



The single fold switch actuator is a built-in device for use in e.g. conventional luminaires, trunking or false ceilings.

It is used for switching lamps and other electrical consumer devices.

Local operation is also possible using a conventional push button. This can also be done without the need for programming as long as the bus voltage and power supply are available.

Should the bus voltage fail, the actuator can activate the load circuit (e.g. for functional or emergency lighting).

The device requires a 230 V power supply.

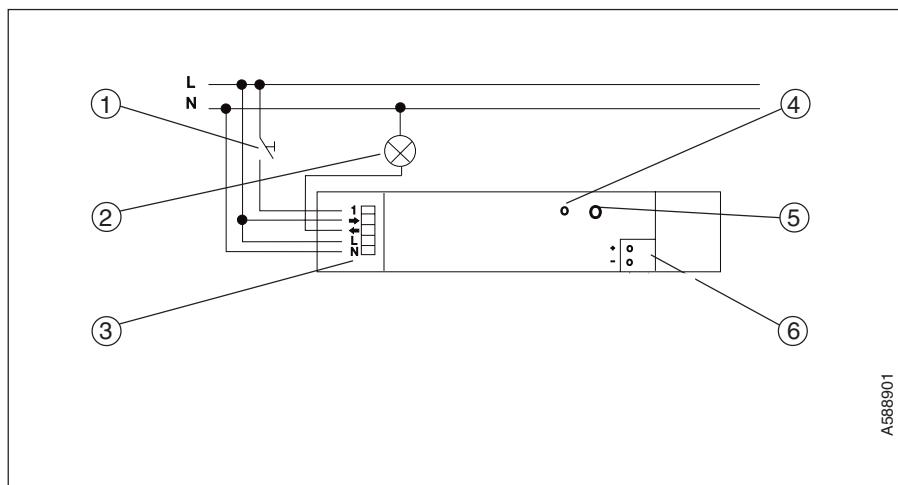
In addition a bus connecting terminal is necessary.

## Technical Data

<b>Power supply</b>	– EIB	24 VDC, via the bus line
	– Auxiliary voltage	230 VAC +/- 10 %, 50 Hz
<b>Inputs</b>	– 1, for extension input operation	
	– Signal voltage	230 VAC +/- 10 %, 50 Hz
<b>Outputs</b>	– Max. cable length	100 m
	– Switching voltage	230 VAC +/- 10 %, 50 Hz
	– Switching capacity	16 A, cos φ = 1 10 A, cos φ = 0,5
<b>Operating and display elements</b>	– red LED and push button	for assigning the physical address
<b>Connections</b>	– 230 V power supply	Screw terminals Wire range 1 ... 2.5 mm <sup>2</sup>
	– Load circuit	Screw terminals Wire range 1 ... 2.5 mm <sup>2</sup>
	– Extension input	Screw terminals Wire range 1 ... 2.5 mm <sup>2</sup>
<b>Type of protection</b>	– EIB	Plug for bus connecting terminal
<b>Ambient temperature range</b>	– IP 20, EN 60 529	
	– Operation	- 5 °C ... 45 °C
	– Storage	-25 °C ... 55 °C
	– Transport	-25 °C ... 70 °C
<b>Design</b>	– Built-in device	
<b>Housing, colour</b>	– Plastic housing, white	
<b>Mounting</b>	– Screw fixing in trunking, false ceilings, ...	
<b>Dimensions</b>	– 42 x 240 x 32 mm (H x W x D)	
<b>Weight</b>	– 0.27 kg	
<b>Certification</b>	– EIB-certified	
<b>CE norm</b>	– in accordance with the EMC guideline and the low voltage guideline	

Application programs	Number of communication objects	Max. number of group addresses	Max. number of associations
Switch Logic Stairc.fct Ext. In. /1	2	8	8
Switch Priority Status Ext. input /1		2	8
Heat 2Point /1	2	12	12

## Circuit diagram



1 Extension input push button  
2 Consumer device  
3 Terminals

4 Programming LED  
5 Programming push button  
6 Bus terminal

## Note

The device has passed the x test in accordance with EN 60669-1, i.e. capacitive loads can be switched with nominal current at the same level as with a conventional switch.

The phases of the extension input and the load circuit power supply (L) must be identical. The simultaneous control of several actuators via an extension input push button is not permitted.

Even if the actuator is only used during extension input operation (conventional push button), you should still assign a group address to the relevant communication objects.

Electronic devices must be protected against overvoltage. The noise and surge immunity of the EIB devices against transient overvoltage is far beyond the limits required in European standards.

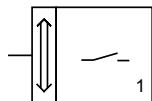
The disconnection of inductive loads e.g. contactors, conventional ballasts, low-loss ballasts etc. can however produce voltage peaks in excess of 4 kV which can destroy other electronic devices.

Suitable protective measures must be carried out such as the installation of surge arresters.

## 1-fold switch actuator, 16 A, LF

Type: 6151EB-500

### Switch Logic Stairc.fct. Ext. In. /1



### Selection in ETS2

- ABB
  - └ Output
    - └ Binary output, 1-fold

### Switch

In the default setting, the actuator switches the relay on when it receives a telegram with the value “1” and switches it off on receipt of a telegram with the value “0”. If the parameter “Switch function” is set to “normally opened contact”, the actuator switches the relay on when it receives a telegram with the value “0” and switches it off on receipt of a telegram with the value “1”.

### Logic

Using the parameter “Logical connection”, it is possible to specify an AND or an OR connection. In both cases the ETS2 program displays an additional communication object. The actuator then links the values of communication objects 1 and 3 and switches the relay according to the result.

### Staircase lighting function

In the operation mode “staircase lighting function”, the actuator switches on immediately on receipt of an “On” telegram. Once the time specified in the two parameters “Time base” and “Factor” has elapsed, the actuator automatically switches off. If the actuator receives further “On” telegrams during this interval, the period restarts each time.

If both the “staircase lighting function” and the “Logical connection” are active, the time setting only applies if the actuator is switched via object 1.

### Extension input

The actuator can be switched on and off via a conventional push button. Object 1 in this case sends a telegram with the current status.

The defined default position on bus voltage failure refers to the relay contact and is independent of the switching function that has been assigned. On bus voltage recovery, the relay contact is opened and the communication objects are set to the value “0”.

### Communication objects

No.	Type	Name	Function
1	1 bit	Output A / Ext. input A	Switch / Telegr. ext. input

### Communication objects for OR connection

No.	Type	Name	Function
1	1 bit	Output A / Ext. input A	OR connection / Telegr. ext. input
3	1 bit	Output A	OR connection

### Communication objects for AND connection

No.	Type	Name	Function
1	1 bit	Output A / Ext. input A	AND connection / Telegr. ext. input
3	1 bit	Output A	AND connection

**Parameters**

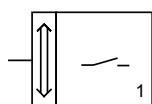
The default setting for the values is **printed in bold type**.

Switch function	<b>normally closed contact</b>
Operation mode	normally opened contact <b>normal operation</b>
only for "staircase lighting function"	staircase lighting function
– Time base for staircase lighting function	130 ms / ... / <b>520 ms</b> / ... / 1,2 h
– Factor for staircase lighting function (2 ... 127)	8
– Delay time applies	<b>only to object no. 1</b>
– Ext. input sends	<b>only ON telegrams</b>
Logical connection	<b>no logical connection</b>
	OR connection
	AND connection
Default position on bus voltage failure	<b>contact opened</b>
	contact closed

## 1-fold switch actuator, 16 A, LF

Type: 6151EB-500

### Switch Priority Status Ext. input /1



## Selection in ETS2

- ABB
  - └ Output
    - └ Binary output, 1-fold

## Switch

In the default setting, the actuator switches the relay on when it receives a telegram with the value “1” and switches it off on receipt of a telegram with the value “0”. If the parameter “Switch function” is set to “normally opened contact”, the actuator switches the relay on when it receives a telegram with the value “0” and switches it off on receipt of a telegram with the value “1”.

## Priority

Using the 2 bit communication object, the actuator can be positively driven by a primary control (e.g. application controller). There are three different states :

- The priority object has the value “3”. The value of the switching object is not important. The output is switched off through priority control.
- The priority object has the value “2”. The value of the switching object is not important. The output is switched on through priority control.
- The priority object has the value “1” or “0”. The output is not priority controlled. It is operated via the switching object.

If the actuator is priority controlled, changes to the 1 bit object are stored, even if the current switching state has not been directly changed as a result. When the priority controlled operation has finished, a switching operation takes place according to the current value of the switching object.

## Status

If priority control is disabled and the actuator is being controlled via the switching object, the priority object sends a telegram with the status of the output with the values “0” or “1”.

## Extension input

The actuator can be switched on or off via a conventional push button, provided that it is not controlled by the priority object. Both the switching object and the priority object then send in addition a telegram with the status of the output.

If the output is being controlled by the priority object, the priority object does not send a telegram when the external input push button is operated. Whether the 1 bit object sends a telegram is dependent on the setting in the parameter “Ext. input sends also, if the output is priority controlled”.

The defined default position on bus voltage failure refers to the relay contact and is independent of the switching function that has been assigned. On bus voltage recovery, the relay contact is opened and the communication objects are set to the value “0”.

## Communication objects

No.	Type	Name	Function
2	1 bit	Output A / Ext. input A	Switch / Telegr. ext. input
3	2 bit	Output A	Priority / Telegr. status

## Parameters

The default setting for the values is **printed in bold type**.

## Switch function

**normally closed contact**

normally opened contact

## Ext. input sends also, if the output is priority controlled

**yes**

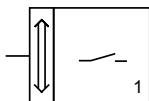
no

## Default position on bus voltage failure

**contact opened**

contact closed

## Heat 2Point /1



## Selection in ETS2

- ABB
  - └ Heating
    - └ Binary output, 1-fold

## Heat

The application program has been specially developed for heat control using electrothermal drives. The two communication objects "Switch" and "Telegr. fault indication" are available.

The actuator expects the switching object to receive telegrams cyclically at intervals of at least 10 minutes. If there have been no telegrams in the space of 24 minutes, the actuator assumes that there is a fault in the room thermostat. The object "Telegr. fault indication" sends telegrams cyclically in 12 minute intervals with the values "0" (= no fault) or "1" (= fault).

In the setting "test mode", the monitoring time is reduced for test purposes from 12 minutes to 3 seconds.

## 2 Point

The actuator can either control drives that are "de-energized closed" or "de-energized opened".

The type of drive used is specified in the parameter "Characteristic of the drive". This determines whether the relay is switched on or off on receipt of a telegram with the value "1" (= heat).

The defined default position on bus voltage failure refers to the relay contact and is independent of the switching function that has been assigned. On bus voltage recovery, the relay contact is closed.

## Communication objects

No.	Type	Name	Function
1	1 bit	Output	Switch
3	1 bit	Output	Telegr. fault indication

## Parameters

The default setting for the values is **printed in bold type**.

Mode	<b>normal operation</b> test mode
Operation	<b>enabled</b> disabled
Characteristic of drive	<b>de-energized closed</b> de-energized opened
Default position on bus voltage failure	<b>contact opened</b> contact closed