



**SACHS**  
MICRO MOBILITY



## Control Unit B100R

Operating Instructions

## Identification

### Product

Model: Control Unit B100R

Art no: 36293-1

Country of origin: PRC

Marks:



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### Document

Operating Instructions Control Unit B100R

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# 1 Introduction

## 1.1 Important, please note!

Together with these operating instructions, your pedelec will be supplied with additional documents. Please observe all these instructions. Currently, only S-Pedelec cyclers (motor assistance up to 45 km/h) are required to wear a helmet. However, for your safety we recommend that you also wear a helmet on "normal" pedelecs (motor assistance up to 25 km/h).

## 1.2 Intended use of Control Unit B100R

When delivered by your dealer, your pedelec equipped with B100R is ether:

- a trekking bike for normal passenger transport on public roads OR
- a mountain bike that is specially designed for off-road use.

Adjustments and repairs carried out on the pedelec and the individual components shall only be deemed to have been carried out in accordance with their intended purpose if they are explained and approved in this operating manual, in the operating manual of the pedelec manufacturer, in the manuals of the component manufacturers or in other documents supplied together with the pedelec. The manufacturer accepts no liability for damage caused by misuse, improper maintenance or repair, or improper use. It is the responsibility of the cyclist to check the pedelec as instructed, to have any work done on it and to use it responsibly. These operating instructions describe only the use of Control Unit B100R and correspond to the state of the art at the time of printing. The manufacturer reserves the right to make changes as a result of mechanical, software or legal developments.

The manufacturer considers the following as examples of misuse of B100R components on your pedelec:

- Use of the drive system that violates the instructions and recommendations in this manual.
- Exceeding the technical limits specified in this manual.
- Technical modifications to the B100R components.
- Changes to the software of the B100R components.
- Use of unauthorized parts or use of B100R components on bikes other than those supplied to you.

The manufacturer is not liable for damage caused by improper use of the components. Before using the device, carefully read all safety information and warnings in the individual chapters of this operating manual and all other included documents.

## 1.3 Explanation of symbols

In these operating instructions, safety information is marked as follows:



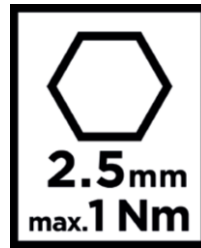
Warning - Failure to follow the instructions may result in serious injury or death.



Caution - Failure to follow the instructions may result in personal injury or damage to the equipment and/or environment.



Hints and special information



Shows the correct tool and torque for assembly. In this case, a 2.5 mm Allen key is to be used to tighten the screw. The maximum torque for mounting the screw is 1 N m (Newton meter).

Always observe these instructions to avoid personal injury and damage to property.

## 1.4 Permissible operating conditions / locations

The B100R can be used at temperatures between 10 °C and +60 °C. IP67 protection means that this component is protected against both harmful dust and immersion in water to a depth of 1 meter for up to 30 minutes. Please also refer to the notes on permissible operating conditions in the operating instructions of the pedelec manufacturer. Restrictions regarding the permissible operating conditions (e.g. maximum climbing ability, maximum permissible height of obstacles, maximum load, etc.) must be observed when using the pedelec. Observe the safety information and warnings in the individual chapters of the operating instructions.

## 1.5 Technical data

<b>B100R</b>	rocker switch for + and -, 3 keys, 7/8" (22.2 mm) inner diameter, hard wired
<b>display type</b>	LCD (Liquid Crystal Display)
<b>color</b>	monochrome
<b>screen diagonal</b>	1.4 inch / 35.4 mm
<b>dimensions (B x L x H)</b>	0.9 x 1.8 x 2.0 (inch) 22 x 46 x 51 (mm)
<b>display glass</b>	hard coated PMMA (PolyMethyl MethAcrylate) acrylic glass lens
<b>protection</b>	IP67

<b>weight with cable</b>	1.76 oz (58 g)
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## 2 What is the B100R?

The B100R is an control unit with integrated LCD display on the handlebar. Since all important information is displayed on the high-contrast 1.4-inch monochrome LCD, a larger display in the centre of the handlebar is not required - the B100R is a stand-alone system.

## 3 Mounting the B100R



Figure 1: B100R mounted on handlebar

The B100R is mounted on the left side of the handlebar of your pedelec [Figure 1]. The entire surface of the LCD display serves as a rocker switch for the "+" and "-" settings.

Additionally, the control unit has three buttons; two on the side and one on the top. The switch and buttons allow you to change the settings on your pedelec, e. g. the degree of motor assistance, at any time without taking your hands off the handlebars.

When mounting the B100R, observe the following [Figure 2]:

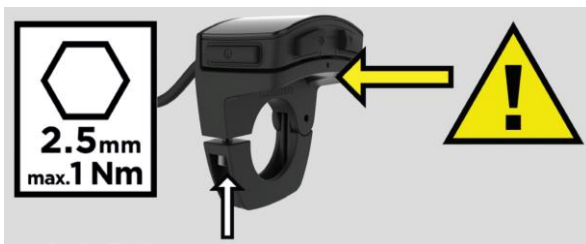


Figure 2: Correct torque, avoid pressure on the housing

**Torque:** The B100R is fixed with a 2.5 mm hexagon socket head screw. Please do not tighten the screw with more than 1 N m (Newtonmeter) torque.

**Caution:** Make sure that nothing on the handlebar such as the handle or brake lever presses against the side or underside of the B100R (yellow arrow). This could affect the function of the rocker switch.

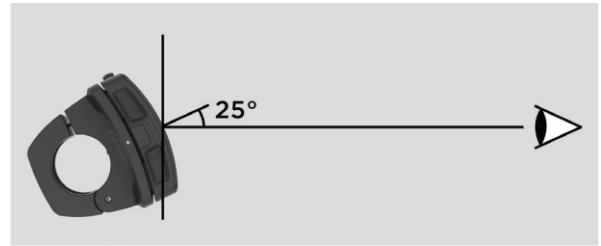


Figure 3: Best viewing angle

The display is designed with an optimum viewing angle of 25 degrees below the vertical [Figure 3]. Loosen the fastening screw and tilt the display on the handlebar until you have found the optimum angle for your riding position. Then retighten the screw with a torque of not more than 1 N m.

## 4 Notes on the connection of the B100R connector



Figure 4: Female connector and male connector

If you need to open both ends of the plug on the cable leading from the B100R to the pedelec frame, follow the instructions below when reconnecting the plug.

The male connector on the cable comes from the B100R [Figure 4, right], the female connector is at the other end of the cable [Figure 4, left].

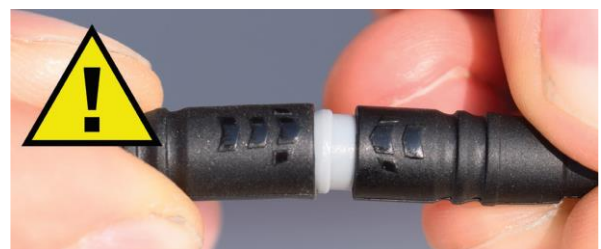


Figure 5: Align connector markings

**Caution:** The ends must be correctly aligned when connecting. Coupling and plug are provided with a mark - align the markings correctly [Figure 5].



Figure 6: Carefully press the plug together

Caution: Carefully press both ends of the connector together [Figure 6]. If the two ends are not aligned correctly, the plug may be damaged.

When disconnecting or connecting, be careful to grip only the ends of the connector, not the cable itself. When plugging the connector together, do not bend the cable to avoid kinks and damage.

## 5 Overview of the Rocker Switch and the Keys



Figure 7: Rocker switches and keys

The entire display of the B100R is a rocker switch. The display can be pressed at the top for the "+" function and at the bottom for the "-" function. In addition, there are three buttons for "On/Off", "Light" and "Set" [Figure 7]. The rocker switch and the keys have the following functions:

<b>On/Off</b>	Switches display / pedelec* on or off
<b>+</b>	Assist level is increased by one
<b>+ push and hold</b>	Pushing aid is switched on
<b>-</b>	Assist level is reduced by one
<b>- long-push</b>	Distance travelled is reset to 0
<b>Light</b>	Switches the lighting on or off

<b>Set</b>	Changes the selection in the display
<b>Set long-push</b>	Unit change between metric and Imperial

\* depending on pedelec model, see chapter 6.1.

## 6 Using the B100R

### 6.1 Switching on and off, screen explanation

#### Switching on the system

The complete system consists of the B100R and the pedelec. To turn on the system, press either the "On/Off" button on the B100R or the button on the battery (varies depending on the model). The display will turn on after a few seconds.

Figure 8 shows all segments of the display. While riding, the display does not show all segments at once - it looks more like the screen above [Figure 7]. In the above example, at a speed of 27 km/h, you are riding with the third support level. The battery is not fully charged, but it is well charged, and you have covered a distance of 65.3 kilometers on this trip.

#### Switching off the system

To turn off the system, press either the On/Off button on the B100R or the button on the pedelec battery (depending on the model). The display and your pedelec will turn off.

#### Auto turn off

If your pedelec is not used for several minutes, the system switches off automatically. By pressing the "On/Off" button, the system is switched on again.

### 6.2 Display

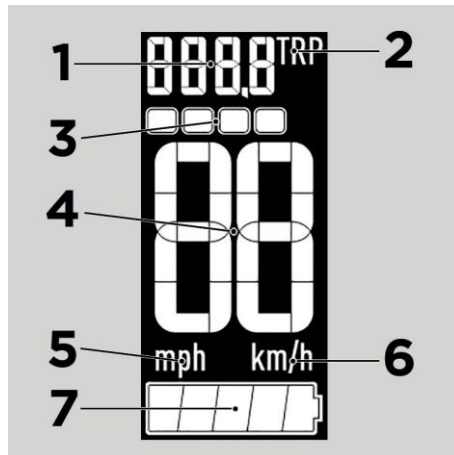


Figure 8: LCD display

The B100R has an LCD display (Liquid Crystal Display). The different segments show:

1. distance travelled or range (chapter 6.5)
2. trip distance (TRP), range (R) or odometer (T) (chapter 6.5)
3. assist level (chapter 6.7)
4. speed (chapter 6.8)
5. mph = units in miles per hour (chapter 6.6)
6. km/h = units in kilometers/hour (chapter 6.6)
7. state of charge of battery (chapter 6.9)

Note: While riding, the display does not show all segments at the same time.



Warning: Do not let the display distract you so much that you lose attention to your surroundings. In the worst case, such distractions can result in serious injury or death..

### 6.3 Lighting

Press the "Light" button (Chapter 5) to switch on the lighting. Normally the lighting on the pedelec consists of a headlight and a rear light. Although there is no visual representation of the lighting on the LCD display, the B100R's backlight turns on and remains on as long as the lighting is on. Press the light button again to turn off the backlight.

### 6.4 Pushing aid

Press and hold "+" on the rocker switch (chapter 5) to switch on the pushing aid. The pushing aid switches on the motor to move the pedelec forward slowly (6 km/h) without the driver having to pedal. This function can be useful, for example, if you push the pedelec up a ramp. There is no visual indication of the pushing aid on the LCD display; the function is stopped as soon as "+" is released. If you pedal or drive faster than 6 km/h, the pushing aid will end.

### 6.5 Distance travelled, range and odometer

At the top right [Figure 8, number 2], the display shows either the travelled trip distance (TRP), the estimated remaining range of the pedelec (R) or the odometer (the total distance travelled by the pedelec = T). The default setting for the display is TRP. Press and hold the "-" key (chapter 5) to reset the TRP counter to 0.

To change the display settings, press the "Set" button once (chapter 5) to display range (R) or twice to display odometer (T). Press the "Set" button again to advance the display in the order TRP / R / T; after T the display returns to TRP.

The display will count up to 9999 kilometers or 6213 miles. If the odometer reaches more than that, it restarts with 0.

### 6.6 Units

Long-push „Set“ (chapter 5), to toggle between metric units (km/h = kilometers/hour) and Imperial units (mph = miles per hour). The units are shown in Figure 8 (numbers 5 and 6).

### 6.7 Choice of assist level

You can always press "+" and "-" on the rocker switch (chapter 4) of the B100R to change the degree of motor assistance. This allows you to make optimum progress with your pedelec in any situation and on any terrain. There are four assist levels and "Off" (level 0), so a total of five levels. The symbols for the levels are shown in Figure 9.

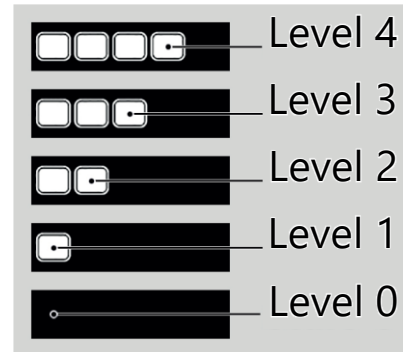


Figure 9: Assist levels

- Level 4: highest assist level with the most power, drains battery fastest
- Level 3: second highest assist level
- Level 2: second lowest assist level
- Level 1: lowest assist level, battery lasts the longest
- Level 0 (Off): no assistance, pedelec is like a bicycle



The motor assists only as long as you pedal. If you do not pedal, the motor interrupts the assistance.

### 6.8 Speed

The largest part of the display shows the pedelec's current speed [Figure 8, number 4]. To change the units (km/h or mph), press and hold the "Set" button.

### 6.9 Battery state of charge (SoC)

The battery symbol at the bottom of the display indicates the battery's state of charge in five segments [Figure 10]. Please note that each segment only indicates a range of 20 %, not an absolute value. For example, if three segments are displayed, the battery is approximately half full, but not necessarily exactly 60 % full - the charge level is in the range of 41 % to 60 %. When the battery charge drops to 10 % or less, the last of the five segments starts flashing to indicate the low state of charge.

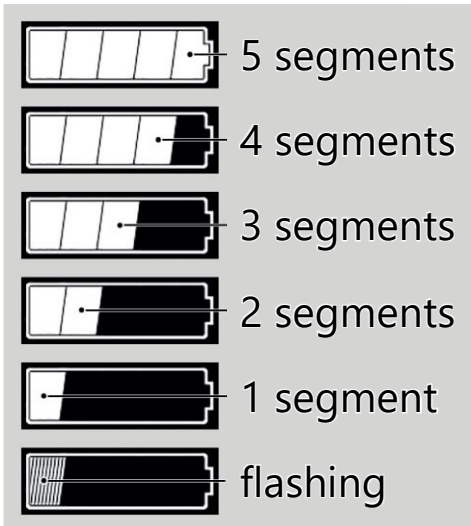


Figure 10: battery state of charge

- Five segments: SoC ca. 81 - 100 %
- Four segments: SoC ca. 61 - 80 %
- Three segments: SoC half full, ca. 41 - 60 %
- Two segments: SoC ca. 21 - 40 %
- One segment: SoC ca. 11 - 20 %
- One segment flashes: SoC SoC 10% or below

## 7 Firmware updates by your dealer

Your bicycle dealer can perform firmware updates to the B100R. Such firmware updates are available at regular intervals - your dealer will be happy to advise you and keep you up to date. Please note that driving behavior can change easily after an update. Therefore, after each update you should first carry out a test drive on a suitable private property.