DL-020 **Sequential Logic Trainer**

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.

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

**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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