Appendix 12: Debugging

Contents

Introduction

This guide will go over various debugging functions in PLCnext Engineer.

Objectives

- Enabling debug mode
- Viewing code online
- Overwriting/Forcing variables
- Other Debugging features

Procedure

Enabling Debug Mode

1. Right click on axcf2152 (A).

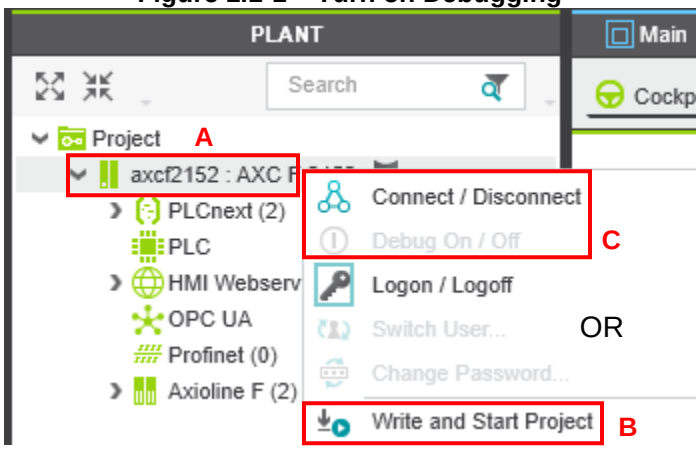
2. Enable debug mode by using “Write and Start Project” (B) this will download the project to the controller and enable the debugger.

OR

If connected to the controller use the “Debug On/Off” (C) Icon as shown in Figure 1.1-1.

NOTE: If the project does not match what is on the controller the Debug will not activate!

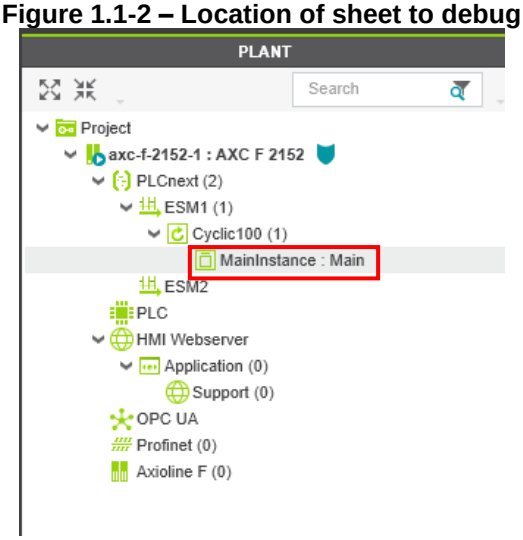
Figure 1.1-1 – Turn on Debugging



Viewing Program in Debug Mode

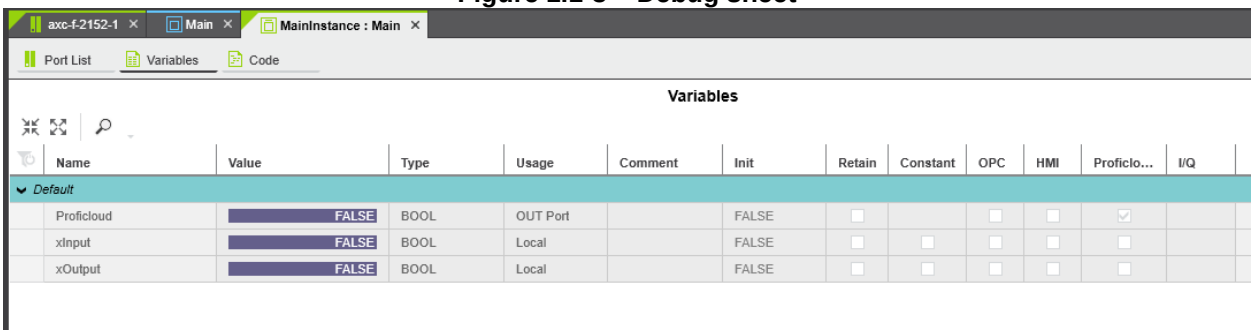
1. Go to PLANT > Project > PLCnext > ESM(#) > Task and double-click a program or navigate to a function block and double-click.

Figure 1.1-2 – Location of sheet to debug



2. A new window will appear. This window will display online values in 2 tabs (3 if IN or OUT Ports are used), as shown in Figure 1.1-3.

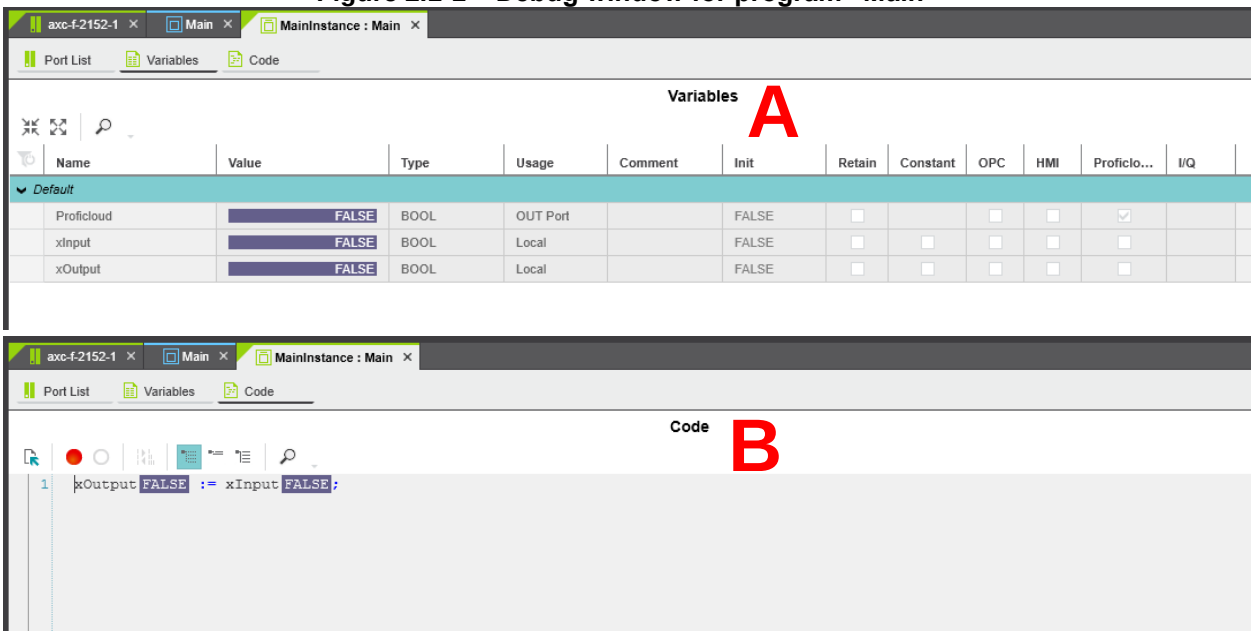
Figure 1.1-3 – Debug sheet



Overwriting/Forcing variables

1. View variables (A) or code (B) in debug mode as shown in Figure 2.1-1.

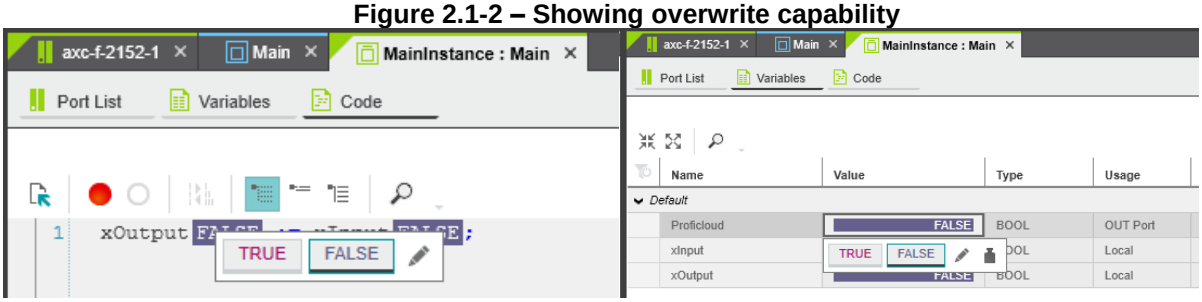
Figure 2.1-1 – Debug window for program "Main"



2. Using the variable table or code sheet double click on a variable.

3. Once selected a pop-up will appear with the ability to overwrite or force the variable to a different value as shown in Figure 2.1-2.

Figure 2.1-2 – Showing overwrite capability



4. To overwrite, select the value you would like to set the variable to (A) and then click the pencil to write (B) in Figure 2.1-3, or the push button to force as shown in Figure 2.1-4.

NOTE: Notice the color difference between force and overwrite!

Figure 2.1-3 – Value change with overwrite

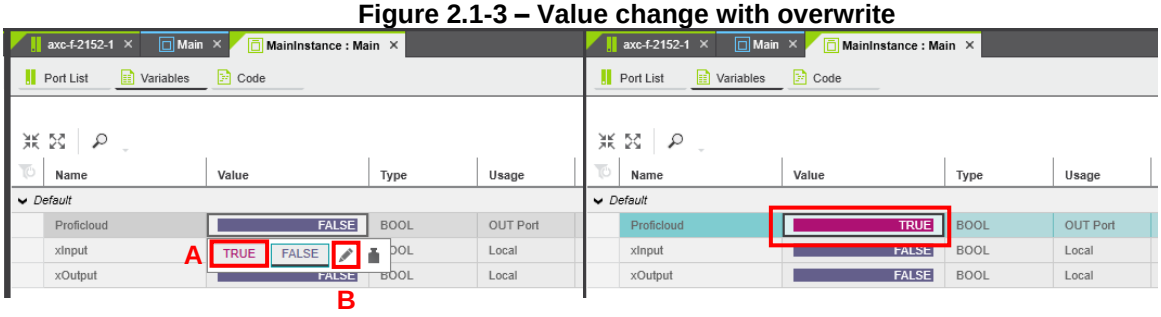
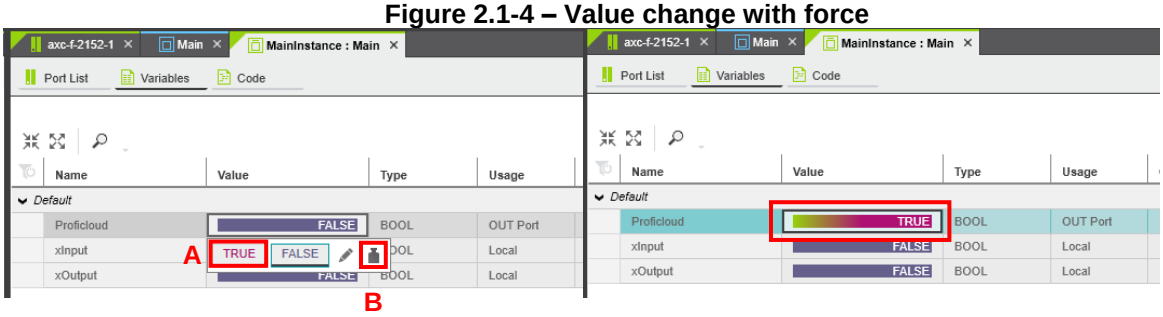


Figure 2.1-4 – Value change with force



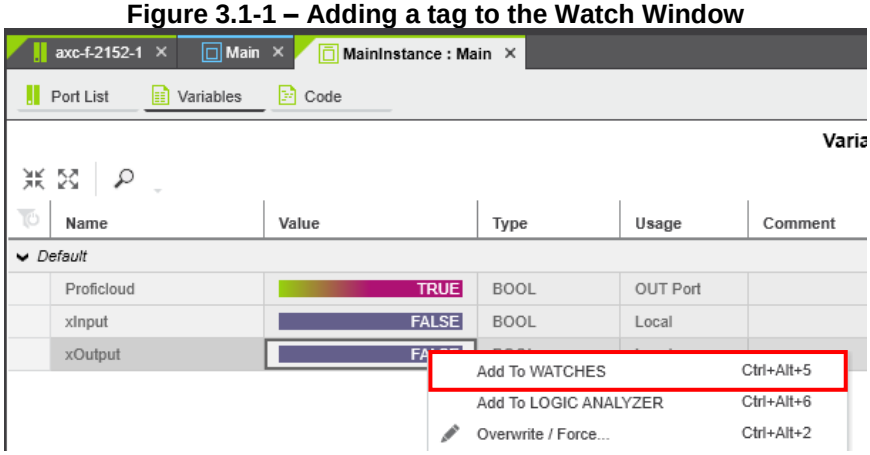
Watch Window

The watch window is a very helpful tool while debugging. It allows you to have multiple tags current values being displayed all in one place.

Adding a tag to the Watch Window:

1. Right click on the tag you would like to add and select Add To WATCHES, as shown in Figure 3.1-1.

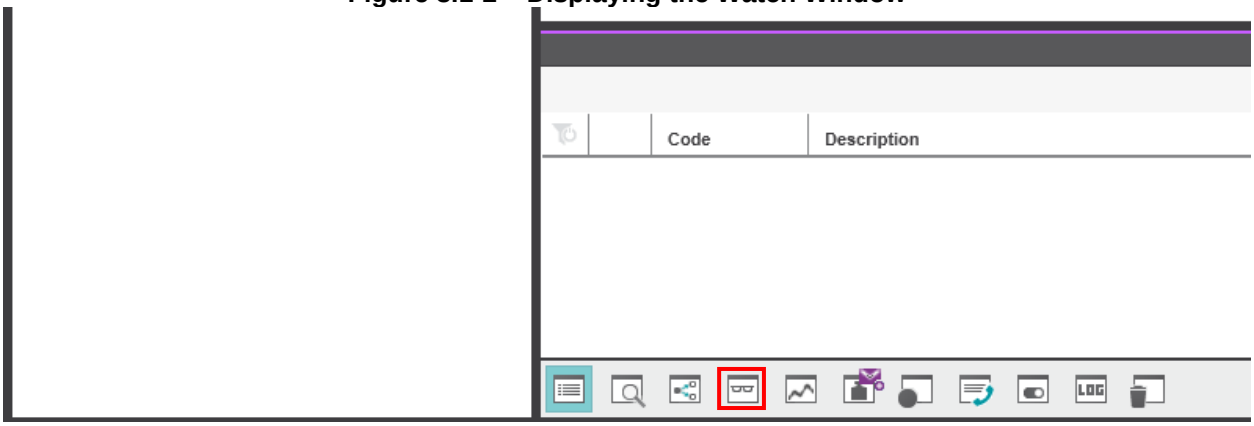
Figure 3.1-1 – Adding a tag to the Watch Window



Viewing the Watch Window:

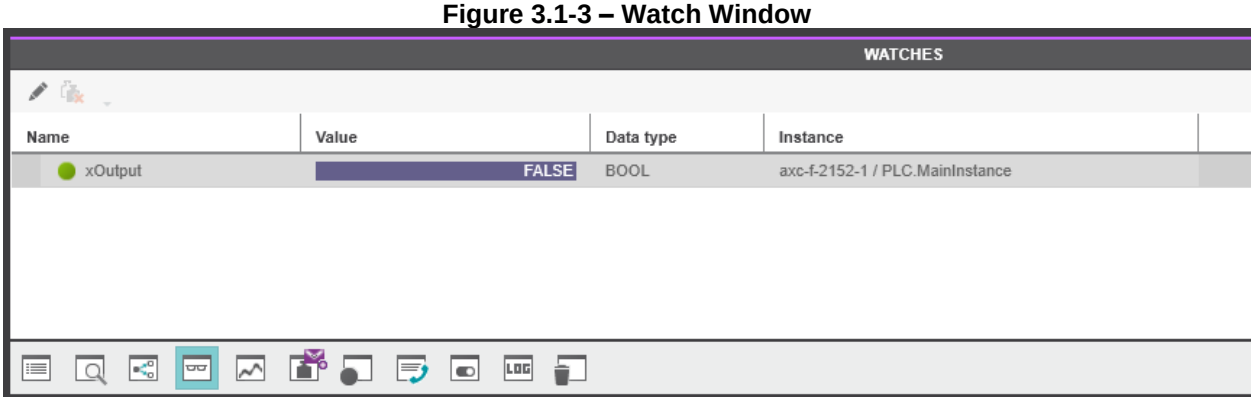
1. At the bottom of the screen, select the glasses icon as shown in Figure 3.1-2.

Figure 3.1-2 – Displaying the Watch Window



2. The watch window will now display across the bottom of the screen with all tags that were added as shown below.

Figure 3.1-3 – Watch Window



Watch Window features:

1. The watch window can be used to write/force variables.
2. The watch window can be “pinned” so more than one window can be present if docked.
3. The watch window can be “un-docked” and will become its own separate window using the button shown in Figure 3.3-1. This button will also “re-dock” the window.

NOTE: If the window is un-docked and then closed, the window will remember its last location and open there when re-opened.

NOTE: If used on a second screen, re-dock before changing screen configurations!

Figure 3.3-1 – Un-docking/Re-docking the Watch Window