Auxiliary Stepper Motor Outputs

The RCOS TCC-II is equipped with control circuits to drive auxiliary stepper motors for motion control. Since these are controlled through the TCC, they allow for remote operation, just like the other TCC functions.
The circuitry is designed to drive a single, bipolar, 4-wire stepper motor per port, with a current rating of up to 1.5 amps.

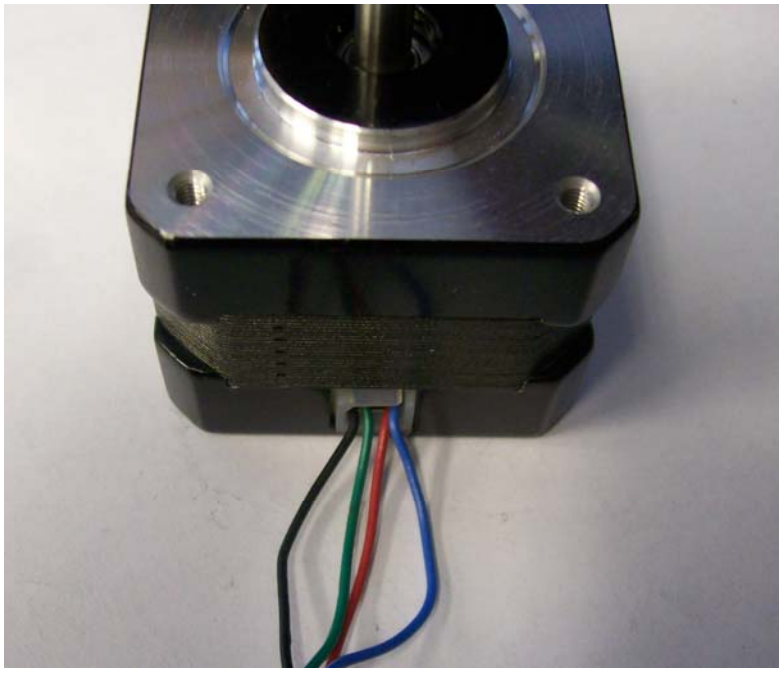
The TCC box has four RJ45 jacks labeled Motion 1-4

These jacks will accept the plugs found on standard Ethernet cables.

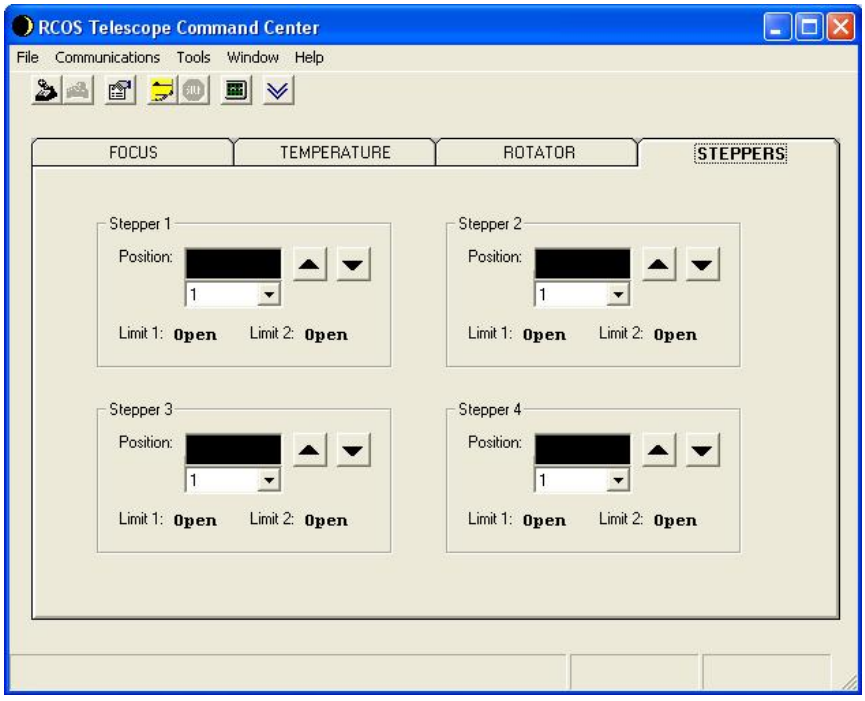
> 1: out 1A
> 2: out 2A
> 3: out 2B
> 4: out 1B
> 5: +5v interrupt
> 6: ground
> 7: +5v detect
> 8: +5v interrupt

Pins 5 and 8 are interrupt signals. They can be a switch tied to ground or an open collector output of an optical interrupt when pin 7 is a current source to supply an optical interrupt. When using switches instead of optical interrupts this pin needs to be connected to ground (pin 6) so that detection circuitry detects that it is plugged in.

Pins 1-4 get wired to the stepper motor. The 4-wire, bipolar motor has two field windings, 1 and 2, with two leads to each winding, A and B. The two leads of each winding (e.g. 1A & 1B) will have a finite resistance between them. Leads belonging to separate windings will have infinite resistance. (e.g. 1A & 2A). One winding must be wired to pins 1&4, and the other to pins 2&3.
The winding leads A & B of each coil can be wired in either polarity, switching the polarity of either coil will reverse the motor's rotation.



A bipolar stepper motor.



Stepper control tab in the TCC software.