

PMR3411 - Projeto de Máquinas

Mecatrônica - EPUSP

Controlador CNC

LinuxCNC

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Controlador CNC

Modos: manual e automático

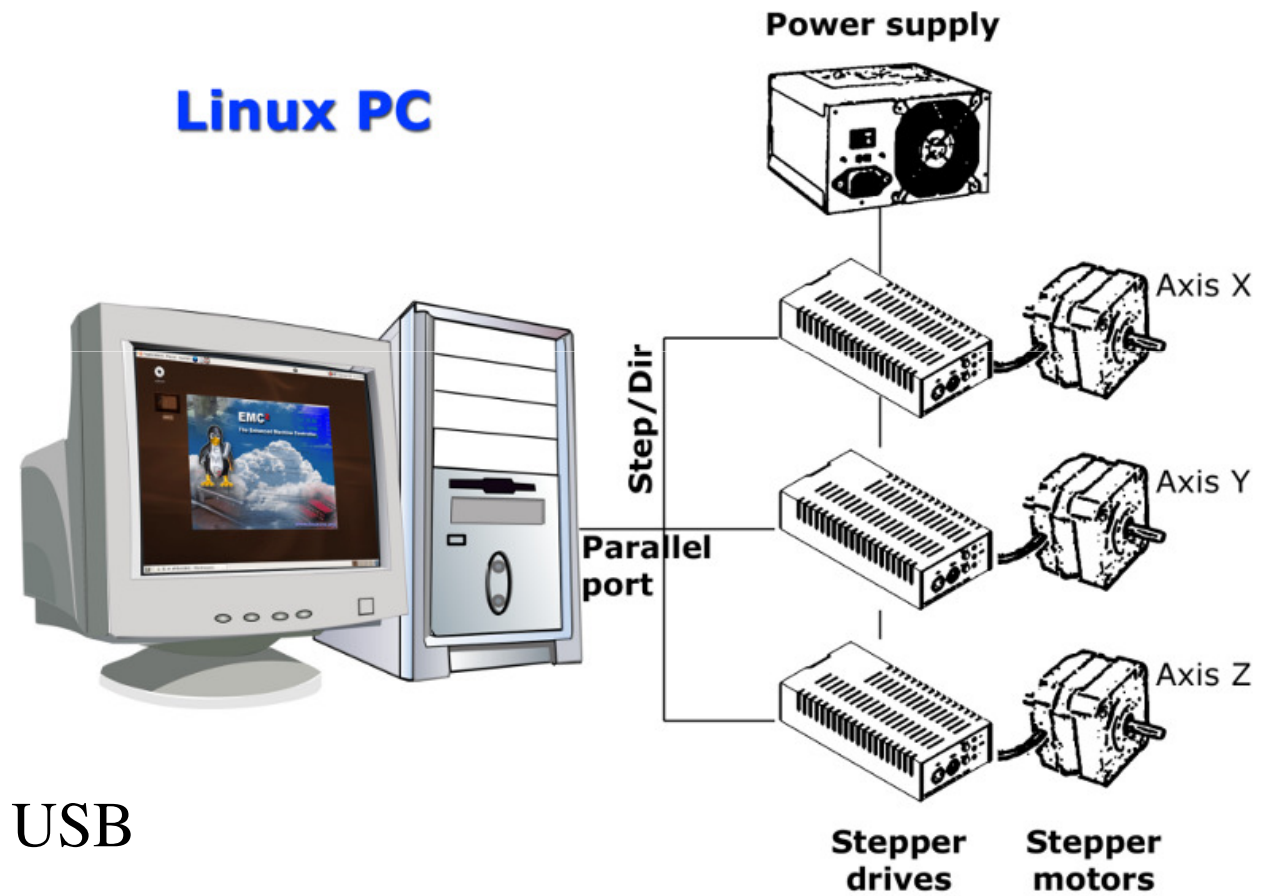
Manual: seleciona eixo, define velocidade, movimentação manual do eixo , define zero peça, liga/desliga eixo árvore, etc.

Automático: seleciona programa, executa programa.

Controlador

PC com Linux CNC (www.linuxcnc.org)

Controle através da porta paralela e joystick



Conversão deslocamento/passo do motor (driver micropasso):

$$x = n \frac{p}{2000}$$

x = deslocamento (mm)

p = passo do fuso (5 mm/volta)

n = número de passos do motor

LinuxCNC

Documentação: **Getting Started V2.6.12-79-g2e52efe, 2016-08-22** (73 páginas)
User Manual V2.6.12-79-g2e52efe, 2016-08-22 (268 páginas)

Requisitos mínimos do PC

- 700 MHz x86 processor (1.2 GHz x86 processor recommended)
- 384 MB of RAM (512 MB up to 1 GB recommended)
- 8 GB hard disk

Teste de latência

Configuração da máquina

torno: XZ

Configuração da porta paralela

Configuração de cada eixo
teste de cada eixo

Stepconf - Stepper Configuration Wizard


Base Information

Machine Name:

Configuration directory:

Axis configuration:

Reset Default machine units:

Driver characteristics: (Multiply by 1000 for times specified in μ s or microseconds)

Driver type:

▾ Driver Timing Settings

Step <u>T</u> ime:	<input type="text" value="1000"/>	ns
Step <u>S</u> pace:	<input type="text" value="2000"/>	ns
Direction <u>H</u> old:	<input type="text" value="200"/>	ns
<u>D</u> irection Setup:	<input type="text" value="200"/>	ns


One Parport Two Parports

Base Period Maximum Jitter: ns

Min Base Period: 58000 ns

Max step rate: 17241 Hz

Stepconf -Stepper Configuration Wizard

Cancel  **Parallel Port 1** Back Forward

Outputs (PC to Mill):		Invert	Inputs (Mill to PC):		Invert
Pin 1:	Digital out 0	<input checked="" type="checkbox"/>	Pin 10:	Spindle Index	<input type="checkbox"/>
Pin 2:	Unused	<input type="checkbox"/>	Pin 11:	Spindle Phase A	<input type="checkbox"/>
Pin 3:	Unused	<input type="checkbox"/>	Pin 12:	Both Limit Z	<input type="checkbox"/>
Pin 4:	X Step	<input type="checkbox"/>	Pin 13:	ESTOP In	<input checked="" type="checkbox"/>
Pin 5:	X Direction	<input type="checkbox"/>	Pin 15:	Unused	<input type="checkbox"/>
Pin 6:	Z Step	<input type="checkbox"/>			
Pin 7:	Z Direction	<input type="checkbox"/>			
Pin 8:	Unused	<input type="checkbox"/>			
Pin 9:	Unused	<input type="checkbox"/>			
Pin 14:	Unused	<input type="checkbox"/>			
Pin 16:	Unused	<input type="checkbox"/>			
Pin 17:	Unused	<input type="checkbox"/>			

Parport Base Address:

Output pinout presets:

Stepconf - Stepper Configuration Wizard

Cancel  **Axis X** Back Forward

Motor steps per revolution: 200 

Driver Microstepping: 10

Pulley teeth (Motor:Leadscrew): 1 : 1

Leadscrew Pitch: 5 mm / rev

Maximum Velocity: 100 mm / s

Maximum Acceleration: 5790 mm / s²

Home location: 0

Table travel: 0 to 100

Home Switch location: 0

Home Search velocity: 1.5

Home Latch direction: Same

Time to accelerate to max speed: 0.0173 s

Distance to accelerate to max speed: 0.8636 mm

Pulse rate at max speed: 40000.0 Hz

Axis SCALE: 400.0 Steps / mm

- Passo 1 - A partir do comando "less /proc/bus/input/devices", identificar o joystick que será utilizado. Para o joystick utilizado, esse foi o resultado obtido para a busca:



Interface com o usuário

