PCT SERIES

Servo Pendulum - PCT64

Link to PCT64

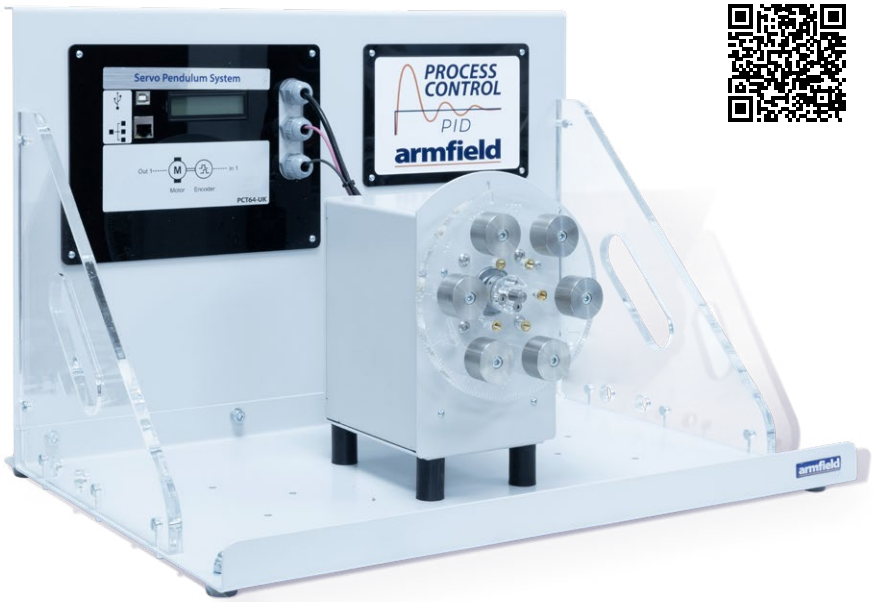
A servo pendulum is a specific type of control system used for applications like pendulum control and inverted pendulum control.

Learning about servo pendulum control systems allows students to see real-world applications of control theory. These systems are used in areas like robotics, aviation, and mechatronics, and understanding them can help students relate theory to practice.

The Armfield PCT64 servo pendulum control system introduces students to fundamental control concepts, such as feedback control, proportional-integral-derivative (PID) controllers, and closed-loop control systems.

The system consists of a powerful DC motor mounted on a rugged frame. A disc with captive nuts is attached to the DC motor and students are able to screw in 100-gram weights to different parts
of the disc to alter the characteristics of the system.

A single weight at 0 degrees forms an inverting pendulum.



Features/Benefits

- USB, WiFi, Bluetooth and LAN communications supplied as standard
- Supplied software includes Basic control, On/Off control and PID control
- Software dynamically displays set point, Process value and Kp, Ki, and Kd
- MATLAB and Labview compatible
- Supplied with full set of manuals and teaching material

Experimental content

- Understanding how to control driving devices
- Understanding the sensors
- On/Off control systems
- System time constant
- P controller
- PI controller
- PID controller
- Zeigler Nichols algorithm
- Integral wind up
- Derivative filter
- Manual tuning
- Interfacing with MATLAB/ LabVIEW

Ordering specifications

PCT64 Servo Process Control System Process

A Servo Pendulum Process Control trainer, comprising:

- 24V PSU 60w 2.5a
- Servo Pendulum control assembly
- USB lead
- Manual Control software allowing low level access to the Drive and Load in each system allowing calibration of sensors and drive systems.
- On/Off Control software allowing control of each system with a simple On/Off algorithm, view software based oscillations and to explore the effects of hysteresis
- PID Control software allowing uses to enter values for Kp, Ki, Kd and see how the system reacts to in-putted values

Related products

PCT60: Level Process Control System
PCT61: Flow Process Control System
PCT62: Temperature Process Control System
PCT63: Pressure Process Control System

Requirements

PC | USB

Scale

Mains electrical supply:
110-230V, AC 50-60 Hz.
PC and Display meeting the following minimum specification:

- **Processor:** 1Ghz or faster
- **RAM:** 1Gb or more
- **HDD Space:** 1Gb
- **OS:** 32 or 64bit Windows 7, 8, 10 or 11
- **Display:** Recommended minimum (1920 by 1080) full HD

Overall dimensions	
Length	64cm
Width	45cm
Height	33cm
Packed and crated shipping specifications	
Volume	0.095m^2
Gross weight	12.1kg

Ordering code

PCT64-UK: Servo Pendulum Control System
PCT64-EU: Servo Pendulum Control System
PCT64-USA: Servo Pendulum Control System

UK office - email: sales@armfield.co.uk tel: +44 (0) 1425 478781 (for ROW)
USA office - email: info@armfieldinc.com tel: +1 (609) 208-2800 (USA only)