

# Quick Start Guide for PID Tuner

Version	1
Date of last revision	7-10-2016

**Step 1:** Download both the OPC Simulator and the PID Tuner from the webpage <http://www.dotxcontrol.com/process-control> and install these packages.



by-step method. Download the OPC Server Simulator and start it first if you want to test and see the full capabilities of the PID Tuner.

projects

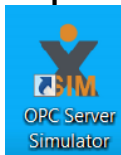
MS software for PID Tuner

PID Tuner: Features	Full
Option to import step data (.csv / .tsv / .txt)	✓
Online real-time trending	✓
Automatic identification experiment	✓
Download PID settings to PLC	✓
	<input type="button" value="Buy Now!"/> <a href="#">Download Trial</a>

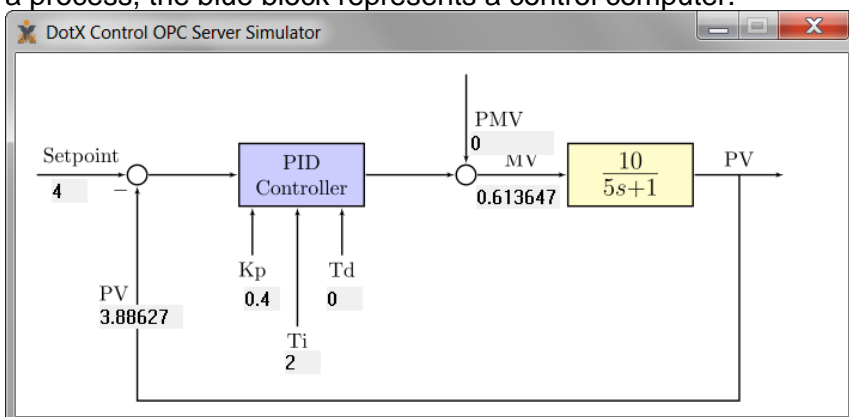
The OPC Server Simulator, simulates a closed loop system with a first order system and PID controller. The closed loop system is implemented discrete with an update rate of 10 Hz. The following tag are available: PMV, MV, PV, SP, Kp, Ti and Td.

OPC Simulator: Features	Free
Simulates a discrete closed loop system with 10 Hz	✓
The following tags are available: PMV, MV, PV, SP, Kp, Ti	✓
Except PV all tags are read- writable	✓
	<input type="button" value="Download"/>

**Step 2** Start the OPC Server Simulator by double clicking on the icon.



After that, you should see this screen with the numbers changing all the time. The yellow block represents a process, the blue block represents a control computer.

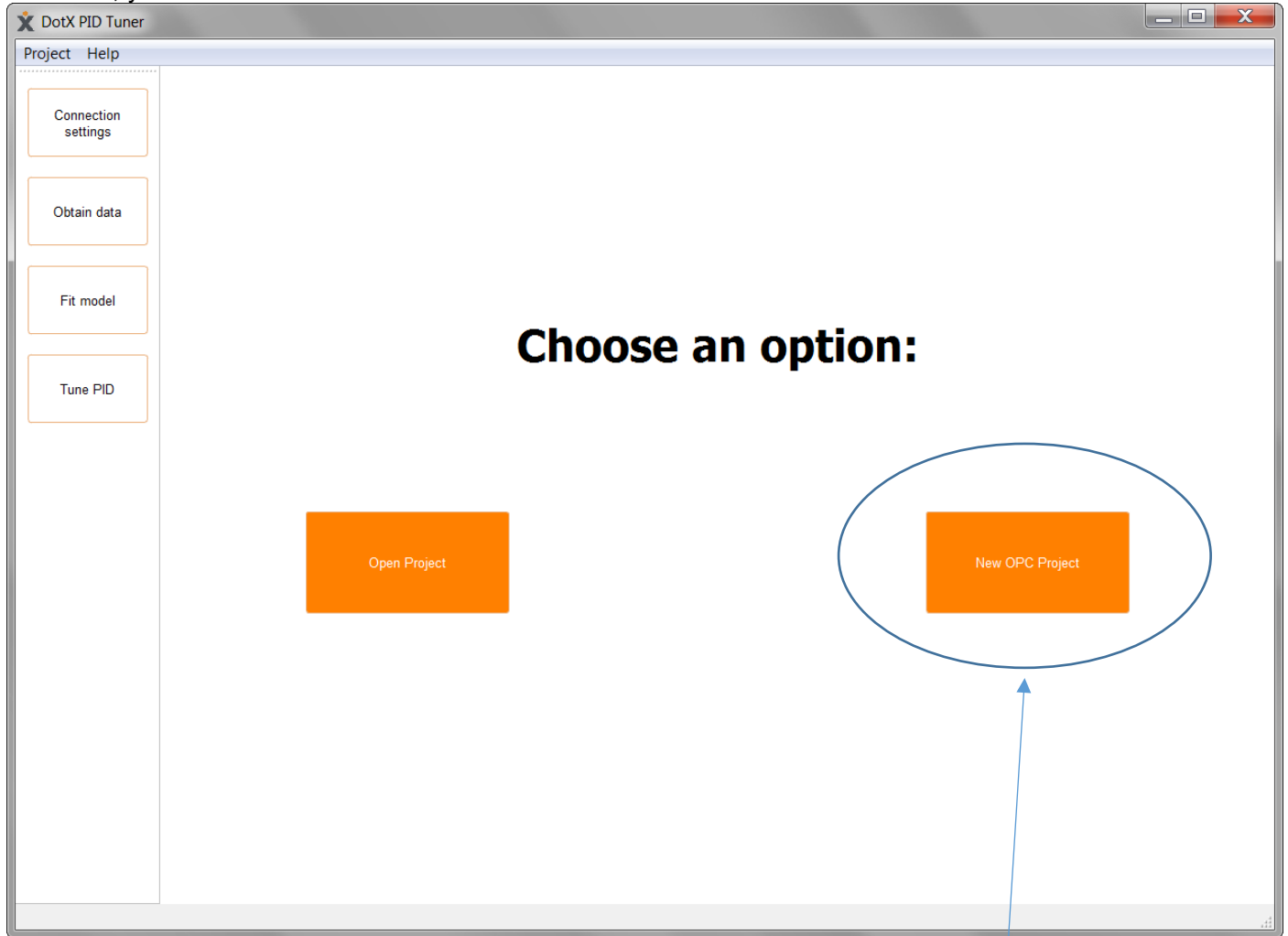


Note that this application is only there for you to test the PID Tuner if you do not have a PLC controller, OPC server and a plant/factory to test it. Nothing else!

**Step 3** Start the PID Tuner by double clicking on the icon

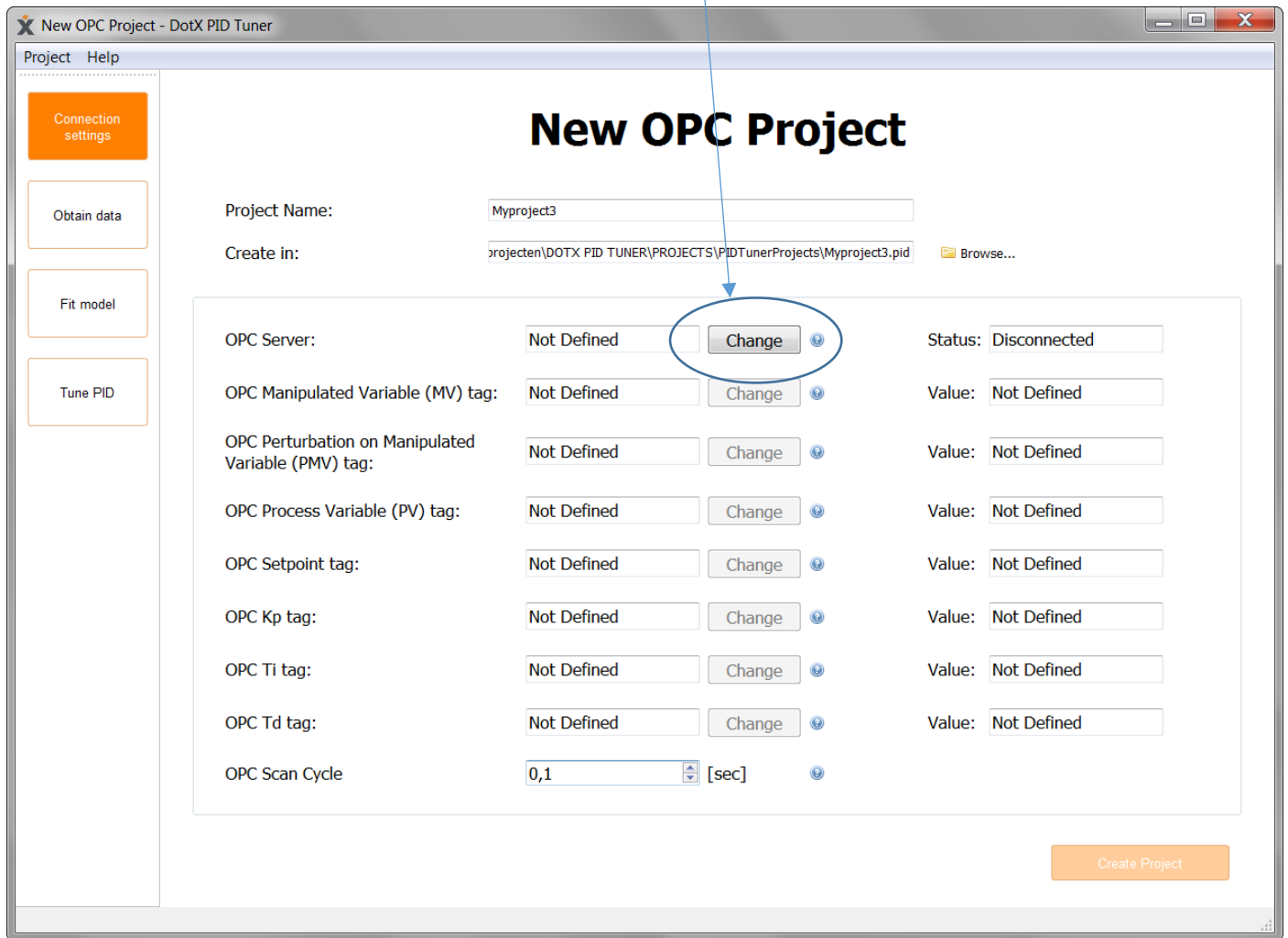


after that, you should see this screen:

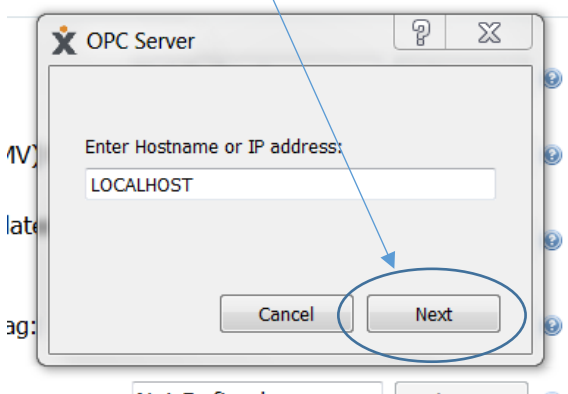


**Step 4** Make a connection with OPC Server Simulator: click on the button 'New OPC Project'

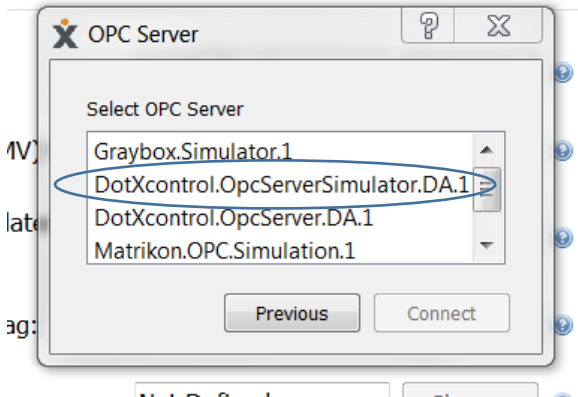
**Step 5** Fill in the fields, as shown below. Start to click here



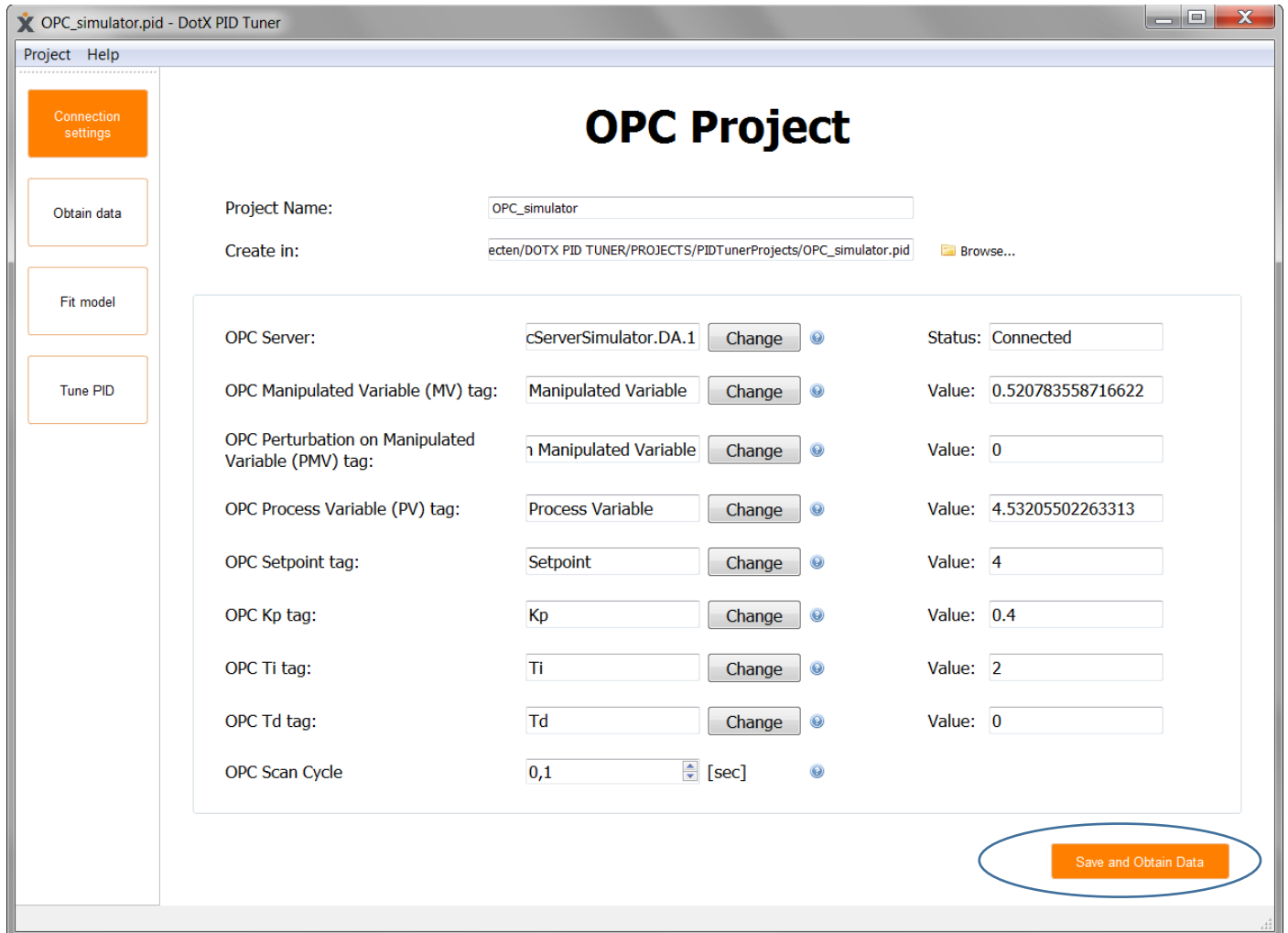
**Step 6** Click on Next



**Step 7** Select this one



**Step 8** Fill in all fields. In the end, you should see the screen as shown below. Now press 'Save and Obtain Data'



**Step 9** Change the Amplitude to 5, then Push the button 'Start' or 'Restart'

The screenshot shows the 'Obtain Data' window in the DotX PID Tuner. The 'Input config' section has 'Amplitude' set to 5.0. The 'Step durat' is 5.0 and 'Automatic of obtainin' is selected. The 'Restart' button is green, and the 'Fit Model' button is orange. The 'Plot settings' section shows 'Automatic scaling' checked. The 'PV (Process Variable)' plot shows a peak at 14:48:24. The 'MV (Manipulated Variable)' plot shows a step change at 14:48:24.

Parameter	Value
Xmax	60
Xmin	0
PV Ymax	39.64
PV Ymin	1.93
MV Ymax	10.65
MV Ymin	-2.58

After that, as soon as the button 'Fit Model' becomes orange, push that button.

**Step 10** Push 'Autofit' first, then push 'Tune PID'

OPC\_simulator.pid - DotX PID Tuner

Project Help

Connection settings

Obtain data

Fit model

Tune PID

### Fit Model

Fit Parameters

Process Gain: 6.54447

Process Time Constant: 1.7918

Process Delay: 0.1

Process Offset: 4.7433

Autofit

Fit Quality

Mean Squared Error: 1.37051

PV (Process Variable)

MV (Manipulated Variable)

Plot settings:

Automatic scaling

Xmax: 8.7000 PV Ymax: 34.2375 MV Ymax: 5.8846

Xmin: 0 PV Ymin: 2.6794 MV Ymin: 0.8846

Tune PID

**Step 11** Push 'Auto Tune' first, then select 'PI' or 'PID', push 'OK', followed by 'Download to PID'

That is it! You have tuned the PID optimally! Well done and congrats!

Notice that the OPC simulator has these new PID settings. If you want to check the setpoint response, or its ability to reject input step disturbances, go back to Step 9. After the step change, the PV should return to setpoint much quicker!

**More in depth info is found under the button 'Help'**