

DESCRIPTION

The Parallel Pre-stressed Actuator PPA10M is designed according to space rules and especially to avoid stick – slip behaviour. A high level of pre-stress allows for robustness. A typical application is laser cavity tuning in LIDAR and other opto-electronic functions.

REFERENCES	UNIT	PPA10M
> Notes		
Space product		
Displacement	µm	8
Blocked force	N	800
Stiffness	N/µm	100
Resonance frequency (free-free)	Hz	65000
Response time (free-free)	ms	0,01
Resonance frequency (blocked-free)	Hz	32500
Response time (blocked-free)	ms	0,02
Voltage range	V	-20 ... 150
Capacitance	µF	0,7
Resolution	nm	0,1
Thermo-mechanical behaviour	µm/°K	-0,03
Height (in actuation direction)	mm	18,0
Base depth	mm	10,0
Base width (incl. edges, wires)	mm	9,0
Mass	g	6,0
Standard mechanical interface - Top	1 centered M2,5 threaded hole 2,5 mm deep	
Standard mechanical interface - Base	1 centered M2,5 threaded hole 2,5 mm deep	
Standard electrical interface	2 PTFE insulated AWG26 wires 300 mm long with Ø 1 banana plug	

Table 1: PPA10M

SPACE EVALUATION PROGRAM

The PPA10M-space has followed a space qualification program according to ECSS standards (European Space Agency standards).

The PPA10M actuator is currently being qualified in the frame of the PHARAO instrument. Lifetime: 2e8 cycles full stroke.

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

SPACE HERITAGE

A specific PPA actuator will flow on ROSETTA in 2004. The PPA10M is scheduled for flight on the ISS/ACES/PHARAO instrument in 2006.

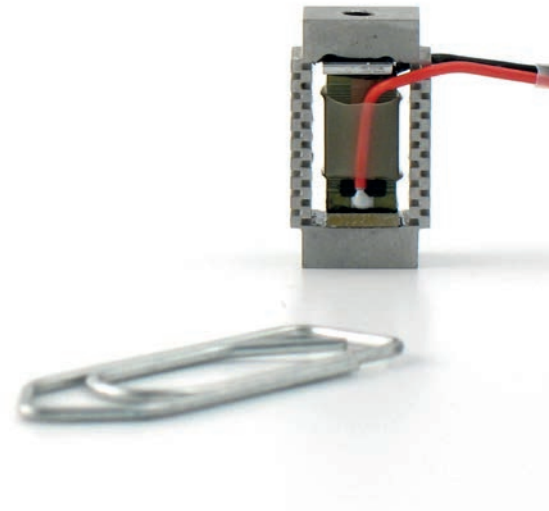


Fig. 1: légende dont le bloc est collé à l'image au dessus