

SMC85/SMC66 with H2 encoder used with other motors than JVL MIS motors

Physical requirements

In order to get the encoder chip to work with your motor with shaft mounted magnet, it is very important to mount the SMC85/SMC66 controller very precise, according to the instructions below.

Aligning the H2 encoder chip with the magnet:

The encoder chip U24 must be aligned as close to perfect as possible with the centre of the magnet. An offset of maximum 0,2mm between the encoder chip and the magnet is allowed.

Distance between the H2 encoder chip and the magnet:

The distance between top of magnet and top of H2 encoder chip must be between 0,3mm and 1,5mm.

Magnet requirements:

Optimum sensor signals are generated by a diametrically magnetized, cylindrical permanent magnet with a diameter, D , of 4 mm and an axial length, L , of 4 mm.

Magnets of neodymium iron boron (NdFeB) or samarium cobalt (SmCo) are very well suited and are hardly influenced by external stray fields.

Various sized magnets with diameter between 3mm and 8mm can be used, but the length-to-diameter ratio, L/D , of the magnet should be between 0.3 to 2 to ensure sufficient field strength.

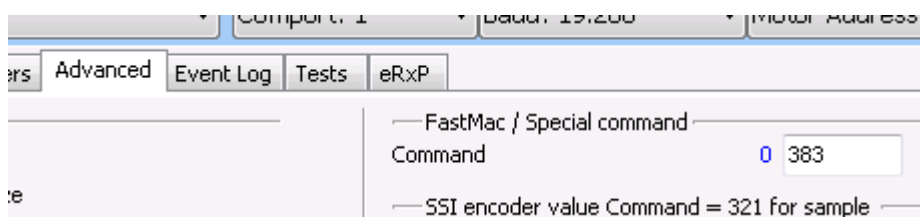
Calibration of the H2 encoder chip

After correct assembly according to the above, the H2 encoder chip must be calibrated with the magnet, as showed in the guide below.

Guide to calibrate the encoder for closed loop operation:

1. Upgrade the firmware in MacTalk to at least version 4.02.
2. Make sure that all mechanical loads have been un-mounted from the shaft.

Execute command 383 from the Advanced tab:



3. Wait until the motor is idle (~2minutes) and cycle the power.
4. The encoder has now been calibrated, and closed loop can now be activated here on the Advanced tab:

