actuator definition
ServoMotor

Inputs
dangle: real

Outputs
T: real

Local Variables
Tm: real, Vemf: real, Tf: real V: real, i: real theta: real, av: real, e: real

Constants
b: real, Ke: real, Kt: real R: real, L: real Kp: real, Ki: real, Kd: real

Equations
av==derivative(theta) Tm==Kt*i Vemf==Ke*av Tf==b*av T==Tm-Tf V==i*R+L*derivative(i)+Vemf e==dangle-theta V==Kp*e+Ki*integral(e, 0, t)+Kd*derivative(e)