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INVERTED PENDULUM DATASHEET

1. What is an Inverted Pendulum?

Remember when you were a child and you tried to balance a broom-stick or baseball bat on your index finger or the palm of your hand? You had to constantly adjust the position of your hand to keep the object upright. An Inverted Pendulum does basically the same thing. However, it is limited in that it only moves in one dimension, while your hand could move up, down, sideways, etc. Check out the video provided to see exactly how the Inverted Pendulum works.

2. What is it for?

Just like the broom-stick, an Inverted Pendulum is an inherently unstable system. Force must be properly applied to keep the system intact. To achieve this, proper control theory is required. The Inverted Pendulum is essential in the evaluating and comparing of various control theories.

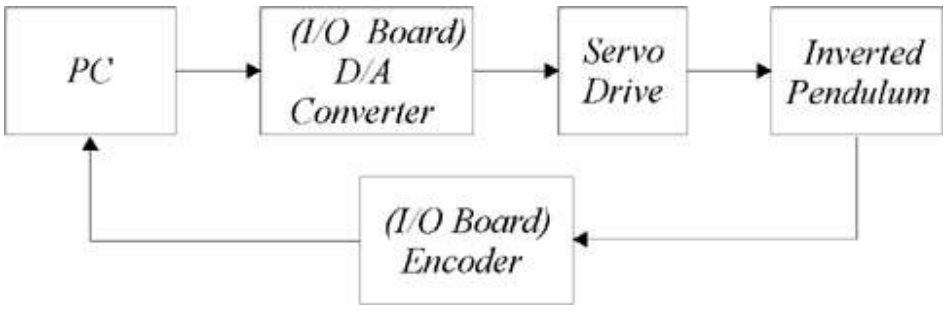

Figure 1: Block Diagram of Inverted Pendulum

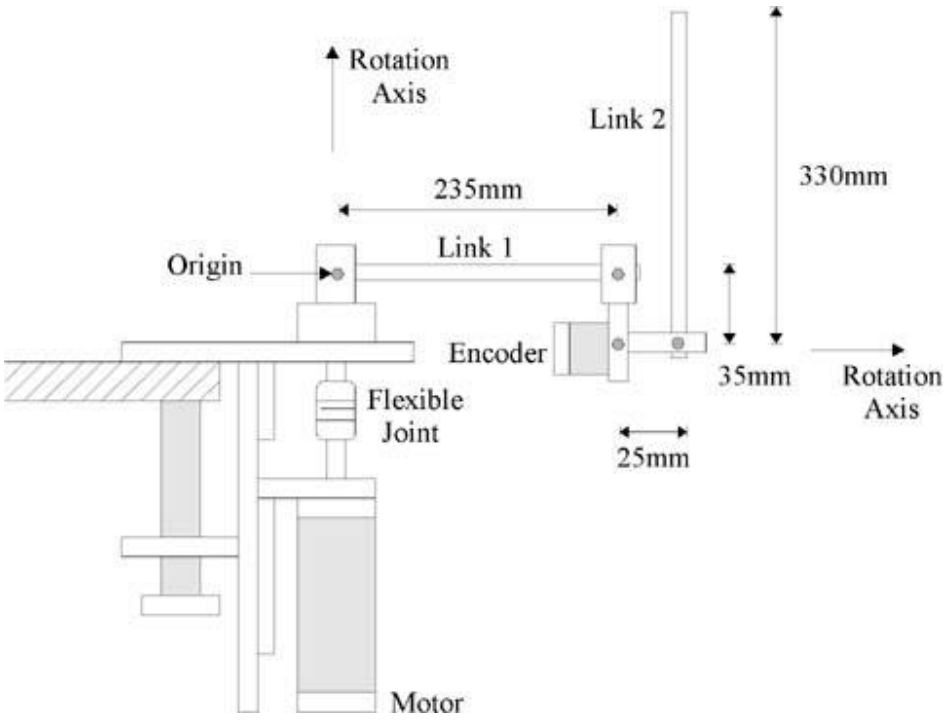

Figure 2: Dimension of the Inverted Pendulum

SPECIFICATIONS

Encoder 1 (Motor Axel):	**1024 pulse/turn**
Encoder 2 (Pendulum Axel):	**1024 pulse/turn (NIDEC NEMICON)**
Max Length of Link 1:	**235 mm**
Max Length of Link 2:	**330 mm**
Motor:	**MINIMOTOR 3557K048CR 48V, 74Watt, 1,350 rpm Including 4:1 deduction gear.**
Motor Power Amp:	**80 Watt**
Counter:	**16 bit biderectional x 2(internally X4 counting)**
Interface:	**PC Parallel Port(EPP mode)**
Power:	**110V / 220V**

FEATURES

- Rotational inverted pendulum.
- Simple architecture.
- Requires minimal space.
- PC base control.
- Printer port interface.
- Easily self inverted.
- System model for Matlab included.
- 3D Animation recorder and viewer, source code.