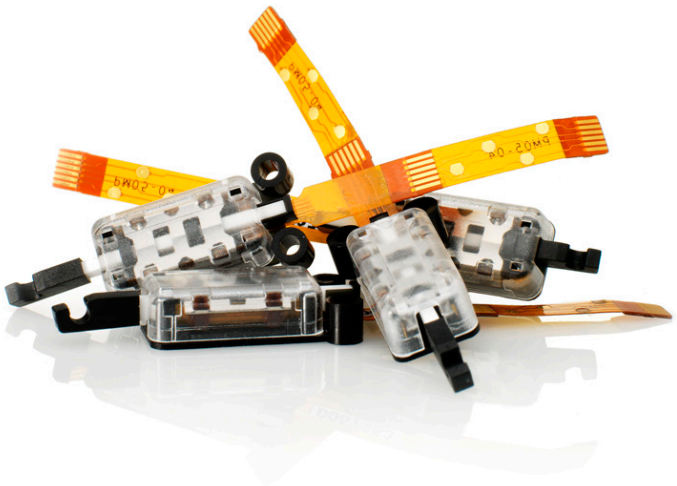
PiezoMotor

PiezoWave® Linear 0.1 N



- **Small size**
- **High Speed**
- **Very simple drive electronics**
- **Low power consumption (no power in hold pos.)**
- **Robust design**

The PiezoWave® motor is designed for low cost, volume applications, and based on a new, innovative drive principal.
PiezoWave® offers direct linear drive with variable speed in a very small package, ideal for precision applications where miniature size and low weight is important, such as portable devices. The design makes the motor very robust and insensitive to different environmental conditions as well as resistant to shock and vibrations.
The motor has very low power consumptions and operates on low voltage. The motor does not draw any power in hold position which further enhance battery life in many applications.
The PiezoWave® comes in a complete package – tested and ready to run.

Drive control electronics

You need two phases plus ground to drive the motor. The most straightforward way of driving the motor is to send a puls train via an inductor to the piezo element phase electrodes. This creates an LC circuit and sinusoidal voltage across the piezo element. The direction of motion depend on the phase shift between the phase signals A and B.
Compared to conventional electromagnetic motors, the PiezoWave® motor has the great advantage of not consuming energy while withstanding a holding force. The PiezoWave® motor only consumes energy while moving. The overall energy consumption is kept low by using resonant drive electronics.
There are also a handheld controller as well as a small driver board available. These are mainly to get you started. The driver board can be used for prototyping.

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.

Open Loop/Closed Loop Operation

If your mechanical system requires very accurate positioning (closed loop), we propose an additional integrated sensor system. For example: IR photo detectors can be surface mounted on the flexible printed circuit board. The photo sensor can detect the position of the drive rod or act as a limit switch.

Demo-kit

Ther is a demo-kit available to get you started. This kit contains two motors, one driver board and a battery driven handheld controller. The hanheld contoller cna be connevted to the RS 232 port. On the CD therer is a software to drive the motor using a computor. There is also information included of how to develop a dirver.

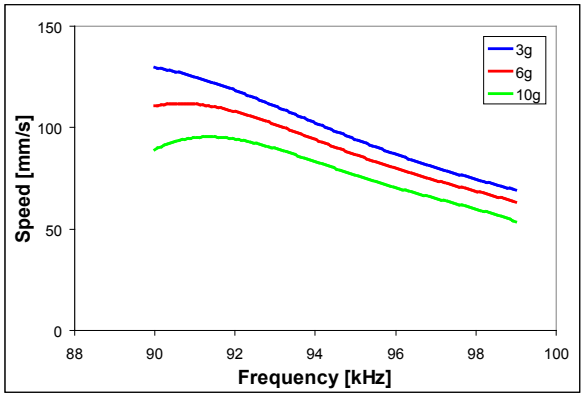
Ordering Information

WL0104A-08A	PiezoWave with hook end
WL0104A-08B	PiezoWave with eye end

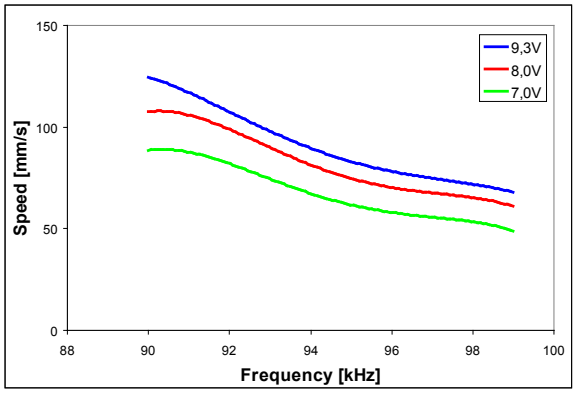
Accessories

PMWD-20-ASSY	Handheld controller
PMWD10-01	Driver Board
DEMO-WAVE-10	Demo-kit

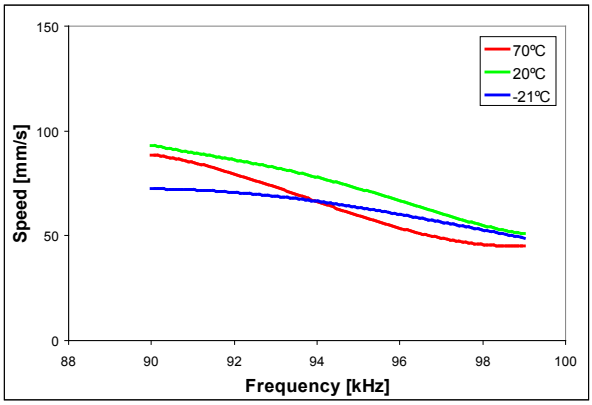
Perfomance



Typical speed as a function of frequency
for different loads at 8 V and 20°C.



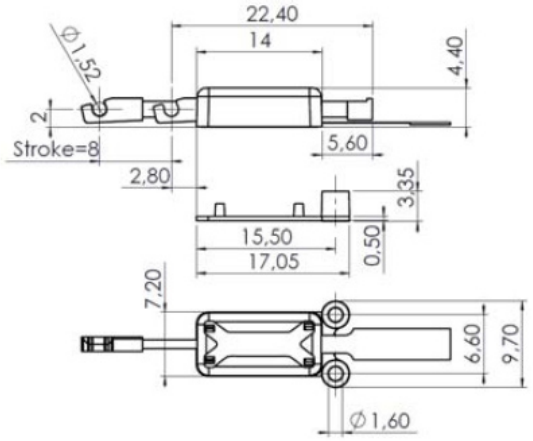
Typical speed as a function of frequency
for different voltages at 0.1 N and 20°C.



Typical speed as a function of frequency
for different temperatures at 8 V and 0.1 N

Mechanical Drawing

drawings and step-file can aslo be downloaded from our web site.



Technical Specification				
Type	**WL0104A-08A hook end** 	**WL0104A-08B eye end** 	**Unit**	**Note**
Stroke max	8	8	mm	
Maximum Speed	50 - 100	50 - 100	mm/s	speed @ 0.1N
Avarage step	0.5 - 1.0	0.5 - 1.0	µm	
Drive Voltage	3.3 - 5.0	3.3 - 5.0	V	
Current at max speed	60 - 70	60 -70	mA	@ 4 V
Dynamic Force	0.1	0.1	N	
Holding Force max	0.3	0.3	N	
Temperature	-20 to +70	-20 to +70	°C	
Life time	> 100 000	>100 000	cycles	8 mm stroke
Material	Plastic	Plastic		
Weight	0.5	0.5	gram	

Note: All specifications are subject to change without notice

PiezoMotor

PiezoMotor Uppsala AB
Stålgatan 14
SE-754 50 Uppsala, Sweden

Telephone: +46 18 489 5000
Fax: +46 18 489 5001

info@piezomotor.com
www.piezomotor.com