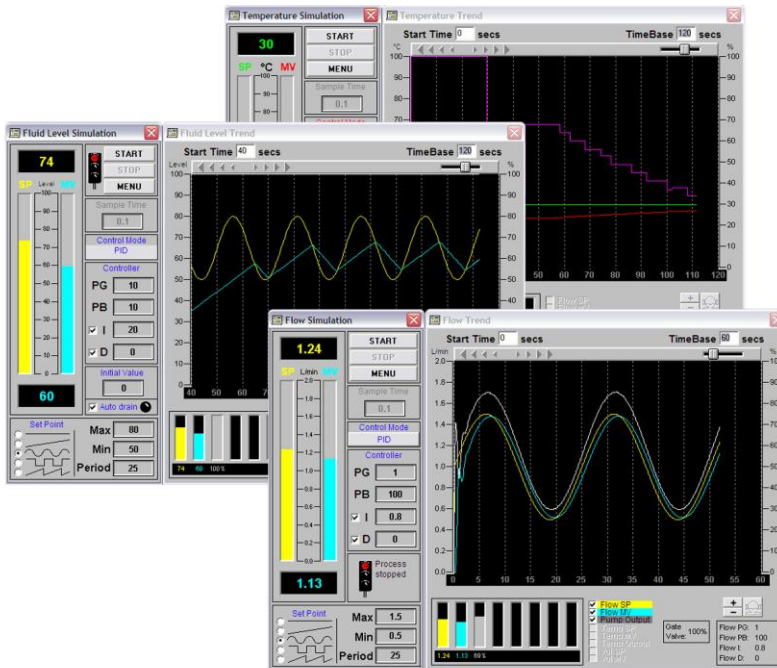


**Process Control Simulation Software PCUSIM**



**Key Features:**

- Graphical display with intuitive controls
- Introduction and development of three term control methods
- Data can be saved and printed
- P, PI, and PID Control
- Manual and Open Loop Control (Open Loop available for flow only)
- Perform experiments under same conditions with different control parameters
- Four control scenarios: flow rate, temperature, batch and fluid level
- Analyse the data and graphs

PCUSIM is a simulation software used to teach process control. The program is aimed at further and higher education students learning process engineering and process control using Three Term Control (PID) methods.

PCUSIM has a graphical display of all data in real time. Graphs can be analysed, rewind, saved and printed. Experiments for flow, level, temperature and batch can be performed. Students can perform the same experiments many times with the same initial condition and different control parameters, allowing closer comparisons of outcomes.

For each of the control screens in flow, level, temperature and batch, displays show : start and stop buttons, the control module, the principle variables being measured, PID parameters, set-point; real-time graph with start time and time base, state of current reading and reading being examined with tick boxes for each traces to be displayed.

Courseware manual and build in help files provided to allow students to proceed without full time supervision.

**Manual Includes**

- Demonstration of Main Features
  - Manual Control
  - Flow Control
  - Temperature Control
  - Batch Volume Control
  - Fluid Level Control
  - Open Loop Control
  - Saving and Retrieval of Trends
- Software Facilities Reference
  - File Menu
  - Control Menu
  - Setup Menu
  - Help Menu
- Initialisation of the Software
- Definition of Terms used in the Subsequent Sections
  - Manual Control
  - Flow Control
  - Temperature Control
  - Batch Volume Control
  - Fluid Level Control
  - Open Loop Control
  - Saving
  - Printing
- Glossary of Terms

**Labworks**

- Exercise 1: Proportional Control
- Exercise 2: Proportional and Integral Control
- Exercise 3: Saturation and Integral Windup
- Exercise 4: Three Term or PID Control
- Exercise 5: Ziegler / Nichols Tuning
- Exercise 6: Temperature Control
- Exercise 7: Batch Volume Control
- Exercise 8: Fluid Level Control
- Exercise 9: Open Loop Control
- Exercise 10: Bode Plots

## Specification

- Flow Rate, Temperature, Fluid Level, Batch Volume simulation control scenarios.
- PID and manual (on – off) control. (Open loop available for flow rate only).
- Graphical display: Start and Stop buttons, Control mode button, principal variables, any PID parameters, set-points, set point parameters, real-time graph with start time, time base, slide-able real-time, tick boxes for selection of displayed traces, display of current variables or of variables being examined, control buttons for choke valve, heater, cooler, stirrer, flow divert and drain valve. Floating display of graphical information, and ‘line-move’ display to analyse variables together
- Graphs save, load and print with headings
- Graphical mimic of a Process Control Unit mode, with button control of valves, cooler and stirrer, and sliding control of flow rate and heater.
- Four set point types available: flat, ramp, sine and saw-tooth
- Easy-menus interface
- Toolbar interface

## Required

A suitable PC with Minimum; Pentium processor, 1GB RAM, 20GB HDD, CDROM Drive, USB Interface and Windows XP or above

## Ordering Information

Consists of: Software CD and Software protection dongle  
Installation instructions  
Instruction Manual

### Licence Agreement

Single user licence, Stand Alone  
Additional licences, Stand Alone

### Order Code

PCUSIM  
PCUSIM/x

10 user licence Network PCUSIM10/n  
20 users licence Network PCUSIM20/n  
50 user licence Network PCUSIM50/n  
Additional licences Network PCUSIM/xn

## Weights and Dimensions

### Un-Packed

Approximate Dimensions (mm) 210W x 20D x 300H  
Approximate Weights 0.5Kg

### Packed

Approximate Dimensions (mm) 250W x 25D x 350H  
Approximate Weights 1Kg

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