

TECHNICAL DATA

ABB i-bus® KNX

SA/S 4.16.6.2

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 complies with the EN 50491 standard and can be used as a product of the KNX system.

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 at the outputs using screw terminals (terminal designation on the housing).

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

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Device functions

The devices possess mutually independent switching relays with which the following functions can be implemented:

- Switching electrical loads (alternating or three-phase current)

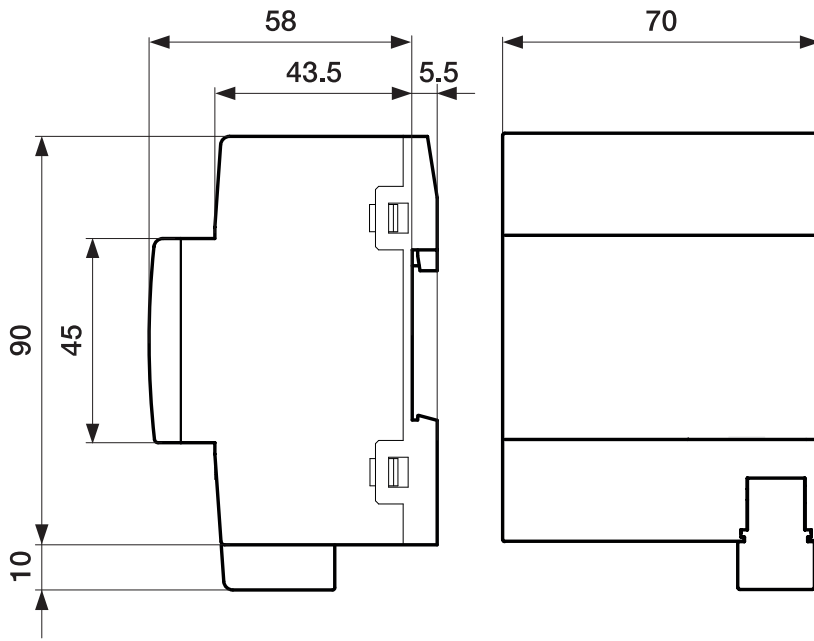
On-site operation of the outputs is possible using toggle switches.

The devices have the following integrated function:

- Current measurement

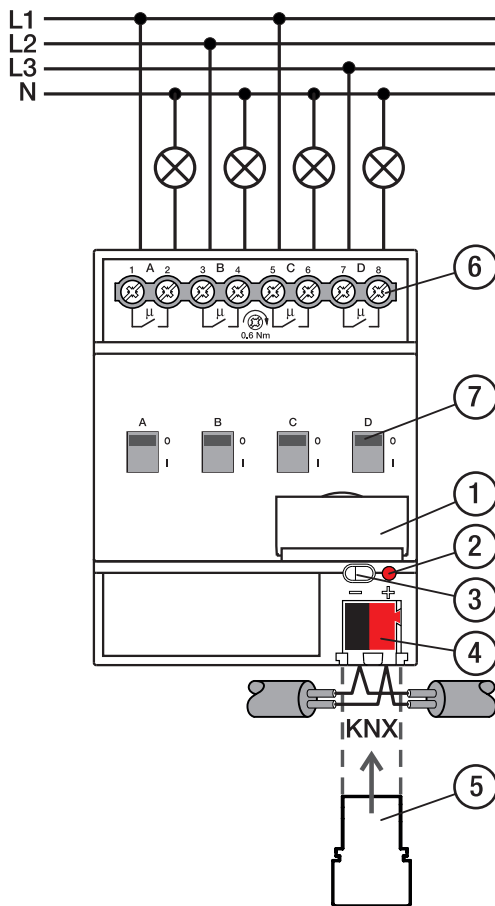
The devices are suitable for switching loads with a high peak inrush current, such as lamps with compensating capacitors.

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Dimension drawing



2CDC072033F0015

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Connection diagram





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Legend

- 1 Label carriers
- 2 Programming LED
- 3 Programming button
- 4 Bus connection terminal

- 5 Cover cap
- 6 Load circuit, two screw terminals each
- 7 Toggle switches

Operating and display elements

| Button/LED | Description/function | LED indicator |
|--|---|--|
|  | Assignment of the physical address | LED on: The device is in programming mode. |
| Programming  | Indication of the switching position: <ul style="list-style-type: none"> • I = Closed • 0 = Open Switching of the output: <ul style="list-style-type: none"> • I = Switch on • 0 = Switch off | not available |
| Toggle switches | | |

General technical data

| | | |
|--|------------------------------------|---|
| Supply | Bus voltage | 21 ... 31 V DC |
| | Current consumption, bus | < 12 mA |
| | Power loss, bus | Max. 250 mW |
| | Power loss (16A), device | 4.0 W |
| | Power loss (20A), device | 5.5 W |
| Connections | KNX | Ø 0.8 mm single core (via bus connection terminal) |
| Connection terminals | Screw terminal | Screw terminal with universal head (PZ 1) |
| | | 0.2 ... 4 mm ² stranded, 2 × (0.2 ... 2.5 mm ²) |
| | | 0.2 ... 6 mm ² single core, 2 × (0.2 ... 4 mm ²) |
| | | Ferrule without plastic sleeve |
| | | 0.25 ... 2.5 mm ² |
| | | Ferrule with plastic sleeve |
| | | 0.25 ... 4 mm ² |
| | | TWIN ferrules |
| | 0.5 ... 2.5 mm ² | |
| | Ferrule contact pin length | Min. 10 mm |
| | Tightening torque | Max. 0.6 Nm |
| Degree of protection and protection class | Degree of protection | IP 20 to EN 60529 |
| | Protection class | II to EN 61140 |
| Isolation category | Overvoltage category | III to EN 60664-1 |
| | Pollution degree | 2 according to EN 60664-1 |
| | Fire classification | Flammability V-0 as per UL94 |
| SELV | KNX safety extra low voltage | SELV 24 V DC |
| Temperature range | Operation | -5 ... +45 °C |
| | Transport | -25 ... +70 °C |
| | Storage | -25 ... +55 °C |
| Ambient conditions | Maximum air humidity | 95 %, no condensation allowed |
| Design | Modular installation device (MDRC) | Modular installation device |
| | Design | proM |
| | Housing/color | Plastic, gray |
| Dimensions | Dimensions | 90 x 70 x 63.5 mm (H x W x D) |
| | Mounting width in space units | 4 modules |
| | Mounting depth | 63.5 mm |
| Mounting | 35 mm mounting rail | To EN 60715 |
| | Mounting position | Any |
| | Weight (net) | 0.30 kg |
| Approvals | KNX certification | To EN 50090-1, -2 |
| | CE marking | In accordance with the EMC and Low Voltage Directives |

Device type

| | | |
|--------------------|-----------------------------------|---|
| Device type | Switch Actuator | SA/S 4.16.6.2 |
| | Application | Switch Energy Function 4f 16 A / ... |
| | | ... = current version number of the application |
| | Maximum number of group objects | 351 |
| | Maximum number of group addresses | 1,000 |
| | Maximum number of assignments | 1,000 |

Note

Observe software information on the website → 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.

Output, rated current 16 A - 20 A C load

| | | |
|---------------------------|--|---------------------------|
| Rated values | Number of outputs | 4 |
| | U_n Rated voltage | 230 V AC (50/60 Hz) |
| | I_n Rated current (per output pair) | 16 A / 20 A |
| | Maximum current per device | 4 x 20 A |
| Switching currents | AC3 operation ($\cos \phi = 0.45$) to EN 60947-4-1 | 16 A / 230 V AC |
| | AC1 operation ($\cos \phi = 0.8$) to EN 60947-4-1 | 20 A / 230 V AC |
| | Fluorescent lighting load according to EN 60669-1 | 20 A (200 μ F) C-Load |
| | Minimum switching current at 12 V AC | 100 mA |
| | Minimum switching current at 24 V AC | 100 mA |
| | DC switching capacity, resistive load, at 24 V DC | 20 A |
| Service life | Mechanical service life | > 3×10^6 cycles |
| | Electrical service life of switching contacts to IEC 60947-4-1: | |
| | AC1 (240 V/ $\cos \phi = 0.8$) | > 10^5 cycles |
| | AC3 (240 V/ $\cos \phi = 0.45$) | > 3×10^4 cycles |
| | AC5a (240 V/ $\cos \phi = 0.45$) | > 3×10^4 cycles |
| Switching times | Maximum switching position changes per minute if all relays are switched. | 15 |
| | Maximum switching position changes per minute if only one relay is switched. | 60 |

Output, lamp load 16 A - 20 A C load

| | | |
|---|---|---------|
| Lamps | Incandescent lamp load | 3,680 W |
| Fluorescent lamps | Uncompensated | 3,680 W |
| | Parallel compensated | 2500 W |
| | DUO circuit | 3,680 W |
| Low-voltage halogen lamps | Inductive transformer | 2000 W |
| | Electronic transformer | 2500 W |
| | Halogen 230 V | 3,680 W |
| Dulux lamp | Uncompensated | 3,680 W |
| | Parallel compensated | 3,000 W |
| Mercury-vapor lamp | Uncompensated | 3,680 W |
| | Parallel compensated | 3,000 W |
| Switching capacity (switching contact) | Maximum peak inrush current I_p (150 μ s) | 600 A |
| | Maximum peak inrush current I_p (250 μ s) | 480 A |
| | Maximum peak inrush current I_p (600 μ s) | 300 A |
| Number of ballasts (T5/T8, single element) | 18 W (ABB ballast 1 x 18 SF) | 26 |
| | 24 W (ABB ballast T5 1 x 24 CY) | 26 |
| | 36 W (ABB ballast 1 x 36 CF) | 22 |
| | 58 W (ABB ballast 1 x 58 CF) | 12 |
| | 80 W (Helvar EL 1 x 80 SC) | 12 |
| Energy-saving lamps | LED lamps | 650 W |
| Rated motor power | | 3,680 W |

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. The number of ballasts specified in the table can be only a sample guide value.

Energy function

| | | |
|------------------------|----------------------------|--|
| Energy function | Detection range | 0.02 ... 20 A |
| | Accuracy | $\pm 2\%$ of the momentary current plus ± 0.02 A |
| | Measurement delay | approx. 2 s |
| | Load current I_{load} AC | 0 ... 20 A, sinusoidal |
| | Load current I_{load} DC | Is not acquired |
| | Frequency range | 50 ... 60 Hz |
| | Ambient temperature | -5 °C ... +40 °C |

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Ordering details

| Description | MW | Type | Order no. | Packaging [pcs.] | Weight (incl. packaging) [kg] |
|-------------|----|---------------|-----------------|------------------|-------------------------------|
| Switch | 4 | SA/S 4.16.6.2 | 2CDG110270R0011 | 1 | 0.37 |



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