

The Analog Joystick Option

The VXM Proportional Speed Joystick provides a precise efficient one, two, three, or four axis variable speed positioning system when used with one or two VXM Stepping Motor Controllers.

The Joystick is a compact long life 1 million cycle design packaged in a hand held size enclosure.

The joystick has two button switches, one for speed range selection, and the other to select motors 1,3 or 2,4.

To achieve simultaneous motion two VXM Controllers are required for this system. The VXMs can be either one or two axis versions.

The joystick without the enclosure is available for OEM applications.

Enclosure Dimensions: 1.45" x 5.75" x 0.85" (Width x Depth x Height)

Overall height: 1.6" (bottom of enclosure to top of joystick lever)

setjAmMx Set primary joystick speed range. $x= 1$ to 24.
See table at right to determine actual range of speed.
 $m=$ motor# (1,2,3,4)
NOTE: Factory set to 1 when VXM and joystick ordered the same time

setjAmM0 Disable joystick for motor m . This command will deactivate the joystick for motor m (default.)
 $m=$ motor# (1,2,3,4)

setJAmMx Set secondary joystick speed range. $x= 1$ to 24. When input 2 is low (I/O,6) this speed range is used by the joystick.
See table at right to determine actual range of speed.
 $m=$ motor# (1,2,3,4)
NOTE: Factory set to 10 when VXM and joystick ordered the same time

getjAmM Get the primary joystick speed range. The value returned will be a number between 0 and 24 (default=0)
 $m=$ motor# (1,2,3,4)

getJAmM Get the secondary joystick speed range. The value returned will be a number between 0 and 24 (default=0)
 $m=$ motor# (1,2,3,4)

CAUTION: The joystick must be at it's self centered position (middle) at power-up. The VXM reads the joystick value at power-up and assigns this value as the no motion setting. If the joystick is off-center on power-up, the motor will start moving when the joystick returns to center.

setDAX Set Joystick Deadband value. $x= 20$ to 100 (default=40)

NOTE: Setting x to a low value makes it difficult to move just one axis without inducing motion on the opposite axis. Setting x to a high value produces a noticeable delay when changing direction.

getDA Get Joystick Deadband value. Value returned is a number between 20 to 100 (default=40)

By default the joystick operates motor 1 of the Master VXM and motor 1 of the Slave VXM. If the VXM controls are two motor versions, motor 2 of each VXM can be operated with the joystick by applying a low on input 3 (I/O,7)

This capability allows four motors to be operated from one joystick.

Table for joystick assigned motor speed

x	Speed Range (steps/sec.)
0	Disable Joystick
1	1 - 250
2	2 - 500
3	3 - 750
4	4 - 1000
5	5 - 1250
6	6 - 1500
7	7 - 1750
8	8 - 2000
9	9 - 2250
10	10 - 2500
11	11 - 2750
12	12 - 3000
13	13 - 3250
14	14 - 3500
15	15 - 3750
16	16 - 4000
17	17 - 4250
18	18 - 4500
19	19 - 4750
20	20 - 5000
21	21 - 5250
22	22 - 5500
23	23 - 5750
24	24 - 6000

Analog Joystick with One VXM

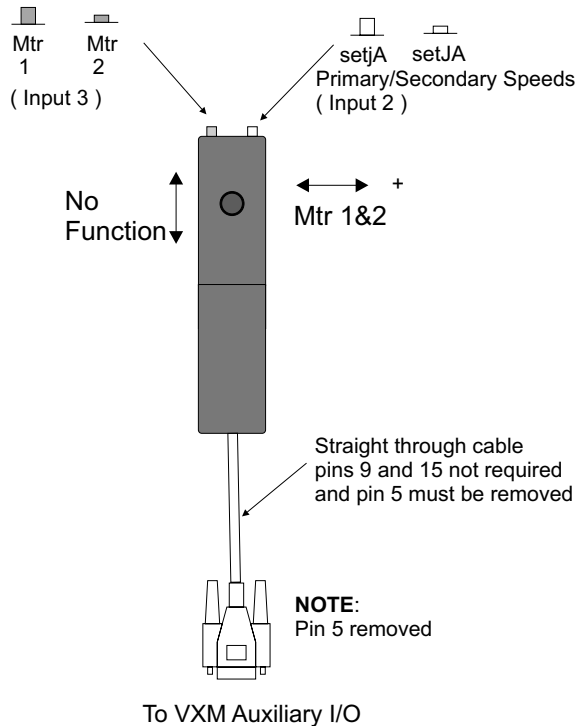
The optional analog joystick can be used with a single VXM control.
The joystick provides analog outputs for two VXM controls. With a single VXM one output is not connected resulting in “no function” in the one direction of the joystick.

The analog joystick has a button switch connected to Input 2 for toggling between the primary and secondary settable jog speeds.

There is also a second button switch connected to Input 3 for alternating between motors 1 and 2.

NOTE: The default primary and secondary speeds are by default both set to 0 (disabled joystick.)

NOTE: It is possible to disable/remove the button switch(es) if Input 2 and Input 3 are needed for another function. To disable/remove the button(s), with the button in the out position, use pliers to pull the button cap off the switch actuator. The switch actuator should now be below the surface enough to prevent unintended input. An alternate method to disable the button switches is by clipping off pin 6 and pin 7 on the cables connector.



Analog Joystick with Two VXMs

The joystick provides analog outputs for two VXM controls. A connection to each VXM is accomplished with a special Velmex “Y” cable.

The analog joystick has a button switch connected to Input 2 for toggling between the primary and secondary settable jog speeds.

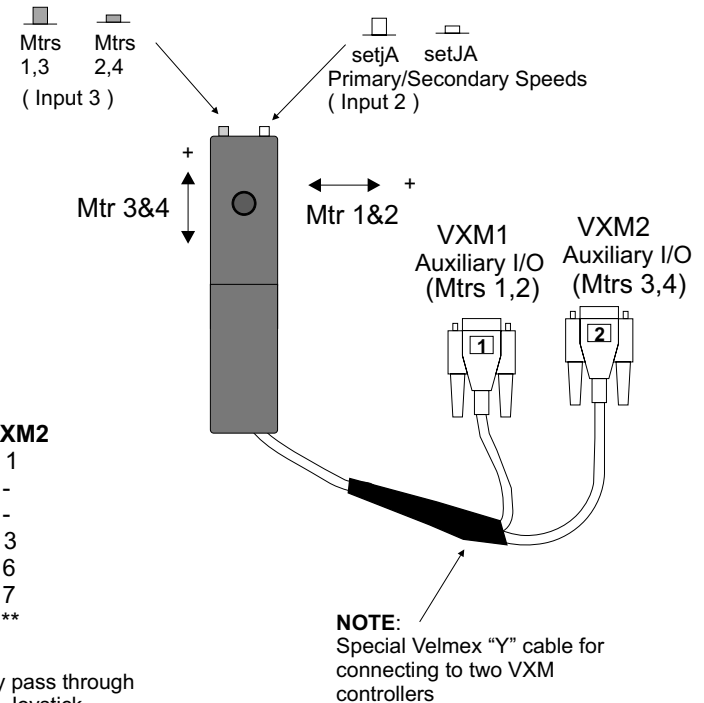
There is also a second button switch connected to Input 3 for alternating between motors 1,3 and 2,4.

NOTE: The default primary and secondary speeds are by default both set to 0 (disabled joystick.)

NOTE: It is possible to disable/remove the button switch(es) if Input 2 and Input 3 are needed for another function. To disable/remove the button(s), with the button in the out position, use pliers to pull the button cap off the switch actuator. The switch actuator should now be below the surface enough to prevent unintended input. An alternate method to disable the button switches is by clipping off pin 6 and pin 7 on the cables connectors.

NOTE: The joystick will not operate VXM2 if the “Y” cable is not connected to VXM1 or if VXM1 is off. This is because the common +5V reference voltage for the joystick comes from VXM1 (pin 2.)

CAUTION:
If VXM1 is turned off with VXM2 on, motor(s) on VXM2 will run!
Use a common power strip to turn on/off VXMs



“Y” Cable Pinouts

Joystick	VXM1	VXM2
1	1	1
2	2	-
3	3	-
5	-	3
6	6	6
7	7	7
*	*	**

* Other connection may pass through but are not used by the Joystick

** No Other Connections