



Email : sales@laboratoryinstrumentindia.com

Product Name :
Helicopter Model

Product Code :
LBNY-0005-18500013



Description :

The model simulates a helicopter with horizontal and tail rotors to give pitch and yaw control. The control system must keep the helicopter stable and allow for a change in the centre of gravity. When operating near the steady state, the electromechanical system can be linearized to a six-order model. Sensors measure the yaw and pitch angles. This gives a two-input and two output system, with cross-coupling. Students use the educational manual (supplied) to help identify plant dynamics and create a control system.

The equipment includes:

- The model helicopter on a stand
- A protective steel cage to put around the helicopter for safety
- An interface unit
- A data acquisition board for your computer.

Technical Specification :

Experiments:

- Direct derivation of a general mathematical model of a helicopter using System decoupling techniques, diagonalisation of system transfer matrix and state space methods.
- Direct and indirect (closed-loop response analysis) methods should be used.
- Lagrange equations, linearisation and simplification.
- On-line identification of parameters of a linear model.
- State feedback design, observer design
- Stabilisation and tracking tasks formulation.



Laboratory Instrument India