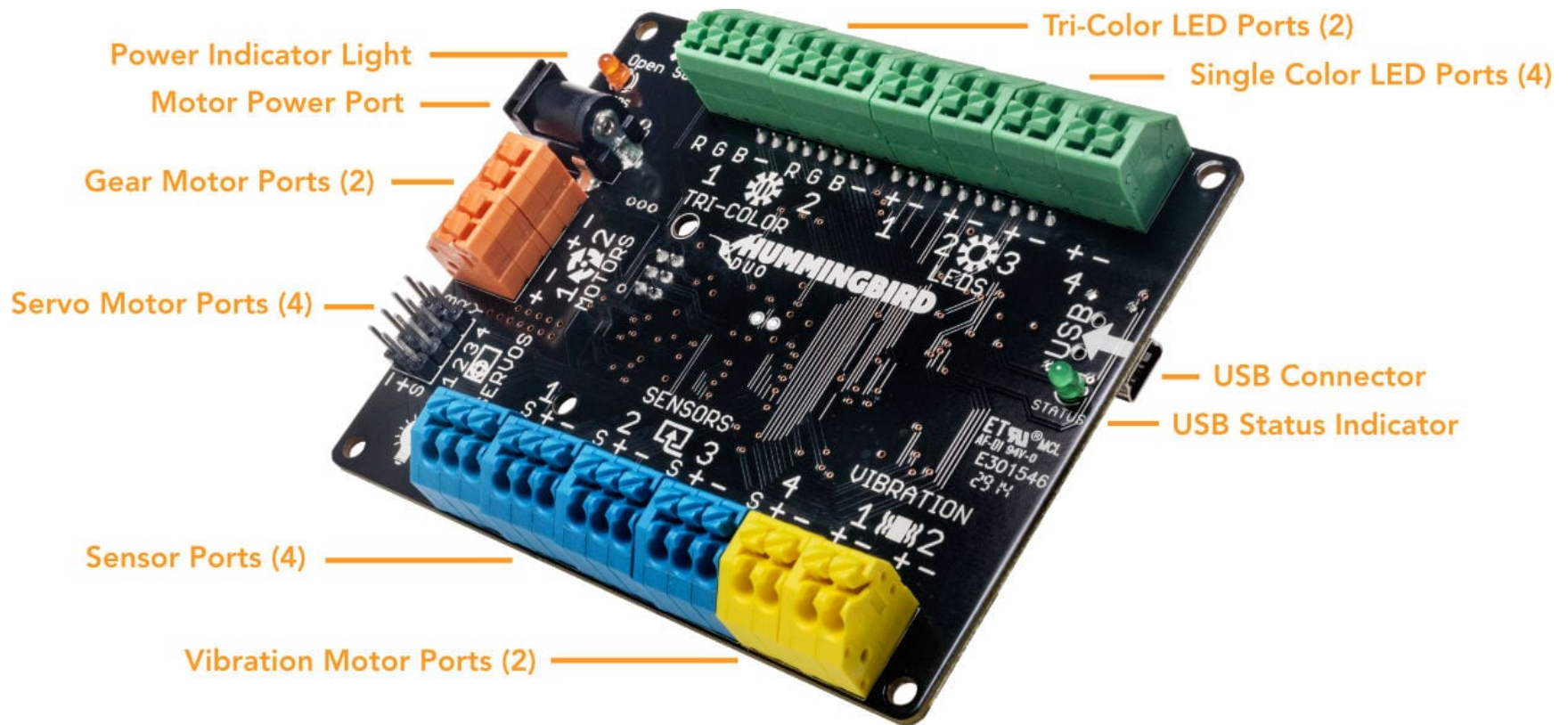






















ANATOMY OF THE HUMMINGBIRD™

ROBOTICS KIT

Controller






















Hummingbird Duo Component Guide

Component	What Does It Do?	Plug It In	Icon
Outputs			
 Single Color LED	Control the brightness of the light	Color: + (Positive) Black: - (Ground)	
 Tri-Color LED	Control the color of the light	Red: R (Red) Green: G (Green) Blue: B (Blue) Black: - (Ground)	
 Servo Motor	Control the angle of the motor from 0° to 180°	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 Gear Motor	Control the speed of rotation	Yellow: + (Positive) and - (Ground) Since both wires are the same color, the gear motor can be plugged in two ways. Switching them just changes which direction is "forward."	
 Vibration Motor	Control the intensity of vibration	Yellow: + (Positive) and - (Ground) Since both wires are the same color, the vibration motor can be plugged in two ways. Switching them just changes which direction the weight spins.	
Inputs			
 Distance Sensor	Measure the distance to the closest object	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 Light Sensor	Measure the light around the robot	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 Temperature Sensor	Measure the temperature around the robot	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 Dial Sensor	Measure how much the knob is turned	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 Sound Sensor	Measure the sound around the robot	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	

Hummingbird Duo Component Guide

Fill in the blanks below.

Component	What Does It Do?	Plug It In	Icon
Outputs			
 <p>Single Color LED</p>	<input type="text"/>	Color: + (Positive) Black: - (Ground)	
 <p>Tri-Color LED</p>	<input type="text"/>	Red: R (Red) Green: G (Green) Blue: B (Blue) Black: - (Ground)	
 <p>Servo Motor</p>	<input type="text"/>	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 <p>Gear Motor</p>	<input type="text"/>	Yellow: + (Positive) and - (Ground) Since both wires are the same color, the gear motor can be plugged in two ways. Switching them just changes which direction is "forward."	
 <p>Vibration Motor</p>	<input type="text"/>	Yellow: + (Positive) and - (Ground) Since both wires are the same color, the vibration motor can be plugged in two ways. Switching them just changes which direction the weight spins.	
Inputs			
 <p>Distance Sensor</p>	<input type="text"/>	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 <p>Light Sensor</p>	<input type="text"/>	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 <p>Temperature Sensor</p>	<input type="text"/>	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 <p>Dial Sensor</p>	<input type="text"/>	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	
 <p>Sound Sensor</p>	<input type="text"/>	Yellow: S (Signal) Red: + (Positive) Black: - (Ground)	