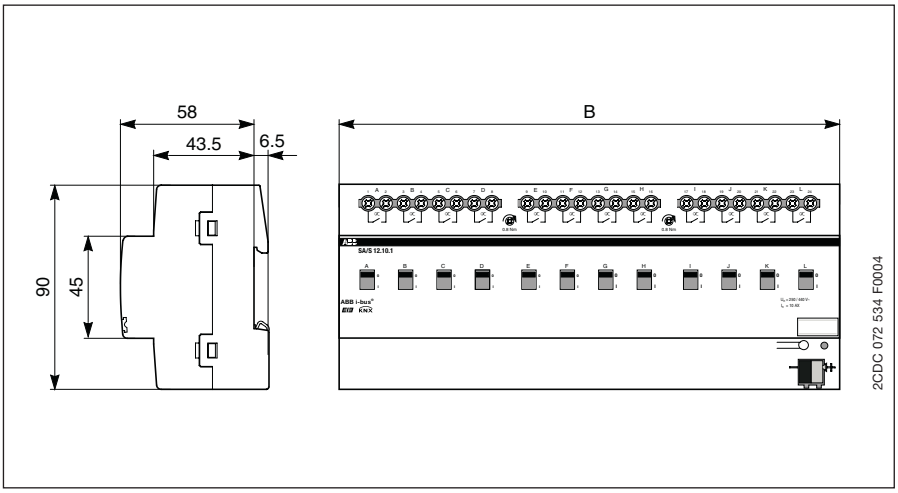
Wiring diagram



1 Label carrier
2 Programming button
3 Programming LED
4 Bus Connection Terminal
5 Contact position indication and manual operation
6 Load current circuits, per circuit 2 connection terminals

Note: All-pole disconnection must be observed in order to avoid dangerous contact voltage which can develop via loads in other phases.

Dimension drawings



	SA/S 2.10.1	SA/S 4.10.1	SA/S 8.10.1	SA/S 12.10.1
B	36 mm 2 module widths	72 mm 4 module widths	144 mm 8 module widths	216 mm 12 module widths

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