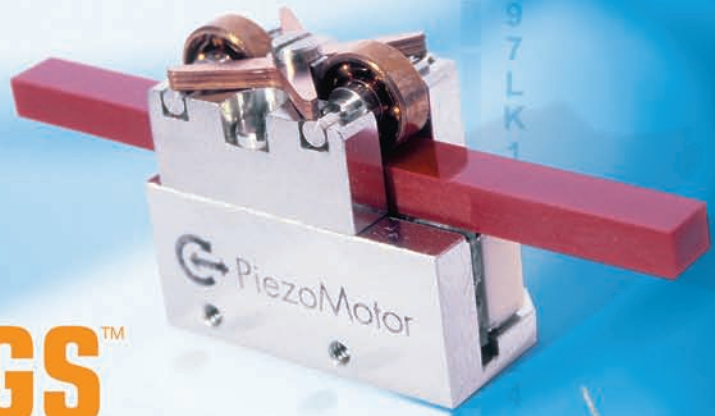


New!

Piezo LEGS™ non-magnetic motor



During 2003 PiezoMotor Uppsala AB introduced a new piezo motor technology with the award winning linear Piezo LEGS™ micro motor. The successful introduction on the market immediately led to the development of several new products to match different needs and special applications.

We are now proud to announce that a new non-magnetic motor is available. The motor has an extremely low permeability and is ideal for applications where interaction with a magnetic field is not permissible.

The totally unique drive principle makes the motor walk instead of rotate. Just like its predecessor the active motor element consists of four piezo legs. By precisely synchronizing the movement of the legs the motor can “walk” with a speed of up to several centimeters per second and with a resolution below 10 nanometers. The motor can reach a pulling force of up to 10 N – without drive screws, gears or other mechanical intermediate components.

The small overall dimensions make the motor well suited for applications where space is limited. The motor can also operate on battery voltage.

PiezoMotor can adapt the motor to fit different OEM applications.

Piezo LEGS non-magnetic motor – preliminary data

Dimensions [mm] (L×W×H)	Complete 22×10.8×19.35	Phase voltage ³ [V]	0 to +42
Weight [g]	Complete 20	Resolution ⁴ [nm]	10
Velocity ¹ [mm/s]	2100 Hz 12.5	Maximum step length ⁵ [μm]	3
Frequency range ¹ [Hz]	0–2100	Stroke ⁶ [mm]	35
Force ² [N]	Stall force 6.4 Holding force 7.3	Phase capacitance at 22 °C ⁷ (nF)	430
Relative permeability ⁹	$\mu < 1.0001$	Power consumption ⁸ (mW/Hz)	5
		Temperature range [°C]	-20 to +70

1) Recommended maximum drive frequency 2.1 kHz. Absolute maximum drive frequency 3 kHz.

2) Force $\pm 10\%$

3) The phase voltage is to be cycled between 0 to -42 V. Maximum allowed phase voltage is 48 V.

4) Dependant on phase voltage resolution (approximately 35 nm/V).

5) Maximum $\pm 10\%$ step length variations at no load.

6) Stroke dependant on length of drive rod. Longer drive rod available on request.

7) Capacitance at 22 °C $\pm 5\%$. Capacitance at -20 °C approximately -20% and at 70 °C approximately +40%.

8) Dependant on drive electronics. The power consumption may be up to 70% lower using energy recovering electronics.

9) By definition the magnetic susceptibility is put to 0 for vacuum from which it follows that $\mu_{\text{vacuum}} = 1$

Specifications subject to change without prior notice.

