

# Operating Instructions Busch-Dimmer®

ocean® (IP 44)  
Twilight switch 2240-500



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## 1 Safety



### Warning

#### Electric voltage!

Risk of death and fire due to electrical voltage of 230 V.

- Work on the 230V supply system may only be performed by authorised electricians!
- Disconnect the mains power supply prior to installation and/or disassembly!

## 2 Intended use

The device is to be used exclusively with the components that are supplied and licensed as described in chapter "Setup and function".

## 3 Environment



### Consider the protection of the environment!

Used electric and electronic devices must not be disposed of with domestic waste.

- The device contains valuable raw materials which can be recycled. Therefore, dispose of the device at the appropriate collecting depot.

All packaging materials and devices bear the markings and test seals for proper disposal. Always dispose of the packaging material and electric devices and their components via the authorized collecting depots and disposal companies.

The products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU Directive 2002/96/EC WEEE and 2002/95/EC RoHS)




(EU REACH ordinance and law for the implementation of the ordinance (EC) No.1907/2006)

## 4 Technical data

General	
Line-side nominal voltage	230 V AC $\pm$ 10%, 50 Hz
Maximum switching capacity	16 AX, 5 A $\cos \varphi$ 0.5 ind.
Incandescent lamps or halogen lamps	2000 W
per terminal	2 x 2.5 mm <sup>2</sup> – 2 x 2.5 mm <sup>2</sup>
Maximum power loss	$\leq$ 1.5 W
Twilight sensor	Approx. 3 ... 500 lux
Switch-on / switch-off delay	3 mins. $\leq$ 6 mins
Protection class	IP44
Ambient temperature range	- 35°C ... 55°C

## 5 Setup and function

The device is intended for the activation of the following types of loads:










	Standard loads with conventional transformer
	Standard loads with electronic transformer
	Electronic ballasts for fluorescent lamps

The twilight switch switches the connected consumers automatically as a function of the ambient brightness.

### 5.1 Features of function and equipment

- Switch-on/switch-off delay: approx. 3-6 min., fixed setting
- With label area

5.2 Possible combinations

	 <b>2240 U</b>
 2609 WS	X
 213 ...-W-54	X
 2086-W-54	X
 2139-W-54	X
 2137/... W-54	X
 2152 NLI-53	X
 1799 13	X
 1763-53	X

## 6 Installation and electrical connection



### Warning

#### Electric voltage!

- Risk of death due to electrical voltage of 230 V during short-circuit in the low-voltage line.
- Low-voltage and 230 V lines must not be installed together in a flush-mounted socket!

### 6.1 Requirements for the electrician



### Warning

#### 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 user 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 from power;
  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 supply network type (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).

### 6.2 Mounting



### Warning

#### Electric voltage!

Risk of death and fire due to electrical voltage of 230 V.

- Work on the 230V supply system may only be performed by authorised electricians!
- Disconnect the mains power supply prior to installation and/or disassembly!



### Caution

#### Malfunction due to overheating!

The connected light sources must not be directed toward the twilight switch.

- Keep a sufficient distance to avoid incorrect switching.

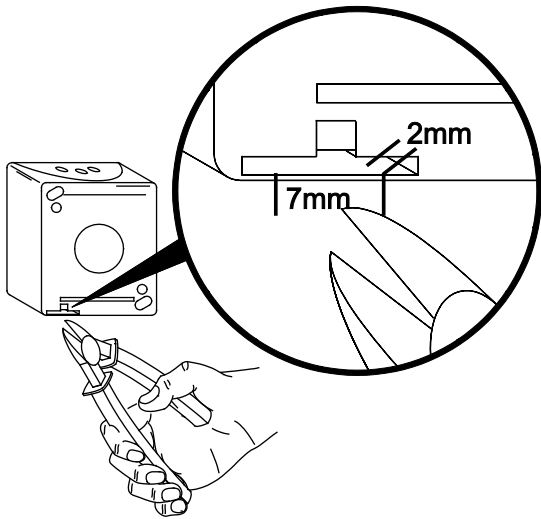


Fig. 1: Pierce the water drain opening

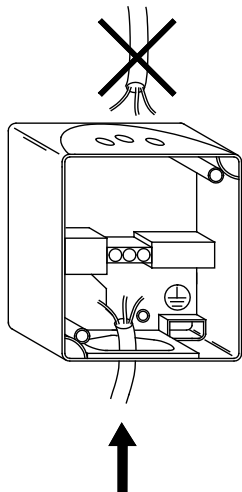


Fig. 2: Cable feed-through from below

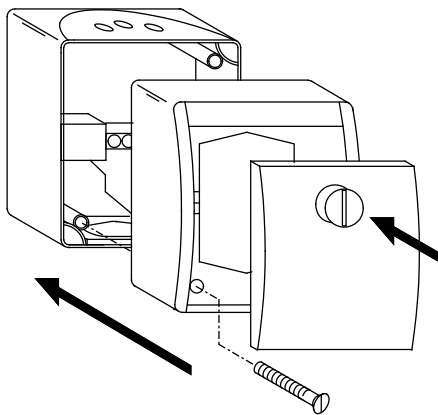


Fig. 3: Installation

6.3 Electrical connection

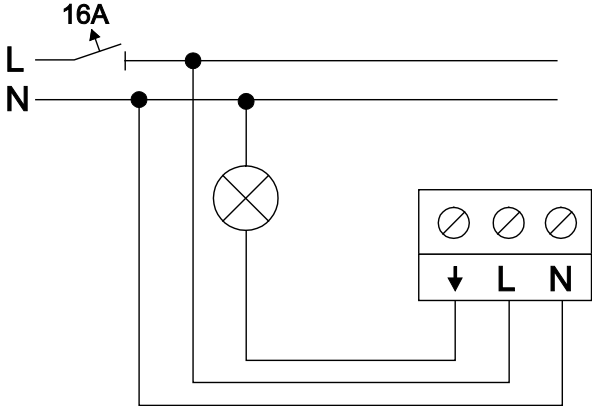


Fig 4: Circuit diagram



## 7 Commissioning

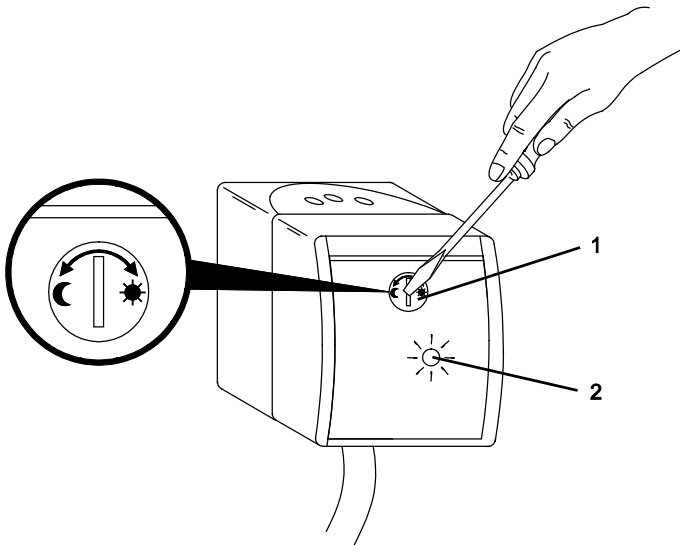


Fig. 5: Setting the twilight value

**1 Trim potentiometer**

**2 Control LED for reaching the switching point**

The twilight value (switching point) is set to the current ambient value by turning the potentiometer (1).



### Note

When adjusting the potentiometer, pay attention to the following points:

- Do not shield the device with your body or with a tool or similar.
- Do not irradiate the device with work lights.
- The twilight switch can be adjusted only up to a maximum ambient brightness of 500 lux. Therefore do not adjust the unit in bright daylight. This would lead to incorrect adjustment values.

1. Turn the potentiometer up to the stop in the direction of the “moon”.
2. Now turn the potentiometer in the direction of the “sun” until the red LED (2) lights up briefly.

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