ELEC1100

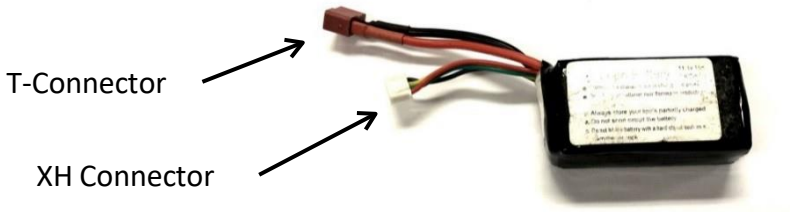
Supplementary Notes for Project

Contents

I. Using battery and its accessories

A. Battery

Under normal condition, after the battery pack is fully charged, the total output voltage is about 12V ~ 12.6V.



- The T-connector is only for power delivery.
- The XH connector is only for battery charging.

WARNING

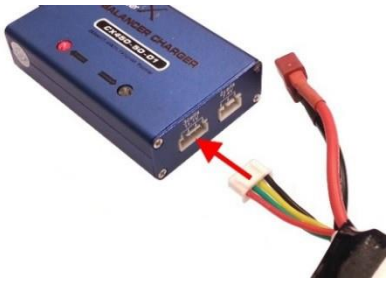
DO NOT short any of the two terminals of connectors.
Otherwise, the battery would explode.

B. Battery Charger

Charging Steps

a) Connect the balanced charger to power socket using the given AC adaptor. The power LED (red) lights up. The charger LED should remain unlit.

b) Connect the battery pack to the “3cells” port. Pay attention to the orientation of XH connector of the battery when inserting to the port.



WARNING

Incorrect insertion will damage the XH connector and the balance port.
If the red power LED does not light, DO NOT CONNECT the battery to the charger. Otherwise the charge would be damaged.

c) If the battery is correctly connected to the charger, the charger LED (green) lights up. This indicates the battery pack is being charged.

d) When the battery pack is fully charged, the charger LED goes off.

e) Disconnect the battery pack from the charger.

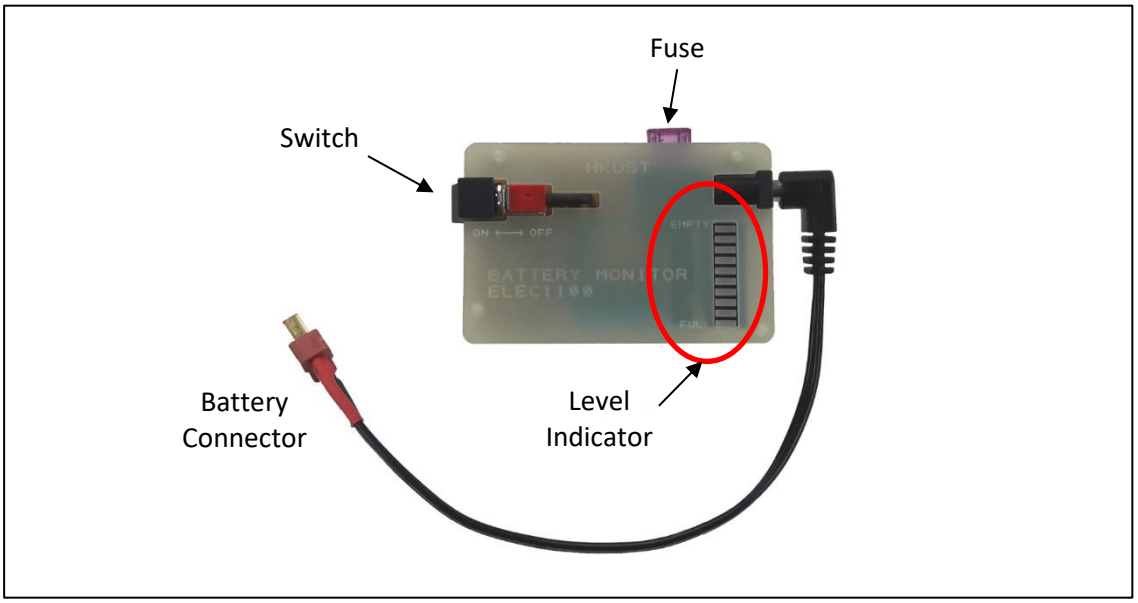
f) Disconnect the AC adaptor from power socket.

NOTICE

It takes more than 8 hours to fully charge a low energy level battery.
DO NOT charge the battery without supervision.

C. Battery Monitor

The Battery Monitor contains an on/off switch, a fuse, a level indicator and a battery connector.

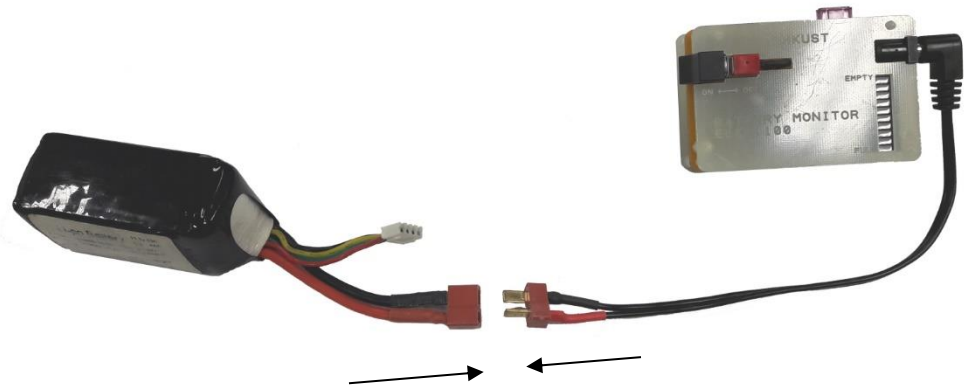


With battery connected, when switching on the battery monitor, the level indicator (contains 10 LEDs) shall emit light, indicating the battery level.

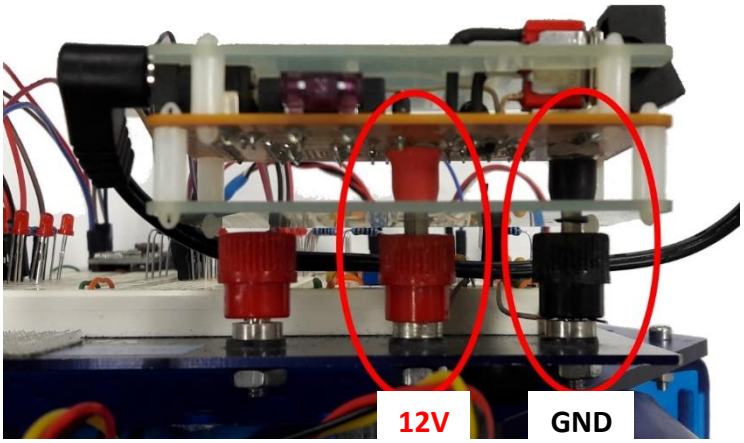
When only red LEDs within the indicator are emitting, you should charge the battery immediately.

D. Using Battery with Breadboard

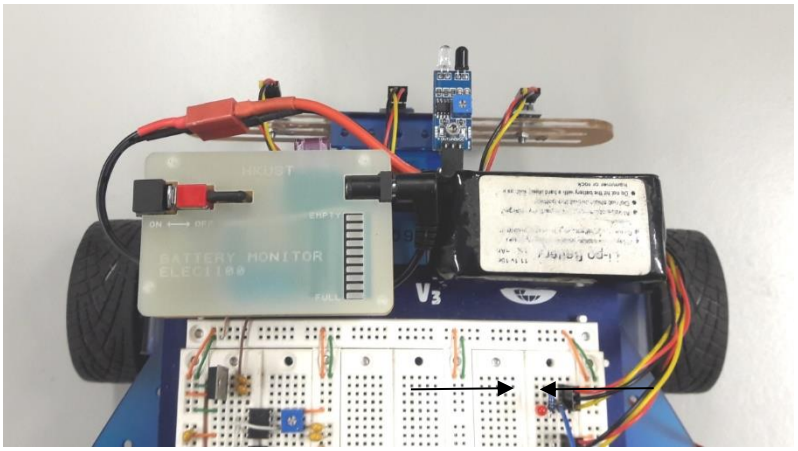
1. Connect the battery with the battery monitor. Be careful with orientation of the connectors.



2. Plug the battery monitor into the posts of breadboard.

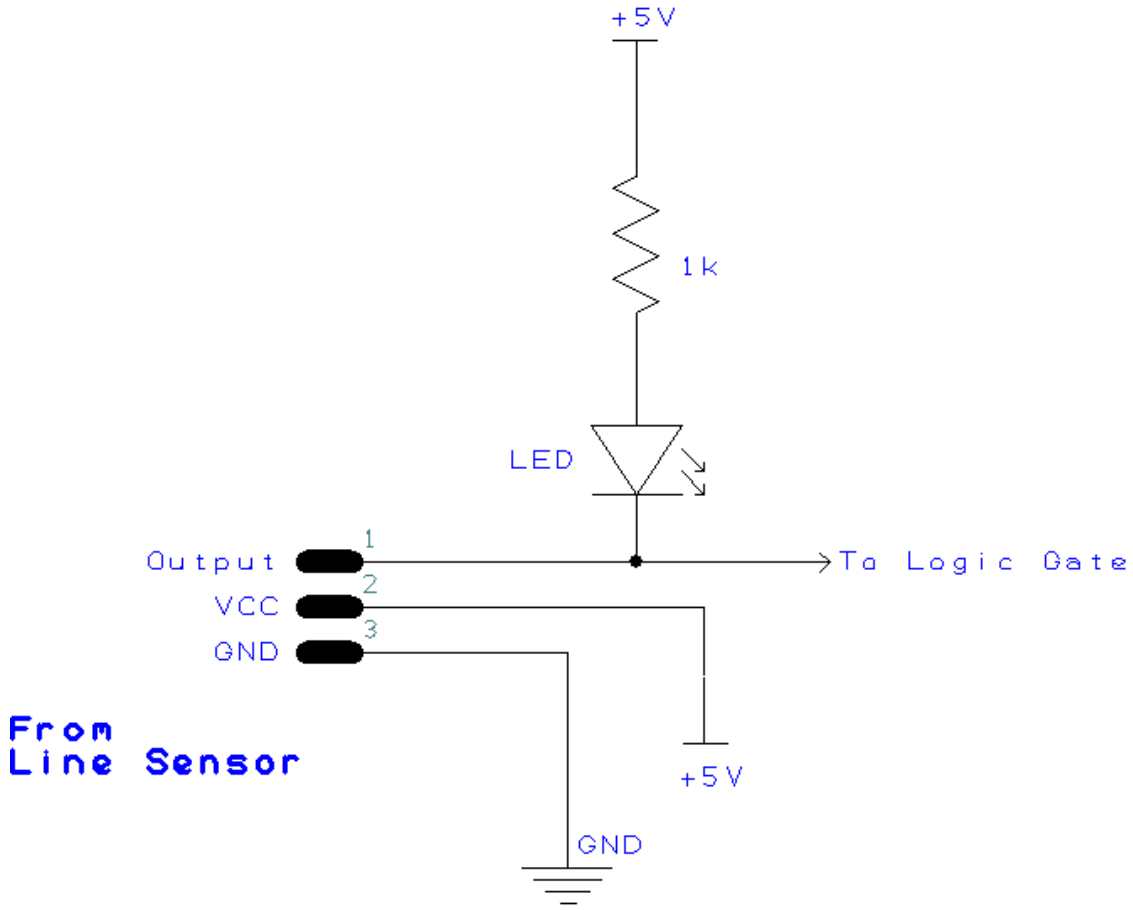


3. Place the battery on the breadboard corner.



II. Using LED with Line Sensor

You may want to use LED to indicate the state of the sensor output on the breadboard. The diagram below suggests a connection method in which the voltage levels of the sensor output are within the gate logic specifications.



1) When the sensor is on top of the white strip, the sensor output level is low, the LED turns on.
2) When the sensor is on top of green portion, the sensor output is high, the LED turns off.

Note: This method is also applicable to show the logic state within digital circuitry with the advantage that the voltage level at test point is less altered.

A resistor MUST be used in series with LED in any cases.