

Laboratory Exercise 7 (Wk 8)

HMI with Tank over Tank

Introduction

We will return to the Tank over Tank experiment and incorporate an HMI screen for the operator.

Procedure

Use a graphic screen similar to the one below in Fig. 7-1 to animate the Tank over Tank process.

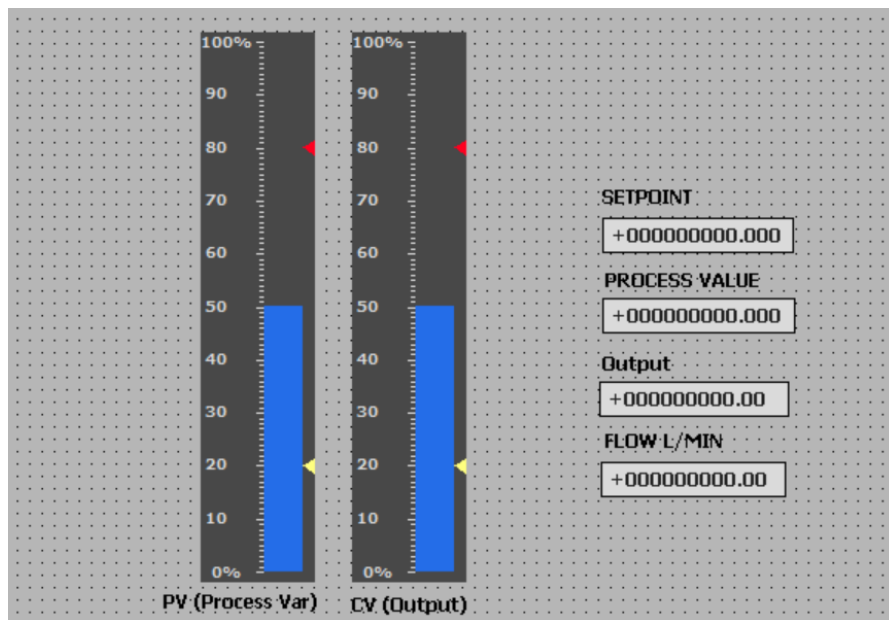
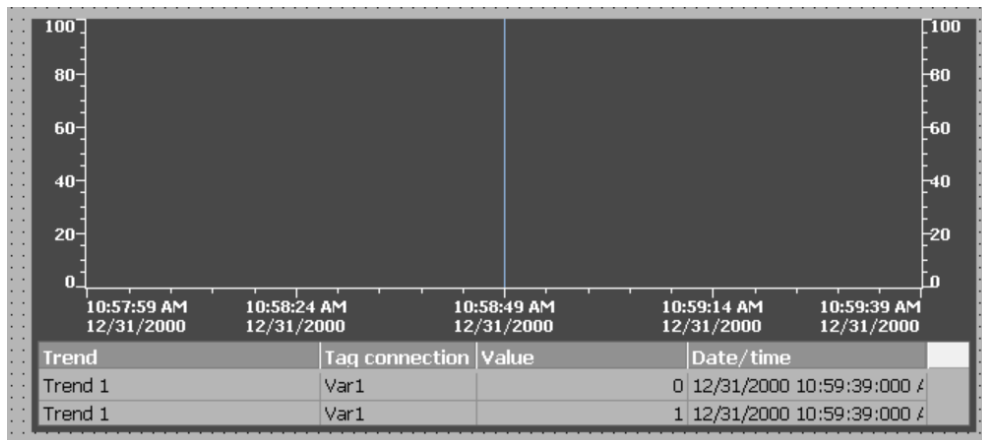
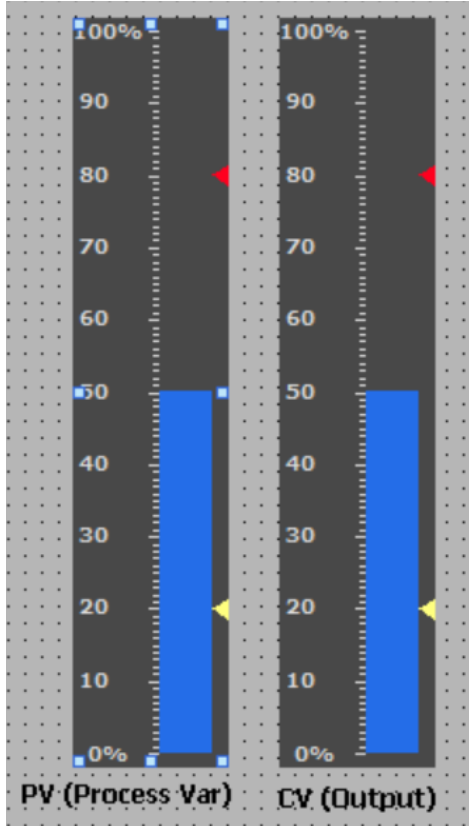


Fig. 7-1

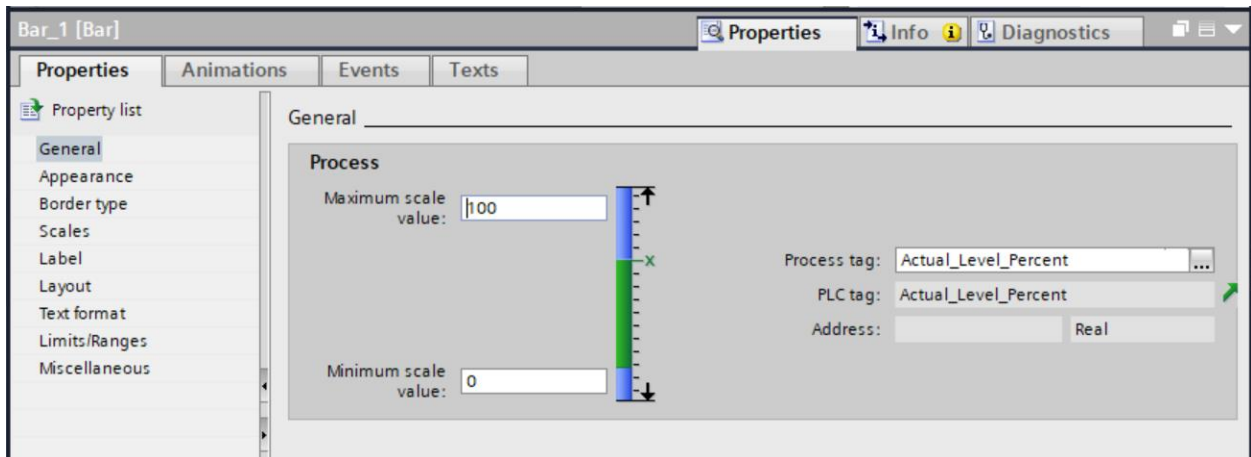
Also, provide a historical graph of the two PID blocks' PV, CV and Setpoint values:



Return to Lab 5 and load the program saved at the end of that lab. If you did not save the program, follow the steps in Lab 5 to get the two variables you need for this lab, Flow PV and Level PV. These two variables are now needed to graphically represent their values in two important HMI screens.

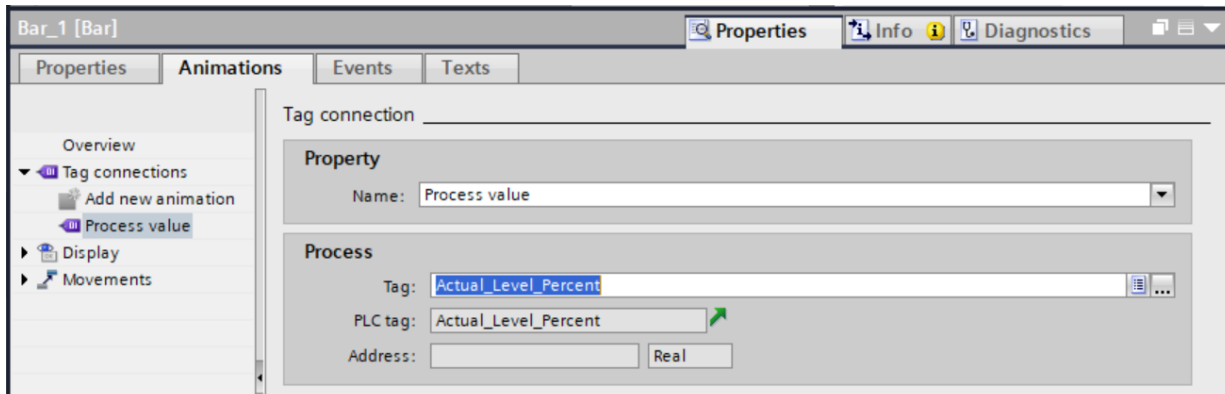


First, on the HMI screen, highlight the Process Variable Graph

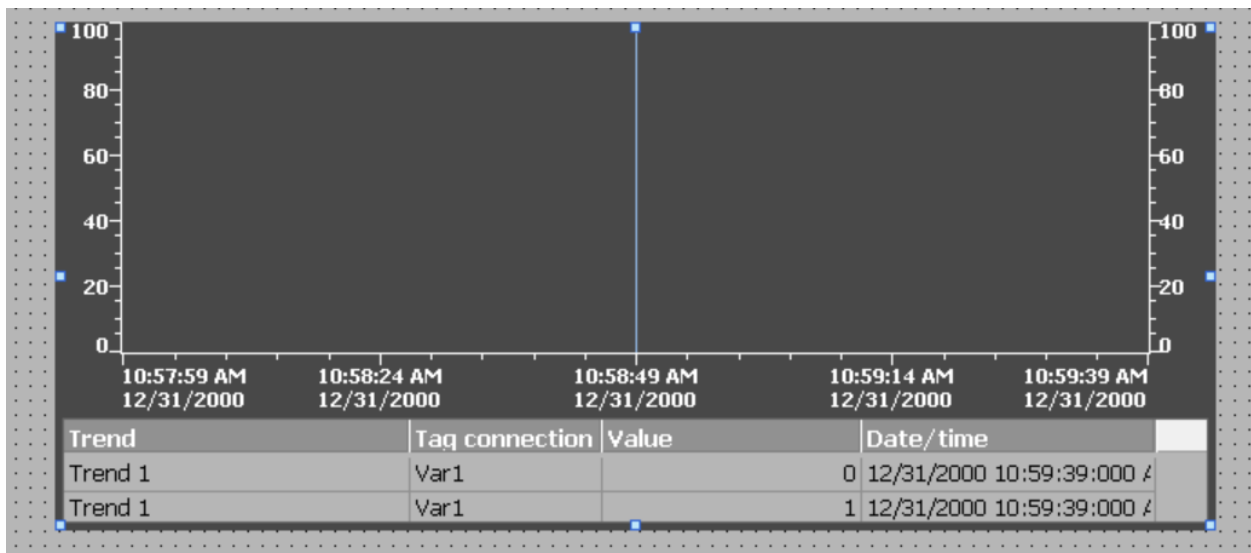


Then select the Properties tag at the bottom of the screen, then expand to view Properties:

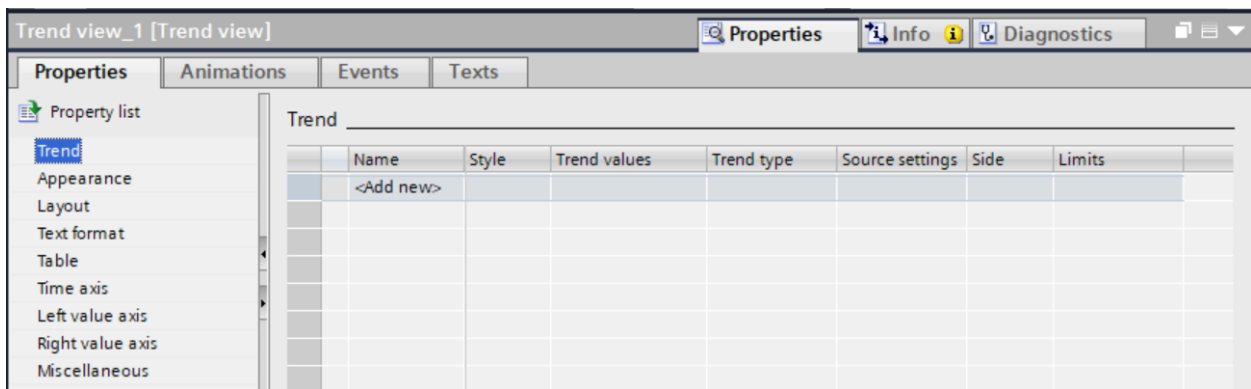
Move to Animation and set the variable to be described in the Tag window. Remember that all variables have been stored in the PLC Tags – Default Tag Table.



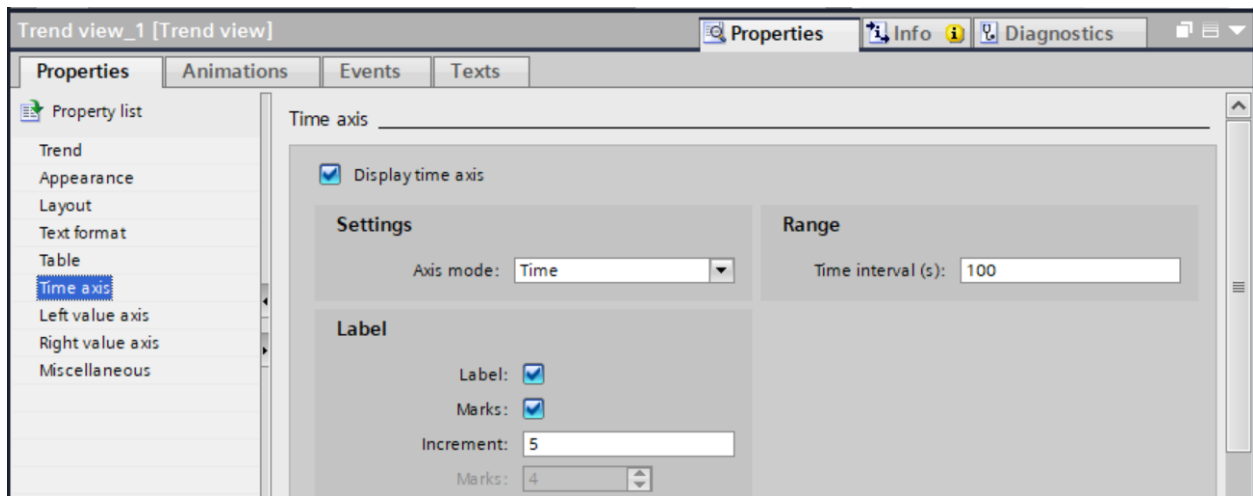
Likewise, highlight the Trend View:



Then, Trend which provides a table of variables to input into the trend chart:



Also, fill in the Time chart with appropriate values:



Run the HMI screen in Simulate Mode. View the two PID blocks through the eyes of an operator who will look at these graphs to see how the process is going.

Comment on how the HMI screens enhance your view of the process being executed. How would you further enhance the HMI. What values would you leave off the screen to not allow operator intervention?

Electrical Engineering Technology

Lab Report Grade Sheet

Name/Date _____

Course: EET 4450

Lab Laboratory Exercise 7 - HMI with Tank over Tank

Grading Element	Maximum Points	Your Points
Objective	10%	
Procedure	10%	
Results	20%	
Discussion	20%	
Conclusion	30%	
Spelling/ Grammar	10%	
Total	100%	

Comments: _____

Instructor: _____

Objective, Procedure, Results:

Conclusion

Discuss the results of your lab and show how the objectives were met. If there were substantial differences or similarities between how the two controllers did a specific task, comment on your observations.