

# VXM Stepping Motor Controller

## Application Note # AN103

### Interfacing to Thumbwheel Switch for Programs 0,1,2,3 Selection

In stand-alone applications it may be necessary to select one of several programs to perform different functions, or to select a different program that may be mostly the same, but with one or more different value(s).

This Application Note demonstrates a method of using a commercially available thumbwheel switch to select 1 of 4 programs on the VXM.

**NOTE:** The thumbwheel will select the program, however, to start the program, the Run button or Run input must be activated

#### Materials Needed:

1. Single BCD output Thumbwheel Switch
2. Auxiliary I/O Breakout Module or DB15HD (VGA) cable
3. Push Button or Switch for remote Run (Optional)

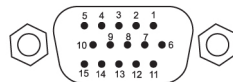
#### Wiring:

Inputs 2, 3, and 0V must be connected to the thumbwheel switch. Connect 0V (I/O pin 9) from the VXM to the terminal labeled "C" on the switch. Input 2 (I/O pin 6) on the VXM needs to be connected to the switch terminal that only makes contact with "C" when the digit 1 is displayed on the thumbwheel. Input 3 (I/O pin 7) on the VXM needs to be connected to the switch terminal that only makes contact with "C" when the digit 2 is displayed on the thumbwheel.

#### BCD Thumbwheel Switch Truth Table

Pgm #	Connection to C				
	Input 2	Input 3	N/C	N/C	0V
Thb Swt	1	2	4	8	C
0					
1	■				
2		■			
3	■	■			

Black = 1  
White = 0



15DSUBHD Socket

Red = Pin 6 / Input 2  
White = Pin 7 / Input 3  
Black = Pin 9 / Ground

#### Program:

Program numbers 0,1,2,3 need to be loaded with the desired program code. The following example does a different Index move for each program number. The **setI67** command enables the VXM to read program selection on Inputs 2 and 3. The **rsm** command saves the program permanently in the VXM.

Example #1	Motors run	RAM used	Function
4 Different Auto-reverses	1	32	Select programs 0,1,2,3 from Thumbwheel Switch

```

PM-3      ;select/clear pgm 3
I1M4000   ;Index out 10 revs
I1M-4000  ;Reverse back

PM-2      ;select/clear pgm 2
I1M2000   ;Index out 5 revs
I1M-2000  ;Reverse back

PM-1      ;select/clear pgm 1
I1M800    ;Index out 2 revs
I1M-800   ;Reverse back

PM-0      ;select/clear pgm 0
I1M400    ;Index out 1 rev
I1M-400   ;Reverse back

setI67    ;Set Pgm Select Inputs 2,3
;next command to save programs/settings
rsm
    
```

7550 State Route 5 & 20  
Bloomfield, NY 14469 USA  
www.velmex.com

