

TECHNICAL DATA

# ABB i-bus® KNX

## SA/S 8.6.2.2

### 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 primarily resistive loads 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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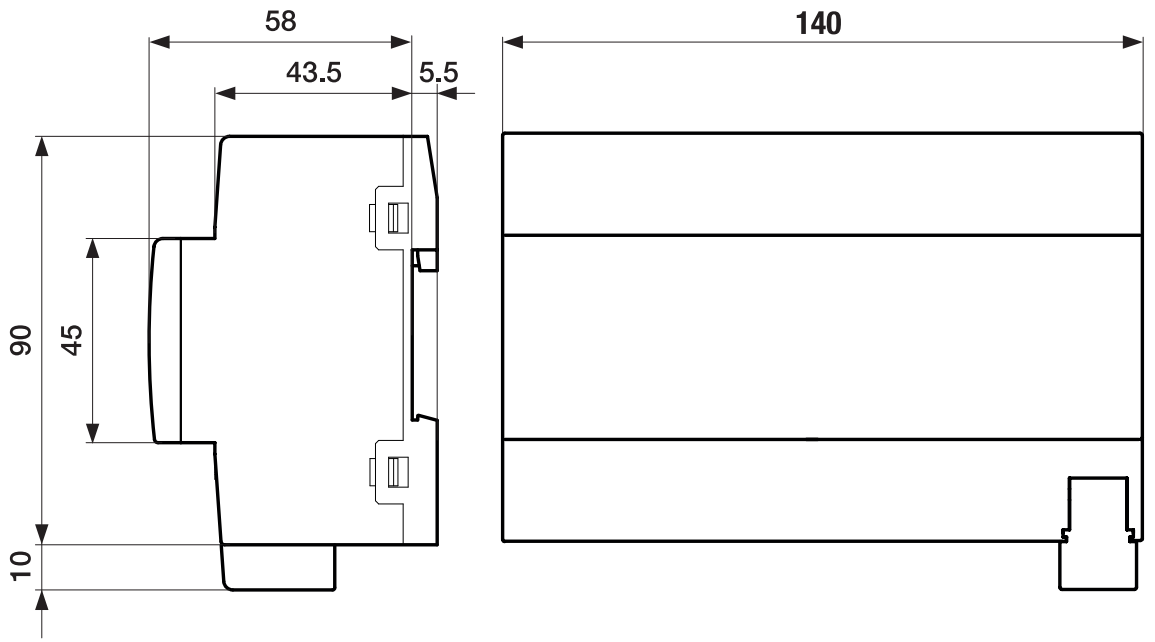
## Outputs

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

The outputs can be used individually to switch electrical loads.

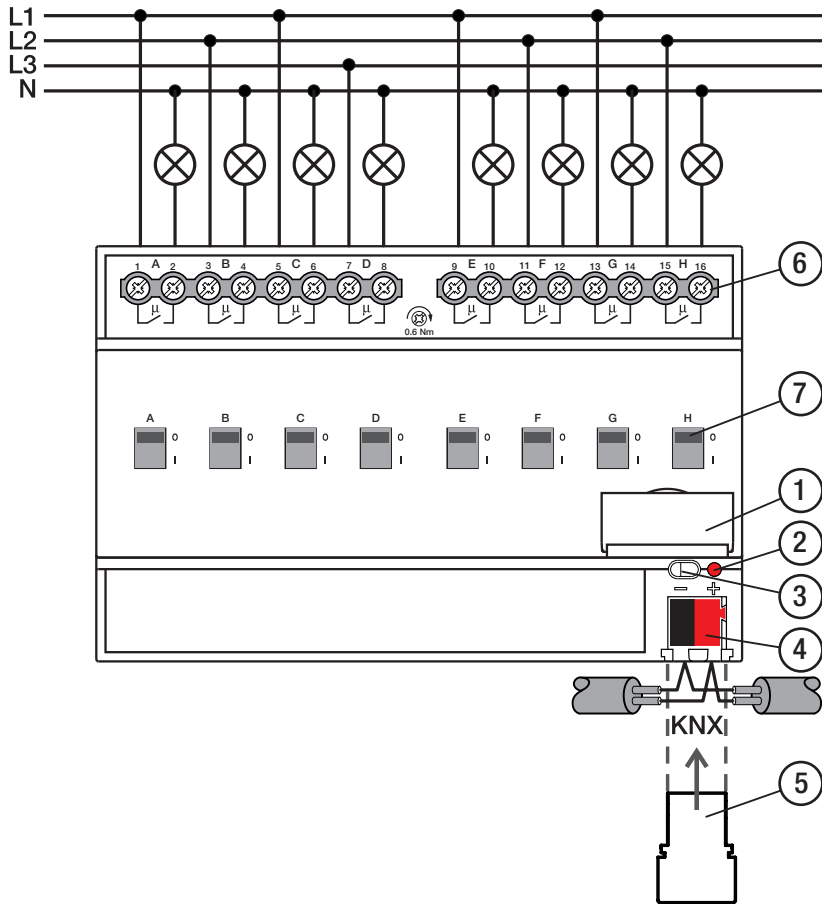
| Function | A | B | C | D | E | F | G | H | I | J | K | L |
|----------|---|---|---|---|---|---|---|---|---|---|---|---|
| Switch   | x | x | x | x | x | x | x | x | x | x | x | x |

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Dimension drawing



2CDC07202F0017

**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> |
| <i>Toggle switches</i>  |  |  |

## General technical data

|                                      |  |   |
|--------------------------------------|--|---|
| <b>Device</b>                        | Dimensions   | 90 × 140 × 63.5 mm (H x W x D)  |
|                                      | Mounting width in space units  | 8 modules, 17.5 mm each   |
|                                      | Weight   | 0.41 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  | 8 × 6 A   |
|                                      | Power loss, device   | ≤ 1.5 W   |
|                                      | 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   | → 2CDK505253D2701   |
| <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 6 A

|                             |   |   |
|-----------------------------|---|---|
| <b>Rated values</b>         | Number of outputs                                       | 8   |
|                             | Rated voltage $U_n$                                     | 230 V AC                                  |
|                             | Rated current $I_n$ (per output)                        | 6 A                                       |
|                             | Rated frequency   | 50/60 Hz                                  |
|                             | Relay type  | Bi-stable                                 |
| <b>Switching currents</b>   | AC-1 operation ( $\cos \varphi = 0.8$ )                 | $\leq 6$ A                                |
|                             | AC-3 operation ( $\cos \varphi = 0.45$ )                | $\leq 6$ A                                |
|                             | Fluorescent lighting load AX                            | $\leq 6$ 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)           | $\leq 6$ A                                |
|                             | Mechanical service life                                 | $\geq 3 \times 10^6$ 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 | $\leq 120$                                |
|                             | Switching operations per minute when all relays switch  | $\leq 15$                                 |
| <b>Inrush current</b>       | Inrush current $I_{peak}$ (150 $\mu$ s)                 | $\leq 400$ A                              |
|                             | Inrush current $I_{peak}$ (250 $\mu$ s)                 | $\leq 320$ A                              |
|                             | Inrush current $I_{peak}$ (600 $\mu$ s)                 | $\leq 200$ 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                               |  | 1,380 W        |
| Fluorescent lamps uncompensated                  |  | 1,380 W        |
| Fluorescent lamps parallel compensated           |   | 1,380 W        |
| Fluorescent lamps duo circuit                    |   | 1,380 W        |
| Low-voltage halogen lamps inductive transformer  |  | 1,200 W        |
| Low-voltage halogen lamps electronic transformer |  | 1,380 W        |
| Low-voltage halogen lamps 230 V                  |   | 1,380 W        |
| Dulux lamps uncompensated                        |   | 1,100 W        |
| Dulux lamps parallel compensated                 |   | 1,100 W        |
| Mercury-vapor lamps uncompensated                |   | 1,380 W        |
| Mercury-vapor lamps parallel compensated         |   | 1,380 W        |
| LED lamps  |  | 400 W          |
| Rated motor power                                |  | 1,380 W        |

## Device type

|             |                                   |   |
|-------------|-----------------------------------|---|
| Device type | Switch Actuator                   | SA/S 8.6.2.2                                    |
|             | Application                       | Switch standard 8-fold 6 A / ...                |
|             |                                   | ... = current version number of the application |
|             | Maximum number of group objects   | 226   |
|             | 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      | 8  | SA/S 8.6.2.2 | 2CDG110255R0011 | 1                | 0.50                          |



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