OMEGA®

A SIGN OF QUALITY PRODUCT

**DIGITAL LAB MODULES**

OMEGA TYPE DL-1041

The **DIGITAL LAB** is intended for elementary as well as advance training of digital electronics. The digital lab covers regular digital circuits by solder-less interconnections on breadboard and as well as compatible with all optional modules through use of 2mm brass terminals and patch cords. Various clock generators, logic level input/output indicators and DC regulated power supplies etc. are in-built. The unit housed in attractive enclosure is supplied with mains cord, patch cords, Instruction manual and Component Set.

**OBJECTS:**

01 Logic gates operation
02 To verify De-morgan's theorem with boolean logic equations
03 Binary to Gray code conversion
04 Gray code to Binary conversion
05 Binary to Excess-3 code conversion
06 Binary Adder and Subtractor
07 Binary Multiplier
08 EX-OR gate implementation
09 Application of EX-OR gate
10 Johnson Counter
11 To verify the dual nature of Logic Gates
12 Study of Flip-Flops RS, JK, D&T
13 Multiplexer and Demultiplexer
14 4 Bit Binary up and down counter
15 Study of 8 to 3 Line Encoder
16 Study of 3 to 8 Line Decoder
17 Study of Shift Register (SIPO)
18 CMOS-TTL Interfacing
19 Study of Crystal oscillator
20 Study of pulse stretcher circuit

**FEATURES:**

**01 Bread Board :**
Unique solder-less large size, spring loaded breadboard consisting of two Terminal Strips with 1280 tie points and 4 Distribution Strips with 100 tie points each, totaling to 1680 tie points. (Size : 112mm x 170mm approx)

**02 Regulated DC Power Supply :**
+5V at 1 Amp, -5V at 500 mA, 3 to +15V at 500mA, and -3 to -15V at 500 mA.

**03 Pulse Generator :**
1 Hz to 1 MHz in 6 Steps. Variable in between steps
Amplitude : 3-15V (CMOS), 5V (TTL)
Duty Cycle : 50% TTL / CMOS Output

**04 Pulsar Switches :**
2 independent buffered bounce free manual pulser (useful for freezing the action of each stage of the counter after every clock pulse)

**05 Data Switches :**
12 Nos. independent buffered logic level inputs to select High / Low TTL levels, each with a bi-color LED to indicate high / low status and termination.

**06 Logic Indicators :**
12 Nos. independent buffered logic level indicators for High / Low status indication with bi-color LED for digital outputs

**07 Seven Segment Display :**
2 Nos. BCD to Seven Segment Decoder / Driver IC with terminals

**08 Logic Probe :**
Logic level indicator for TTL / CMOS

**09 Power :** 230 V ± 10%, 50 Hz

**10 Components Provided:**
ICs-4001/1, 4049/1,4069/1, 7400/1, 7402/1, 7404/1, 7406/1, 7408/2, 7410/2, 7411/3, 7420/2,7432/3,7474/2,7476/2,7486/1.Resistors -330E/1,1K/2, 1K8/1,,15K/1, 47K/1.1M/2, Capacitors- 0.01mF/1, 0.1mF/1, 0.22 mF/1,Crystal-32.768MHz/1.

12 Weight : 5 Kg. (Approx.)
13 Dimension : W 415 x H165 x D315

**LIST OF ACCESSORIES:**

01 Mains cord, Operating and Experimental manual, Red & Black patch cords (2mm with Pin) 10 each, Red & Black patch cord (Pin to Pin) 10 each. Wire 24/25 SWG. 1Meter each 5 Color

**02 Instruction manual :**
Strongly supported by detailed operating instructions.

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**OMEGA ELECTRONICS**

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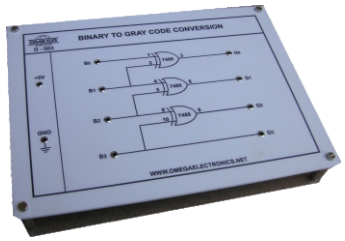
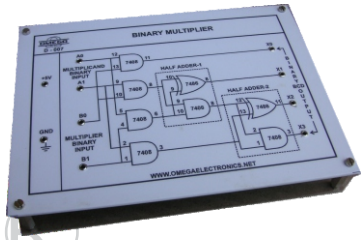
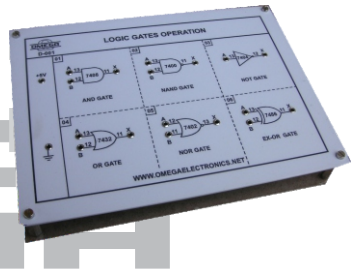
**OTHER APPARATUS REQUIRED :**

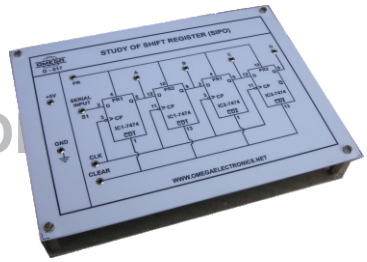
Apart from above given experimental coverage of 20 experiments on breadboard, customers can purchase these optional modules. These are ready to use modules with wired components & circuit schematic drawn on top compatible to use with Digital Lab.

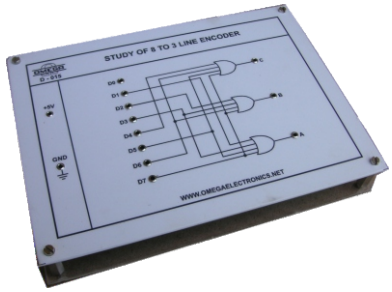
D001 Logic gates operation
D002 To verify De-morgan's theorem with boolean logic equations
D003 Binary to Gray code conversion
D004 Gray code to Binary conversion
D005 Binary to Excess-3 code conversion
D006 Binary Adder and Subtractor
D007 Binary Multiplier
D008 EX-OR gate implementation
D009 Application 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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