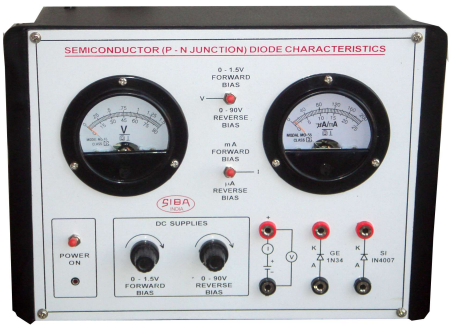
SBL 401
SEMICONDUCTOR P-N DIODE CHARACTERISTICS



Technical Features:

Two regulated DC supplies 0- 3V, and 0- 60 volts

one germenium diode, two dual range meters,

one for voltage and one for current.

with range and mode select.

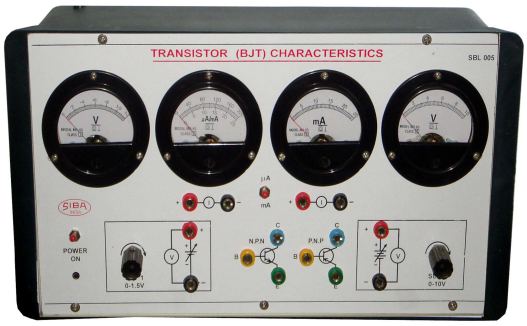
DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Object: To study V-I characteristics of Semiconductor P-N diode.

SBL 402
TRANSISTOR CHARACTERISTICS



Technical Features:

Two regulated dc supplies, 0- 3 V and 0- 10 V,

Four meters, Two voltmeters, One ammeter and

One dual range meter.

Leads and sockets to convert CE or CB mode,

Two Si N.P.N. & P.N.P. transistors

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

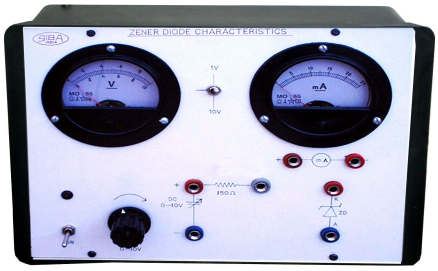
Object: To study characteristics of PNP & NPN transister in CE & CB configuration

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER

SBL 403
ZENER DIODE V-I CHARACTERISTICS

SBL 404
ZENER DIODE V-R CHARACTERISTICS



Technical Features:

One regulated dc supply 0- 10 volt, two analog meters,

One for voltage and One for current.

One zener diode BZX 56

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 230x190x80mm(approx).

Technical Features:

One regulated dc power supply 0- 15 volts,

Two volt meters,

one selected load decade and one zener diode 1W

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 260x210x80mm(approx).

Object: To study Forward-Reverse characteristics of Zener diode.

Object: To study Voltage regulation characteristics of Zener diode

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER

SBL 405
C-V CHARACTERISTICS OF P-N JUNCTION DIODE

Technical Features:

One regulated dc power supply 0- 30 volts,

One volt meter

Built-in excitation source(10Khz)

Two dial R-C bridge & go/no go detector

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 260x210x80mm(approx)

Object: To study of diode capacitance V/S Voltage in reversed biased mode

SBL 406
L.E.D. CHARACTERISTICS

Technical Features:

One regulated dc power supply, 0- 5 volt

Two meters, One volt meter, one ammeter and Two

LED's(5mm Red & green)

One fix resistor.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 230x190x80mm(approx)

Object: To study forward bias characteristics of L.E.D.

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SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

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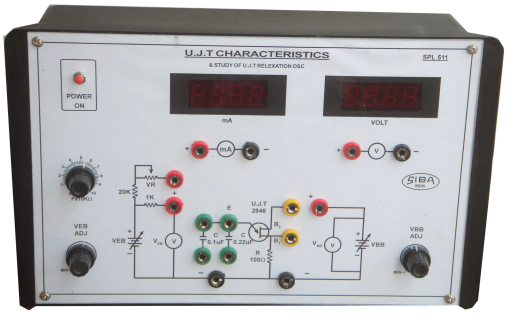
SPL 407
U.J.T. CHARACTERISTICS



Technical Features:

Two regulated dc power supply, 0- 20 volt each.

Digital volt meter & ammeter

One UJT 2N2646

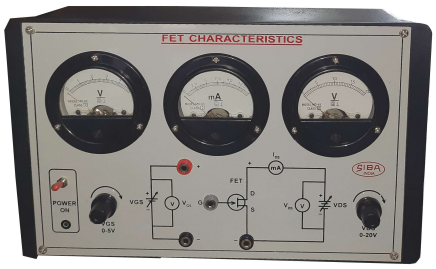
DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Object: To study of V-I characteristics of U.J.T.

SBL 408
F.E.T. CHARACTERISTICS



Technical Features:

Two regulated dc supplies 0-5V & 0-20V

Three meters, Two voltmeters and one ammeter.

One FET BFW 10 or Equivalent.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx).

Object: To study of V-I characteristics of F.E.T.

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

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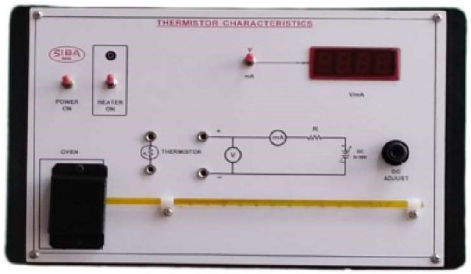
SBL 409
MOSFET CHARACTERISTICS

SBL 410
THERMISTER (GLASS) CHARACTERISTICS



Technical Features:

Three regulated dc supplies 0-1V,0-3V & 0-20V

Three meters, Two voltmeters(one in dual range)

and one ammeter.

One dual gate MOSFET 3N200 or equivalent.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx)

Technical Features:

One regulated dc power supply 0-10V

Two meters,one voltmeter & one milliammeter.

One glass encapsulated thermistor mounted

in electrically heated oven,

Glass thermometer

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size :310x2100x80mm(approx).

Object: To study characteristics of MOSFET

Object: To study of V-I characteristics of Thermister(NTC)

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER

SBL 411
OPTO COUPLER CHARACTERISTICS

Technical Features:

One regulated dc power supply 0-5V

One fix DC supply 10V

Two meters,one voltmeter & one milliammeter.

Optocoupler(CN35 or equivalent) mounted upon base.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 230x190x80mm(approx)

Object: To study transfer characteristics of Optocoupler

SBL 412
PHOTO DIODE CHARACTERISTICS

Technical Features:

Two regulated dc supply 0-6V for lamp &

0-20V for Photo diode

Two resistors,

One photo diode (reverse biased) in light tight case

One µAmmeter in dual range

One high impedance volt-meter.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx)

Object: To study of V-I characteristics of Photodiode

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER

SBL 413
L.D.R. CHARACTERISTICS

Technical Features:

One LDR with Light source mounted.

One DC regulated power supply 0-6V for lamp

One digital Ohm meter

Operable on 220V/50Hz AC

DC supply short circuit & overload protected

Complete with manual and patch cords.

Size : 310x210x80mm(approx).

Object: To study characteristics of L.D.R. Illumination versus resistance

SBL 414
PHOTO TRANSISTOR CHARACTERISTICS

Technical Features:

Two regulated dc supply 0-6V for lamp &

0-10V for Photo transistor

Two resistors,

One photo transistor in light tight case

One Milliammeter.

One high impedance volt-meter.

DC supply short circuit & overload protected

Complete with manual and patch cords

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx)

Object: To study of V-I characteristics of Phototransistor

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

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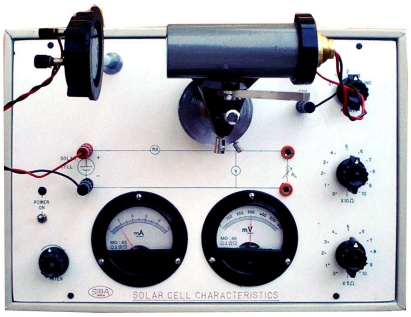
SBL 415
PHOTOVOLTIC CELL (SOLAR CELL)CHARACTERISTICS



Technical Features:

One panel mounted light source with variable intensity

opertable on inbuilt IC regulated power supply

Photo voltic cell,

One milliammeter

One high impedance millivoltmeter

Two decades of RL(load resistance)

DC supply short circuit & overload protected,

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx).

Object: To study V-I characteristics of photovoltic (solar) cell.

SBL 416
PHOTO TRANSISTOR CHARACTERISTICS

Technical Features:

Two regulated dc supplies 0-6V & 0-1V

Two ferrite inductors,

Two dc meters, one triple range AC millivoltmeter,

1 kc sine wave oscillator with amplitude control,

One switch and GE transistor AC125/2SB77 or

equivalent

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx)..

Object: To study of hybrid parameters of transistor in common emitter

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

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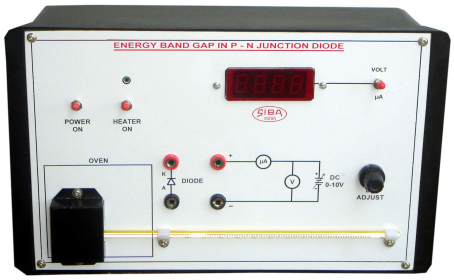
SBL 417
BAND GAP(ENERGY GAP) IN SEMICONDUCTOR DIODE

SBL 418
TRANSISTOR BIASING CIRCUITS



Technical Features:

Variable stablized dc supply 0-10V

Germanium point contact diode mounted

in electrically heated oven,

Dual range μAmmeter and voltmeter.

Glass Thermometer

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx).

Technical Features:

Fixed DC 12V power supply

With inbuilt 1 KHz Oscillator

Two Meters,one high impedance voltmeter

& one milliammeter

Si Transistor BC 557 with heating arrangement.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx)..

Object: To derive Eg of given P-N diode

Object: To study Biasing stability in fixed bias & potential divider bias circuits

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER

SBL 421
L.E.D. CHARACTERISTICS
(Current versus illumination)

Technical Features:

Variable stablized dc supply 0-10V

Germanium point contact diode mounted

in electrically heated oven,

Dual range µAmmeter and voltmeter.

Glass Thermometer

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx).

Object: To derive Eg of given P-N diode

SBL 425
THYRATRON VALVE CHARACTERISTICS

Technical Features:

Fixed DC 12V power supply

With inbuilt 1 KHz Oscillator

Two Meters,one high impedance voltmeter

& one milliammeter

Si Transistor BC 557 with heating arrangement.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx)..

Object: To study Biasing stability in fixed bias & potential divider bias circuits

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

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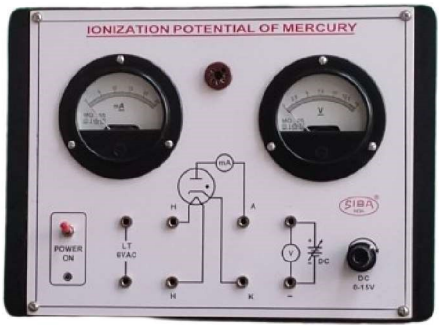
SBL 426
IONIZATION POTENTIAL OF MERCURY (THYRATRON VALVE)



Technical Features:

One DC regulated power supply 0-150V

One DC regulated power supply 0- 15V.

Thyratron valve mounted in panel base,

One RL, one potentiometer, one voltage divider

nerwork,

One dual uA/mAmeter, one dual range voltmeter.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 365x210x105mm(approx).

Object: To study & draw V-I & control characteristics of Thyratron valve

SBL 425
THYRATRON VALVE CHARACTERISTICS

Technical Features:

One DC regulated power supply 0-15V

with current limiting

One AC supply 0-6V for heater

Thyratron valve mounted in panel base,

Two meters,one voltmeter & one milliammeter

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 310x210x80mm(approx).

Object: To study & draw Hg filled valve

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER

SBL 428
WORK FUNCTION OF DIODE EMITTER (VERIFICATION OF RICHARDSON LAW)

Technical Features:

One DC regulated power supply 0- 150V,

One DC regulated power supply 0-3V,

One high impedance voltmeter with one milliammeter in LT circuit,

One voltmeter and µAmeter in HT circuit,

One diode valve in base upon panel.

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 365x210x80mm(approx).

Object: To study & verify Richardson's Law

SBL 430
PHOTO ELECTRIC CELL (VACCUM)CHARACTERISTICS

Technical Features:

One regulated power supply 0- 100V

One uAmmeter with calibrated x10 amplification (0- 2 uA scale),

One high impedance voltmeter,

One single rod 1/2 mtr optical bench

with photo electric cell mounting,

One lamp house 100W

DC supply short circuit & overload protected

Operable on 220V/50Hz AC

Complete with manual and patch cords.

Size : 250x125x175mm(approx).

Object: To study & draw V-I char. of photoelectric cell

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER

SBL 431
PLANCK'S CONSTANT SETUP

It was observed as early as 1905 that most metals under influence of radiation, emit electrons. This phenomnon was termed as photoelectric emission. The detailed study of it has shown. That the emission process depends strongly on frequency of radiation. For each metal there exists a critical frequency such that light of lower frequency is unable to liberate electrons, while light of higher frequency always does. The emission of electron occurs within a very short time interval after arrival of the radiation and member of electrons is strictly proportional to the intensity of this radiation. The experimental facts given above are among the strongest evidence that the electromagnetic field is quantified and the field consists of quanta of energy $E= h\nu$ where n is the frequency of the radiation and h is the Planck's constant. These quanta are called photons.

Technical Features:

Planck's Constant by Photoelectric Effect setup

The experimental should be able to determine

1 Planck's Constant and Work Function of Materials by Photoelectric Effect.
2. To verify inverse square law of radiation using a photoelectric cell.
The experimental set up should consist of following
:
Photo Sensitive Device: Vacuum photo tube.
Light source: Halogen tungsten lamp 12V/35W.

Colour Filters: 5 different colors.

Regulated Voltage Power Supply Output: ± 15 V continuously variable Digital Display
Accuracy: ±0.2% or less

Current Detecting Unit: Digital Nanoammeter
Resolution: 1nA at 1 µA range Digital Display

Power Requirement: 220V ± 10%, 50Hz.

Optical Bench: The light source should be movable to adjust the distance between light source and phototube.

The set should be complete in all respects and should have a well-documented instructin manual

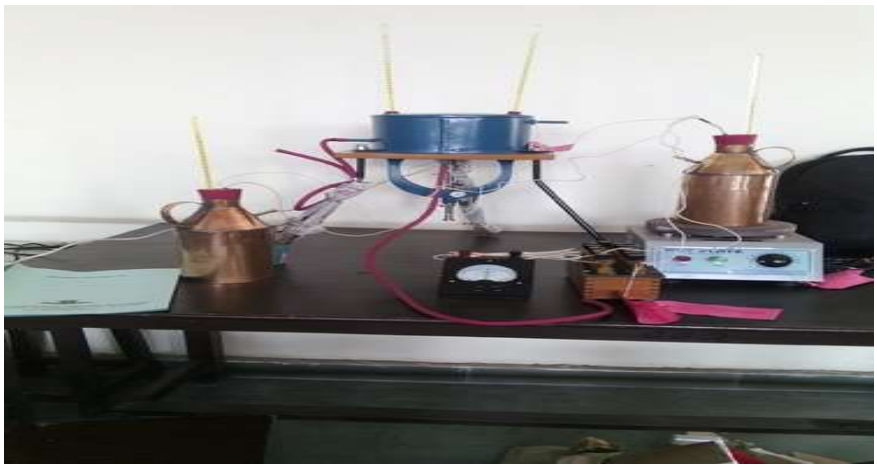
Photographs are for reference only final product may vary

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER

SBL 432T

STEFAN'S CONSTANT EXP. SET UP



Technical Features:

The set up should be able to verify the Stefan's

lawof
radiation and determine Stefan's constant Setup should consist of:

Hot Plate: 1500 W

Steam generator Copper Minimum capacity 1.5 liter

Stefan's Constant: Hollow metal Sphere with two thermometer holder and connection for Steam in & Out, mounted on wooden base, with proper stand, Adjustable

Black and Silver disc (2 gm)

Copper Constantan Thermocouple Thermometer

Stop watch Beaker 600 ml Oil Bath (Copper)

Super Sensitive Galvanometer fixed on

board (0-200microAmpere)

The set should be complete in all respects and should have a well-documented instruction manual

Photographs are for reference only final product may vary

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

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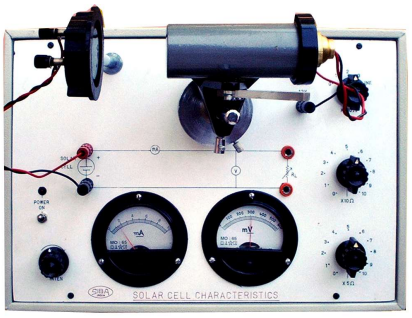
SBL 415
PHOTOVOLTIC CELL (SOLAR CELL)CHARACTERISTICS



Technical Features:

The setup should be able to demonstrate
1. V-I characteristics of solar cell
2. IR characteristics of a solar cell as a function of irradiance

The setup should have the following

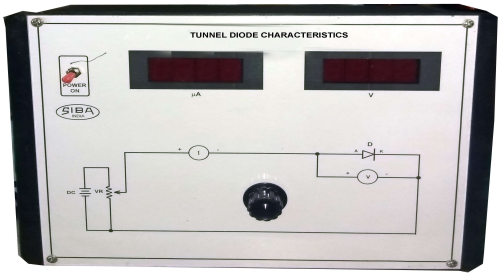
Solar Cell with Max. Output voltage: 2 V DC Electronics Component (Resistance, Rotary Switch 1 Pole 12 Ways,) mounted on PCB with Acrylic Transparent protective cover.

Lamp Source Multimeter Switch Module
Circuit board with minimum 24 quartet of four 4mm interconnected brass sockets.

Power Supply
Input Voltage: 220V, ±5%, 50Hz AC Output Voltage: 2-12 V DC/ AC, Output Current: 5 A Max.
Safety Thermal Switch

The set should be complete in all respects and should have a well-documented instruction manual

SBL 462
Tunnel Diode Experiment



Technical Features:

The set up should be able to measure the current and voltage characteristics of tunnel diode.

The set up should contain the following

Power Supply
Input Voltage : 220V, ±5%, 50Hz AC

Output Voltage : 5V DC Fixed

Digital Voltmeter: 0-20 V DC

Electronics Components (Tunnel Diode 1N3716, Potentiometer 1K, Variable Resistors mounted on PCB with Acrylic Transparent protective cover.

Symbol and Name printed on Cover for easy identification. Adaptor: 5V DC / 1A.

Circuit board with minimum 24 quartet of four 4mm interconnected brass sockets. Gun type banana plug leads
The set should be complete in all respects and should have a well-documented instruction manual

MANUFACTURED BY:
SATISH BROTHERS
#4309/20,Marble house,Punjabi Mohalla,
Ambala Cantt -133001(hry.)
Tel: 0171-2642617,4008617
E-mail: info@sibaindia.com

AUTH. DEALER