

Embedded Systems Design Series

Digital Logic Trainers

DL-020 Sequential Logic Trainer



Some of the logic circuits that can be implemented with this trainer include:

SR latch
D latch with and without enable
D flip-flop with and without enable
SR flip-flop
JK flip-flop
T flip-flop
4-bit register
Serial-to-parallel shift register
4-bit up counter
4-bit up/down counter
Finite state machine (FSM)
Rotating lights controller
Car security system controller
Jeopardy® contestant response controller
Traffic light controller
Other custom controllers

Features:

- ❑ 62-page professionally written lab manual authored by university professor, Enoch Hwang, PhD.
- ❑ iPad version of lab manual available on iTunes
- ❑ 12 hands-on labs correlated to any textbook for a digital logic course.
- ❑ Sturdy blow molded carrying case makes the entire lab lightweight and portable.
- ❑ Attractive and easy to use system draws students in to the beauty of digital logic and embedded systems design.
- ❑ Complete kit with 9V wall adapter and 100 machined pin hookup wires. No need to buy anything else.
- ❑ All gate elements are pre-mounted and fully integrated.
- ❑ Expandable breadboard allows the system to grow as students' knowledge increases.
- ❑ Perform experiments using standard TTL logic.
- ❑ Well regulated 5V power (Vcc) and ground (GND) points.
- ❑ Commonly referenced truth table chart inside the case lid.
- ❑ High quality machined sockets for input and output interconnections.
- ❑ Each gate element is presented in its easy to visualize graphic form.

Global Specialties' DL-020 is the second model in its series of embedded systems design trainers. The DL-020 teaches students the advanced concepts of sequential digital logic design, which is an essential step towards understanding microprocessor and microcontroller logic.

With the DL-020, all necessary logic components are included and pre-mounted for fast, easy implementation of sequential circuits that are used as the building blocks of microprocessors. These sequential circuits include the SR latch, D latch, register, memory, finite state machine (FSM), and several real-life controller examples.

Global Specialties' logic trainer simplifies the teaching process by eliminating the need to discretely wire IC's as all gate elements are pre-mounted, de-coupled and de-bounced, ready for immediate classroom use. Students can spend their time directly on logic training.

Most importantly, the trainer includes a 62-page professionally written training manual featuring an overview of sequential digital logic and 12 corresponding hands-on labs enhancing any textbook currently in use.

The DL-020 is a complete and ruggedly packed trainer that will provide a solid learning platform to individuals and classroom students.

Sequential Logic Trainer

Specifications

Model DL-020	
	Clock Switch between 1Hz and 20Hz
NOT gate	12
2-Input AND gate	12
4-Input AND gate	8
2-Input OR gate	8
4-Input OR gate	8
2-Input XOR gate	12
2-Input NAND gate	8
D Flip-flop	4
4-to-1 Multiplexer	4
LEDs	8
7-Segment LED display	1
Slide switch	8
Push Button switch	3
270 tie point Bread Board	Yes
Vcc & GND tie points	Yes
Hook up wire 100pcs	Yes
9V wall adaptor	yes
Regulated 5V supply	yes
DL-020 Manual	Yes
Width	13.5 in
Length	8.5 in
Height	3.5 in
Weight	3.40 lbs

Training Manual

Chapter 1: Sequential Logic Design Trainer

Model DL-020

Chapter 2: Microprocessors
Introduction to Microprocessors
Combinational and Sequential Circuit
Analogy

Chapter 3: Sequential Logic Circuits
Identifying Sequential Circuits
Analysis of Sequential Circuits
Finite State Machines
Synthesis of Sequential Circuits

Chapter 4: Labs
The NAND gate
SR Latch
D Latch
D Latch with Enable
D Flip-Flop
D Flip-Flop with Enable
Register
Binary Up Counter
Car Security System Version 2
Rotating Lights Controller
Jeopardy® Contestant Response
Controller
Traffic Light Controller



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