

The PiezoWave™ Demo-kit

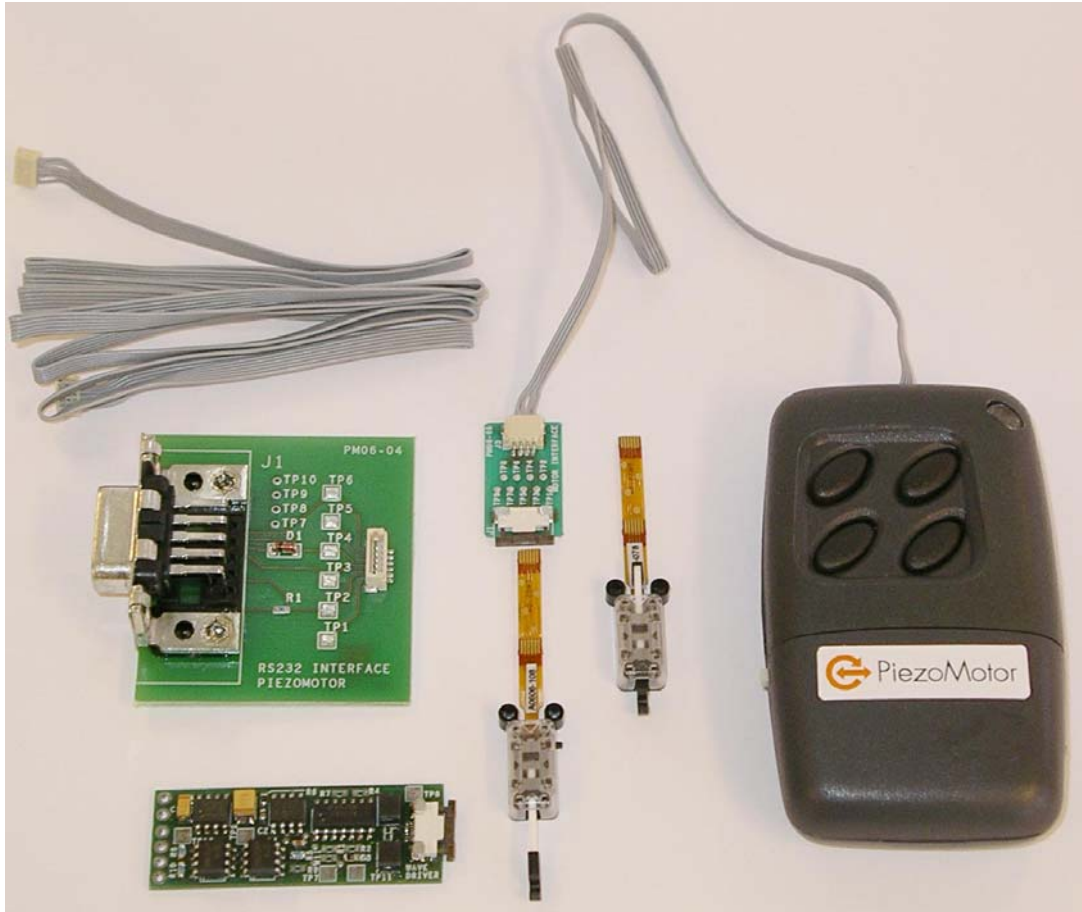


Fig. 1 The parts in the demo-kit: two motors, one handheld driver, one compact driver, one RS232 interface card, one motor interface card and cables.

Description

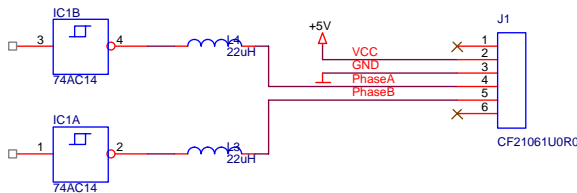
The PiezoWave™ motor has been developed to meet the needs in e.g. portable consumer electronics where miniature size, speed, precision and power consumption are essential features. The part count is very low and all components in the motor are manufactured with existing mass-fabrication technology. The electronics interface is extremely simple – two low voltage signals of essentially arbitrary shapes can be used and the demands on frequency control is extremely low. The PiezoWave™ motor can easily be tailored for various customer applications.

The **demo-kit** consist of two motors, one handheld driver that is prepared for computer control, a compact driver with digital input control signals, interface cards and cables. The battery operated handheld driver gives the possibility to drive the motors at a few selected speeds apart from changing movement direction. It allows for control via a LabView application on a PC. The compact controller can give three different speeds and is being controlled via opto-isolated digital signals.

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Electrical description

Both drivers are utilizing the same type of driver stage with a resonant LC circuit.



the driver must be removed to connect the cable for the RS232 Interface. The push buttons are partially disabled when the RS232 Interface card is connected to the driver.

The pushbutton functionality without the RS232 connected is shown below.

Handheld Driver

The handheld driver is powered by a 12V battery. The voltage is stepped down to 3.4V by a switching circuit. The driver can operate in two different modes. The first mode is via four simple push buttons. The two centre ones control the movement direction, while the second two will change the speed when used in combination with the ones controlling the direction. The second mode is control via a LabView Application, which is supplied on the CD. A separate data sheet describes the function of the software and its installation procedure.



Compact Driver

This driver is controlled by a simple digital interface. The driver runs Forward if the F-signal is active, and Reverse if the R-signal is active. There are four different speeds available. Power supply voltage should be within 6.5-12.5VDC. Current consumption is around 100 mA at maximum speed.

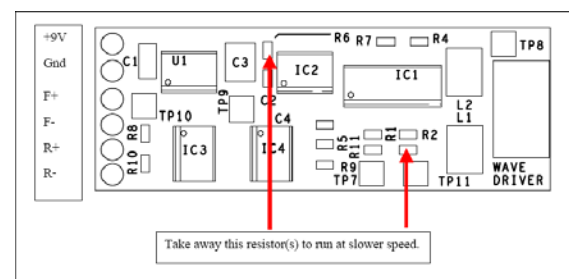
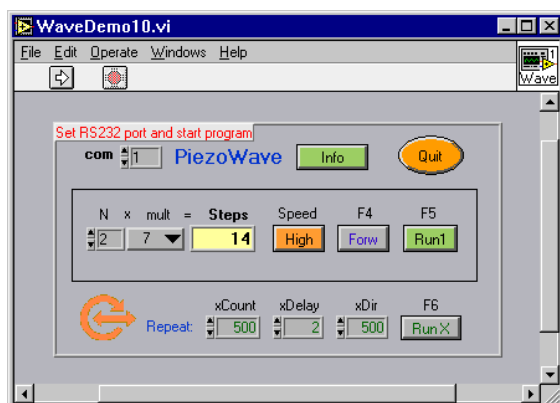


Fig. 1

To use the PC to control the motor the RS232 Interface card must be connected to the PC and to the hand held driver via the cable supplied in the demo kit. The lid on

The stepping frequency is around 92 kHz at maximum speed. At slower speeds, the stepping occurs in bursts of e.g. 80 steps and a 3-10 ms waiting period between each burst. However, for ability to make fine positioning without μ s timing, the first burst contains only 8 steps.

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Bypassing the on-board +5V regulator, the driver can be driven from a +5V power supply. Furthermore, by shorting the pads for R1, R2, R4, R7, the driver can be powered by +3.3V.

Typical electrical characteristics

Phase Voltage, peak-peak	8 V
Phase voltage, DC level	1,7-2,5 V
Phase shift A-B	$\pm 90^\circ$
Frequency	92 kHz

Data handheld driver

Outer dimensions	mm
Battery type	12V MN21

Data compact driver

Outer dimensions	mm
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Ordering information

Handheld Driver	PMWD20-00
Compact Driver	PMWD10-01
Motor Interface Card	
RS232 Interface Card	
Motor Cable	
Interface Cable	
Battery	
PiezoWave Motor	