



TBDZ02 LCD CONTROLLER OPERATING MANUAL



Specifications

Working voltage: DC 11V-60V

Max working current: 70mA(11V) 32mA(50V)

Display type: 21*4 segment LCD

Sampling:

- 1-12 pulses each circle of the wheel (Data come the from hall sensor in controller)
- 1 pulses each circle of the wheel(Data come from reed sensor on the front wheel)

Working temperature: -20°C to 50°C

Backlight: White LED

Brightness: 200cd/m²

Dimensions: 102.5mm×74.5mm×28mm

USB Charger Output: 5V, 700mA

Installation

The controller LCD is designed to be installed in the middle of the handlebars above the stem. Remove the two securing bolts from the clamps and stretch the clamps over the handlebars. Rubber shims are provided for securing the display to smaller diameter handlebars. Once the correct shims are in place re-fit the securing bolts and tighten them until the display is secure (i.e. until the display cannot be rotated easily). Note that doing the securing bolts up too tight could damage the clamps.



LCD Functions

Speed Display

Shows current speed in either km/h or mil/h (user selectable)

Battery Indicator

Six horizontal segments show the current charge state of the battery (each segment represents 17% of the capacity of the battery). When the battery reaches 15% capacity the battery indicator will appear empty and start to flash, indicating the the battery needs to be charged.

NOTE: When a high assist setting is used and the motor is under load the battery indicator may drop suddenly, then recover when the motor is not under load. This is normal and is due to the internal voltage drop in the battery and wiring at high current.

Trip Distance

Trip distance can be reset manually and is also reset when the controller is powered off.

Odometer

Shows the total distance travelled (odometer can not be reset). This is useful for servicing.

Movement Time

This is the total time for which the pedals have been turning. It can be reset manually and is also reset when the controller is powered off.

Power Assist Level

The current power assist level is displayed on a bar graph to the left of the screen

Backlight

The LCD has a backlight for use in low light levels. A lamp icon is displayed when the backlight is on.

Wheel Diameter

The wheel diameter can be set from 8" to 28". The default setting is 26"

Speed Sensor

The speed sensor type and number of pulses per wheel revolution can be adjusted if required. If the speed sensor provided with the kit is used this setting should be left at the default value.

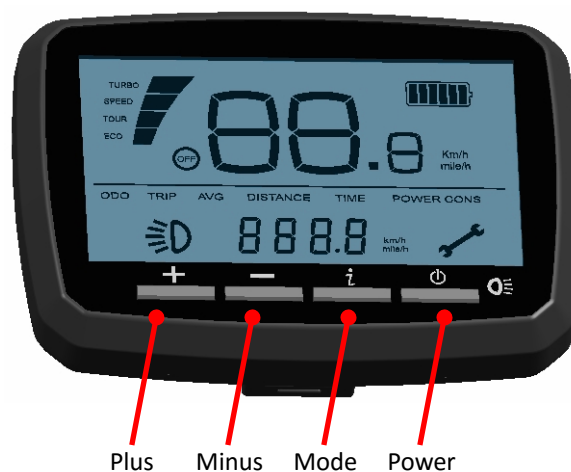
Diagnostic Code

If a fault is detected a spanner will appear in the lower left corner of the display and the diagnostic code will be displayed where the speed normally appears. The diagnostic codes are explained at the end of this manual.


USB Charging Output

A USB type-A outlet is provided on the LCD display. It can be used to charge devices such as mobile phones. The output is 5V and a maximum current of 700mA can be supplied.

Operation and Settings



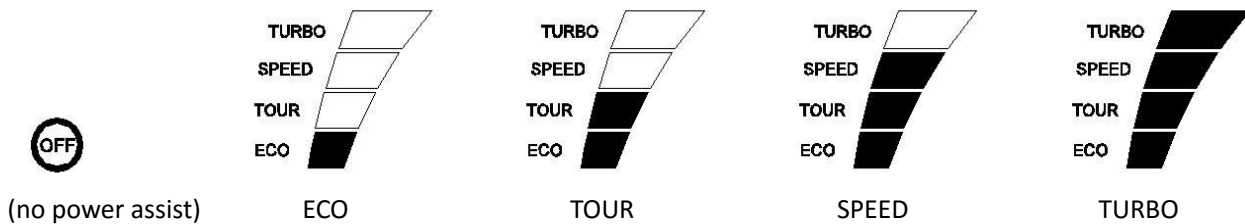
Powering the Controller On

Press and hold the power  button for 2 seconds to turn the controller on. The controller can be powered off by holding the power button for another 2 seconds. The controller will automatically power off if no activity is detected for 5 minutes.

NOTE: The bike should always be at a standstill when the controller is powered on so that it can perform its self-diagnostic. If you turn the controller on while you are riding the bike or if you have your feet on the pedals this will probably put the controller into a fault state as it expects the reading from the torque sensor to be zero during the self-diagnostic.

Setting the Assist Level

There are four assist levels ("ECO", "TOUR", "SPEED" and "TURBO") and the power assist can also be turned off. Press the plus **+** button to increase the power assist level and the **-** minus button to decrease the assist level.



Setting the Display Mode

Press the information button **i** to toggle through "ODO", "TRIP", "AVG" and "TIME" displays.

Advanced Settings

To enter the Advanced Menu, turn the display off and then press and hold **i** and **⏻** for three seconds. Now press **i** to toggle through the advanced options.

- "d1" - Set the wheel diameter of the bike. Default is 26".
- "cc" - Increase "+" / decrease "-" the number of signal outputs from the speed sensor per rotation. Default is 1.
- "km/h" - Select the units of speed by pressing "+". Default is km/h.
- "6km/h" - Set the walking speed function on/off by pressing "+". Default is Off
- "Sd" - Increase "+" / decrease "-" the maximum speed limit. Default is 25km/h.
- "A" - Default is 16.
- "m" - Select either European "EUR" or Japanese "JAP" mode by pressing "+". Default is EUR.
- "25km/h" - Default is On.

FUNCTIONS

Backlight



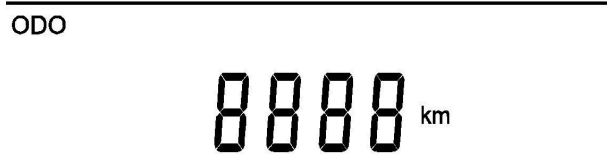
With the system powered on push the power button momentarily to turn the backlight on. Push the power button again to turn the backlight off.

Trip Distance (trip)



Shows the distance covered in the current trip.

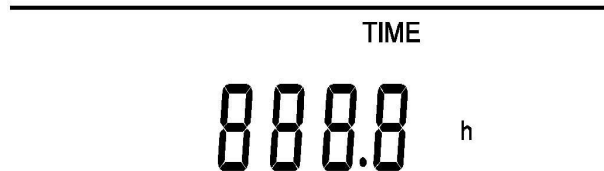
Odometer



Shows the total distance covered. This is useful for servicing.

When on trip distance, press the button for 2 seconds to clear.

Movement Time (TIME)



Shows movement time.

Press and hold the button for 2 seconds to clear/reset.

Average Speed (AVG)



Shows the average speed (average speed=trip distance / movement time), speed resolution is 1km/h (mil/h), full range is 99 km/h or 99mil/h.

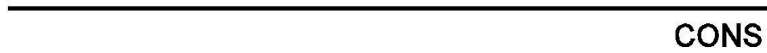
Power



888.8

Average power consumption in W*h.

Cons



888.8

Shows the average power in watts

Wheel diameter selection

d1

0026

Press **i** button to select the wheel diameter using + and - buttons to adjust the wheel size from 8 to 28 inch, the default value is 26 inch.

Speed sensor selection

CC

0001

Press **i** button to "Speed sensor selection" using - and + buttons to select the number of pulses per wheel revolution. The default is 1.

Speed units selection (km/h-mil/h)

888.8 km/h
mile/h

Press **i** button to enter the speed units. Use + button to switch between km/h and mil/h default is km/h.

Diagnostic code



If a fault is detected a spanner will appear in the lower right corner of the display and the error code will be displayed.

E02 = Motor hall sensor failure or Motor cable short circuit.

E03 = Controller failure.

E04 = Throttle failure.

E06 = Torque sensor fault. (NOTE: Often triggered if the controller is powered on while the bicycle is being ridden)

E08 = Under voltage alarm.