

GENERAL DESCRIPTION

A training aid developed to help teach basic principles of process control and computers. Contains LS TLL CMOS compatible integrated circuits. Molded plastic ABS case. Soldered connections are easily replaced. Training systems offers versatility, reliability and durability. Symbols allow for easy identification. Includes lab manual with answers..

The CL-SLD includes the following components:

- Basic SLD i-34 module (mounting board, function generator, power supplies, displays and switches);
- SLD i-35 combined circuit module (NOT-AND, AND NOT-OR, OR, and OR ONLY gates);
- SLD i-36 sequential circuits (J-K, D, R-S switches, Schmitt trigger gates, timing log, decade and binary counters).



BASIC MODULE SPECIFICATIONS

- Power switch
- 0.5 A input protection fuse
- 100' (30 m) of solid wire 24 AWG (0.511 mm) for connections

Power supplies (4)

- + 5 VDC, $\pm 5\%$ at 0.5 A
- + 15 VDC, $\pm 4\%$ at 0.25 A
- - 15 VDC, $\pm 4\%$ at 0.25 A
- + 1.2 at 12 VDC, with current limit at 0.138 A

Function generator

Sinewave

- Variable amplitude 0.2 to 3 V peak to peak
- Variable frequency and duty-cycle

Triangle wave

- Variable amplitude 0.4 to 8 V, peak to peak
- Variable frequency and duty-cycle

Square wave

- Variable frequency and duty-cycle
- Frequency is adjustable on 2 steps; Slow: .2 Hz to 45 Hz, Fast: 40 Hz to 9 kHz and the duty-cycle varies from 1 to 99 %
- Pulse generator (monostable): 40 ms pulse width with logic level indicator
- Eight (8) DIP switches selecting logic levels 0 and 1 with logic lever indicator
- LED display with 8 independent inputs
- Two (2) seven-segment LED displays with decoded or direct inputs.
- LED level indicator on each logic output
- Breadboard: 6 1/2" (1 6.5 cm) X 4 13/32" (1 1.2 cm) X 4 13/32" (.9 CM)
- Sockets for all integrated circuits

LIST OF EQUIPMENT

SLD I-34, BASIC MODULE

- Breadboard
- Functions generator
- Power supplies
- Displays
- Switches

SLD I-35, COMBINATIONAL CIRCUITS MODULE (optional)

- Eight (8) 2-input NAND gates
- Three (3) 3-input NAND gates
- Four (4) 2-input AND gates
- Eight (8) 2-input NOR gates
- Four (4) 2-input OR gates
- Four (4) 2-input exclusive OR gates
- Six (6) hex inverters

SLD I-36, SEQUENTIAL CIRCUITS MODULE (optional)

- Eight (8) J-K flip-flops
- Two (2) D flip-flops
- Four (4) R-S latches
- Hex Schmitt trigger inverter
- Four-bit shift register
- Decade counter
- Binary counter



CL SLD TOP PANEL



CL SLD BOTTOM PANEL

DESCRIPTION	CL SLD-00	CL SLD-50
Supply voltage:	120 VAC	220 VAC
Total weight:	4 kg (9 lbs)	
Volume:	0.016 m ³ (0.55 ft ³)	
Product number:	52216/50722	

LIST OF EXPERIMENTS

Combinational circuits

- Electronics gates : semiconductors
- Electromechanical components
- Binary numbers
- Boolean algebra postulates and theorems
- Simplification and design of semiconductor gate networks
- Design of relay circuits
- Design with "NOR" and "NAND" gates
- Design of multiple-output circuits using semiconductor gates
- Design of multiple-output contact networks
- Diagram analysis
- Addition and subtraction
- Multiplication and division by a constant
- Subtraction by complement addition
- Binary-coded-decimal (BDC) code conversion and addition
- Comparator
- Parity-bit generator
- Automatic control of a garage door
- Decision-making machine
- Burglar alarm
- Sound distribution system

Sequential circuits

- Flip-flops
- Up counters, down counters, up-down counters
- Registers
- Series addition - series subtraction
- Serial multiplier