Lesson 02

Lesson 02 will take you through the basics of opening an existing program in FREE Studio and simulating in on the screen without a physical connection to a PLC.
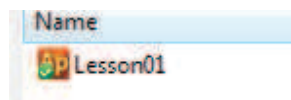
Contents

Opening an existing program

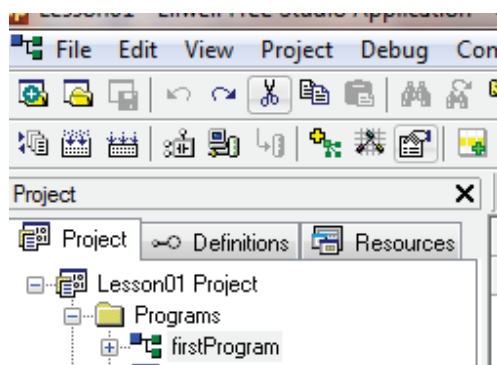Start Free Studio Application program by clicking on

Click on Open project ….
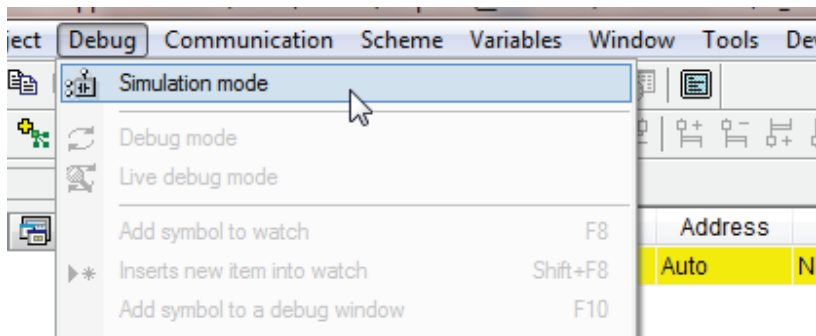

Select the program with icon Ap you want to open.

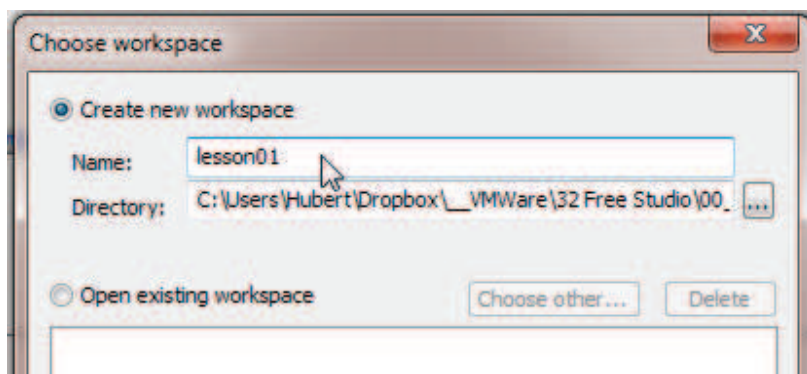Open Project Tab and double click on firstProgram from Lesson 01 in the tree view.
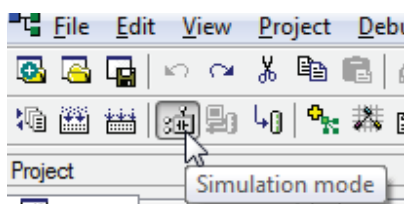
Simulation Mode

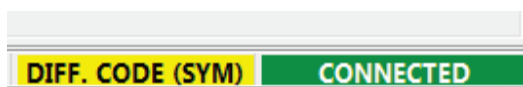To start the Simulation Mode click on the *Debug* Menu and select *Simulation mode*.

Type in a name for the simulation workspace and click on OK. Some files will be created in your work directory that simulate a PLC.

FREEStudio Application now behaves as if a physical PLC would be connected.
Check following Indicators:

 Simulation mode is active

 The PLC (Simulation file) is connected. Diff. Code indicates that the program in the PLC (Simulation file) differs from the one open in FREEStudio Application.

 On the Taskbar the Simulation Mode should be visible as an open program.

Downloading a program

Either select *Communication > Download Code* from the menu or press *F5* or click on *Code download* icon to start download.
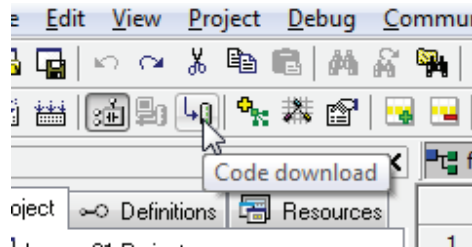
If program hasn't been compiled before it will be compiled and saved now and then downloaded to the simulation file.

SOURCE OK green indication shows that code has been downloaded and program is the same as it is in FREEStudio Application.

Simulator

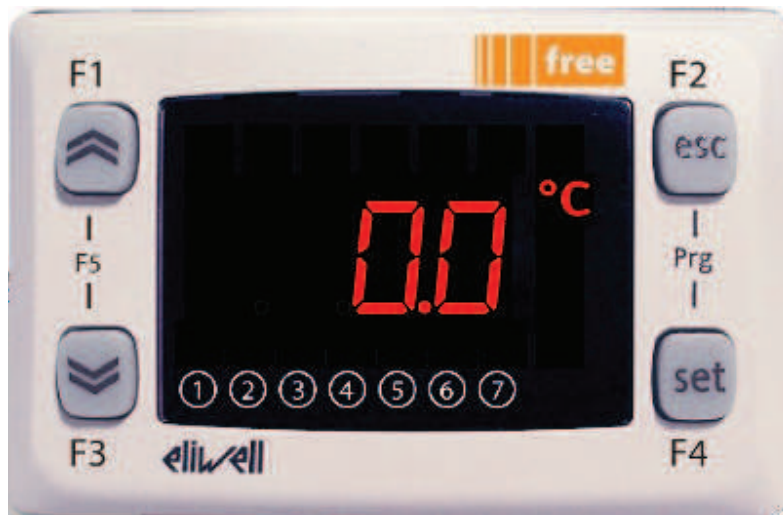Open the Simulator by clicking on

The Simulator Window will be opened
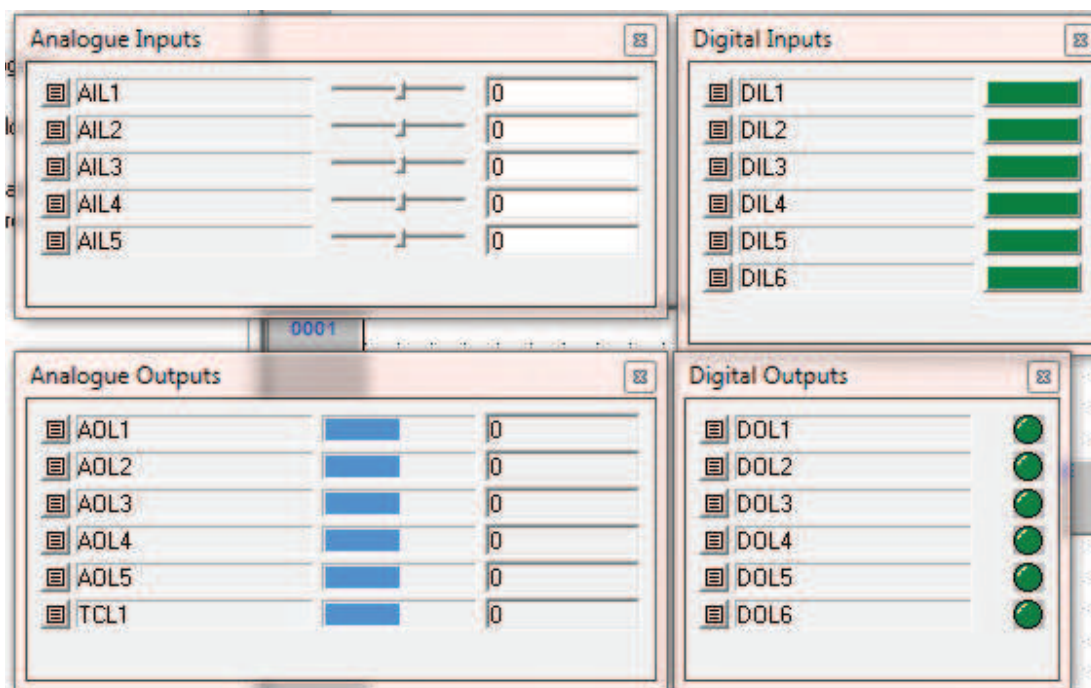
Click on to open the HMI window

This window can be controlled just like a physical PLC. Buttons can be activated by clicking on them.
To activate F1 and F3 simultaneously click on F5 between the buttons.
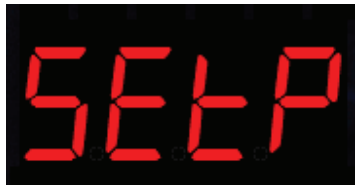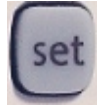To activate F2 and F4 simultaneously click on Prg between the buttons

Click on to open I/O panels .

Analog Inputs can be manipulated by entering a value in the field next to them.
Digital Inputs can be switched on and off.
Status of Analog and Digital Outputs are displayed.
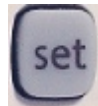
Changing Menu Parameters

Click on F4 (Set) to enter Setpoint menu.

Click on F4 again to display Setpoint parameter.

Click on F4 again to display Setpoint value.

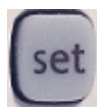Change value with F1 and F3 (Up and Down button).

Click on F2 (Esc) to go back to Setpoint parameter.

Click on F1 (Up) to go to Differential parameter.

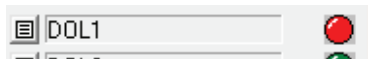Click on F4 to display Differential value.

Change value with F1 and F3 (Up and Down button).

Change now Analog Input 1 to a value higher than Setpoint + Differential (in our example 310 = 31.0 degree C)

Digital Output is On (red) now.

And cooling Indicator on main display is on. Main Display shows Temperature value of Analog input 1.

Change Analog Input 1 now back to a Value smaller than Setpoint and the Digital Output and on Screen Cooling display will turn Off.

Conclusion

This was an example how to utilize the Simulation facility in *FreeStudio.*

In the next Lesson we will show how to connect a physical PLC to *FreeStudio* Application and *FreeStudio* Device . How to search for a connected PLC and how to do On screen debugging. Debugging can also be used in Simulation mode.