

TECHNICAL DATA

# ABB i-bus<sup>®</sup> KNX

## SAH/S 24.6.7.1

### Switch/Shutter Actuator



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**Product description**

The Switch/Shutter Actuator is a modular installation device in proM design. The device is designed for installation in electrical distribution boards and small housings for rapid mounting on a 35-mm mounting rail (to EN 60715).

The device possesses mutually independent switching relays with which the following functions can be implemented:

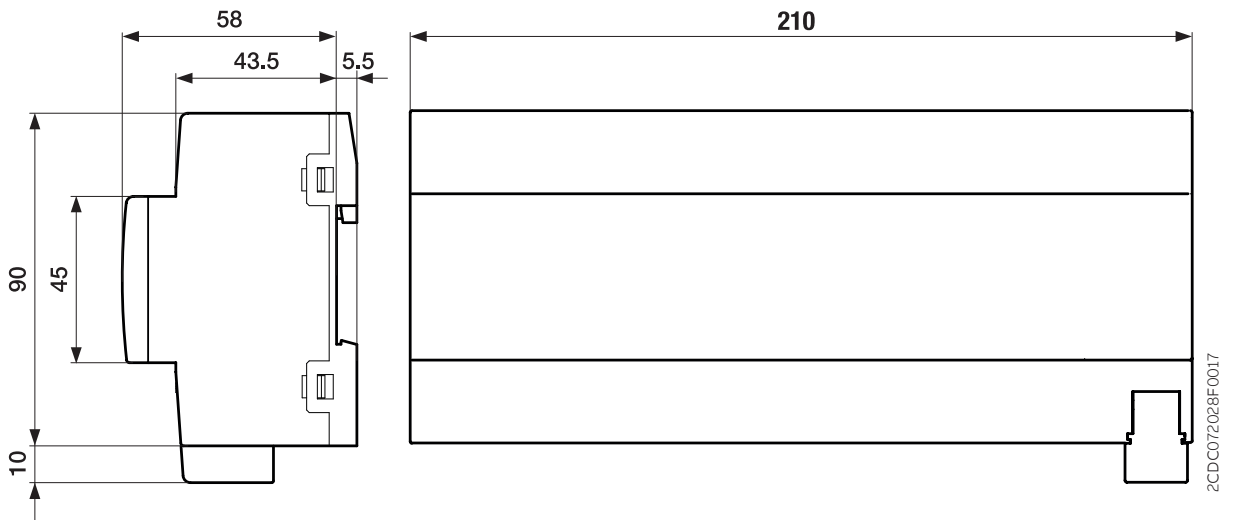
- Switching electric consumers (individually)
- Activation of 230 V AC blind and shutter drives (in pairs)

The device does not possess any mutually electromechanically interlocked output contacts.

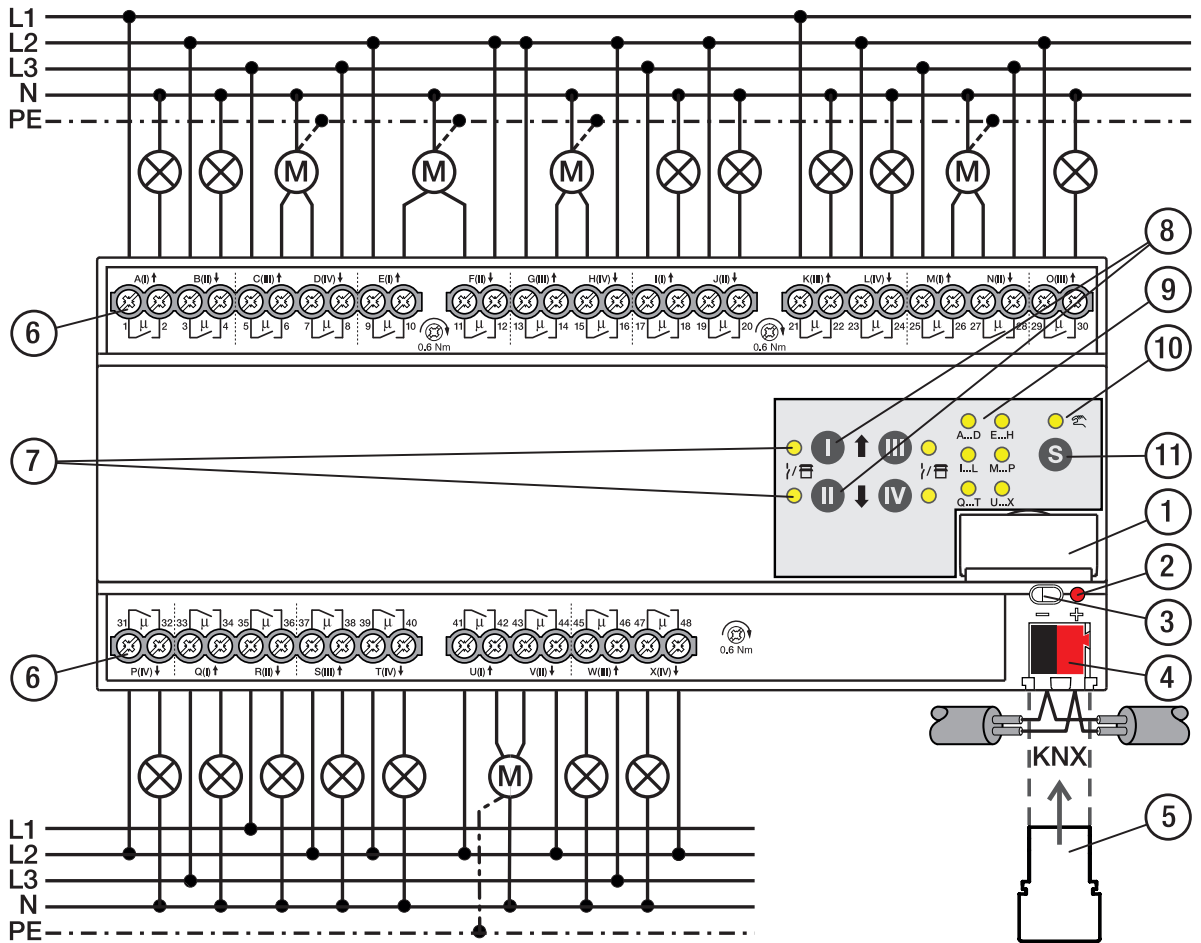
The device is provided with bus voltage via the ABB i-bus® KNX. The connection to the ABB i-bus® KNX is implemented using the bus connection terminal. The consumers are connected at the outputs using screw terminals (terminal designation on the housing).

*Manual operation* mode permits on-site operation of the device using a membrane keypad.

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**Dimension drawing**



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**Connection diagram**



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**Legend**

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|--|--|
| 1 Label carriers                         | 7 Output status LED (yellow)                   |
| 2 Programming LED                        | 8 Output button                                |
| 3 Programming button                     | 9 Groups LED (yellow)                          |
| 4 Bus connection terminal                | 10 Manual operation LED (yellow)               |
| 5 Cover cap                              | 11 S button (manual operation / select output) |
| 6 Load circuit, two screw terminals each |  |

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General technical data

<b>Supply</b>	Bus voltage	21 ... 32 V DC
	Current consumption, bus	< 12 mA
	Power loss, bus	Max. 250 mW
	Power loss, device	7.5 W
<b>Connections</b>	KNX	Ø 0.8 mm single core (via bus connection terminal)
<b>Connection terminals</b>	Screw terminal	Screw terminal with universal head (PZ 1) 0.2 ... 4 mm <sup>2</sup> stranded, 2 × (0.2 ... 2.5 mm <sup>2</sup> ) 0.2 ... 6 mm <sup>2</sup> single core, 2 × (0.2 ... 4 mm <sup>2</sup> )
	Ferrule without plastic sleeve	0.25 ... 2.5 mm <sup>2</sup>
	Ferrule with plastic sleeve	0.25 ... 4 mm <sup>2</sup>
	TWIN ferrules	0.5 ... 2.5 mm <sup>2</sup>
	Ferrule contact pin length	Min. 10 mm
	Tightening torque	Max. 0.6 Nm
	<b>Degree of protection and protection class</b>	Degree of protection
<b>Isolation category</b>	Protection class	II to EN 61140
	Overvoltage category	III to EN 60664-1
	Pollution degree	II to EN 60664-1
	Fire classification	Flammability V-0 as per UL94
<b>SELV</b>	KNX safety extra low voltage	SELV 24 V DC
<b>Temperature range</b>	Operation	-5 ... +45 °C
	Transport	-25 ... +70 °C
	Storage	-25 ... +55 °C
<b>Ambient conditions</b>	Maximum air humidity	95 %, no condensation allowed
<b>Design</b>	Modular installation device (MDRC)	Modular installation device
	Design	proM
	Housing/color	Plastic, gray
<b>Dimensions</b>	Dimensions	90 × 210 × 63.5 mm (H × W × D)
	Mounting width in space units	12 modules
	Mounting depth	63.5 mm
<b>Mounting</b>	35 mm mounting rail	To EN 60715
	Mounting position	Any
	Weight (net)	0.72 kg
<b>Approvals</b>	KNX certification	To EN 50090-1, -2
	CE marking	In accordance with the EMC and Low Voltage Directives

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Device type

<b>Device type</b>	Switch/Shutter Actuator	SAH/S 24.6.7.1
	Application	Switch/Shutter 24f 16 A / ... ... = current version number of the application
	Maximum number of group objects	610
	Maximum number of group addresses	1,000
	Maximum number of assignments	1,000

**i Note**  
Observe software information on the website → [www.abb.com/knx](http://www.abb.com/knx).

**i Note**  
The device supports the locking function of a KNX device in ETS. If a BCU code was assigned, the device can be read and programmed only with this BCU code.

## Output, rated current 6 A

<b>Rated values</b>	Number of outputs	24 switch / 12 shutter
	U <sub>n</sub> Rated voltage	230 V AC (50/60 Hz)
	I <sub>n</sub> Rated current	6 A
	Maximum current per device	24 × 6 A
<b>Switching currents</b>	AC3 operation (cos φ= 0.45) to EN 60947-4-1	6 A / 230 V AC
	AC1 operation (cos φ= 0.8) to EN 60947-4-1	6 A / 230 V AC
	Fluorescent lighting load according to EN 60669-1	
	minimum switching current at 12 V AC	100 mA
	minimum switching current at 24 V AC	100 mA
<b>Service life</b>	DC switching capacity, resistive load, at 24 V DC	6 A
	Mechanical service life	> 10 <sup>6</sup> cycles
	Electrical endurance of switching contacts according to IEC 60 947-4-1:	
	AC1 (240 V/cos φ=0.8)	> 10 <sup>5</sup> cycles
<b>Switching times</b>	AC3 (240 V/cos φ=0.45)	> 6 × 10 <sup>3</sup> cycles
	AC5a (240 V/cos φ=0.45)	
	Maximum output relay position changes per minute if all relays are switched.	5
	Maximum output relay position changes per minute if only one relay is switched.	120

### **Note**

The switching times apply only after the bus voltage has been applied to the device for at least 30 seconds. The typical relay delay is approx. 20 ms.

## Output, lamp load 6 A

<b>Lamps</b>	Incandescent lamp load	1,200 W
<b>Fluorescent lamps</b>	Uncompensated	800 W
	Parallel compensated	
	DUO circuit	
<b>Low-voltage halogen lamps</b>	Inductive transformer	800 W
	Electronic transformer	1,000 W
	Halogen 230 V	1,000 W
<b>Dulux lamp</b>	Uncompensated	
	Parallel compensated	
<b>Mercury-vapor lamp</b>	Uncompensated	1,000 W
	Parallel compensated	800 W
<b>Switching capacity (switching contact)</b>	Maximum peak inrush current I <sub>p</sub> (150 ms)	200 A
	Maximum peak inrush current I <sub>p</sub> (250 ms)	160 A
	Maximum peak inrush current I <sub>p</sub> (600 ms)	100 A
<b>Number of ballasts (T5/T8, single element)</b>	18 W (ABB ballast 1 × 18 SF)	10
	24 W (ABB ballast T5 1 × 24 CY)	10
	36 W (ABB ballast 1 × 36 CF)	7
	58 W (ABB ballast 1 × 58 CF)	5
	80 W (Helvar EL 1 × 80 SC)	3
<b>Energy-saving lamps</b>	LED lamps	250 W
<b>Rated motor power</b>		1,380 W

### **Note**

The device features independent switching relays that are linked by software to control the shutters. The contacts are not mutually electromechanically interlocked.

**i Note**

The peak inrush current  $I_p$  is the typical ballast load current that results during switching. Using the peak inrush current  $I_p$ , it is possible to calculate the maximum number of switchable ballasts at the Switch Actuator output for the various ballast types. The number of ballasts specified in the table can be only a sample guide value.

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**Ordering details**

Description	MB	Type	Order no.	Packaging unit [pcs.]	Weight 1 pc. (gross) [kg]
Switch/Shutter	12	SAH/S 24.6.7.1	2CDG 110 246 R0011	1	0.720



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