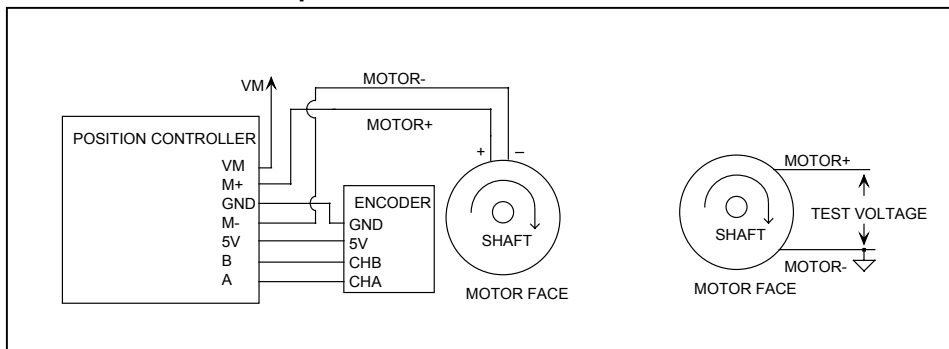


Overview:

The marketplace is has a variety of motors and quadrature encoders. Most 2 channel optical encoders with TTL level outputs will be compatible with the Motion Mind. However in our testing we have noticed that all motors and encoders do not rotate in the same direction when running “forward” (defined as the direction of motor shaft rotation when a positive voltage is applied between the motor positive and negative terminals).

The Motion Mind is labeled in a manner that makes it compatible with Pittman DC brush motors equipped by Pittman with Agilent encoders. When a positive voltage is applied to the motor’s terminals the shaft should rotate in the clockwise direction (when looking at the motor face). When rotating in this direction the encoder should count up (channel A leads channel B).

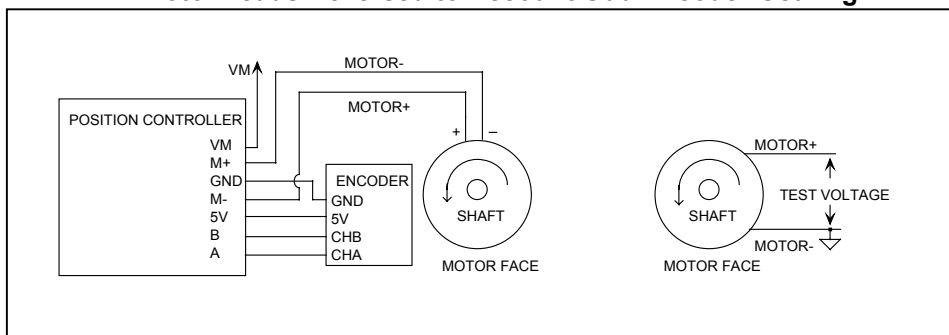
Expected Motor/Encoder Connection



Some motor-encoder combinations may cause the encoder to count down when a positive voltage is applied to the motor’s terminals. If your motor shaft turns counter clockwise when a positive test voltage is applied to the motor’s terminals, this may be an indicator that your motor-encoder combination will operate in reverse of the expected connections.

Encoders that count down when a positive voltage is applied across the motors terminals may cause a “runaway condition”. The motor will run at full speed and the position error will grow instead of decreasing. To fix this condition either reverse your motor leads as shown in the diagram below, or swap the A and B connections (A connects to B, and B connects to A). **Do not do both.** This is the case with the EZ Roller motor and encoder combination sold by Solutions Cubed.

Motor Leads Reversed to Account Odd Encoder/Gearing



Always test your motor-encoder system with your position control module before applying a load to the motor’s shaft. Applying a velocity limit can reduce the possibility of damaging electrical transients occurring during if a runaway motor occurs.

The INDEX connection may be connected to the IND/RC connection of the Motion Mind, but is not necessary for position control. This connection is not shown in these diagrams.