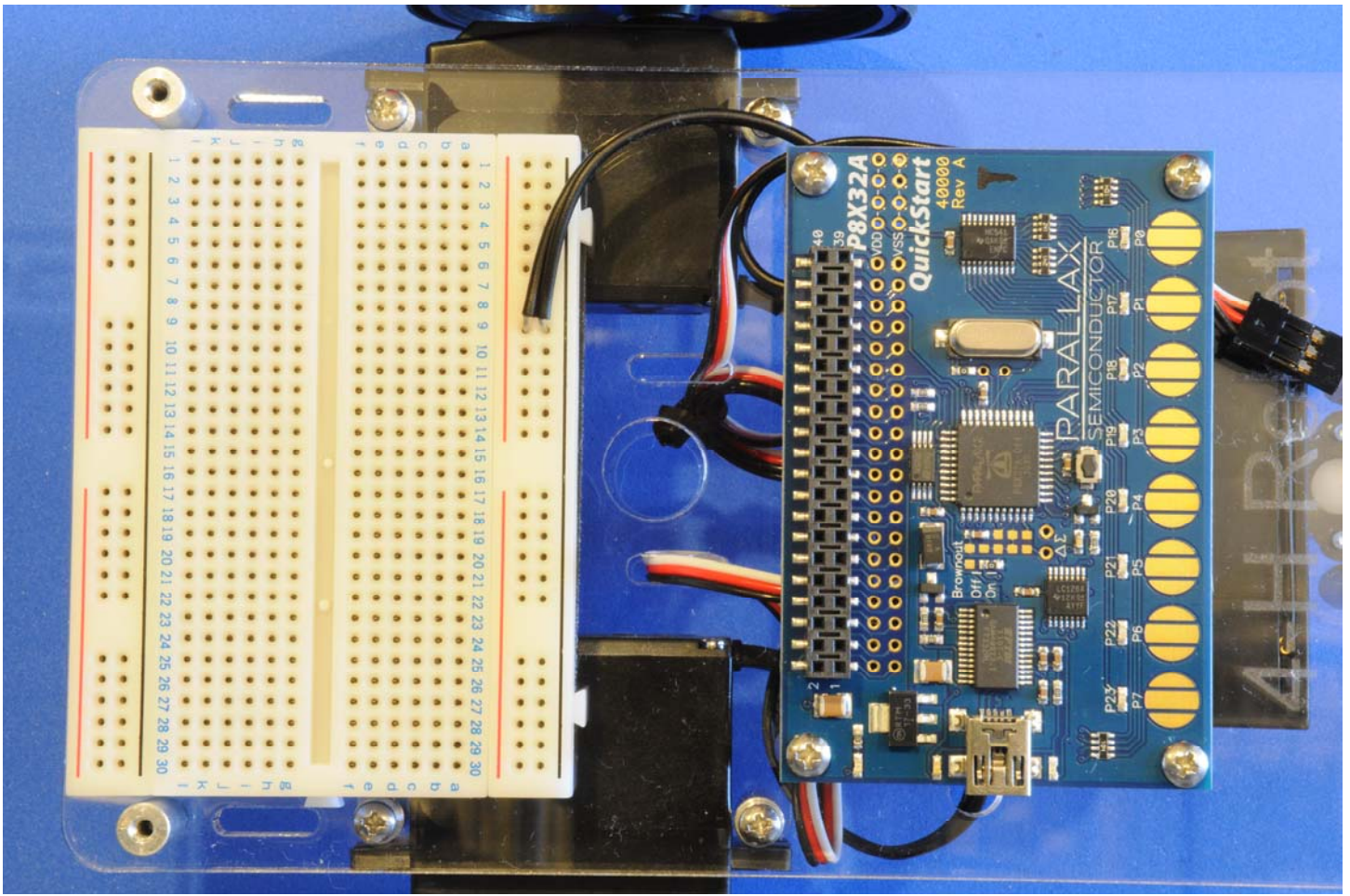
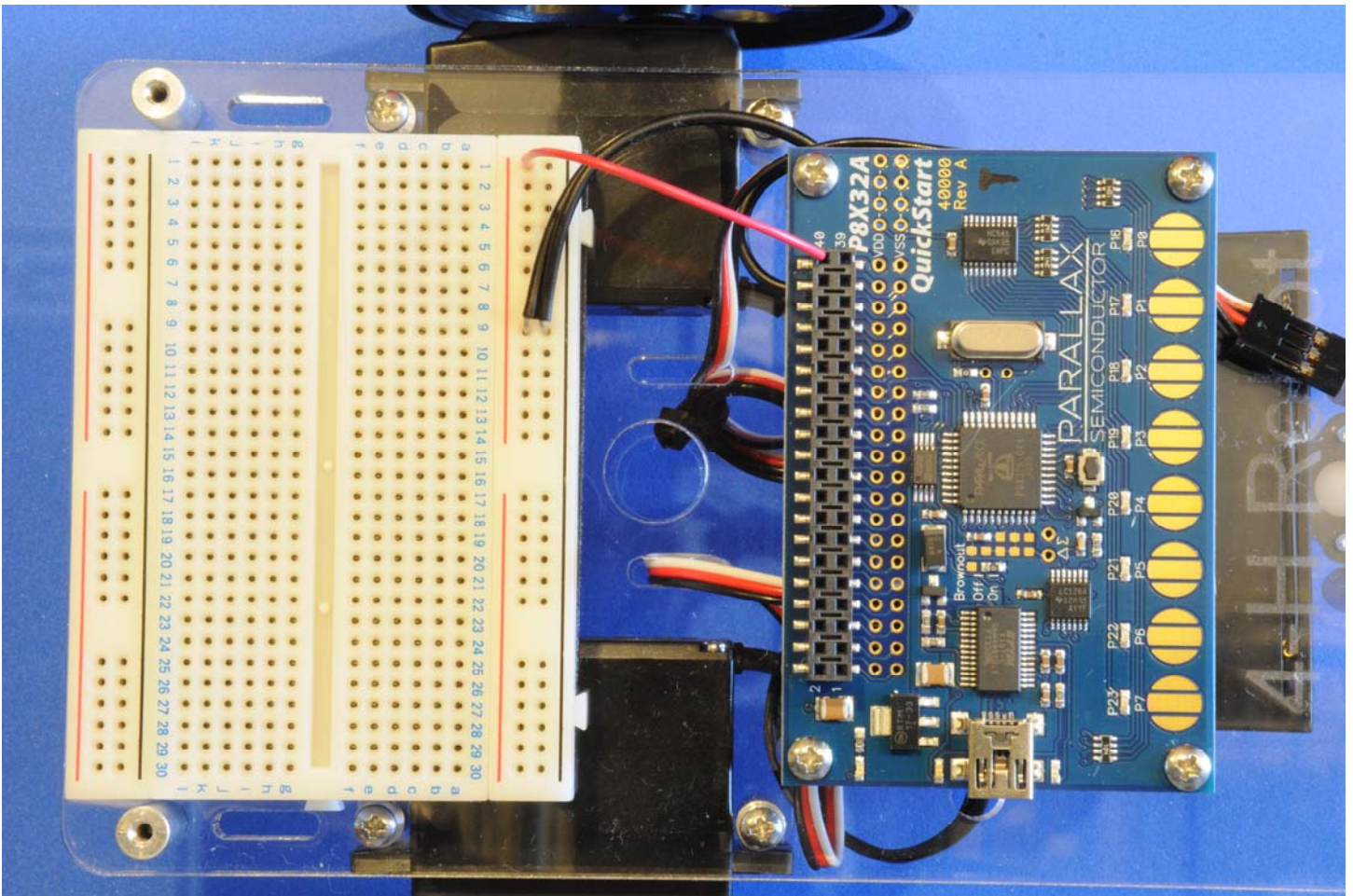


View before wiring starts.

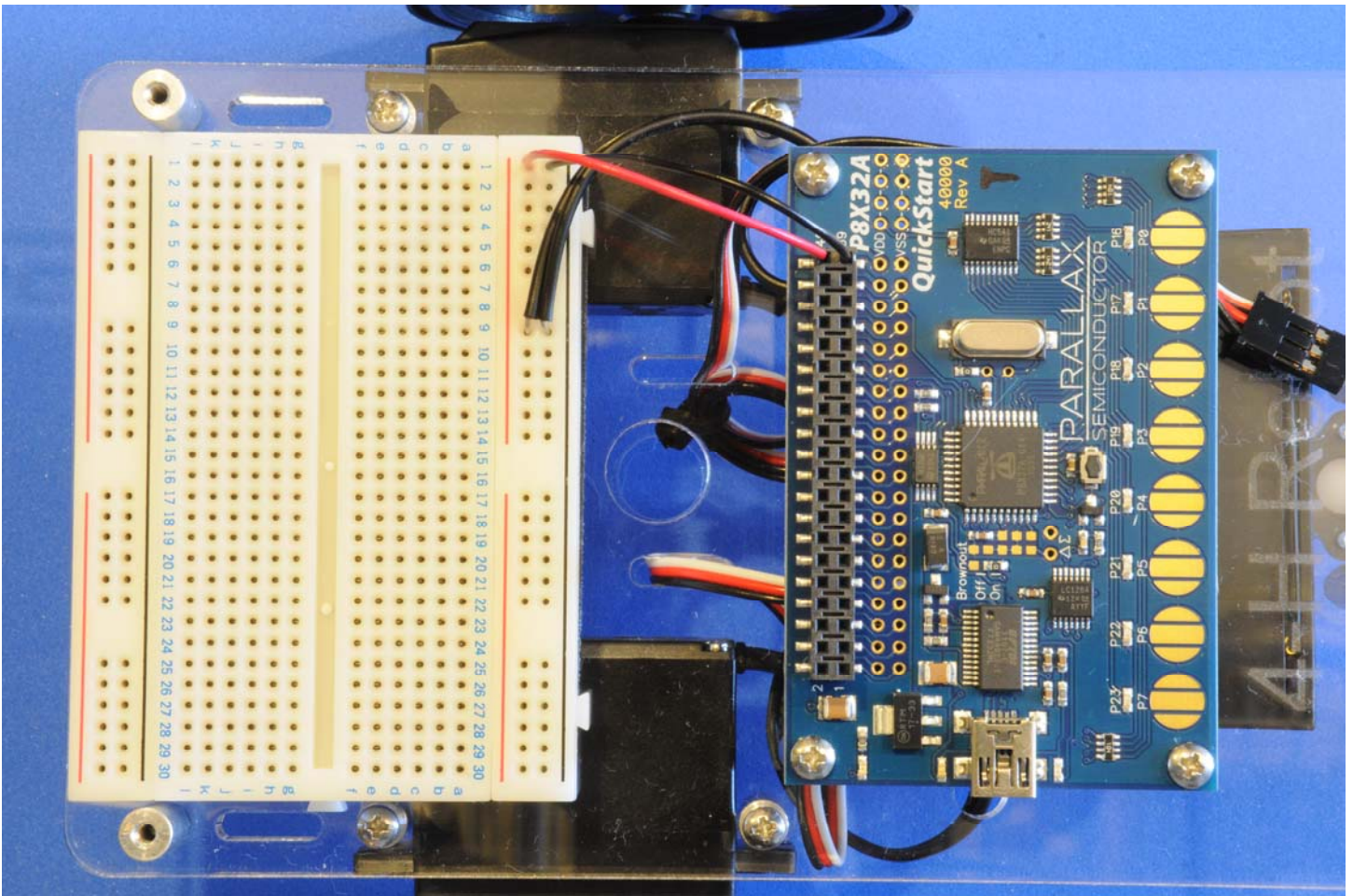


Connect Wire from Battery Pack.

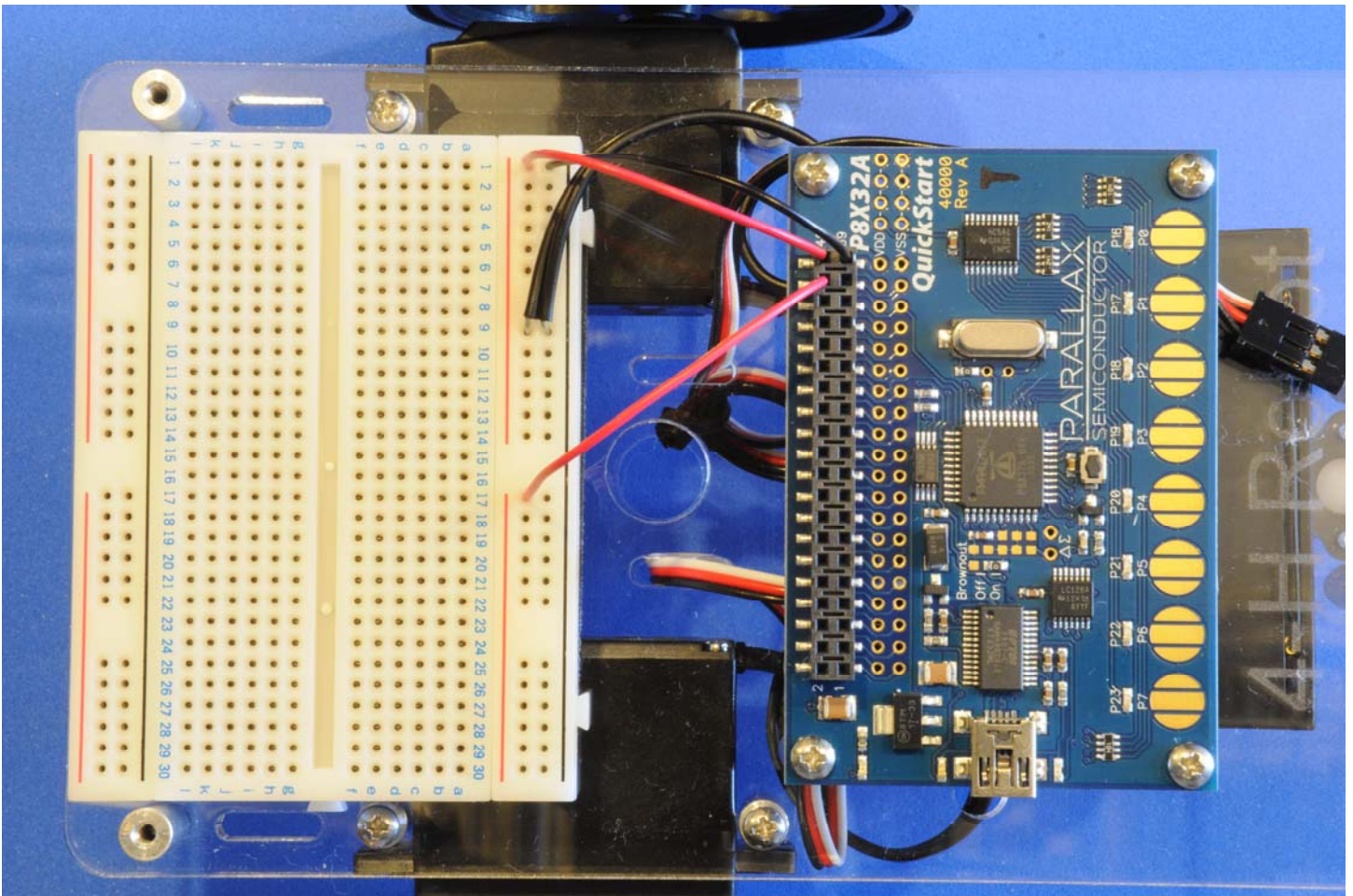
- The wire with the white stripe goes into the “red rail” at position 9. This is the “Vin” rail and runs from position 1 through 14.
- The all black wire goes to the “black rail” at position 9. This is the “Vss” or “Ground” Rail and runs the entire length of the board.



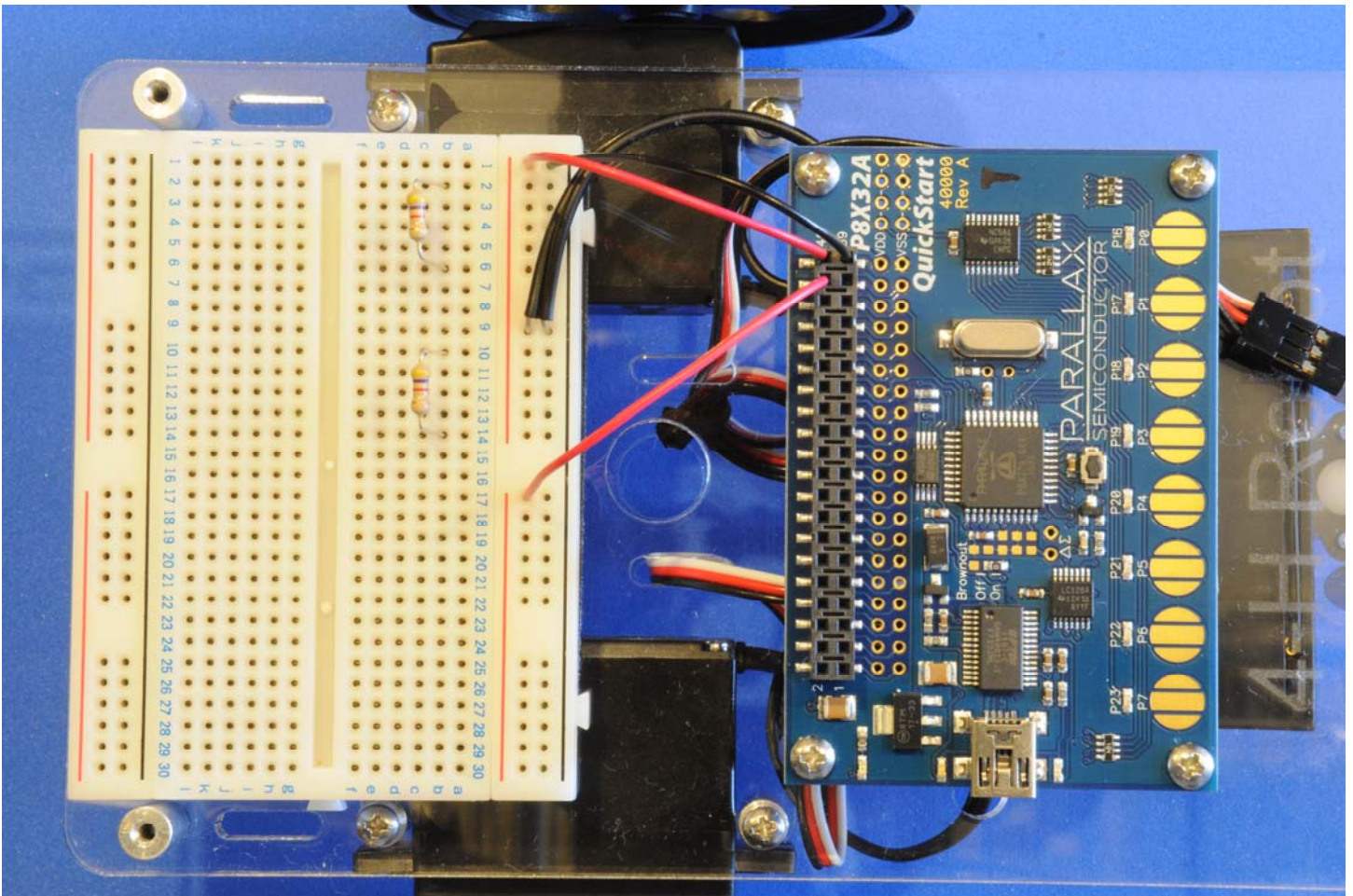
Connect a red jumper wire from position 1 of the Red Rail to Pin 40 of the Quick Start board. This will supply power from the battery pack to the Quick Start board via Vin.



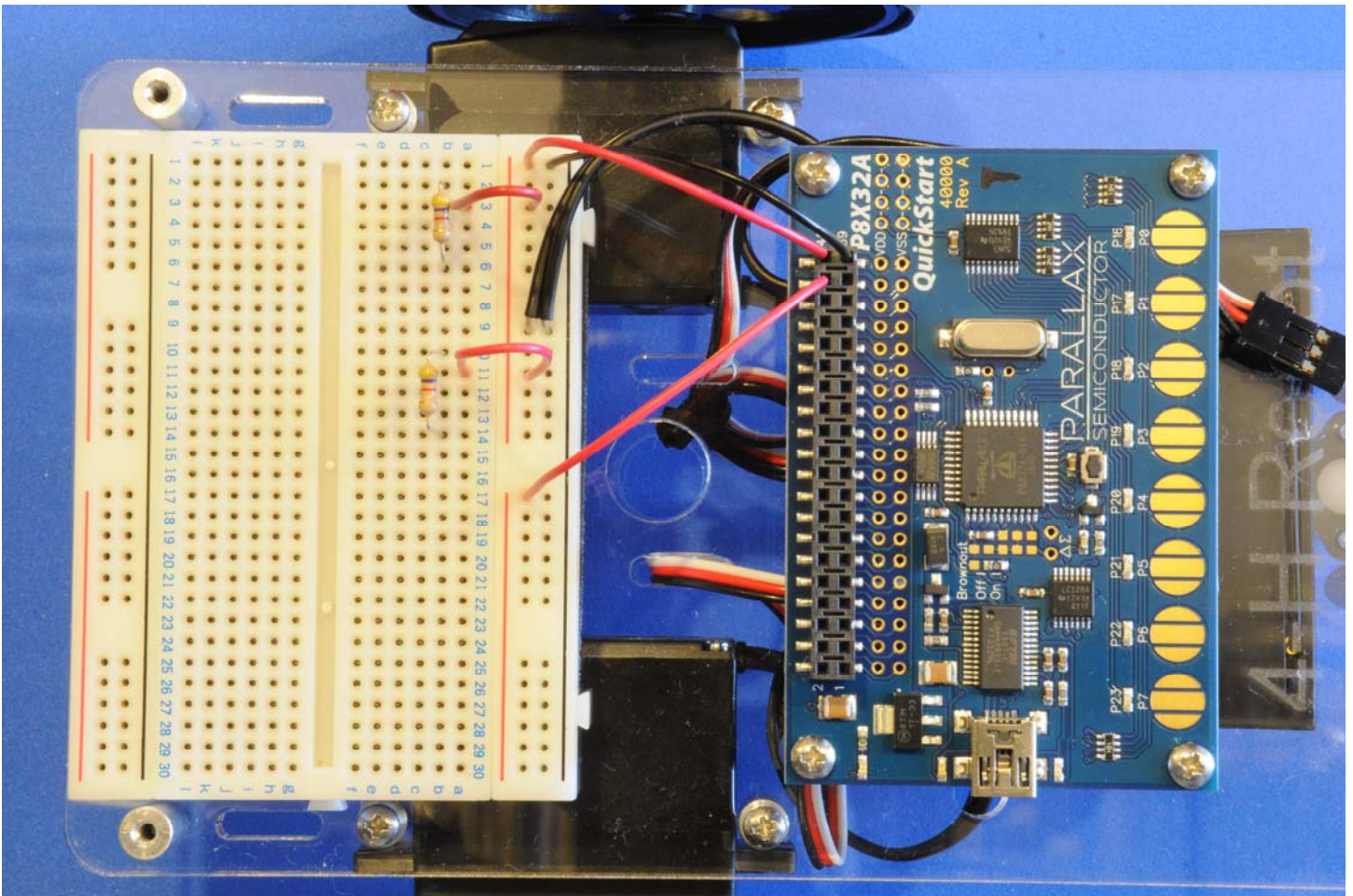
Connect a black jumper wire from position 1 of the black rail to Pin 39 of the Quick Start board. This will connect the battery pack, breadboard and the Quick Start board to a common ground (Vss).



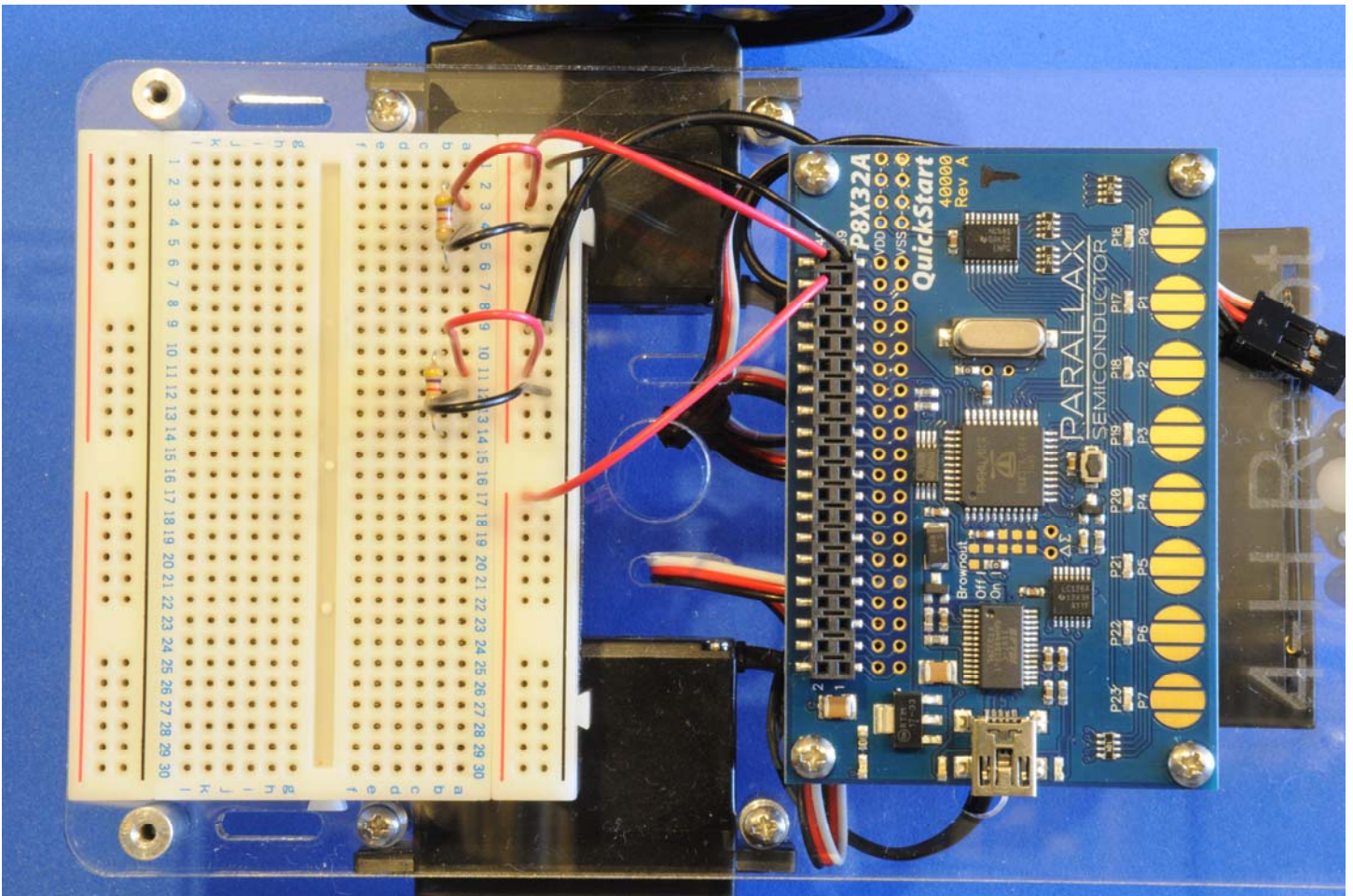
Connect a red jumper wire from pin 38 of Quick Start board to pin 17 of the red rail. This will bring regulated 3.3 Volts (Vdd) to the breadboard. The Vdd rail runs from pins 17 through 30 of the red rail.



We need to have a 4.7K (Yellow, Violet, Red) resistor between the servo signal wire and the Quick Start board. Place one 4.7K resistor between pins B2 and B6 of the breadboard, and the other between pins B10 and B14.

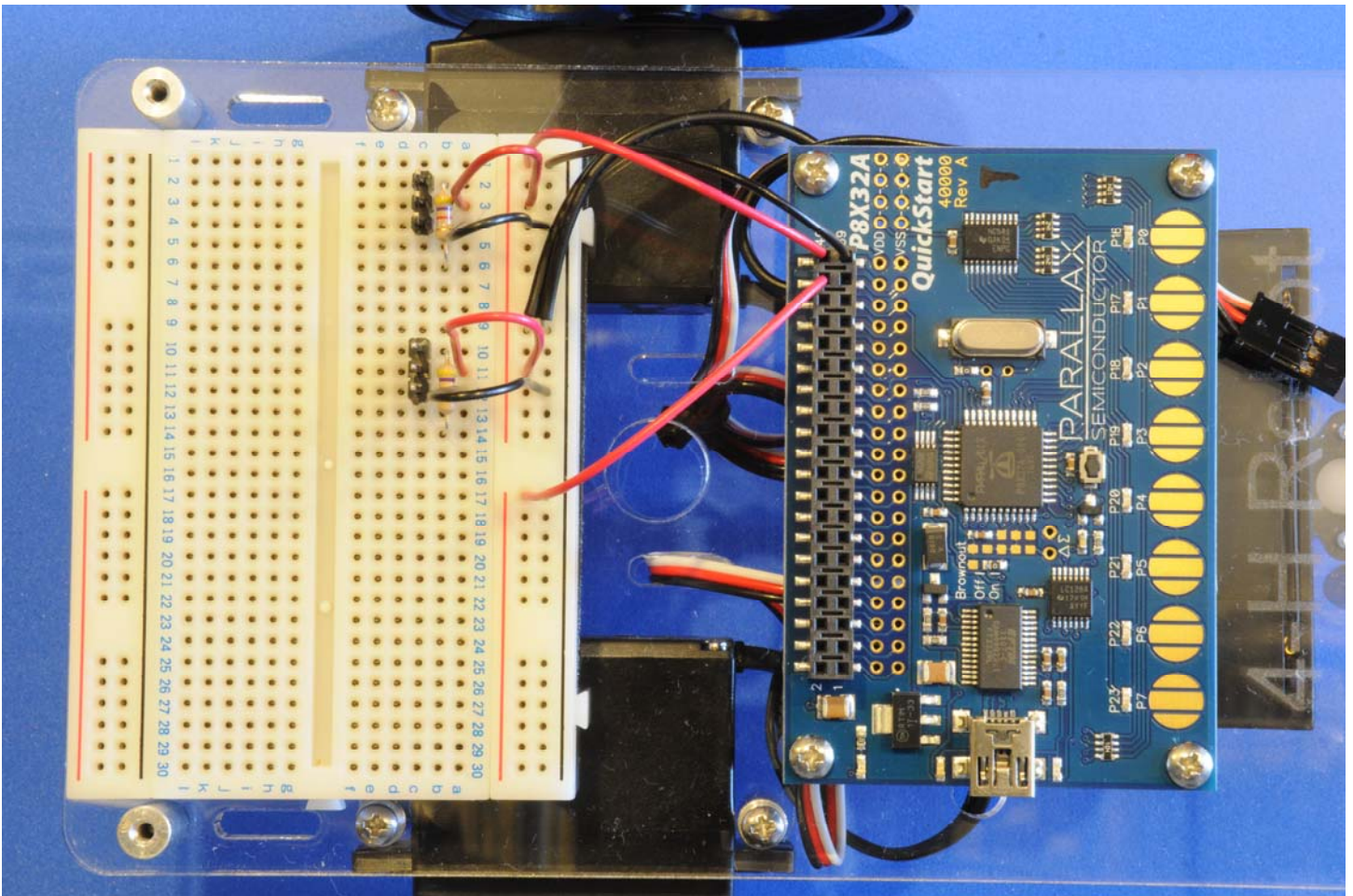


To provide power to the servos, connect a red jumper wire from Pin A3 to the position 3 on the red rail, and from A11 to position 11 on the red rail.

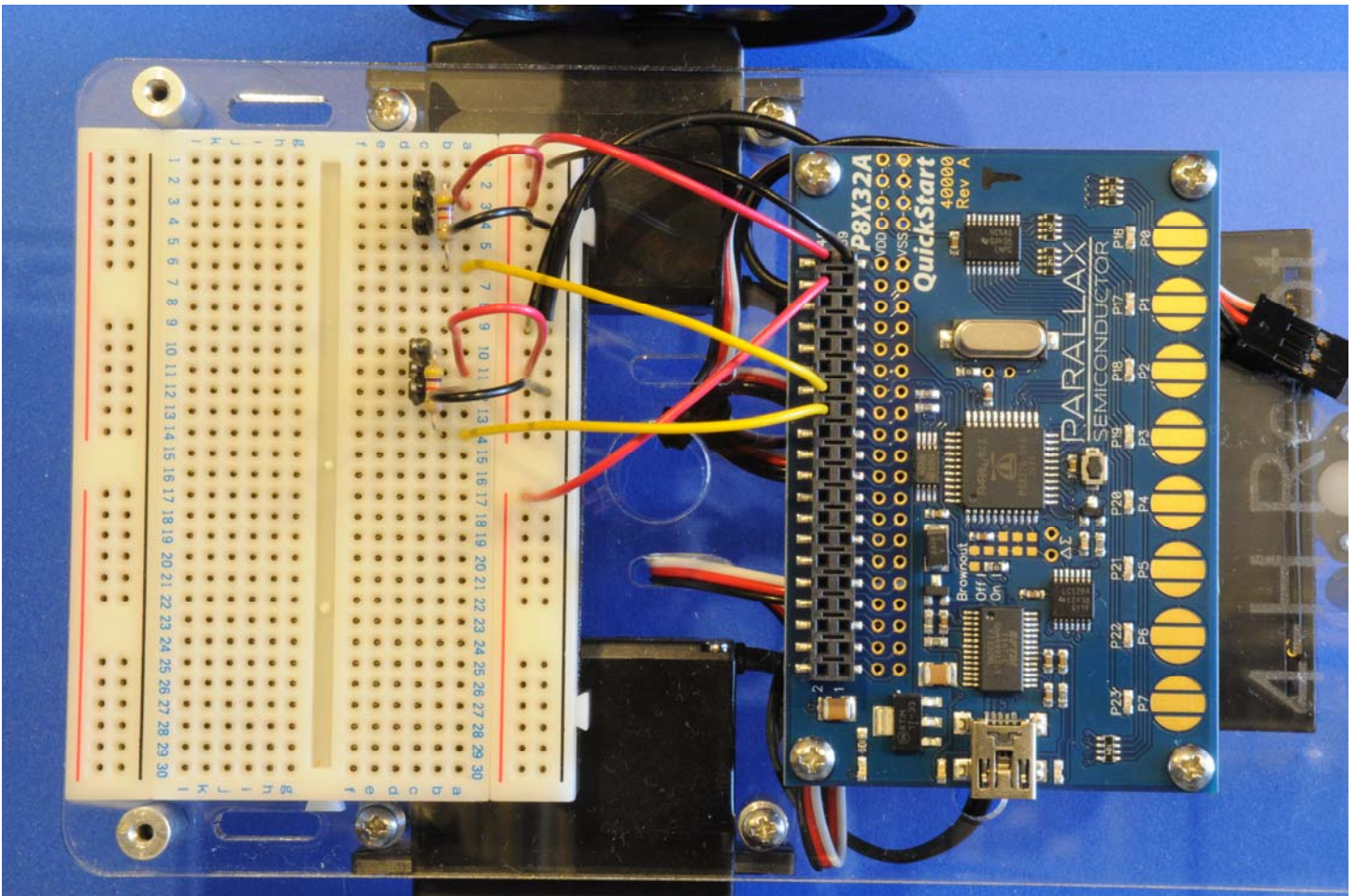


For the servo ground, connect a black jumper wire from B4 to position 4 of the black rail, and from pin B12 to position 12 of the black rail.





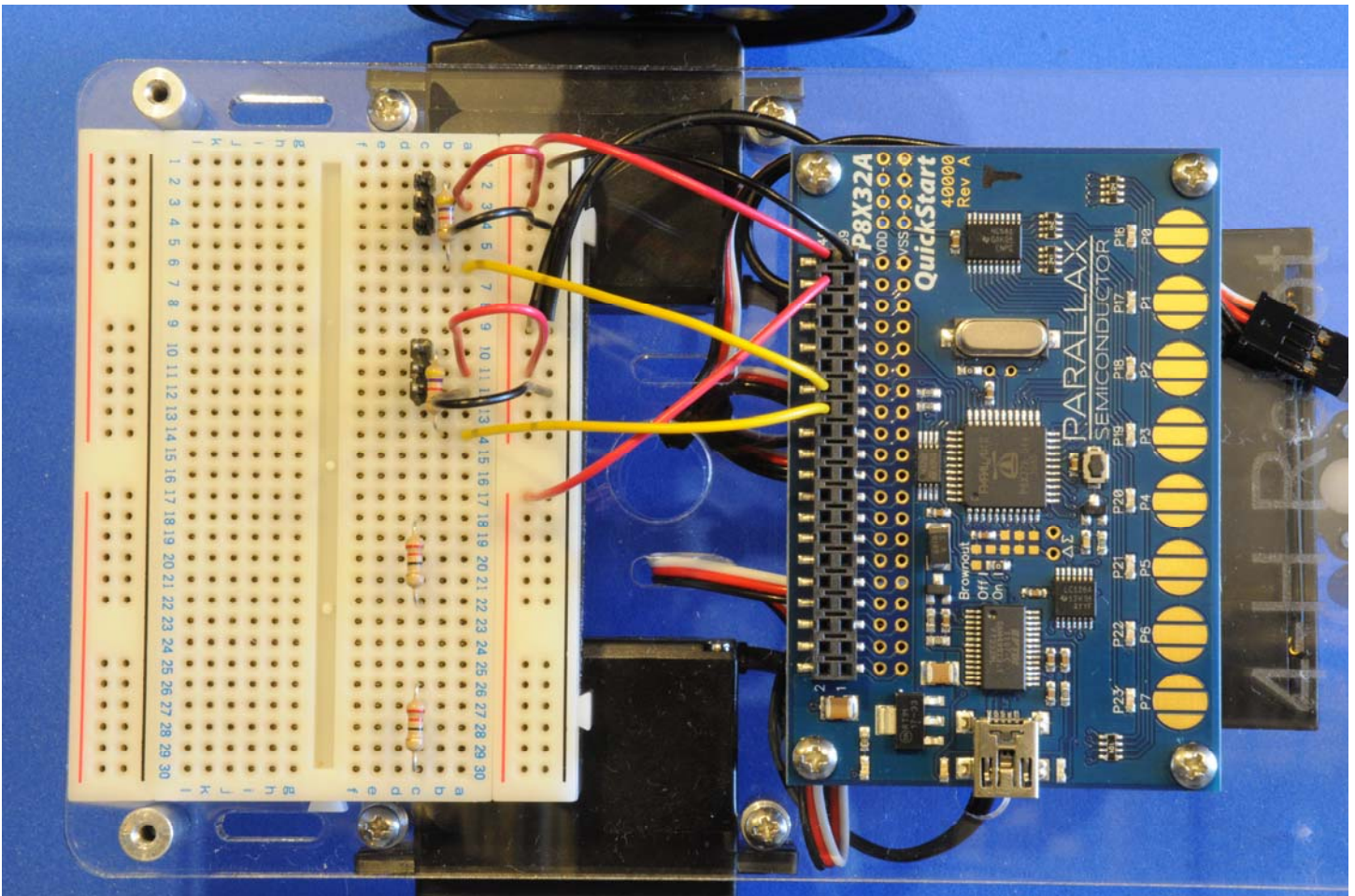
Place a three pin header for the servo connection in pins C2, 3 and 4 for the right servo, and pins C10, 11 and 12 for the left servo.



Connect a yellow jumper wire from pin A6 of the breadboard to pin 28 of the Quick Start header (there should be 4 empty positions between the red wire and the yellow on the header).

Connect a second yellow jumper wire from pin A14 to pin 26 of the Quick Start header.

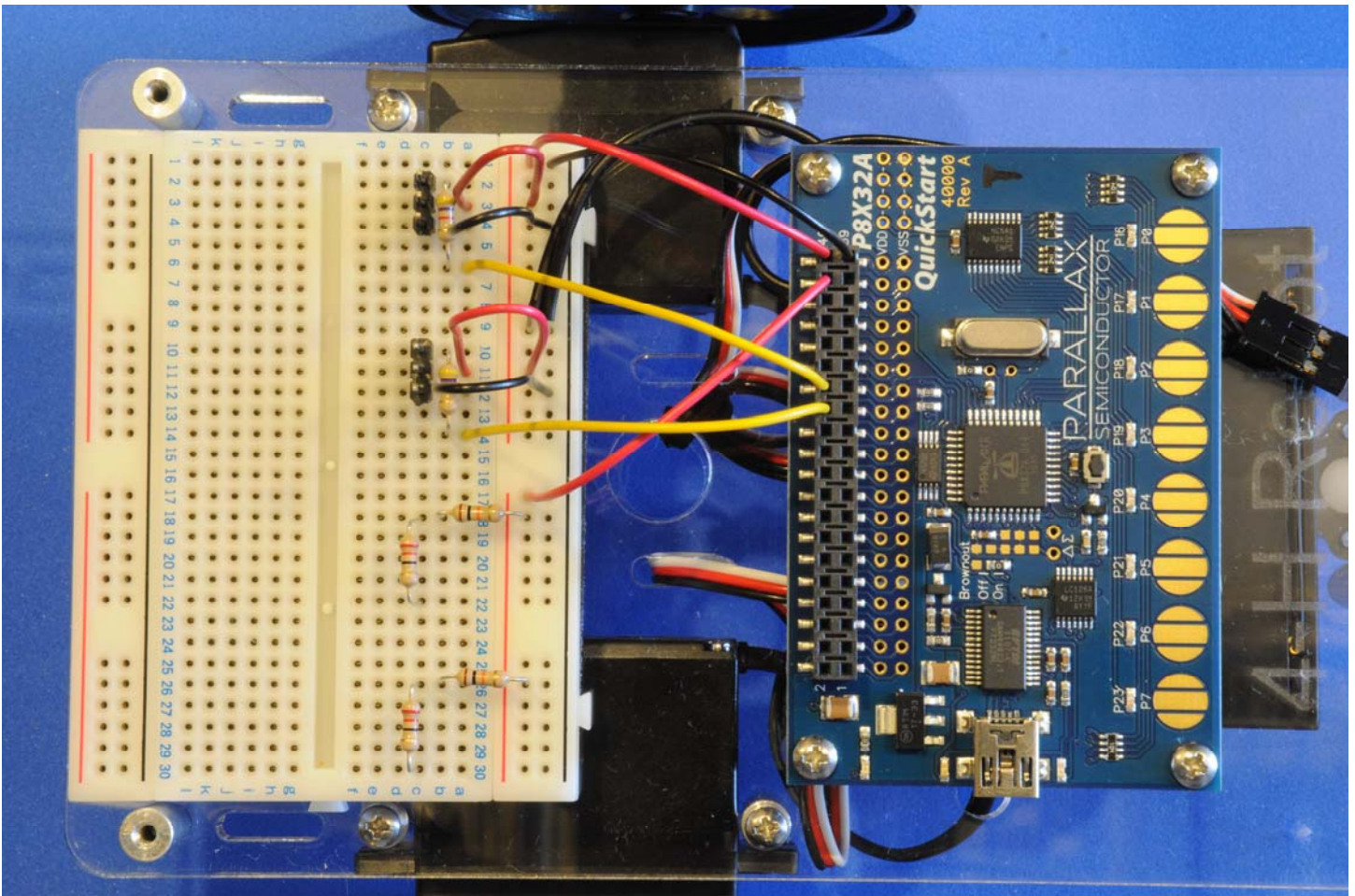
These two wires are the output from the Quick Start board to the servos.



This is the start of the Whisker sensor circuit. We're going to "tie the input pins high", and then when the Whisker is touched, it will pull the input pin on the Quick Start board low.

The first step is to use two 220 Ohm (red, red, black) resistors (one for each whisker).

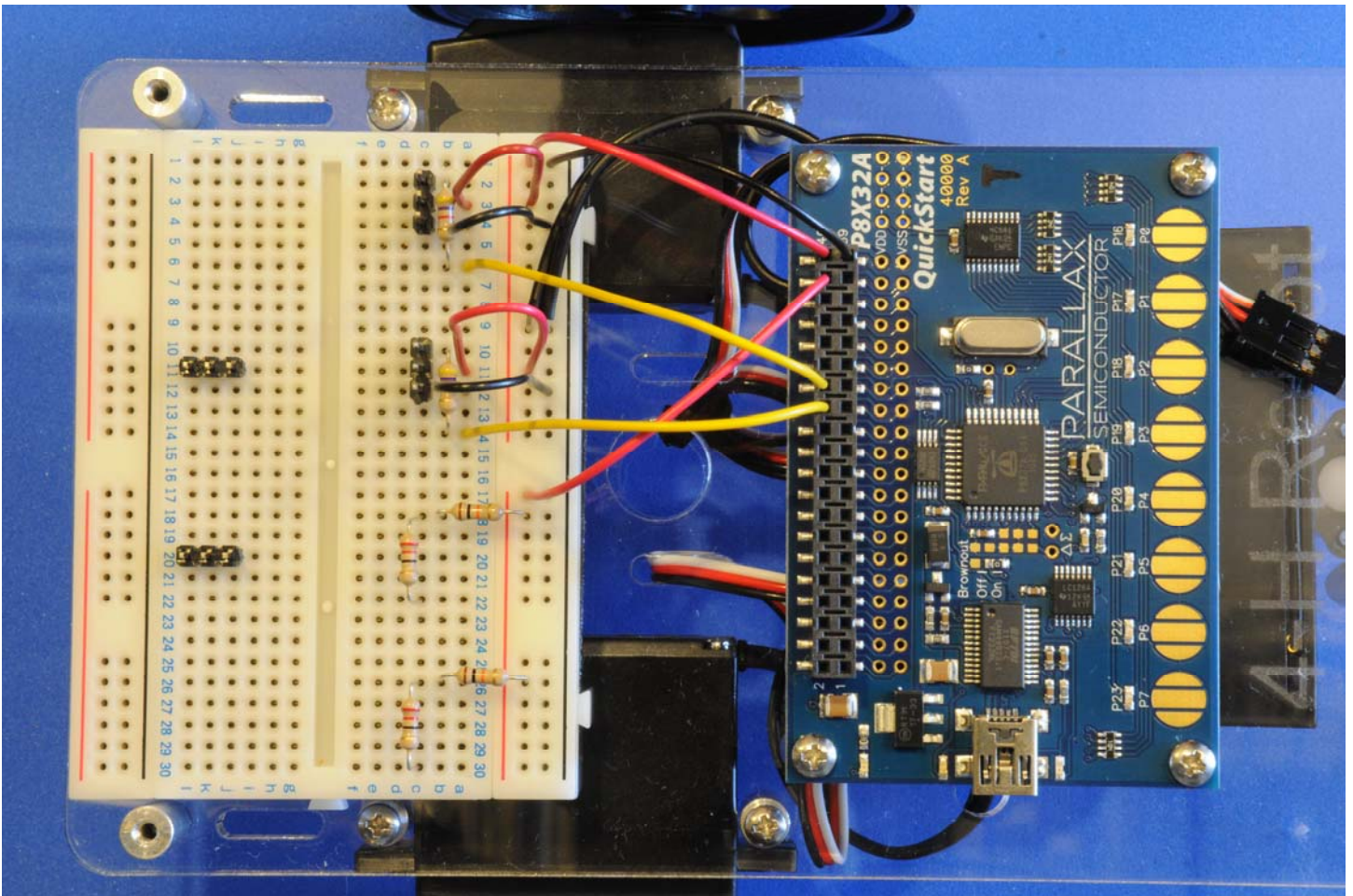
Connect one from pin C18 to C22. The other goes from C26 to 30.



To tie the input pins high, we'll use a 10K (brown, black, orange) resistor for each whisker.

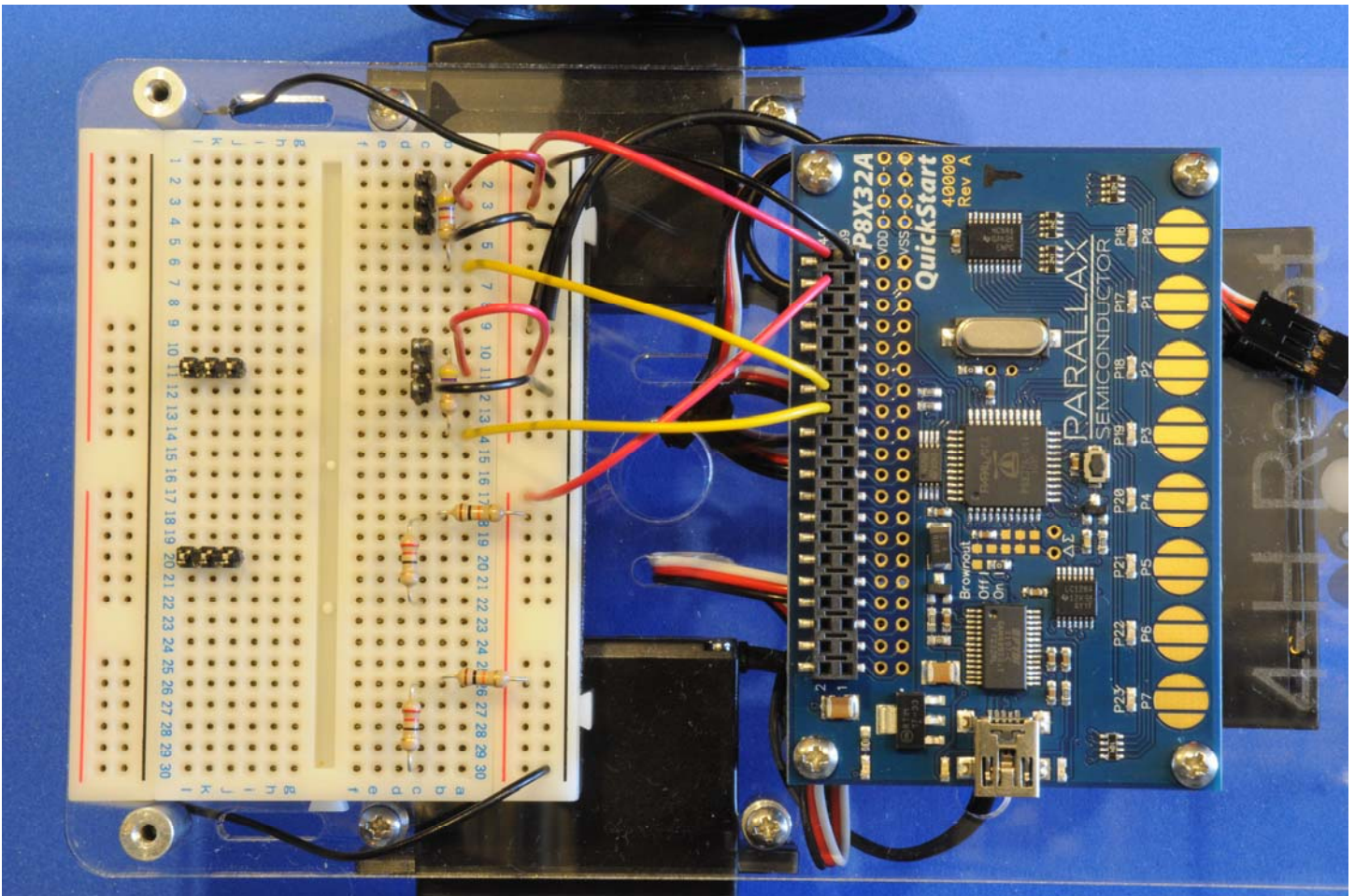
Connect one 10K resistor between pin B18 and position 18 of the red rail (Vdd or 3.3 V).

Connect the other between pin B26 and position 26 of the red rail.



We'll use two three pin headers for the whisker contacts.

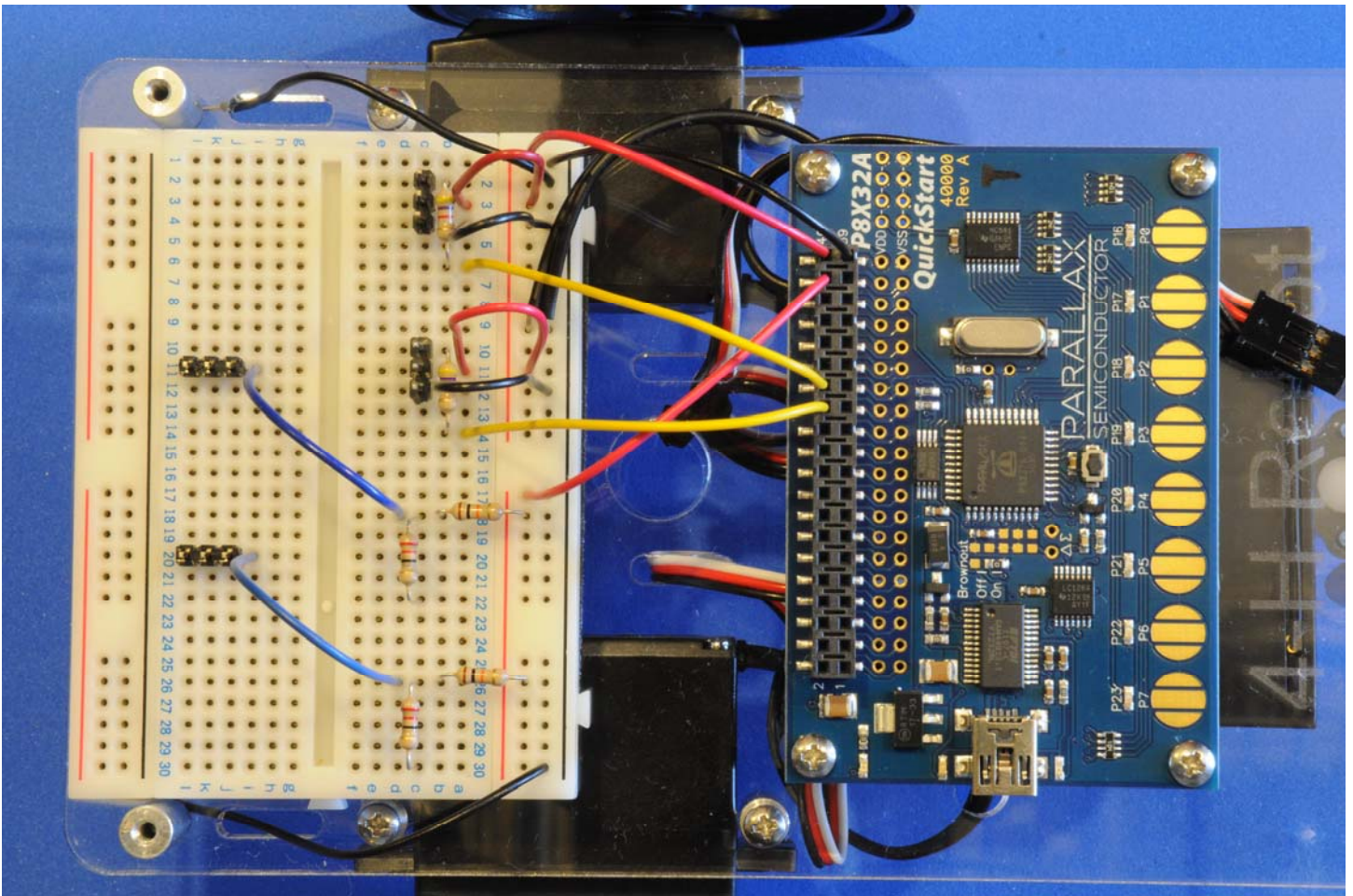
Place one three pin header in pins J, K and L11, and the other in pins J, K, and L 20.



We need to connect the whisker posts to ground.

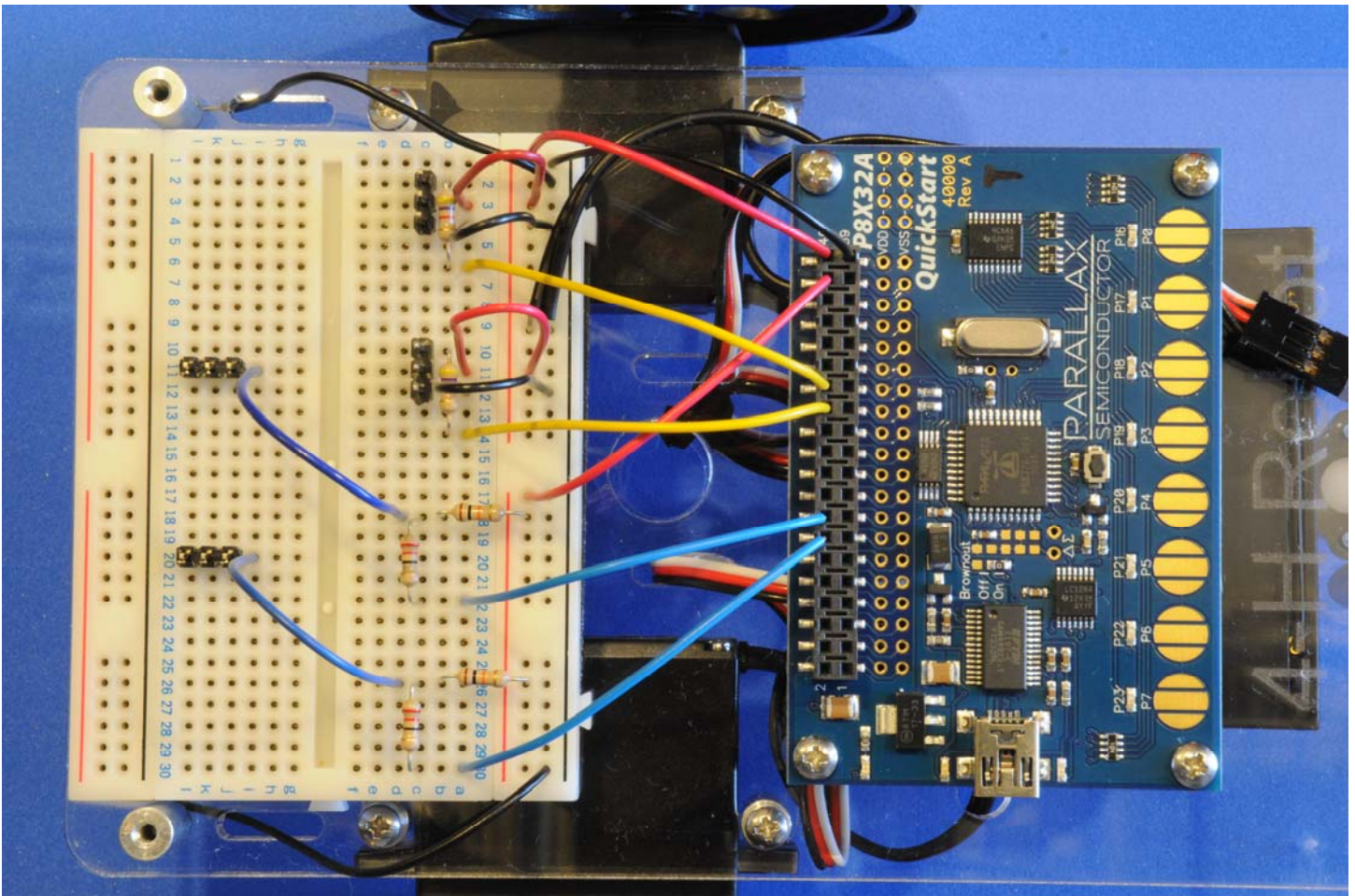
Run a black jumper wire through the slot in the board just behind the whisker post, and use the number 4 screw on the bottom side of the post to connect the wire. Connect the other end of the jumper wire to the first open position on the black rail (you will need to use the black rail nearest the Quick Start board). Do this for each Whisker post.

The post on the left of the robot should connect to position 30 of the black rail, the one on the right to position 2.



Connect a blue jumper wire from pin I11 to pin D18.

Connect a second blue jumper wire from I20 to D26.

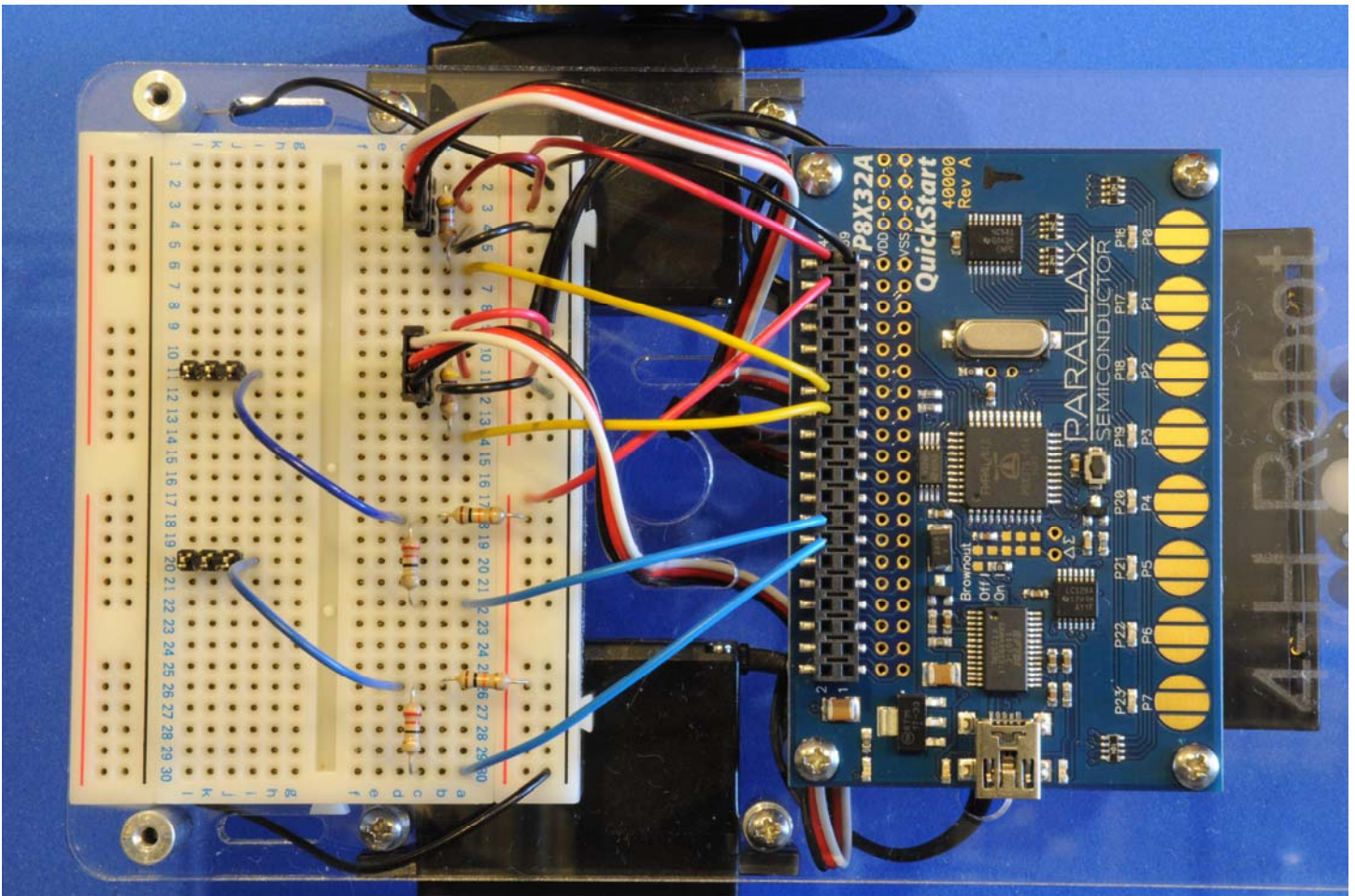


To get the signals from the Whiskers to the Quick Start board, connect a blue jumper wire from pin A22 to pin 16 of the Quick Start header.

There should be four empty spaces between the yellow jumpers and the blue jumpers.

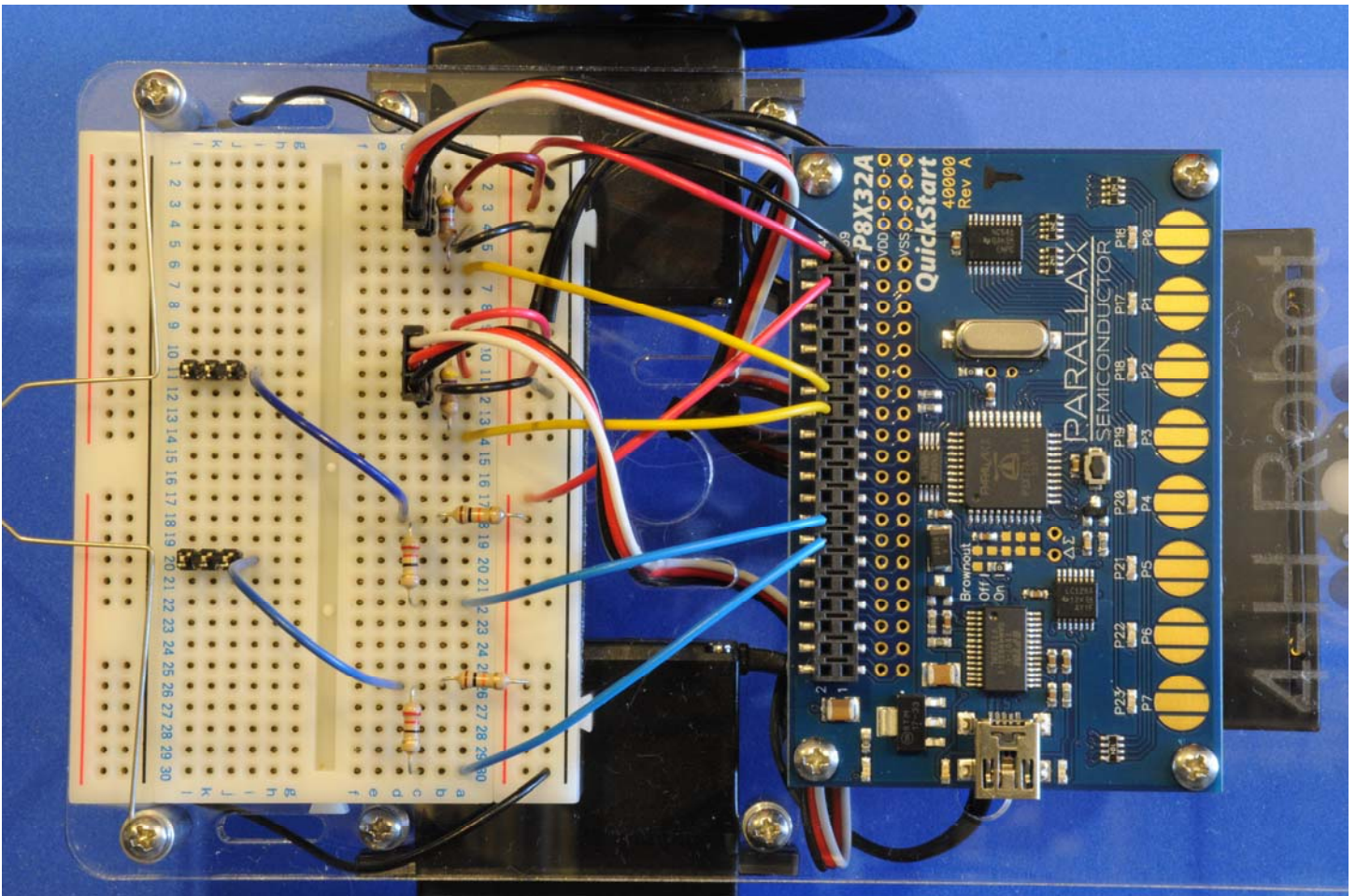
Connect a 2nd blue jumper from pin A30 to pin 14 of the Quick Start header.





Connect the left servo connector to the 3 pin header on pins C10, 11 and 12. Make sure the white wire is on pin C10.

Connect the right servo to the 3 pin header on pins C2, 3 and 4. Make sure the white wire is on pin C2.



Mount the two Whisker wires. They should be mounted so that when touched from the front of the robot (as if the robot were bumping into something) they should easily touch the appropriate 3 pin header, and bounce back when released.

Make sure the bottom screw remains tight for the ground connection to the post.