

Stand Alone With Digital I/O

Associated files:

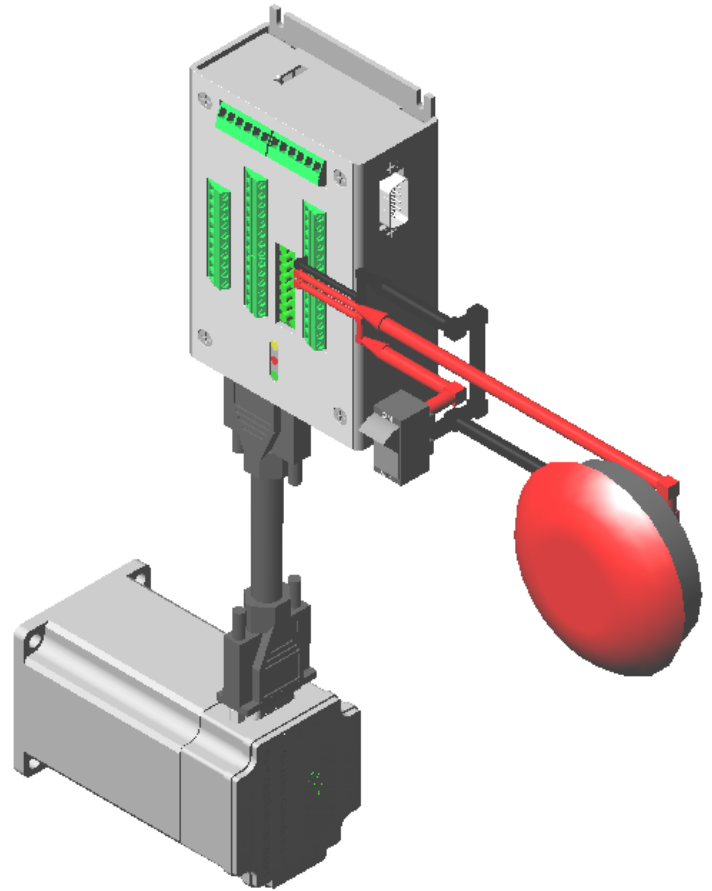
- QCI-AN058_StandAloneWithDigital_IO.qcp

Required Software

QuickControl
Rev 4.6 or higher

Overview

This system uses a toggle switch to select between two programs and momentary pushbutton to start the chosen program. Programs 1 and 2 are merely examples for any program that the user would want to execute.



For an advanced example show how to use multiple inputs to select multiple programs, please see Application Note “QCI-AN015_UsingInputsForProgramSelection”

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 Toggle Switch
- 3) 1 x Momentary Pushbutton

QCI-AN058_StandAloneWithDigital_IO.qcp

Program Selector

The first command waits for I/O #5 (pushbutton) to go LOW, before checking the state of I/O #1 (toggle switch).

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

Line# Oper	Label	Command
1:REM		QCI-AN058_StandAloneWithDigital_I O.qcp See Application Note QCI-AN058 Stand Alone With Digital IO for information about this program Stand Alone Digital
2:REM		I/O #1 controls the Program Selection I/O #5 controls the Start Function
3:REM	LOOP	Wait for Start button to be pressed
4:WBE		Wait On Bit Edge Until "I/O #5" is LOW/FALSE
5:REM		Load Program 1
6:JOI		Jump On Input 2 line(s) When "I/O #1" is HIGH/TRUE
7:LRP		Load And Run Program: Program = "Program 1"
8:REM		Load Program 2
9:JOI		Jump On Input 2 line(s) When "I/O #1" is LOW/FALSE
10:LRP		Load And Run Program: Program = "Program 2"
11:REM		Loop back to the beginning
12:JMP		Jump to "LOOP"

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"

Program 1 & Program 2

These basic programs are placeholders for the user's application specific code.

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.

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"