

Modern Motion...

Technical Note: Powering the NM70R-6P with the MAD-V5

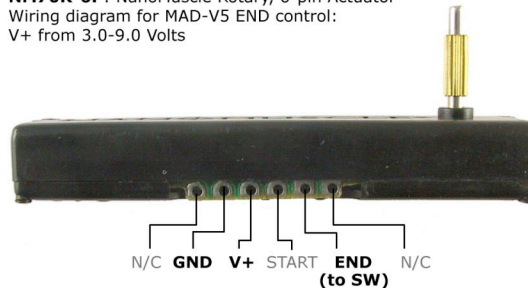
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The rotary NM70R-6P actuator and Miga Analog Driver -V5 (MAD-V5) are described in earlier Tech Notes ^{1,2}.

By connecting the MAD-V5 V+ and GND to the NM70R-6P as shown, the MAD-V5 can be used to monitor the Actuator End Switch (END), and safely remove power to the NM70R-6P the moment the end-of-stroke is reached. If input power is maintained, the END position can be maintained without over-heating the SMA wires inside the actuator. Use of the MAD-V5 in this manner allows the NM70R-6P to be operated at higher voltages (thus allowing faster actuation speeds).

The wiring diagram below illustrates the NM70R-6P wiring for this configuration. When the NM70R-6P reaches the end of stroke, the SW line on the MAD-V5 is pulled LOW, indicating that the END limit has been reached. The MAD-V5 momentarily cuts power, allowing very slight relaxation until the SW is open again, and the MAD-V5 again provides power to the actuator. This 'dithering' motion is almost undetectable, and requires only ~15% of DC power level to HOLD the actuator at the END position.

NM70R-6P: NanoMuscle Rotary, 6-pin Actuator
 Wiring diagram for MAD-V5 END control:
 V+ from 3.0-9.0 Volts



N/C: Not Connected
 START: LOW (GND) when actuator is at rest
 END: LOW (GND) when actuator reaches end of stroke

Miga Analog Driver V5 -Pinout Diagram



¹⁾ [MAD-V5-TechNote.pdf](#) & ²⁾ [NM70R-Pinouts.pdf](#) online at migamotors.com/Downloads.html