Getting Started with ProcessLogix R310.0

This Quick Start guide describes the tasks you will need to complete to become familiar with the ProcessLogix™ system, including:

- starting the software
- creating a controller
- creating digital and analog I/O modules
- assigning modules to a Controller Execution Environment (CEE)
- configuring a Peer-to-Peer Block
    - creating a Control Module
    - building the Peer-to-Peer Block
    - downloading the Control Module to the 1757-PLX52 Process Controller module
    - verifying proper operation
- creating a PID Loop
    - creating a Control Module
    - building the PID loop
    - downloading the Control Module to the 1757-PLX52 Process Controller module
    - verifying proper operation
- viewing pre-built screens
- shutting down the system

This chapter also explains what you need to do before you begin installing the system. Refer to the ProcessLogix Hardware Installation Instructions, publication 1757-IN901A-US-P for information on the components that make up your ProcessLogix system

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this manual we use notes to make you aware of safety considerations

ATTENTION	Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss.

Attention statements help you to:

- identify a hazard
- void a hazard
- recognize the consequences

IMPORTANT	Identifies information that is critical for successful application and understanding of the product.

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| **ATTENTION** | The ProcessLogix R310.0 server runs on Microsoft Windows NT 4.0 (Service Pack 5). |

The tasks described in this Quick Start represent a sample program. This program is not intended for actual process control applications. After you have completed the tasks in this sample program, you can use the sample to guide you as you program your own process control application.

When completing the tasks in this Quick Start, always use the parameter names we suggest so that the pre-built screens provided with the ProcessLogix system work correctly.

Before You Begin

Before you begin installing the system, ensure that you have already:

- installed the chassis and power supply
- installed the 1757-PLX52 Process Controller module
- installed the CNB module
- installed the analog and digital I/O modules you want to use in your system
- set up and configured the ProcessLogix server

We explain how to do all of these tasks in the *ProcessLogix Hardware Installation Instructions*, publication 1757-IN901A-US-P.

| **TIP** | For details on installing ProcessLogix software on a ProcessLogix server, refer to the *ProcessLogix Installation and Upgrade Guide* for the most current ProcessLogix release. For R310.0, the publication number is 1757-IN031A-US-P. |

Starting the Software

In this section, we explain how to start:

- The ProcessLogix server program
- Control Builder software

TIP
▶

The System Repository is a database that contains information about your control environment. The CDA program controls communications between ProcessLogix server applications and RSLinx™ communication software. The System Repository and the CDA program are both Windows NT Services that start automatically.

Verifying ControlNet nodes and I/O modules

The CDA program starts up RSLinx and all configured drivers for ControlNet communications from the server to the controller backplane.

You should verify the ControlNet nodes and the I/O modules you will be using in your system. For purposes of illustration, we will use two ControlNet nodes:

- ControlNet module with address 1 at slot 0 in the chassis (To set the node address, adjust the rotary switches on top of the module. See the schematic on the right side of the module for a guide to selecting the address), and
- the ProcessLogix server at ControlNet address 20 (set in RSLinx Software)

TIP
▶

If the LED on the front of the ControlNet module reads ERR, no other ControlNet devices are present on the network.

Verify the ControlNet nodes using NTOOLS:

1. To view chassis configuration click on Start $\Rightarrow$ Programs $\Rightarrow$ ProcessLogix Engineering Tools $\Rightarrow$ NTOOLS.

2. Click OK.

3. Click on NetworkTools $\Rightarrow$ Settings.

4. Select the Ping radio button.

5. Click OK.

6. Click on NetworkTools $\Rightarrow$ Ping.

7. Click on 01 Series R CNI. Set the number of slots in Local Chassis Settings to match your chassis size (this is a one-time setting), and click OK.

8. Verify that all I/O modules appear as configured in the chassis.

9. Exit NTOOLS by clicking on NetworkTools $\Rightarrow$ Exit.

Starting the ProcessLogix server

The ProcessLogix Server program is the operating system for the ProcessLogix server. To start the server:

1. Click on Start $\Rightarrow$ Programs $\Rightarrow$ ProcessLogix Server $\Rightarrow$ Start-Stop ProcessLogix Server.

2. On the dialog box that appears, click on the Start button. (If server is already started, skip to next section).

3. A dialog box asking you if you are sure you want to start the server appears. Click on Yes.

> **TIP**
>
> ▶
>
> You may experience a delay while the system launches all server tasks and services.

Turning off areas

Areas are portions of a process you wish to control. This Quick Start assumes that areas are turned off. To turn off areas:

1. Click on Start ⇒ Programs ⇒ ProcessLogix Server ⇒ Station.

2. Select Configure ⇒ Areas.

3. Access manager mode.
   a. Click on "Oper" in the bottom right of the screen. You see a flashing cursor in a box in the upper right corner of the screen (below the toolbar).
   b. Type mngr (lower case).
   c. Press the Enter key. "Oper" changes to "Mngr".

4. To disable areas, uncheck the Areas Enable check box.

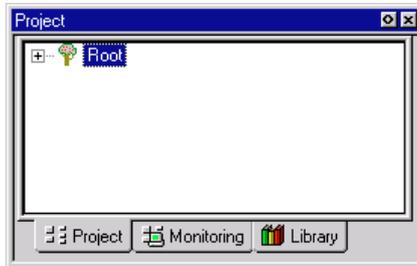

5. Exit Station.

Starting Control Builder

Control Builder software is an application you use to develop Control Modules and Sequential Control Modules. The Control Modules and Sequential Control Modules are downloaded to the 1757-PLX52 Process Controller module.

To start Control Builder:

1. Click on Start ⟹ Programs ⟹ ProcessLogix Engineering Tools ⟹ Control Builder.

2. A Login Information window appears. Enter your user name "mngr" (lowercase) and password "mngr1" (lowercase). Click OK.

3. Control Builder starts up displaying a "tree" view:



We describe the available trees in the following table:

this tree view:	shows you:
Project	the offline copy of your project
Loaded/Monitoring	The loaded or runtime (currently monitoring) copy of the application executing on the 1757-PLX52 Process Controller module
Library	• available I/O modules (IOM) • available function blocks for use in Control Modules • available function blocks for use in Sequential Control Modules. • available control component libraries (CCLs)

Once you have opened Control Builder, you can begin configuring your hardware.

Creating a Controller

The first step in configuring your hardware is to create a controller.

1. In Control Builder, select File $\Rightarrow$ New $\Rightarrow$ Controller $\Rightarrow$ C200 Controller. Realize that C200 Controller = PLX52. You see the New Controller dialog box:
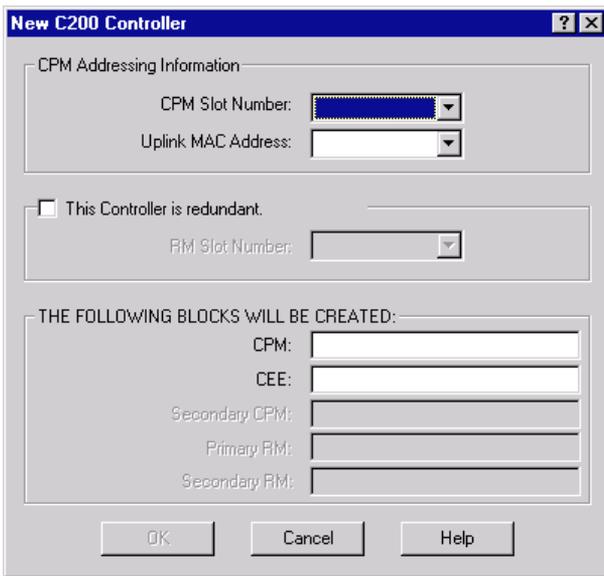
2. In the New Controller dialog box, select the following:

in this field:	select:
CPM Slot Number	01
Uplink MAC Address	01 (for the ControlNet CNB card)

TIP

As you enter the CPM slot number and the uplink MAC address, notice the CPM and CEE name fields on the bottom half of the New Controller dialog box. You will see that the CPM and CEE names are assigned automatically. You can change the CPM or CEE name by clicking on the CPM or CEE name field and typing a new name.

If you want to change the CPM or CEE name, do so now, since the CPM and CEE names reference all screen and tag names in the server database.

3. Click on OK to close the New Controller dialog box.

4. Click OK to close the Parameters Configuration dialog box.

5. To see your newly configured CPM and CEE, click the Project tab.

TIP

To see the CPM and CEE, you may need to expand the Root branch of your tree by clicking on the small "+" sign to the left of the word Root.

The CEE is listed under the CPM and is connected directly to it. This tells you that the CEE is assigned to the CPM.

6. Enter the server parameters by following these steps:
   a. Under the Project tab, double-click on the CPM0101 icon.
   b. Select the Server Parameters tab.
   c. Enter the following parameters (non-case-sensitive), and click OK.

in this field:	for the CPM, enter:	for the CEE, enter:
Point Detail Page	sysdtlcpma.dsp	sysdtlceea.dsp
Group Detail Page	sysgrpcpma.dsp	sysgrpceea.dsp

7. Load the CPM and the CEE:

   a. In the project tab, click on CPM0101.

   b. From the Toolbar Menu, click on the green down arrow.

   c. The *Load* dialog box appears. Verify the selected object is CPM0101, and click on Continue.

   d. Verify that the loaded CPM and CEE can be seen on the Monitoring Tab
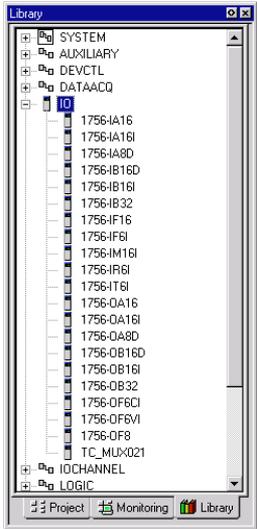
TIP ▶

Loading the CPM also loads the corresponding CEE. To see the CPM and CEE in the Monitoring tab, you may need to expand the Root branch of your tree by clicking on the small "+" sign to the left of the word Root. The CPM should appear green.

Configuring I/O Modules

Once you have created a controller, the next step is to configure the I/O modules you will use in your system.

Before you can configure a module, you must add it from the library to your project:

1. Click on the Library tab.

2. Click the "+" to the left of the I/O icon to see a list of available modules.

```
Library                    [icons]
  SYSTEM
  AUXILIARY
  DEVCTL
  DATAACQ
  IO
        1756-IA16
        1756-IA16I
        1756-IA8D
        1756-IB16D
        1756-IB16I
        1756-IB32
        1756-IF16
        1756-IF6I
        1756-IM16I
        1756-IR6I
        1756-IT6I
        1756-OA16
        1756-OA16I
        1756-OA8D
        1756-OB16D
        1756-OB16I
        1756-OB32
        1756-OF6CI
        1756-OF6VI
        1756-OF8
        TC_MUX021
  IOCHANNEL
  LOGIC
  Project    Monitoring    Library
```

3. Create the I/O module blocks by dragging and dropping these modules from the Library tab to the Project tab (on the second tree display).

Be sure to add the modules in the order listed here so that ProcessLogix automatic module numbering conventions work correctly.

— 6-channel isolated analog input module (1756-IF6I)
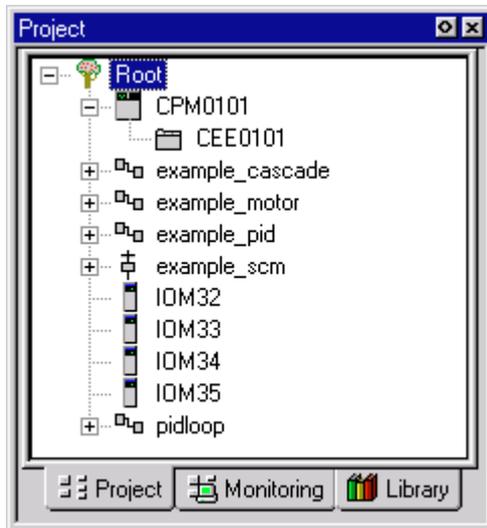— 6-channel isolated analog output module (4-20 MA; 1756-OF6CI)

or

— 6-channel isolated analog output module (voltage output; 1756-OF6VI)

and

— 16-channel isolated digital input module (24V DC; 1756-IB16I)
— 16-channel isolated digital output module (24V DC; 1756-OB16I)

TIP	In the Project tab, you can see the modules displayed after the heading IOMxx under Root.

Configuring analog input modules

To configure an analog input module:

1. Double-click on the IOM with the lowest number after it (for example, IOM32). This will bring up the window for the 6-channel isolated analog input module (1756-IF6I).

TIP

IOM32 is an example of the automatic module numbering convention. We will provide you with an example module number as we show you how to configure all the I/O modules. The module numbers you see in your application may vary.

2. On the IOM Configuration window that is displayed, select the Main tab and enter the following parameters:

in this field:	enter:
Module Name	LabAI
IOM Slot Number	the slot number containing this module (remember that chassis numbering begins with 0)
Remote I/O Chassis Mac Address	0
CNI Slot Number	0

3. Select the Channel Configuration tab and enter the following parameters for all channels:

in this field:	select:
Input Range	0V to 10V
Notch Filter	60Hz

4. Select the Server Parameters tab and enter the following (non-case-sensitive) parameters:

in this field:	enter:
Point Detail Page	sysdtlaia.dsp
Group Detail Page	sysgrpaia.dsp

5. Click on OK.

Configuring analog output modules

To configure the analog output modules:

1. Double-click on the IOM with the lowest number after it (for example, IOM33). This will bring up the window for the 6-channel isolated analog output module (1756-OF6CI; current output, or 1756-OF6VI; voltage output).

2. On the IOM Configuration window that is displayed, select the Main tab and enter the following parameters:

in this field:	enter:
Module Name	LabAO
IOM Slot Number	the slot number containing this module
Remote I/O Chassis Mac Address	0
CNI Slot Number	0

3. Select the Channel Configuration tab and enter the following parameters for all channels:

in this field:	enter:
Shed to Safe Value	unchecked (de-select the check mark)
Calibration Bias	0.0

4. Select the Server Parameters tab and enter the following (non-case-sensitive) parameters:

in this field:	enter:
Point Detail Page	sysdtlaoa.dsp
Group Detail Page	sysgrpaoa.dsp

5. Click on OK.

Configuring digital input modules

To configure a digital input module:

1. Double-click on the IOM with the lowest number after it (for example, IOM34). This will bring up the window for the 16-channel, 24V DC isolated analog input module (1756-IB16I).

2. On the IOM Configuration window that is displayed, select the Main tab and enter the following parameters:

in this field:	enter:
Module Name	LabDI
IOM Slot Number	the slot number containing this module
Remote I/O Chassis Mac Address	0
CNI Slot Number	0

3. Select the Module Configuration tab.

4. In the Filter Times fields, select 1MSDELAY for all channels.

Filter Times	OFF -> ON	ON -> OFF
Channels 0 - 7	1MSDELAY	1MSDELAY
Channels 8 - 15	1MSDELAY	1MSDELAY

5. Select the Server Parameters tab and enter the following (non-case-sensitive) parameters:

in this field:	enter:
Point Detail Page	sysdtldia.dsp
Group Detail Page	sysgrpdxa.dsp

6. Click on OK.

Configuring digital output modules

To configure a digital output module:

1. Double-click on the remaining IOM with a number. This will bring up the window for the 16-channel, 24V DC isolated analog output module (1756-OB16I).

2. On the IOM Configuration window that is displayed, select the Main tab and enter the following parameters:

in this field:	enter:
Module Name	LabDO
IOM Slot Number	the slot number containing this module
Remote I/O Chassis Mac Address	0
CNI Slot Number	0

3. Select the Server Parameters tab and enter the following (non-case-sensitive) parameters:

in this field:	enter:
Point Detail Page	sysdtldoa.dsp
Group Detail Page	sysgrpdoa.dsp

4. Click on OK.

Assigning Modules to a Controller Execution Environment

Once you have configured I/O modules, you must assign them to the controller execution environment (CEE).

To assign modules to the CEE:

1. From Control Builder, select Tools ⟹ Assign.
You will see the Controller Assignments window:
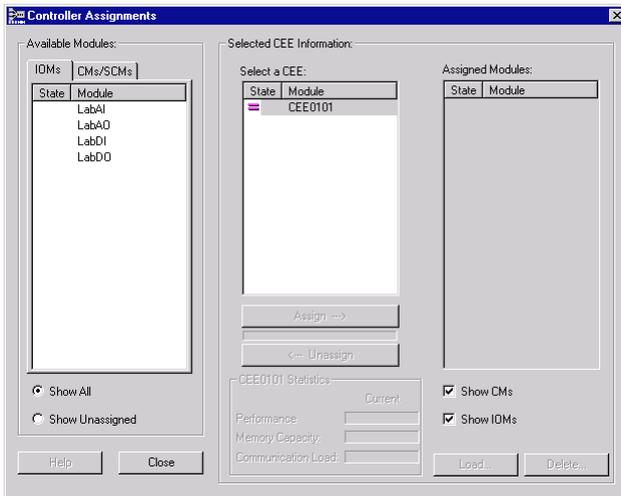
2. Click on the IOMs tab in the Available Modules area.

3. Select all four modules. To select all four modules, click on the first module, hold down the Shift Key and click on the last module.

4. Select the correct CEE from the CEE list box.

5. Click on Assign. After a few seconds, you see the IOMs displayed in the Assigned Modules list box.

6. Select all of the IOMs from the Assigned Modules List box.

ATTENTION

Load only the I/O modules that physically exist in the chassis.

---

7. Click on Load. When prompted, click OK to load the Project Version.

8. Click on Continue to load the selected objects to the CEE.

TIP

After the input modules are loaded from Control Builder, the status LEDs stop blinking and glow steady green on the actual hardware input module. The output module will continue to flash until the PLX52 is put into run mode.

9. Close the Controller Assignments window.

Configuring a Peer-to-Peer Block

In this section, we explain how to configure peer-to-peer communications. If you are not using peer-to-peer communications in your system, you may skip this section and Refer to Creating a PID Loop on page 26.

Before You Begin

Before you begin configuring a peer-to-peer block, ensure that you already:

- installed RSLogix5
- installed the 1771 chassis
- installed the 1785-L80C or equivalent
- installed 1771-P4S
- installed ControlNet taps, cable, and terminators

We explain how to do all of these tasks in the related 1771 and 1785 Installation Instructions.

There are a number of different peer-to-peer configurations. For the purposes of this illustration, we are configuring a PLC-5 with address 2.
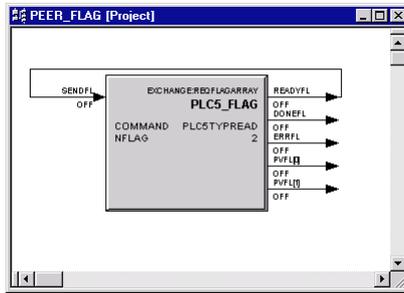
Creating the Control Module

1. Create a new Control Module by clicking on File $\Rightarrow$ New $\Rightarrow$ Control Module. You see a blank window for the Control Module in the center of your screen.

2. Rename the Control Module:
   a. Double-click anywhere in the palette. You see the Parameter window.
   b. In the Name field, enter PEER_FLAG.

3. Click on OK to close the Parameter window.

4. Save your changes by clicking on File $\Rightarrow$ Save. Notice that the new Control Module name appears in the Project Tab.

5. Close the Control Module PEER_FLAG.

Assigning the Control Module to the Controller Execution Environment

To assign the Control Module PEER_FLAG to the CEE:

1. From Control Builder, select Tools $\Rightarrow$ Assign.

2. On the Controller Assignments window, select the CMs/SCMs tab.

3. Select PEER_FLAG from the list box in the Available Modules area of the screen.

4. Click on Assign. The PEER_FLAG module is displayed in the Assigned Modules list box.

5. Close the Controller Assignments window.

Building the Peer-to-Peer Block

1. In the Project tab, open the Control Module by double-clicking on PEER_FLAG.

2. Click on the Library tab.

3. Display the available EXCHANGE function blocks by clicking on the "+" to the left of the EXCHANGE control component library in the Library tree display.

4. Select a REQFLAGARRAY block by clicking on it. Move the block by dragging it to the area of the chart where you want it.

Wire the block

1. Double-click on the READYFL wire. The cursor changes to a "+".

2. Click on the SENDFL wire.

> **TIP**
>
> For additional wire segments as you draw your wire, click the left mouse button.

Configure parameters

1. On the REQFLAGARRAY block, double-click in the gray area. You see the REQFLAGARRAY Parameters window.

2. Enter these parameters:

in this field:	enter:
Name	PLC5_FLAG
Command	PLC5TYPREAD
Number of Flag Values	2
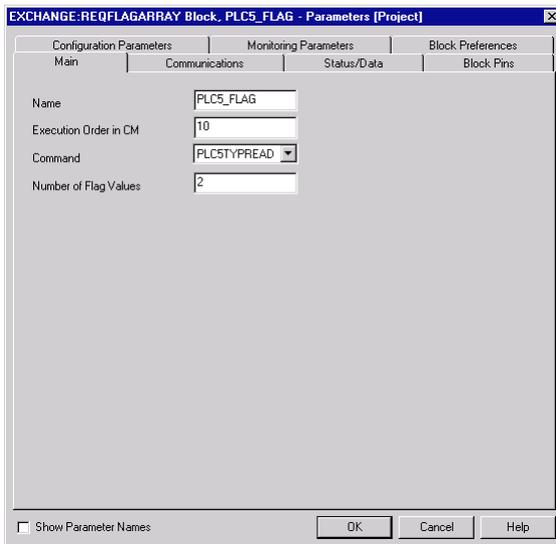
3. Click on the Communications tab.

4. Enter these parameters:

in this field:	enter:
Path to Device[1]	1,0,2,2
File Name in Target Device	B3:0

[1] The Path to Device indicates that the path is from the CPM through the CNB in slot 0 to a PLC5 that is on ControlNet with a MAC ID 2.
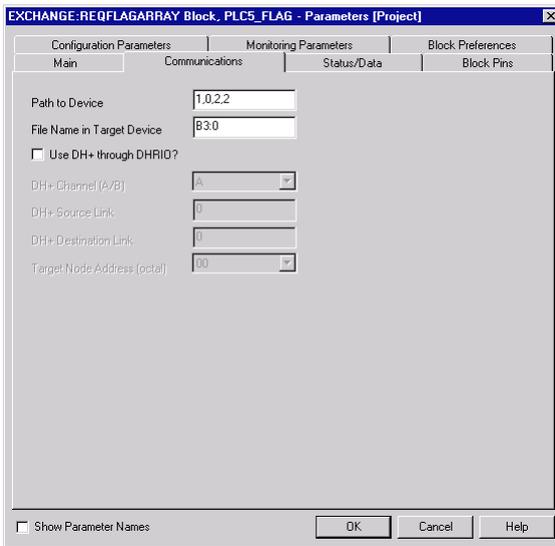
5. Click on the Block Pins tab.

6. Select PVFL from the Parameter list.

7. Set the Pin Position to be Output and Left/Right.

8. Select Array index 0 and click Add--->.

9. Select Array index 1 and click Add -->.

10. Click OK to close the Parameters window.
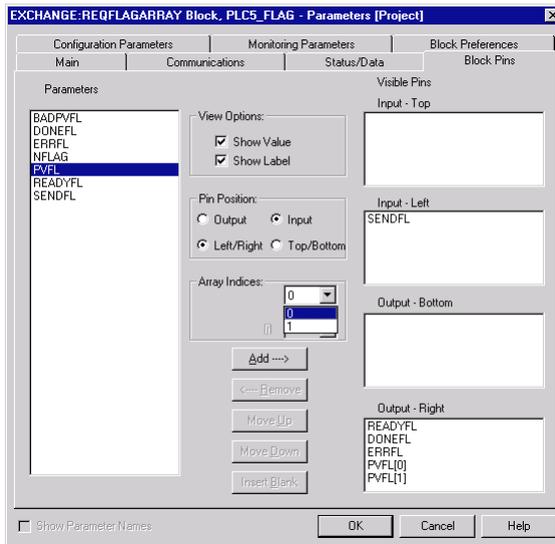
Save and Exit

1. Save your changes by clicking on File $\Rightarrow$ Save.

2. Close the Control Module PEER_FLAG. If prompted, select Yes to save changes.

Downloading the Function Block Diagram to the 1757-PLX52 Process Control Module

Use one of these two methods to download your function block diagram to the controller module.

Method 1

1. In Control Builder, select = from the toolbar to display the Controller Assignments window.

2. In the Assigned Modules list box, select PEER_FLAG.

3. Click on Load. Click OK to load the Project Version.

4. Click on Continue to load the selected object to the CEE.

5. When the load is complete (status bar at 100%; Load Complete message displayed,) close the Controller Assignments window.

Method 2

1. In the Project tab, click on PEER_FLAG.

2. From the Toolbar Menu, click on the green down arrow to download the function block diagram.

3. Click on Continue to load the selected object to the CEE

Changing the Control Execution Environment for the 1757-PLX52 Process Control Module from Inactive to Active

To execute your program, you must change the CEE from inactive to active. If the CEE is not already activated, follow these steps to change it to active:

1. In the Monitoring tab, click on CEE0101.

2. Select Operate $\Rightarrow$ Activate $\Rightarrow$ This CEE and its IOMs and CMs.

3. Click on Yes to change the state of the selected objects. You see the CEE and everything listed under it in the tree view under the Monitoring tab go solid green.

Verifying Proper Operation

1. Open RSLogix 5 by clicking on Start Menu ⟹ Programs ⟹ Rockwell Software ⟹ RSLogix 5 English ⟹ RSLogix 5 English.

For more information on using RSLogix5, Refer to RSLogix5 Help.

2. Go online by clicking on Comms ⟹ Go Online.

3. Open the Data File B3 by double clicking on it.

4. Change the value of B3/0 to 1.
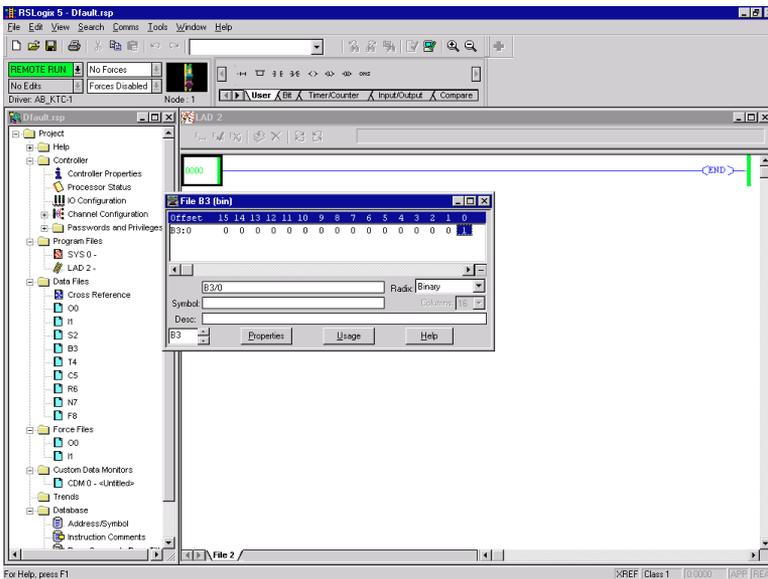
5. In Control Builder, in the Monitoring tab, open the control drawing by double-clicking on PEER_FLAG.

6. Verify that the ERRFL wire is red indicating there are no errors.

7. Verify that PVFL[0] value (displayed near the wire) changes to ON.

8. Close the diagram **without** saving your changes.

Creating a PID Loop

The next step is to create a Control Module to control a process. In this example, we will create a PID loop.

Creating the Control Module

To create the Control Module:

1. Create a new Control Module by clicking on File $\Rightarrow$ New $\Rightarrow$ Control Module. You see a blank window for the Control Module in the center of your screen.

2. Rename the Control Module:
   a. Double-click anywhere in the palette. You see the Parameter window.
   b. In the Name field, enter FIC102.

3. Select the Server tab and enter the following (non-case-sensitive) parameters:

in this field:	enter:
Point Detail Page	sysdtlpida.dsp
Group Detail Page	sysgrppida.dsp

4. Click on OK to close the Parameter window.

5. Save your changes by clicking on File $\Rightarrow$ Save. Notice that the new Control Module name appears in the Project Tab.

6. Close the Control Module FIC102.

Assigning the Control Module to the Controller Execution Environment

To assign the Control Module for the PID loop to the CEE:

1. From Control Builder, select Tools ⟹ Assign.

2. On the Controller Assignments window, select the CMs/SCMs tab.

3. Select FIC102 from the list box in the Available Modules area of the screen.

4. Click on Assign. The FIC102 module is displayed in the Assigned Modules list box.

5. Close the Controller Assignments window.

Building the PID Loop

To develop the PID loop:

1. In the Project tab, open the Control Module by double-clicking on FIC102.

2. Click on the Library tab.

3. Display the available function blocks by clicking on the "+" to the left of the appropriate library in the tree display.

4. To select a block, click on it.

5. To move the block to your diagram, drag it to the area of the chart where you want it.

6. Rename the block by double-clicking on the block to bring up the Parameters window.
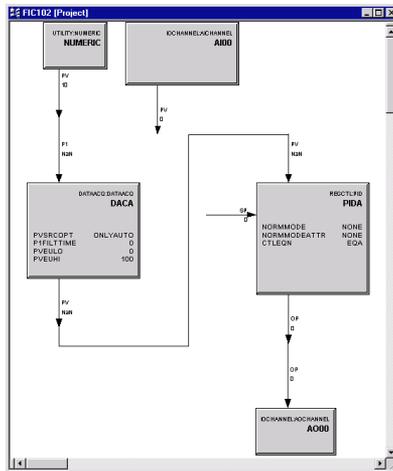
7. Add the following function blocks to the Control Module:

function block	name
AI Channel	AI00
Dataacq	DACA
PID	PIDA
AO Channel	AO000
Numeric	

Wire the blocks

IMPORTANT The Numeric block you created enables us to simulate a control loop. For this loop to work properly, do not wire the AICHANNEL block.

1. Double-click on the source wire. The cursor changes to a "+".

2. Click on the destination wire.

TIP	For additional wire segments as you draw your wire, click the left mouse button.

Configure parameters

1. On the Numeric block, double-click in the gray area. You see the Numeric Parameters window.

2. Enter this parameter:

in this field:	enter:
Actual Value	10.0

3. Click on OK.

4. On the PID block, double-click in the gray area. You see the PID Parameters window.

5. Click on the Algorithm tab.

6. Enter these parameters:

in this field:	enter:
T1	.1
T1 High Limit	2.0
High Gain Limit	2.0
Overall Gain	.5

7. Click on OK.

8. On the AICHANNEL block, double-click in the gray area. You see the AICHANNEL Parameters window.

9. Enter these parameters:

in this field:	select
Module Name	LabAI
Currently Assigned Slots	Channel 0

10. After you have selected Channel 0, click on Assign Channel and click OK.

11. On the AOCHANNEL block, double-click in the gray area. You see the AOCHANNEL Parameters window.

12. Enter these parameters:

in this field:	select
Module Name	LabAO
Currently Assigned Slots	Channel 0

13. After you have selected Channel 0, click on Assign Channel and click OK.

Enter Alarms

1. Double-click on the DATACQ block to display the Parameters window.

2. Click on the Alarms tab.

3. Enter these alarms:

IMPORTANT	You must enter the PV High alarm first to enable the PV High alarm.

type	trip point	priority	severity
PV High	85	High	0
PV High	95	Urgent	0

4. Click on OK.

Save and exit

1. Save your changes by clicking on File $\Rightarrow$ Save.

2. Close the Control Module FIC102. If prompted, select Yes to save changes.

Downloading the Function Block Diagram to the 1757-PLX52 Process Control Module

Use one of these two methods to download your function block diagram to the controller module.

Method 1

1. In Control Builder, select "=" from the toolbar to display the Controller Assignments window.

2. In the Assigned Modules list box, select FIC102.

3. Click on Load. Click OK to load the Project Version.

4. Click on Continue to load the selected object to the CEE.

5. When the load is complete (status bar at 100%; Load Complete message displayed), close the Controller Assignments window.

Method 2

1. In the Project tab, click on FIC102.

2. From the Toolbar Menu, click on the green down arrow to download the function block diagram.

3. Click on Continue to load the selected object to the CEE.

Changing the Controller Execution Environment for the 1757-PLX52 Process Control Module from Inactive to Active

To execute your program, you must change the CEE from inactive to active. If the CEE is not already activated, follow these steps to change it to active:

1. In the Monitoring tab, click on CEE0101.

2. Select Operate $\Rightarrow$ Activate $\Rightarrow$ This CEE and its IOMs and CMs.

3. Click on Yes to change the state of the selected objects. You see the CEE and everything listed under it in the tree view under the Monitoring tab go solid green.

Verifying Proper Operation

Follow these steps to verify that your PID loop operates properly:

1. In the Monitoring tab, double-click on FIC102. The PID diagram opens.

2. On the PID block, look at the MODE parameter to ensure that it is set to MAN (manual).

3. With the PID block in manual mode, double-click on the OP parameter and set it to 80.

4. On the PID block, double-click on the MODE parameter and set it to AUTO (automatic).

5. Double-click on the setpoint wire and set the setpoint to 25.0.

6. Verify that the PID OP output value (displayed near the wire) changes.

7. Change the NUMERIC.PV to 20, then 30. Observe the OP output of the PID block for changes.

8. Close the diagram **without** saving your changes.

Viewing Pre-built Screens

To view the pre-built screens provided with the ProcessLogix system:

1. If the Station application program is not running, select Start $\Rightarrow$ Programs $\Rightarrow$ ProcessLogix Server $\Rightarrow$ Station.

2. Click on the text box in the upper right corner of the screen (below the toolbar).

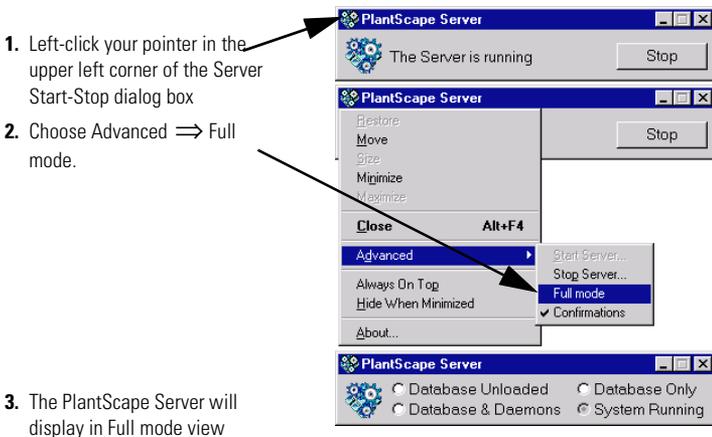| to view the detail screen for the:	do this:
controller	1. Type **CPM0101** in the box. 2. Press [F12].
CEE	1. Type **CEE0101** in the box. 2. Press [F12].
PID loop	1. Type **FIC102** in the box. 2. Press [F12].
I/O modules	1. Type the name of the I/O module in the box. 2. Press [F12].
alarms	Click on the red, blinking alarm indicator at the bottom of the screen, or click on the Alarm icon in the toolbar menu.

Shutting Down the System

Follow this procedure to shut down your system in an orderly manner:

IMPORTANT   Before shutting down the system, verify that the process being controlled is off-line.

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1. Close all open Control Modules in Control Builder.

2. To close Control Builder, from the main menu, select File $\Rightarrow$ Exit.

3. To close Station, in the Station application widow, select Station $\Rightarrow$ Exit.

4. Unload the database:
   a. Select Start $\Rightarrow$ Programs $\Rightarrow$ ProcessLogix Server $\Rightarrow$ Start-Stop ProcessLogix Server.
   b. Ensure that the window is in the Full mode view. To do this:

1. Left-click your pointer in the upper left corner of the Server Start-Stop dialog box

2. Choose Advanced $\Rightarrow$ Full mode.

3. The PlantScape Server will display in Full mode view

   c. Click the Database Unloaded radio button.
   d. When asked to confirm, click Yes.
   e. When the server changes states, close the window.

4. Shut down the System Repository:
   a. From Windows NT, select Start $\Rightarrow$ Settings $\Rightarrow$ Control Panel.

b. Double-click on the Services icon. You see the Services dialog box.

   c. Select the PlantScape System Repository service by highlighting it.

   d. Click the Stop button to shut down the System Repository and the CDA server.

5. Shut down RSLinx:

   a. From Windows NT, select Start $\Rightarrow$ Settings $\Rightarrow$ Control Panel.

   b. Double-click on the Services icon. You see the Services dialog box.

   c. Select RSLinx by highlighting it.

   d. Click the Stop button to shut down RSLinx.

   e. Close the Services dialog box.

6. Close any open windows.

7. Shut down the Windows NT workstation.