

## DESCRIPTION

This Proportional Piezo Valve PPV200M is a piezo actuated valve using an Amplified Piezo Actuator APA200M to move the poppet and to display the following characteristics: proportional feature and high bandwidth. The valve has been tested with inert gas and can be adapted to incompressible fluid, or higher Maximum Expected Operating Pressure. This valve is issued from an ESA-ESTEC TRP funded program and has followed a space evaluation.

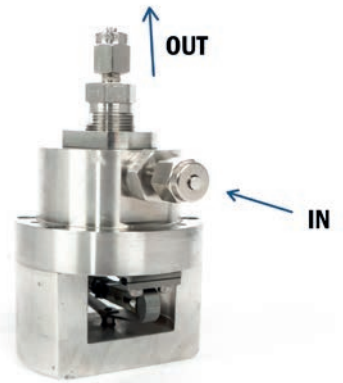


Fig. 1.a: view of the PPV200M

## SPACE EVALUATION PROGRAM

The PPV200M followed a space evaluation program including

- Functional tests,
- Lifetime test ( $10^6$  open/close cycles),
- Thermal vacuum test (-10 / 75 °C),

## SPACE HERITAGE

One Engineering Qualification Model (EQM) has been realised and tested.



Fig. 1.b: PPV200M with CA45 electronics

REFERENCES	UNIT	PPV200M
<b>&gt; Notes</b>		<b>&gt; Space product</b>
Fonction		Proportional valve
Sensors option		Strain gauges Flowmeter
Max. no load displacement	µm	200
Max. flow	sccm	250
Fluid		N2, Ar, air
Maximum Expected Operation Pressure	bar	2
Voltage Range	V	-20 ... 150
Internal leakage	sccs@Ghe	$4.0^{-06}$
External leakage	sccs@Ghe	$2.0^{-08}$

REFERENCES	UNIT	PPV200M
Resolution	nm	13
Mass	g	250
Unloaded resonance frequency (in the actuation's direction)	Hz	2100
Bandwidth	Hz	200
Capacitance	$\mu$ F	3.5
Mechanical interfaces		3xM2 at 120°
Dimensions	mm	Ø : 60 Heigh : 70
Fluid interfaces		Swagelock 1/8" connector
Electrical interfaces		2 PFTE AWG30 wires
Temperature range	°C	-20/65

Table 1. Performances of PPV200M