HMI Setup and Programming for Control Logix series

This information sheet will guide you on how to create a new HMI program networked to a PLC and establish communication.

Software to open

Factory Talk View Studio

This will take about 1 minute or less to load. Let both the tabs, Application and Communication come up in the lower left hand corner before starting.

Create a new HMI program and give it a name.

Change the screen size under System Project Settings

Setup communication

* RS Linx make sure you can see the HMI panel you want to program in the RS Who.
* On the Factory Talk View Studio Machine Edition (ME) software
  + Lower left corner RSLinx Enterprise expand to see Communication Setup and open.
  + Create new config
    - Top left click Add button and give it a name
    - Top middle of the screen the Design (Local) tab must be on top.
    - Expand the RS Linx and choose your PLC
    - Apply button top left
    - Click the Copy from Design to Runtime button on the top right.
    - Verify button bottom right
      * Make sure both say “device IS ASSIGNED”!!!!
      * Click ok

PLC portion

* Open the PLC software and create tags specific for the HMI screen. NOTE: These tags must be in the Controller tags portion..
* Create ladder diagrams as needed to support your task on the HMI.
* Download and put PLC in run mode.

HMI programming

* Expand Graphics, Displays, Main page
* Top menu bar Objects, Pushbutton, Momentary
* Place your cursor at the top left of where you want your button and drag to the bottom right to establish the size.
* Adjust the button as you see fit. Size, shape, border, color etc.
* Click on the States tab, fill in the caption, change color etc for each state of the button.
* Click on the Connections tab click the radio button …
* Refresh all folders
* Expand the On-line folder. You should see the PLC name you created under the Communications setup shortcut. If not then repeat the Communications setup.
* Choose the tag you entered in the PLC

Do the same for an indicator light.

Saving and transferring your HMI program to the HMI screen.

* Top menu bar Application, Create Runtime Application
* Save
* Top menu bar Tools, Transfer Utility
* Ensure your program file is the one you are transferring. If not browse with the radio … button.
* Select the HMI destination for the program on the bottom half of the window.
* Click Download button.

Loading the program into the HMI

* At the physical HMI find and press the Shutdown button.
* Press Load button and choose your file.
* Press Run button.

Now your program should be running on the HMI.

Putting your program onto a jump drive.

* File - Close the application
* Tools - Application Manager - Backup Application - Next
* Select your program name - Next
* Select where to store the application - choose your jump drive - Finish

**Firmware upgrades**

If you need to upgrade the firmware version on the HMI.

* Download the firmware from the AB Website ver 8.10.
* Extract the files
* **Run the EXE file titled PVP...**
* Enter Factory Talk View Studio/tools/Firmware wizard Follow Prompts

**Slider on HMI to an integer on PLC**

* Open Libraries
* Sliders
* Drag a slider from the window to the screen
* Select the small slider box and right click, animate, horizontal
* Click the tags button and relate it to the PLC’s tag that is an INT.
* Set the physical limits of the slider by Horizontal offset {Pixels}
  + Uncheck the “At maximum” box.
  + Move the slider to the right most position and the “At maximum” should change value.
  + Check the “At maximum” box.
  + In the Expression range area change the max to whatever value is in the “At maximum” box.
* Now you have to do math in the PLC in order to control the VFD.

**To make a button visual or invisable**

A good application for this would be when the VFD is faulted show the clear fault button appears.

* Create the button and then right click for animation, visibility, link the tag to the VFD:I.Faulted bit

**To simulate on the laptop**

* You can be on the screen and press the Play button (filled in triangle)
* If you want to change screens on the laptop find the project with \*.mer and open it. It will change screens and update the PLC’s data through your laptop.

**To get something to change rotational speed.**

* In the rotation tab
  + We set the expression to system\second
  + We set the use constant min to 0 and max to 60 because the range of the system seconds is 0 to 60 seconds.
  + We set the Rotation min value to 0 and max to 60 then the smiley face rotated 1 degree every second and reset to 0 degrees when it reached 60 degrees.
  + We set the Rotation max to 360 and the smiley face rotated a full 360 degrees at 6 degrees per second.
  + Therefore, the Rotation maximum value was divided by the Expression range and determined how far it would rotate.

**To get the screen to update quicker**

* + Right click on an open area of the screen
  + Display settings
  + Maximum Tag Update Rate: Change this value