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High Power Motor Controller Operating Instructions

Lyen Edition Controller - Installation And Operation Manual 101

When you receive the controller, please hook it up temporarily to a battery and motor to confirm everything is functioning properly, prior to permanent installation.

Connection Instructions

1. Connect the throttle to the controller. The connector type and pin-out may not match your existing connector, since manufacturers have not yet standardized.
  a) Pin-out info: **red** = +5v, **green** = signal, **black** = ground
  b) for *Crystalyte* throttle pin-out conversion, click here

2. Connect the motor hall and phase wires to the controller. The connectors and color codes of both the hall wires and the phase wires may not match your existing connector, since manufacturers have not yet standardized.
  a) For known color codes of both hall and phase wires, click here
  b) If you do not see your motor listed, click here for a combination matching sheet.

3. Connect the battery to the controller. The thin red wire is for ignition. You may need to connect it to the battery positive to start your "engine".

4. Connector the ignition wire to activate the controller.

5. Turn the throttle gently and confirm that the motor spins.

Once the controller is confirmed functional, you can find a permanent place to mount it on your electric bike, along with your motor and battery pack.

USB-TTL Programming Adapter, and Software Driver Installation

Let's focus on the driver setup first.

Do not insert the USB-TTL programming adapter yet.

1. Download the program and driver here (Windows Vista & Windows 7 32bit/64bit), or here for (Windows XP driver only), and save it to a folder on your computer.

2.Unzip and extract the zipped file to a local directory. *(example: My Documents, Desktop, C:\temp, etc.)*

3. Open the program *USB-TTL_Programming_adapter_driver.exe*

4. Follow the on-screen instructions.

5. When setup is complete, you may need to restart your computer.

6. If so, restart computer and insert the USB-TTL programming adapter into a spare USB port.

7. Verify that the USB-TTL adapter driver is installed properly by going to START > Control Panel > System > System Properties > Hardware > Device manager > and expand the Ports (COM & LPT). Look to see if there is a yellow exclamation mark by the adapter driver. I not, The installation process is complete. If you see the yellow exclamation mark, then click here to proceed.

Program Installation

1. Download the program and save it to a folder on your computer.

2. Open the folder and unzip the files to a new folder.

3. Open the program named **Install.bat** if you are running 32bit OS such as Windows XP or newer OS. For 64bit OS, select *Run as administrator* and click **Install64.bat**

4. The program will then register 4 files. Simply click “OK” 4 times, once for each file registration, and you should be ready to go.

Programming Instructions

1. Unplug the controller from the electric bike battery.

2. Plug the USB-TTL programming adapter into a spare USB port.

3. Wait 30-60 seconds for the computer to recognize and install the driver for the adapter

4. Verify the USB-TTL adapter driver is installed properly, by going to START > Control Panel > System > System Properties > Hardware > Device Manager, and expand the Ports (COM & LPT) to confirm that the COM port for the USB to Serial Adapter appears. If you see a yellow exclamation mark, click here to proceed.

5. Plug the USB-TTL programming adapter into the JST-SM 5 pin connector of the controller.

6. Open Parameter Designer For 116 folder and execute the file called *Parameter Designer For 116.exe*

7. Load the profiles by clicking *OpenFile* for your controller (For example, 6 FET.asv, 12 FET.asv, 18 FET.asv, 24 FET.asv, etc.). It will then display the default value.

8. When you are satisfied with your settings, save a copy by clicking on *StoreFile.*

(Use a name other than the default profile, to avoid overwriting it)

9. Select *"Comm Num"* to choose the Com Port associated with the USB adapter. (You can confirm the port number by opening Control Panel > Phone and Modem Options).

10. When you are ready to send the settings to the controller, click *Start Transmit* program command.

11. The press the button on the USB-TTL adapter and hold it for 5 seconds.
The status box will display *"O.K"*, indicating it has been transmitted successfully.

13. Click *Stop Transmit* program command.

14. Disconnect the USB-TTL programming adapter from the 5 pin connector of the controller.

15. Disconnect the USB-TTL programming adapter from your computer.

16. Close the program.

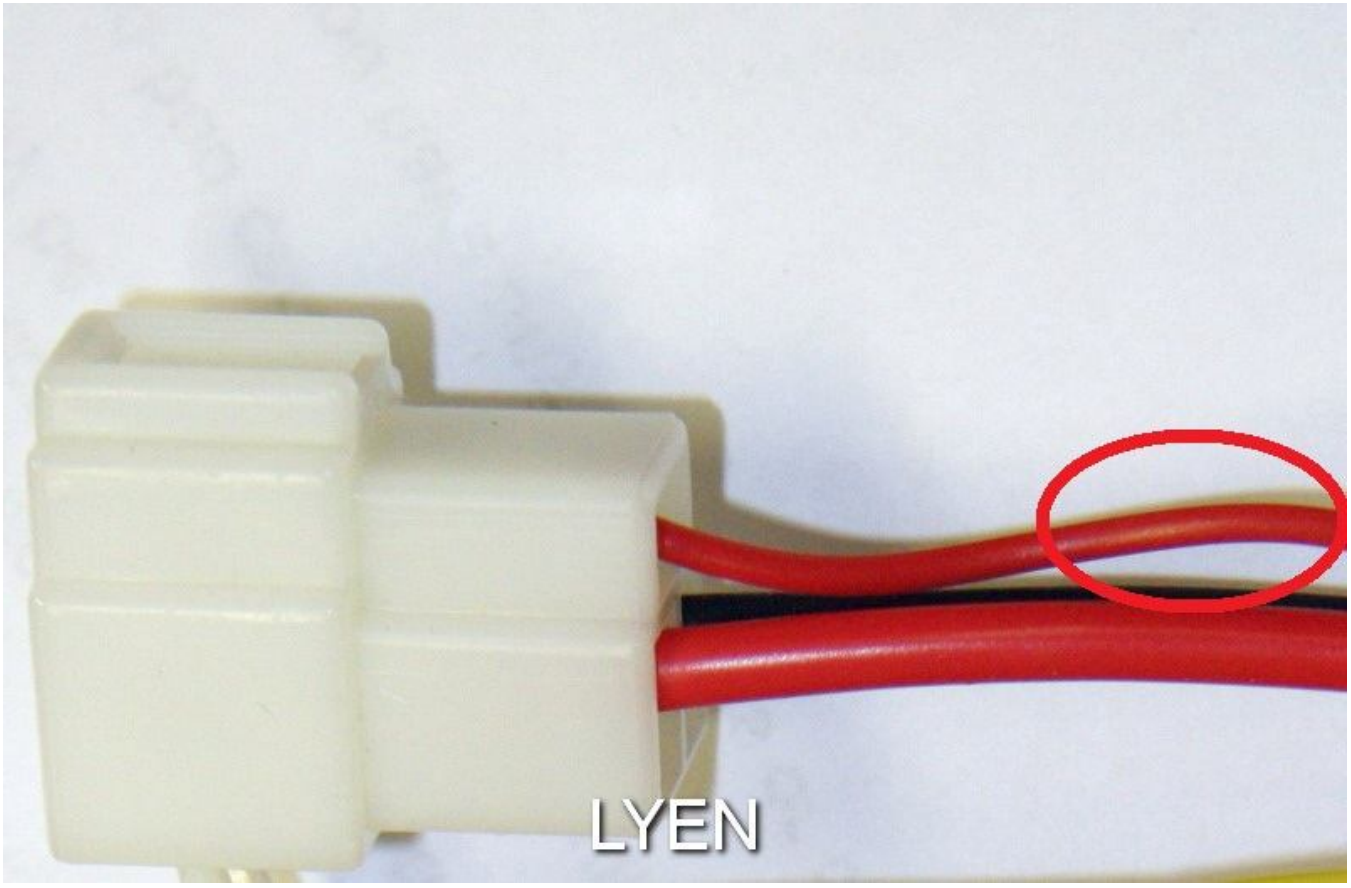
17. Reconnect the electric bike battery to the controller

18. You are now ready to perform a test ride with the newly programmed controller parameters.

For definitions of program parameters, click here

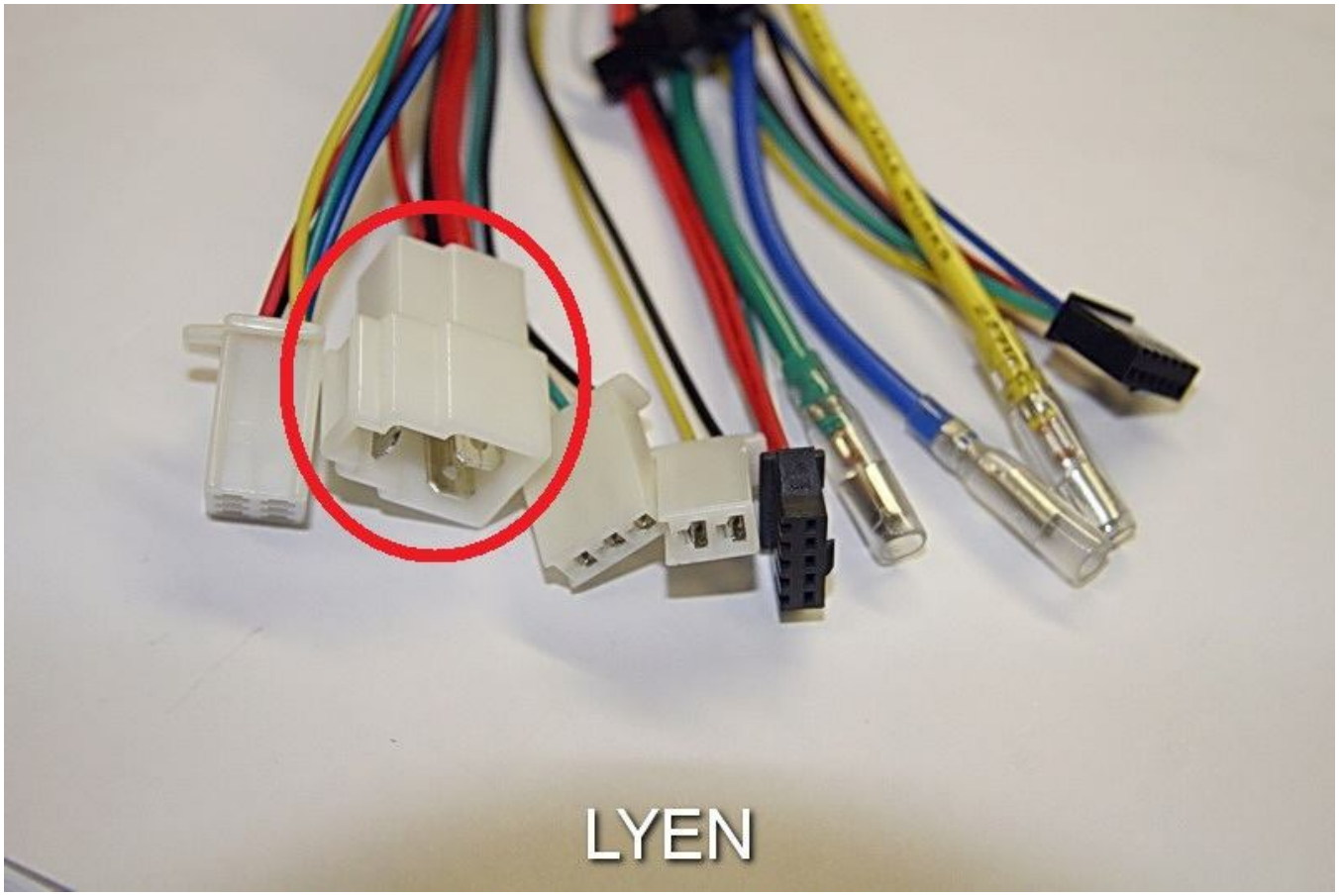
Connector and Wiring Description

1. Connect the battery to the controller. The thin red wire is for ignition. You may need to connect it to the battery positive to start your "engine"



(For 18 FET and above, click here)

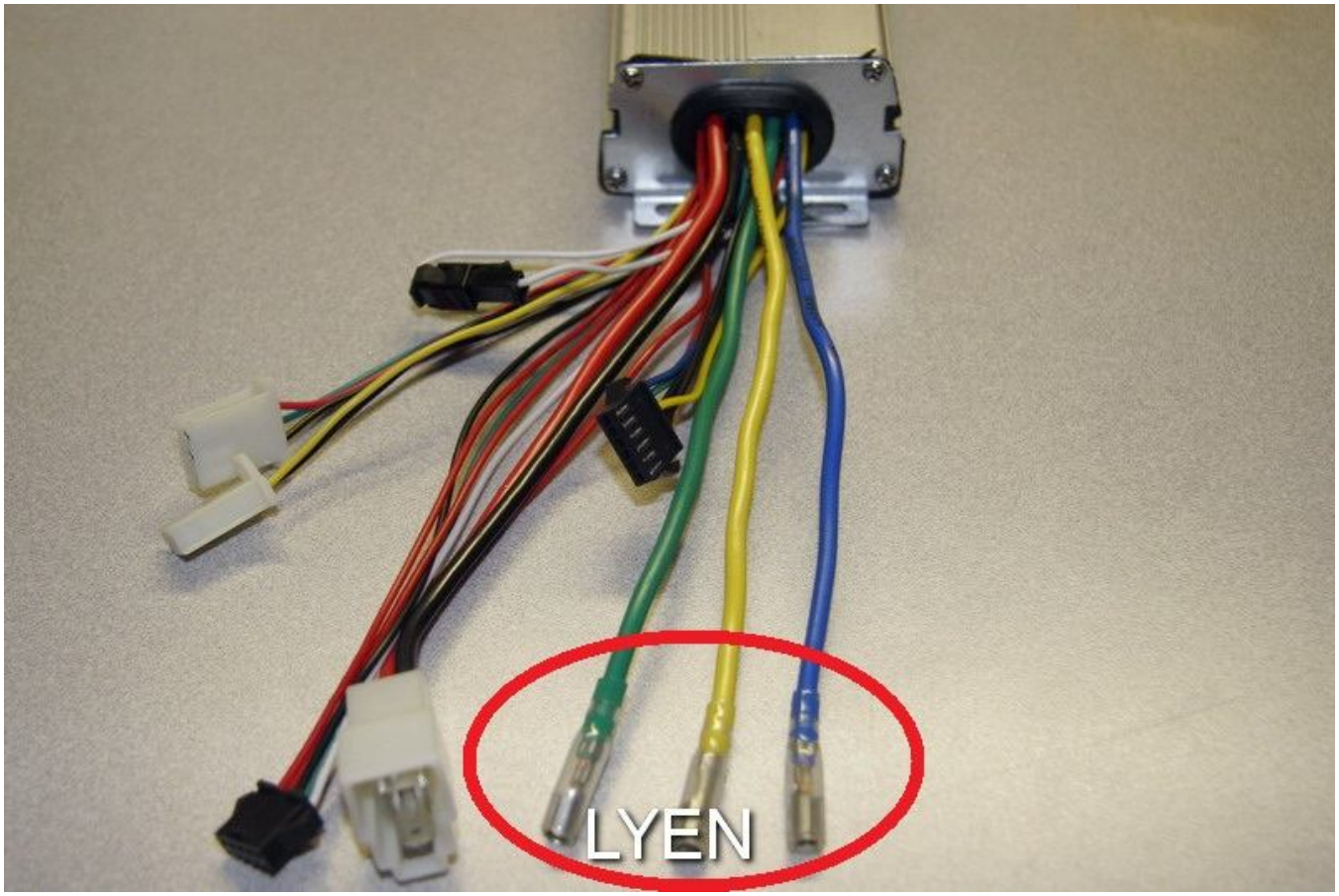
2. Battery Connector



Red = Battery positive (For 18 FET and above, click here)

Black = Negative (For 18 FET and above, click here)

3. Phase Wire Connectors

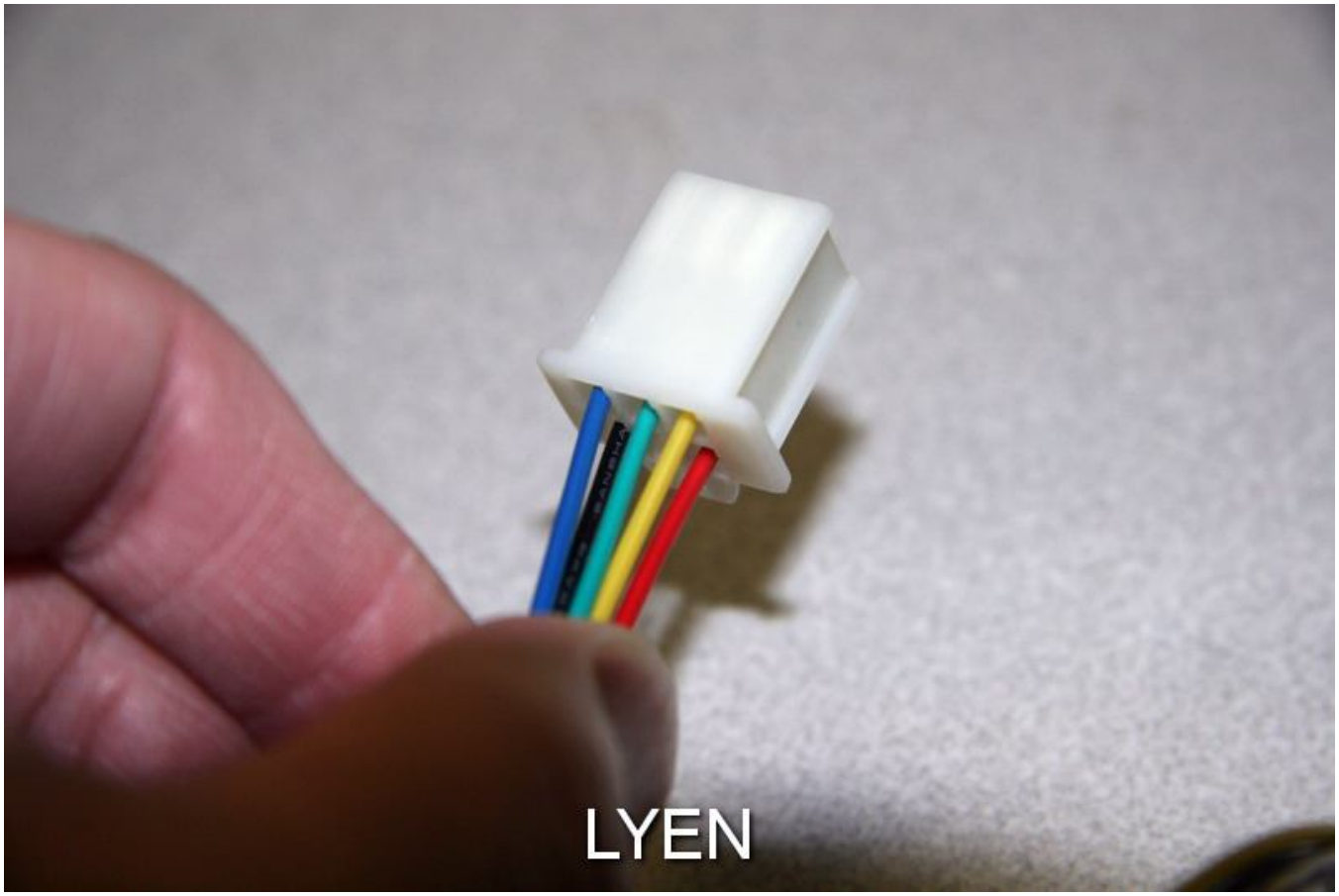


Yellow = Phase A (For 18 FET and above, click here)

Green = Phase B (For 18 FET and above, click here)

Blue = Phase C (For 18 FET and above, click here)

4. Hall Sensor Connector



Red = +5V

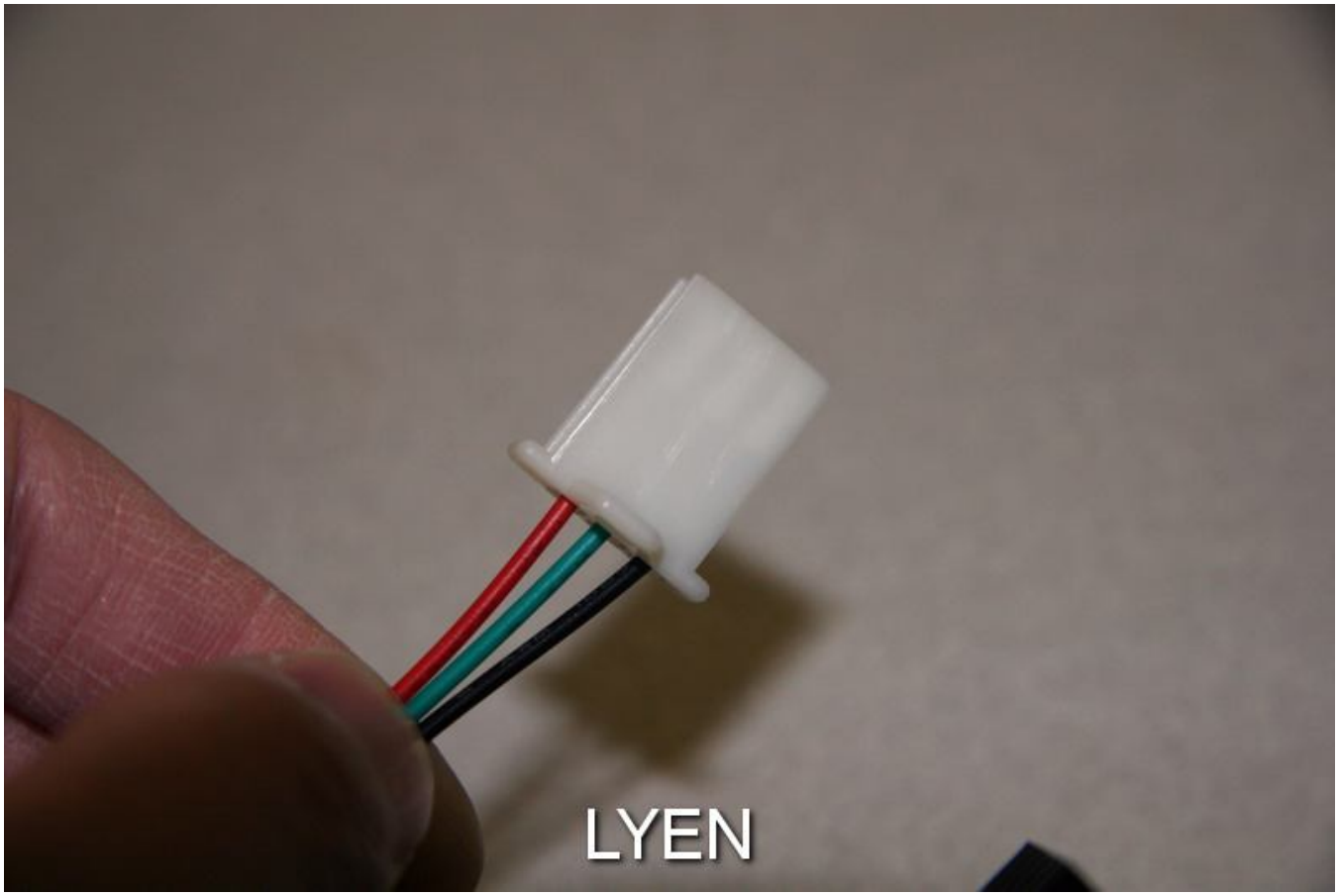
Black = Ground

Yellow = Hall A

Green = Hall B

Blue = Hall C

5. Throttle Connector

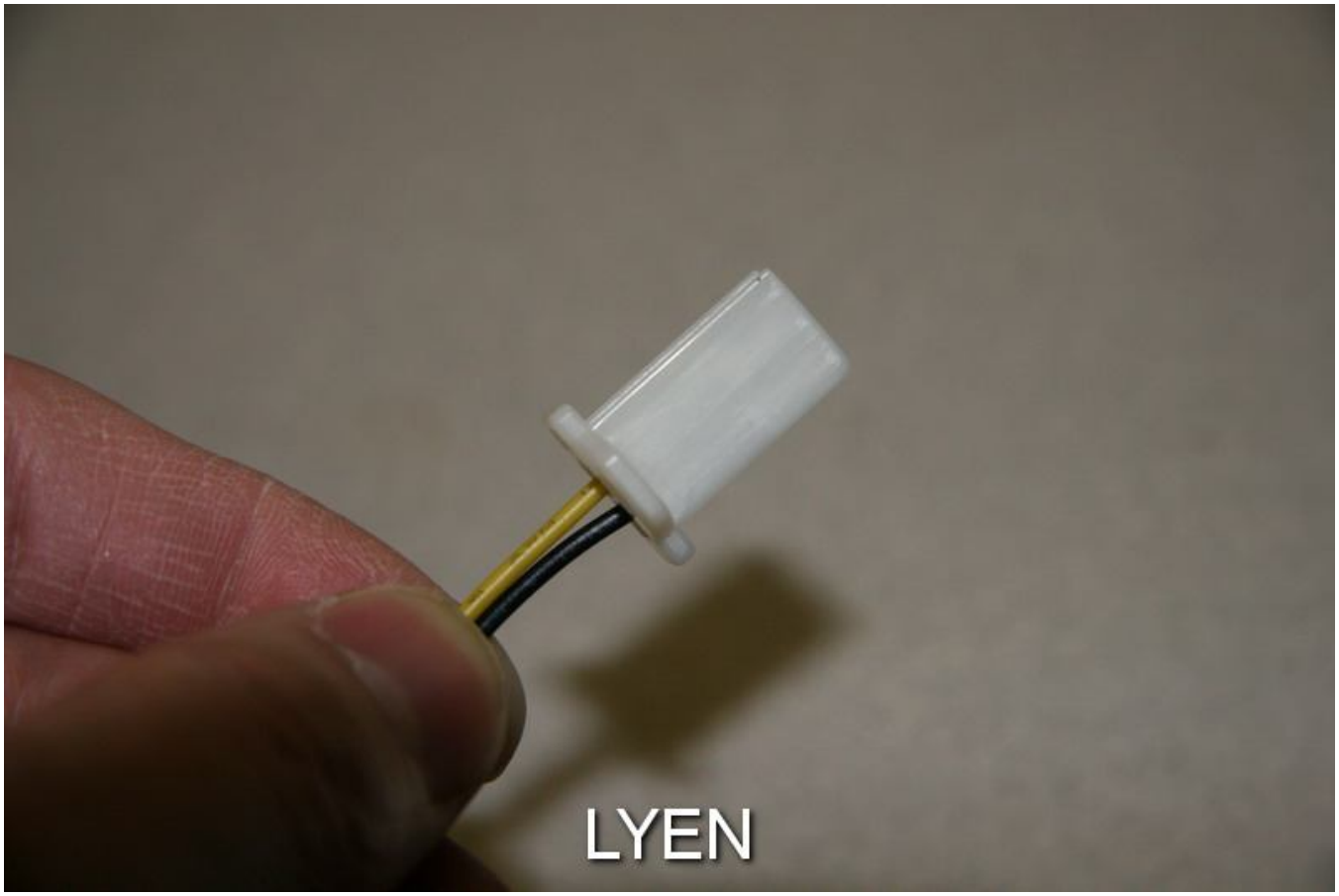


Red = +5V

Green = Signal

Black = Ground

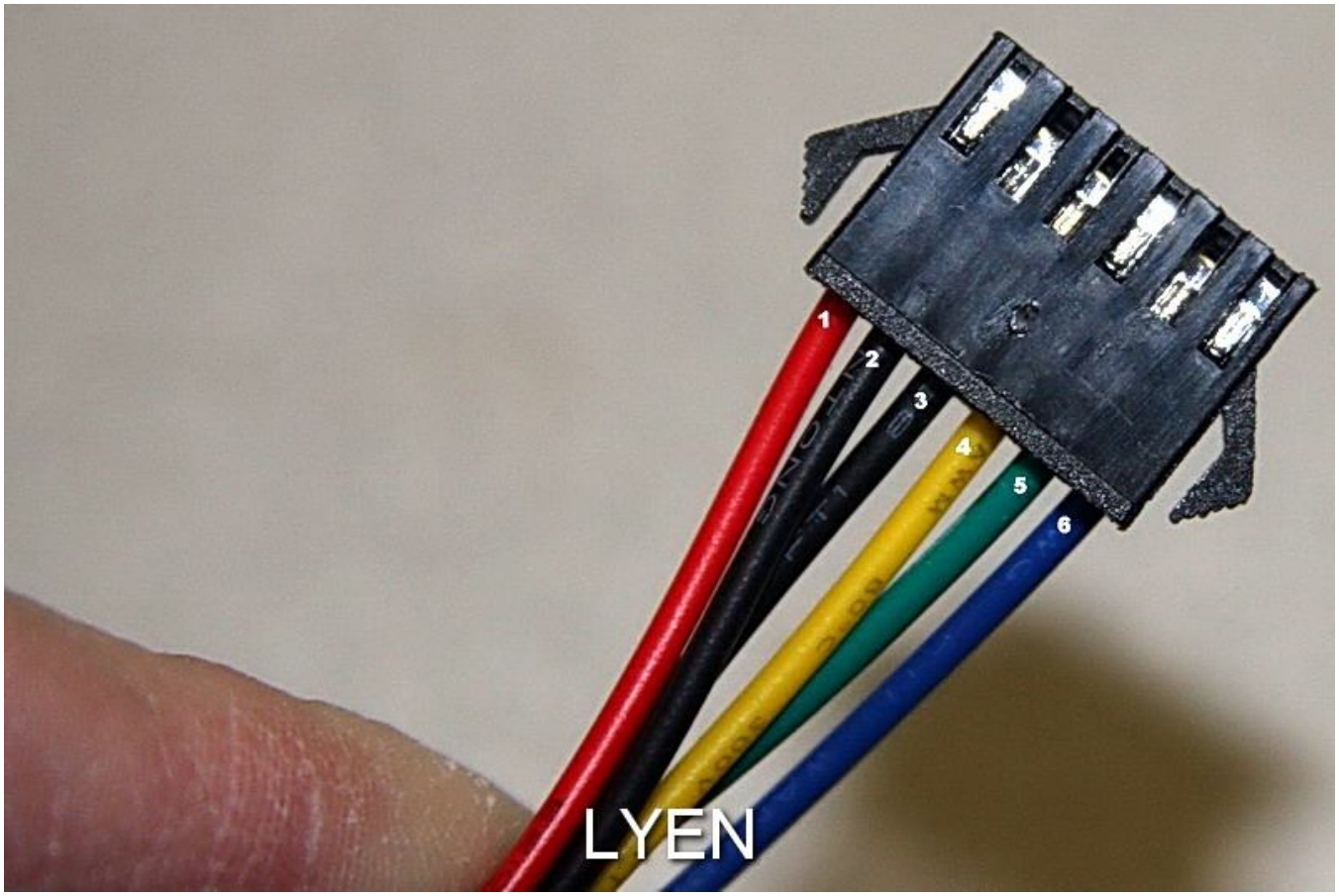
6. E-Brake Connector



Yellow = Signal

Black = Ground

7. *Cycle Analyst* Direct Plug module connector



Pin 1: Red = Battery +

Pin 2: Black = Ground

Pin 3: Black = Shunt -

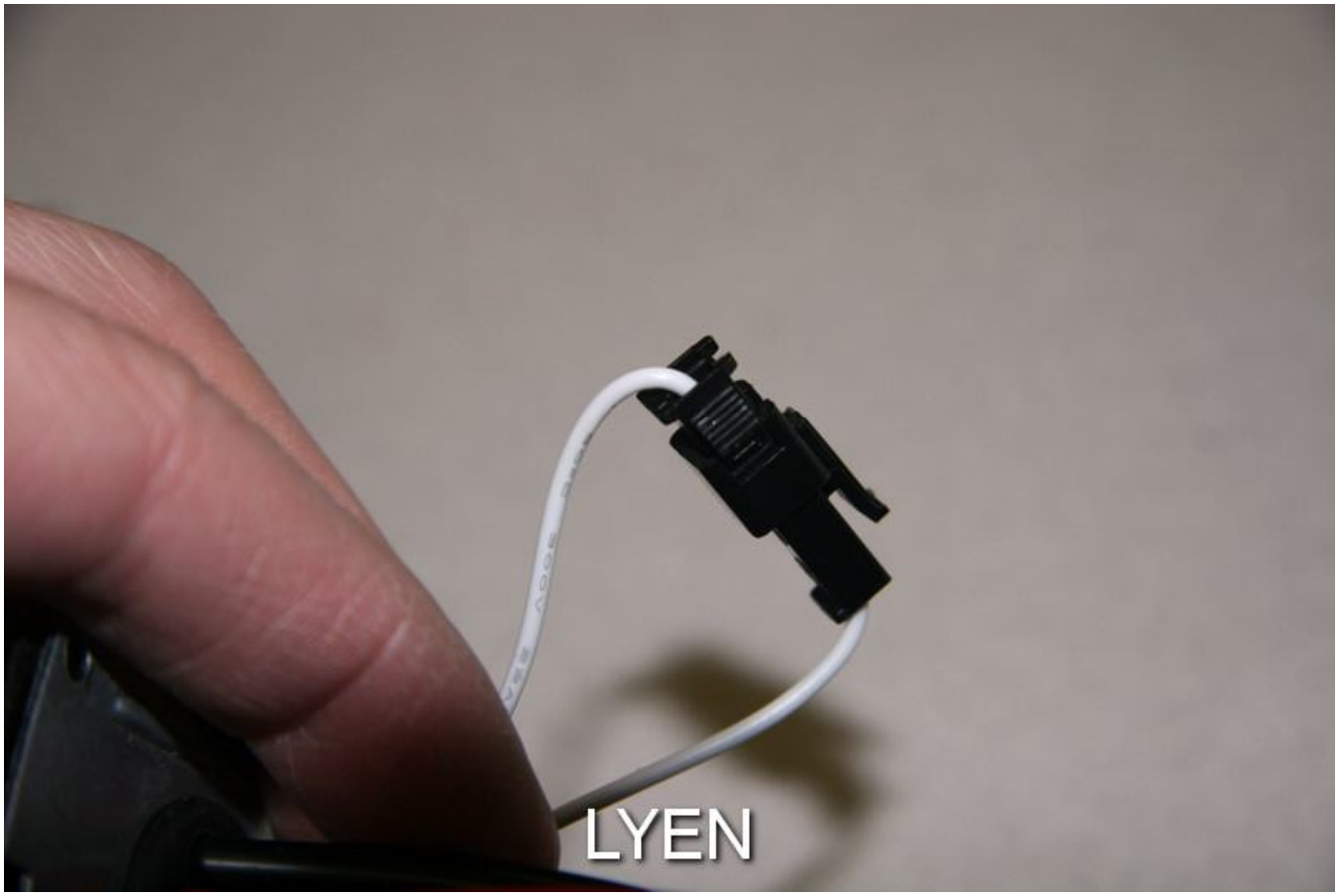
Pin 4: Yellow = Shunt +

Pin 5: Green = Speed sensing

Pin 6: Blue = Hall Effect Throttle Over-Ride

For more setup information, click here

8. Regenerative Braking jumper wire



Both wires are White > connect = enable, disconnect = disable

9. USB-TTL Programming Adapter connector

Pin 1: Red = +5v Feed

Pin 2: Red = +5v

Pin 3: Black = Ground

Pin 4: Green = Transmit

Pin 5: White = Receive