OMEGA®

A SIGN OF QUALITY PRODUCT

DIGITAL TRAINER

OMEGA TYPE DL-1044

OMEGA TYPE DL-1044 Digital Trainer is intended for elementary as well as advance training of Digital electronics and for bread board digital circuits, AND, OR, NOT, NAND, NOR, XOR, Three State Buffer, RS Latch, JK Flip Flop, Monostable Multibrator. and UP/ DOWN Counter.

Practical experience on this board carries great educative value for R & D labs, Science and Engineering Students.

SPECIFICATIONS:

01 Breadboard :
Solderless Bread board with 1680 inter connected Tie Points

02 Pulse Switches :
2 No's. Bounce free push buttons

03 Logic Switches :
8 logic level Switches in Dip type .

04 Power Supply :
Fixed: +5V at 750 mA

05 Power Sockets :
Logic Probe Power Supply Sockets

06 Logic Input :
8 LED buffered logic level indicators

07 Variable Clock :
Fine adjustment of clock frequency. Clock range selection L : 10 – 40 Hz, H : 1K – 20K Hz.

08 Jacks :
2mm to BNC Socket 2 No. 2mm to 4mm Socket 2 No.

09 Components Provided :
ICs - 4001/1, 7400/3, 7402/1, 7404/1, 7408/1, 7432/1, 7476/2, 7486/1, 74126/1, Resistors 1/4W ±5% 330E/1,10K/1, 39K/1, LED 5mm/1

10 Accessories :
Mains cord, 2mm Red & Black patch cords 5 each and 2mm to 1mm Red & Black 2 each

11 Instruction manual:
Strongly supported by detailed operating instructions.

12 Logic Probe Omega Type LP-002 With 2mm Banana Pin Qt.1 Provided

13 Wiring of all types of experiments become simple and less time consuming.

14 The unit is operative on 230V ±10% at 50Hz AC Mains.

15 Weight : 3 Kg. (Approx.)

16 Dimension : W 340 x H 125 x D 210

OBJECTS:

01 LED Display
02 Getting a Pulse
03 Setting a Logic Level
04 Getting a Clock and using the Logic Probe
05 AND Gate (static operation)
06 OR Gate (static operation)
07 Dynamic Operation of AND Gate and OR Gate
08 NOT Gate
09 NAND Gate
10 NOR Gate
11 Exclusive OR Gate (Also called XOR Gate)
12 XNOR
13 Three State Buffer
14 RS Latch
15 Basic JK Flip Flop
16 Monostable Multivibrator
17 Asynchronous UP/DOWN Counter

SPECIFICATIONS OF LOGIC PROBE OMEGA TYPE LP-002

01 OPERATING VOLTAGE : 5V ± 3% regulated DC at 150mA, Ripple < 3mV.

02 LOGIC STATE INDICATIONS
- 01 High Level '1' : 'H' (HIGH).
- 02 Low Level '0' : 'L' (LOW).
- 03 Open / Floating state: 'O' (OPEN).
- 04 Pulses : 'P' (PULSES).

03 LOGIC FAMILIES : TTL / CMOS.

04 FREQUENCY : Upto 50MHz for TTL/CMOS.

05 RECOGNISED VOLTAGE LEVELS BY LOGIC PROBE AT
AN OPERATING VOLTAGE OF 5V ±3% RIPPLE < 3mV
- 01 High Level Threshold : > 3.0V
- 02 Low Level Threshold : < 0.8V
- 03 Open/Floating Level : 0.8V to 3.0V (Approx.)
- 04 Over Load Protection : Upto 25V source
- 05 Sink Current : Less than 15mA

06 SUPPLY CURRENT TAKEN BY THE PROBE : Less than 150mA

07 SHORTEST PULSE WHICH CAN BE DETECTED BY THE PROBE: 40 nano Sec.

08 Pulse detection is retriggerable and hence continuous pulses or clock will be indicated by 'P'.

09 Positive going pulse will be indicated by letter 'L' followed by letter 'P' and then 'L' again.

10 Negative going pulse will be indicated by the letter 'H' followed by letter 'P' and then 'H' again.

11 THE INDICATOR 'O' OCCURS IN TWO SITUATIONS
- 01 When the probe tip is not connected to a test point
- 02 When the test point is floating with a level lying between about 0.8V to 3V

Cont. 2

OMEGA ELECTRONICS

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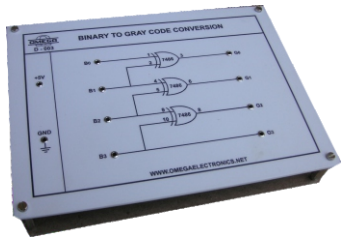
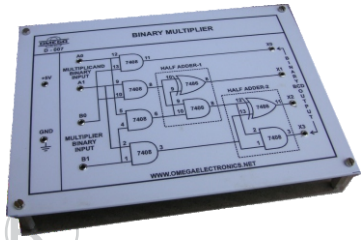
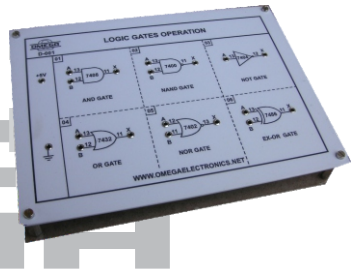
OTHER APPARATUS REQUIRED :

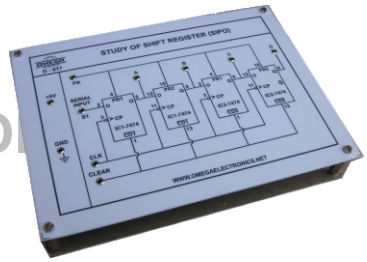
Apart from above given experiment customers can purchase these optional modules. These are ready to use modules with wired components & circuit schematic drawn on top compatible to use with Digital Lab.

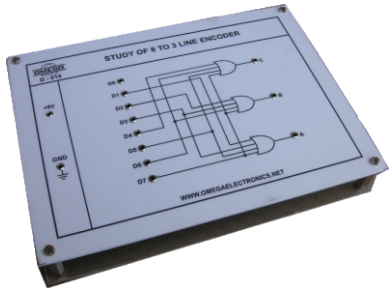
D001 Logic gates operation
D002 To verify De-morgan's theorem with boolean logic equations
D003 Binary to Gray code conversion
D004 Gray code to Binary conversion
D005 Binary to Excess-3 code conversion
D006 Binary Adder and Subtractor
D007 Binary Multiplier
D008 EX-OR gate implementation
D009 Application of EX-OR gate
D010 Johnson Counter
D011 To verify the dual nature of Logic Gates
D012 Study of Flip-Flops RS, JK, D&T
D013 Multiplexer and Demultiplexer
D014 4 Bit Binary up and down counter
D015 Study of 8 to 3 Line Encoder
D016 Study of 3 to 8 Line Decoder
D017 Study of Shift Register (SIPO)
D018 CMOS-TTL Interfacing
D019 Study of Crystal oscillator
D020 Study of pulse stretcher circuit
D021 4 Bit Ring Counter
D022 Modulo 12 Counter By Direct Clearing
D023 Decade counter
D024 Shift Register SISO and PIPO
D025 Decimal to BCD Converter
D026 Astable Multivibrator using Digital IC
D027 Bistable Multivibrator using Digital IC
D028 Monostable Multivibrator using Digital IC
D029 Octal to binary Encoder
D030 4 Bit Magnitude Comparator
D031 Interface of TTL-IC to CMOS-IC & CMOS IC to TTL-IC
D032 Digital to analog converter











01 Weight : 0.7 Kg. (Approx)
02 Dimension : W 176 x H 131 x D 37

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