

PRESENTATION

Stepping Piezo Actuators (SPA) are long stroke linear piezoelectric motors for high precision positioning. Classified as inertial piezo actuators, they benefit from the APA® heritage, especially from their large deformation and high reliability. SPA operates by accumulation of small steps (M1), produced by a sawtooth-like signal. Between each step, the motor is locked in position and that, without any consumption. As a complementary mode, fine adjustment (M2) of the APA® allows to reach nanometer resolution.

The SPA30uXS Developer kit offers the possibility to discover the potential of the SPA30uXS, smallest existing SPA, in stepping mode (M1). With an external dedicated miniature driver (SPC45), and coupled to a high resolution magnetic sensor, the Developer kit is a fully closed-loop solution for high resolution millimetric motion.

DESCRIPTION OF THE SPA30uXS DEVELOPER KIT

The SPA30uXS Developer kit is made of different sub-systems:

- SPA30uXS kit (SPA30uXS motor coupled with an incremental sensor on a holding platform)
- SPC45 driver
- SPC45 Power Supply
- Cables
- USB cable for GUI control

MECHANICAL CONFIGURATIONS AND INTERFACES

The Developer kit is a plug and play solution. It allows to learn quickly how to use the SPA motor. The SPA30uXS motor can be extracted from the holding platform and integrated directly onto user's test bench.

DEDICATED ELECTRONICS' CHARACTERISTICS

The dedicated driver, the "Stepping Piezo Controller" (SPC45) has been built to offer large possibilities to designers, from fast motion setup to completely controlled movement. USB interface, as well as serial port are available to meet every designer's requirements.

The technical information on this leaflet is not contractual and can be changed without prior notice.

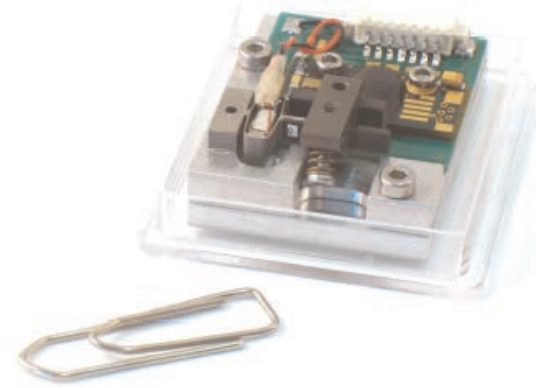


Fig. 1: SPA30uXS

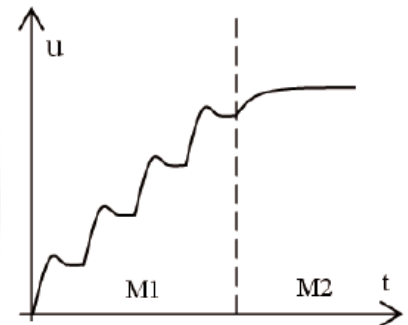
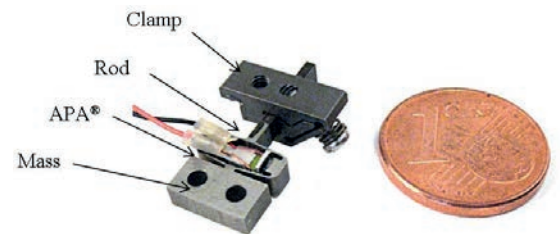


Fig. 2: SPA30uXS motor components and principle

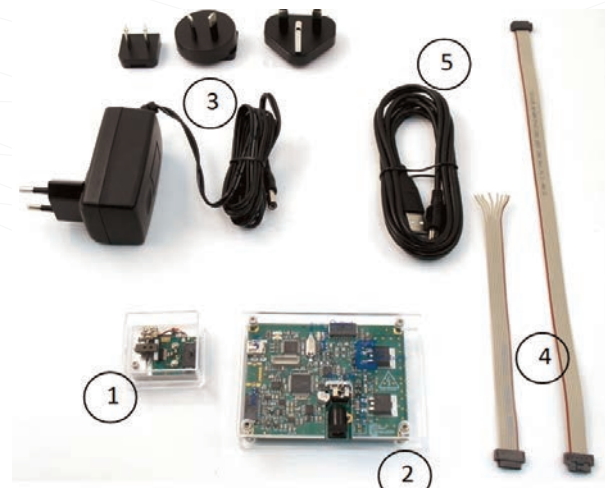


Fig. 3: SPA30uXS kit components

PERFORMANCES OF THE SPA30UXS DEVELOPER KIT

REFERENCES	UNIT	SPA30UXS DEVKIT
Notes		
Sensor		MAG
Base		APA30μXS
Stroke	mm	3.4
Stiffness	N/μm	0.108
Max speed	mm/s	30
Typical Holding force at rest	N	0.8
Typical actuation force	N	0.2
Sensor resolution	μm	1.952
Capacitance	μF	0.052
Height	mm	8.25
Base size	mm	24 x 34
Mass	g	8.1
DC input voltage	V	12
Max input current (incl. Driver)	A	0.4
Holding consumption	A	0

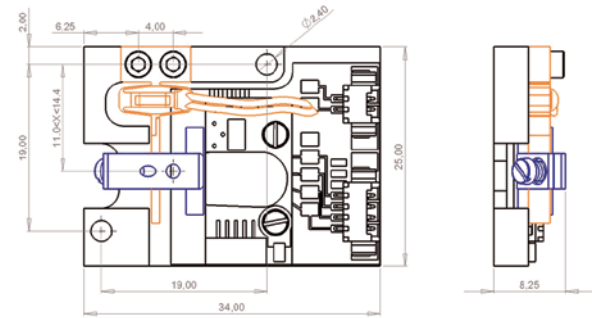


Fig. 4: Mechanical configuration, with fixed (orange) and mobile part (blue) of the motor

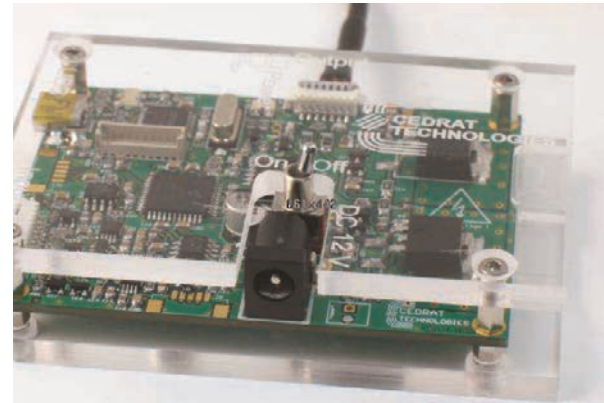


Fig. 5: Stepping Piezo Controller SPC45