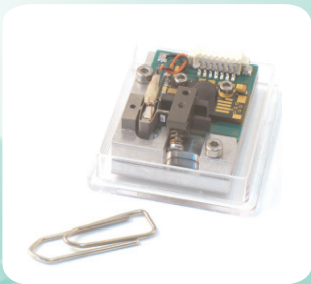


SPA30uXS Piezo Motor Developer kit



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), and 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.

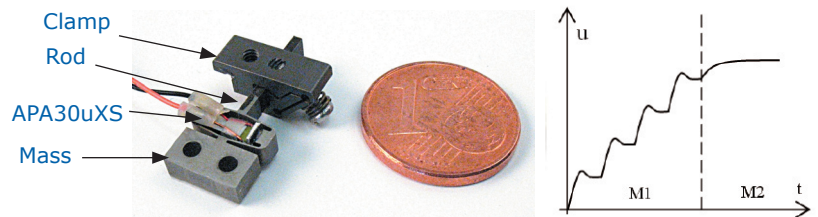


Figure 1: SPA30uXS motor components and principle

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

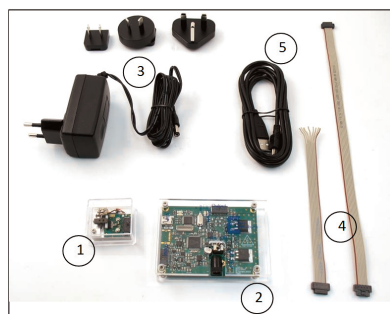


Figure 2: SPA30uXS kit components

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

1. SPA30uXS kit (SPA30uXS motor coupled with an incremental sensor on a holding platform)
2. SPC45 driver
3. SPC45 Power Supply
4. Cables
5. 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.

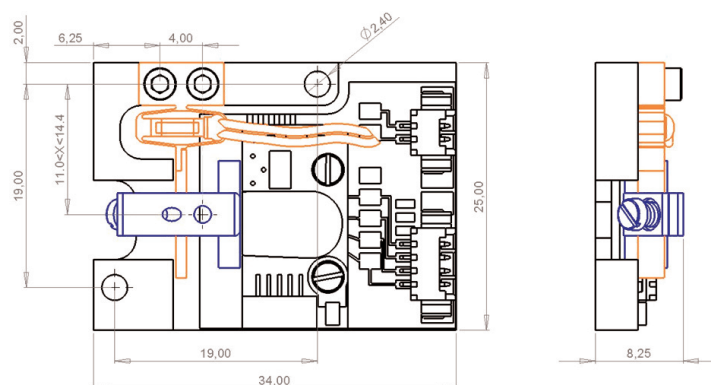
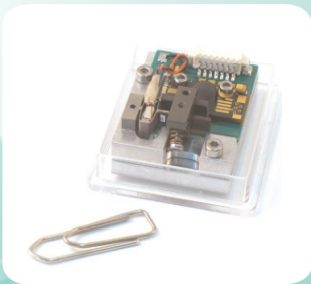


Figure 3: Mechanical configuration, with fixed (orange) and mobile part (blue) of the motor

SPA30uXS Piezo Motor Developer kit



Performances of the SPA30uXS Developer Kit

References	Unit	SPA30uXS DevKit
Notes		-
Sensor		MAG
Base		APA30uXS
Stroke	mm	3.4
Stiffness	N/ μ m	0.108
Max speed	mm/s	30
Typical Holding force at rest	N	0.8
Typical actuation force	N	0.2
Sensor resolution	μ m	1.952
Capacitance	μ F	0.052
Height *	mm	8.25
Base size *	mm	25*34
Mass	gr	8.1
DC input voltage	V	12
Max input current (incl. Driver)	A	0.4
Holding consumption	A	0

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.

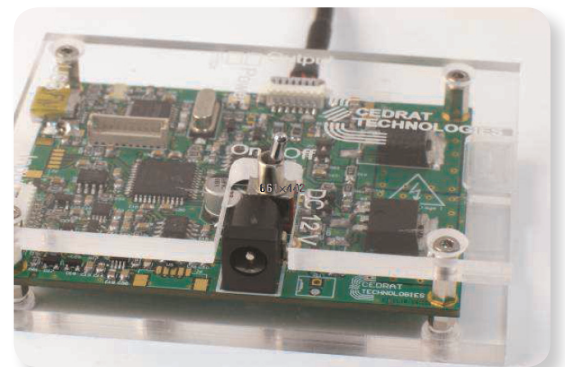


Figure 4: Stepping Piezo Controller SPC45

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