

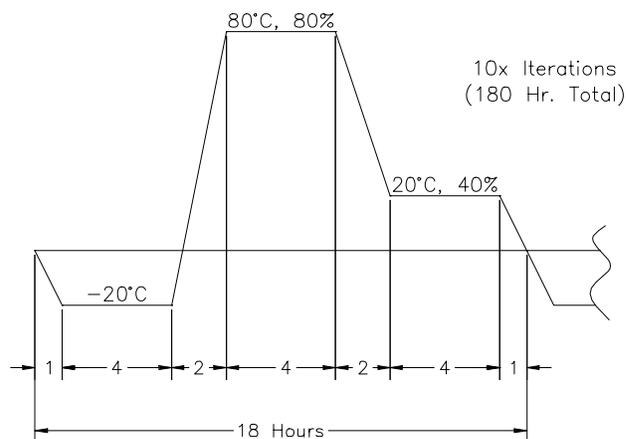


## SHOCK, VIBRATION AND ENVIRONMENTAL TEST RESULTS

December 2, 2002 -- Exlar's integrated motor linear actuators have been tested by an independent testing facility for temperature, humidity, shock and vibration with the following results.

### Temperature and Humidity Exposure

Actuators were subjected to 180 hours of temperature/humidity exposure as shown in the profile below.



After removal from the test chamber, the sample displayed no physical or functional damage.

### Vibration Endurance

The test samples were mounted to a holding fixture secured to a vibration shaker table. Control and response accelerometers were placed near points of attachment. Vibration frequency was swept from 20 Hz to 2500 Hz at a sweep rate of one (1) octave/minute. The input level of 24.5 m/s<sup>2</sup> (2.5 G's) was applied to the sample throughout the frequency range. The frequency range was cycled for 100 sweeps, approximately 11.5 hours.

Results showed no physical or mechanical degradation.

### Mechanical Shock

The test samples were mounted to an aluminum holding fixture, capable of transmitting a shock input. A control/measurement accelerometer was placed near the point of sample attachment. The shock pulse was a half sine waveform, 11 milliseconds in duration with a 490 m/s<sup>2</sup> (50 G's) input. Three shocks were applied in each direction (positive and negative) or three (3) mutually perpendicular axes, for a total of 18 shocks.

Post-test evaluation including operational tests showed no physical or mechanical degradation.