

# Manual

## DALI switch actuator

### SU 1 DALI-2



## Contents

1	General	3
	1.1 Safety information	3
	1.2 Proper use	3
	1.3 Explanation of terms	3
2	Function description	4
3	Technical data	6
4	Product characteristics	7
	4.1 Usage	7
	4.2 Functionality	7
	4.3 Dimensions	8
5	Connection	9
6	Installation	10
7	Settings	11
	7.1 Settings via the DALI bus	11
	7.2 Status messages via the DALI bus	11
	7.3 Start-up behaviour	12
	7.4 Addressing	12
8	Contact	13

## 1 General

### 1.1 Safety information



#### **ATTENTION**

Installation should only be carried out by a qualified electrician!

### 1.2 Proper use

The DALI switch actuator SU 1 DALI-2 is intended for indoor installation. It is used as a DALI-2 operating device with switch function (controlling a relay contact via DALI bus).

The SU 1 DALI-2 is exclusively intended for use as contractually agreed between the manufacturer and the user. Any other use is considered to be unacceptable. The manufacturer does not accept liability for any resulting damages.

### 1.3 Explanation of terms

The DALI switch actuator SU 1 DALI-2 is an operating device for non-dimmable loads (operating device with switch function) according to standard IEC 62386 Part 208 and DiiA guidelines "Clarifications & Recommendations for IEC 62386" version 1.2, April 2020.

## 2 Function description

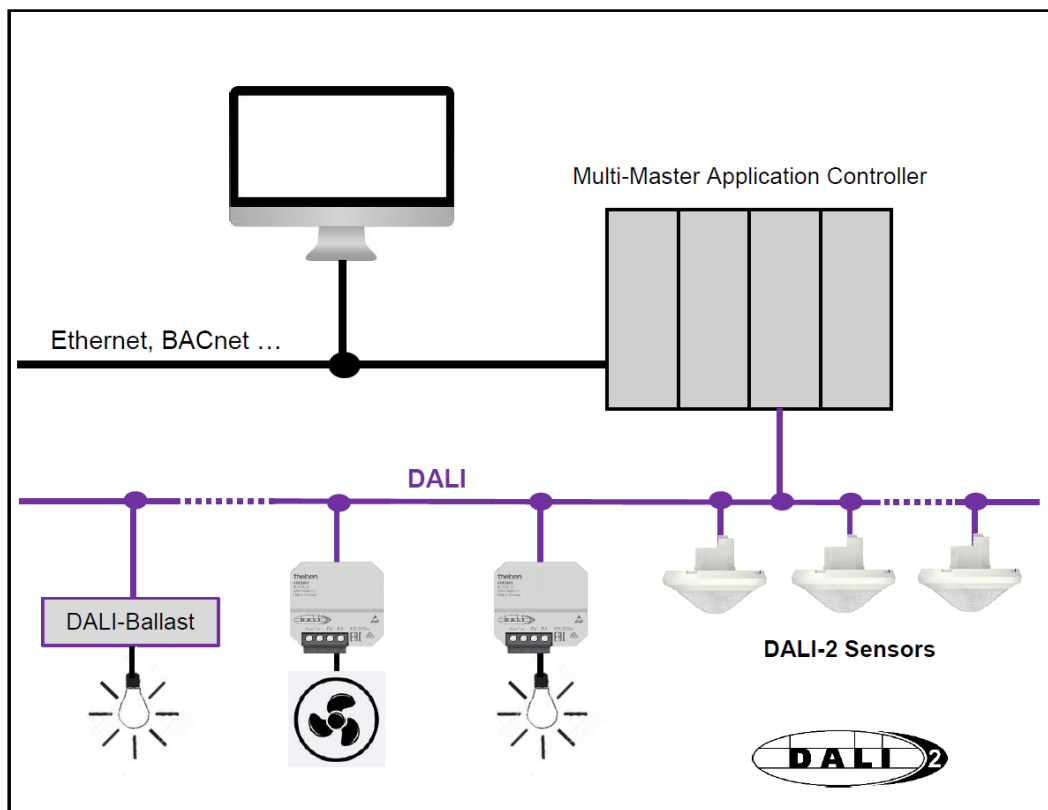
The SU 1 DALI-2 switch actuators are integrated into a DALI system. Thanks to the DALI-2 standard, an application controller from any manufacturer may be used. This controller must support the standard IEC 62386 Parts 101/102/208.

The SU 1 DALI-2 switch actuators and other DALI components are connected to the DALI line. The DALI supply is provided by the application controller or an external DALI supply. The assignment of the short addresses (random addressing) for the SU 1 DALI-2 switch actuators is carried out via the application controller.

After start-up, the loads connected to the SU 1 DALI-2 can be switched on and off by using the DALI commands.

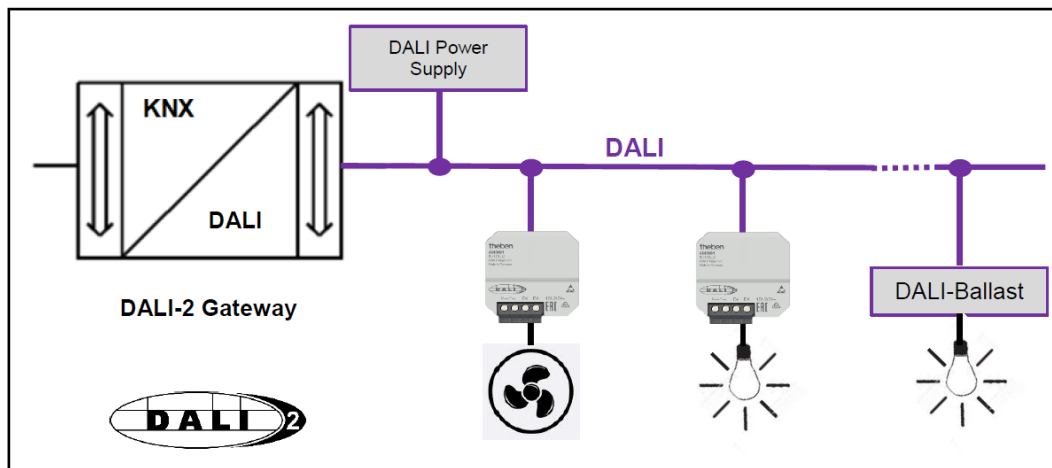
In the following, a few typical application examples:

### Application with a higher-level control



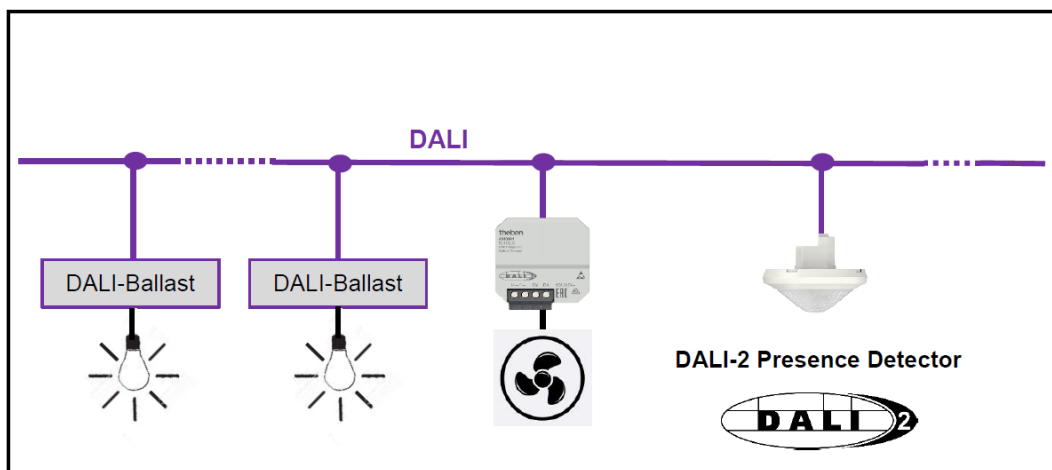
The SU 1 DALI-2 switch actuators can be used for lamps, fans, pumps, HVAC control, etc.

## Application with a DALI-2 gateway



The SU 1 DALI-2 switch actuators can be used for lamps, fans, pumps, HVAC control, etc.

## Application with a DALI-2 presence detector



The switch actuator SU 1 DALI-2 can be used for HVAC control, etc.

### 3 Technical data

Operating voltage	DALI (in accordance with IEC 62386-101): 10 V – 22.5 V
Power input	max. 10 mA
Connection type	Screw terminals
Cable cross-section	max. 2 x 2.5 mm <sup>2</sup> wire
Type of installation <sup>1</sup>	Flush-mounted box according to DIN 49073
Type of contact	μ-contact, floating, NO contact
Nominal switching capacity	13 A/250 V AC
Minimum load	5 V/100 mA
SELV	Switching SELV is possible
Shortest continuous switching interval	400 ms
Incandescent/halogen lamp load	1500 W
Capacitive switching load	80 μF
Inrush current	max. 500 A/200 μs
LED lamps < 2 W	30 W
LED lamps > 2 W	350 W
Fluorescent lamps (EVB)	650 W
Compact fluorescent lamps	170 W
Protection rating	IP 20 (IP 40 when installed)
Protection class	II (subject to designated installation)
Ambient temperature	-15 °C ... + 50 °C
Pollution degree	2
Rated impulse voltage	4 kV
Circuit breaker	Fusing type B or C (EN 60898-1) of max. 13 A
CE Declaration of Conformity	This device corresponds to EN 60669-2-1/5.
RCM conformity	This device is compliant with the ACMA guidelines.
DALI conformity	IEC 62386-101/102/208

<sup>1</sup> can be installed with conventional buttons/switches in flush-mounted boxes

## 4 Product characteristics


### 4.1 Usage

The switch actuator SU 1 DALI-2 can be used in many different ways. It can directly control consumers with mains voltage of 230 V AC, such as lamps, fans or pumps. In addition, there are applications with low voltage or control of a higher-level control system (HVAC) etc.

The focus is on applications in residential and commercial construction:

- Office building
- Schools
- Hospitals
- Hotels
- Sports halls or warehouses

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 Only for use in closed and dry rooms.

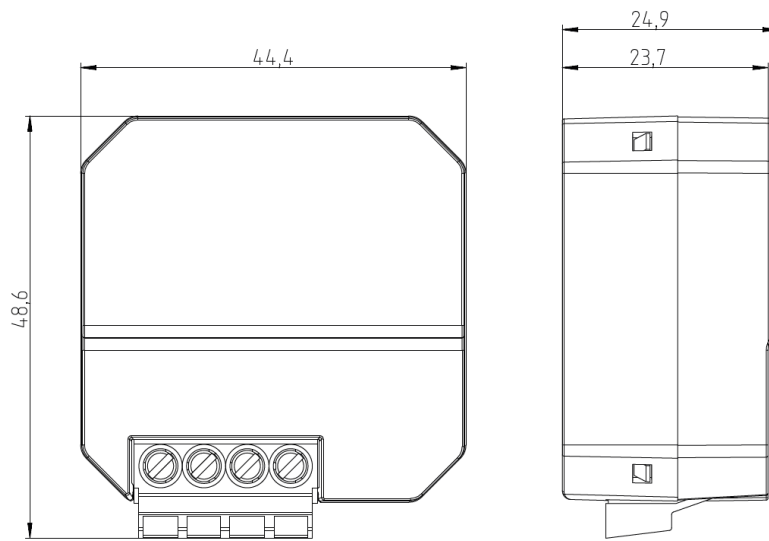
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### 4.2 Functionality

- Compact relay module for direct control of loads via the DALI bus according to IEC 62386 Part 208
- Powerful relay suitable for loads with a high inrush current like LED lamps
- Adjustable switch-on level after loss of the bus voltage
- The switching thresholds of the relay can be easily set via the DALI bus (IEC 62386 Part 208)
- The switch actuator SU 1 DALI-2 is a DALI bus participant and can be correspondingly addressed according to IEC 62386 Part 102
- The switch actuator SU 1 DALI-2 is supplied via the DALI bus
- Easy installation in conventional flush-mounted boxes

All of the product characteristics are described in detail in the following sections.

## 4.3 Dimensions

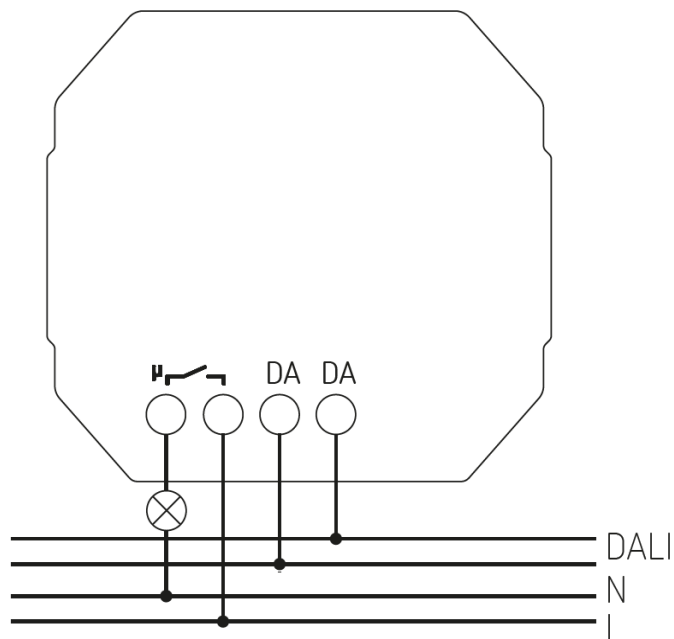




## 5 Connection

The SU 1 DALI-2 switch actuators are connected to the DALI line.

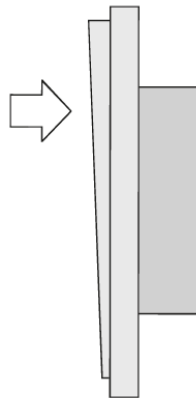
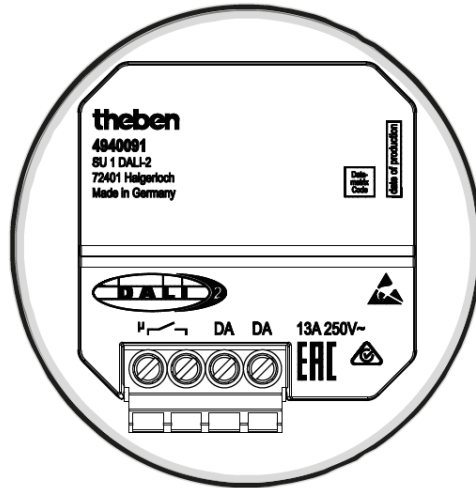
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- i** For operation of the SU 1 DALI-2, an external DALI supply is required. This DALI supply must be able to ensure a reliable power supply for all connected DALI participants.
  - i** **A minimum current of 10 mA per SU 1 DALI-2 must be provided.**
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- !** In order to ensure that the load current does not exceed the maximum permissible current of the relay, the installation must be fused with a type B or C circuit breaker of max. 13 A.

## 6 Installation


The SU 1 DALI-2 switch actuators are installed in conventional flush-mounted boxes according to DIN 49073.



## 7 Settings

All settings are configured via the DALI bus.

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 In its initial delivery condition, the SU 1 DALI-2 does not have a short address.

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### 7.1 Settings via the DALI bus

All parameters and configuration commands are set by the application controller via the DALI bus. The SU 1 DALI-2 supports the parameters and configuration commands according to IEC 62386 Part 208. Parameters which are not defined by the standard can be found in section 7.2 Status messages via the DALI bus.

The default values of the parameters in the factory settings are also based on standard IEC 62386 Part 208.

#### Comment

The SU 1 DALI-2 switch actuator compares the received dimming value with the 4 threshold parameters and – depending on the setting – switches the switch output on or off. By programming the 4 threshold parameters, different switching characteristics can be achieved. For a detailed description, see IEC 62386 Part 208 and DiiA guidelines "Clarifications & Recommendations for IEC 62386" version 1.2, section 8.5.

### 7.2 Status messages via the DALI bus

The command 240 "QUERY FEATURES" can be used to query information about the supported features of the SU 1 DALI-2:

Bit	Name	Value	Comments
0	Load error can be queried	0 = No	
1	not used	0	Default value
2	not used	0	Default value
3	Thresholds can be set	1 = Yes	
4	Error delay time can be set	0 = No	
5	not used	0	Default value
6	Reference measurement of system performance supported	0 = No	
7	Physical selection supported	0 = No	

The command 247 "QUERY GEAR TYPE" can be used to query the type of switch output of the SU 1 DALI-2:

Bit	Name	Value	Comments
0	Output is an electronic switch	0 = No	
1	Relay output, normally open contact	1 = Yes	
2	Relay output, normally closed contact	1 = Yes	
3	Output has an overvoltage protection	0 = No	
4	Load inrush current limiter integrated	0 = No	
5	not used	0	Default value
6	not used	0	Default value
7	not used	0	Default value

All further query commands are supported according to IEC 62386 Part 208.

## 7.3 Start-up behaviour

The start-up behaviour of the SU 1 DALI-2 complies with standard IEC 62386 Part 208.

If the bus voltage is interrupted, the current state of the bistable relay will be maintained. As soon as the bus voltage is restored, the relay shows its normal start-up behaviour.

## 7.4 Addressing

The addressing of SU 1 DALI-2 (assignment of short addresses) is carried out on the basis of the algorithm defined in IEC 62386-102, Annex A1 (informative).

## 8 Contact

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