VistaCNC M1 CNC Control Pendant for LinuxCNC

PREFACE

Any machine tool, including computer controlled machine tool, is potentially dangerous. VistaCNC LLC accepts no responsibility for any damage or injury caused by its use. It is your responsibility to insure that you understand the machine you are using and the procedures for safety operations.

If you are in any doubt you must seek guidance from a professionally qualified expert rather than risk injury to yourself or to others.

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WARNING

E-STOP button in iMach[III] M1 CNC Control Pendant only provides Emergency STOP signal to LinuxCNC application.

For further protection in CNC operation, other emergency protection methods may be needed.

FEATURES

- Plug n' Play USB connection and controls.
- 100 steps high precision MPG.
- Step, Velocity and Continuous mode jogging through MPG.
- Feed rate, Spindle speed, and Slow Jog rate change through MPG.
- Program Cycle Start and Stop control buttons.
- 3 Axis selections.
- 3 custom control functions.

Driver and HAL file installation

Download the latest M1 LinuxCNC upgrade package from www.vistacnc.com download page, and unzip the package.

The package includes following files:

1. This manual
2. **Pendant FW update procedure** --- for pendant firmware upgrade
3. Pendant FW Loader --- tools for FW upgrade
4. M1_LinuxCNC_FW_v --- FW for LinuxCNC
5. **M1 LinuxCNC Installation Instruction** --- for driver installation
6. 99-vistacnc-pendant.rules
7. vc-m1 --- driver file
8. vc-m1.hal ---HAL file
9. Makefile --- to move 99-vistacnc-pendant.rules, vc-m1, vc-m1.hal into the corresponding folder.

Refer to "iMach3 Pendant FW update procedure" to upgrade the pendant firmware (FW) to LinuxCNC if the pendant was used with other CNC application or a newer FW version is available.

The upgrade application needs to be run under XP or Win7 PC.

Refer to "M1 LinuxCNC Installation Instruction" to install driver and other files, and add lines to the .ini file.

CONNECTION and START

▪ Directly plug the USB cable into any USB port on the PC.
▪ Start LinuxCNC application.

FUNCTIONS and OPERATIONS

1. Axis selection

Press X, Y or Z axis selection button to select an axis to jog.

2. MPG (Manual Pulse Generator) mode selection

2.1 STEP mode

In STEP mode, the selected axis moves 1 step at each MPG click (detent) with the step size and feed rate currently in the system. In the LinuxCNC application GUI, select a desired step size.

2.2 VELOCITY mode

In VELOCITY mode, axis moves at 0 to 100% of maximum axis speed based on how fast the MPG wheel is turned.

2.3 CONTINUOUS

In CONTINUOUS mode, axis moves at constant speed at maximum axis speed overridden by feed rate overridden rate.

2.4 CONTINUOUS RATE

In C% mode, turning MPG changes current feed overridden (FO) rate. It has the function of

2.5 FEED OVERRATE

In F% mode, turning MPG changes current feed overridden (FO) rate.

2.6 SPINDLE OVERRATE

In S% mode, turning MPG changes current spindle speed overridden (SO) rate

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3. Function Buttons

3.1 ZERO

While pressing and holding the Enable Button **ENABLE**, press and release the Zero Button to zero the currently selected axis.

4. Operation Controls

4.1 START / HOLD button :

- While pressing and holding the Enable Button **ENABLE**, press and release START/HOLD button to RUN a program or RESUME the program if the program is in IDLE or is in PAUSE, or PAUSE the program if the program is RUNNING.

- When the program is in RUNNING state, 3 axis selection LEDs flash one by one.

- When the program is in PAUSE state, all 3 axis selection LEDs flash twice in the first half second and stop flashing in the next half second.

4.2 STOP / REW button :

- While pressing and holding the Enable Button , press and release STOP/REW button to stop the program if the program is running.

5. E-Stop switch button

5.1 E-Stop switch button

- Press E-STOP switch button to send out E-Stop signal to LinuxCNC application and activate Emergency Mode in LinuxCNC.

- While pressing and holding the Enable Button , press the E-STOP button to exit Emergency mode.

- When in Emergency Mode, all MPG mode selection LEDs and Axis selection LED flash at ½ second rate.

SPECIFICATIONS

- 100 steps (clicks) per Rev MPG.
- MPG MTBF > 10000 hour.
- Shipped with10' High Speed USB cable. Extendable to 15' with extension cable, or to 45' with USB hub cables.
- Size (over all) 7"(L) x 2.6"(W) X 2.5"(H)