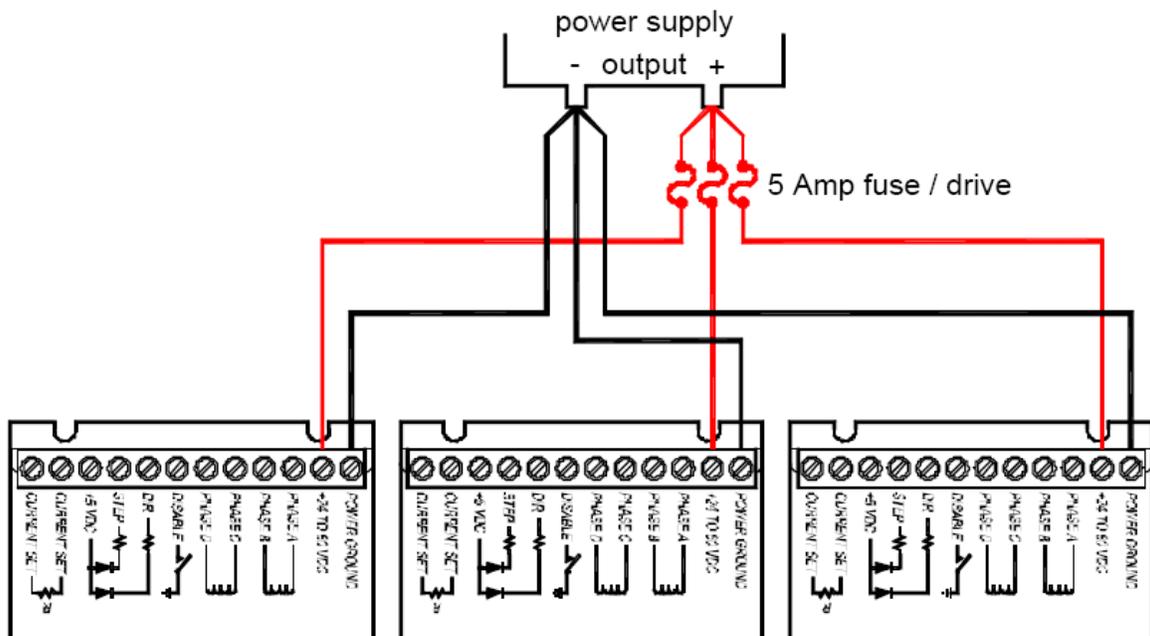


POWER SUPPLIES

The choice of a power supply is determined by voltage, current and power supply type, i.e. switcher versus linear regulated versus unregulated and purchased versus in-house designed. By far the most problematic factor is voltage, so we will leave it until last.

The easiest factor in choosing a power supply is its current rating. The current rating of the supply is based on your motor choice. The drive will always draw less than 2/3 of the motor's rated current when it is parallel (or half-winding) connected and 1/3 of the motor's rated current when it is series (or full-winding) connected. That is to say, a 6 Amp / phase motor will require a 4 Amp rated supply when parallel connected and a 2 Amp rated supply when series connected. If multiple motors and drives are used, add the current requirements of each to arrive at the total power supply current rating.

power distribution (star)



When using multiple drives from a common power supply, use individual supply and ground wires to each drive and return them to a common point back at the power supply. This is called a “star” power supply distribution; never ever use a “daisy-chain” power distribution, where the supply and ground wires for the next drive are picked up from the previous one. It is good practice to use a fuse, (5 Amp, fast blow) for each drive. This way if a fault develops such as a short to ground, windings shorted, etc. the fuse will blow and protect the drive and power supply. It is cheap insurance.

If the cable run from the power supply to the drive exceeds 18” or if a fuse is used, place a 470uF100 VDC capacitor across each drive’s power terminals 1 and 2. Make sure the capacitor’s “+” lead goes to terminal 2 and that its “-“ lead goes to terminal 1. The capacitor is necessary because the drive draws power supply current in 20 kHz pulses and needs “flywheel” to work properly.

