Switch dimmer
6517 U-101-500
1 Safety ........................................................................................................................................................................... 3
2 Intended use ................................................................................................................................................................. 3
3 Environment .................................................................................................................................................................. 3
4 Operation ..................................................................................................................................................................... 4
5 Technical data .............................................................................................................................................................. 4
6 Setup and function ........................................................................................................................................................ 5
6.1 Features of function and equipment .................................................................................................................. 5
6.2 Possible combinations ......................................................................................................................................... 5
7 Reduction of the connection load (derating) ............................................................................................................. 6
8 Installation and electrical connection ........................................................................................................................ 7
8.1 Requirements for the electrician .......................................................................................................................... 7
8.2 Mounting ................................................................................................................................................................. 8
8.3 Electrical connection ............................................................................................................................................. 9
8.4 Inserting the glow lamp ....................................................................................................................................... 9
9 Commissioning ......................................................................................................................................................... 10
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 REACH ordinance and law for the implementation of the ordinance (EC) No.1907/2006)
4 Operation

The device has a two-way switch and an independent dimmer.

Dimmer deactivation
1. Turn the rotary knob to minimum brightness.

5 Technical data

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>230 V AC ± 10 %, 50 Hz</td>
</tr>
<tr>
<td>Nominal current</td>
<td>1.7 A</td>
</tr>
<tr>
<td>Nominal power</td>
<td>60 ... 400 W / VA</td>
</tr>
<tr>
<td>(depending on the ambient temperature, a power loss of 20% in case of conventional transformers needs to be considered)</td>
<td></td>
</tr>
<tr>
<td>Rated switch current</td>
<td>6 A</td>
</tr>
<tr>
<td>Minimum load</td>
<td>20 VA</td>
</tr>
<tr>
<td>Short-circuit protection</td>
<td>T 3,15 H</td>
</tr>
<tr>
<td>Maximum back-up fuse</td>
<td>10 A</td>
</tr>
<tr>
<td>Radio interference suppression</td>
<td>According to EN 55015</td>
</tr>
<tr>
<td>Total ambient temperature range</td>
<td>0 ... 70 °C</td>
</tr>
<tr>
<td>Connected load</td>
<td></td>
</tr>
<tr>
<td>- Ambient temperature range</td>
<td>0 ... 35 °C connected load 100%</td>
</tr>
<tr>
<td>- Ambient temperature range</td>
<td>35 ... 70 °C reduced connected load (Derating)</td>
</tr>
</tbody>
</table>
6 Setup and function

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

<table>
<thead>
<tr>
<th>230 V incandescent lamps</th>
</tr>
</thead>
<tbody>
<tr>
<td>230 V halogen lamps</td>
</tr>
<tr>
<td>Low-voltage halogen lamps with conventional transformers</td>
</tr>
</tbody>
</table>

6.1 Features of function and equipment

- For use in series switches
- 1 channel designed as dimmer
- 1 channel designed as switch contact (changeover contact)
- Rotary actuation
- Phase-angle
- Adjustable minimum brightness
- Suited as a replacement for series switches
- Illuminable with glow lamp
- Without cover plate

6.2 Possible combinations
7 Reduction of the connection load (derating)

The dimmer heats up during operation because part of the connected load is lost and converted into heat. The specified rated power is designed for dimmer installation in a solid masonry wall. When installing the dimmer in a wall made of gas concrete, wood, or plasterboard, the maximum connection load must be reduced by 20%.

The connected load must always be reduced when several dimmers are installed one below the other or when other heat sources cause additional heating. In intensely heated-up rooms, the maximum connected load must be reduced according to the diagram.

Use the following formula for the calculation of the nominal power:

\[
\text{Nominal power} = \text{transformer losses}^* + \text{lamp power}
\]

* For conventional transformers ~ 20% of nominal power of transformer

![Derating Graph](image)

Fig. 1: Derating

<table>
<thead>
<tr>
<th>Unit</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>Nominal power</td>
</tr>
<tr>
<td>°C</td>
<td>Ambient temperature</td>
</tr>
</tbody>
</table>

Fuses which are destroyed by excessive inrush currents are excluded from the warranty.
8 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!

8.1 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.).
8.2 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!

The flush-mounted insert must only be installed in flush-mounted wall boxes according to DIN 49073-1, Part 1, or suitable surface-mounted housings.

Caution

Risk of damaging the device due to overheating!
- When using transformers, ensure that each transformer is fused individually on the primary side or with a thermal fuse according to the manufacturer's specifications.
- Use exclusively wound safety isolating transformers according to DIN VDE 61558.

Risk of damaging the device due to excessive voltages!
Extended operation of an unloaded transformer (e.g. with a faulty bulb) connected to a dimmer may destroy both the transformer and the dimmer. This is caused by a possible voltage rise which may occur between an unloaded transformer and the dimmer.
- Connect at least two incandescent lamps per transformer or at least two transformers per dimmer.
- Replace defective incandescent lamps immediately.

Note on operating transformers with dimmers
To achieve the same linear rise in the brightness level of halogen lamps over the entire adjusting range from bright to dark, transformers with the same secondary voltage and the same power should be used.
When installing, please bear in mind that transformers, depending on their quality and version, may generate humming noise when used with dimmers.
Use an inrush current limiter if excessive inrush currents occur.
8.3 Electrical connection

Note on adapting the connected load to the ambient temperature
In intensely heated rooms, the maximum connected load must be reduced according to the following derating diagram.

Fig. 2: Deactivation

Fig. 3: Two-way circuit

8.4 Inserting the glow lamp

Note
The glow lamp is included in the delivery with cover plate. The glow lamp serves for orientation.

1. Pull the rotary knob off.
   The rotary knob is fixed with a spring and can be removed by turning it in a clockwise direction.
2. Remove the cover plate.
3. Plug the glow lamp onto the centre terminals with the nose facing the dimmer centre.
4. Seat the cover plate on the insert.
5. Attach the rotary knob.
9 Commissioning

Fig. 4: Front of device

1 Potentiometer

1. Set the minimum brightness on the potentiometer on the front of the device.

   **Hint on setting the minimum brightness**
   Reduce the minimum brightness only to the extent that the illuminated rotary knob is still visible.
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Busch-Jaeger Elektro GmbH
PO box
58505 Lüdenscheid

Freisenbergstraße 2
58513 Lüdenscheid
Germany

www.BUSCH-JAEGER.com
info.bje@de.abb.com

Central sales service:
Phone: +49 (0) 2351 956-1600
Fax: +49 (0) 2351 956-1700

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