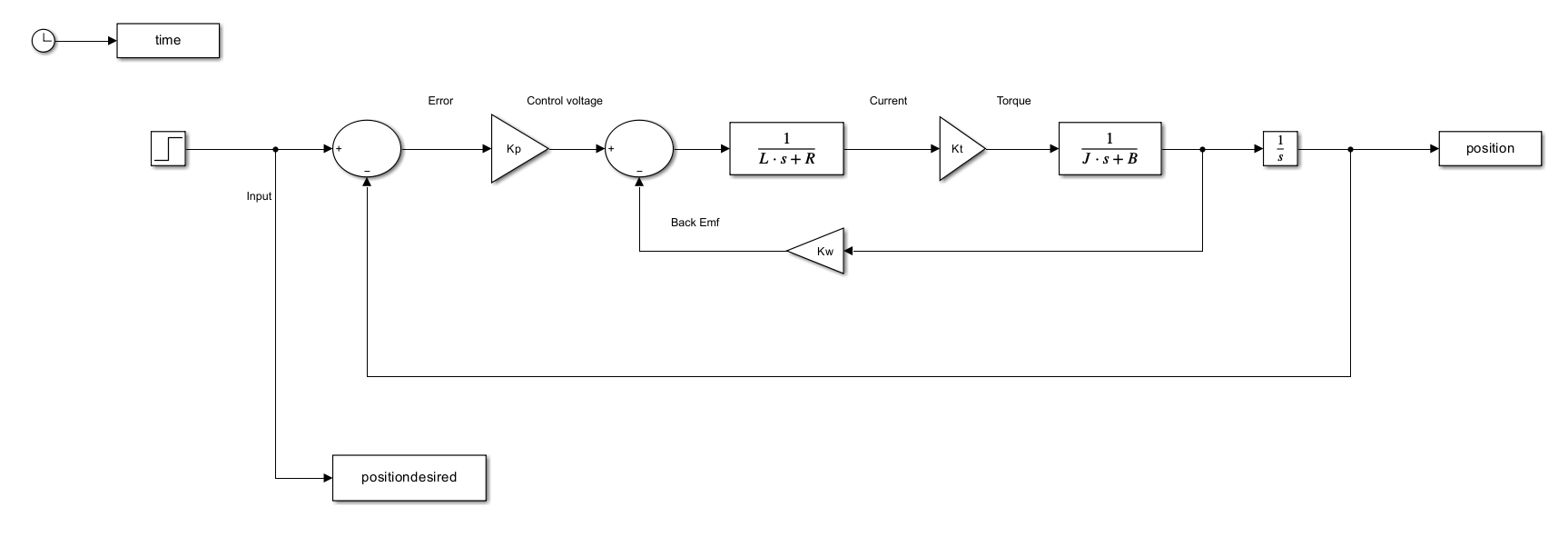
**Mechatronics Assignment-2 – Position Control**

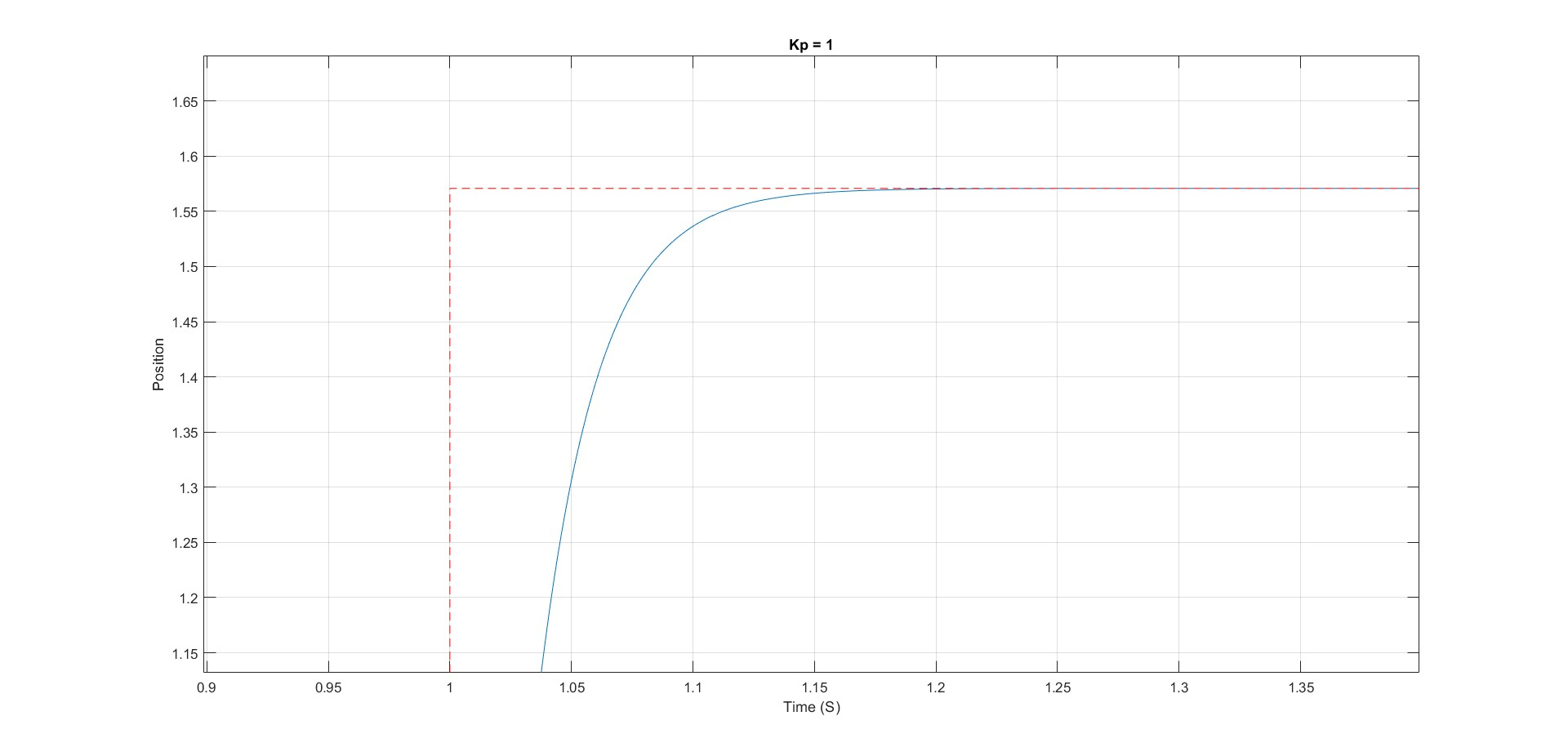
**1. This week, find a computer where you can run Matlab and Simulink----------Installed the Matlab and Simulink**

**2. We will model a 2nd order system based on controlling the Position of a motor**

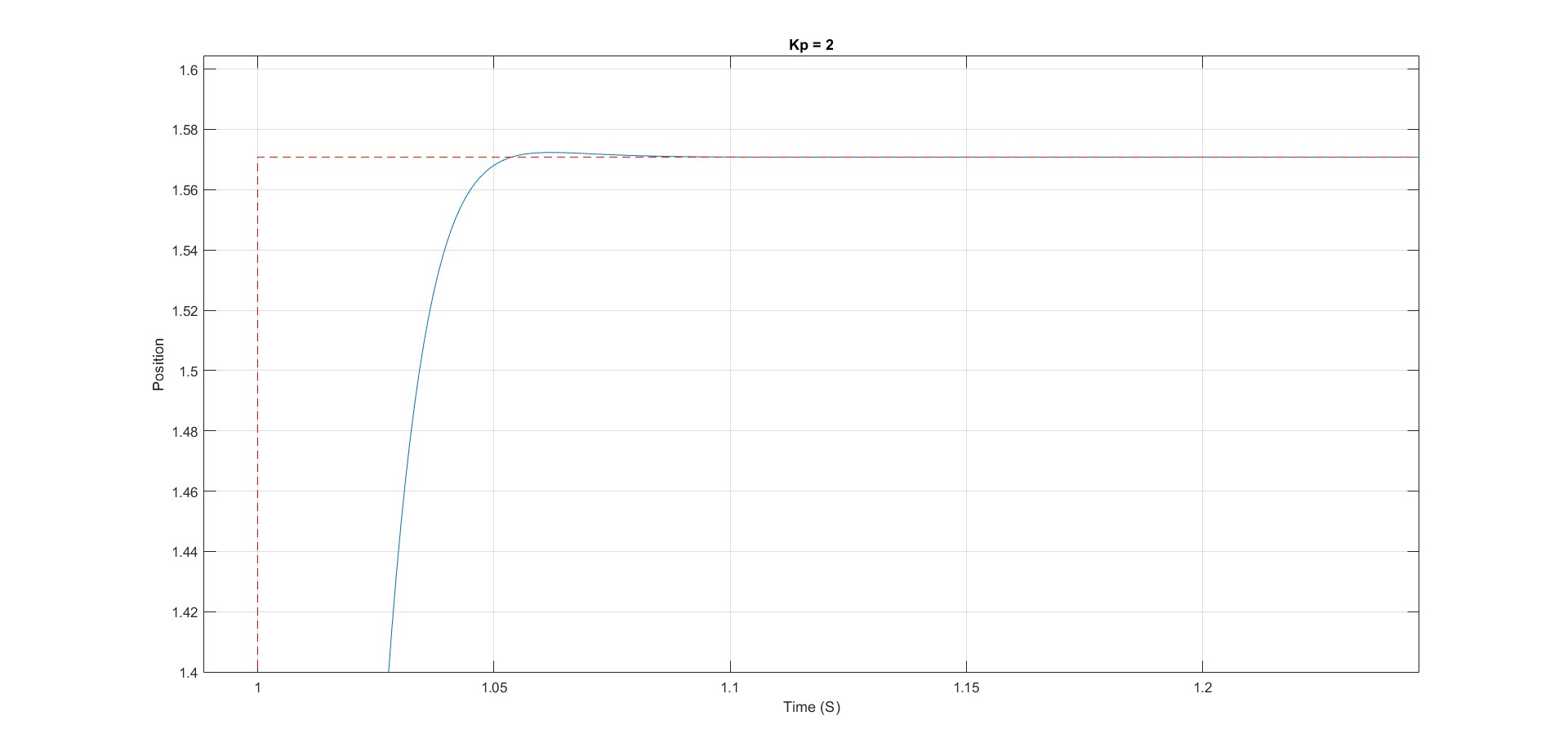
**3. Please turn in 8 plots plus a screen shot of your Simulink model 3. 1. Below is the Model with Step Response**



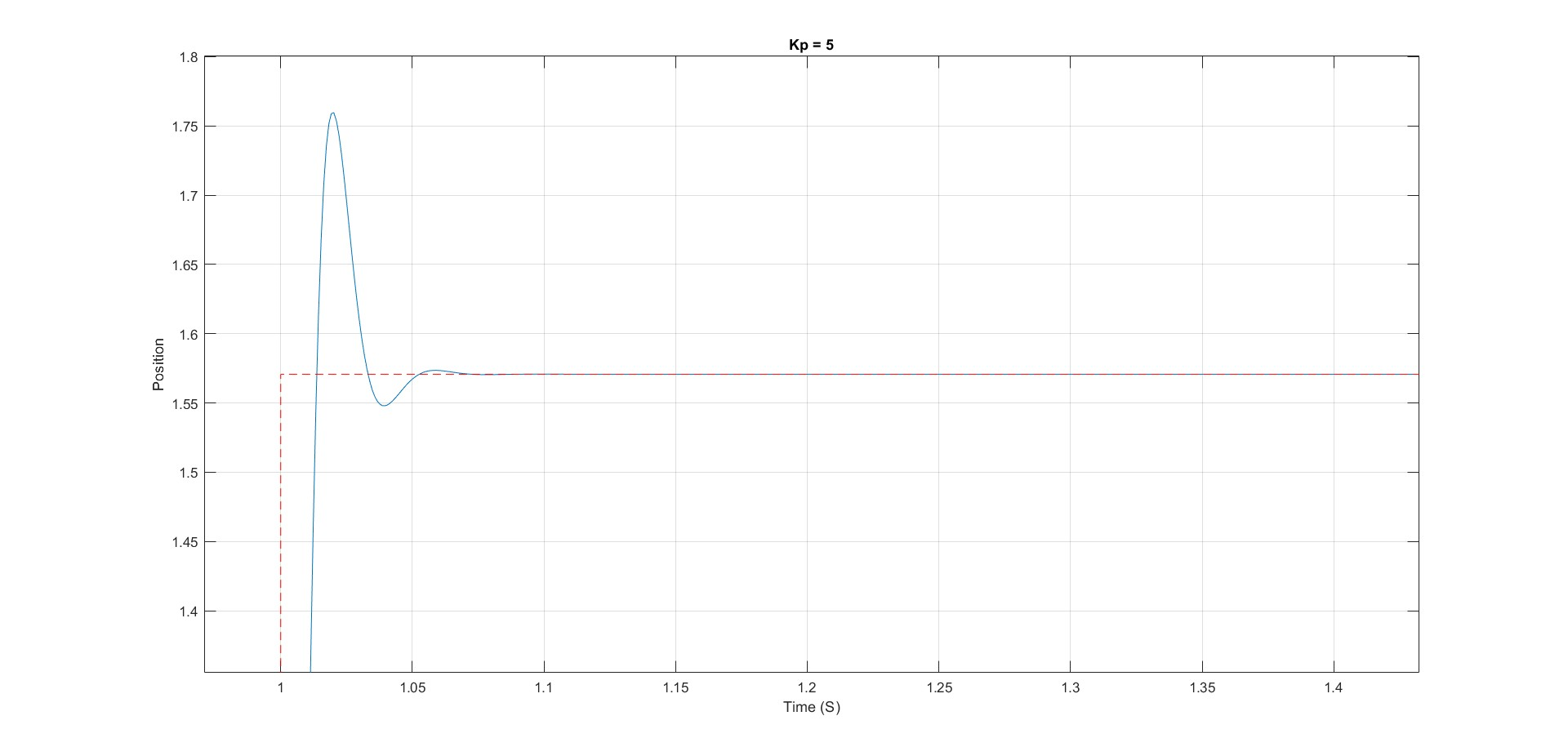
**Kp = 1**



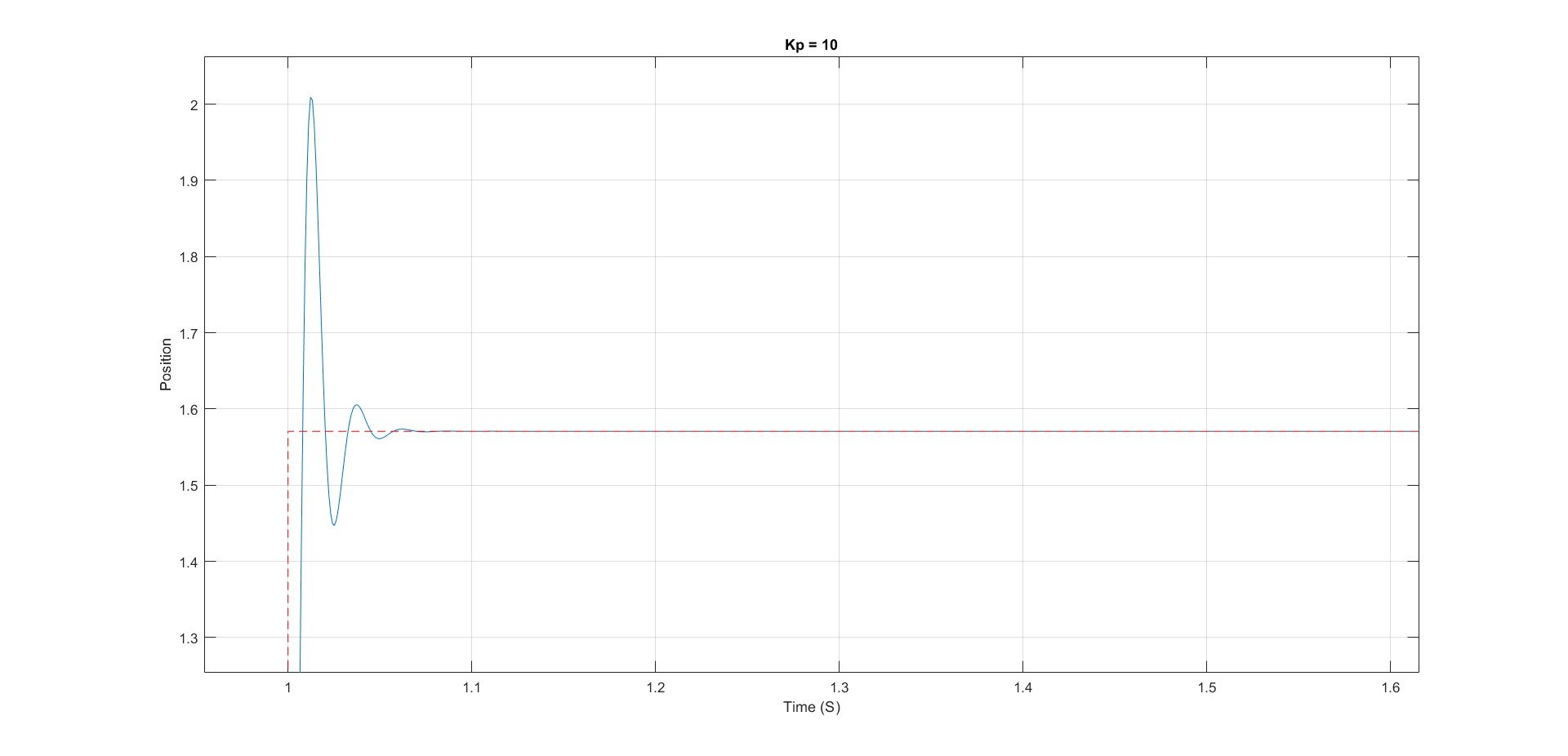
**Kp = 2**



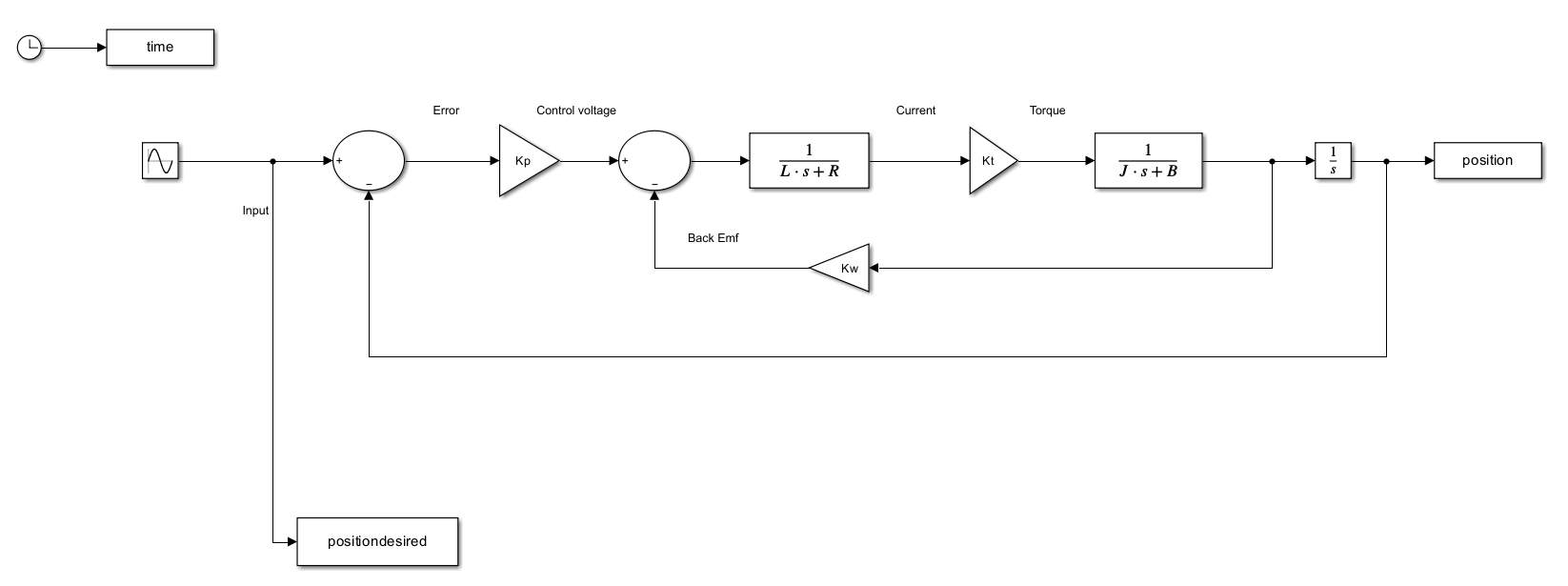
**Kp = 5**



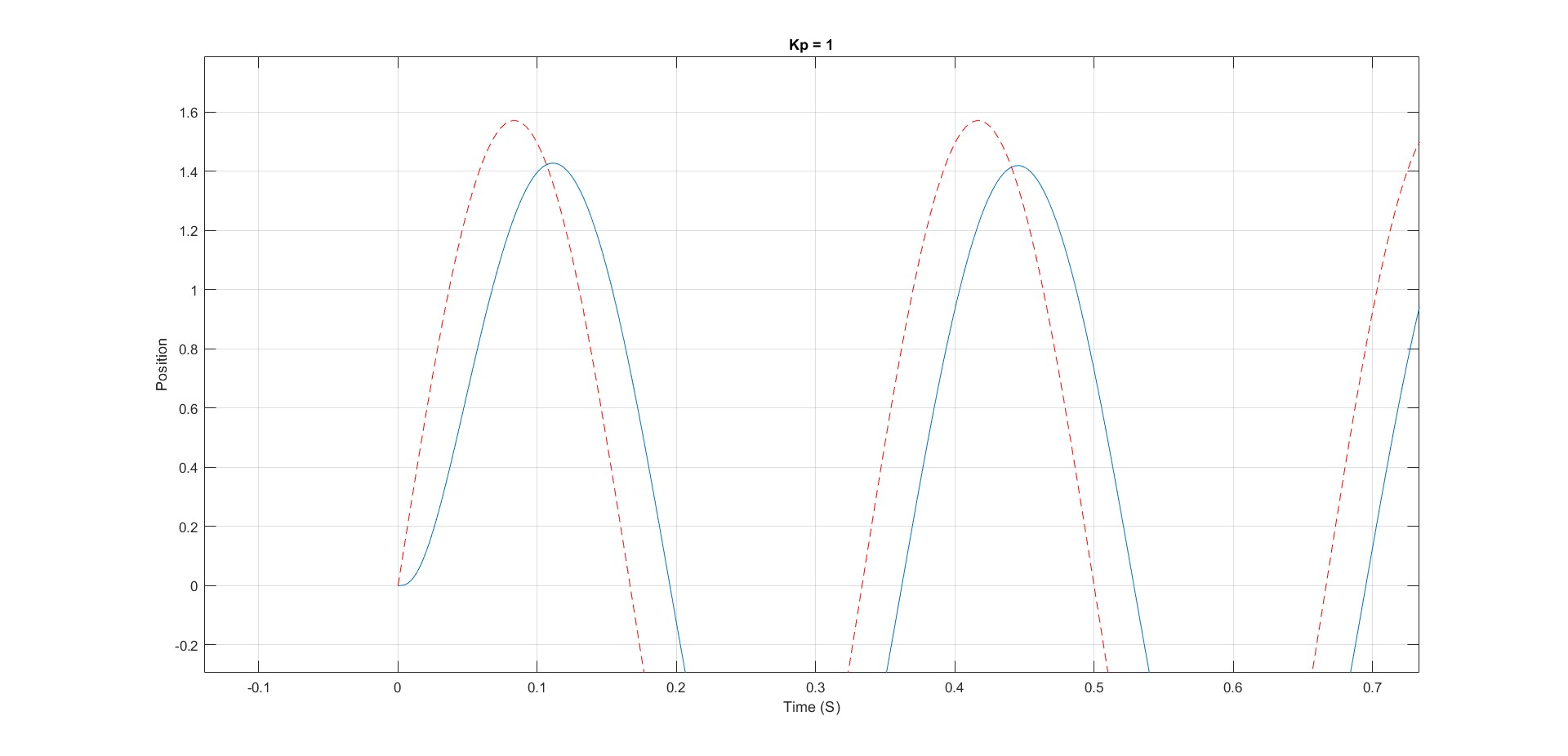
**Kp = 10**



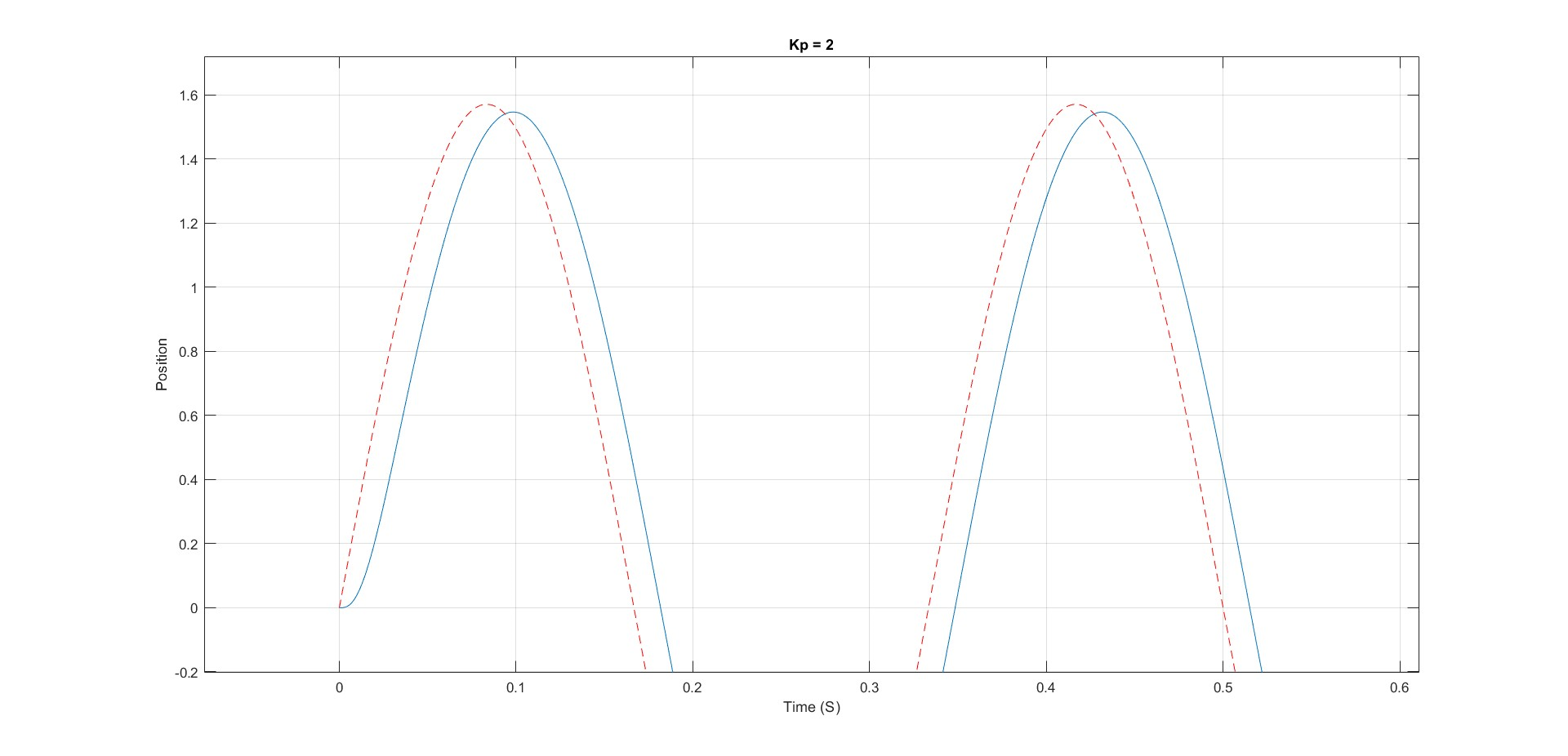
* 1. **Below is the Model with Sinusoidal Response**

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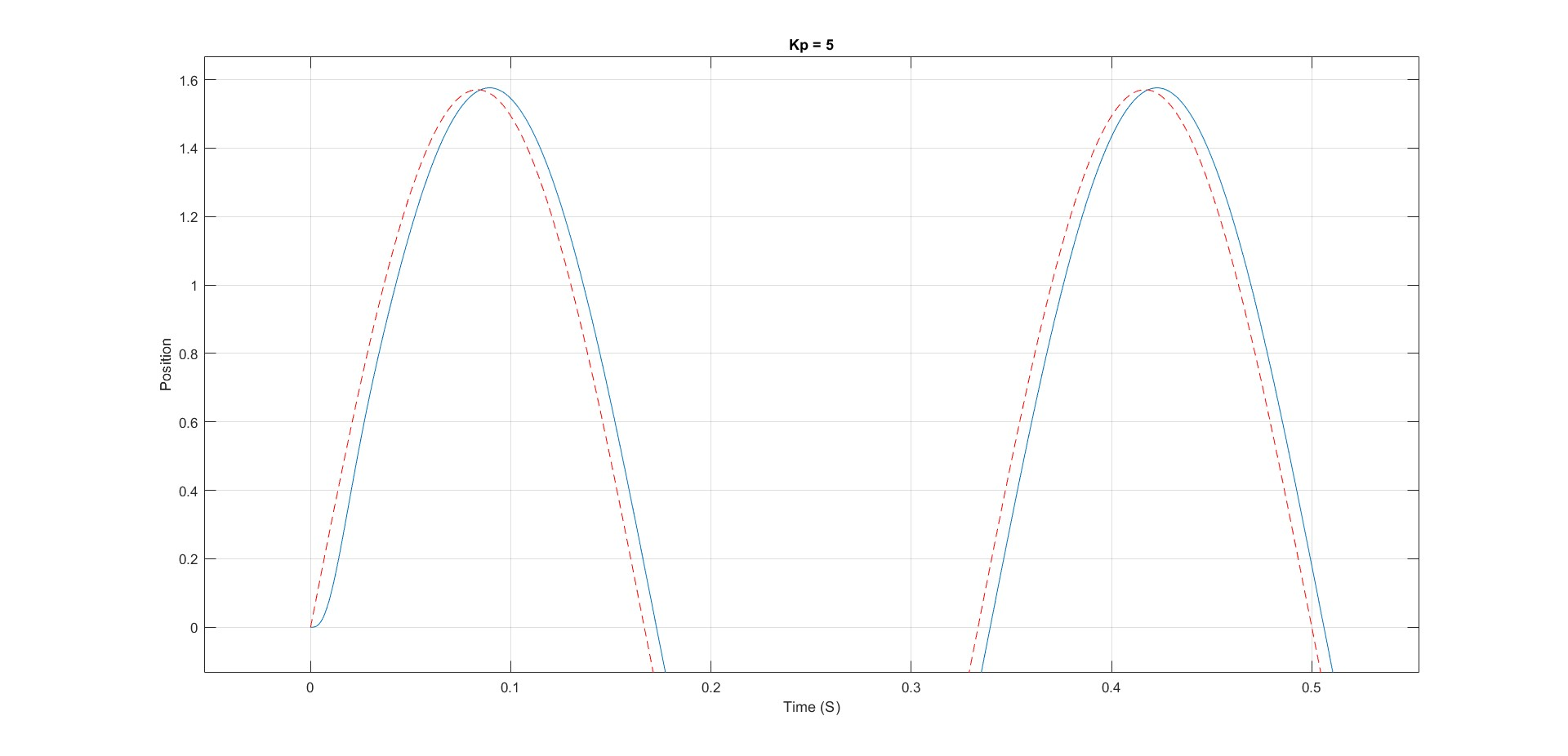
**Kp = 1**



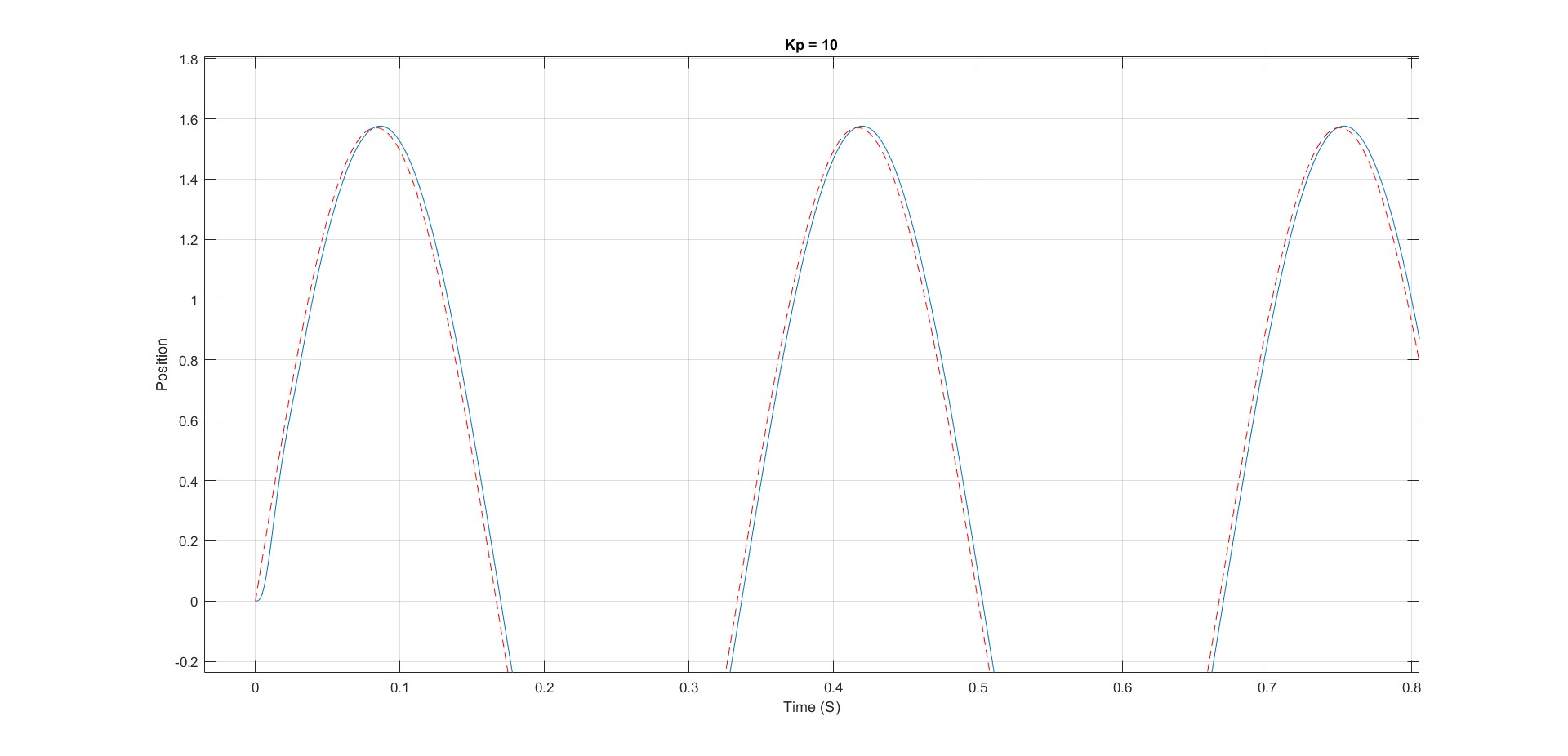
**Kp = 2**



**Kp = 5**

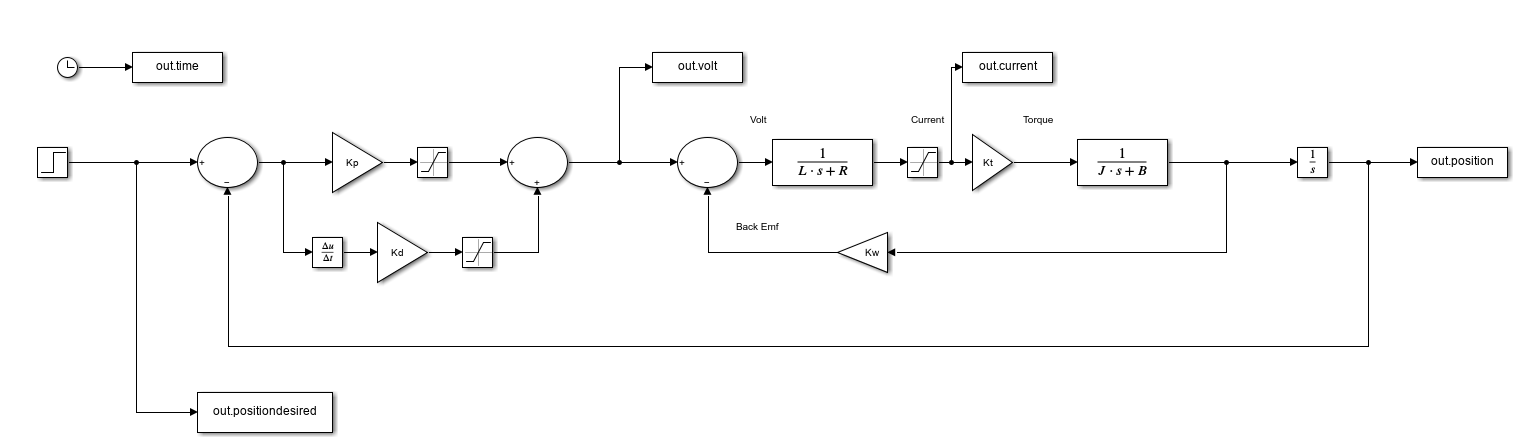


**Kp = 10**

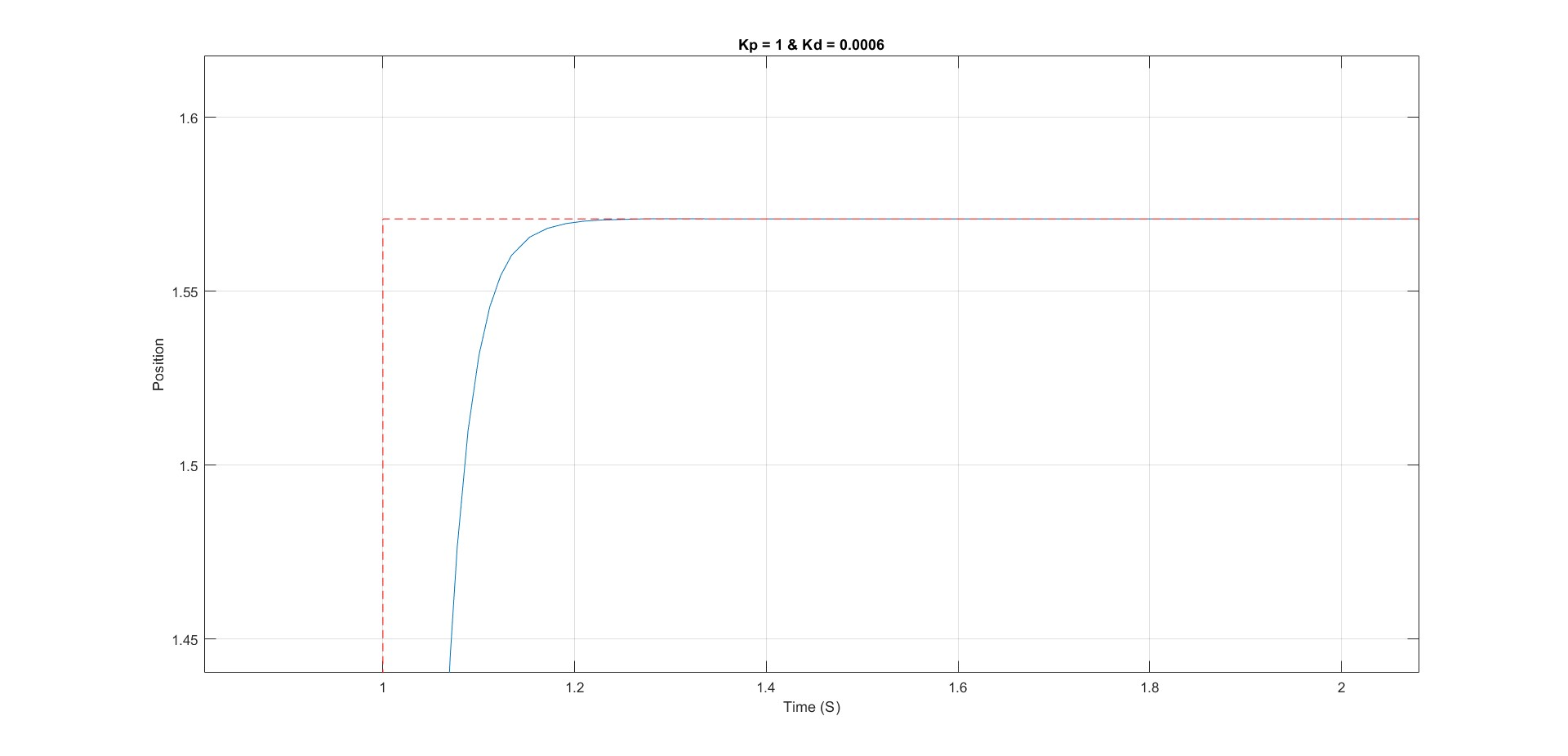


4. Develop a model with both Kp and Kd and make sure there is no overshoot

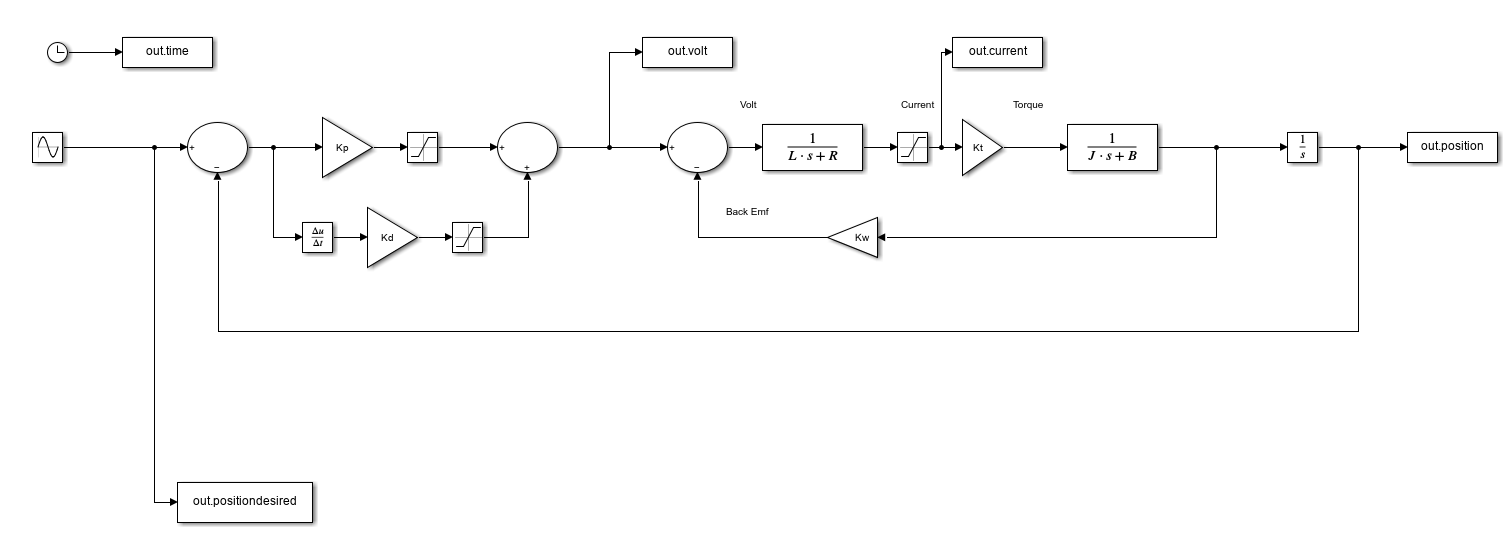
**The Step response with both Kp and Kd and has no overshoot**



And the best **step response** for Kp = 1 and Kd = 0.0006



**The sinusoidal response with both Kp and Kd and has no overshoot**

****

And the best **Sinusoidal response** for Kp = 5 and Kd = 0.0009