www.cedrat-technologies.com | actuator@cedrat-tec.com

DESCRIPTION

This Amplified Piezoelectric Actuator APA120ML is designed to obtain a stiff actuator and produce higher displacements than Direct Piezoelectric Actuators. Consequently, the APA120ML actuator has a high bandwidth and can bear a high dynamic force. A parallel pre-stressed option (pp) is used to improve the loading capabilities of the actuators.

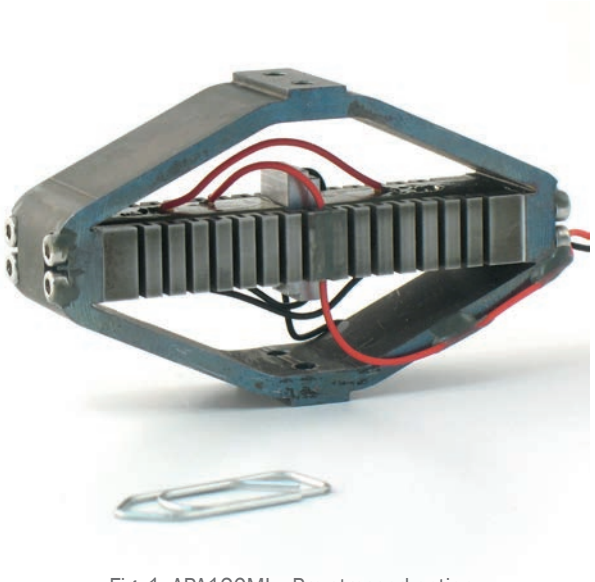

Fig. 1: APA120ML - Pre-stressed option

REFERENCES	UNIT	APA120ML
› Notes		Space product
Displacement	µm	130
Blocked force	N	1400
Stiffness	N/µm	10,8
Resonance frequency (free-free)	Hz	6450
Response time (free-free)	ms	0,08
Resonance frequency (blocked-free)	Hz	1750
Response time (blocked-free)	ms	0,29
Voltage range	V	-20 ... 150
Capacitance	µF	20,0
Resolution	nm	1,3
Thermo-mechanical behaviour	µm/°K	1,87
Height H (in actuation direction)	mm	45,0
Length	mm	78,9
Width (inch, edges, wires)	mm	22,5
Mass	g	160,0
Standard mechanical interface [H]	- 2 flat surfaces 9*20 mm² with 2 Ø 3,2 mm holes, centred at 5 mm from the side	
Standard electrical interface	- 2 PTFE insulated AWG26 wires 300 mm long with Ø 1 banana plug	

Table 1: APA120ML

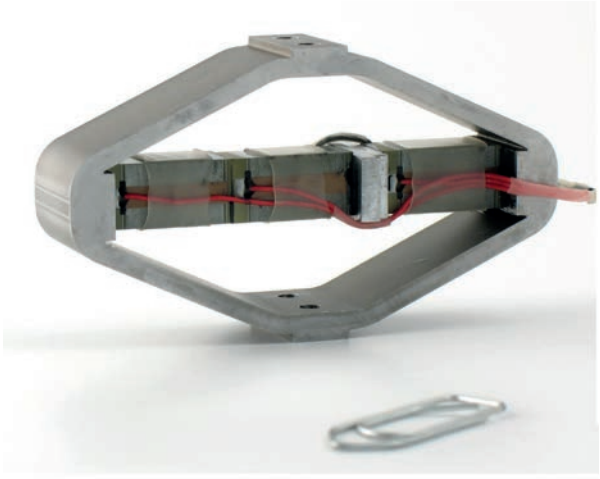

Fig. 2: APA120ML

SPACE EVALUATION PROGRAM

The amplified piezoelectric actuator APA120ML has followed a space evaluation program according to ECSS standards (European Space Agency standards).

- Thermal – vacuum: -20 / 75 °C
- Random vibration: 20 grms

Radiations	ESCC n°22900
Outgassing	PSS 01-702
ESD	ESCC n°23800
Micro-section examination	ESCC n°23400

SPACE HERITAGE

3 Engineering Models have been used in a refocussing mechanism by EADS-SODERN.