

**Product Name :**  
Modular Servo System (D.C., A.C., D.C./A.C, complete system)

**Product Code :**  
CE198



**Description :**

Modular Servo System (D.C., A.C., D.C./A.C, complete system)

**Technical Specification :**

Modular Servo System (d.c., a.c., d.c./a.c, complete system)

The modular servo system enables students to study the theory and practice of automatic control systems. It illustrates modern circuit and constructional techniques. The system is modular and, therefore, versatile. Each unit is fitted with a magnetic base which holds the unit to the plastic coated steel baseplate, irrespective of the angle at which the baseplate is positioned. Individual units may be so arranged to create operating block schematic systems and interconnections between the units are made by jumper leads terminated in 4 mm stackable plugs. The modular concept of the system permits the study of individual units and also, by combination, the investigation and performance testing of complete systems. A series of instructional manuals is supplied to provide comprehensive coverage of servo system theory and assignments.

Curriculum Coverage

Operational amplifiers

Motor speed characteristics

D.C. error channel

Simple position control

Closed-loop position control

Simple speed control

Dead band & step response

Velocity feedback

Analysis of simple speed control with speed response

Position response

Closed-loop frequency response  
Identification of motor time constants  
Identification of velocity error constant  
Frequency and transient response  
Motor characteristics  
A.C. tachogenerator  
Motor speed control  
A.C. pre-amplifiers  
Position control system  
Importance of correct phasing on performance  
Compensation using the adjustable notch filter  
Notch filter design exercises  
Frequency selective  
Characteristics for the elimination of noise & harmonics  
Detailed analysis of carrier system  
Frequency transformation for compensator techniques  
Principles & measurement of compensation unit characteristics  
Measurement of system characteristics  
Instability  
Reduction in steady following error  
Relay characteristics  
Relay-operated control system  
Following characteristics of relay system  
Effect of backlash on system stability  
Relay-operated speed-control system  
Phase-plane analysis  
Motor characteristics - trajectories  
Trajectory for a sequence of switching  
Phase-plane analysis of relay-operated systems  
Rotation of switching lines by velocity feedback  
Waveform sampling  
Sampled data servo control system  
Simulated sampled data control system  
Sampled data process control system - transfer functions of hold circuits and the sampling theorem  
Speed control of an servo  
Position control  
Following error

Features:

Modular & flexible  
Self-contained units with mimic diagrams on function blocks  
Units can be investigated individually before building systems  
"Hands on" assembly of working systems  
Magnetic unit bases creating a versatile & stable system  
Robust product used & trusted for many years  
Can be used for advanced work  
Upgrade pack to enable MATLAB compatibility  
Comprehensive theory & experiment manual.

## Naugralabequipments

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