

Category: Mechanical Components and Systems

Reference: TD-DE-1063

ONE actuator

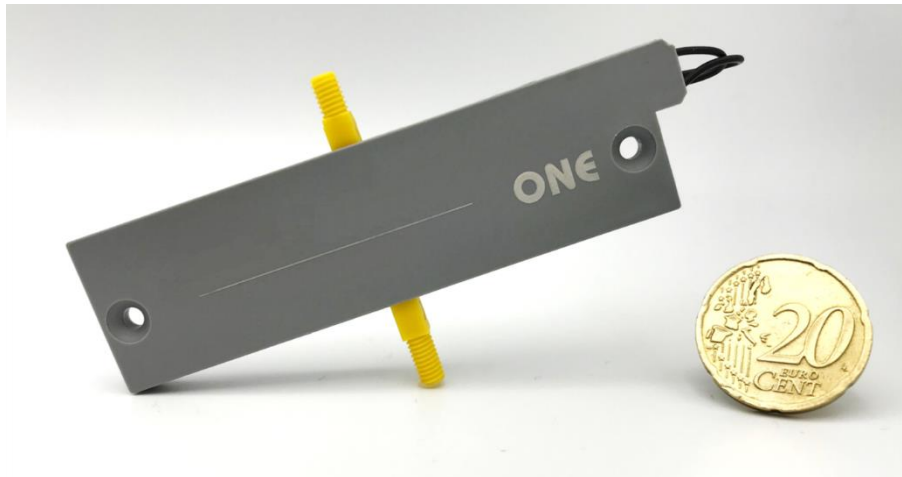
ONE actuator, standardized miniature actuator based on smart materials, the so called shape memory actuator (SMA).

SMA actuators are very well suited for space applications because of their low weight and space requirements. Since early space missions, SMA actuators have been used.

Thus they can be used for locking and unlocking of e.g. solar panels, cameras and other sensors on a satellite or space objects. Unfortunately, the development process for space applications of those actuator devices is highly complicated due to the complex thermo-mechanical behaviour of those smart materials.

The ONE actuators combine the advantages of the well-known SMA devices with the standardization benefits from industrial production.

That means: complicated product development for SMA actuation is reduced to the application of a "plug & play" actuator which is today produced in mass production. The ONEspace version of this intelligent actuator, is suited by space approved polymers as as housing, and power amplifiers which are compatible to CubeSat standards.



Innovative Aspects:

Shape memory actuators (SMA) up to 50 N force

- It can replace an electromagnet though locking and unlocking systems
- Compact
- Light
- high-performance
- noise- and magnet-free

Application Areas:

ONE actuators are developed with for lightweight movements, unlocking functions and precise positioning of mechanical systems in New Space applications. Emerging potentials are seen in optic-, safety- and release applications on CubeSats, rockets, deployers, drones and rovers.

Cooperation:

The donor is interested in the development and production of actuators for special applications.