

# Connected Component Workbench Task-based Quick Start

## QS# GS05 – Using Simulation Mode to Test a Program

LISTEN.  
THINK.  
SOLVE.®

## **Hardware & Software Versions Used to Develop This Quick Start**

- CCW Release 1, Build 43
- Micro830, 2080-LC30-16QWB

### **Prerequisite**

- QS04 Creating a New Ladder Program

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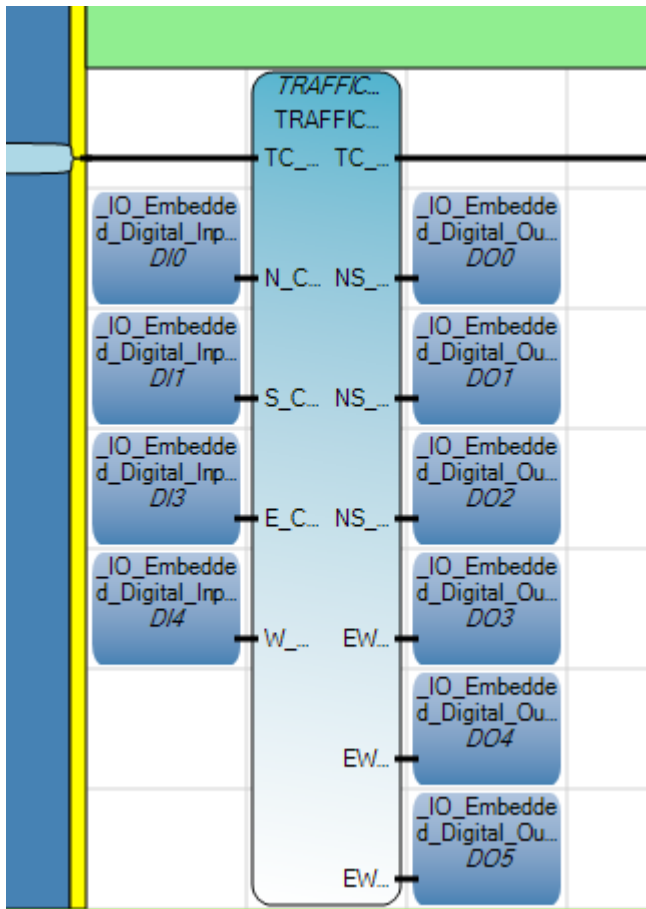
## Using Simulation Mode to Test a Program

This quick start will show you how to use simulation mode to test a program. For this example we will use a traffic light program to show you how simulation mode works. For more details on creating the traffic light program refer to quick start GS04.

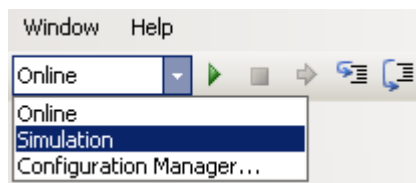
The benefit of using simulation mode is that you don't need a controller to test a program. Simulation mode allows the user to simulate the program on their computer without having to connect to the controller. This can save programmers a lot of time because they can test a program at any time during the development phase.

1. Open the project you created for quick start QS04.

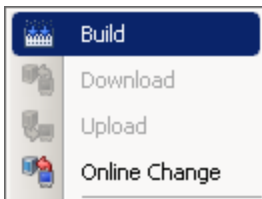
You should have a traffic light program with 1 rung.



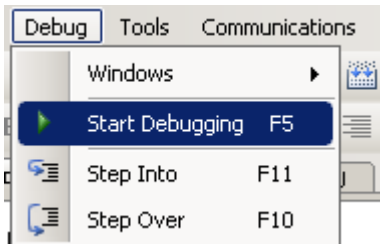
2. From the Connected Components Workbench toolbar, select **Simulation**.



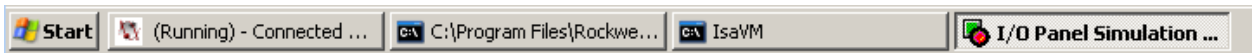
- From the Project Organizer, right-click on the Micro830 controller and select **Build**.



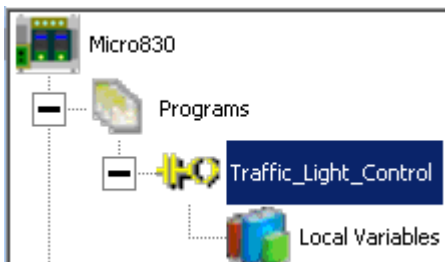
- From the **Debug** menu, click **Start Debugging**.



You will notice three new screens appear in your taskbar. The third screen is called the I/O Panel Simulation tool. The I/O simulation tool can be used to simulate the change of state of any variable in your program.

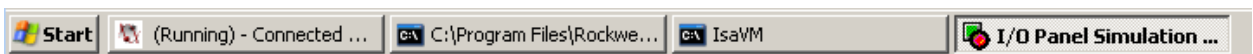


- Double click on the traffic light control ladder program to view the rung. If you are already in this view skip this step.



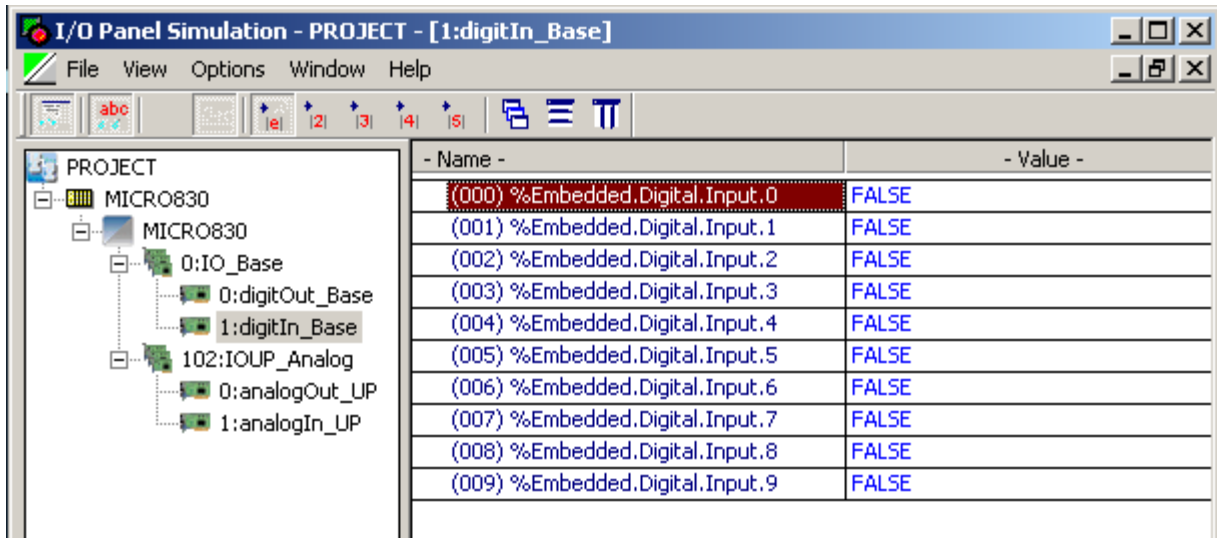
- From the taskbar click on **I/O Panel Simulation**.

This will expand the I/O Panel Simulation window.



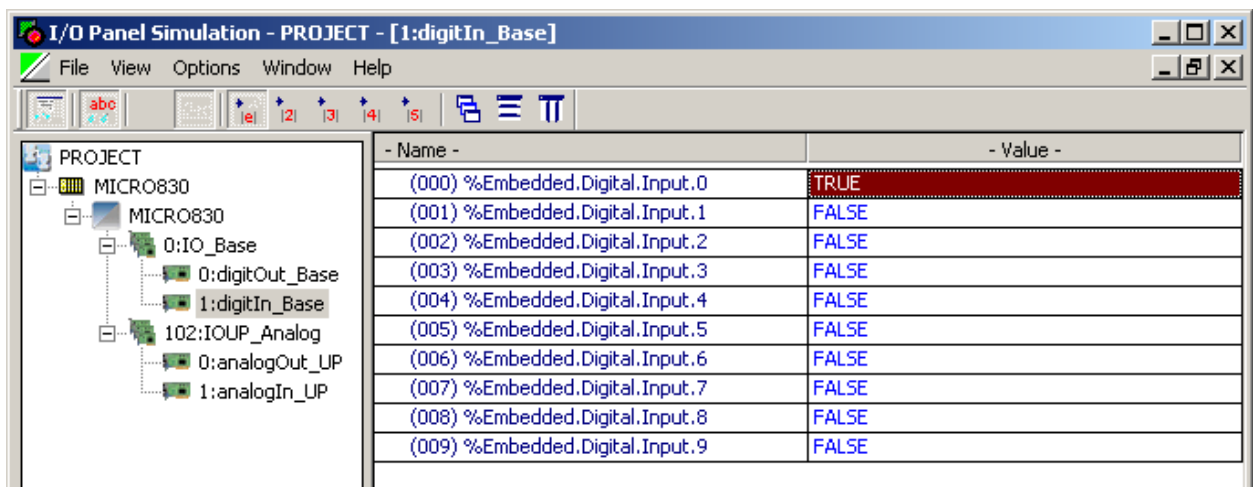
- On the left you will see entries for your digital and analog I/O. For this example double click on **1:digitIn\_Base** this will display the digital inputs.

Your I/O Panel Simulation screen should look similar to the one below.

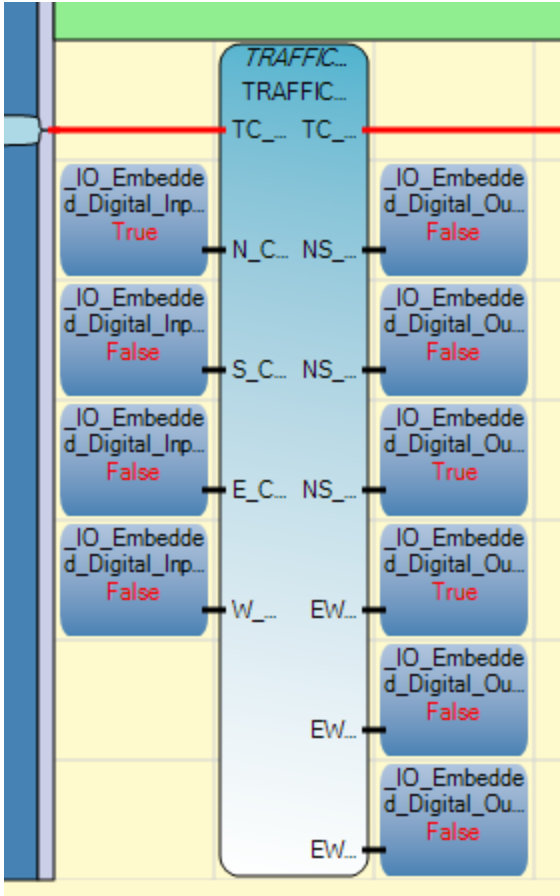


- For this example we are going to change the state of digital input 0 to TRUE and we will monitor outputs 2 and 3.

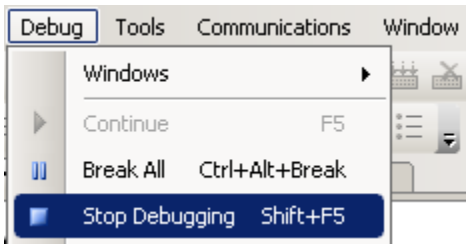
To modify the value of digital input 0, double click on the cell to the right of **(000)%Embedded.Digital.Input.0**, this will change the value from FALSE to TRUE.



- A few seconds after changing the state of digital input 0 you should see digital output 2 and 3 go to TRUE. Verify this is the case by looking at your function block.



10. We are done simulating the program. Now from the toolbar click **Debug** and select **Stop Debugging**. This will stop Simulation Mode and will allow you to make modifications to your program.



11. Select **Online** and **Save** your project before moving on to the other quick starts.

