PID System Model for Closed Loop Simulations with PIDSim

BACKGROUND: PID loop tuning can be difficult on operating systems. Critical systems that can damage equipment on instability need special care for PID loop tuning. Tuning these critical systems off line with PIDSim increases the probability for success and creates significant peace of mind in the field.

SOLUTION: IEI's PIDSim implements the PID function block and the first or second order system model. This complete system model is used to tune the PID controller off line for significant time saving in the field on PID loop start-up.

Gather the plant system model step response data, enter the system step response data into PIDSim, run the simulator and use standard methods to tune the loop. No worries about system instability.

SYSTEM: PIDSim uses the standard ISA PID controller model and a second order system plant model. Step response data is entered into the plant system model to achieve a simulated step response close to that of the actual plant. The PIDSim PID loop controller is then adjusted to control the plant model as if it was actually controlling the real plant.

RESULT: PIDSim gives piece of mind when implementing new PID loop controller constants. PIDSim has been used successfully in many applications including water pressure, air flow, air pressure and temperature control systems. PID constants can be optimized without the fear of instability on an operating system.