

TECHNICAL DATA

# ABB i-bus<sup>®</sup> KNX

## SA/S 12.16.5.2

### Switch Actuator



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### Device description

The device is a modular installation device (MDRC) in *proM* design. It is designed for installation in electrical distribution boards and small housings with a 35 mm mounting rail (to EN 60715).

The device is KNX-certified and can be used as a product in a KNX system → EU declaration of conformity.

The device is powered via the bus (ABB i-bus® KNX) and requires no additional auxiliary voltage supply. The connection to the bus is made via a bus connection terminal on the front of the housing. The loads are connected to the outputs using screw terminals → terminal designation on the housing.

The software application Engineering Tool Software (ETS) is used for physical address assignment and parameterization.

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### **Device functions**

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

- Switching electrical loads with high peak inrush currents in single- or multi-phase electrical networks

On-site operation of the outputs is possible using toggle switches.

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**Connections**

- The devices possess the following connections:
- Depending on the device type, 2, 4, 8 or 12 relay outputs for switching electrical loads
  - 1 bus connection

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**Inputs**

This section is not relevant for these devices.

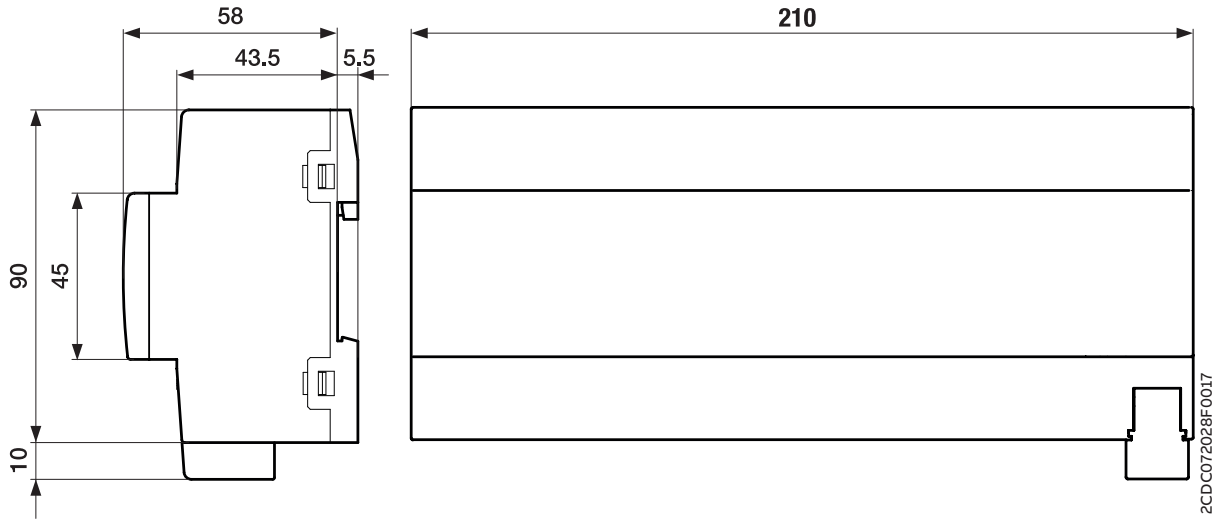
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**Outputs**

**ⓘ Note**  
A device with 12 channels (A ... L) is described below.

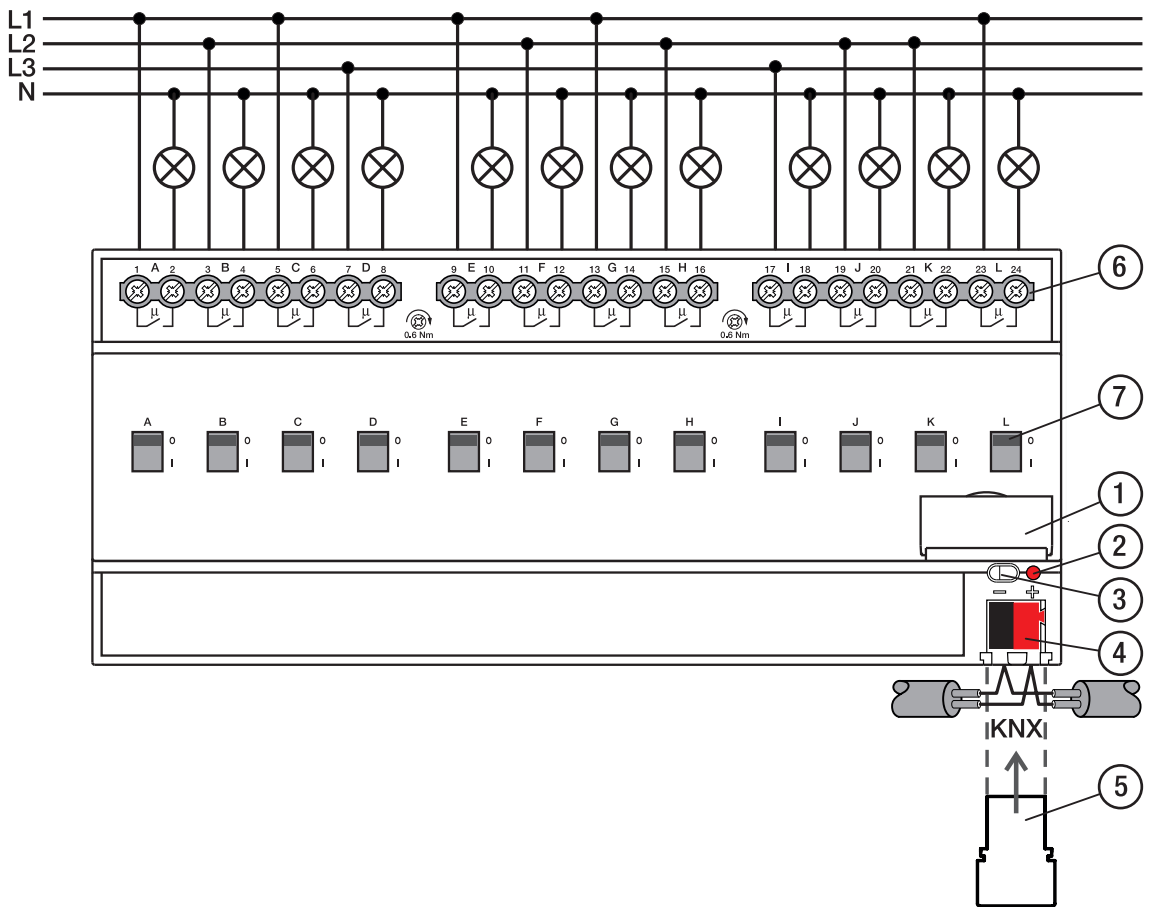
The outputs can be used individually to switch electrical loads.

Function	A	B	C	D	E	F	G	H	I	J	K	L
Switch	x	x	x	x	x	x	x	x	x	x	x	x

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**Dimension drawing**



**Connection diagram**





**Legend**

- |                             |  |
|-----------------------------|--|
| 1 Label carriers            | 5 Cover cap                              |
| 2 <i>Programming</i> LED    | 6 Load circuit, two screw terminals each |
| 3 <i>Programming</i> button | 7 Toggle switches                        |
| 4 Bus connection terminal   |  |

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## Operating and display elements

Operating control/LED	Description/function	Display
	Assignment of the physical address	LED On: Device in programming mode
<i>Programming button/LED</i>		
	Switching of the output: <ul style="list-style-type: none"> <li>• 1 = Switch on</li> <li>• 0 = Switch off</li> </ul>	Indication of the contact position: <ul style="list-style-type: none"> <li>• 1 = Closed</li> <li>• 0 = Open</li> </ul>
Toggle switches		

## General technical data

<b>Device</b>	Dimensions	90 × 210 × 63.5 mm (H x W x D)
	Mounting width in space units	12 modules, 17.5 mm each
	Weight	0.68 kg
	Mounting position	Any
	Mounting variant	35 mm mounting rail
	Design	ProM
	Degree of protection	IP 20
	Protection class	II
	Overtoltage category	III
	Pollution degree	2
<b>Materials</b>	Housing	Polycarbonate, Makrolon FR6002, halogen free
<b>Material note</b>	Fire classification	Flammability V-0
<b>Electronics</b>	Rated voltage, bus	30 V DC
	Voltage range, bus	21 ... 31 V DC
	Current consumption, bus	< 12 mA
	Maximum current, device	12 × 20 A
	Power loss, device	≤ 12 W (16 A)/16 W (20 A)
	Power loss, bus	≤ 0.25 W
	KNX safety extra low voltage	SELV
<b>Connections</b>	Connection type, KNX bus	Plug-in terminal
	Cable diameter, KNX bus	0.6 ... 0.8 mm, solid
	Connection type, load circuit	Screw terminal with universal head (PZ 1)
	Pitch	7.62 mm
	Tightening torque, screw terminals	0.5 ... 0.6 Nm
	Conductor cross-section, flexible	1 × (0.2 ... 4 mm <sup>2</sup> ) / 2 × (0.2 ... 2.5 mm <sup>2</sup> )
	Conductor cross section, rigid	1 × (0.2 ... 6 mm <sup>2</sup> ) / 2 × (0.2 ... 4 mm <sup>2</sup> )
	Conductor cross section with wire end ferrule without plastic sleeve	1 × (0.25 ... 2.5 mm <sup>2</sup> )
	Conductor cross section with wire end ferrule with plastic sleeve	1 × (0.25 ... 4 mm <sup>2</sup> )
	Conductor cross section with TWIN wire end ferrule	1 × (0.5 ... 2.5 mm <sup>2</sup> )
Length, wire end ferrule contact pin	≥ 10 mm	
<b>Certificates and declarations</b>	Declaration of conformity CE	→ 2CDK505245D2701
<b>Ambient conditions</b>	Operation	-5 ... +45 °C
	Transport	-25 ... +70 °C
	Storage	-25 ... +55 °C
	Humidity	≤ 95 %
	Condensation allowed	No
	Atmospheric pressure	≥ 80 kPa (corresponds to air pressure at 2,000 m above sea level)









## Outputs – relays 16 A - 20 A (C load)

<b>Rated values</b>	Number of outputs	12
	Rated voltage $U_n$	230 V AC
	Rated current $I_n$ (per output)	16/20 A
	Rated frequency	50/60 Hz
	Relay type	Bi-stable
<b>Switching currents</b>	AC-1 operation ( $\cos \varphi = 0.8$ )	$\leq 20$ A
	AC-3 operation ( $\cos \varphi = 0.45$ )	$\leq 16$ A
	Fluorescent lighting load AX	$\leq 20$ AX
	Switching current at 12 V AC	$\geq 0.1$ A
	Switching current at 24 V AC	$\geq 0.1$ A
<b>Service life</b>	Switching current at 24 V DC (resistive load)	$\leq 20$ A
	Mechanical service life	$\geq 10^6$ switching operations
	AC-1 operation ( $\cos \varphi = 0.8$ )	$\geq 10^5$ switching operations
	AC-3 operation ( $\cos \varphi = 0.45$ )	$\geq 3 \times 10^4$ switching operations
	AC-5a operation ( $\cos \varphi = 0.45$ )	$\geq 3 \times 10^4$ switching operations
<b>Switching operations</b>	Switching operations per minute when one relay switches	$\leq 60$
	Switching operations per minute when all relays switch	$\leq 5$
<b>Inrush current</b>	Inrush current $I_{peak}$ (150 $\mu$ s)	$\leq 600$ A
	Inrush current $I_{peak}$ (250 $\mu$ s)	$\leq 480$ A
	Inrush current $I_{peak}$ (600 $\mu$ s)	$\leq 300$ A

### Note

The inrush current  $I_{peak}$  is the typical ballast load current that results during switching. Using the inrush current  $I_{peak}$ , it is possible to calculate the maximum number of switchable ballasts at the Switch Actuator output Ballast calculation.

Lamp type	Symbol	Max. lamp load
Incandescent bulbs		3,680 W
Fluorescent lamps uncompensated		3,680 W
Fluorescent lamps parallel compensated		2,500 W
Fluorescent lamps duo circuit		3,680 W
Low-voltage halogen lamps inductive transformer		2,000 W
Low-voltage halogen lamps electronic transformer		2,500 W
Low-voltage halogen lamps 230 V		3,680 W
Dulux lamps uncompensated		3,680 W
Dulux lamps parallel compensated		3,000 W
Mercury-vapor lamps uncompensated		3,680 W
Mercury-vapor lamps parallel compensated		3,000 W
LED lamps		650 W
Rated motor power		3,680 W

## Device type

Device type	Switch Actuator	SA/S 12.16.5.2
	Application	Switch C load 12-fold 16 A / ...
		... = current version number of the application
	Maximum number of group objects	286
	Maximum number of group addresses	1000
	Maximum number of assignments	1000

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

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

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**Ordering details**

Description	MW	Type	Order no.	Packaging [pcs.]	Weight (incl. packaging) [kg]
Switch	12	SA/S 12.16.5.2	2CDG110268R0011	1	0.79



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