# PLC220 Hands-On Assessment, Module 6

Student Name: _____ N# _____ Date: _____

This hands-on assessment requires that each student successfully demonstrates each of these tasks to the instructor's satisfaction. There is no grade for this assessment.
Prior to taking this assessment, the student must pass (minimum of 80%) the Knowledge and Application Assessment.
The student cannot proceed to the HOA for the next module without completing this HOA

**Equipment Required:**

Computer with RSLogix 5000 / Studio 5000 software
RSLinx software
RSNetWorx for DeviceNet software
Ethernet Port

ControlLogix Demo board with 1756-DNB module
1756-Ethernet Communication Module
Discrete Input / Output Modules

DeviceNet Demo Board with 871TM Prox switch
RightSight Standand Diffuse Photoelectric Sensor
855T – Stack Light
1791D 8B8P Compact Block I/O
PowerFlex 4 VFD

Note: Other components are also installed on DeviceNet Demo Board

Project File
PLC220 Module 6_HOA_020417.L5K

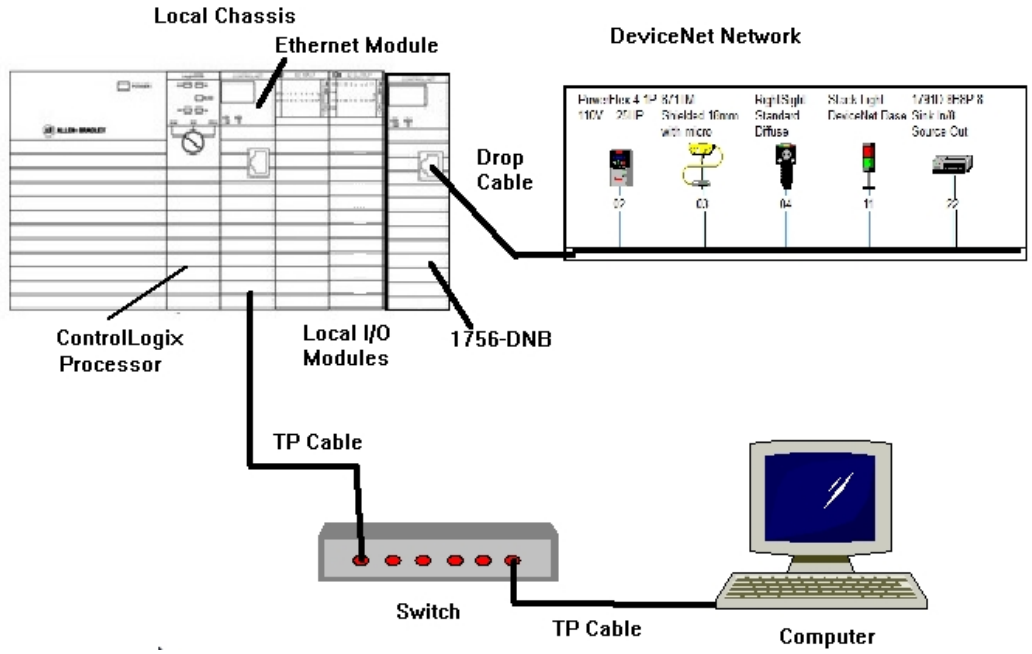


Figure 1-A. The hardware configuration for this HOA.

Ensure on the DeviceNet component's cables are connected to the IDC taps on the bottom of the DeviceNet Demo Board

Twisted pair Ethernet cables from Computer Ethernet Port the 1756-EtherNet Module
Note: the cable may be directly connected - no Switch required

DeviceNet drop cable to connect the DeviceNet Demo Board to the front port on the 1756-DNB Module located on the ControlLogix Demo Board.

Power-up ControlLogix and DeviceNet Demo Boards

Note: If the display on the 1756-DNB Module shows - No Network Power – the 1756-DNB Module is not receiving power from the DeviceNet network (drop cable) cable.

For this HOA a connection will be made from the computer's Ethernet Port thru RSNetWorx for DeviceNet using a RSLinx, EtherNet/IP Driver to connect to the DeviceNet network

Ensure the Computer can connect to the ControlLogix Demo board using the 1756 – Ethernet Communication Module with an EtherNet/IP driver.

Note: DeviceNet Scanner Module - 1756-DNB – located in slot 6.

_____ 1. Using RSLinx verify connection to ControlLogix Demo Board

_____ 2. Using RSLinx verify connection to DeviceNet Demo Board

_____ 3. Open RSNetWorx for DeviceNet application
Go Online and Browse the Network

_____ 4. Clear the Network Configuration in the 1756-DNB Module

_____ 5. Assign the following components to the 1756-DNB Scanlist

1. RightSight Standard Diffuse Photoeye
2. PowerFlex 4 VFD

RightSight Standard Diffuse Photoeye Node Address:_____
PowerFlex 4 VFD Node Address: _____

_____ 6. Map the RightSight Standard Diffuse Photoeye Inputs to data element 1

_____7 Map the PowerFlex 4 VFD Input Logic Status data to Input data element 3
Map the PowerFlex 4 VFD Input Logic Feedback data to Input data element 4
Map the PowerFlex 4 VFD Input Logic Command data to Output data element 3
Map the PowerFlex 4 VFD Input Logic Reference data to Output data element 4

_____ 8. Modify Start Source and Speed Reference of PowerFlex 4 for Network Control
Start Source Parameter #:_____
Start Source Current Value:_____
Speed Reference Parameter #:_____
Speed Reference Current Value:_____
Download changes to PowerFlex 4 VFD

_____ 9. Save the Network Configuration as HOA_PLC220_Module6.dnt

Download the Network Configuration, HOA_PLC220_Module6.dnt, the 1756-DNB Scanner

_____ 10. Import ControlLogix Project File HOA_PLC220_Module6.L5K in to Studio 5000

Modify the Ladder Logic as follows:

RightSight Standard Diffuse Photoeye turns ON PL6 when detecting a target
PB1 starts the VFD
PB2 stops the VFD
Speed tag sends frequency value to VFD
Speed_Fdbk tag monitors VFD's frequency output
PL0 ON when VFD is ready to Run
PL2 ON when VFD is Running

Remove unnecessary Rungs

____ 11. Save the Project file as HOA_Module6.ACD

Download ControlLlogix Project File HOA_ Module6.ACD to ControlLogix Processor

_____ 12. Remove RightSight Standard Diffuse Photoeye from the DeviceNet Network

State of MOD/NET diagnostic indicator on 1756-DNB_____
State of I/O diagnostic indicator on 1756-DNB_____
State of OK diagnostic indicator on 1756-DNB_____

Information shown on 1756-DNB display_____

Install the RightSight Standard Diffuse Photoeye back on the DeviceNet Network

State of MOD/NET diagnostic indicator on 1756-DNB_____
State of I/O diagnostic indicator on 1756-DNB_____
State of OK diagnostic indicator on 1756-DNB_____

Information shown on 1756-DNB display_____

_____ 13. Verify VFD operation

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