Technical data | 17.04.2024

ABB-free@home®

SA-M-x.16.2.2

Switch Actuator, 4-, 8-, 12-fold, MDRC

1 Product description

The device is a switch actuator for installing on a mounting rail. The device has, depending on the selected version, 4, 8 or 12 switching channels and can switch the corresponding number of connected electric circuits.

After activating the bus voltage the channels can be switched independent of each other in dependence of other sensors connected to the bus (e.g. via buttons coupled to binary inputs). The individual channels can also be switched manually on the device.

Advantages:

- 4, 8 or 12 switching channels in one device
- Manual switching option on the device for each individual channel
- Variable wiring via 4 mm^2 clamps with combi-head screw
- Usual manner of wiring of the 230 V lines

Notice
Basic information about system integration is contained in the system manual. It is available for downloading at www.abb.com/freeathome.

1.1 Dimensional drawings

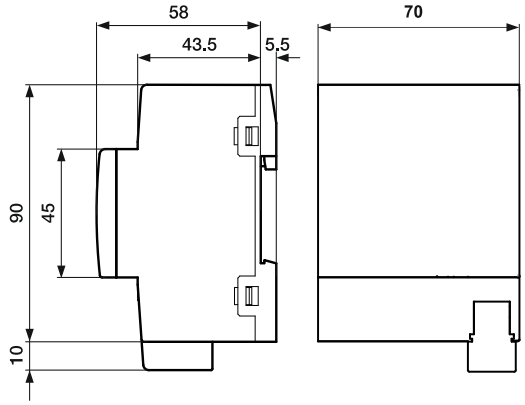

Fig. 1: Dimensions of 4-fold switch actuator MDRC (specifications in mm)

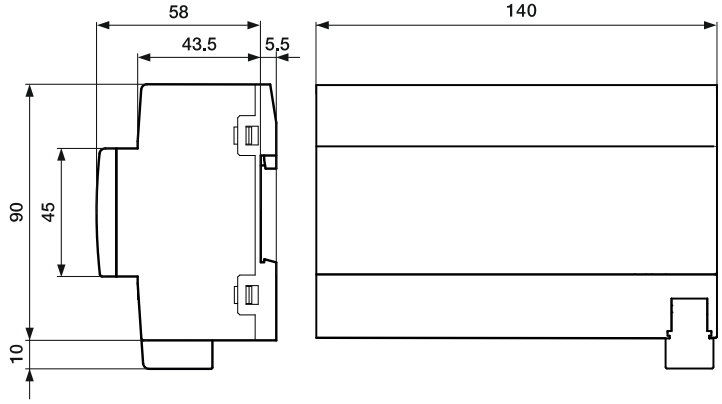

Fig. 2: Dimensions of 8-fold switch actuator MDRC (specifications in mm)

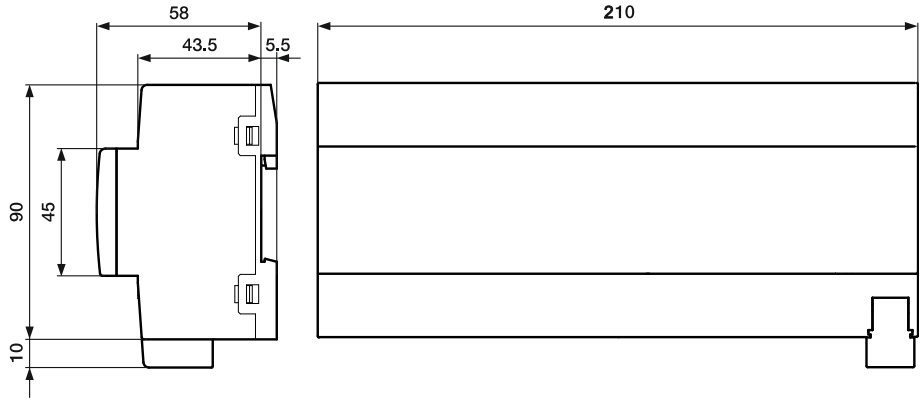

Fig. 3: Dimensions of 12-fold switch actuator MDRC (specifications in mm)

1.2 Circuit diagrams

Danger - Electric shock due to short-circuit!

Risk of death due to electrical voltage of 100 to 240 V during short-circuit in the low-voltage line.

– Low-voltage and 100 - 240 V lines must not be installed together in a flush-mounted box!
– Observe the spatial division during installation (> 10 mm) of SELV electric circuits to other electric circuits.
– If the minimum distance is insufficient, use electronic boxes and insulating tubes.
– Observe the correct polarity.
– Observe the relevant standards.

Danger - Electric voltage!

Install the device only if you have the necessary electrical engineering knowledge and experience.

- Incorrect installation endangers your life and that of the users of the electrical system.
- Incorrect installation can cause serious damage to property, e.g. due to fire.

The minimum necessary expert knowledge and requirements for the installation are as follows:

- Apply the "five safety rules" (DIN VDE 0105, EN 50110):
  1. Disconnect
  2. Secure against being re-connected
  3. Ensure there is no voltage
  4. Connect to earth and short-circuit
  5. Cover or barricade adjacent live parts.
- Use suitable personal protective clothing.
- Use only suitable tools and measuring devices.
- Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).
- Observe the correct polarity.

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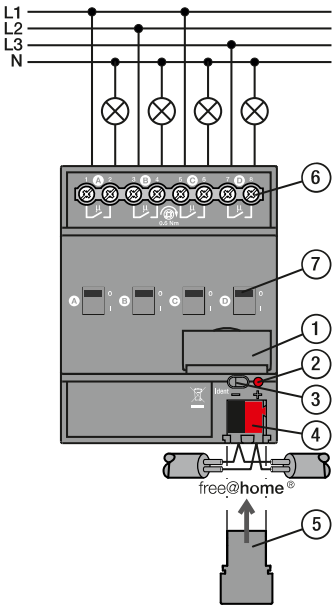

Fig.4: Device overview of switch actuator 4-fold MDRC

[1] Label holder

[2] Identification LED

[3] Device identification during commissioning

[4] Bus connection terminal

[5] Cover cap

[6] Load current circuit, per two screw-type terminals

[7] Switch-position indicator and manual operation

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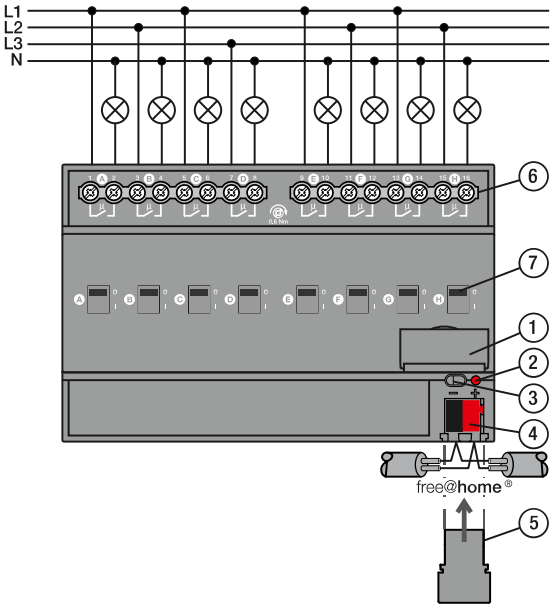

Fig.5: Device overview of switch actuator 8-fold MDRC

[1] Label holder

[2] Identification LED

[3] Device identification during commissioning

[4] Bus connection terminal

[5] Cover cap

[6] Load current circuit, per two screw-type terminals

[7] Switch-position indicator and manual operation

SA-M-12.16.2.2

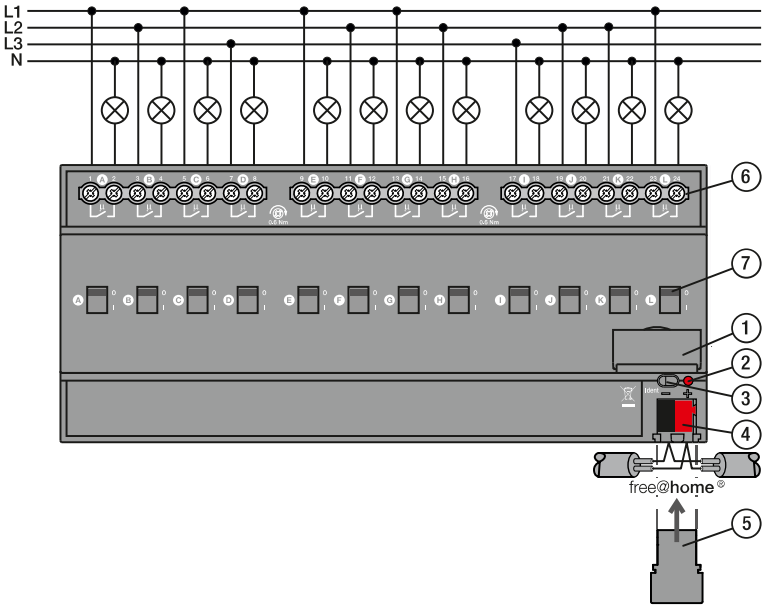

Fig.6: Device overview of switch actuator 12-fold MDRC

[1] Label holder
[2] Identification LED
[3] Device identification during commissioning
[4] Bus connection terminal
[5] Cover cap
[6] Load current circuit, per two screw-type terminals
[7] Switch-position indicator and manual operation

1.3 Types of load

Lamps	Incandescent lamp load	2500 W
Fluorescent lamps T5/T8	Uncompensated	2500 W
	Parallel compensated	1500 W
	DUO circuit	1500 W
LV halogen lamps	Inductive transformer	1200 W
	Electronic transformer	1500 W
	Halogen lamp 230 V	2500 W
Dulux lamp	Uncompensated	1100 W
	Parallel compensated	1100 W
Mercury-vapour lamp	Uncompensated	2000 W
	Parallel compensated	2000 W
Switching capacity (switching contact)	Maximum switch-on current Ip (150 µs)	400 A
	Maximum switch-on current Ip (250 µs)	320 A
	Maximum switch-on current Ip (600 µs)	200 A
Number of ballasts (T5/T8, single-light)[1)]	18 W (ABB ballasts 1 x 18 SF)	23
	24 W (ABB ballasts-T5 1 x 24 CY)	23
	36 W (ABB ballasts 1 x 36 CF)	14
	58 W (ABB ballasts 1 x 58 CF)	11
	80 W (Helvar EL 1 x 80 SC)	10

Table 1: Types of load

[1)] For multi-flame lamps or other types the number of electronic ballasts is to be determined via the switch-on current of the ballasts.

2 Technical data

Designation	Value
Power	21 - 31 VDC
Bus subscribers	1 (12 mA)
Power loss P_{16A} [A] SA-M-4.16.2.2 [B] SA-M-8.16.2.2 [C] SA-M-12.16.2.2	 4 W 8 W 12 W
Module widths [A] SA-M-4.16.2.2 [B] SA-M-8.16.2.2 [C] SA-M-12.16.2.2	 4 MW (70 mm) 8 MW (140 mm) 12 MW (210 mm)
Bus connection	Bus connecting terminal, screwless
Switching voltage	230 V AC, 50/60 Hz
Switching capacity	16 A (AC1)
Wiring terminal Output	 Combi-head screw-type terminal (PZ 1) 0.2 - 4 mm^2 fine-wire 0.2 - 4 mm^2 single-wire
Protection type	IP 20
Protection class	II
Overvoltage category	III
Pollution degree	2
Air pressure	≥ 80 kPa (corresponds to air pressure at 2,000 m above NN)
Ambient temperature	-5 °C - +45 °C
Storage temperature	-20 °C - +70 °C

Table 2: Technical data

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Technical data 2CKA000073B5511 | EN | Rev. A