

mechOnics ag

CF30 Controller Software

USER'S GUIDE

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1 Introduction

The CF30 Controller Software **CF30.exe**.

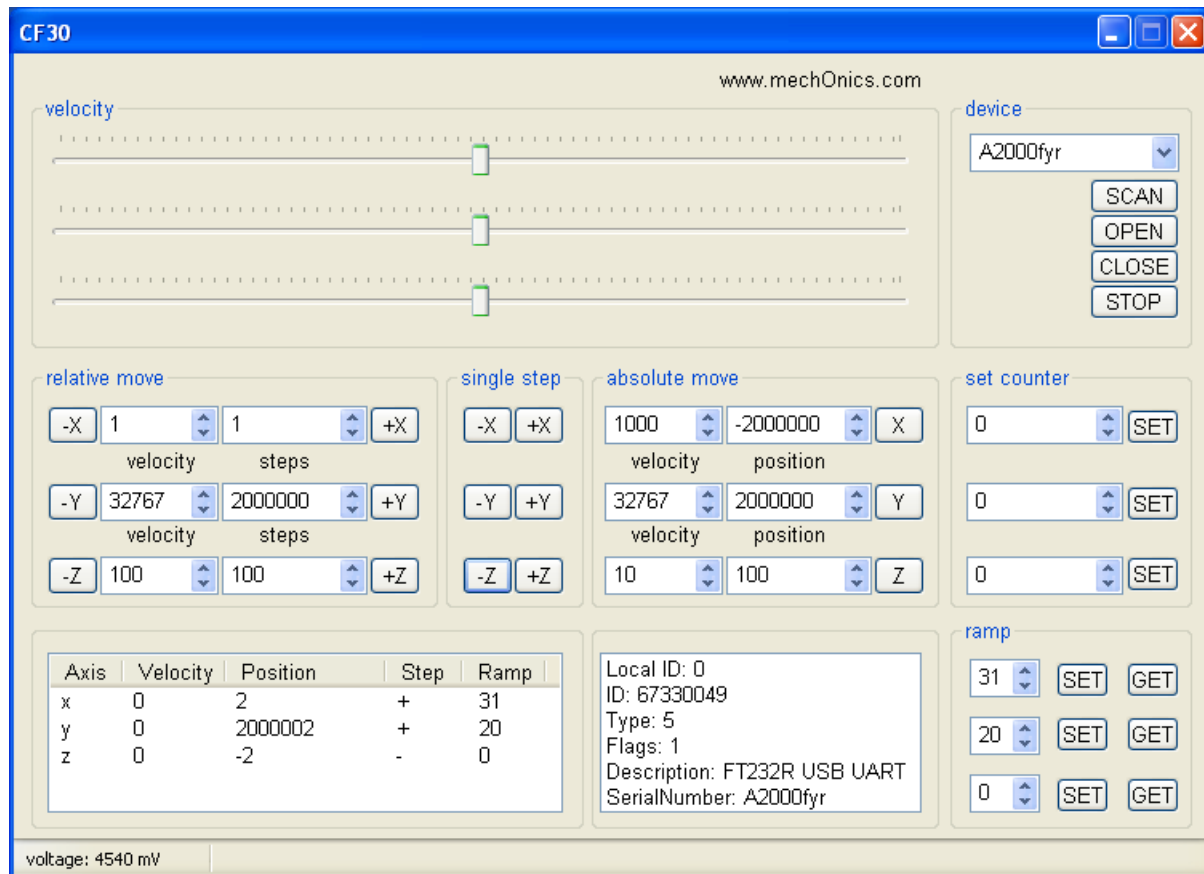


figure 1.0

Main Features:

- move with velocity without stop
- move relative to actual position
- move to absolute position
- move with single step
- set counter, new reference position
- set ramp value
- move all axes simultaneously if the power supply is connected.

2 Installation

The CF30 controller USB interface is realized using the RF232R USB interface chip of the company FTDI (www.ftdichip.com)

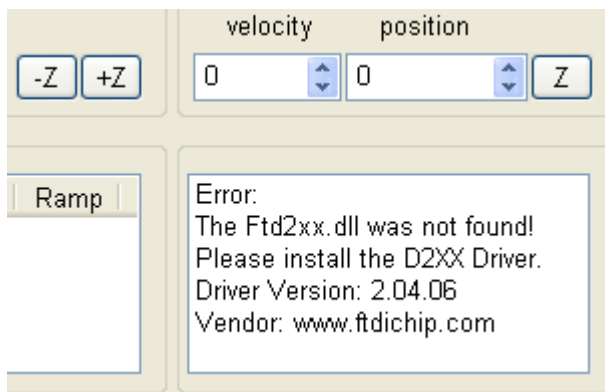
First you have to install the driver that isn't part of the CF30setup.msi windows installer.

FTDI provides two types of driver for Windows: a D2XX direct driver and a virtual COM port (VCP) driver. The combined driver model (CDM) installs both parts at the same time. The applications access the FTDI devices through the D2XX DLL. Download the zip file (CDM 2.04.06 WHQL Certified.zip) if this file is not part of the software CD distributed with the

controller and follow the windows installation instruction.

At least driver version 2.04.06 is necessary.

1. Plug in the CF30 controller.
2. Install the FTDI driver for the FT232R interface chip.
3. Install the CF30 application.

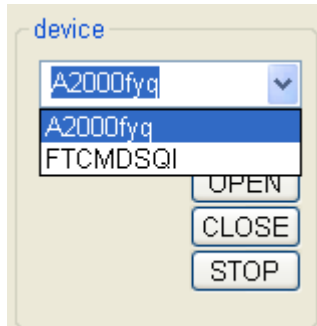


If there is no valid FTDI Driver on your PC,
the “**CF30.exe**” program starts with an error message.

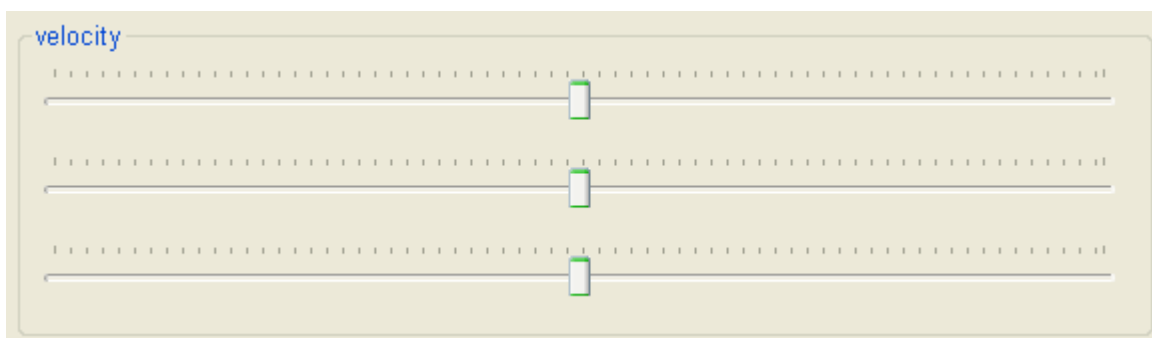
3 User Interface

After each new start of the CF30 application, you have to scan for devices. If there is more than one device, select one and open the device, by pressing the button. Every instance of the program only connects to one controller.

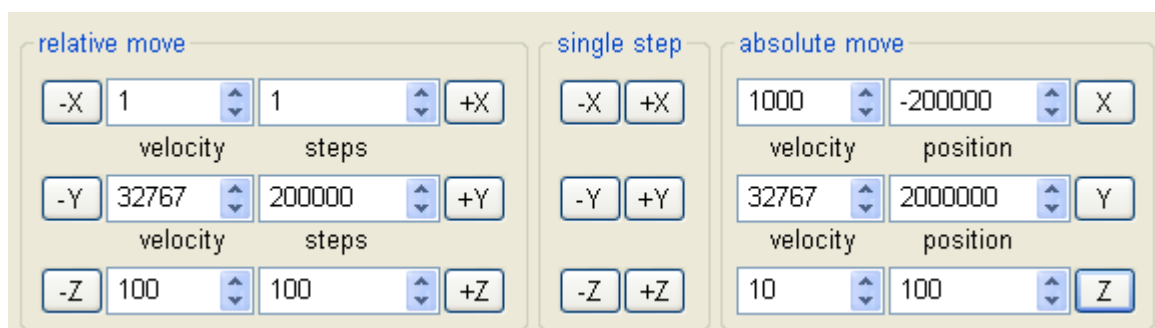
The Terminal



- Selection of a device



- the velocity slider starts the movement without timeout. Use it with care. The movement doesn't stop automatically.



- This part of the terminal controls the movement with a definite number of steps. When switching on, the counter it is set to zero.

- Range:
- velocity: [0..32767]
- steps: [0..2000000]
- position: [-2000000 .. 2000000]
- counter: [-20000000..20000000]
- ramp: [0..31]

Axis	Velocity	Position	Step	Ramp
x	0	2	+	31
y	0	2000002	+	20
z	0	-2	-	0

This table above shows the last counter/position value, the direction of the last “single step” order and the ramp value of the Controller.

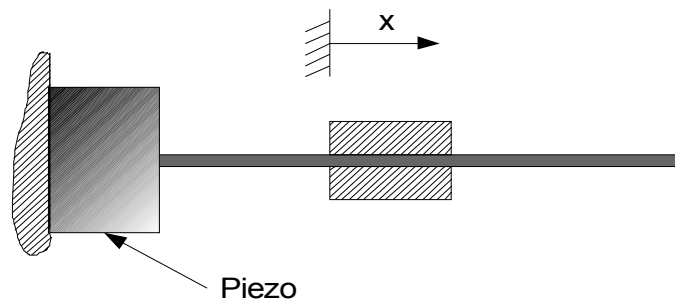
Axis	Velocity
x	0
y	0
z	0

voltage: > 5000 mV

If the power supply is connected and the voltage is above 5,0 volt, it is possible to move all axis simultaneously. If the voltage is lower than the 5 volt threshold, only one axis can be moved at the same time.

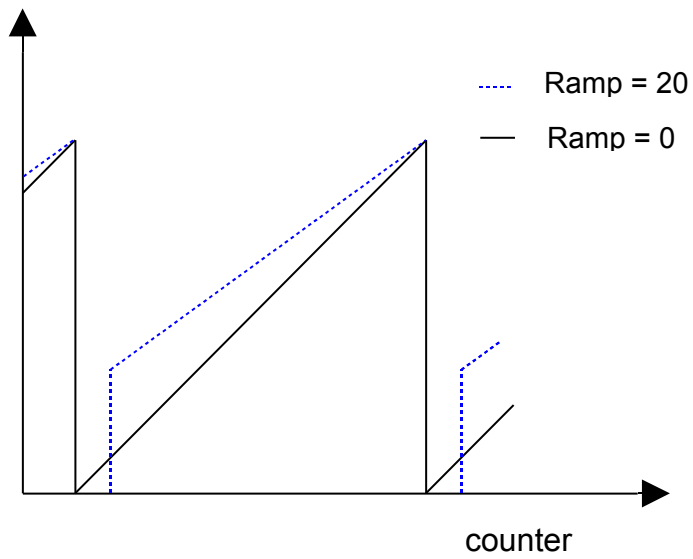
4 The ramp function

- The ramp function improves (smooth) the movement in the lower speed range but slows down the speed and affects the counter. Setting the ramp value to zero, disables this feature. Valid values:[0..31]

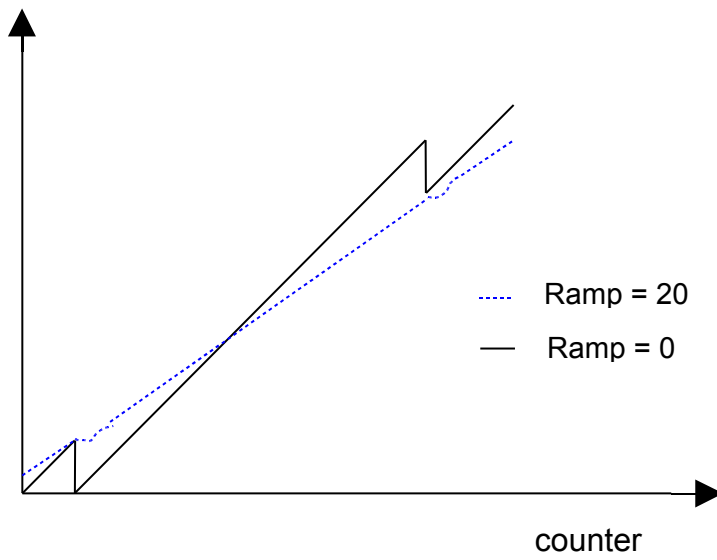


Piezo movement

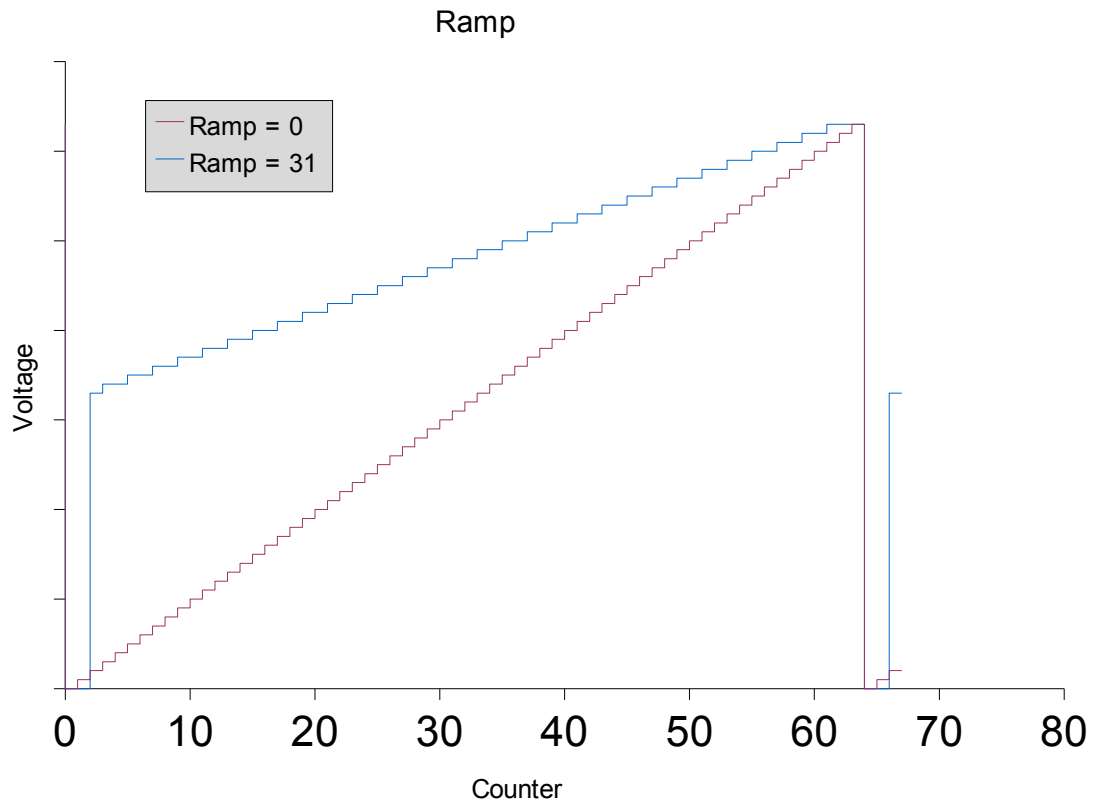
v — t



s — t



The additional ramp makes the movement more even.
Only at low speeds this plays a major role.



There is a linear relationship between the counter value and the stroke of the movement if the ramp is equal to zero. If the ramp value isn't equal to zero not every incremented value of the counter change the voltage/stroke.