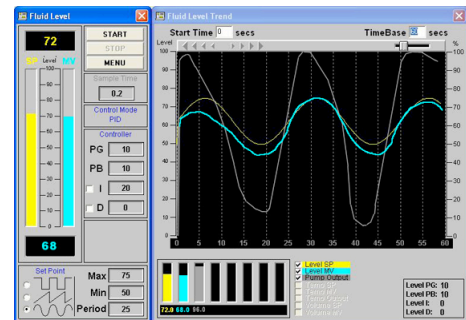


## Process Control Technology Level Module PCT-M2



### Key Features:

- Control and measurement of Level
- PID control PC SCADA type software with control and data monitoring
- Complete self-contained unit
- Connection to PC through USB
- Water used for the process
- Pressure sensor used to measure level
- Manual disturbance using a needle valve with incremental markings
- Visual indication of level
- Clear tank and pipes
- User manual



The PCT-M2 Level control trainer system enables the study of the principles in Level control and monitoring in a system. The system is self-contained and only requires connection to a PC through USB. The control module is contained on the unit and has a mimic of the systems and LED indication. The PCT-M2 can be controlled through the graphical based software supplied with the unit providing PID control.

The system comprises a pump connected through PVC pipes from a reservoir tank to a process tank and a valve to control the flow out of the process tank into the reservoir tank. The level in the process tank is measured using a pressure transducer and a needle type drain valve is fitted to provide a disturbance to the system. The clear tanks and pipes allow the student to see clearly the process they are controlling.

### Curriculum Coverage

- Introduction
- Software installation
- Software manual level control
- Software PID level control
- Principles of level measurement
- Established level-sensing technologies
- Types of level measurement
- Selecting the best method
- Control methods
- Modern control theory
- Topics in control theory
- Main control strategies
- Closed loop control
- Basic control principles
- 1st. order Ssystems
- PID controllers

### Labworks

- Proportional control
- Proportional and Integral control

## Process Module

Reservoir tank	Clear, approximately 3 litre capacity
Process tank	Clear, approximately 2 litres capacity
Pipe	Clear 20mm PVC
Pump type	12v submersible pump
Flow rate	8 litres per minute
Delivery height	Max 7 metre at (0.7 bar)
Pressure sensor type	Fully signal conditioned pressure transducer Bidirectional gage pressure
Operating pressure range	0 to $\pm 50$ mmHg
Proof pressure	170 mmHg
Sensitivity	40.0 mV/mmHg
Supply voltage	4.75 ... 5.25 V
Temperature limits	
Operating	-45 to +125°C
Storage	-55 to +125°C
Compensated	-45 to +125°C
Hysteresis and repeatability	$\pm 0.15$
Ratiometricity error	$\pm 0.25$
Response time	1 ms
Control element	1 x Proportional control valve 24v d.c. 1 x Manual disturbance needle valve with incremental markings
Drain valve	1 x Finger type valve fitted to rear of unit

## Control Console

Front of console	Graphical representation of process module
Connections	1 x Power connector 1 x USB connection
Number of LED displays	3 x Power on, pump on, valve open
Number of switches	1 x Power switch
Power supply voltage	100-250V AC @ 50/60Hz.

## Software

*Windows based graphical software with SCADA type interface with control and data monitoring.*

## Weights and Dimensions

Un-Packed		Packed	
Approximate Dimensions (mm)	500W x 550D x 745H	Approximate Dimensions (mm)	580W x 630D x 880H
Approximate Weights	13Kg	Approximate Weights	19Kg

## Required:

*A PC with Minimum; Pentium processor, 1GB RAM, 20GB HDD, CDROM Drive, USB 2 interface and Windows XP or above.*

## Ordering Information

<b>Model Number:</b>	<b>PCT-M2</b>
<i>Consists of:</i>	1 x Level control process module with controller 1 x 24v d.c. power supply 1 x USB connector cable 1 x User manual 1 x CD with Windows based graphical type software

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