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 VXN.

**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 VXN to the terminal labeled “C” on the switch.
Input 2 (I/O pin 6) on the VXN 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 VXN 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**

<table>
<thead>
<tr>
<th>Pgm #</th>
<th>Connection to C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thb Swt</td>
<td>Input 2</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Black = 1
White = 0

**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 VXN to read program selection on Inputs 2 and 3.
The `rsm` command saves the program permanently in the VXN.

**Example #1**

<table>
<thead>
<tr>
<th>Motors run</th>
<th>RAM used</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Different Auto-reverses</td>
<td>1</td>
<td>32</td>
</tr>
</tbody>
</table>

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

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