



Digital Electronics - Basic deals with the basic logical elements, number system, combination circuits and switches. The practical exercises are carried out on the connection board and on a completed printed circuit board connected as a house alarm. Fault finding is also possible with the house alarm.

LIST OF EXPERIMENTS

Digital Electronics-Basic covers:

- | | |
|---|---|
| 01 The transistor as a switch | 11 Encoder |
| 02 The AND, OR, NOT, NAND, and NOR gates | 12 The multiplexer |
| 03 Logic families (S24), different types of outputs | 13 The Schmitt trigger |
| 04 NAND synthesis | 14 Astable multivibrator (6) and monostable multivibrator |
| 05 Combinatory circuits | 15 The 555 |
| 06 XOR AND XNOR | 16 Bistable multivibrator |
| 07 The comparator | 17 D-multivibrator |
| 08 Decoder | 18 JK and T-multivibrator |
| 09 BCD Decoder and BCD to 7 segment decoder | 19 Registers |
| 10 The demultiplexer | 20 Counters |
| | 21 Fault detection |

PROVIDED PANELS AND OPTIONAL ACCESSORIES

SN.	Nome	Order Code	Qty.
01	Analog Electronics Base Unit	M00001	1
02	House Alarm	M00013	1
03	Component Set	M00014	1
04	Digital PCB	M00015	1
05	Digital Connection Board	M00016	1
06	Lab Flex Set Shrouded Patch Cords	M00011	1
Optional			
08	Digital Storage Oscilloscope	DSO-1102	1

Note: Specifications are subject to change.



ANALOG ELECTRONICS BASE UNIT

Order Code - M00001

The Base Unit is used throughout the system M00001. The unit supplies different output voltages suitable for the different lab cards used in the system. The Lab Cards put in slots and are automatically powered via a D-sub connector.

The base unit is accepted by CE standards.

TECHNICAL SPECIFICATIONS

Supply voltage: 230V AC 50 - 60 Hz

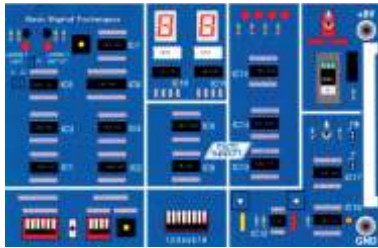
The unit has 6 outputs with following data:

Output 1 - 3 : DC 12 V / 200mA with LED indication and fuse

Output 4 - 6 : AC 12 V / 200mA with LED indication and fuse

Dimension: 200 x 300 x 73mm

Weight: 4 kg Approx



HOUSE ALARM MODULE

Order Code - M00013

Contains all the functions of a house alarm. The functions of an alarm system are learned step by step so making fault finding more easy to understand. Altogether 8 faults can be simulated. The alarm connections are built around normal digital components, e.g. logic gates, comparators, shift registers, counters, different types of switches and decoders. The lab card is connected to the Base Unit.

TECHNICAL SPECIFICATIONS

Dimension: 190 x 110 mm

Weight: 0.2Kg Approx



COMPONENT SET

Order Code - M00014

The component set is delivered in a hard plastic box with ESD protection

TECHNICAL SPECIFICATIONS

01 Digital IC	:	25
02 Trim potentiometers	:	2
03 Diodes	:	2
04 Resistors	:	13
05 Transistors	:	2
06 Capacitors	:	4

Dimension : 190 x 110 mm

Weight : 0.2 kg Approx



DIGITAL PCB

Order Code - M00015

Digital PCB is a printed circuit board with similar functions as the S24 above. The lab card is connected to the Base Unit and is ordered separately.

TECHNICAL SPECIFICATIONS

Dimension: 190 X 110 mm

Weight: 0.2Kg Approx

Note: Specifications are subject to change.



DIGITAL CONNECTION BOARD

Order Code - M00016

This breadboard is easily connected to 2 contact plugs. The board is suitable for projects where the student connects up circuits on this unit for testing.

Connection leads 4mm sockets: 4

Connection lead BNC contact: 1

TECHNICAL SPECIFICATIONS

Voltage Outputs: (+5V, +12V, and -12V)

Dimension: 190 X 110 mm

Weight: 0.2Kg Approx



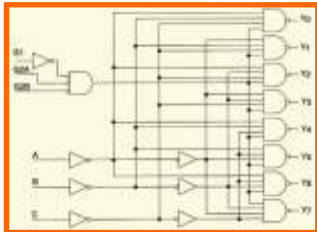
LAB FLEX SET SHROUDED PATCH CORDS

Order Code - M00011

01. 2mm Patch Cord Red 50cm 10nos.

02. 2mm Patch Cord Black 50cm 10nos.

03. Connecting Wire 5 colors 1mm². 1 mtr. each



In the diagram below G1 is used as a data input where G2A=G2B=L. How should A,B and C be set if the data at G1 shall be sent out on the lead connected to Y5?

As can be seen in the diagram, an extra function has been added, LED that will indicate when the alarm is active. The LED has a self blinking action built into the circuit.

OPTIONAL ACCESSORIES



DIGITAL STORAGE OSCILLOSCOPE

Order Code - DSO-1102

Digital Storage Oscilloscope 100MHz, 2 CH, Coloured LCD 7, 1GS/s, USB+Software

Note: Specifications are subject to change.

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