PLC Technology 4 with CompactLogix

SETUP INSTRUCTIONS

Name	Class/Period	Date

1. Overview

This document contains the instructions for connecting the JMTS panel components for all lab activities (projects) in *PLC Technology 4.*

2. Required Materials

The following materials are required:

- JobMaster Training System (JMTS) double-sided panel
- JMTS connectors (banana cables)
- Power Supply Module
- PLC Module
- Operational Module
- Solenoid Module
- DC Servo Motor Module
- HMI Module
- Computer
- Ethernet cables (4)
- Ethernet switch

3. Inventory and Safety

Before beginning the connection procedure, review this checklist and mark off each item as you complete it.

- ☐ All hardware components are available.
- ☐ Hands, hair, and clothing are securely away from the work area.
- ☐ The work area is clean and devoid of food or drink.
- ☐ You have reviewed the *PLC Safety Guidelines.* This document can be found in the Resources area of the course page.

4. Connection Procedure

4.1. Overview

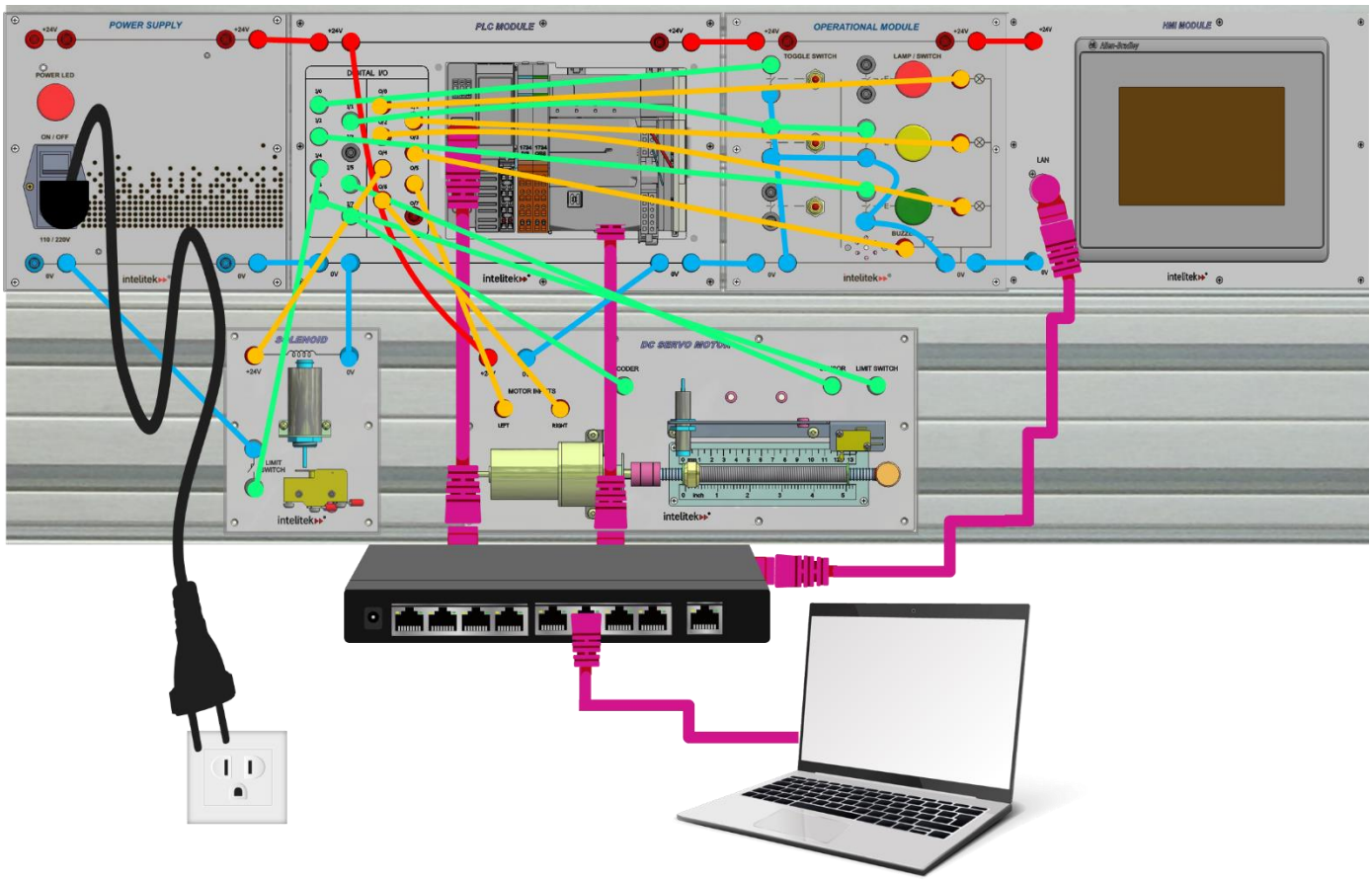


Figure 1. Wiring and Ethernet connection overview. The colors used for wiring are for illustrative purposes only. Any color combination of connectors may be used.

4.2. JMTS Modules

Mount the JMTS modules onto one side of the JMTS double-sided panel. The recommended order of module position, from left to right is:

- Upper row: Power Supply Module, PLC Module, Operational Module, HMI Module
- Lower row: Solenoid Module, DC Servo Motor Module

4.3. Electrical Connections

1. Ensure that the Power Supply Module is switched off.
2. Connect the power cable to the Power Supply Module and insert the other end of the cable into a wall socket.
3. Using the electrical connectors (banana connectors), wire the power, input, and output connections between the appropriate JMTS modules according to the table below (refer also to Figure 1).

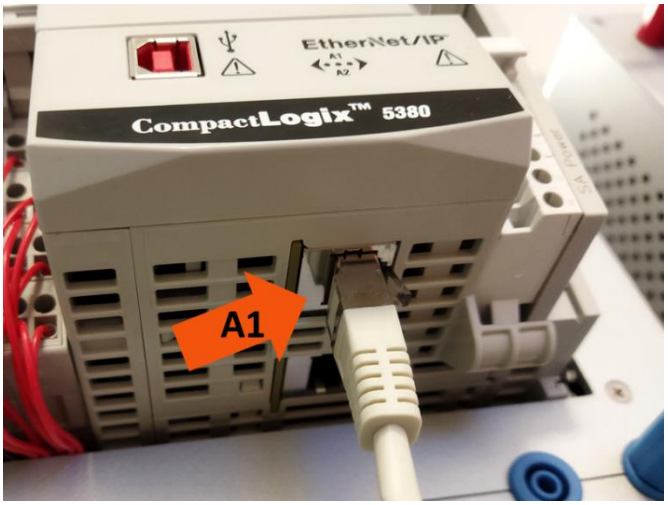
ⓘ ***Note:*** *Toggle switch 1 is the upper toggle switch. Toggle switch 2 is the middle toggle switch. Toggle switch 3 is the lower toggle switch.*

Type	Origin Module/Terminal	Destination Module/Terminal
Power/Neutral	Power Supply +24V	PLC +24V
Power/Neutral	Power Supply +0V	PLC +0V
Power/Neutral	PLC +24V	Operational +24V
Power/Neutral	PLC +0V	Operational +0V
Power/Neutral	Operational +24V	HMI +24V
Power/Neutral	Operational +0V	HMI +0V
Power/Neutral	PLC +24V	DC Servo Motor +24V
Power/Neutral	PLC +0V	DC Servo Motor +24V
Power/Neutral	Power Supply +0V	Solenoid Limit Switch Upper
Power/Neutral	Operational +0V	Toggle Switch 1 Lower
Power/Neutral	Operational +0V	Toggle Switch 2 Lower
Power/Neutral	Operational +0V	Yellow PB Lower
Power/Neutral	Operational +0V	Green PB Lower
Input	Toggle Switch 1 Upper	PLC I/0
Input	Yellow PB Upper	Toggle Switch 2 Upper
Input	Toggle Switch 2 Upper	PLC I/1
Input	Green PB Upper	PLC I/2
Input	Solenoid Limit Switch Lower	PLC I/4
Input	DC Servo Motor Sensor	PLC I/5
Input	DC Servo Motor Limit Switch	PLC I/6
Input	DC Servo Motor Encoder	PLC I/7
Output	PLC O/0	Red lamp
Output	PLC O/1	Yellow lamp
Output	PLC O/2	Green lamp
Output	PLC O/3	Buzzer
Output	PLC O/4	Solenoid +24V
Output	PLC O/5	DC Servo Motor Input - Left
Output	PLC O/6	DC Servo Motor Input - Right

4.4. Ethernet Connections

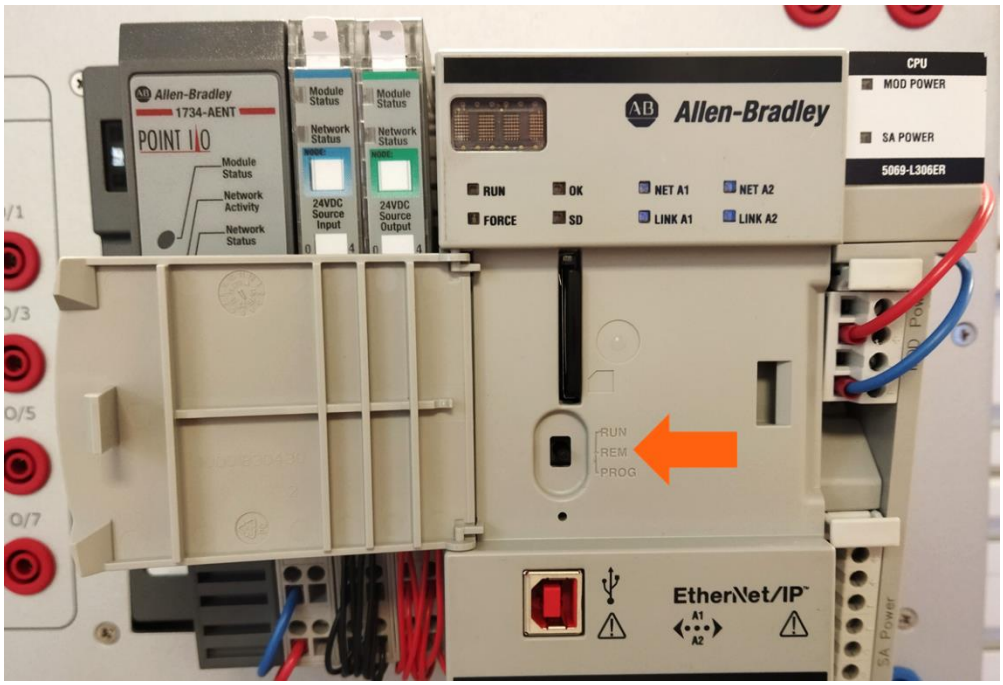
Power on your Ethernet switch and connect it to the following devices/ports:

- Computer network port
- AENT Network Adapter Ethernet port
- HMI Module LAN port
- CompactLogix controller Ethernet port A1



4.5. Setting the Controller to Remote Mode

1. Open the controller's front panel and ensure that the mode switch is set to **REM** (Remote). This setting allows the Studio 5000 software to change the controller mode when required.



2. Close the controller's front panel.