VELMEX, INC.
7550 State Routes 5&20 Bloomfield, NY 14469-9389 USA
Fax: 585-657-6153 Tel: 585-657-6151 or 800-642-6446
Internet: VelmexControls.com Email: Support@Velmex.com

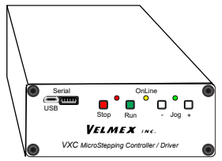
VXC PACKING LIST

Model VXC-1 _____

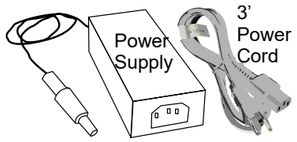
Ser #: _____ CO #: _____

☐ **VXC-1, USB Cable, Power Supply, Power cord**

Customer: _____ Date: _____



USB Serial Cable



Notes:

☐ Other: _____

*** ⚠ CAUTION: Refer to the VXC User's Manual for Precautions & Additional Information**

Visit ***VelmexControls.com*** to download the VXC User's Manual

VXC START GUIDE*

Document #VXCPLSG-1 4/21/24

Connect:

A. AC Cord to DC Power Supply

B. DC Power Supply to VXC

C. Motor Cable to Motor

D. Limit Cable to Limit Switches

E. AC Power Cord to AC

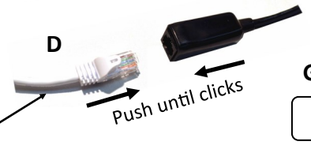
F. USB Cable Computer to VXC

G. Write down Device ID # from tag on motor & Power-up VXC

H. Download & Run the *VXC Utility App* from *VelmexControls.com*

1 per each axis

NOTE: Always plug VXC power supply into a power strip that has an on/off switch



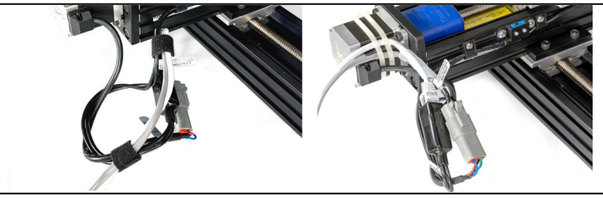
Cable Color Code & Axis Name		
Axis #1	White	X

☐ *Checked= VXC has been configured for Device*

Write Device ID #s here

Axis #1 Device ID # _____

⚠ IMPORTANT: On multi-axis units, tie cables together around connectors or to the base/ motor to reduce stress on connection



I. Follow setup prompts in the *VXC Utility App*. If the *VXC Utility App* connected to & configured the VXC proceed to step J.

a. If the *VXC Utility App* is not compatible with your computer, there are other free terminal apps for serial port communication such as TeraTerm (Win PC), CoolTerm (PC,Mac,Linux), Minicom (Mac,Linux). Set these other terminal apps to 57600 baud, 8 data, parity None, 1 Stop, No flow control, Emulate CR+LF. Select the Serial Port the VXC is connected to. To determine which port the VXC is using, disconnect the USB cable from computer, restart the Terminal App and observe which port is now not showing on the list of available ports. When reconnected to the correct Port, test the communication by typing "**E**" in the terminal (send) window to put the VXC OnLine (yellow LED on VXC will light.) To go Offline type "**Q**"

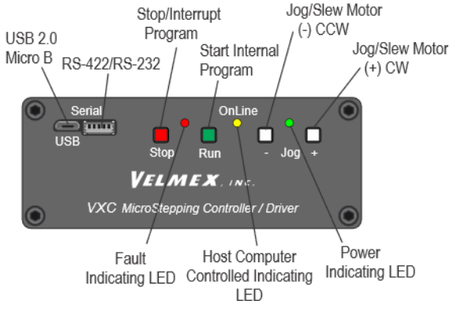
b. If VXC was preconfigured (check in box G above) by Velmex for axes skip step c.

c. While the VXC is OnLine set each axis to the Device ID of the attached motor(s) with the "setMLH" command.
setMLHmM=Device ID # **m**= Axis/motor# (1,2,3,4)

Example: If Device ID # for Axis/motor# 1= C,1,0,
Enter: **setMLH1M=C,1,0,**

J. From the VXC Utility App Terminal you can type and send commands directly to the VXC. Type "E" in the Terminal (send) window to put the VXC OnLine (yellow LED on VXC will light.) Type "Q" to take VXC Offline (back to default Jog Mode.) Type "Help" for VXC built-in help menu. Refer the next page of this document for more examples of VXC commands.

Front (Model VXC-1)



Jog Mode

When the OnLine (yellow) light is off, the VXC is in the Local/Jog mode. Using the front panel jog buttons, each motor can be jogged a single step or slewed to 2000 sps (5 revs/sec.) in either direction.

When a Jog button is pressed the motor moves 1 step (1/400 rev.) If the button is held for >0.3 second the motor will accelerate to 2000 sps. Pressing Stop or the other Jog button while Jogging will hold the current speed (minimum of 63 sps.)

From the VXC Utility App Terminal you can type and send commands directly to the VXC.

These commands are the most common.

ImMx, Set steps to incremental Index motor CW (- is CCW) **m**= motor# (1,2,3,4), **x**=±1 to ±16,777,215

SmMx, Set Speed of motor (70% power), **m**= motor# (1,2,3,4), **x**=1 to 6000 steps/sec. Default=2000

C Clear all commands from currently selected program (program 0 is default)

E Enable OnLine mode with echo "on" Use "**F**" for echo off

Q Quit OnLine mode (return to Local/Jog mode)

R Run currently selected program (program 0 is default)

rsm Run save memory (saves setup/ program values to nonvolatile memory)

Typical commands to enable OnLine, Clear, & Run motor 1 one revolution:

```
E C I1M400, R
```

To Clear the previous index from the VXC and move the motor back 2 revolutions:

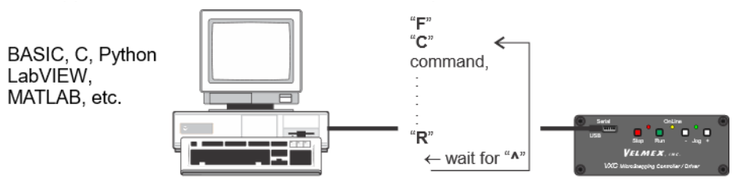
```
C I1M-800, R
```

⚠ CAUTION Refer to the VXC User's Manual for Complete Information

Visit ***VelmexControls.com*** to download the VXC User's Manual

Have a Question? Email us at: Support@Velmex.com

Common method to send commands is with commercially available languages and Apps such as BASIC, C, LabVIEW, MATLAB, Python, etc



Visit ***VelmexControls.com*** for examples in the different program languages/ Apps

Troubleshooting

Symptom	Cause
VXC sends a "?" and red LED is on or is flashing	A Fault has occurred. See "VXC User's Manual" for information about faults
When motor is commanded to move, the Red LED flashes several times instead	Motor is not connected or VXC is not set for a motor type, see "setMT" and "setMLH" commands
When pressing a Jog button the Red LED stays on while button is pressed and motor does not move	VXC is set to have limit switches connected but they not plugged-in or setting is incorrect, see "setL" command
Red/Yellow/Green LEDs flash constantly when VXC powered up	Wrong power supply voltage or internal fuse issue
Motor stops unexpectedly and red/green LEDs flash together constantly	Overcurrent/voltage drop occurred, check that VXC is set to correct motor attached and power connector is tight
Motor has low torque, stalls, makes noise but does not move	Speed too high, not set to correct motor attached, motor connector is not fully mated, cables where altered/lengthened

Common Command Summary*

Motion Commands

ImMx Set steps to incremental Index motor CW (positive), m= motor# (1,2,3,4), x=1 to 16,777,215

ImM-x Set steps to incremental Index motor CCW (negative), m= motor# (1,2,3,4), x=1 to 16,777,215

IAmMx Set Absolute Index distance, m=motor# (1,2,3,4), x= ±1 to ±16,777,215 steps

IAmM0 Index motor to Absolute zero position, m=motor# (1,2,3,4)

IAmM-0 Zero motor position for motor# m, m= 1,2,3,4

ImM0 Index motor until home or positive limit is encountered, m=motor# (1,2,3,4)

ImM-0 Index motor until home or negative limit is encountered, m=motor# (1,2,3,4)

SmMx Set Speed of motor (70% power), m= motor# (1,2,3,4), x=1 to 6000 steps/sec.

AmMx Acceleration/deceleration, m= motor# (1,2,3,4), x=1 to 127.

(I*m*Mx,I1Mx,) Run Index moves for axes simultaneously, *m* = 2,3,4 Axis (Axis 1 must be last)

Operation Commands

E Enable On-Line mode with echo "on"

F Enable On-Line mode with echo "off"

C Clear all commands from current program

Q Quit On-Line mode (return to Local/Jog mode)

R Run currently selected program

N Null (zero) motors 1,2,3,4 absolute position registers

Status Request Commands

Help Display context sensitive help screen (for use with terminal program interfacing)

getFAc Get all the logged faults with complete descriptions

X Send current position of motor 1 to host (Motor can be in motion)

Y Send current position of motor 2 to host (Motor must be stationary)

Z Send current position of motor 3 to host (Motor must be stationary)

T Send current position of motor 4 to host (Motor must be stationary)

Program Management Commands

PMx Select Program number x, x= 0 to 12

PM-x Select and clear all commands from Program number x, x= 0 to 12

PM Request the number of the current Program

Mem Request Memory available for currently selected program

lst List the current program to host (ASCII text)

rsm Run save memory (saves setup & program values to nonvolatile memory

Looping & Branching Commands

L0 Loop continually from the beginning or Loop-to-marker of the current program

LM0 Sets the Loop-to-marker at the current location in the program

LM-0 Resets the Loop-to-marker to the beginning of the current program

Lx Loop from beginning or Loop-to-marker x-1 times (x=2 to 65,535)

L-x Loop from beginning or Loop-to-marker x-1 times, alternating direction of motor 1

LAx Loop Always from beginning or Loop-to-marker x-1 times (x=2 to 65,535)

LA-x Loop Always from beginning or Loop-to-marker x-1 times, alternating direction of motor 1

Jx Jump to the beginning of program number x, x= 0 to 12

JMx Jump to the beginning of program number x and come back after program x ends, x= 0 to 12

Pausing, Input/Output Commands

Px Pause x seconds, (x=0.0001 to 5.9999 & 6.0 to 6553.5 sec.)

PAx Pause x seconds (x=0.0001 to 5.9999 & 6.0 to 6553.5 sec, 10 µsec when x=0) Output 1 high for duration of the pause

U0 Wait for a "low" on user input 1

U4 User output 1 "low" (reset state)

U5 User output 1 high

U90 Wait for a low to high on the Run button or connection I/O,4 with debouncing for a mechanical push-button switch