

# AUTOMATIC CONTROL TRAINER

**Model: ACT-108900**

## I. EXPERIMENTS INCLUDED:

1. INTRODUCTION TO EACH MODULE UNIT
2. OPERATION AMPLIFIER EXPERIMENT
3. DC SERVO MOTOR CHARACTERISTIC
4. ANALYSIS OF ERROR SIGNALS
5. SPEED CONTROL EXPERIMENT
6. POTENTIOMETER POSITIONING CONTROL SYSTEM
7. DEAD BAND, TRANSIENT AND STEADY-STATE RESPONSE
8. PID CONTROLLER
9. SYNCHRO
10. DEMODULATOR
11. CONTROL SYSTEM OF SYNCHRO AND DC SERVO MOTOR
12. BASIC EXPERIMENT OF STEP MOTOR
13. CONTROL SYSTEM OF SYNCHRO AND STEP MOTOR
14. CONTROL SYSTEM OF POTENTIOMETER AND STEP MOTOR
15. ROTARY ENCODER

## OPTIONAL:

16. PLC PROGRAMMING AND COMMUNICATION
17. PLC AND STEP MOTOR OPEN-LOOP CONTROL
18. PLC AND STEP MOTOR CLOSED-LOOP CONTROL
19. AC SERVO MOTOR PRINCIPLE AND STRUCTURE
20. CONTROL SYSTEM OF POTENTIOMETER AND AC SERVO MOTOR
21. CONTROL SYSTEM OF SYNCHRO AND AC SERVO MOTOR
22. PLC AND AC SERVO MOTOR CLOSED-LOOP CONTROL

## II. COMPONENTS & MODEL NUMBERS

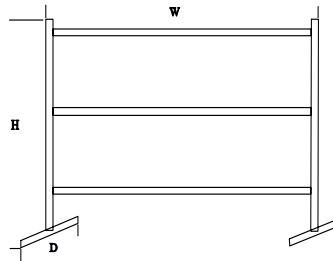
<u>DESCRIPTION</u>	<u>MODEL #</u>
1. Attenuator	CJ-8901
2. Phase Demodulator	CJ-1273
3. Plate Form	CJ-8910
4. Input Potentiometer	CJ-8911
5. Output Potentiometer	CJ-8912
6. DC Servo Motor	CJ-8913
7. Synchro Transmitter	CJ-8914
8. Synchro Receiver	CJ-8915
9. Step Motor	CJ-8917
10. Rotary Encoder, 90-pulse	CJ-8918
11. V/F Converter & Forward/Reverse Rotation Controller	CJ-8935
12. Step Motor Driver	CK-230
13. Keyboard and Display Console	DK-416
14. PLC Controller	FX2-32MR
15. PLC Output Extension Module	FX-16EYT
16. Pulse Generator Module	FX-1PG
17. Digital Multimeter	MIC-7S
18. Error & Proportional Controller	CJ-8932
19. PID Controller	CJ-8933
20. Variable Load Resistor	CJ-8934
21. Connection Wires	CJ-0005

22. Gear Box, Magnetic Load, & RPM CJ-8907
23. Power Supply EE-202
24. Function Generator & RPM Meter EE-207
25. DC Servo Motor Driver CJ-8927
26. AC Servo Motor (optional) CJ-8916
27. AC Servo Motor Driver (optional) MR-J40A

## III. HARDWARE SPECIFICATION

### 1. MAIN PANEL FRAME

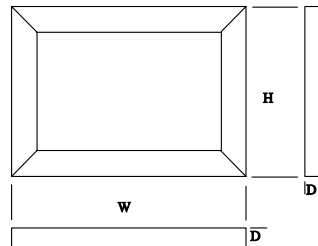
- 1) Size: 59.1"/1.5m(W) X 30.7"/.78m(H) X 15.7"/.4m(D).



- 2) Material: Aluminum and square steel tubing.
- 3) Demonstration: Module boards can be slid in and out of the holding slots. It is designed to allow instructors conveniently demonstrate the circuits and let the students work on the panel easily.

### 2. MODULE BOARD

- 1) Size: 13.4"/.34m X 9.45"/.24m X 1.9"/.048m Approx.



- 2) Board frame: PS plastic extrusion, 0.118"/3mm thick minimum

### 3. PLATFORM

- 1) Size: 19.7"/.5m(W) X 5.5"/.14m(D) X 1.4"/.035m(H)
- 2) Iron casting.

### 4. L-SHAPE STAND

- 1) Size: 3.9"/.1m(W) X 5.5"/.14m(D) X 5.5"/.14m(H)
- 2) Iron casting.

### 5. ELECTRICAL BOX

- 1) Size: 9.8"/.25m(W) X 11.8"/.3m(D) X 7.9"/.2m(H)
- 2) Steel.

### 6. CONNECTION WIRES

- 1) Extruded banana plugs, standard .16"/4mm dia..