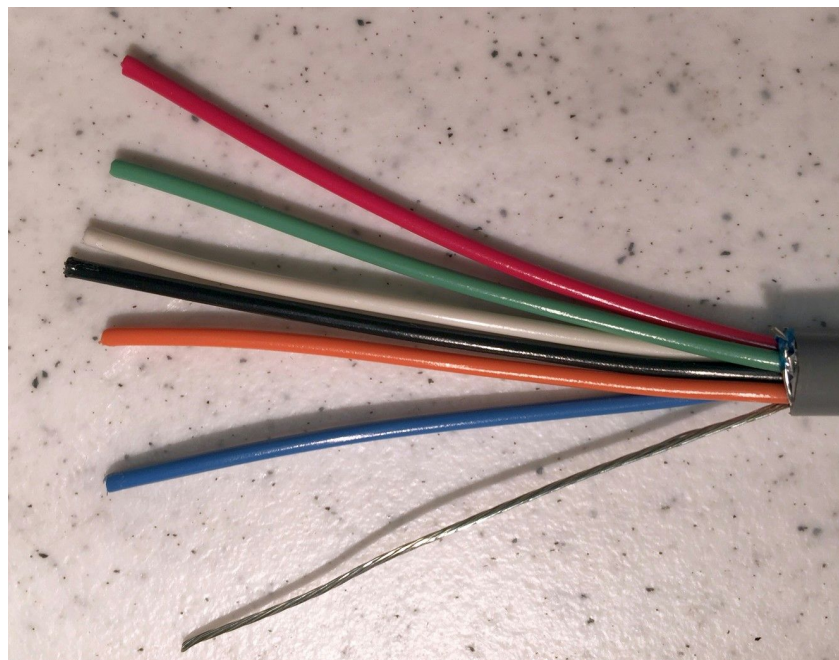


# AzEI Rotator and Controller Wiring

Bob, WB4SON, Oct 14, 2015

This document describes the Yaesu G-5500 Az/EI Rotator to Green Heron RT-21 AZ/EL Controller cabling system, and explains why certain decisions were made.

The cable used was shielded 20 AWG 6-conductor cable. The source was OneStopBuy.com (part # D22006, \$0.57/ft), but the cable manufacturer was OmniCable.

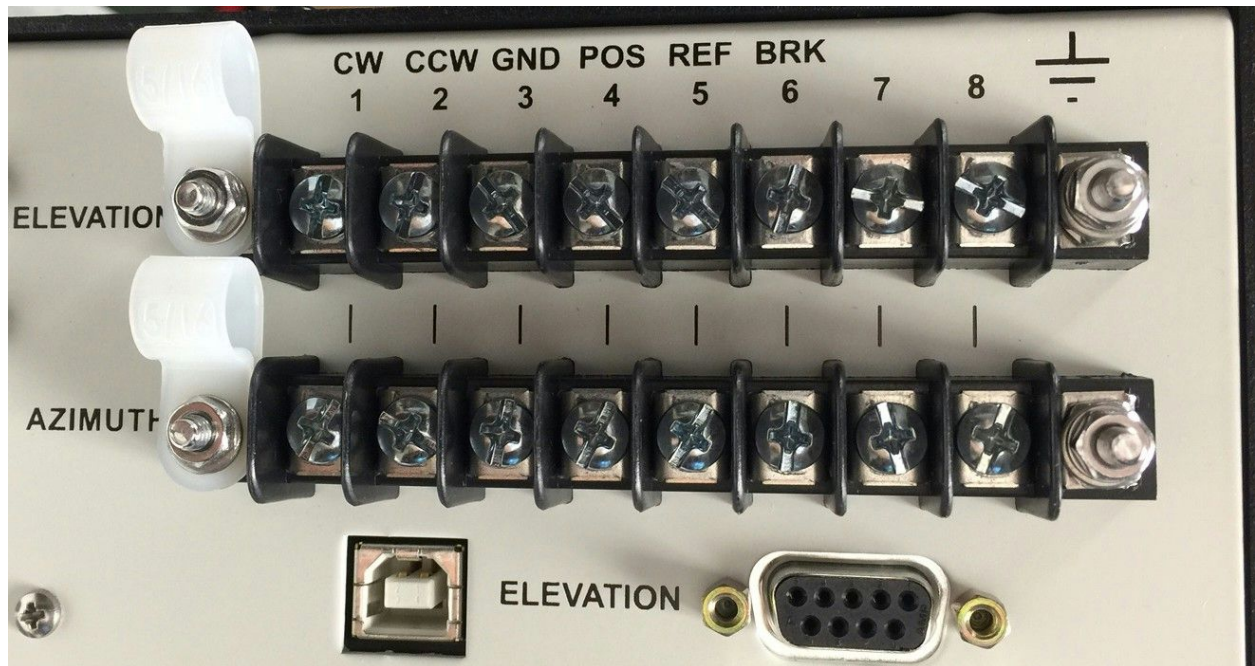


The Rotor Cable has the following color scheme:

- Red
- Green
- White
- Black
- Orange
- Blue
- Shield (tinned)

Green Heron supplies a two pair of "Quick Connect" connector cables that are intended to allow the rotor cable to be disconnected from the controller box. One connector of each pair has five insulated pins and one exposed pin. It was decided to mount this to the controller box, since fewer exposed pins means less potential short-damage. Also the WHITE conductor, on the exposed pin, will be tied to GND (#3 on the terminal strip). Note the colors are WHITE, BLACK, BROWN, BLUE, YELLOW, GREEN.

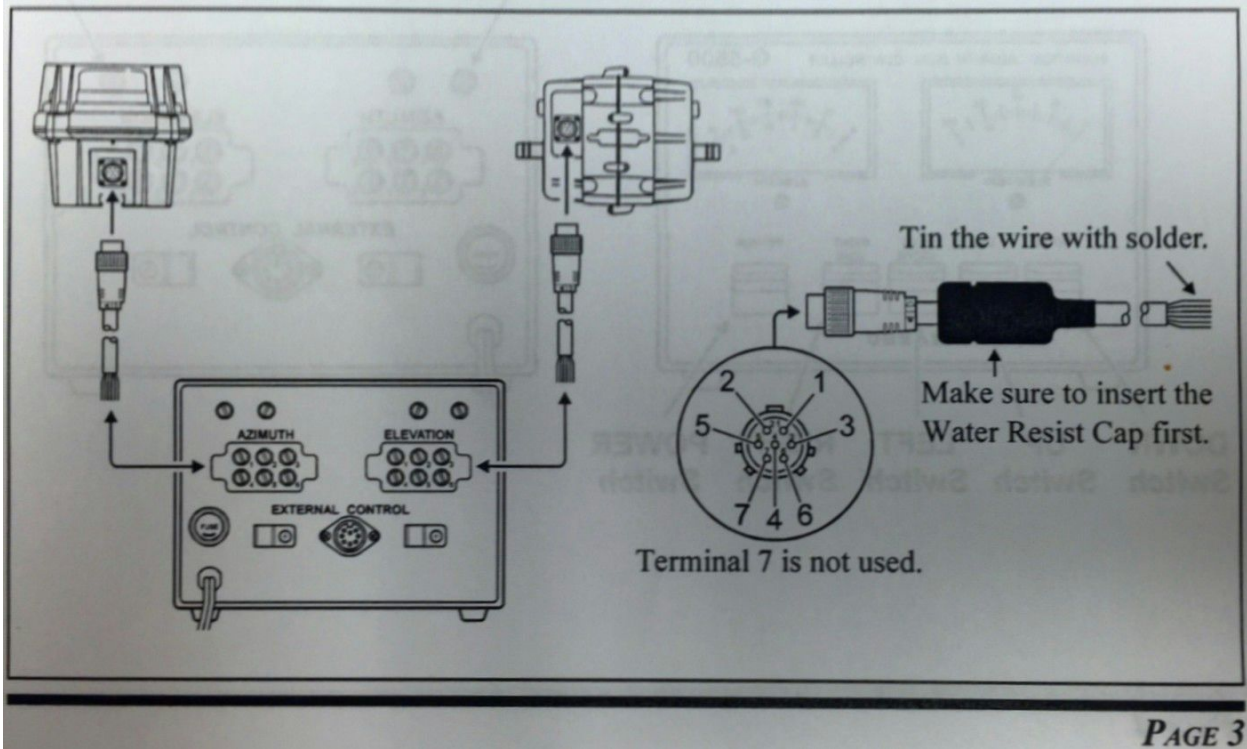
These are the connections on the back of the Green Heron Controller box:



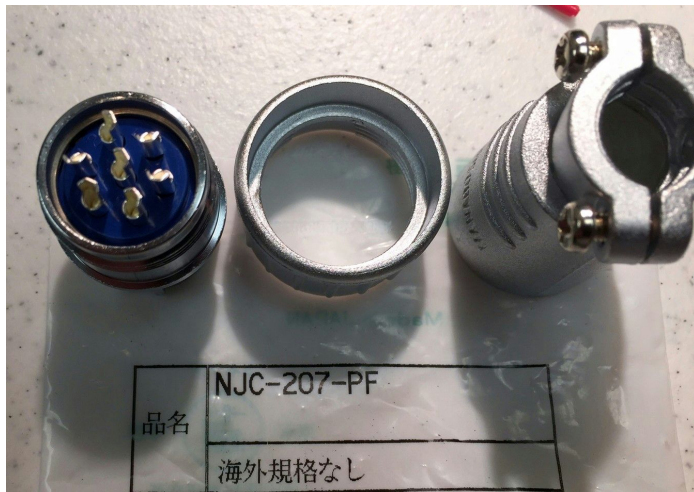
A decision was made to rotate the cable clamps on the left side so they point UP. All connections will be made from the upper side of the screw terminals. This will prevent the cables from interfering with the USB and RS232 connections.



The Yaesu AZ (lower) and EL (upper) rotor connectors are NOT keyed differently, so the user will have to attach the correct cable to the correct rotor. Because it will be very easy to inadvertently swap those connectors, it was decided to set up the Green Heron quick connectors so the cables can be swapped easily on that end (much easier than lowering a mast to get to the rotors).



NOTE: The black rubber “Water Resist Cap” was NOT included in the Green Heron kit of parts. So these connectors will need to be sealed for use outdoors (electrical tape, vulcanizing rubber, etc.). This defines the Yaesu Rotor Pin Numbers.



The actual connector is shown here:

STRIP LENGTH:

Outer Jacket 20.0mm

Inner Conductors 5.0mm

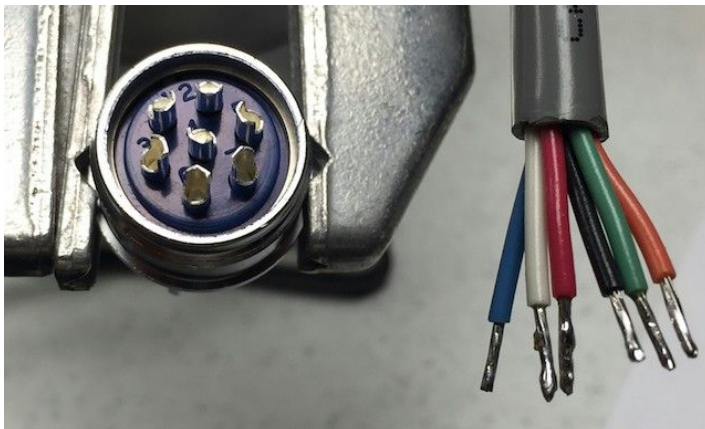
### Rotor Connections

Function	Yaesu #	RT-21
REF	1	5
POS	2	4
GND	3	3
MOT CCW	4	2
MOT CW	5	1
MOT COM	6	3

NOTE: Term 3 gets 2 wires

Yaesu Pin #	Cable Color	GH QC Color	RT21 Screw #
1 - Ref	Black	Black	5
2 - POS	Blue	Blue	4
3 - GND	White	White (Same Wire)	3
4 - CCW	Orange	Brown	2
5 - CW	Green	Green	1
6 - COM	Red	White (Same Wire)	3
No Connect	Tinned	Yellow	Earth Ground

Note: The connection of the cable shield is made on the Green Heron side of the box ONLY. It is NOT connected at the rotor end.



#### STRIP LENGTH:

Outer Jacket 20.0mm

Inner Conductors 5.0mm



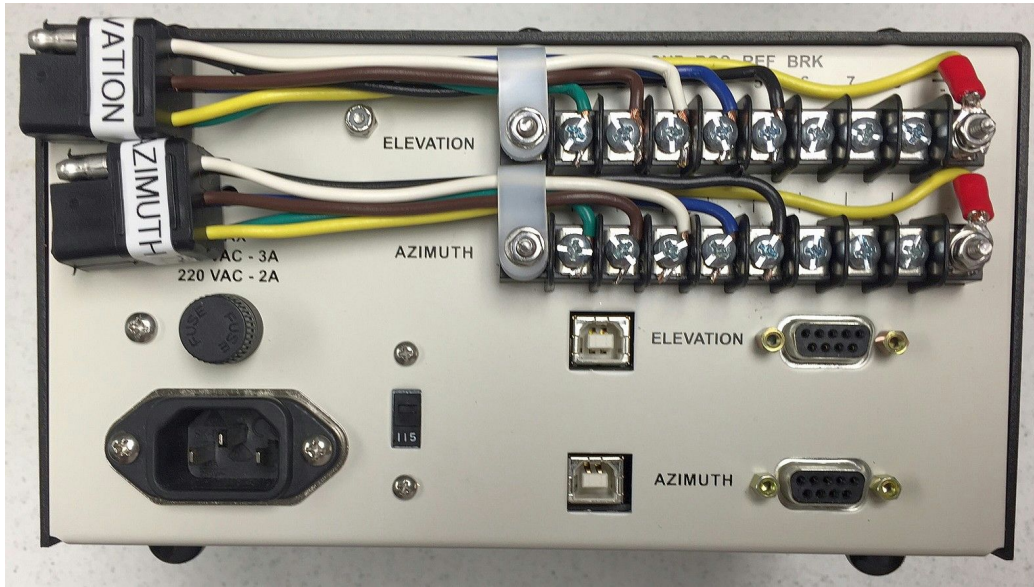


Photo Above shows Green Heron Controller with Quick Disconnects installed.



100' Elevation cable completed.