

# VELOGICAL

## SWITCH

### User Manual

#### General

This small and lightweight miniature switch can be used to selectively turn on and off bicycle lights and other consumers. The switch is waterproof and vibration resistant, and it can be securely and permanently attached to the handlebars or elsewhere on the bike with two industrial cable ties, just as needed.

Installing the switch is useful every time you want to save energy.

Especially when using more powerful e-bike LED headlights, switching off the lights during the day is recommended:

- to save battery, or
- to cancel the limited energy supply for the darkness.

If the energy is generated by a dynamo during the ride, it is advisable to turn off normal / economical headlights in order

- to have enough energy for cell phone or navigation system,
- to quickly charge an existing buffer battery, or
- to build up reserves in the buffer battery for the dark.

#### Connection

Figure 1 shows the connection to an e-bike headlight with rear light output: This type of headlight works only with direct current (DC) from an accumulator or battery, and the level of voltage can vary within wide limits (in this example, 6V to 42V). The limits are usually stamped or printed on the housing or can be found in the user manual.

The special feature of this type of headlight is an output for the rear light with DC voltage regulated to approx. 6V. This allows the connection of almost all common tail lights, including dynamo tail lights. Although they are originally built for operation with alternating current, they usually also work with 6V direct current (possibly try the correct polarity).

When the front headlight is switched off, the rear light automatically turns off, too.

**Important note:** For DC connection, always ensure that the polarity is correct: **+** to **+**, **-** to **-** !

- The VELOSPEEDER motor controller has a DC output of 24V DC, red is **+**, black is **-**.
- The VELOGICAL universal power source has a 12V DC output, red is **+**, blue is **-**.

Usually, the symbols for **+** and **-** are engraved in the headlamp housing.

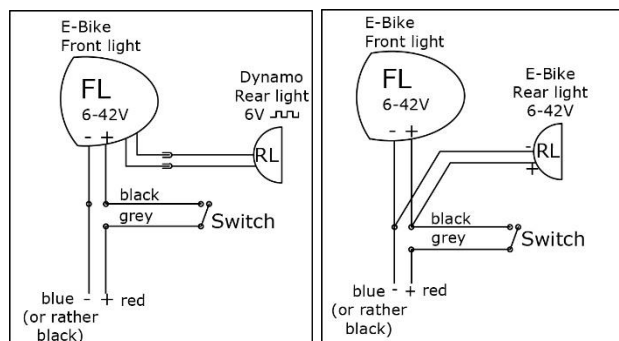


Figure 1

Figure 2

In figure 2, the rear light is connected in parallel to the front light and accordingly receives the same voltage as the front light. According to this scheme, only special e-bike rear lights that have a corresponding voltage-resistant DC input may be connected. Just as with the front headlight, polarity must be observed, and information on the permissible voltage range (e.g. at least 6-24V) must be available.

If an already existing dynamo headlamp is to be connected to a (subsequently installed) VELOGICAL universal power source, it can be connected either according to Fig. 1 or 2, depending on which configuration requires the least possible wiring effort.

Since the VELOGICAL universal power source has an AC output (two green wires) especially designed for dynamo lights, there is no polarity either at the power source or at the headlight and rear light. Mechanically operated switches basically have no polarity.

**Important note:** to prevent short circuits, bare spots must be covered with a heat shrink tube.

When routing the cables, please make sure there is no tension on the cables, even with extreme handlebar deflection. Keep all cables away from the wheels and when removing excess cable lengths, make sure never to cut too close to headlights or switches.

This is what we recommend as a reliable cable connection: pull on 25mm heat shrink tube with  $\varnothing 2.4\text{mm}$  on one side, strip both strands to 12mm, twist cable ends carefully. Then fold over, cover with heat shrink tube, shrink.

Fitting is at your own risk and should only be carried out by appropriately trained professionals. VELOGICAL cannot accept any liability for incorrect assembly or improper use.

#### Technical data

Weight:	9g
Dimensions:	35x23x21mm for $\varnothing > 22\text{mm}$
Switching capacity:	6A/250Vac 1A/48Vdc
Protection class:	IP67

**The warranty period for the VELOGICAL switch is 2 years from the date of purchase upon presentation of the original sales receipt.**

For service purposes, please contact VELOGICAL directly or your dealer. Justified claims for replacement refer to the current model at that time - we reserve the right to make technical changes. Long-term customer satisfaction is very important to us.

#### Scope of delivery

- 1x switch
- 4x industrial cable tie 4,5x165
- 1x set heat shrink tube
- 1x user manual

#### Manufacturer

VELOGICAL engineering GmbH  
[www.velogical-engineering.com](http://www.velogical-engineering.com)

Please read these instructions carefully to ensure that the switch is a reliable long-term companion. Keep this manual in a safe place for future reference.

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