

RC4 Wireless

RC6

Safe Wireless Motion

Quick Start Guide

Initial RC6 System Setup

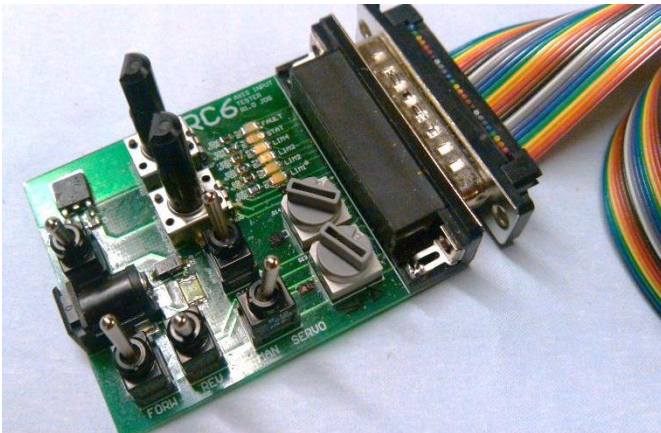
Please read the entire RC6 User Manual. Understand how the system works and what it is capable of doing.

Follow wiring and pin-out diagrams in the manual, along with application-specific drawings provided with your system, to set up your transmitter, receivers, and each motor driver.

Do not hesitate to call or email for technical support.

RC6-RU Transmitter Setup

If you have an **RC6 Axis Input Tester**, use it to confirm proper operation of your RC6-RU transmitter. You may also use it to confirm initial setup of your RC6-1MOT motor drivers. Once everything is performing as expected using the Axis Tester, proceed to wiring your automation system to the transmitter.



RC6-1MOT Motor Driver Setup

Install the RC6-1MOT so that the screen and buttons can be accessed easily during both initial setup and troubleshooting later if required.

Do not bury it in a hard-to-reach location that is inaccessible while the piece is being operated.

It is recommended that your first tests be done with drive wheels off the floor to confirm proper motor operation.

Confirm Correct Motor Direction

Use Direct Drive mode to run the motor forward and backward. Confirm that the piece actually moves in the correct direction. If directions are reversed, swap the motor wires.

Confirm Correct Encoder Count Direction

Set the transmitter to display Servo Status for the axis you are testing. This shows the encoder position. Confirm that the position value increases when moving forward, and decreases when moving backward. If counting direction is backwards, either swap the signal A and signal B wires from the encoder, OR change the Encoder Setup parameter in the RC6-1MOT.

Test Servo/Trajectory Motion

While testing, determine how many counts is just a few feet forward from zero. In the transmitter, set one of the Servo Position table values to be that position. Set one of the Servo Speed table values to a slow speed. Set the Servo Accel rate to 20 (moderately slow).

Be sure the current encoder position is zero. Enable servo mode, then enable Forward movement. The set piece should advance a few feet to the programmed position.

Repeat all of these steps for each set piece and axis.

PID Tuning

For best results, the PID loop must be tuned for quick and strong movements with minimal overshoot. Optimizing the PID settings can be done by setting up servo commands that move the set piece a few feet at a fairly high speed and the fastest acceleration rate. While sending the piece back and forth, adjust PID parameters to minimize overshoot and oscillation.

Caution: fast abrupt movements will heavily stress mechanical components, particularly shaft keys, gear teeth, and chains. Do not force the machine to do things it may not be able to withstand safely.

You may not be able to achieve optimal performance for these fast movements. Simply adjust them for the best possible results.

Now try slower speeds and accel rates. Find the rates that are most suitable for your show.

If necessary, go back and tweak the PID settings further.

Repeat these steps until you are satisfied with the quality of motion and system responsiveness.

Troubleshooting

Please contact us for assistance.

Additional information will be added to this section in a future revision of this document.

Contact RC4 Wireless

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