

## Installation and operating instructions

### for twilight switches DASY 10-2/230V, DASY 10-2/24V, DASY 10-2/12V, DASY 16-2/230V



These instructions describe the installation and commissioning of the Dasy twilight switch. They are intended for use by electrically skilled persons. Electrical laypersons must not install and connect devices of this type due to the considerable potential dangers. The instructions must be kept so that they can be referred to at a later stage.

#### Safety instructions

Working with and on high voltages can be potentially fatal; the extent of injury cannot be predicted. The basic requirement for safe work and the avoidance of accidents due to electric current (electric shock, electric arcs, secondary effects, e.g. accidents caused by tripping) is to comply with all safety and operating requirements stated in these instructions. The local accident prevention regulations are also applicable.

1. Installation and connection must only be carried out by an electrician.
2. When the device is opened, voltage-carrying parts (terminals) become exposed. Touching these can cause life-threatening injury. Therefore, only open the Dasy when the supply voltage is disconnected.
3. Ensure there are no people or animals in the danger area when manually switching (putting the Dasy in dark conditions).
4. Avoid quick switching sequences if sensitive luminaires (e.g. HQL) are connected.

#### Intended use

The Dasy is intended for brightness-linked control of electrical consumers. According to its protection class, it is also suitable for outdoor use, in which case it must be installed on the wall or on a mast.

#### Functional description

The twilight switch compares the current illuminance with the set switch-on threshold. If the illuminance drops below the desired switch-on threshold, the internal relay switch (normally opened contact) is switched on once the switch-on delay has expired. If the switch-off threshold is reached due to increasing illuminance (1.5 times the switch-on threshold), the load relay switches off again after the switch-off delay has expired. The delay ensures that the load relay of the twilight switch does not respond to brief lighting fluctuations (e.g. lightning, car headlights).

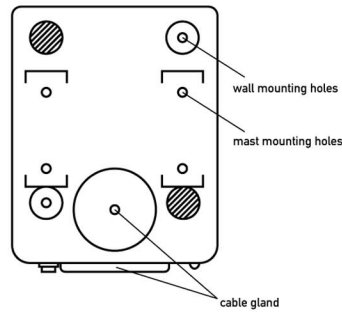
#### Assembly

Observe the following points when selecting the place of installation and during mounting itself:

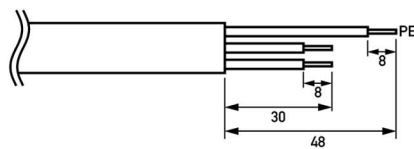
- » Avoid locations in direct sunlight. North and east-facing walls are ideal.
- » The light reaching the sensor must not be interrupted by overhanging roofs etc.
- » The switched light source must not directly affect the sensor.
- » Mount the device so that the warning light and potentiometer are facing downwards.
- » Use the optional mounting kit (must be ordered separately) to mount the device on masts or pipes.

#### Installation

- » In order to prevent death or injury due to electric shock, the power supply must be cut off before installation.
- » The device's supply line must be protected using the specified miniature circuit breaker.
- » The cable gland on the underside or back of the device should be used for the supply line.
- » The specified stripping lengths for the lines are given in the following diagram.
- » The silicon tubes enclosed are to be fitted to the cores of the connection lines.
- » The terminal assignment is shown in the following figure.
- » The maximum torque when tightening screw-type terminals must not be exceeded.



#### ▲ Cable glands and attachments



#### ▲ Stripping lengths

#### Commissioning

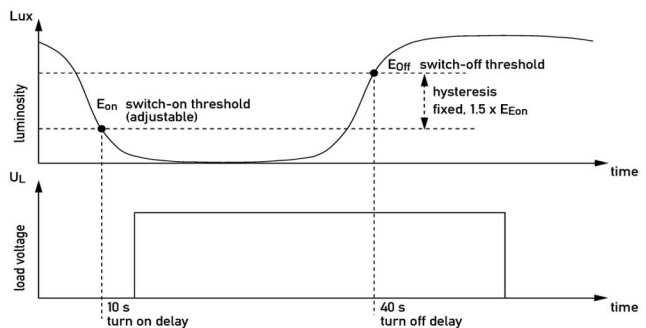
The appropriate voltage must be supplied to the Dasy for commissioning. Therefore, make sure that the housing is properly closed and screwed together.

#### Switch-on threshold

After connecting the operating voltage, move the potentiometer to the left stop  $\odot$  to set the switch-on threshold  $E_{ON}$ . If the outdoor brightness is at the desired level, the potentiometer should be slowly turned to the right  $\odot$  until the control diode illuminates. This process sets the switch-on threshold to the desired illuminance. The load relay switches on after the switch-on delay has expired.

#### Switch-off threshold

The switch-off threshold  $E_{OFF}$  is fixed at 1.5 times the value of the switch on threshold  $E_{ON}$ . If the switch-off threshold is exceeded due to increasing brightness, the control diode and the load relay switch off once the switch-off delay time has expired.



#### Switch-on/switch-off delay time

As soon as the switch-on threshold is altered due to the potentiometer being operated, the switching delays are reduced to 1 second for 5 minutes. This causes the load relay to switch almost synchronously with the control diode, to be able to check immediately that the device and load are functioning correctly. Should the delay times be activated prematurely, the power supply to the device should be momentarily interrupted.

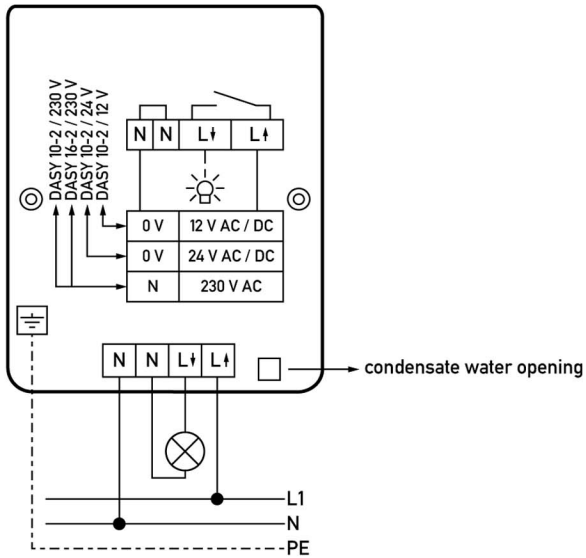
#### Instructions for function test

When the weather is sunny or if the device is installed at an unfavourable location with a lot of natural light, covering the lens with your hand may not suffice for test purposes. The switch-on point cannot be reached because too much light is able to enter the housing. In these cases, use the packaging to cover the housing or another opaque aid to create conditions which are sufficiently dark for testing.

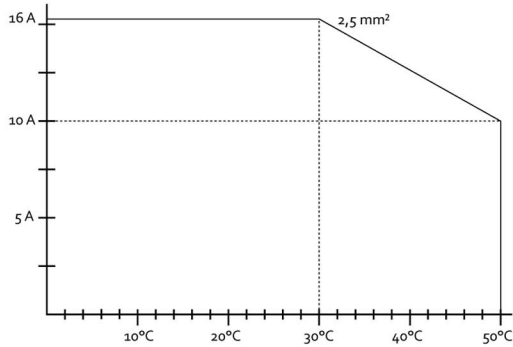
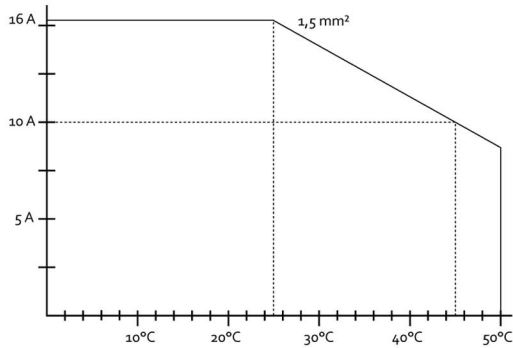
#### Warranty

All professionally installed, unaltered devices are covered by warranty for the duration of the statutory warranty period from the day of purchase by the end user. The warranty is not applicable to damage incurred during transport or caused by short-circuit, overloading or improper use. In the event of defects in workmanship or material being discovered within the warranty period, the company will provide repair or replacement free of charge.

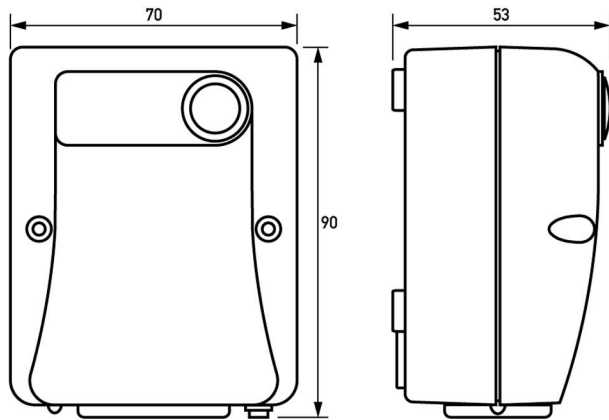
## Wiring



## Derating based on the cable cross-section



## Dimensions



## Technical Data

| DASY                                   |   |                  |                       |                       |
|--|---|------------------|-----------------------|-----------------------|
| Device design                          | DASY 10-2/12 V  | Dasy 10-2/24V    | Dasy 10-2/230V        | Dasy 16-2/230V        |
| Operating voltage                      | 12 V AC/DC ± 10%                                      | 24 V AC/DC ± 10% | 230 V AC ± 10%, 50 Hz | 230 V AC ± 10%, 50 Hz |
| Item no white                          | 09 500 040  | 09 500 041       | 09 500 043            | 09 500 042            |
| Item no anthracite                     | -   | -                | 09 500 047            | 09 500 046            |
| Integrated overvoltage protection      | No  |                  |                       |                       |
| Miniature circuit-breaker              | max. 10 A   |                  | max. 16 A             |                       |
| <b>Output</b>                          |   |                  |                       |                       |
| Type                                   | All-or-nothing relay                                  |                  |                       |                       |
| Contact                                | 1 NO contact<br>Micro switch-off                      |                  |                       |                       |
| Switching power                        | 2500 VA   |                  | 4000 VA               |                       |
| Max. capacitor for shunt compensation  | 70 µF   |                  | 140 µF                |                       |
| el. switching cycles                   | > 100,000   |                  |                       |                       |
| Internal consumption at rated load     | 0.9 W   |                  |                       |                       |
| Switch-on delay                        | 10 s (1 s) <sup>a)</sup>                              |                  |                       |                       |
| Switch-off delay                       | 40 s (1 s) <sup>a)</sup>                              |                  |                       |                       |
| <b>Switching thresholds</b>            |   |                  |                       |                       |
| Switch-on value, adjustable            | 1-200 lux   |                  |                       |                       |
| Switch-off value                       | 1.5 × switch-on value                                 |                  |                       |                       |
| <b>Control display</b>                 |   |                  |                       |                       |
| Red LED: on                            | Switch-on threshold exceeded (immediate LED display)  |                  |                       |                       |
| Red LED: off                           | Switch-off threshold exceeded (immediate LED display) |                  |                       |                       |
| <b>Terminals</b>                       |   |                  |                       |                       |
| Type                                   | Screw terminals with strain-relief clamp              |                  |                       |                       |
| Clamping area                          | 0.4 mm Ø to 4 mm <sup>2</sup> (rigid)                 |                  |                       |                       |
| Tightening torque                      | 0.5 Nm  |                  |                       |                       |
| <b>Housing</b>                         |   |                  |                       |                       |
| Dimensions (H x W x D in mm)           | 90 x 70 x 53  |                  |                       |                       |
| Type                                   | On-wall case for wall or mast mounting <sup>b)</sup>  |                  |                       |                       |
| Protection class                       | IP54  |                  |                       |                       |
| Material                               | Polycarbonate (PC)                                    |                  |                       |                       |
| Ambient temperature                    | -25 °C to +50 °C                                      |                  |                       |                       |
| Weight                                 | 0.140 kg  | 0.136 kg         | 0.139 kg              | 0.144 kg              |
| Design regulations/standards           | DIN EN 60669  |                  |                       |                       |
| Accessories mast bracket <sup>b)</sup> | 09 500 049  |                  |                       |                       |

<sup>a)</sup> These values apply for five minutes after the last switch-on threshold change.

<sup>b)</sup> Optional mounting kit to be ordered separately