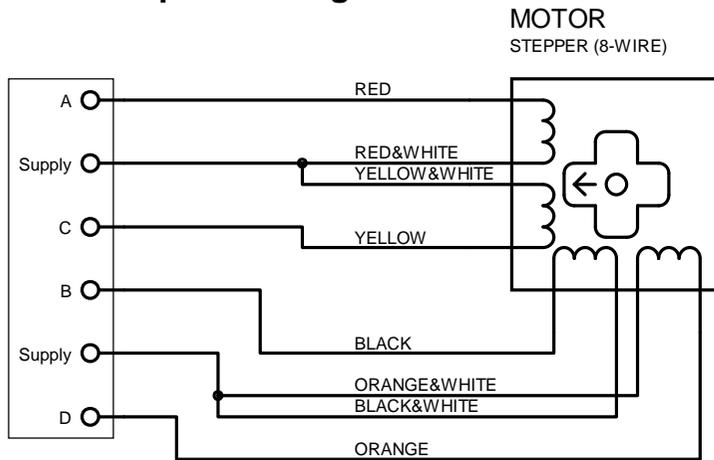


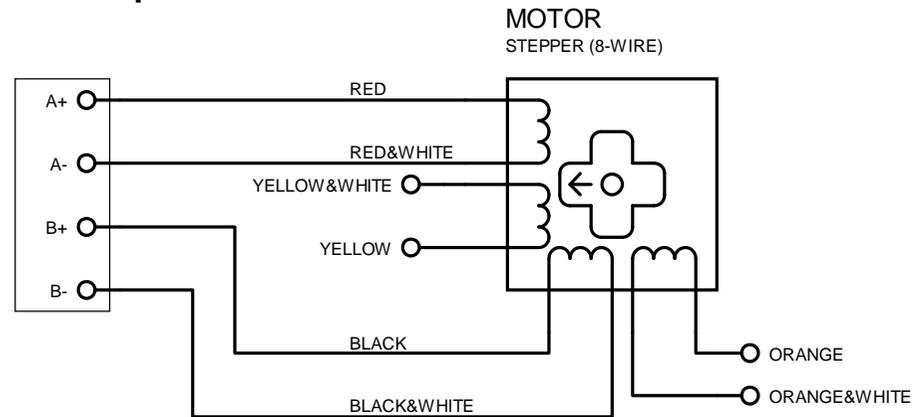
Uni-polar wiring



For use with older control cards.
Current is 1x the unipolar rating.

MUST NOT BE USED WITH BI-POLAR DRIVES!

Bi-polar 'half-wired'

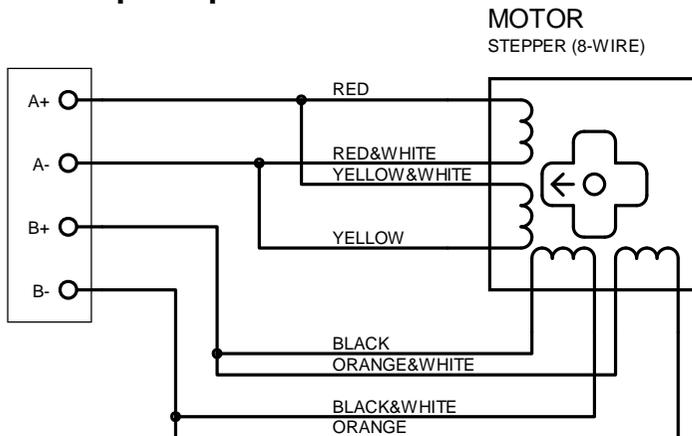


Yellow, Yellow&White, Orange and Orange&White are left unconnected and should be taped off or isolated.

Current is as rated for uni-polar drive (1x).

Provides lower torque than bi-polar series but a higher top speed.

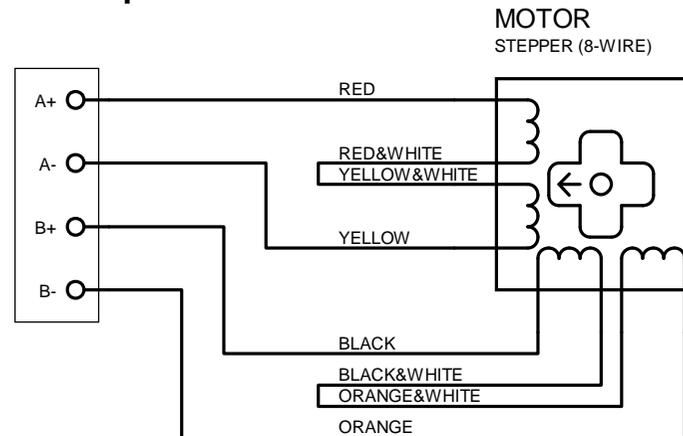
Bi-polar parallel



Current is 1.414x the unipolar rating.

Requires the most current but provides the best torque and highest speed.

Bi-polar series



Current is 0.707x (/1.414) the unipolar rating.

Provides good low end torque but restricts the top speed of the motor.

This winding configuration is usually used to allow large motors to be used with cards that have limited current output.

Current ratings...

Most motors with 6- or 8-wires will quote the current for a single winding (this is called the uni-polar rating).

When the windings are combined for bi-polar use the current will increase by a factor of 1.414 (square-root of 2) or decrease by the same factor depending on whether the windings are connected in parallel or in series.

The other rating on the motor is the nominal voltage or, in some cases, the resistance of the phase (you can get the nominal voltage by multiplying the current by the resistance).

With bi-polar drives a higher voltage than the nominal voltage is used - the drive limits the current across the coil so that the motor does not burn-out (which it would if the higher voltage was connected continuously).

Because the coils have some inductance the power passing through the coils will be higher than the theoretical amount and it is necessary to reduce the current as the over-voltage is increased. A good indicator of whether the current needs to be reduced is if the motor gets warm or hot to the touch.

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