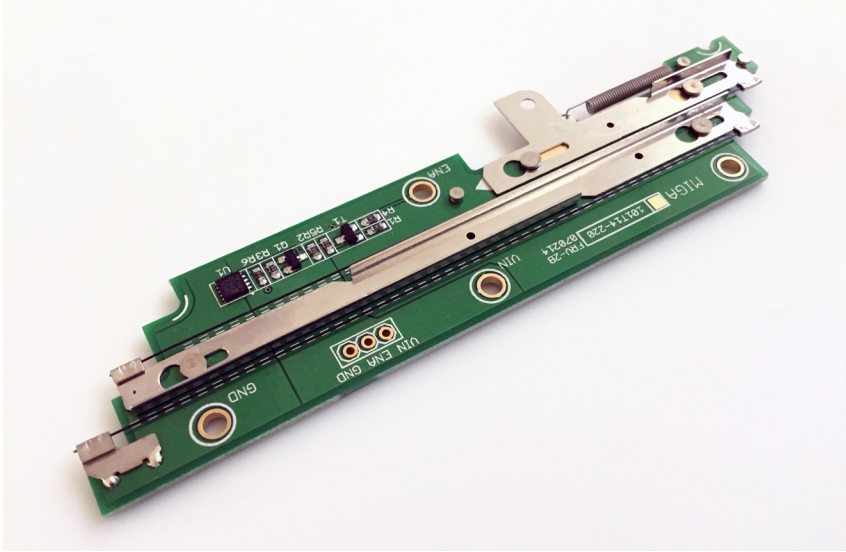


Miga Technologies, LLC

Technical Data Sheet

T220 Linear Shape Memory Alloy Wire Actuator



Specifications:

- Force: 3 lbf (13N)
- Stroke: 0.22" (5.6mm)
- Operating Temp Range: -10 to 55°C
- Actuation: 0.3s @ 7.4v, 0.1s @ 9.0v
- Optimized for 7.4v LiPo battery operation

The **T220** is a volume-ready Shape Memory Alloy wire actuator, with MOSFET switching & protection circuitry directly onboard the PCB, allowing for a simple 3-wire interface. The ideal uses are as latch- or trigger- release mechanisms for portable or hand-held battery-powered devices.

The **Miga T220** is a latch-release or trigger-release mechanism featuring silent operation and low profile typical of Miga's constant-force Shape Memory Alloy actuators. Optimized for battery-powered operation at 7.4 volts, the **T220** operates from 3.0 to over 9.0 volts. Actuation speed is a function of voltage as shown below.

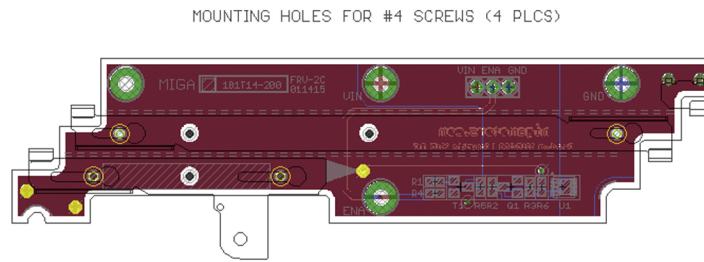
The **T220** has an on-board MOSFET switching & protection circuit, which cuts power to the SMA wire when the output stage reaches the End-of-Stroke Contact. The **T220** can 'HOLD' the end position at full load. Holding power is typically ~10% of actuation power – allowing the **T220** to maintain long-duration HOLD while consuming minimal power.

The **T220** has a 3-wire interface: Voltage (+V), Enable (EN), and Ground (GD). The Enable voltage range is 2.5 volts to +V, but is typically a logic signal from a microprocessor. The actuator is energized whenever the Enable is raised 'high'.

The **T220** weighs less than 0.44 oz. (12.4 grams), providing a Force-to-Weight ratio of 110:1, and the overall envelope is 4.42 x 1.04 x 0.15" (112.3 x 26.4 x 3.8mm).

The **T220** has a low-force bias spring to maintain tension in the SMA wire at all times.

Contact us for STEP files of the **T220** actuator in both Default and Energized states.

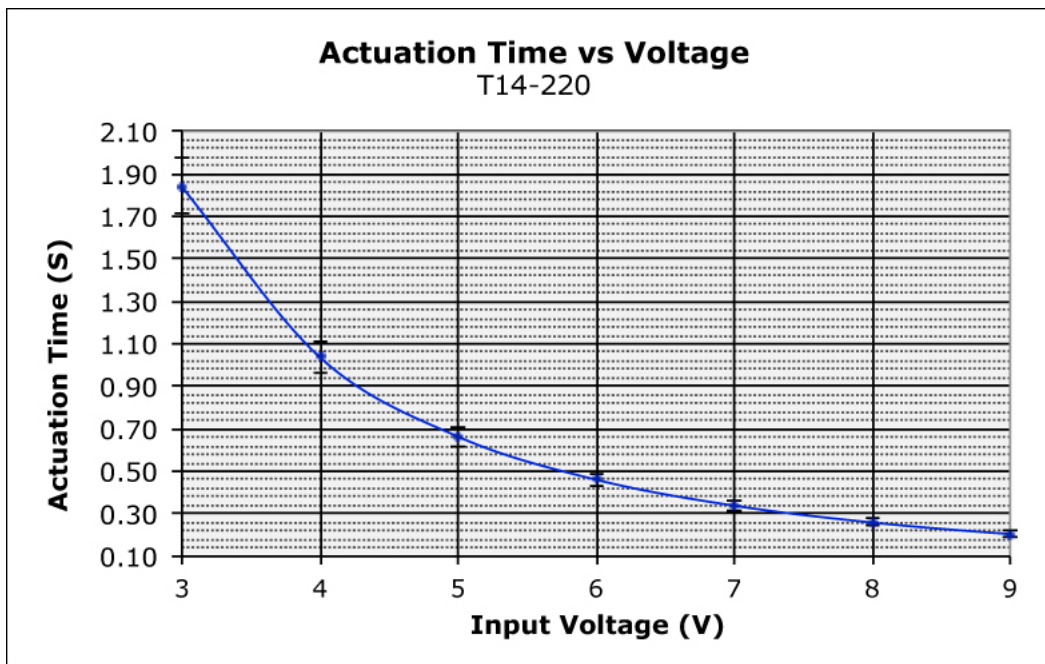


The **T220** has a $\varnothing 0.086$ " hole in the output shaft to attach linkages, but we recommend contacting the load only with the leading edge of the shaft, so the actuator wire remains under tension while cooling following actuation.

Technical Specifications

| | | |
|-------------------------|------|---------------|
| Resistance: | 2.4 | Ω |
| Current (@ 7.4 volts): | 3.1 | Amps |
| Actuation Power: | 23 | Watts |
| Holding Power: | 2.7 | Watts |
| Still Air Cooling Time: | 5.2 | Seconds |
| Cycles per charge: | 1929 | 750mA*hr LiPo |

Figure 1: Typical specifications for T220-012 actuators.



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