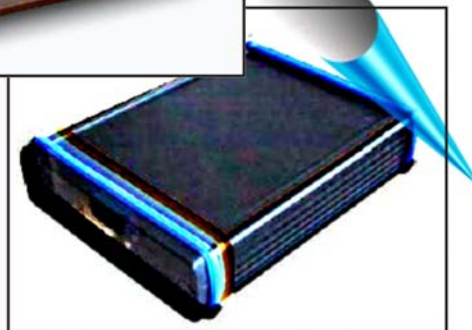


# CU17 Progstep Piezocontroller

## *Manual*



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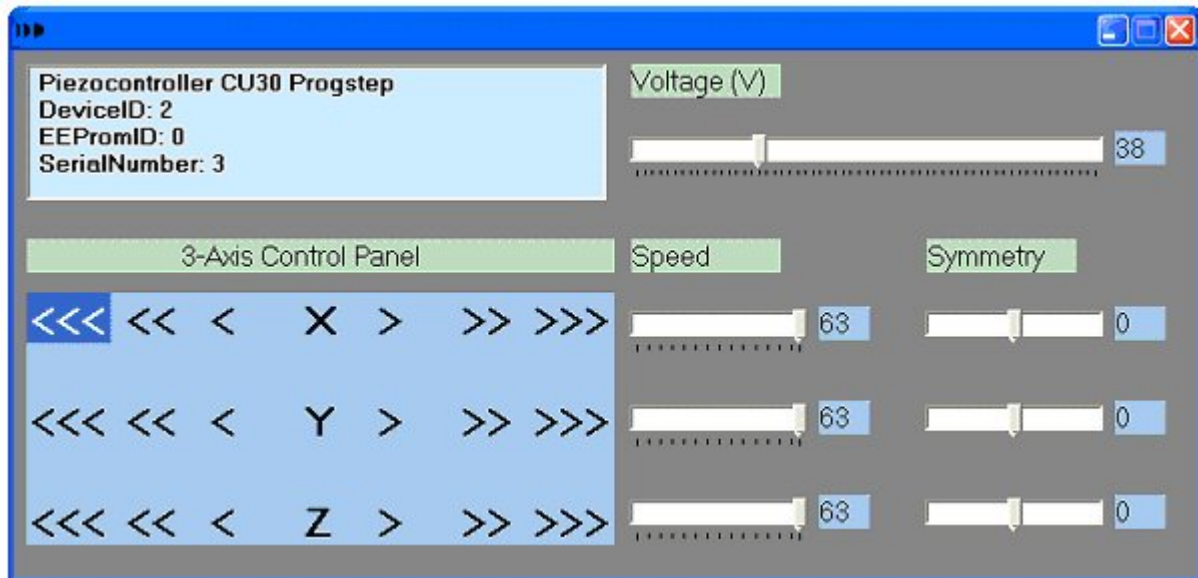
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## 1.0 The CU17 Progstep Piezocontroller

Connect the CU17 controller to an USB-Port on your PC and open the “**CU17 Progstep.exe**”. You should see the following window:



*figure 1.0: CU17 control program*

In the upper left part of the control window general information is displayed for the identification of the program version in the EEPROM ("Electrically eraseable programmable read only memory").

### 1.1 Available controls

#### 1.1.1 3-Axis Panel

The arrows in the blue underlayed field are controls to move a connected piezocontrolled unit in any direction of the three axes with different speed. The speed selection can be made by the three trackbars on the right side of this field (1.1.2 Speed). To move a piezocontrolled unit, you have to click and hold with the left mouse button one of these arrow fields.

The amount of the arrows are standing for the speed value:

- <<< >>> : Step down or up with selected speed
- << >> : Step down or up with 25% of selected speed
- < > : Singlestep down or up

### **1.1.2 Speed**

The selection of different speeds for the movement of a connected piezocontrolled unit is possible with the trackbars for the three axes on the right side of the 3-Axis Panel (1.1.1). You can change the speed value within a range between 8 and 63 for each axis. Default is 63.

### **1.1.3 Symmetry**

The symmetry trackbars are allowing to compensate the load-induced differences between up and down speeds. You can change the symmetry value within a range between -20 and 20 for each axis. Default is 0.

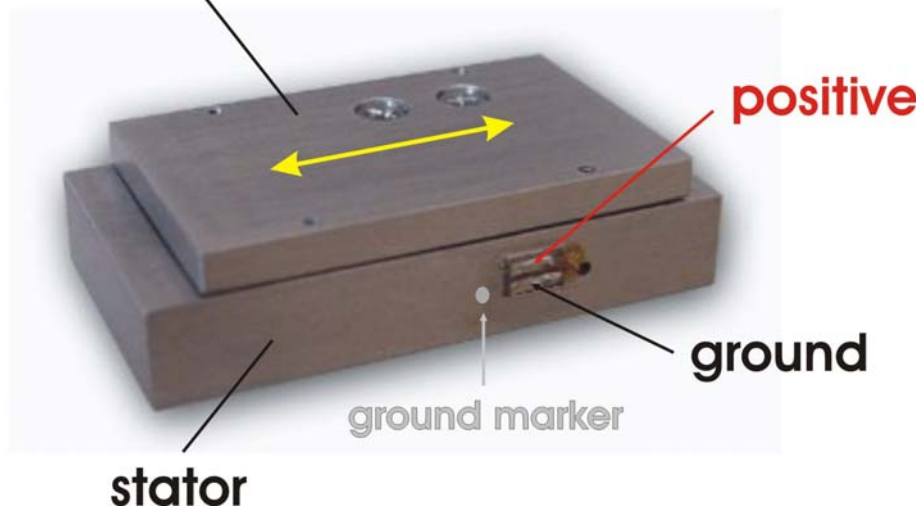
### **1.1.4 Voltage**

You can change the piezo peak-voltage by the voltage trackbar within a range between 22V and 82V. Default is 38V for room temperature operation. Increasing values will result in an increasing stepsize and increasing driving force. For low temperature operation ( $T = 4.2\text{K}$ ) this parameter may have to be increased up to 82V.

## 2.0 The positioning unit ML17

### 2.1 description

**positioning plate**



*figure 2.0: elements of the positioning unit ML17*

### 2.2 axis coordinate



*figure 2.1: z-positioning axis*

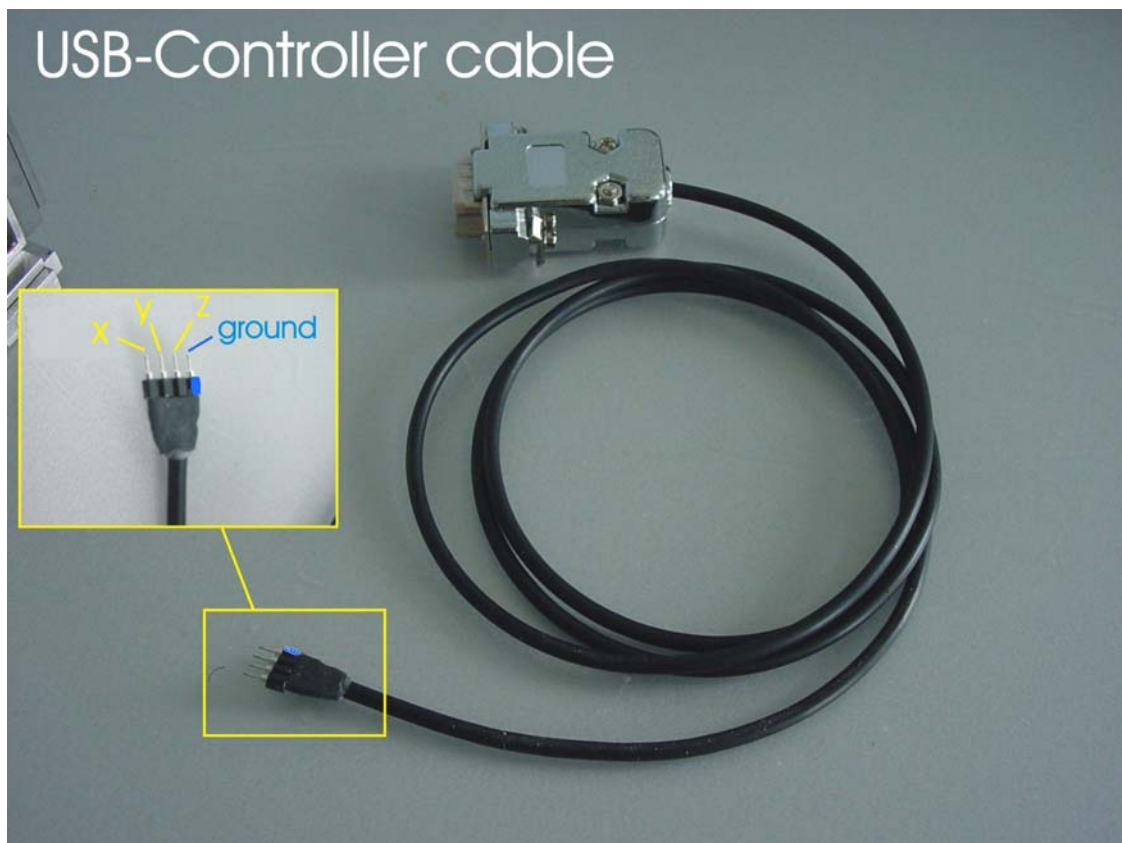
## **2.3 connecting**

Guarantee that you connect the positioning unit ML17 in the correct way. The positive wire has to be connected to the positive contact pin (z-axis) of the CU17 controller. The negative wire (ground) has to be connected to the negative contact pin (**blue inked**).

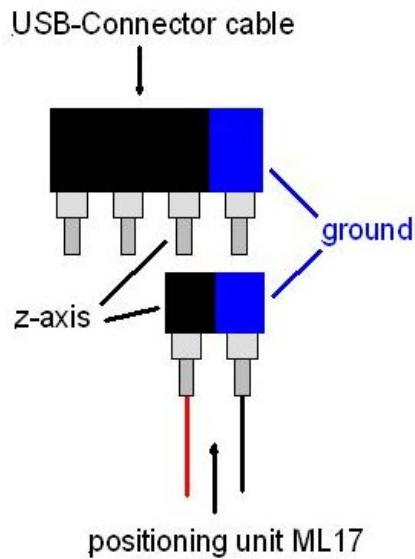
If it is not so, you depolarize the piezo-crystals and the functionality of the positioner will degrade.

### **2.3.1 connecting with the USB-Controller cable**

You can use the delivered cable (*figure 2.2*) to connect the piezocontrolled positioning unit ML17 with the CU17 controller (*figure 2.3*). So it is possible to test the unit with the CU17 control software (1.0).



*figure 2.2: USB-Controller cable*



*figure 2.3: sketch of the connectors*

## **2.4 positioning plate**

The positioning plate is equipped with four threads M1, the stator with ten threads M1.

The positioning plate has a travel of 5mm.

## **2.5 room & low temperature operation**

The functionality of the positioning unit ML17 has been tested at low temperature ( $T = 4,2K$ ) and room temperature. The positioning unit is able to operate for voltages above 40V by low temperature conditions.

At room temperature the positioning unit should be operated at voltages between 22V and at maximum 50V.