## Stand Alone Digital

Associated files:

- QCI-AN058_DigitalInput-ProgramSelectAndStart.qcp

## Required Software

QuickControl
    Rev 4.6 or higher

## Overview

This system uses two I/O controls to select between two programs and when to start the chosen program. The switch selects which program executes while the momentary push button waits for a user press to start selected program. Programs 1 and 2 are merely examples for any program that the user would want to execute.
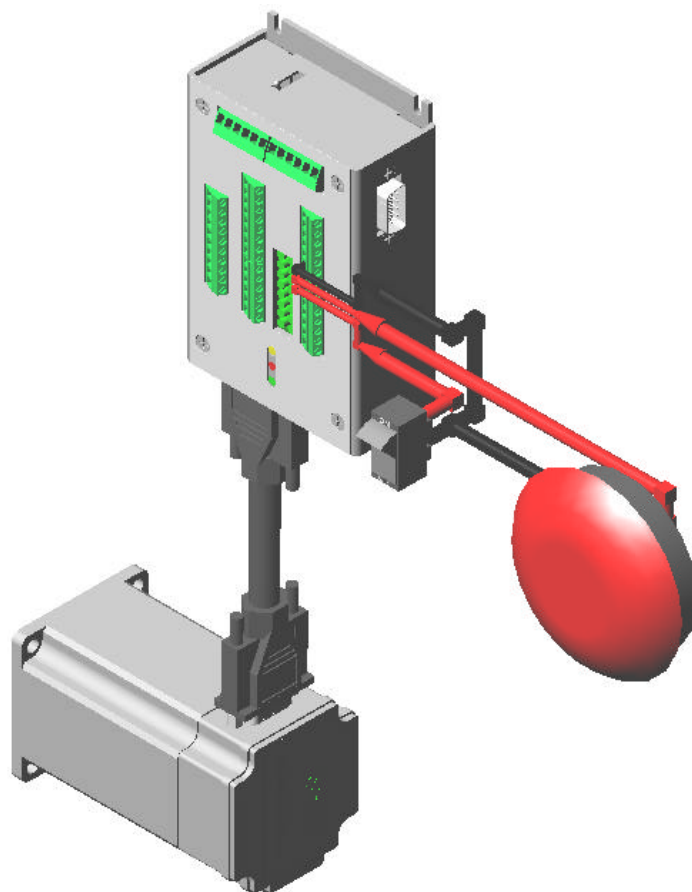
Although this example only shows the simple case of a single input used for program selections, multiple inputs can be used to select multiple programs (i.e. 3 input to select 7 programs). Please refer to Application Note "QCI-AN015 Using Inputs For Program Selection".

An "Emergency Stop" input is also common on servo applications, but is not covered in this simple app note. For information on using Emergency Stop buttons to shutdown a servo, see Technical Document "QCI-TD052 Shutdown And Recovery".

## System Parameters

This system requires:
1) 1 x Controllers, Motors and Associated Cables
2) 1 x Switch
3) 1 x Button

# QCI-AN058_DigitalInput-ProgramSelectAndStart.qcp
**Program Selector**

The first command waits for a I/O #5, the start condition, to trigger before checking the state of I/O #1.

If I/O #1 is LOW, Program 1 executes. If I/O #1 is HIGH, Program 2 executes.

| Line# Oper | Label | Command |
|---|---|---|
| 1:REM | | Digital Input-ProgramSelectAndStart.qcp<br><br>See Application Note<br>  QCI-AN058  Digital Input-Program Select And Start<br>For information about this program |
| 2:REM | | Stand Alone Digital<br><br>I/O #1 controls the Program Selection<br>I/O #5 controls the Start Function |
| 3:REM | LOOP | =============<br>MAIN LOOP<br>============= |
| 4:REM | | Wait for Start button to be pressed |
| 5:WBE | | Wait On Bit Edge<br>Until "I/O #5" is LOW/FALSE |
| 6:REM | | Load Pogram 1 ? |
| 7:JOI | | Jump On Input to "2"<br>When "I/O #1" is HIGH/TRUE |
| 8:LRP | | Load And Run Program:<br>Program = "Program 1" |
| 9:REM | | Load Pogram 2 ? |
| 10:JOI | | Jump On Input to "2"<br>When "I/O #1" is LOW/FALSE |
| 11:LRP | | Load And Run Program:<br>Program = "Program 2" |
| 12:REM | | Add any application specific code here<br>................. |
| 13:REM | | Loop back to the beginning |
| 14:JMP | | Jump to "LOOP" |

# QCI-AN058_DigitalInput-ProgramSelectAndStart.qcp

**Program 1 & Program 2**

A basic program is in place to demonstrate the fact that any program could run at this point. To help distinguish between the two programs, the first program lights the I/O #101 LED and runs a fast move followed by a slow move while the second program lights the I/O #102 LED and runs a slow move followed by a fast move.

The Program Selector calls and processes the next program request.

Program 2 pictured below. Both programs are placeholders as examples.

| Line# Oper | Label | Command |
|---|---|---|
| 1:REM | | Program 1 This program is selected by I/O #1 reading LOW. |
| 2:REM | | LED 1 = ON |
| 3:SOB | | Set "I/O #101" |
| 4:REM | | Fast Move |
| 5:MRV | | Move 80000 counts @ acc=20000.67 cps/s vel=40000 cps |
| 6:REM | | Slow Move |
| 7:MRV | | Move -80000 counts @ acc=20000.67 cps/s vel=8000 cps |
| 8:REM | | LED 1 = OFF |
| 9:COB | | Clear "I/O #101" |
| 10:REM | | Return to Program Selector |
| 11:LRP | | Load And Run Program: Program = "Program Selector" |

| Line# Oper | Label | Command |
|---|---|---|
| 1:REM | | Program 2 This program is selected by I/O #1 reading HIGH. |
| 2:REM | | LED 2 = ON |
| 3:SOB | | Set "I/O #102" |
| 4:REM | | Slow Move |
| 5:MRV | | Move -80000 counts @ acc=20000.67 cps/s vel=8000 cps |
| 6:REM | | Fast Move |
| 7:MRV | | Move 80000 counts @ acc=20000.67 cps/s vel=40000 cps |
| 8:REM | | LED 2 = OFF |
| 9:COB | | Clear "I/O #102" |
| 10:REM | | Return to Program Selector |
| 11:LRP | | Load And Run Program: Program = "Program Selector" |