

## Using Fox Delta ST3 Satellite Tracker with Kenpro KR-400 and KR-500 Rotors.

### **Background:**

The ST3 had been designed to use with the Yaesu G-5500 series of AZ-EL rotors that already has onboard circuitry to accommodate the ST3 and other tracking interfaces.

I was already running the demo version of SatPC32 in conjunction with my home brew Max232 radio interface. It was successfully controlling my satellite capable transceiver, so hence the desire to have a satellite tracking interface to take care of the antenna department automatically also, so I purchased an ST3 kit with the intention of interfacing it to my old Kenpro rotors that I had kept in storage awaiting further use. I quickly assembled the ST3 kit when it arrived and proceeded to check if it would work with my AZ and El rotors.

### **KR-400 and KR-500 modifications:**

To enable the ST3 to automatically switch the direction controls on both rotor controllers, I decided to use on each, two 12v SPST relays with 240v contacts rated at 10Amps each, which I wired in parallel with the existing direction switches on each rotor controller, so manual switching remains.

I soon discovered that apart from some minor calibration error, the KR-500 elevation rotor worked as expected.

The KR-400 presented another problem. The meter readout being effectively 180 degrees in error, with the rotor travel STOP directions given as 180 degrees South for full CCW and CW travel direction on the meter. The ST3 requires the direction to start at 0 degrees fully CCW and finish at 360 degrees full CW travel, on the meter.

### **The solution tuned out to be simple to achieve:**

The KR-400 meter was removed from the control box and carefully opened up. The original meter panel was then removed and scanned in colour on a flat bed scanner, at the highest available resolution. Next the saved image was modified by using the program available on almost ever computer running "MS Windows", namely the "Paint" program. I was able to edit the position of all letters and numbers, etc, prior to having the "new panel meter" image professionally printed to the correct size, as I do not have a colour printer. After the "new" meter was reinstalled and calibration complete, both the KR-400 and KR500 have worked well on the bench, prior to final installation.

