### PLC Technology 1 with MicroLogix 1100

PLC MODULE SETUP NOTES







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## Overview

This guide provides several important notes and procedures that will help you get your JobMaster<sup>®</sup> Training Station (JMTS) PLC module up and running.

## Setting up the JMTS

The JMTS modules are movable and can be mounted and dismounted at will.

To mount a module onto the panel:

- 1. Insert the module's push button leg into the upper-most slot of the panel.
- 2. Push the module upwards until the bottom legs are inserted into the slotted panel as well.
- 3. Slide the module horizontally to the desired location.



If you ever need to dismount one of the electrical modules, push the module upwards from the bottom and pull the bottom legs away from the panel.

You can see a video of this process by clicking or scanning this QR code:







You can set up the modules as you please. However, for PLC Technology 1, we recommend the following arrangement:







## **Connecting to PLCMotion**

In order to program your PLC using PLCMotion for the first time, you must activate **PLCMotion Online Control** and configure your PLC to PC connection.

Before beginning the procedure below, ensure that the power supply module and PLC module are mounted to the JMTS mounting panel. Also ensure that the PLCMotion software is installed on your computer.

#### To connect the PLC to your computer:

- 4. Connect the power supply module to an appropriately rated power source.
- 5. Connect the PLC module to the power supply module along both the 24V and 0V lines.



- 6. Turn the power supply module ON.
- **7.** Connect the PLC RS-232 port to your computer's serial port with the included cable. Use a USB-to-Serial adapter if your computer does not have a serial port.
- 8. Navigate to the PLCMotion program folder and open PLC Online Control.







9. In the Simulate menu, select AB PLC Configuration.



- **10.** If you are prompted to provide Administrator permissions, click **Yes**.
- The configuration window is displayed. In the Comm Port drop-down menu, select the appropriate communication port. (Check your computer's Device Manager if you are unsure which port this is.) Keep the other default settings.

CimQuest IN-GEAR AB Standard Edition Configuration					
Settings Hardware	Communications				
Adapter 1 💌 🗹 Enabled	Command Set DH-485	Apply			
DeviceType Serial DF1	Link Speed 19.2k 💌	Close			
Comm Port COM5: 💌	Checksum 💿 CRC 🕥 BCC				
Base Address	Timeout 3000	About			
I/O Port COM6	Station ID 00 🖵				
COM9: COM10:	Max Nodes 00 🚽				
COM11:	Term. Name				

- 12. Click Apply.
- **13.** Click **Close** to close the configuration window. If you are prompted to save your configuration, click **Save**.





# **PLC Wiring**

### **BASIC PLC MODULE SOCKETS AND ADDRESSES**

The PLC Technology with MicroLogix 1100 course series uses the JobMaster<sup>®</sup> PLC Module. The PLC module has 10 digital input sockets and 6 digital output sockets. These sockets are wired directly to the relevant input and output terminals of the controller itself. This allows you to make quick connections and disconnections using the electrical connectors (banana plugs) in your hardware kit.

An important item to note is that the labels on the digital I/O sockets differ somewhat from their corresponding addresses in PLCMotion. This table compares each socket label with its corresponding PLCMotion address.

Digital I/O Socket		PLCMotion Address
Input	Output	
I/0		1:0/0
I/1		I:0/1
I/2		1:0/2
I/3		1:0/3
I/4		1:0/4
I/5		I:0/5
I/6		I:0/6
I/7		1:0/7
I/8		I:0/8
I/9		1:0/9
	O/0	O:0/0
	0/1	O:0/1
	0/2	0:0/2
	0/3	O:0/3
	O/4	O:0/4
	0/5	O:0/5

### **POSITIVE AND NEGATIVE LOGIC**

In the JMTS PLC Module, input terminals require a power source. This is reflected by the fact that you have to connect either the 24V line or the 0V line to either or both **input DC Com** sockets. These sockets are found above the controller in the PLC module.

Whether you connect the left socket or the right socket – or both – depends on the input terminals that you need to use for your system. For example, if you want I/3 to be energized in your system, the 0-3 input DC com socket must be connected to the 24V or 0V line.





If you decide to connect the 24V line to the input DC com socket, the I/3 terminal can only be energized from power originating from the 0V line. This is referred to as **negative logic**.



On the other hand, if you choose to connect the 0V line to the input DC com socket, the I/3 terminal can only be energized from power originating from the 24V line. This is referred to as **positive logic**.



You can actually have *both* types of logic in your system by connecting one input DC com socket to the 24V line and the other to the 0V line.





### **MANUAL WIRING**

While the input and output ports of MicroLogix PLC are wired directly to the sockets on the PLC module, advanced students can rewire the PLC themselves and connect the I/Os to directly to other electrical components.



Re-wiring only requires a flat-head screwdriver. Simply unscrew the screws holding the wires using the screwdriver. Once a wire has been freed, it can be wired to a different component or terminal.