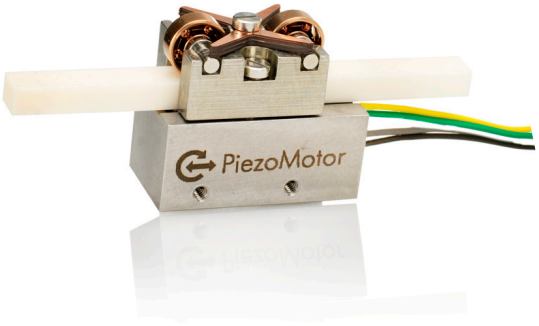
Piezo LEGS® Linear 6N



- **Direct Drive - Backlash Free Motion**
- **Nanometer Resolution**
- **Simple Drive Electronics**
- **No power draw in hold position**

The Piezo LEGS® 6N linear motor is intended for a very large range of applications. The motor is ideally suited for move and hold applications or for automatic adjustments. This is due to the fact that the motor does not require any power in hold position as well as that the motor has no backlash and can move in increments of single nanometers. The motor is operating in a non-resonant mode and is not sensitive to different cable lengths etc.

The maximum force of the motor is set by the number of springs giving the force. The standard motor is set for a stall force of 6.5N. Higher forces are optional (up to 10 N).

The Piezo LEGS® 6N linear motor is available in different versions for vacuum and non-magnetic environments. The motor is easily integrated and the drive rod can also be equipped with an adapter (optional) to further facilitate the mechanical integration in many systems.

There are now possibilities for other lenths of drive rods as standard (30, 40, 50, 60, 70 and 101.8 mm). See next page for item no. Special length can be made on requets.

Operating modes

The motor can move in full steps, shorter steps or partial steps (micro-stepping) giving positioning resolution in the nanometer range. For extreme positioning requirements in the sub-nanometer range a bending mode is possible. Speed is easily adjustable from extremely low up to max specified.

Controlling the motor

PiezoMotor offers a range of drivers and controllers. The basic one is a handheld push button driver. An option is the PDA 3.1 analouge driver that regulate the motor speed by means of an analogue ±7 Volt interface. The more advanced alternative i s the PMD90 microstepping driver/controller. This product enables the user to vary the waveforms as well as speed. There is also a connector for a quadrature encoder signal. The microstepping feature divides full step cycle in up to 2048 increments which results in steps as small as two nanometers. More information is available upon request.

PDA 3.1 PMD90

Design your own driver

Most customers prefer to design their own driver control for ease of integration. In this case PiezoMotor will provide all relavant information for a successful design.

Ordering Information

LL1011A- LL1011C- LL1011D-	Stainless Steel Non-Magnetic Non-Magnetic, Vacuum
Drivers and Controllers	
PMCM21-01	Handheld driver
PMCM31-01	PiezoMotor Driver Model PDA 3.1
PMD90	Microstepping Driver
Accessories	
ECA-PMD031-00	Motor cable

Item no. LL1011_-___ ___ ___ ___

Stall Force
10 = 10 N

Version

Motor type
A = SS / Stainless Steel
C = NM / Non-Magnetic
D = NMV / Non-Magnetic Vacuum

Standard lengths, Drive rod
030 = 30 mm
040 = 40 mm
050 = 50 mm
060 = 60 mm
070 = 70 mm
101 = 100.8 mm

Adapter mounting
A0 = No adapter
B1 = One adapter - Front/Up
B2 = One adapter - Front/Down
B3 = One adapter - Back/Up
B4 = One adapter - Back/Down
C1 = Two adapters - Up
C2 = Two adapters - Down

Cables
A = No cable
B = Teflon PTFE AWG28
C = Kapton (coloured) AWG30
D = Kapton (braun) AWG28

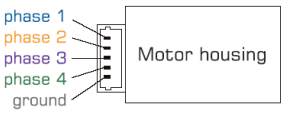
Cable length
00 = No cable
10 = 1.0 m

Example:
LL1011A-050A0A00: LEGS Linear, 10N, version 11, 50 mm drive rod with no adapter or cable. (old item no: LEGS-L01S-11)

NOTE: All combinations not possible

Connector Type and Pin Assignment

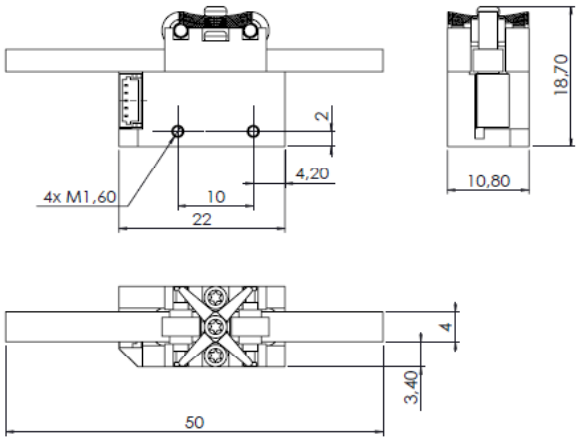
The motor connector is JST BM05B-SRSS-TB.



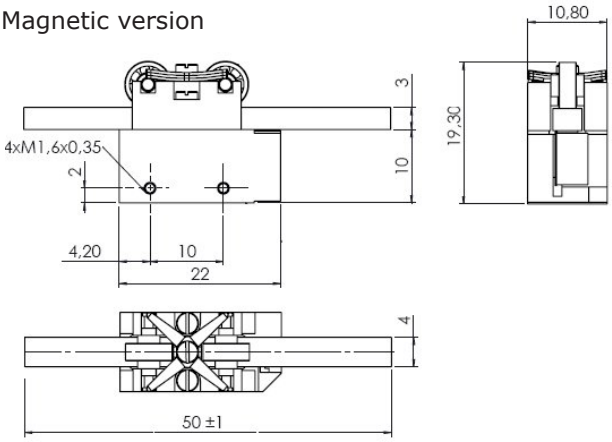
1 Ground is floating from chassi/protective GND (PGND)

Mechanical Drawing

Standard version



Non-Magnetic version



Technical Specification					
Type	**LL1011A-**	**LL1011C-**	**LL1011D-**	**Unit**	**Note**
Stroke max	80	80	80	mm	35 mm standard
Maximum Speed	20	20	20	mm/s	at no load
Resolution	<1	<1	<1	nm	Bending mode
Max Voltage	48	48	48	V	
Power Cons.	5	5	5	mW/Hz	
Stall Force max	6.5 (10)	6.5	6.5	N	Stnd. (optional)
Holding Force max	7 (11)	7	7	N	Stnd. (optional)
Vacuum			10^{-7}	torr	
Surface	bare metal	bare metal	bare metal		
Material	stainless steel	non-magnetic	non-magnetic		
Connector	JST BM05B-SRSS-TB	JST BM05B-SRSS-TB	Teflon caoted AWG 28 cables with JST 05SR-3S		
Weight	23	23	23	gram	
Operating Temp.	-20 to +70	-20 to +70	-20 to +70	°C	

Note: All specifications are subject to change without notice

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