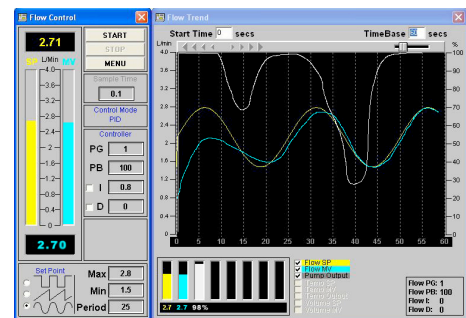


Process Control Technology Flow Module PCT-M1



Key Features:

- Control and measurement of flow
- 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
- Turbine flow sensor
- Flow meter for visual monitoring
- Clear tank and pipes
- User manual



The PCT-M1 Flow control trainer unit is a self-contained system comprising a pump connected through PVC pipes to a flow sensor, a valve and to a rotameter used to see actual flow rate in the system. The clear tank and pipes allows the student to see the processes they are controlling. The study of flow control and monitoring in a system can be performed through the graphical based software supplied with the unit, which has PID control with graphical interface for data analysis.

The PCT-M1 only requires connection to a PC through a USB connection. The control module is contained on the unit and has a mimic of the systems and LED indication.

Curriculum Coverage

- Introduction
- Software installation
- Software manual flow control
- Software PID flow control
- Principles of flow measurement
- Types of flow measurements
- The principles of flow control
- Flow measurement methods
- Turbine flow meter
- General performance characteristics
- Design and construction
- Control methods
- Modern control theory
- Topics in control theory
- Main control strategies
- Closed loop control
- Basic control principles
- 1st. order systems
- PID controllers

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- Proportional control
- Proportional and Integral control
- Saturation and integral windup
- Three term or PID control

Process Module

Reservoir tank	Clear, approximately 3 litre capacity
Pipes	Clear 16mm PVC
Pump type	12v submersible pump
Flow rate	8 litres per minute
Delivery height	Max 7 metre at (0.7 bar)
Flow sensor type	Turbine flow rate sensor
Operating pressure	14 bar maximum
Burst pressure	170 bar
Operating temperature	-20°C to 100°C (ambient +80°C for cable)
Input power	5 to 24 VDC @ 8mA
Accuracy	±3% of reading
Repeatability	0.5% of full scale
Flow range	Litres per minute 0.5-5
Flow meter	In line variable flow meter PVC
Maximum fluid pressure at 20°C	10 bar
Maximum fluid temperature	60°C
Accuracy	±2.5% full scale
Scaling	Litre per hour plus 0 to 100%
Control element	1 x Proportional control valve 24v d.c.
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	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 420H	Approximate Dimensions (mm)	580W x 630D x 560H
Approximate Weights	9Kg	Approximate Weights	15Kg

Required:

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

Ordering Information

Model Number:	PCT-M1
<i>Consists of:</i>	1 x Flow 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 software

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