

KCL - 14

AC POSITION CONTROL TRAINER



A.C. Position Control System is used in control laboratory experiments. 2-phase ac servomotors have been traditionally used for position/ speed control applications especially in light weight, precision instrumentation areas in airborne systems. The present unit is designed around a 12V ac servomotor and exposes the basic characteristics and dynamics of a position control system.

Besides introducing the basic features like balanced modulation of the error signal, phase reversal around the set point and phase difference between the reference and control phases of the motor, the experiment involves the study of the step response of the closed loop system. Being a mechanical system, the response is too slow for a comfortable viewing on a CRO, except on an expensive storage oscilloscope. A microprocessor based waveform capture/ display card in the unit stores the step response in real time and displays the same once steady state is reached.

Features

- 2-phase servomotor 12V/ phase, 50Hz, 10W.
- Power amplifier.
- Servo potentiometer type error detector.
- In-built 10.00V (rms) panel meter.
- μ P based waveform capture card.
- **Interconnections**
 - All interconnections are made using 2mm banana Patch cords.
- Test points are provided to analyze signals at various points.

- All ICs are mounted on IC Sockets.
- Bare board Tested Glass Epoxy SMOBC PCB is used.
- In-Built Power Supply with Power ON indication
- Attractive ABS Plastic enclosures.
- Set of 2mm Patch cords for interconnections
- User's Manual.

List of Experiments

- Error detector characteristics, phase reversal.
- Amplifier gain measurement
- Phase difference between control and reference windings.
- Step response study.

Note : Specifications can be altered without notice in our constant efforts for improvement.