MOTOR CONNECTIONS

Step motors have either 4, 6 or 8 wires.

Four-wire motors are the simplest to connect and offer no connection options. Simply connect one winding to terminals 3 and 4, connect the other winding to terminals 5 and 6. If you don't know which two pair of wires are which, simply use an ohmmeter to check for continuity. The first two wires that have continuity connect to terminals 3 and 4, the remaining two wires go to terminals 5 and 6. If the motor turns opposite to the desired direction, exchange the wires going to terminals 3 and 4. **Fig. 4**

4-wire motor connection
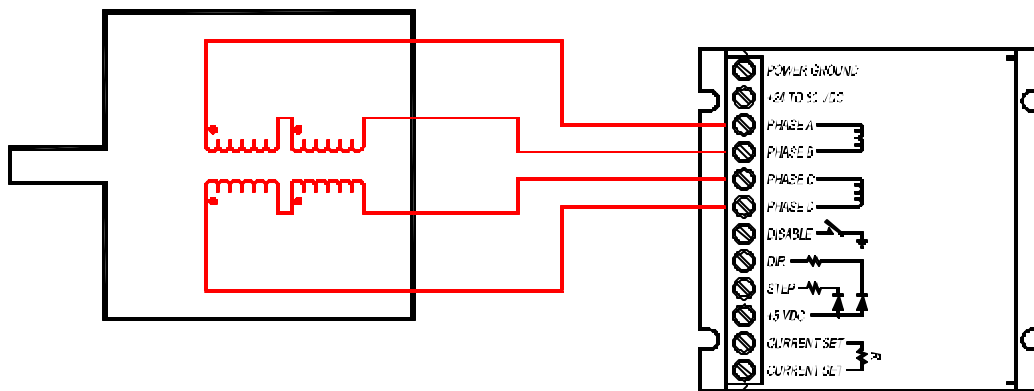
Six-wire motors are the most common. There are two connection options; full-winding and half-winding. A six wire motor is just like a four wire motor except there is a center tap on each of the two windings, for a total of six wires. For a half-winding connection, the center tap and one of the end wires are used.
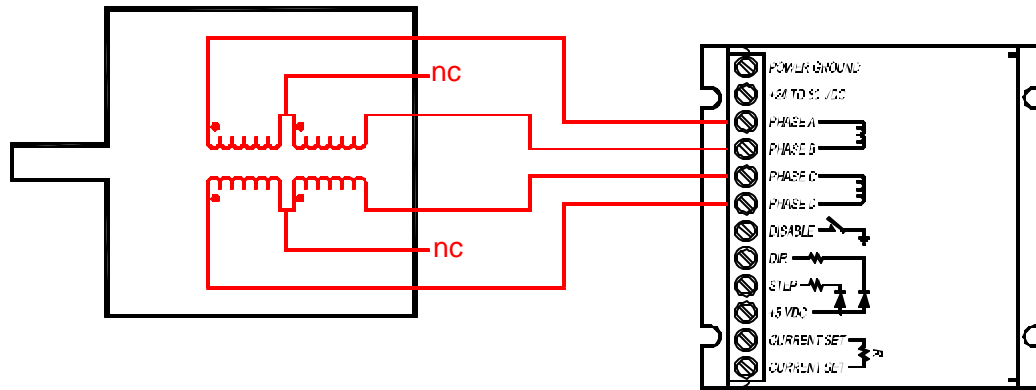
6-wire motor, half-winding connected
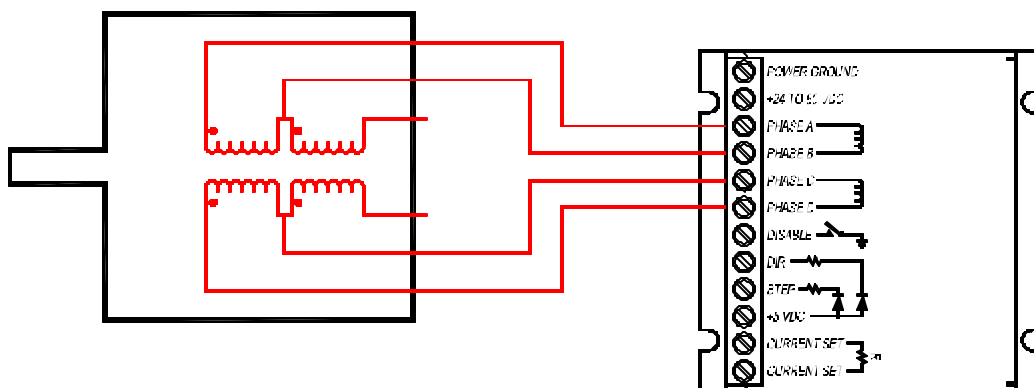
For a full-winding connection, the center tap is ignored and both end wires are used. The term "full-winding" is exactly equivalent to "series" connected while "half-winding" is virtually identical to "parallel" connected. The choice between the two is application dependent, which is discussed
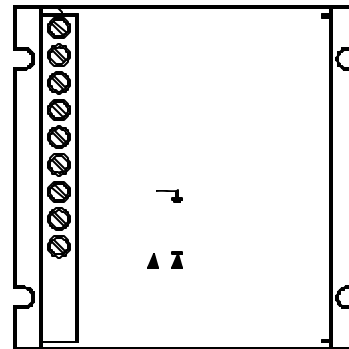
later; just remember to set the drive current to exactly half of the motor's rated unipolar current rating. **Fig. 5**

6-wire motor, full-winding connected

Eight-wire motors are about 3% more efficient when parallel connected than an equivalent half-winding connected six-wire motor, but are considerably more complicated to hook up. There is no advantage when comparing a series connection to a full-winding connection. As in a six-wire motor, the choice between series versus parallel connection is application dependent. Remember to set the drive current to exactly half of the motor's rated parallel current rating when using the series connection. **Fig. 6**

8-wire motor, parallel connected

8-wire motor, series connected