



The ABB i-bus® Switch/Dim Actuators with a rated current of 16 A are EIB / KNX modular installation devices in ProM design for installation in the distribution board on 35 mm mounting rails. The connection to the ABB i-bus® is implemented via a bus connection terminal.

The SD/S controls via 2-, 4- or 8-channel dimmable electronic ballast devices or transformers with 1 – 10 V control interfaces.

Per channel the load relay can be manually operated (on/off) via operating element which simultaneously indicates the switch status.

The switching relays are particularly suitable for switching ohmic loads, inductive and capacitive loads as well as fluorescent lamp loads (AX) to EN 60 669.

The switching relays can be switched on or off manually without a bus or auxiliary voltage. The operating element simultaneously indicates the switch status.

The devices are powered via the EIB / KNX and do not require additional power supply.

## Technical data

Power supply	– Operating voltage	21 ... 30 V DC, made available by the bus		
	– Current consumption EIB / KNX	2.16.1	4.16.1	8.16.1
		8.5 mA	9 mA	9.5 mA maximum
	– Power consumption via EIB / KNX	Max. 250 mW		
Outputs control circuit	– SD/S-type	2.16.1	4.16.1	8.16.1
	– Number of control outputs 1 – 10 V (passive)	2	4	8
	– Max. current per control output	100 mA	100 mA	100 mA
	– Max. number of ballast devices (2 mA/ballast) <sup>3)</sup>	50	50	50
	– Max. cable length, with max. load (100 mA)	70 m with cable cross-section 0.8 mm <sup>2</sup> 100 m with cable cross-section 1.5 mm <sup>2</sup>		
Outputs load circuit rated values	– SD/S-type	2.16.1	4.16.1	8.16.1
	– Number of load outputs (floating)	2	4	8
	– U <sub>n</sub> rated voltage	250 / 440 V AC (50/60 Hz)		
	– I <sub>n</sub> rated current	16 A - AC 1 or 10 AX		
	– Power loss per device at max. load	2.6 W	5.2 W	10.4 W
Load circuit (relay) switching currents	– AC1 operation (cos φ = 0.8) IEC 60947-4-1	16 A / 230 V		
	– Fluorescent lighting load AX acc. EN 60669-1	10 AX / 250 V (140 μF) <sup>2)</sup>		
	– Minimum switching performance	100 mA / 12 V 100 mA / 24 V		
	– DC current switching capacity (ohmic load)	10 A / 24 V =		
	– Lamp loads	See table 2		
Load circuit (relay) service life	– mechanical endurance	> 3 x 10 <sup>6</sup>		
	– electrical endurance to IEC 60947-4-1			
	– AC1 (240 V/cos φ = 0.8)	> 10 <sup>5</sup>		
	– AC5a (240 V/cos φ = 0.45)	> 3 x 10 <sup>4</sup>		
Load circuit (relays) switching times <sup>1)</sup>	– Max. relay position change per output and minute if all relays are switched simultaneously object. The position changes should be distributed over a minute.	2.16.1 60	4.16.1 30	8.16.1 15
	– Max. relay position change per output and minute if only one relay is switched	120	120	120

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 3) may not be exceeded

3) The control current of 1 – 10 V devices determine the number of connectable ballast devices. Typical devices are between 0.4 ... 4 mA.

**Table 1 - Part 1: Switch/Dim Actuators SD/S x.16.1, technical data**

**Technical data** (Continuation from page 1)

<b>Connections: ABB i-bus®</b>	– EIB / KNX	Bus connection terminal, 0.8 mm Ø, single core
<b>Connections: control circuit</b>	– 2 terminals per control circuit	Screw terminal with slotted screw 0.2 ... 2 mm² finely stranded 0.2 ... 4 mm² single core
	– sleeves without/with plastic	0.25 ... 2.5 / 0.25 ... 4 mm²
	– TWIN sleeves	0.5 – 2.5 mm²
	– Tightening torque	Contact pin length min. 8 mm Max. 0.6 Nm
<b>Connections: load circuit</b>	– 2 terminals per load circuit	Screw terminal with universal head (PZ 1) 0.2 ... 4 mm² finely stranded, 2 x (0.2 – 2.5 mm²)
	– sleeves without/with plastic	0.2 ... 6 mm² single core, 2 x (0.2 – 4 mm²)
	– TWIN sleeves	0.25 ... 2.5 / 0.25 ... 4 mm²
	– Tightening torque	0.5 – 2.5 mm² Contact pin length min. 8 mm Max. 0.8 Nm
<b>Operating and display elements</b>	– Red LED and EIB / KNX push button	for assignment of the physical address
	– Switch position display	Relay operator
<b>Enclosure</b>	– IP 20	to EN 60 529
<b>Safety class</b>	– II	to EN 61 140
<b>Isolation category</b>	– Overvoltage category	III to EN 60 664-1
	– Pollution degree	2 to EN 60 664-1
<b>EIB / KNX safety extra low voltage</b>	– SELV 24 V DC	
<b>Temperature range</b>	– Operation	– 5 °C ... + 45 °C
	– Storage	– 25 °C ... + 55 °C
	– Transport	– 25 °C ... + 70 °C
<b>Environmental conditions</b>	– humidity	Max. 93%, moisture condensation should be excluded
<b>Design</b>	– Modular installation device (MDRC))	Modular installation device, ProM
	– SD/S-type	2.16.1      4.16.1      8.16.1
	– Dimensions (H x W x D)	90 x W x 64,5
	– Width W in mm	72              108              144
	– Mounting width (modules at 18 mm)	4                6                8
	– Mounting depth in mm	64.5           64.5           64.5
<b>Weight</b>	– in kg	0.18           0.28           0.46
<b>Installation</b>	– On 35 mm mounting rail	EN 60 715
<b>Mounting position</b>	– as required	
<b>Housing, colour</b>	– Plastic housing, grey	
<b>Approvals</b>	– EIB / KNX to EN 50 090-2-2	Certification
<b>CE mark</b>	– in accordance with the EMC guideline and low voltage guideline	

**Table 1** - Part 2: Switch/Dim Actuators SD/S x.16.1, technical data

**Note:** Connection of 230 mains voltage to one of the 1 – 10 V outputs leads to the destruction of the 1 – 10 V output.

**Note:** Control, load and EIB / KNX sides are electrically isolated. Individual switching outputs are floating outputs. When connecting the control line it is important to consider that the control outputs each feature a common reference ground with one another.

**Note:** Several electronic ballast devices with 1 – 10 V interfaces can be controlled with a channel of the Switch/Dim Actuators. The number of dimmable ballast devices per channel is limited both by the switching and the control powers of the Switch/Dim Actuator. See description in the product manual.

**Lamp loads, switching powers for lamp circuit**

<b>Lamps</b>	– Incandescent lamp load	2300 W
<b>Fluorescent lamps T5 / T8</b>	– Uncorrected luminaire	2300 W
	– Parallel compensated	1500 W
	– DUO circuit	1500 W
<b>Low-volt halogen lamps</b>	– Inductive transformer	1200 W
	– Electronic transformer	1500 W
	– Halogen lamp 230 V	2300 W
<b>Dulux lamp</b>	– Uncorrected luminaire	1100 W
	– Parallel compensated	1100 W
<b>Mercury-vapour lamp</b>	– Uncorrected luminaire	2000 W
	– Parallel compensated	2000 W
<b>Switching capacity</b> (switching contact) <sup>1)</sup>	– Max. peak inrush-current I <sub>p</sub> (150 µs)	400 A
	– Max. peak inrush-current I <sub>p</sub> (250 µs)	320 A
	– Max. peak inrush-current I <sub>p</sub> (600 µs)	200 A
<b>Number of electronic ballast devices</b> (T5/T8, single element) <sup>1)</sup>	– 18 W (ABB EVG 1 x 58 CF)	23
	– 24 W (ABB EVG-T5 1 x 24 CY)	23
	– 36 W (ABB EVG 1 x 36 CF)	14
	– 58 W (ABB EVG 1 x 58 CF)	11
	– 80 W (Helvar EL 1 x 80 SC)	10

1) For multiple element lamps or other types the number of electronic ballast devices must be determined using the peak inrush current of the electronic ballast devices. See description in the product manual.

**Table 2:** Lamp load for load current circuit SD/S x.16.1

Application program	Number communication objects	Max. number of group addresses	Max. number of associations
Switch Dim 2f 1 – 10 V/1	40	254	255
Switch Dim 4f 1 – 10 V/1	80	254	255
Switch Dim 8f 1 – 10 V/1	160	254	255

**Table 3:** User programs SD/S x.16.1**Note:**

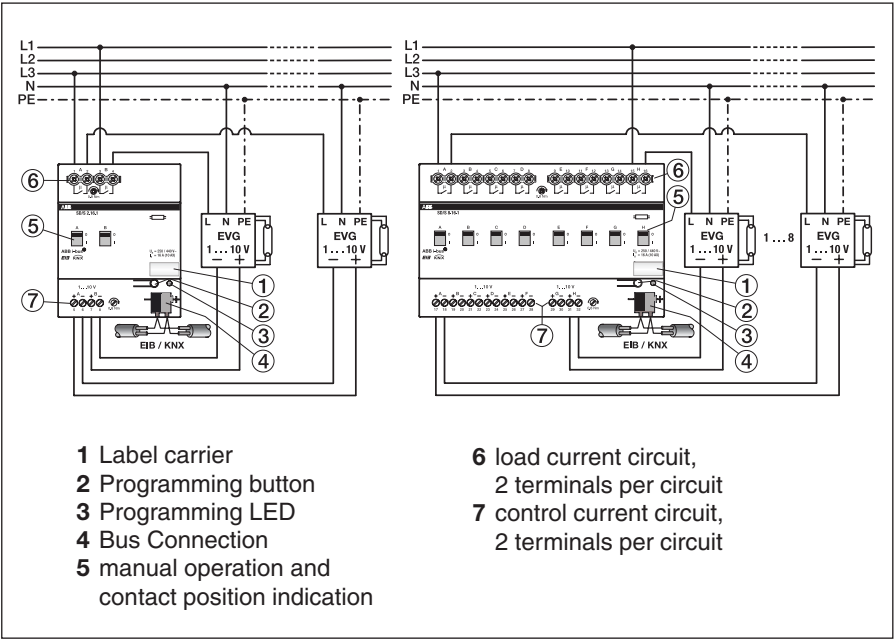
The programming requires EIB Software Tool ETS2 V1.3 or higher.  
If ETS3 is used a “.VD3” or higher type file must be imported.  
The application program is in the ETS2 / ETS3 at ABB / Lighting / Switching/  
Dimming Actuators 1-10 V / Switch Dim xf 1-10 V/1  
(x = number of outputs 2, 4 or 8)

**Note:**

The devices do not support the closing function of a project or the KNX devices in the ETS. If you inhibit access to all devices of the project with a “BA password” (ETS2) or “BCU code” (ETS3), it has no effect on this device.  
Data can still be read and programmed.

See the product manual “Switch/Dim Actuators SD/S”  
for a detailed description of the application program.  
The manual is available free of charge on the Internet at [www.abb.de/eib](http://www.abb.de/eib).

Circuit diagram



Dimension drawing

