



Battery Gauge Customized for Grin Technologies, Rev 1.0

(Firmware Batt2LT_Justin_3Apr14.hex)

Power On

During power on, the battery gauge will do an initialization with all the LEDs light up for 2 seconds before entering normal operation. If all the LEDs fail to light up, there is a fault in the battery gauge. Try to switch On/Off the ignition key again to initialize.

Basic Operation



Battery level on the top shows the state of charge of the battery. As you continue to ride under power and use the pack, the remaining LED's will indicate the approximate charge in the battery. If the battery level shows 'red', it is nearly empty and best to recharge.

The blue Power level shows the level of electric assistance. On turning on the device, it will default to no LEDs illuminated and you will not have power to the bike. You increase or decrease the power by pressing the Up▲ or Down▼ buttons. With all 5 LED's lit up the output power is not limited by the console, while fewer LED's the console will limit your motor power for less assistance and greater range.

With the stock 25A eZee controller, each LED represents 5 amps. So if you have 2 power LED's lit up, then the system will be limited to drawing no more than 10 amps from the battery pack.

Advanced Setup Menu

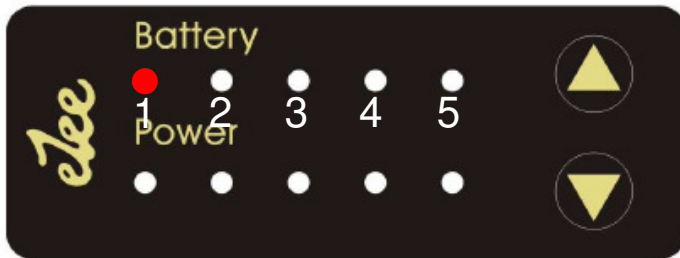
Hold the 'Up▲' and 'Down▼' button together during power up to enter setup menu.

Use Up▲ or Down▼ button to select the appropriate settings, and hold the 'Down▼' button for about 3 seconds to save and switch to the next menu

Menu 1: Voltage Selection

This sets whether the LED gauge is calibrated for 36V or 48V lithium battery packs. If you have it setup in 48V mode with a 36V battery, then the battery level will always be red (low), while having the console in 36V mode with a 48V pack will indicate full battery charge even when the battery is actually flat.

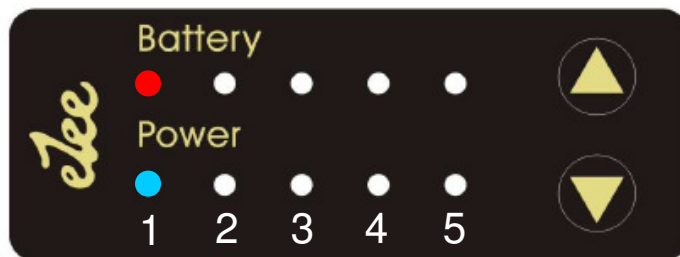
- 1 – 36V (Default)
- 2 – 48V



Menu 2: PAS Selection

The second menu is not implemented in this firmware build as no PAS connections are supplied.

- 1 – Dual Hall Pedelec sensor (Default)
- 2 – Thun Torque sensor



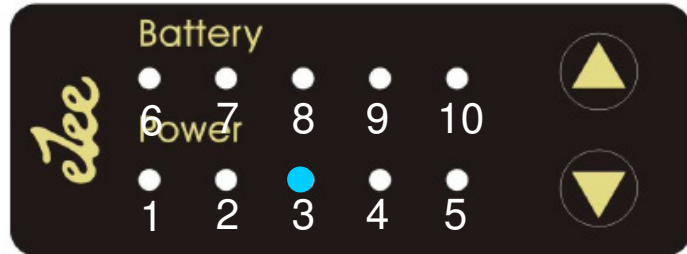
Menu 3: Shunt Resistance

The battery gauge power limiting is calibrated to the controller's current sensing shunt via the a shunt resistance value. This shunt resistance is shown on the controller label or on a sticker. Choose the value from the list below which is closest to the exact RShunt you find on the label. If you use an incorrect shunt

resistance, then the power limiting will not be scaled in even 5A increments as intended.

Shunt Value (mOhms)

- 1 – 1.0
- 2 – 1.25
- 3 – 1.5 (Default)
- 4 – 1.75
- 5 – 2.0
- 6 – 3.0
- 7 – 3.5
- 8 – 4.0
- 9 – 4.5
- 10 – 5.0



Menu 4: IntAGain

The power limiting happens via a current control feedback loop, and some systems may exhibit oscillating behavior if the feedback gain is not properly adjusted. If there is too much lag before the power limit kicks in, then increase to a gain to a higher setting. If the power limiting is rough and oscillates, then reduce the gain to a lower setting.

- 1 – 0.025
- 2 – 0.05
- 3 – 0.14 (Default)
- 4 – 0.2
- 5 – 0.4



Menu 5: Speed Limit

Set the speed limit. The battery gauge will limit the speed when it senses that exceeds the speed limit. However, it has no effect in the default hardware layout as the motor hall signal is not connected to the board.

- Speed Limit Value (km/h)
- 1 – 25.0
 - 2 – Motor Max RPM (Default)

