# DH485 Router/B

## PanelView800 to SLC or MicroLogix setup

Technical Application Note

## A-DH485R

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CONTENTS


1. Preface ..... 2
   1.1. Purpose of this Document ..... 2
   1.2. Additional Information ..... 2
   1.3. Support ..... 2
2. Application Description ..... 3
3. Setup ..... 4
   3.1. Module Layout ..... 4
   3.2. Serial Cable wiring ..... 5
   3.3. DH485 Router Setup ..... 7
   3.4. RSLogix 500 Setup ..... 8
   3.5. PanelView 800 Setup ..... 8
      3.5.1. Communication Setting ..... 9
      3.5.2. Tag Setup ..... 11
      3.5.3. Testing Communication ..... 12


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# 1. PREFACE

## 1.1. PURPOSE OF THIS DOCUMENT

This document will assist the user to setup the DH485 Router/B (referred to as DH485 Router in this document) to allow a PanelView 800 application to communicate to an SLC device's DH485 port via EtherNet/IP.

## 1.2. ADDITIONAL INFORMATION

The following resources contain additional information that can assist the user with the module installation and operation.

| Resource | Link |
|---|---|
| Slate Installation | http://www.aparian.com/software/slate |
| DH485 Router/B User Manual<br>DH485 Router/B Datasheet<br>Application Notes<br>Example Code & UDTs | https://www.aparian.com/products/dh485routerb |
| Ethernet wiring standard | www.cisco.com/c/en/us/td/docs/video/cds/cde/cde205_220_420/installation/guide/cde205_220_420_hig/Connectors.html |
| CIP Routing | The CIP Networks Library, Volume 1, Appendix C:Data Management |

## 1.3. SUPPORT

Technical support will be provided via the Web (in the form of user manuals, FAQ, datasheets etc.) to assist with installation, operation, and diagnostics.

For additional support the user can use either of the following:

| | |
|---|---|
| Contact Us web link | https://www.prosoft-technology.com/Services-Support/Customer-Support |
| Support email | support@prosoft-technology.com |

# 2. APPLICATION DESCRIPTION

The Aparian DH485 Router can be used to enable multiple modern Ethernet devices to communicate to legacy SLC5/03 via their DH485 serial ports. In the application example below, two PanelView800 terminals can read and write data to an SLC500.

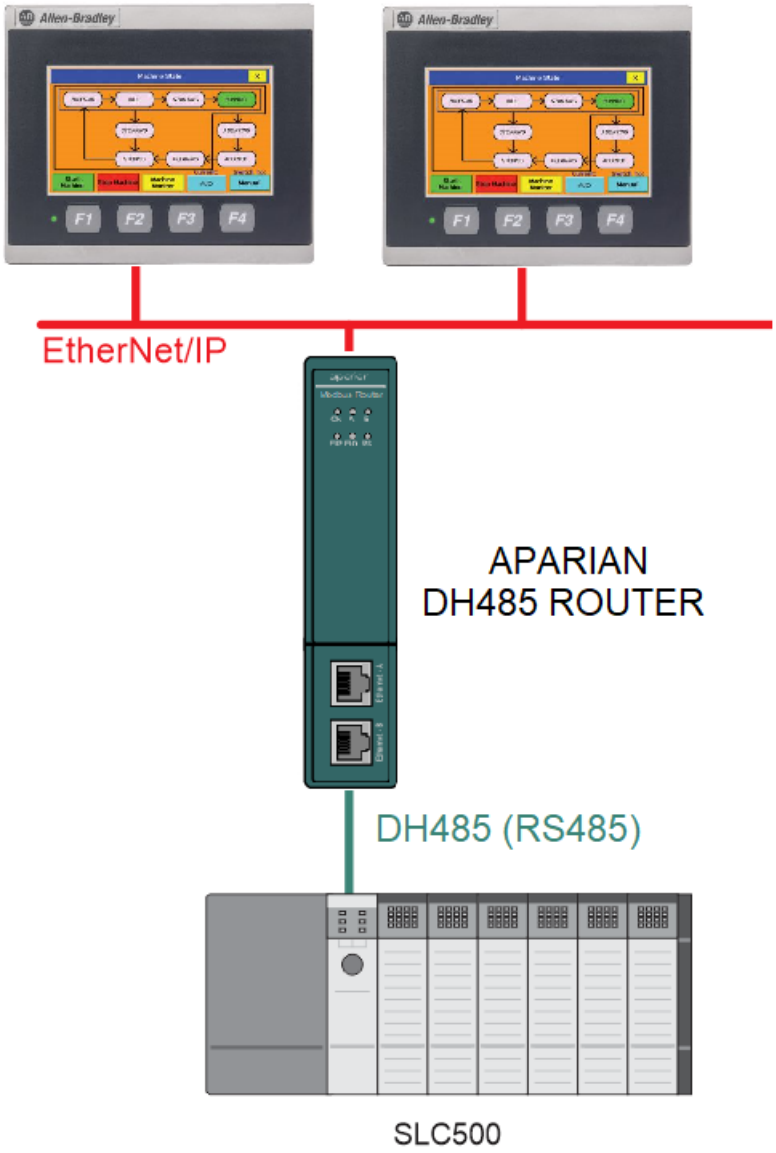


FIGURE 2.1. - EXAMPLE OF A TYPICAL NETWORK SETUP

# 3. SETUP

The following sections will describe the installation and configuration of all the required devices to assist the user with the initial setup.

## 3.1. MODULE LAYOUT

The module has two ports at the bottom and two ethernet ports on the front of the enclosure as shown in the figure below. The ports are used for Ethernet, RS232 or RS485 serial, and power. The power port uses a three-way connector which is used for the DC power supply positive and negative (or ground) voltage as well as the earth connection.

The Ethernet cable must be wired according to industry standards which can be found in the additional information section of this document.

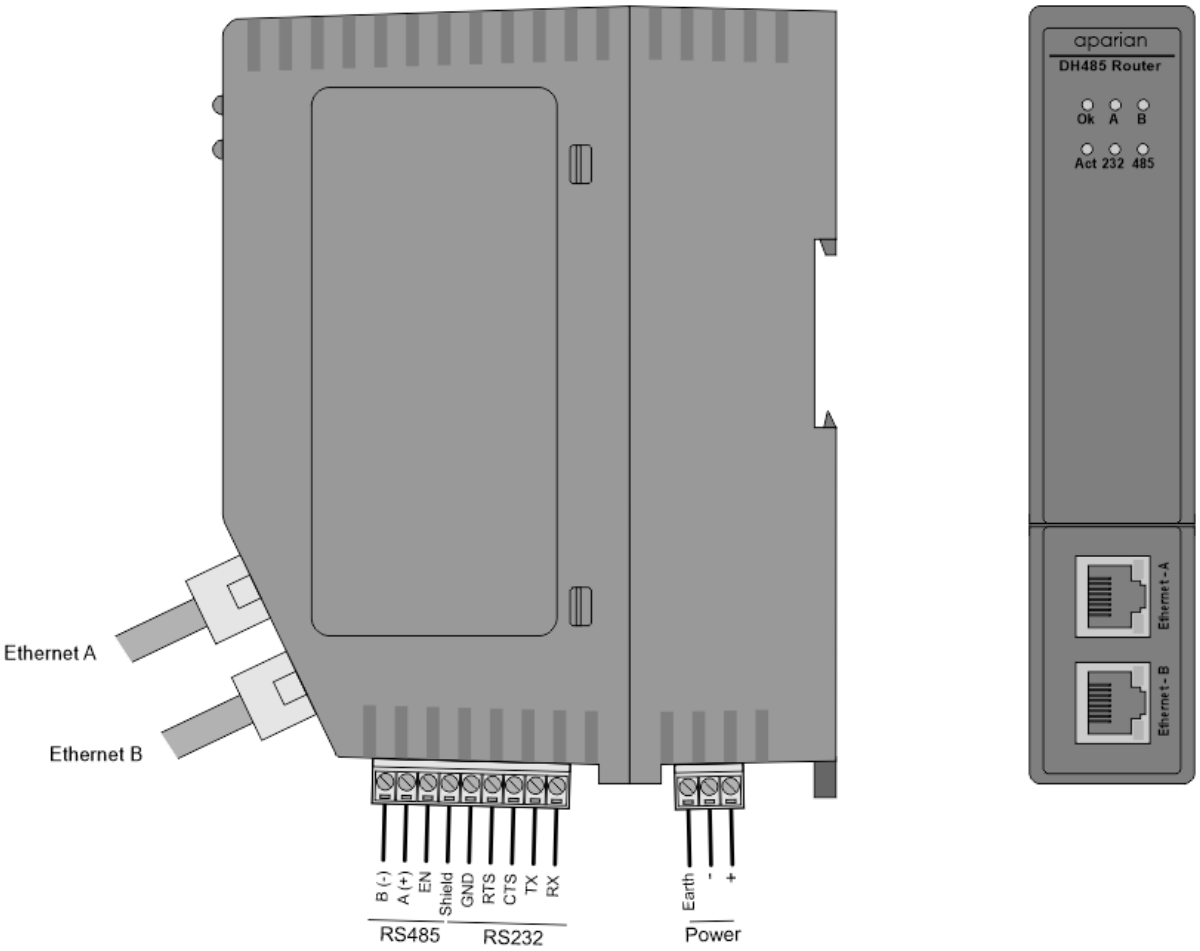


FIGURE 3.1. - DH485 ROUTER/B SIDE AND FRONT VIEW

## 3.2. SERIAL CABLE WIRING

The serial cable pinout is shown in the figure below:

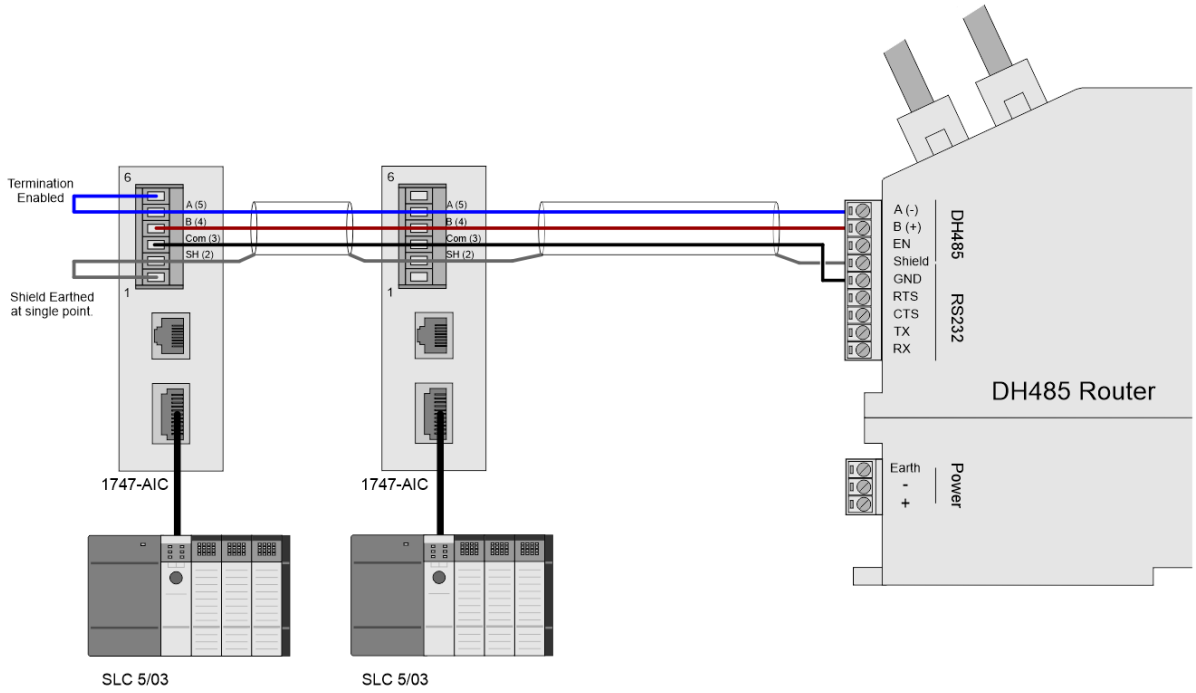


FIGURE 3.2. – SERIAL CABLE PINOUT – 1747-AIC

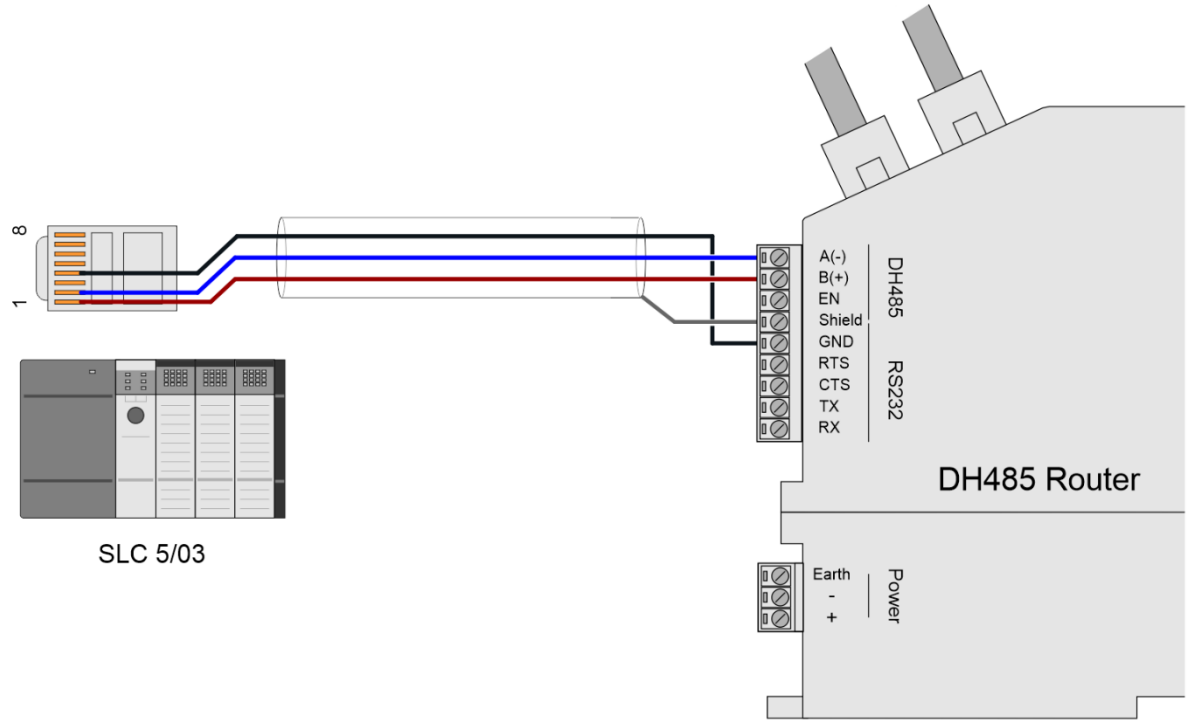


FIGURE 3.3. – SERIAL CABLE PINOUT – SLC DIRECT

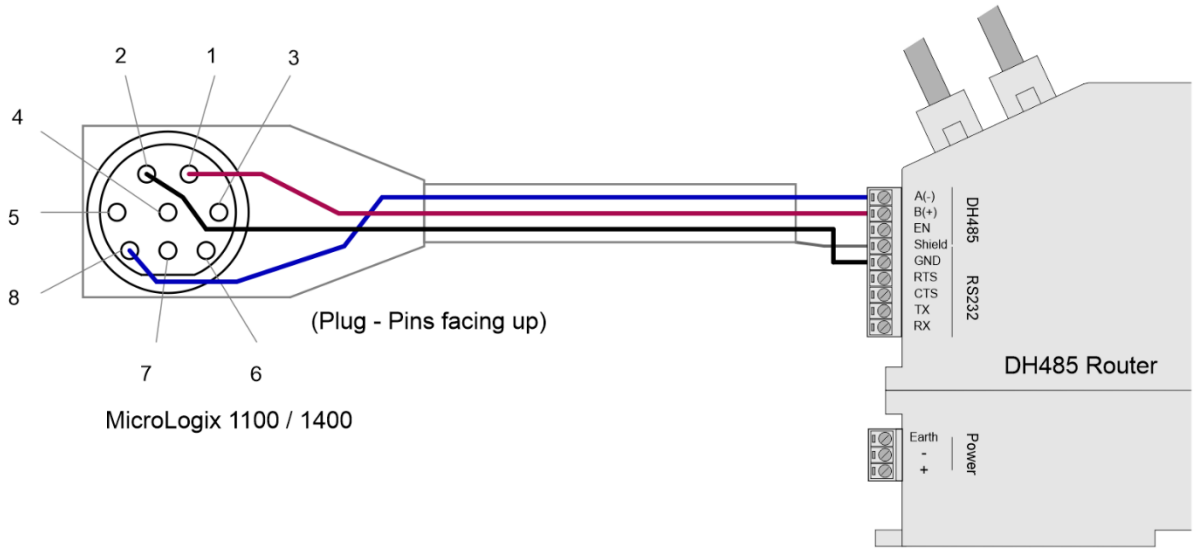


FIGURE 3.4. – SERIAL CABLE PINOUT – MICROLOGIX 1100

All RS485 networks need to be terminated at the extremities (start and end point) of the communication conductor. The termination is done by placing a resistor between the positive and negative communication conductor. The value of the resistor will depend on the characteristic impedance of the cable chosen, but generally ranges from 100 Ohm to 150 Ohm.

The DH485 Ground Bridge should be enabled and the user can also enable the DH485 Router internal RS485 terminator in the module configuration in Slate (see below):

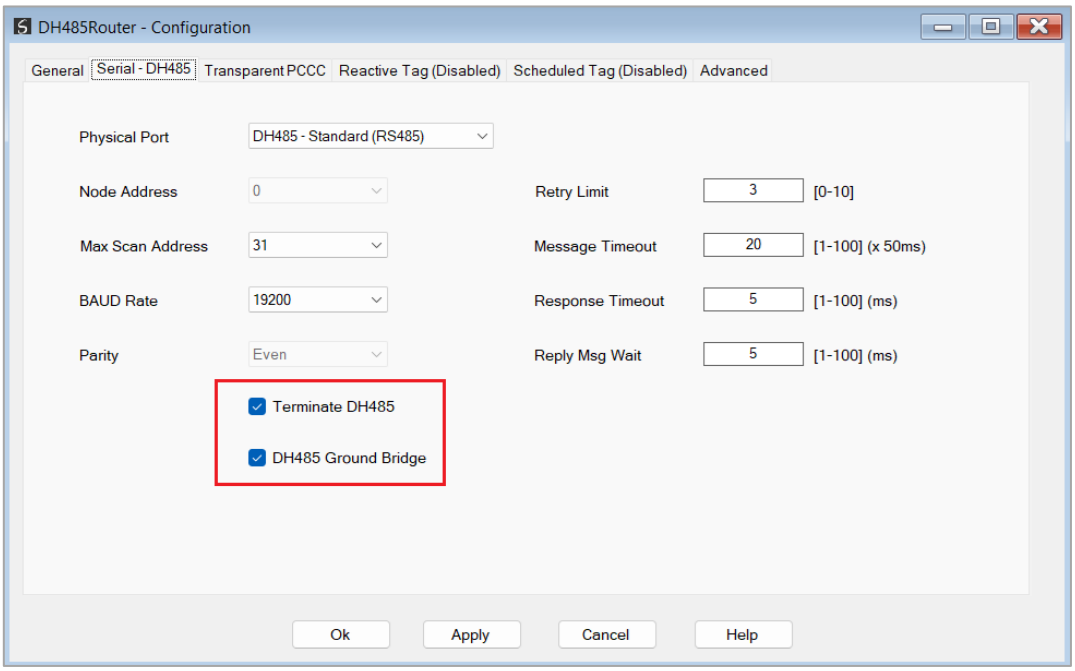


FIGURE 3.5. – INTERNAL RS485 TERMINATION

## 3.3. DH485 ROUTER SETUP

The DH485 Router must be configured in Transparent PCCC mode, as shown below.

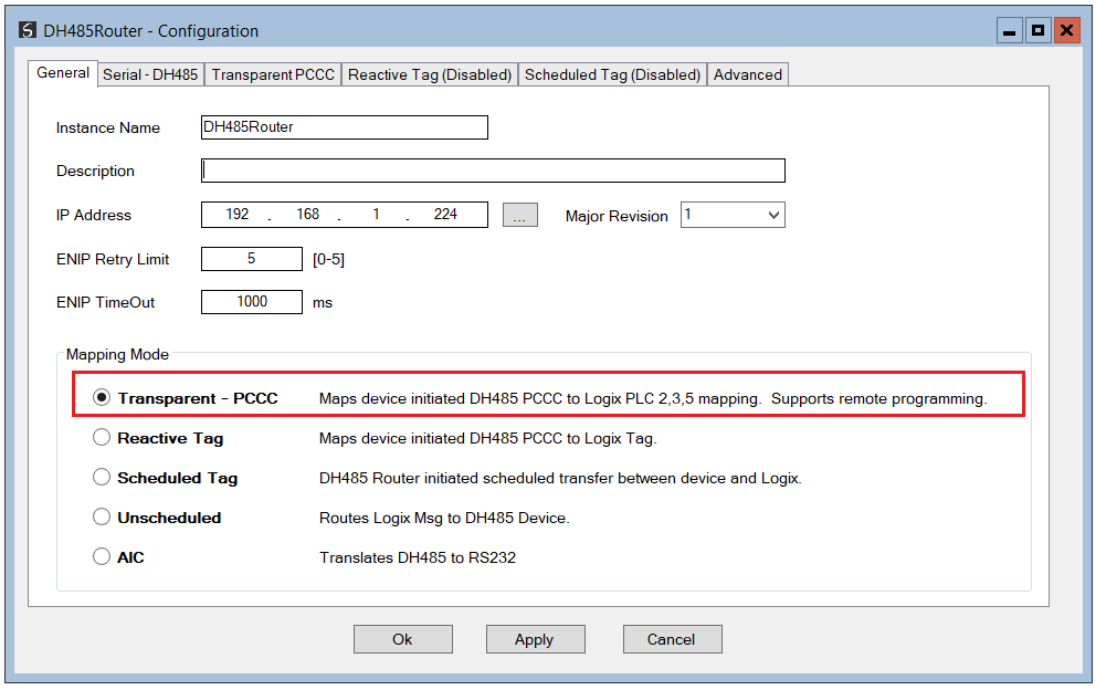


FIGURE 3.6. – DH485 GENERAL CONFIGURATION

In the Serial-DH485 settings, the BAUD Rate must match that of the SLC device (as configured using RSLogix 500).

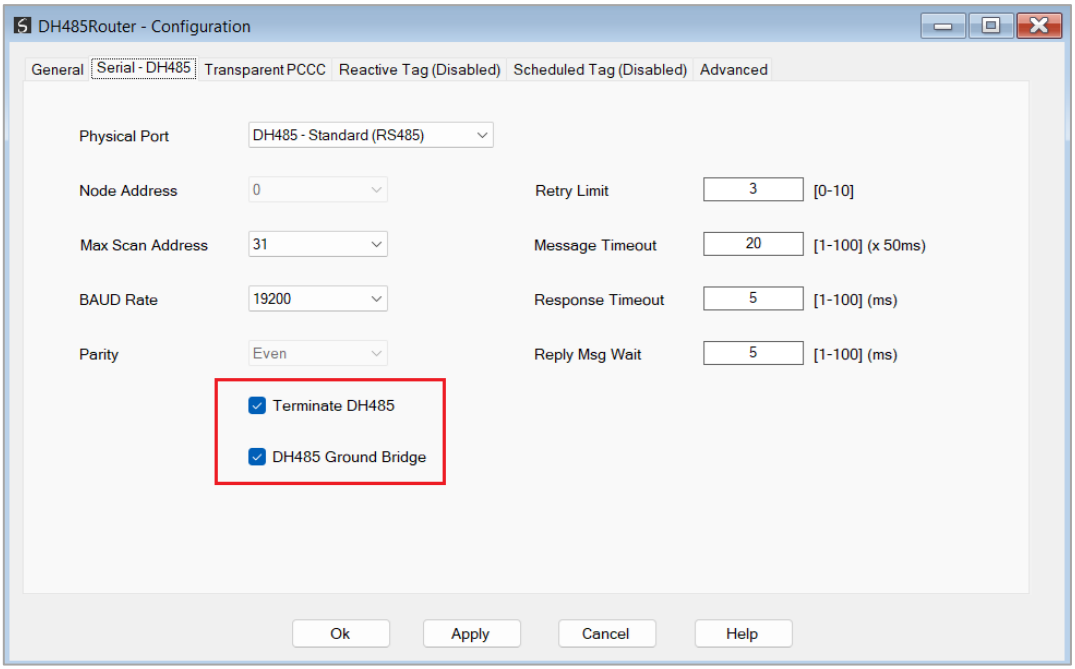


FIGURE 3.7. – DH485 SERIAL CONFIGURATION

**NOTE:** At least one transparent mapped item must be added for the SLC500 programming to work on DH485. If the DH485 Router is used purely for communicating to the PanelView then the user can add a DH485 Node of zero with an IP address matching the PanelView connected. The reason for this is because the DH485 Router requires a node on the network.

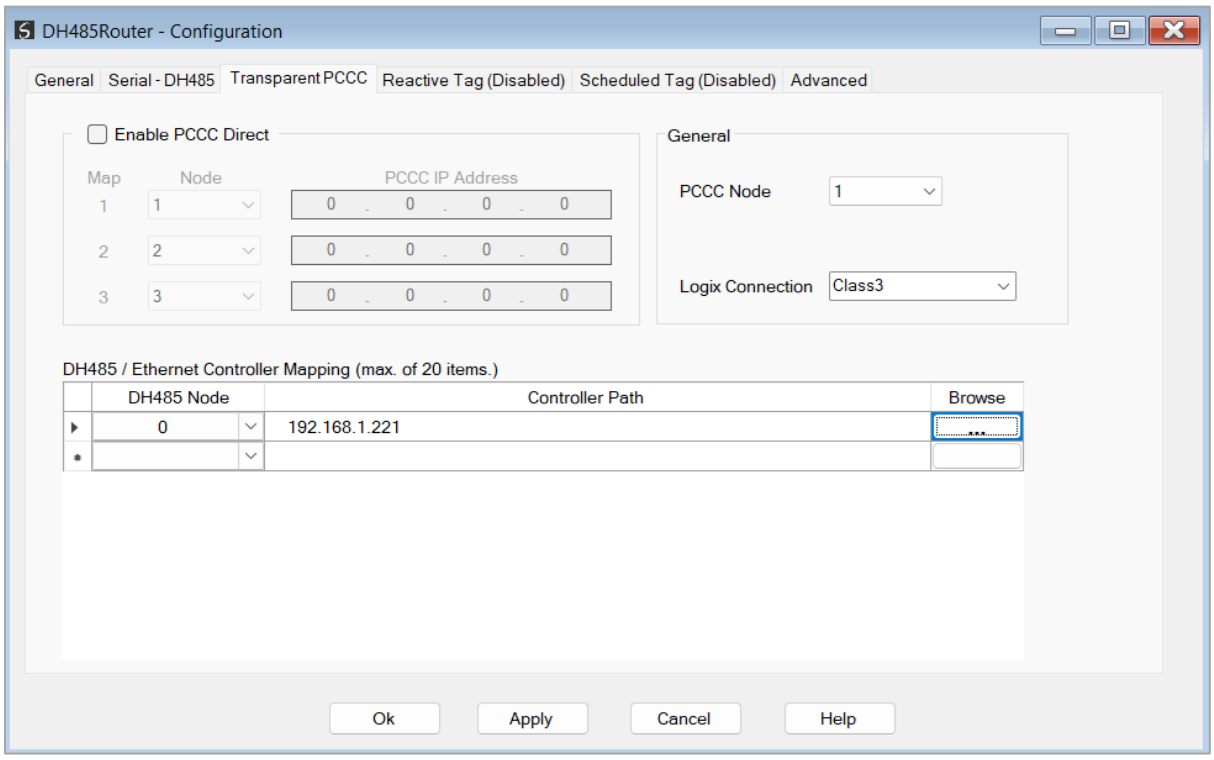


FIGURE 3.8. – TRANSPARENT PCCC CONFIGURATION

## 3.4. RSLOGIX 500 SETUP

Using RSLogix500, the DH485 port must be configured to match that of the DH485 Router's serial port settings with respect to BAUD rate.

## 3.5. PANELVIEW 800 SETUP

Open Connected Components Workbench and create a new project. The user will be prompted to add a device. Select a PanelView 800 model under the Graphical Terminals and press *Select* followed by *Add to Project*.

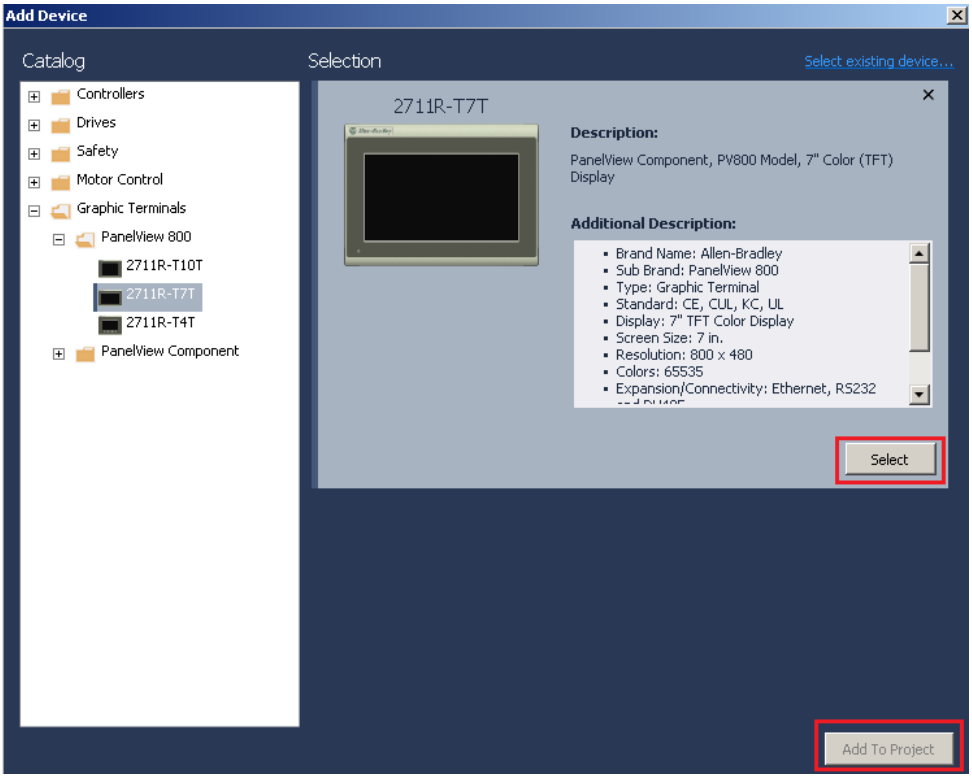


FIGURE 3.9. – PANELVIEW 800 ADD

The PanelView 800 (PV800) will now be added to the project tree on the left.

### 3.5.1. COMMUNICATION SETTING

Double click on the PV800 application in the tree to go to the settings page. The user will first need to setup the communication for the PV800.

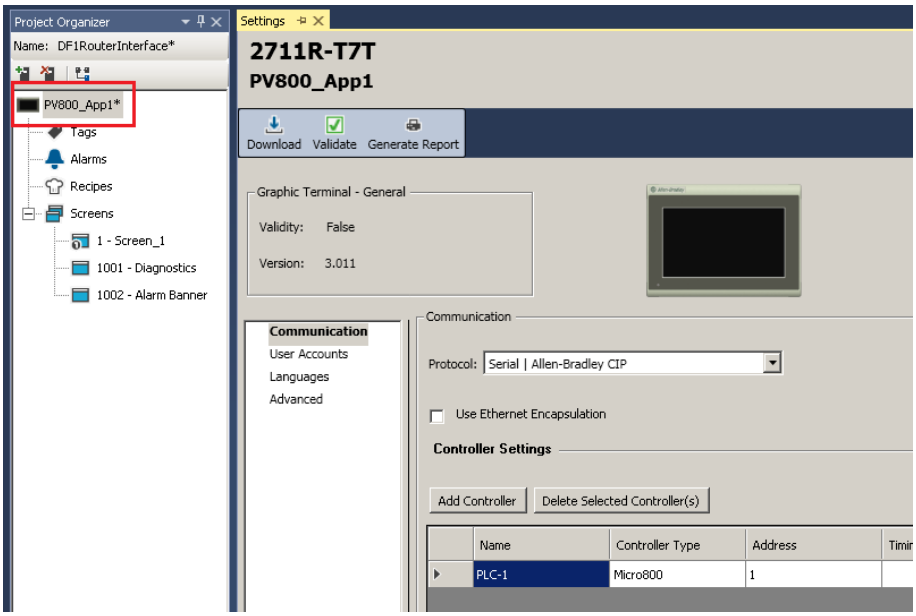


FIGURE 3.10. – PV800 APPLICATION COMMUNICATION SETTINGS

Next the user will need to select the MircoLogix/ENI Protocol from the drop-down menu:

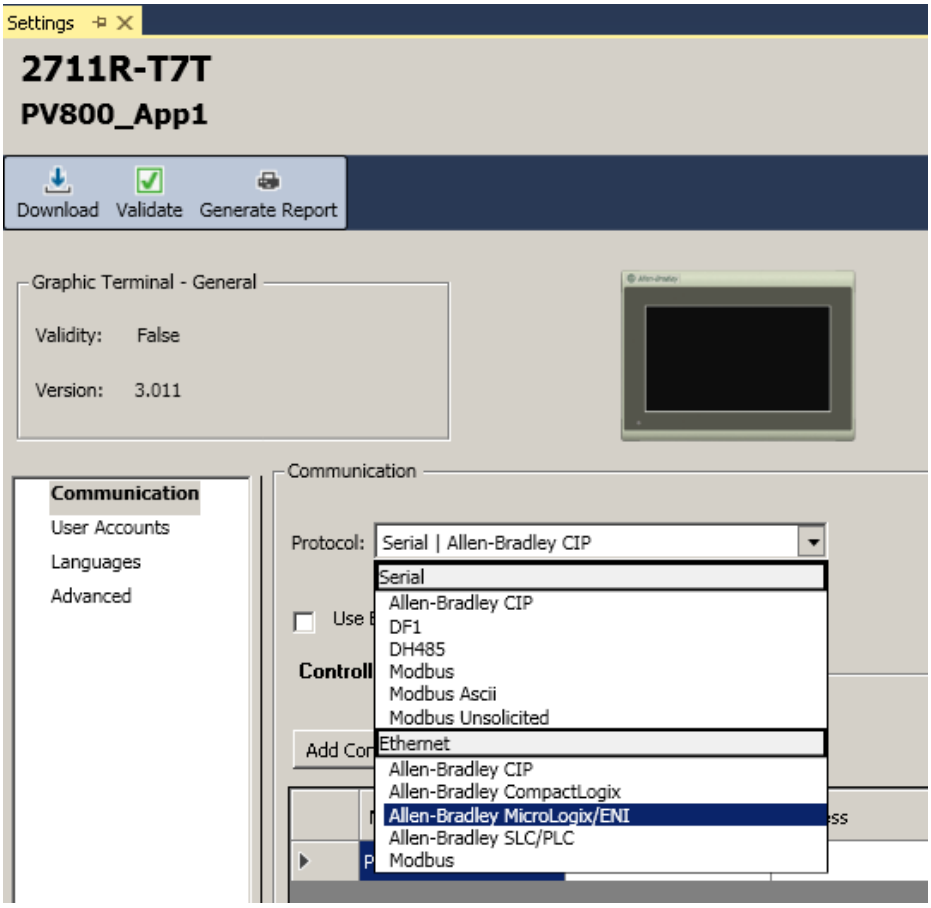


FIGURE 3.11. – PROTOCOL SELECTION

The user will need to select the MicroLogix 1400 Controller Type for any SLC or MicroLogix device that the PV800 will interface to. Enter the **IP Address of the DH485 Router** in the address textbox.

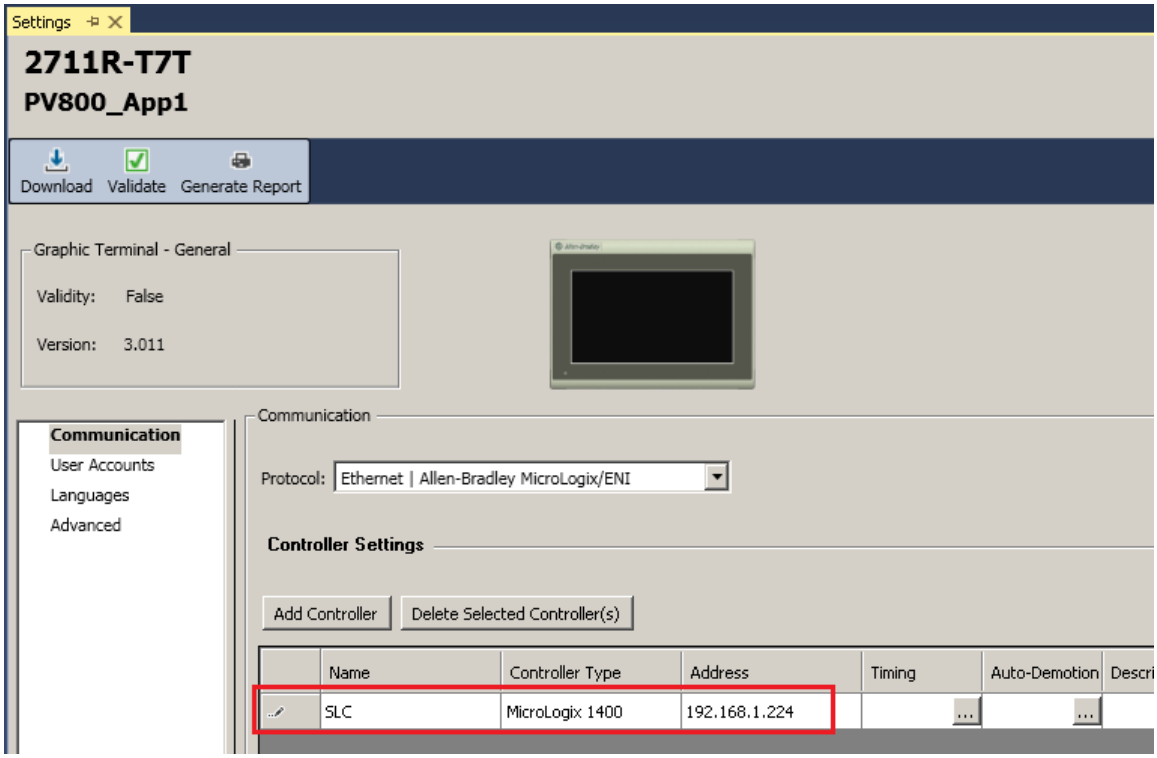


FIGURE 3.12. – COMMUNICATION PARAMETERS

### 3.5.2. TAG SETUP

Next the user will need to setup a Tag which the PV800 can use to communicate with the SLC/MircoLogix controller. The Tag Editor can be found by double clicking on the Tags in the project tree.

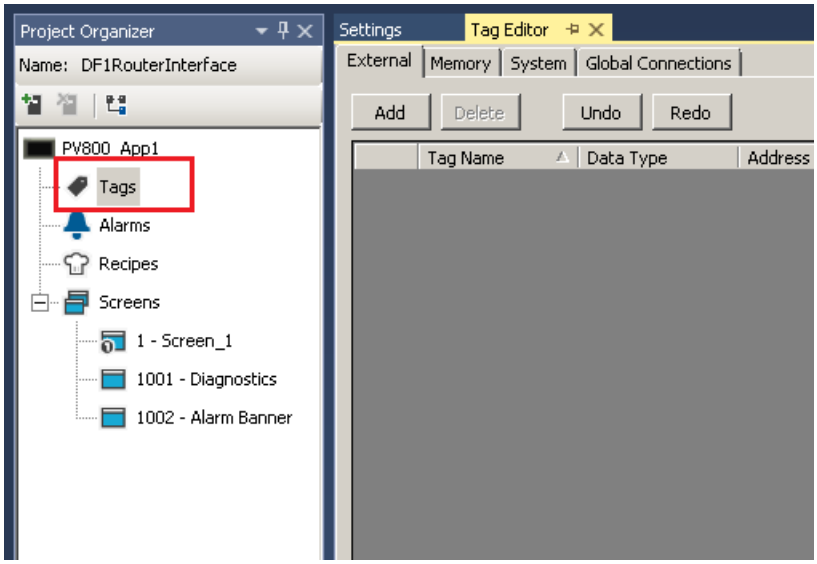


FIGURE 3.13. – OPENING THE TAG EDITOR

The user must first select the controller to be used. This will be the same as the one selected in the communication settings (can be selected from a drop-down menu). The user must then select the request communication address as well as the data type.

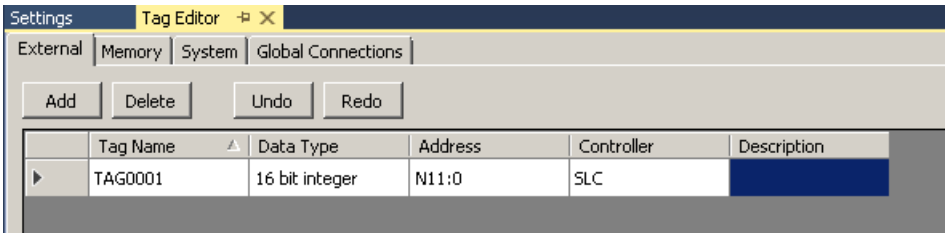


FIGURE 3.14. – TAG PARAMETERS

### 3.5.3. TESTING COMMUNICATION

To test the communication, the default screen can be selected by double-clicking on it in the project tree.

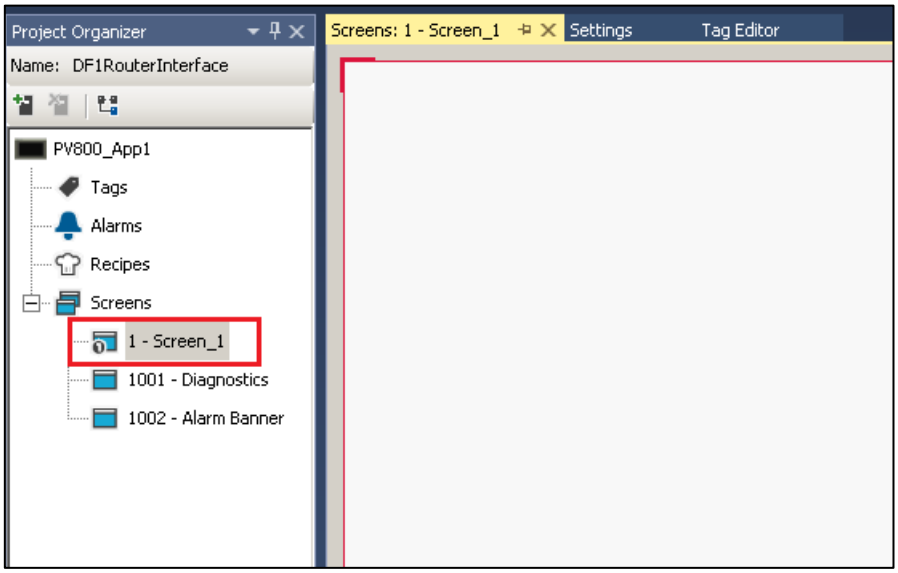


FIGURE 3.15. – DEFAULT SCREEN

The user will first need to add the Goto Terminal Config button to the display. The user can then add a Numeric Display as well which will be used to show the value of the tag.

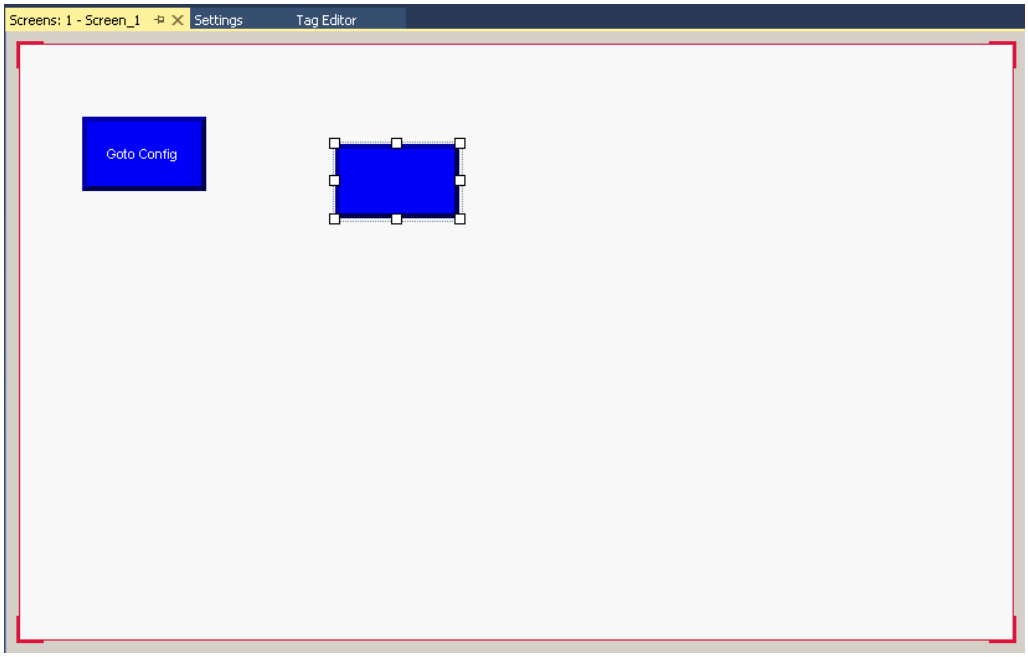


FIGURE 3.16. – NUMERIC DISPLAY ADDED

Next the user will need to assign the Tag created (TAG0001) to the numeric display. This is done by right-clicking on the numeric display and selecting properties. The properties window will generally be opened on the right-hand side of the screen. Under the Connections tab the user will need to select the Read Tag that will be used.

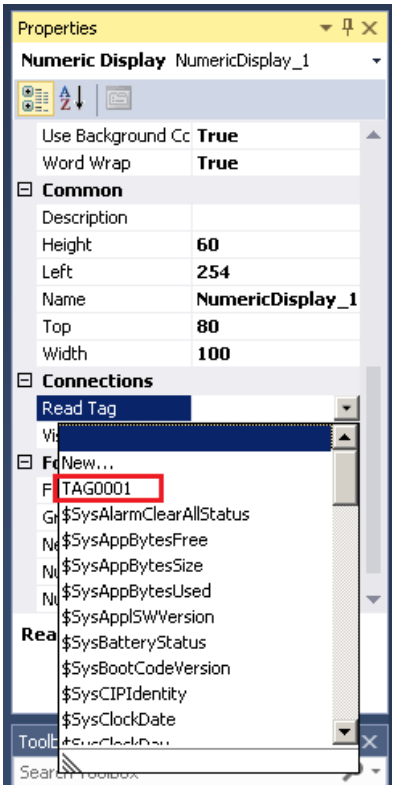


FIGURE 3.17. – READ TAG SELECTED

Once this is done the user can download the application to the PV800. This is done by right-clicking the Application in the project tree and selecting download.

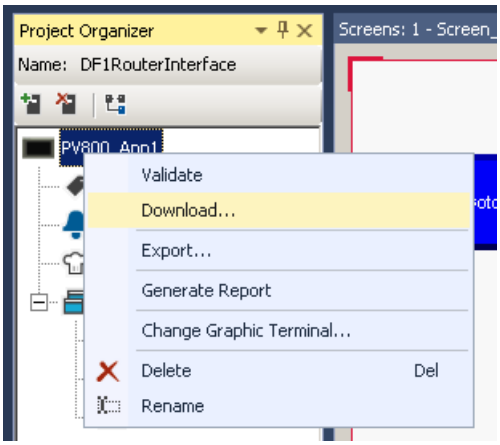


FIGURE 3.18. – DOWNLOAD APPLICATION

The user will need to select the PV800 to which the application must be downloaded in the Connection Browser.

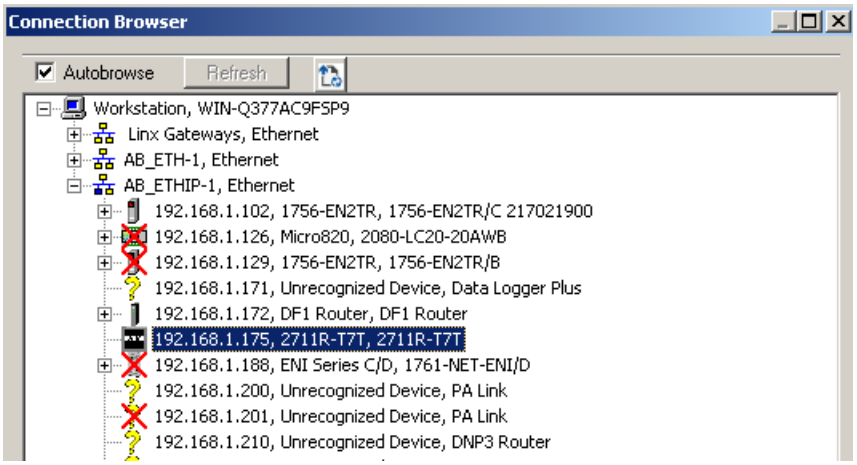


FIGURE 3.19. – PANELVIEW SELECT

Once the application has been downloaded the user can verify the communication operation by viewing the actual PV800 to which the application was downloaded.

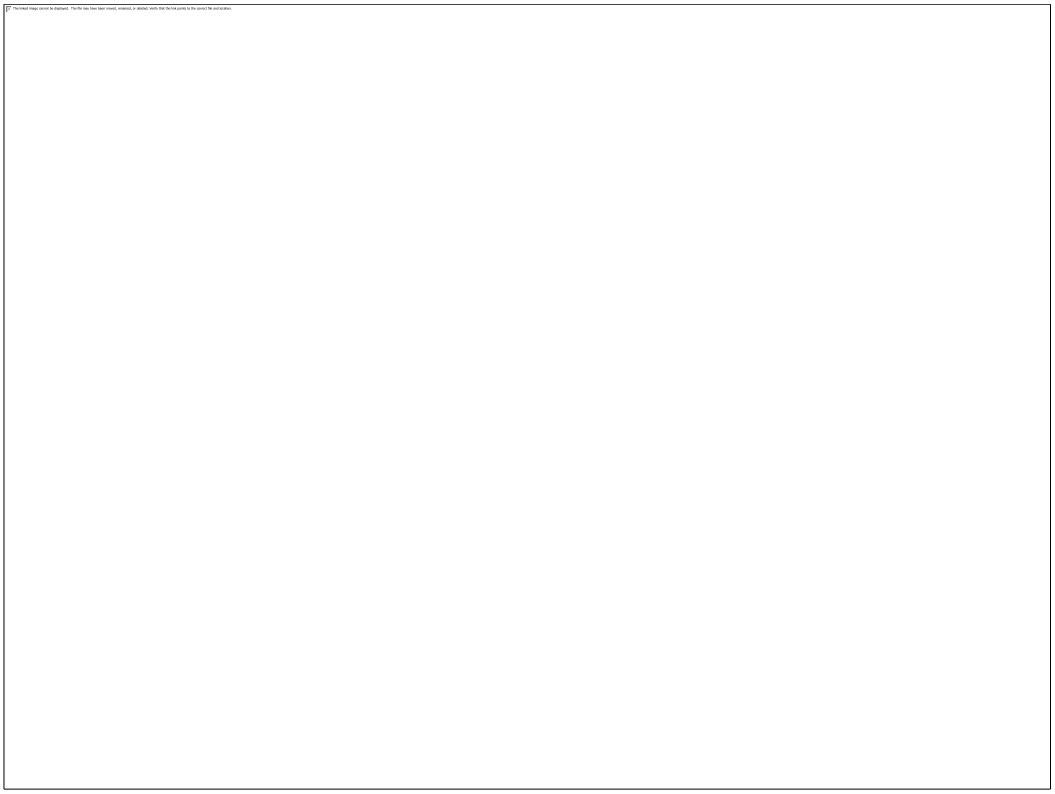

FIGURE 3.20. – ACTUAL PANELVIEW