

Untitled

In order to make the turret work properly I need 5 input signals and 2 outputs.
inputs = 4 for the turret encoder and one for the turret down switch
outputs = 1 to lift and rotate the turret the other is to activate turret stop.

normal operations are as follows:
get tool number
activate turret (lift and rotate)
wait for encoder to reach desired station
activate turret stop
deactivate turret (stop rotation and lock down)
deactivate turret stop
check turret down switch
recheck encoder position
if encoder is correct end
if encoder is not correct go back to activate turret line.
end

Here is a list of the conditions of the 4 wires coming from the turret encoder.
0 = 0 VOLTS AND 5 = 5 VOLTS

WIRE (input)	A	B	C	D
STATION 1	0	5	5	5
STATION 2	5	0	5	5
STATION 3	0	0	5	5
STATION 4	5	5	0	5
STATION 5	0	5	0	5
STATION 6	5	0	0	5
STATION 7	0	0	0	5
STATION 8	5	5	5	0

I'm also including the m-code map file I have used to index the turret with Ah-ha retrofit.

HNC_TCHG.txt

; TLCH_HNC.AGC - Hardinge Tool Change Routine
 ; This is a test program for an air driven type turret.
 ; The M06 sub-routine below can be placed in the MCDMAP.AGC file
 ; After this is done the tool change routine may be
 ; called using the 'Tnn M06' command in any part program.

; WTAIN is used to check an n bit input. Group input id 601 is used.
 ; group input 601 requires 3 inputs, starting with
 ; aux in line 8. Least significant bit is 108.

;Hook up-
 ;encoder line aux line (set H=true)
 ;A input 8
 ;B input 9
 ;C input 10
 ;D input 2 (disable block allow)
 ;turret dwn sw input 5
 ;IND solenoid output 3
 ;STP solenoid output 4

O %M06

%MXNTL=8.0

%ctlno=T ; assign the tool no. to %ctlno

%std=%ctlno

; Don't increment conditional test counter. The counter is used in restart
 ; operations to determine when the restart should begin.

#3720=0 ; don't increment conditional test counter

%TP1=#3700 ; Get restart mode from system var 3700

; If restart mode is active (<>0) skip previous tool no. assmt

IF (%TP1 NE 0) GOTO %TCH600

; The following input/output ID assignments and AIN/AOUT statements
 ; must be changed to reflect the physical i/o of the machining system.

; Determine the station code. Station 8 maps to code 0. Others are
 ; the same.

IF (%ctlno NE %MXNTL) GOTO %tch200

%std=0 ;this assumes lines abc are zero when d is 1

%tch200:

%stdt=AIN 601

IF (%std EQ %stdt) GOTO %TCH500 ;test if turret is at tool location

MSGCT 1 ; user message display

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LOCATE 1,1 ; set coordinates of message
CLMSWD ; clear message window
PRINT "Tool Change In Progress"

IF(%ctlno EQ 8.0)GOTO TCH300

AOUT 103,1 ; turret index
WTAIN 205,1 ; wait for unlock posn (may not be required)
WTAIN 601,%stcd ;wait for correct station number 1 to 7
AOUT 104,1 ; turret stop
AOUT 103,0 ;index off
WTAIN 205,0 ; wait for locked posn
AOUT104,0 ;turret stop off
GOTO %TCH500

%TCH300:

AOUT 103,1 ; turret index
WTAIN 205,1 ; wait for unlock posn (may not be required)
WTAIN 202,1 ; wait for station 8
AOUT 104,1 ; turret stop
AOUT 103,0 ;index off
WTAIN 205,0 ; wait for locked posn
AOUT 104,0 ;turret stop off

; end of main body

%TCH500:

; Assign tool no. to prev tool no. var
#3802=%CTLNO

%TCH600:

#3720=1.0 ; increment conditional test counter
MSGCT 0 ; revert to normal message display

%tch900:

M99