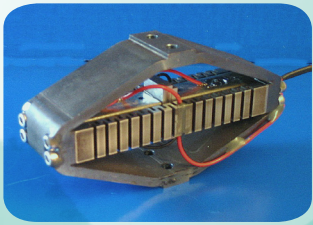


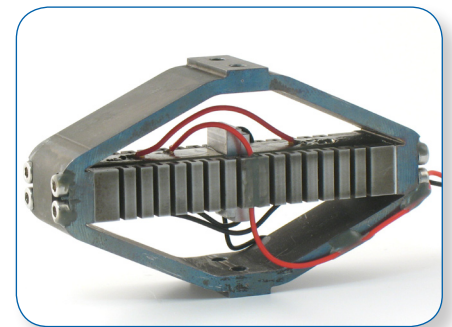
# Amplified Piezo Actuator APA120ML-PP



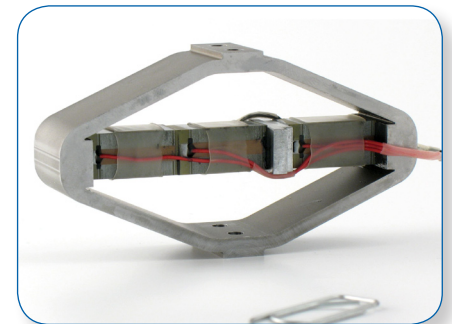
## Description

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.

References	Unit	APA120ML
Notes		space product
Displacement	( $\mu\text{m}$ )	130
Blocked force	(N)	1400
Stiffness	(N/ $\mu\text{m}$ )	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	( $\mu\text{F}$ )	20,0
Resolution	(nm)	1,3
Thermo-mechanical behaviour	( $\mu\text{m}/^\circ\text{K}$ )	1,87
Height H (in actuation direction)	(mm)	45,0
Length	(mm)	78,9
Width (incl. edges, wires)	(mm)	22,5
Mass	(g)	160,0
Standard mechanical interface [H]		2 flat surfaces 9*20 mm <sup>2</sup> with 2 $\varnothing$ 3.2 mm holes, centred at 5 mm from the side
Standard electrical interface		2 PTFE insulated AWG26 wires 300 mm long with $\varnothing$ 1 banana plug



APA 120 ML - Pre-stressed option.



APA 120 ML.

## 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.

For more information, please contact:

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