ELECTRONICS
KELVIN® ENGINEERING IN SCHOOL

Find the **KELVIN®**
S.T.E.M. Lab: Electricity on **pg. 3.**

ORIGINAL IDEAS FROM
KELVIN
EDUCATIONAL

Find **KELVIN®** LabKit Trainers for Analog
& Digital Electronics on **pg. 5.**

KELVIN® VARIABLE POWER SUPPLY • 842639

30.0 V C.V
5.00 A C.C

COARSE

FINE

Find **KELVIN®** Variable Power
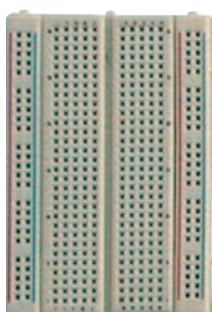Supply w/ Polarity Box on **pg. 20.**

Buy 50 or
More and
Price Each
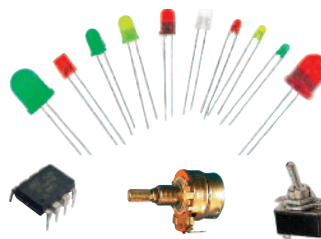As Low As

$5⁹⁵

9.48

Features:
- **Buzzer**
- Square Wave Output
- Low Battery Indicator
- Overload Protection

KELVIN®
50 LE

Find **KELVIN®** 50LE Multimeter
w/ Buzzer on **pg. 20.**

Find **Project Parts and Tools**
on **pgs. 21-30.**

Part of Catalog #321,
Copyright © 2024

Electrical Invention Classroom Pack

DesignLab: Electrical Inventions

Design and build an alarm system for your bedroom, a light-up Frisbee ® you can use at night, and a fortune-telling box that is a new electric version of the old Magic 8 Ball® or the fortune tellers you see at carnivals. This is a fun, creative, open-ended challenge that is probably unlike anything you have done before.

Before you can tackle these design challenges, you first need to learn about electricity, learn how to build circuits and switches and how to draw schematics of circuits. You will learn how to wire series and parallel circuits, and you need to understand how these two different types of circuits work. You will also learn how to strip and solder wires, as well as how to use other basic tools to build things.

Electrical Engineers understand how to design and build different types of circuits to make electrical devices, like iPods and TVs, cell phones, kids toys, computers, weather satellites, robotic vacuum cleaners, electric cars, and many other things. This workshop will give you the ability to design and build your own electrical inventions, and give you some idea of what it is like to be an Electrical Engineer.

DesignLab: Electrical Inventions Workshop Kit

- [2] 22 GA. Wire, Black, 100 ft. Roll
- [2] 22 GA. Wire, Red, 100 ft. Roll
- [25] Foam Boards, 20 x 30, White
- [300] Drinking Straws
- [500] Jumbo Craft Sticks
- [50] Clothespins, Spring Type
- [1] Aluminum Foil sheet, 75 ft. Roll
- [200] Brass Paper Fasteners
- [3] Jumbo Paper Clips, 100/box
- [24] Brass Strips, 2 x 12 in.

- [24] Tin Sheets, 4 x 10 in.
- [2] Rubber Bands, Assorted, 2 oz.
- [1] Cotton Twine 300 ft. long Roll
- [1] Velcro, 3/4 in. x 3 ft. long Strip
- [24] Sinkers Egg, Steel, 5 oz.
- [5] 14mm Steel Balls, 5/pkg.
- [200] Flat Washers, 1/2 in. ID
- [1] 8D Common Nails, 5lb. Box
- [1] Perforated Steel Pipe Strap, 3/4 in. W x 50 ft. long Roll

021292 **Now Includes a Workshop Guide!**..**$335**

DesignLab: Electrical Inventions Workshop Guide

652563 Booklet **$15.95**

BEST VALUE!

DesignLab: Electrical Inventions Complete Classroom Pack
Includes: [12] Project Parts Kit (#021291), a Workshop Materials Pack (#021292), and a Spare Parts Kit (#021293).

021294..**$695**

DesignLab: Electrical Inventions Project Parts Kit

- [1] Workshop Guide
- [1] DesignLab Frisbee
- [3] SPST Slide Switch
- [2] SPST Momentary Pushbutton Switch, N.O.
- [1] AA Battery Holder, 2-Cell with Leads
- [2] AA Battery
- [2] 3V Lithium Coin Cell Battery

- [2] Coin Cell Holder
- [4] Ultrabright Red LED, 1-3/4 with Flange
- [1] Alarm Horn, 5-10 V DC
- [1] Extra Large LED, Red
- [1] Extra Large LED, Green
- [1] Extra Large LED, Yellow
- [6] Ceramic Disc Magnets
- [1] Ceramic Block Magnet

021291 ....**$29.95**

DesignLab: Electrical Inventions Spare Parts Kit

- [2] DesignLab Frisbee
- [3] SPST Slide Switch
- [3] SPST Momentary Pushbutton Switch, N.O.
- [3] AA Battery Holder, 2-Cell with Leads
- [6] AA Battery
- [3] 3V Lithium Coin Cell Battery
- [3] Coin Cell Holder

- [2] Ultrabright Red LED, 1-3/4 with Flange
- [2] Alarm Horns, 5-10V DC
- [2] Extra Large LEDs, Red
- [2] Extra Large LEDs, Green
- [2] Extra Large LEDs, Yellow
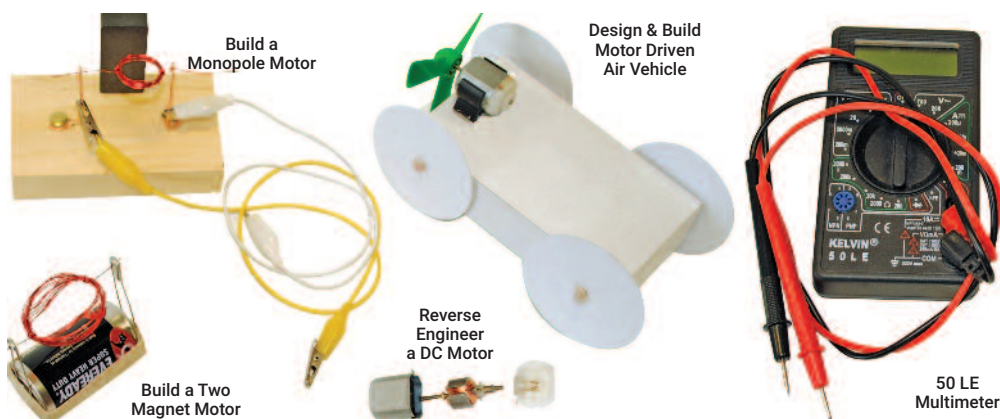- [12] Ceramic Disc Magnets,
- [6] Ceramic Block Magnets

021293 ....**$29.95**

KELVIN® New Standards®
S.T.E.M. Lab: Electricity Gr. 4-7

Electricity

Learn through hands on activities the basics of electricity and electrical circuits. Students will combine electrical components to create simple circuits and solve simple electricity design problems. Students can design their own display board (like sample above) for use in the classroom or a S.T.E.M. fair with the reusable corrugated plastic board that is included.

Team Pack
Includes: Reusable Corrugated Plastic Display Board, [20] Light House Kits, [10] Switches, Wires, [10] Bulbs, [10] Sockets, [10] Buzzers, Jumper Cables, [10] Battery Holders and Motors. Requires assembly with hand tools and batteries.

842494   [5] Kits & Extra Parts........**$245**

Build a Monopole Motor

Design & Build Motor Driven Air Vehicle

Reverse Engineer a DC Motor

Build a Two Magnet Motor

50 LE Multimeter

★ **BONUS PRODUCT** included with KELVIN® S.T.E.M. Lab: Motors Advanced Team Pack (**842368**)

KELVIN® Kre8® DC Motor
Build an electromagnet and make the motor spin as fast as possible!
    Kit includes: tubes, slit rods, steel rods, copper wire, [2] magnets, collars, clip connectors, metal bearing, fuse, reed switch, red base, bag and sand paper. Requires a battery.

Kit
842081   ....**$15.95** or **$14.95** ea./5+
or **$13.95** ea./10+

Bulk Pack for 20
283736 ....**$12.50 Per Kit** **$250**

KELVIN® S.T.E.M. Lab: Motors Gr. 7-12

Hands-on activities (for teams of two) cover: single magnet motors, electromagnets, reverse engineering DC motors, motor driven air powered carts and more. Students can design their own display board for use in the classroom or a S.T.E.M. fair with the reusable corrugated plastic board that is included.

Team Pack
Includes Reusable Corrugated Plastic Display Board, [5] Monopole Magnet Motor Kits, [5] Two-Magnet Motor Kits, [5] Air Car Kits, [8] DC Motors, Battery Holders, Magnets, Cardstock Wheels, Wood, Axles, Pliers, Cardstock (Pre-Cut & Scored), Motor Mounts, 50LE Multimeter, Alligator Jumper Cables, Propellers, Copper Wire, Magnet Wire, Solid Wire, [2] Compasses, Abrasive Paper, Nails, Rubber Bands, Wood Blocks and Instructions. Requires assembly with hand tools and batteries (AA & D).
842486   Team Pack - [15] Kits, 50LE Multimeter & Extra Parts **$135**

Advanced Team Pack
Includes Team Pack (842486) **PLUS** [1] Reusable Corrugated Plastic Display Board, [10] Kre8® Motor Kits and ★ **BONUS** [3] Kre8® Motor Kits (see above).
842368   Team Pack + [10] Kits & ★ BONUS [3] Kre8® Motor Kits **$295**

KELVIN® S.T.E.M. Lab: Advanced Motors

Explore additional motor types like generators and sturg motors. Students can design their own display board for use in the classroom or a S.T.E.M. fair with the reusable corrugated plastic board (included).
    Enough materials for a class include: Corrugated Plastic Display Board, [30] Motor Generator Kits, [15] Sturg Motor Kits and [5] 50LE multimeters.
842376   Class Pack - [45] Kits & [5] 50LE Multimeters **$295**

SoFast® ELECTRONICS

Circuits in Seconds with Activity Sheets

Switch on 3 Colors Circuit

Switching LED Circuit

Color Mixing Circuit

KELVIN® SOFAST® ELECTRONICS MINI LAB 1 Gr. 3-6

Power | Push Switch | Slide Switch | LEDs - Red, Yellow & Green | Buzzer | Var. Resistor | Battery Pack
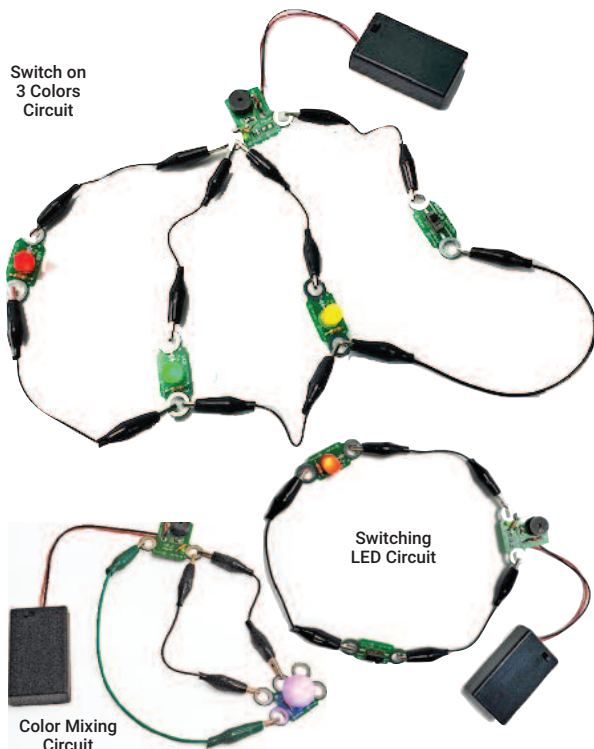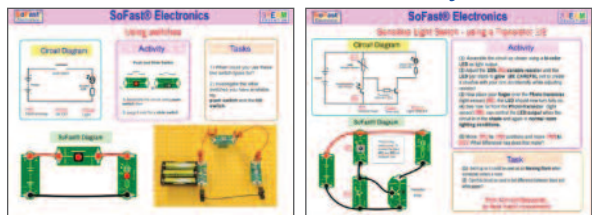
Boards & Parts in Mini Lab 1 include:

- Push Switch
- Momentary Switch
- [3] LED Boards
- Buzzer
- Variable Resistor
- Electronic Parts
- Battery Pack
- [10] Alligator Clip Leads
- Case

Activities in Mini Lab 1 include:

- Power Supplies
- Fuses
- LEDs
- Series / Parallel Connections
- Resistors
- Switches
- Digital Logic

842568   KELVIN® SoFast® Electronics Mini Lab 1 ....**$69.95** or **$59.95** ea./5+

KELVIN® SOFAST® ELECTRONICS MINI LAB 2 Gr. 6-8

Motor with Propeller
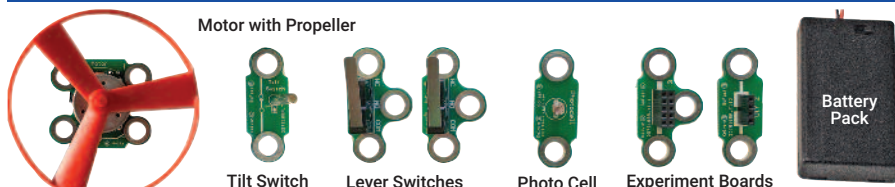
Tilt Switch | Lever Switches | Photo Cell | Experiment Boards | Battery Pack

Boards & Parts in Mini Lab 2 include:

- Tilt Switch
- [2] Lever Switches
- Motor
- Propeller
- Photo Cell
- [2] Experiment Boards
- Electronic Parts
- Battery Pack
- [10] Alligator Clip Leads
- Case

Activities in Mini Lab 2 include:

- Photocells
- Transistors
- Motors
- Building a Simple Car that moves with propeller power

842580   KELVIN® SoFast® Electronics Mini Lab 2 ....**$69.95** or **$59.95** ea./5+

KELVIN® SOFAST® ELECTRONICS MINI LAB 1+2+3 Gr. 7-12

555 Timer | Speaker | RGB LED | Transistor Driver | Relay | DIY Board | Battery Pack

Kre8 Design & Make

KELVIN® Kre8® Car Kit (above) with added electronic parts from Mini Lab 1+2+3
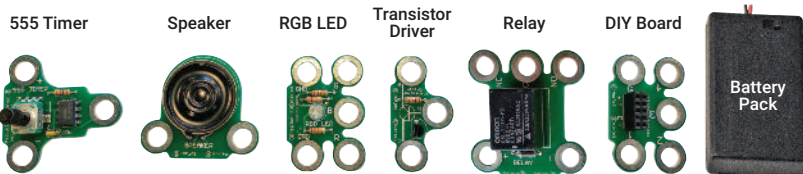
Board & Parts include, in addition to those provided with Mini Labs 1 & 2:

- Kre8® Car Kit
- DIY Mini Breadboard for 5 Connections
- 555 Timer
- Speaker
- RGB LED
- Transistor Driver
- Relay
- Electronic Parts
- Battery Pack
- [20] Alligator Clip Leads
- Case

Activities cover, in addition to Mini Labs 1 & 2:

- Multimeters
- Phototransistors
- Tilt Switches
- Relays
- 555 Timer
- Capacitors

842581   KELVIN® SoFast® Electronics Mini Lab 1+2+3 ....**$195** or **$175** ea./5+

KELVIN® ELECTRONICS LABKIT TRAINER: ANALOG

Economical. hands-on trainer features clearly labeled sections of common electronic parts already added to a circuit board. Students use jumper wires and breadboard connection points in each section. No need for special cables or alligator clips.

Experiments in the manual cover:

- Lighting the LED
- LED based Digital Logic Probe
- Counting in Binary with Switches
- Making Colors with RGB LED
- Relay Experiment
- Making Sounds with 555
- Controlling the LED Brightness with Photoresistor
- Morse Code
- Using the NPN Transistor
- Night Light Experiment
- Using the PNP Transistor as a Relay
- Using the Resettable fuse
- Using the Voltmeter
- Controlling the speed of the motor with PWM Control
- Student/teacher can make up their own or look online for more.

Analog LabKit includes:

- Power Input (5V DC Wall Adapter)
- Power Switch
- [3] Potentiometers (1M, 100k, 10k)
- [2] SPDT Switches
- [4] Pushbutton Switches
- Digital Display
- 7-segment w/ BCD driver (CD4511, Breadboard - 400 contacts)
- Volt Meter (3-digit, Digital)
- Resettable Fuse (0.75A)
- RGB LED
- Relay
- Transistors (NPN and PNP)
- [8] LEDs
- Motor
- MOSFET (N-Channel)
- 555 Timer (w/ Freq. & PWM Control)
- Photoresistor (Photocell)
- Buzzer
- Speaker (2 in., 8 Ohm, 0.2W)

Assembled trainer with storage case and 6V adapter. Ideal for HS and trade schools. Powered by the provided 5V DC wall adapter or [4] AAA batteries (not included) for standalone operation. Each section has its own power connection and does not drain the batteries when not in use. 110 V AC. USA plug.

842462   Assembled - Call for Additional Pricing ....**$295** or **$275** ea./10+

Analog Electronics Trainer
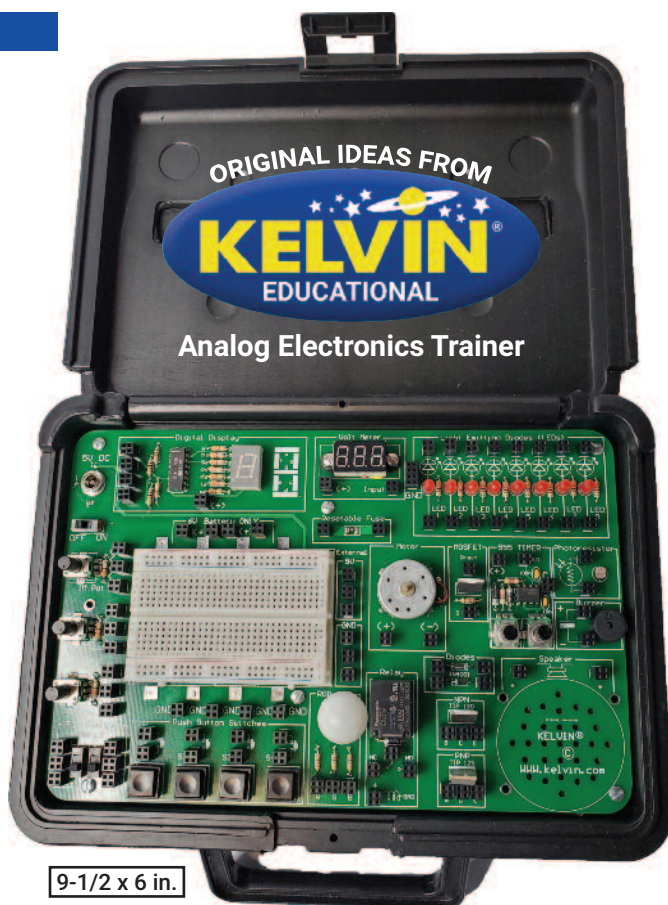
9-1/2 x 6 in.

KELVIN® ELECTRONICS LABKIT TRAINER: DIGITAL

NEW Economical, hands-on trainer features clearly labeled sections of common electronic parts already added to a circuit board. Students use jumper wires and breadboard connection points in each section.

In addition to descriptions of all basic parts, experiments in the manual cover:

- Lighting LEDs
- Using different types of switches
- Display numbers on 7 segment displays
- Using a simple digital probe
- Generating sounds
- Generating colors with an RGB LED
- Demonstrating the operation of AND, OR and NOT gates
- Build 4-bit and 8-bit binary counters and display the data
- Build decade counters
- Use and demonstrate debouncing circuits
- Serial to parallel data transfer
- Parallel to serial data transfer
- Generating PWM signals

Digital LabKit includes:

- [2] Displays, 7-segment w/ BCD driver (CD4511)
- [8] LEDs w/ Drivers (ULN2803)
- [2] Binary Counters, 4-Bit (7493)
- Shift Register, Parallel In/Serial Out (74165)
- Shift Register, Parallel Out/Serial In (74164)
- [6] Digital Inputs/Outputs, Debounced
- 555 Timer w/ Freq. & PWM Adjust.
- RGB LED (Common Cathode)
- Digital Probe w/ Light & Sound Outputs
- [4] AND Gates (7408)
- [4] OR Gates (7432)
- [6] Inverters (7404)
- 10K Potentiometer
- [4] Push Button Switches
- [8] SPDT Switches w/ Protecting Resistors
- 400 Contact Breadboard

Assembled trainer with storage case and 5V adapter. Ideal for HS and trade schools. Powered by the provided 5V DC wall adapter or for standalone operation, use [4] AAA batteries (not included). Each section has its own power connection and does not drain the batteries when not in use. 110 V AC. USA plug.
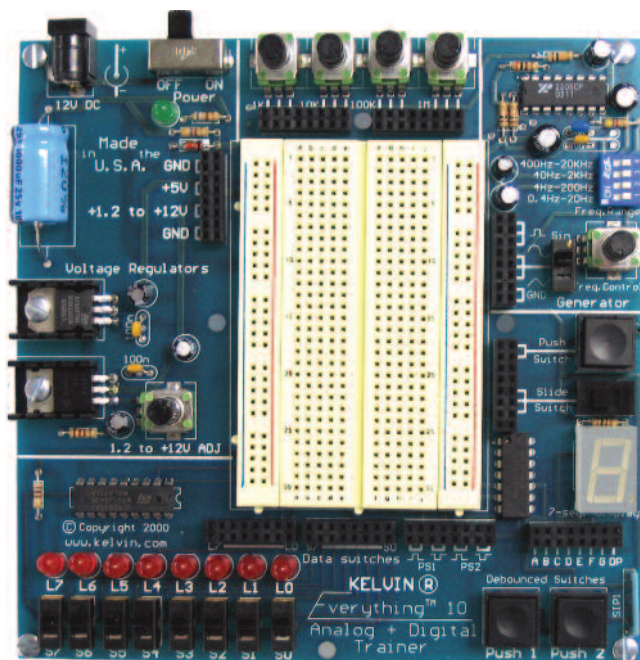
842602   Assembled - Call for Additional Pricing ....**$295** or **$275** ea./10+

Digital Electronics Trainer

9-1/2 x 6 in.

KELVIN® Everything™ Electronics Trainers

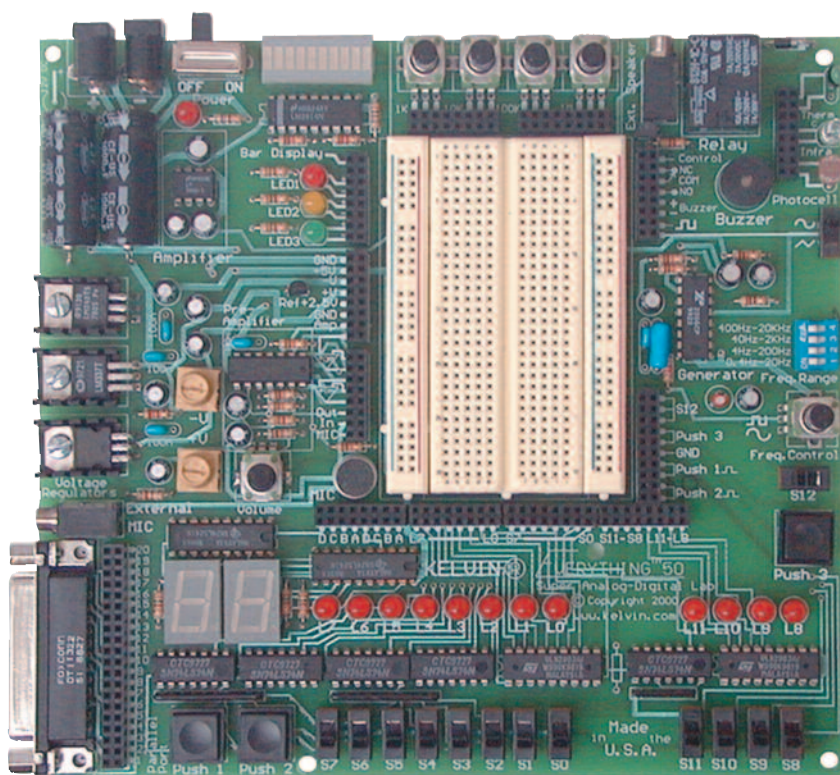| The MOST Economical Trainer! | Actual Size is 5-5/8 x 5-5/8 in. |

KELVIN® Everything 10™ Trainer

Intended for use with your textbook; does not include curriculum. Board measures 5-5/8 x 5-5/8 in. In addition to a Wire Jumper Kit and 12 V Power Supply, the trainer also includes these on-board parts:

- **[1] Breadboard:** 500 Contacts
- **[2] Power Supplies**: Fixed Power Supply (5 V) and Variable Power Supply (1.2-12 V)
- **[1] Function Generator**: 0.3Hz-20KHz with 3 Outputs (Square, Sinusoidal, Triangular)
- **[4] Potentiometers**: 1K, 10K, 100K, and 1M
- **[14] Switches**: SPDT Switch, Pushbutton Switch, [4] Fully Debounced Pushbutton Switches with +/- Signal Outputs, and, [8] Signal Switches
- **[9] LEDs / Displays**: [8] Fully Buffered LEDs and, a Large 7-Segment Display (3/4 in. High)

841121   Kit ....$175 or $155 ea./3+
841122   Assembled Trainer ....$195 or $185 ea./3+

KELVIN® Learn About Electronics Activity

No soldering is required! Students experiment with series and parallel circuits, switches, batteries, lights, continuity and more. Includes board, banana plugs and instructions.

841749   Kit...$34.95

SUPER ANALOG & DIGITAL TRAINER
| | Actual Size is 7-1/4 x 6-3/4 in. |

KELVIN® Everything 50™ Trainer

Intended for use with your textbook; does not include curriculum. Board measures 7-1/4 x 6-3/4 in. In addition to a Wire Jumper Kit and 12 V Power Supply, the trainer also includes these on-board parts:

- **[1] Breadboard**: 400 Contacts
- **[4] Power Supplies**: Fixed (5 V), [2] Variable (1.2-12 V & -1.2 to -12 V, req. DC Wall Adapter, 220121), High Accuracy Voltage Reference Source (2.5 V)
- **[1] Function Generator**: 0.4 Hz-20 KHz with 3 Outputs (Square, Sinusoidal, Triangular)
- **[3] Inputs**: Condenser Microphone, External Microphone Jack, Parallel Port with DB25 Socket Connector
- **[3] Outputs**: Buzzer, 10A/125V Relay, External Speaker Jack
- **[4] Amplifiers**: Power Amp with Volume Control, Pre-Amplifier, [2] Independent Op/Amps
- **[16] Switches**: SPDT, Pushbutton, [2] Fully Debounced Pushbutton with TTL Outputs, [4] with TTL Outputs, [8] Fully Debounced with TTL Outputs
- **[4] Potentiometers**: 1K, 10K, 100K, 1M
- **[3] Sensors**: Photocell, Thermistor, Phototransistor
- **[27] LEDs/Displays**: [3] LEDs with Current Limiting Resistors, [10] LED Bar Graph Display with IC Driver, [12] Fully Buffered LEDs with Dedicated Drivers, [2] 7-Segment LED Display (3/4 in. H) with Hexadecimal Drivers

841143   Assembled ....$295 or $275 ea./9+ or $255 ea./10+

DC Wall Adapter
Use as an optional power supply for negative voltage. 12 V DC, 800 mA. 110 V AC. USA plug.
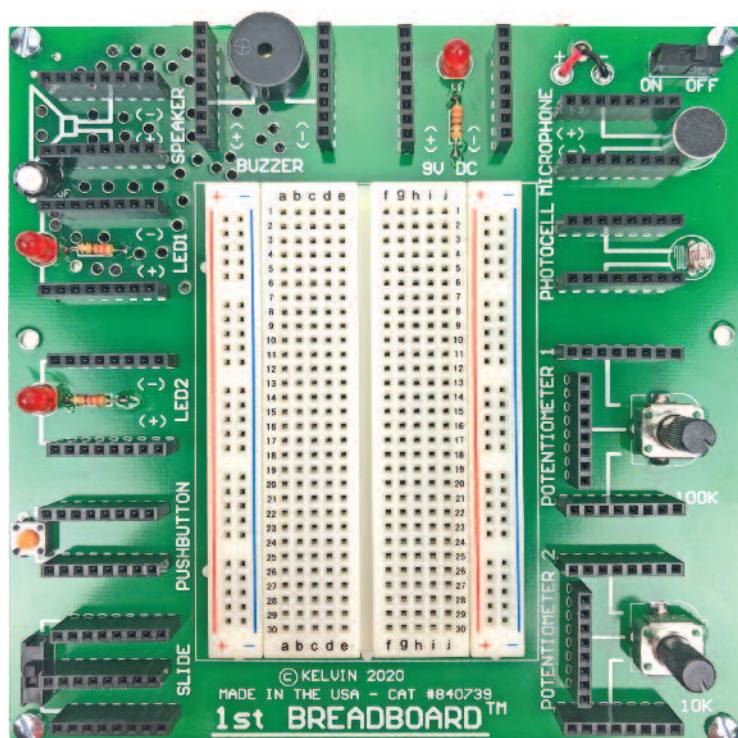220121   ....$19.95 or $18.95 ea./3+
Find More Wall Adapters on pg. 21.

| EASY CIRCUIT DESIGN | Actual Size is 6-1/4 x 6-1/2 in. |

KELVIN® 1st Breadboard Lab™ Manual in Spanish or English

This easy to use trainer lets students build circuits that are far from simple in function. Breadboards make it easy to design, experiment with, and test circuitry without etching and soldering PC boards. This trainer not only contains a small breadboard for students to assemble circuits on, but includes basic components that most circuits use—right on the board, ready for easy wiring.

Experiments cover: Resistor Color Code , Resistor measurement, Ohm's Law, Measuring Voltage, Measuring Current, Series Circuits, Photocells, LED Current Limiting, Variable Time Constants, Capacitors, Using Switches, Using Buzzers, CMOS OR Gate, CMOS AND Gate, SPDT Toggle Switch with LEDs, Diode Operation, Transistor as Switch, Transistor as Amp, Crystal Radio with Amplifier, Kirchhoff's Law, 555 Timer IC with LED Flasher, 555 Timer IC with Buzzer, 555 Timer Delay Circuit, Basic PA System, Audio Power Amp with Speaker, Photocell Switch, Alarm Buzzer, Logic Inverter, Microphone, LED with Buzzer, Sound Generation Circuits, Parallel Circuits, Binary Numbers, and Lights & Switches.

The completely assembled trainer includes a 6-1/4 x 6-1/2 in. breadboard, an assortment of loose parts and a detailed lab manual.

840739 Assembled Trainer ....$175 or $145 ea./6+
650801 Additional Manual, English ....$19.95 or $17.65 ea./6+
651240 Additional Manual, Spanish ....$19.95 or $17.65 ea./6+

Snap Circuits™

Make learning electronics a snap. Just follow the colorful pictures in the manual and build over 300 projects, such as AM radios, burglar alarms, flashlights, doorbells, and more. No tools required. Requires AA batteries.

Snap Circuits Jr.
282378   Over 30 Parts..........$49.95

Snap Circuits
282379   Over 60 Parts $89.95
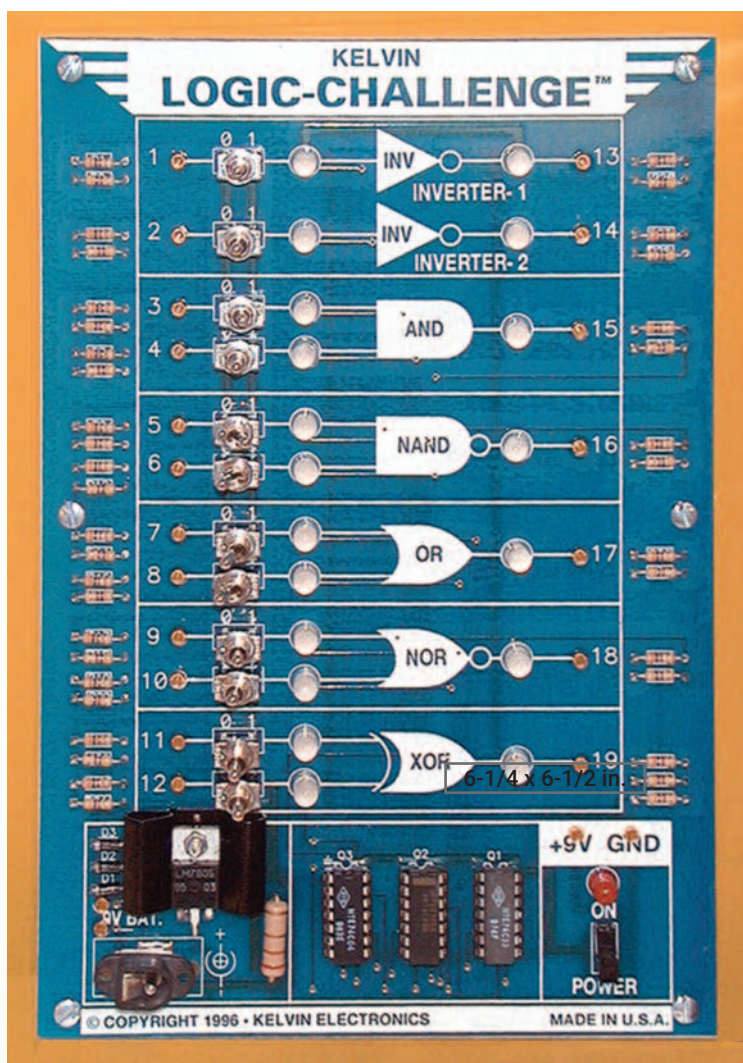
| DIGITAL LOGIC CIRCUITS | Actual Size is 5-3/8 x 8-1/4 in. |

KELVIN® Logic Challenge Trainer™

A fresh and exciting way for students to learn about the digital logic circuits that are used in computers and almost all electronics equipment.

Pre-wired logic circuits are connected with banana plug leads. Easily monitor input and output states. Teachers can also use pre-wired logic circuits to demonstrate inverters and basic logic gates. After using this trainer, students will be more prepared for work in advance computer operations.

The easy to us and read Student Workbook contains: six demonstration projects, real world examples, self-tests, explanation of experiment results and classes or self-paced learning.

Table of Contents:

- Basic Digital Logic
- Binary Numbers and Codes
- Making Binary Numbers with Electronic Circuits
- How to Use the Logic Challenge Trainer
- Project 1 - Logic Inverter
- Project 2 - AND Gate
- Project 3 - NAND Gate
- Project 4 - OR Gate
- Project 5 - NOR Gate
- Project 6 - XOR Gate

Power is provided by a plug-in wall outlet transformer, built-in DC voltage regulator and separate on/off switch. The assembled trainer comes with a student workbook written by Lou Frenzel. Board measures 5-3/8 x 8-1/4 in. Ideal for Grades 9 to 12.

840870   ....$135 or $125 ea./3+
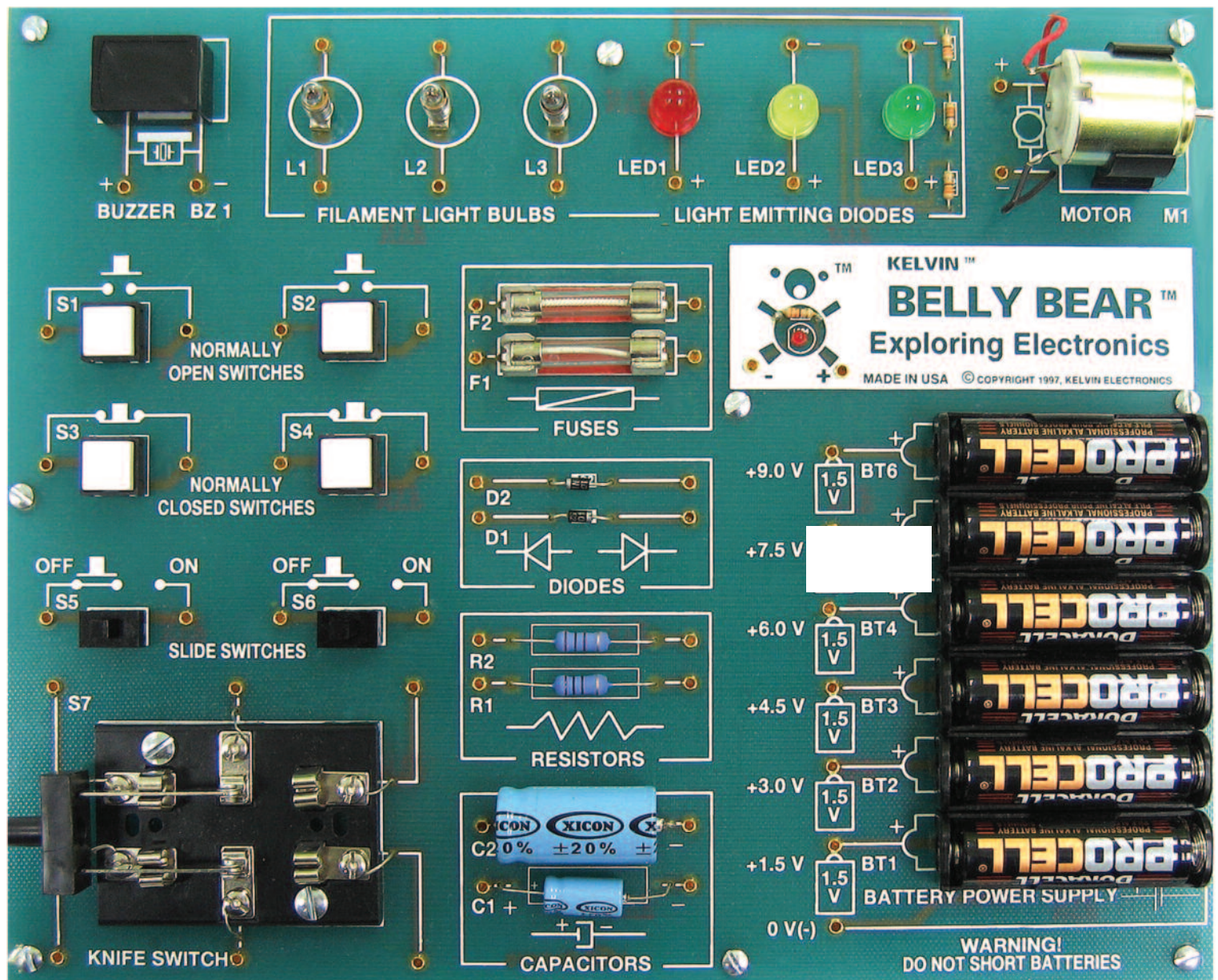
IDEAL FOR YOUNGER STUDENTS   Actual Size is 8-1/2 x 10-1/2 in.

KELVIN® Belly Bear Electronics Trainers

An economical way for students, grades 1 and up, to learn about electronics. No prior electronics knowledge, on the part of the teacher or student, is needed. Quick disconnect makes it easy to create and test circuitry while learning about discrete components.

Teacher Guide includes Lesson Plans, Teacher Aids for each Lab, Suggested Discussions, Assessment Tests with Answer Keys, and a Glossary. The Student Manual contains numerous labs and projects.

Self-contained trainer includes built-in: Buzzer for sound, [2] Motor for motion and power generation, Capacitors to demonstrate hi/low capacitance, Resistors to demonstrate hi/low resistance, [2] Fuses (a good one and a bad one for testing), [2] Diodes, [3] Light Bulbs, [3] LEDs, Switches, [6] Batteries to wire in series or parallel, Student Manual and a Teacher's Guide. Assembled boards measures 8-1/2 x 10-1/2 in.

Actual Size is 8-1/2 x 10-1/2 in.

Belly Bear I™ Trainer
840985   w/ English Manual ....**$145** or **$125** ea./5+

Belly Bear II™ Trainer
840993   w/ English Manual ....**$165** or **$145** ea./5+
841235   w/ Spanish Manual ....**$165** or **$145** ea./5+
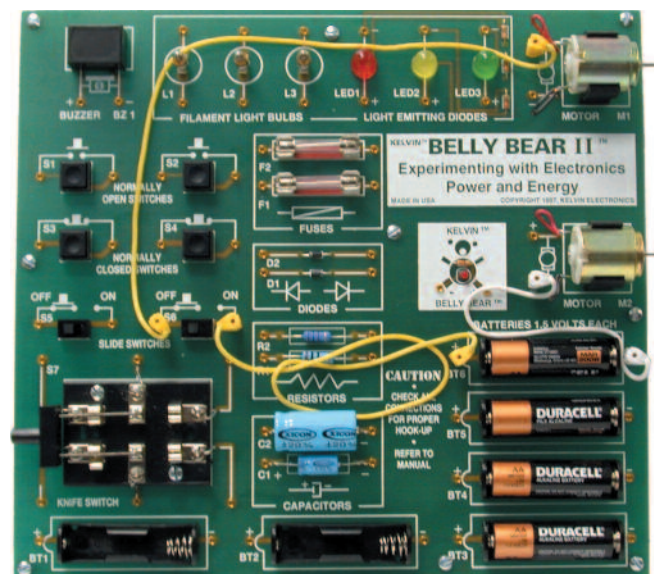
KELVIN® BASIC 3™ External Sensors

Use to build a Smart House, explore controls, etc. External sensors reach up to 3 feet away from the motherboard.

840653 – LDR
840654 – Thermistor
840655 – Micro Lever
840656 – On/Off
840657 – Liquid
840658 – Magnetic
840684 – Microphone

Individual Sensors, $12.95
or **$11.95** ea./3+

Set of all 7,
840894, **$135**
or **$125** ea./3+
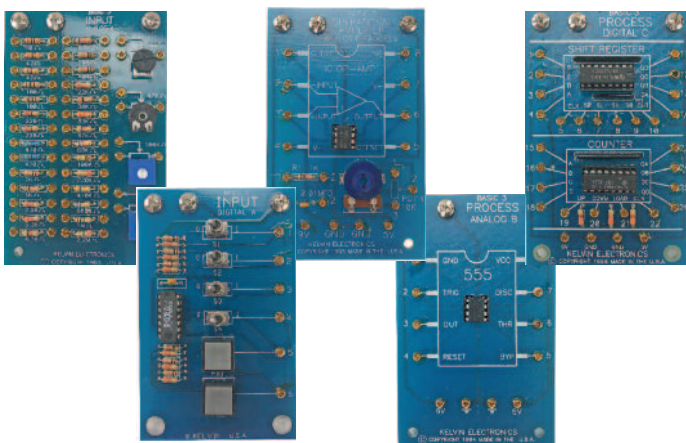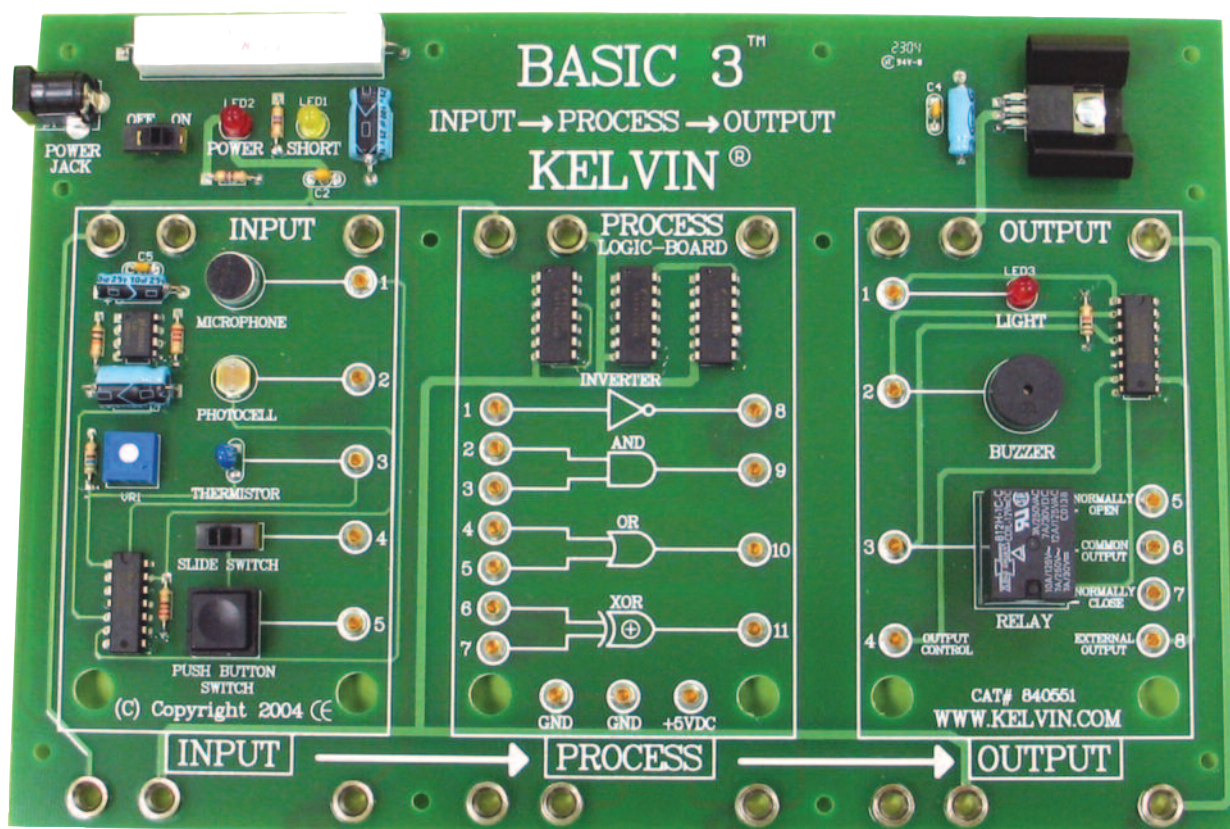
KELVIN® Basic 3™ Plug-In Boards

An excellent way to plug-in to the potential of the Basic 3™ Trainer!

ANALOG Plug-In Boards
840553	Analog Outputs, Resistors & Pots., 3 Boards........	**$195** or **$185** ea./3+
840650	Circuits & 555 Timers, 2 Boards/Circuitry	**$145** or **$135** ea./3+
840625	Wire, Fiber Optics & Infrared Comm., 2 Boards....	**$145** or **$135** ea./3+
840836	Op-Amp, 1 Board...	**$95**

DIGITAL Plug-In Boards
840552	Logic Gates, Input & Output Devices, 3 Boards....	**$195** or **$185** ea./3+
840554	Digital Input & Output Devices, 3 Boards	**$195** or **$185** ea./3+
840648	Counters & Shift Registers, 1 Board…………………………	**$95**
840649	Binary Adders & Subtractors, 2 Boards/Circuitry ..	**$145** or **$135** ea./3+

Mounting Bases for Plug-In Boards
840797	Analog Mounting Base	**$95**
840798	Digital Mounting Base..	**$95**

INPUT → PROCESS → OUTPUT | Actual Size is 9-1/4 x 6-1/4 in.

KELVIN® Basic 3™ Trainer

Electronic circuits and schematic diagrams can be difficult to understand when learning about them. Even simple concepts can be difficult to grasp! What's needed are simple, hands-on activities that explore the concepts as students learn about them.

The BASIC 3™ Trainer introduces students to electronics in a non-threatening, thematic way. Hands-on activities help students (Grades 5 and up) explore electronics at their own pace. Stackable banana plug leads are used for quick circuitry design and hands-on experiments. The original BASIC 3™ concept and activities were designed and written by Earl D. Gates, the author of *Introduction to Electronics: A Practical Approach*.

The compact, assembled trainer includes: Expandable Motherboard, 9V DC Wall Transformer, Stackable Banana Plug Leads, [10] Activity Cards, Design Portfolio, Detailed Teacher's Guide, and Plug-In Module Ready (additional plug-in modules for digital and analog are in the left column). 110 V AC. USA plug.

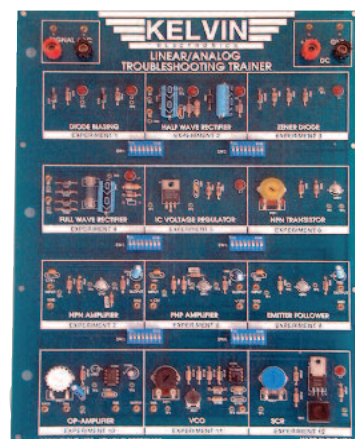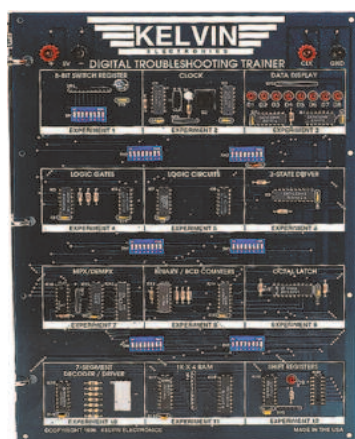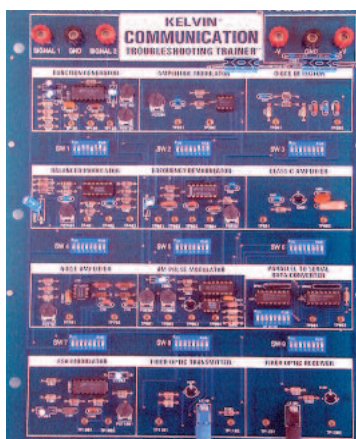|		
840551	Basic 3™ Trainer	**$185** or **$175** ea./6+
990136	Stackable Banana Cables	**$29.95** or **$26.95** ea./10+

BEST VALUE! Basic 3™ Complete Set with Plug-In Boards

Includes: BASIC 3™ Trainer, [10] Activity Cards, Design Portfolio, All Digital Plug-In Boards, All Analog Plug-In Boards and Teacher's Guide. 110 V AC. USA plug.

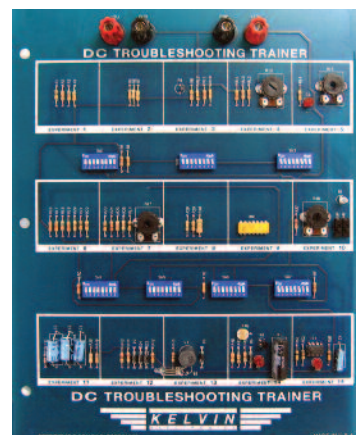|		
840796	....	**$1,250**

PRE-WIRED NOTEBOOK TRAINERS

Actual Size is 8-1/2 x 11 in.

KELVIN® Troubleshooting Trainers

Each assembled trainer includes: pre-wired printed circuit boards (8-1/2 x 11 in.), wall adapter power supply, 3-ring storage binder, working electronic circuits with DIP switches, student lab manuals with experiments and tests, and a teacher's guide with detailed and documented faults.

AC Troubleshooting Trainer
Covers: Circuits, Resonance, Low & High Pass Filters, Band Pass & Reject Filters, Phase Shift Circuits and Transformers.
840627   Assembled Trainer ....**$325** or **$295** ea./3+

DC Troubleshooting Trainer
Covers: Circuits, Voltage Dividers, Resistors, Traces, Bridge Circuits, Voltage Source Circuits, Resistance Circuits, Switch Circuits, Capacitors, DC Diodes, DC Inductors, Transistor Switch Relay, Photoresistive Input Control and 555 IC Timers.
840626   Assembled Trainer ....**$325** or **$295** ea./3+

Communications Troubleshooting Trainer
Covers: Amplitude Modulator, Diode Detection, Balanced Modulator, Frequency Demodulation, Class C Amplifier, FSK Modulation, Fiber Optics, Function Generator, Parallel & Series Data Converter, AM Pulse Mode, and Noise Amplifier.
840951   Assembled Trainer ....**$325** or **$295** ea./3+

Linear/Analog Troubleshooting Trainer
Covers: Diodes, Complementary Symmetry, Emitter Follower, Amplifier Circuits, Audio Amplifiers, Power Amplifiers, Operational Amplifiers, Instrumentation Amplifiers, Speakers, Mixers, Audio Oscillator, Linear & Switching SCR Light Dimmer and Power Supply Regulator.
840857   Assembled Trainer ....**$325** or **$295** ea./3+

Digital Troubleshooting Trainer
Covers: Logic Gates, Decoders & Encoders, Flip Flops, Binary Comparators & Adders, Logic Circuits, XOR Gate and Applications, BCD Counters, Shift Registers, Multiplexer & Demultiplexer, Binary Up / Down Counters, 7-Segment Display, 3-State Bus and Static RAM.
840856   Assembled Trainer ....**$325** or **$295** ea./3+

KELVIN® Troubleshooting Trainers Set
841402   Set of 5 Assembled Trainers **$1,425**
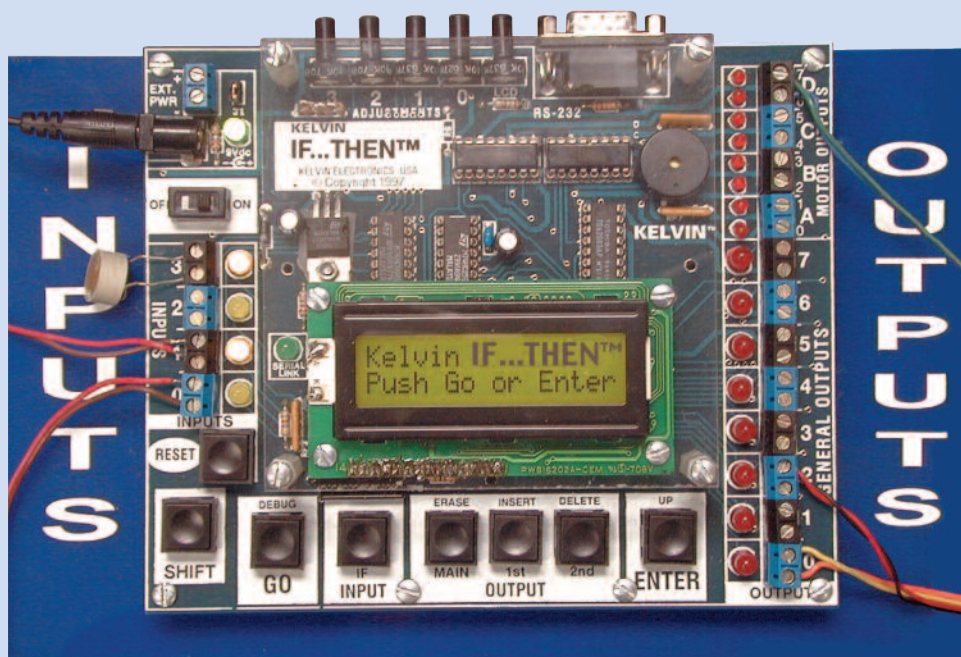
KELVIN® If...Then™ Trainer

Learn about conditional programming with this programmable logic controller. Programming is written in simple logic for quick learning and exploring input, process and output. Use it for controlling a model such as a greenhouse, light show, house alarm, doll house automation, etc.

Trainer includes:
- Alphanumeric Display (backlit, 2-line)
- Microprocessor (built-in) with Keyboard
- [4] Input Sensors (switch, photocell, etc.)
- [8] Outputs (buzzers, lights, etc. or [4] motor outputs)

Assembled controller includes: light sensor, switch sensor, buzzer, light bulb, motor, wall adapter and a RS232 cable. 110 V AC. USA plug. Grades 6 and up.
840990   ....**$199.95** or **$189.95** ea./3+

KELVIN® Home Electrical Wiring Trainer

Students get valuable experience with home wiring tools and supplies. This comprehensive trainer includes all the supplies needed for students to complete a number of hands-on activities like creating and testing common AC/DC circuits. Subsequent activities challenge students as they wire progressively harder circuits. For Grade 9 through College.

840642 ....**$795**

KELVIN® Binary Quartz Clock

24-hour binary quartz accurate clock features built-in alarm and bi-color LEDs. Includes built-in alarm, DC wall transformer and instructions.

840589   Kit - 110 V AC. USA plug ....**$99.95** or **$94.95** ea./10+

KELVIN® Low Voltage Electric System

Using low voltage, safely wire AC components (such as outlets, switches, breakers, a dimmer switch, light fixture and a ceiling fan) for practice with DC voltage.

Low Voltage Electric Trainer Kit

Teachers construct this economical version of the trainer from a kit. It requires wire stripping, frame assembly, and circuitry assembly.

Kit includes: precut and drilled plywood (to simulate wall framing) frame), circuit breaker panel box, [2] electrical breakers (15 A), [6] electrical boxes, toggle switch, [2] outlet receptacles, Romex wire (14/2, 50 ft. long), ground wire pipe connector, brass pipe (for ground wire), [2] mini bulbs and sockets (to simulate overhead lighting), propeller (to simulate ceiling fan), wire nuts, multimeter (Volt-Ohm-Milliammeter), student instruction booklet, teacher's guide, and kit assembly instructions. Teachers will need to construct it.

842401   Kit **$495**
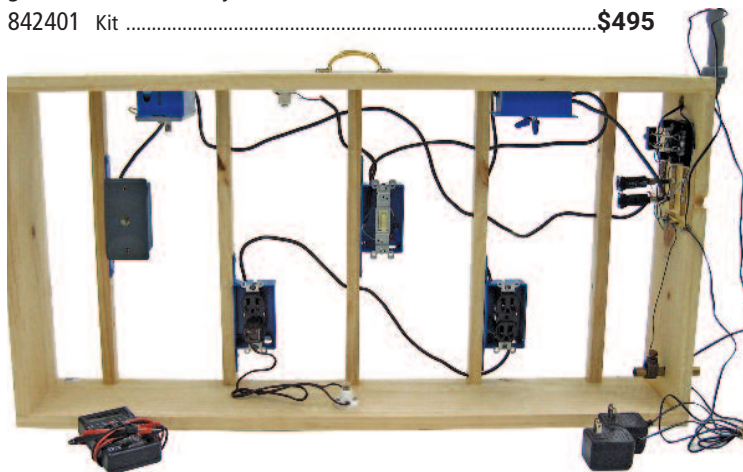
Assembled Low Voltage Electric Trainer

Each assembled trainer comes with a portable table top work station, step by step instructions, explanations, theory and assessments. The supplied curriculum is geared for general education not vocational study.

841890   Assembled **$795**

KELVIN® Clip-On Electronics Trainer

A low cost, no frills trainer that expands as your student's knowledge builds. Covers basic electronic components found in everyday use. Parts are connected together into circuits using jumper leads and a special holder.

Parts include: a variety of switches, lamp, LED, buzzer, piezo buzzer, motor, fixed resistor, photoresistor, variable resistor, power pack (batteries not included), jumpers and instructions. No soldering is required.

841980   ....**$39.95** or **$34.95** ea./10+ or **$32.95** ea./20+
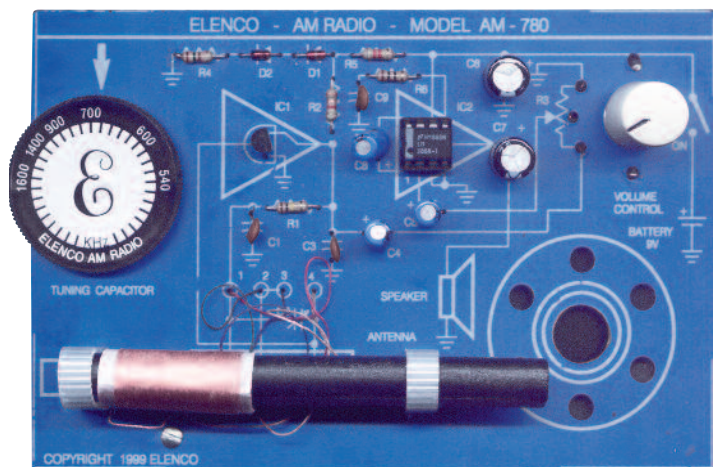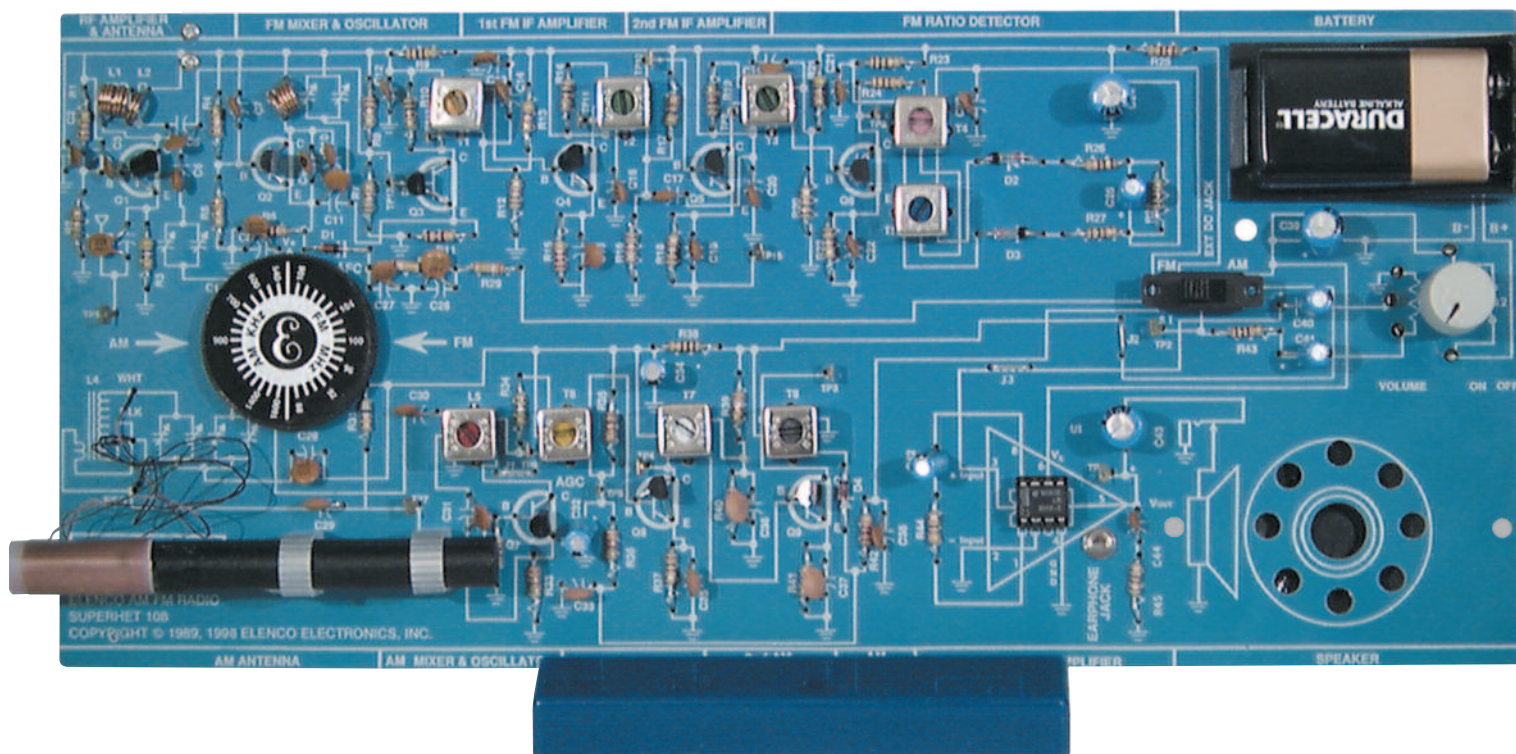
AM/FM Radio Kit with Transistor & IC

Construct an FCC-approved radio. Superheterodyne receiver of AM/FM frequencies. Learn about audio amplifiers, AM detectors, AM IFs, AM amplifiers, AM mixers, oscillators, FM detectors, FM IFs, and FM RF stages.

Kit includes AM/FM superheterodyne receiver, [7] transistors, [2] diodes, IC, PC board, earphones, magic wand and 52 pg. workbook. Requires a 9 V battery, soldering, and assembly.

842313   Kit...**$65.95** or **$60.95** ea./6+

AM Radio Kits with 2 ICs

Easy-to-build, complete radio on a single printed circuit board. Unique design allows you to place parts over its corresponding symbol on the PC board. Teaches the basic theory of AM radio operation. Detailed instructions and illustrations make it an educationally sound project.

Kit includes [2] ICs. Requires 9V DC battery, soldering, and assembly.

280642   ....**$27.95** or **$26.95** ea./6+
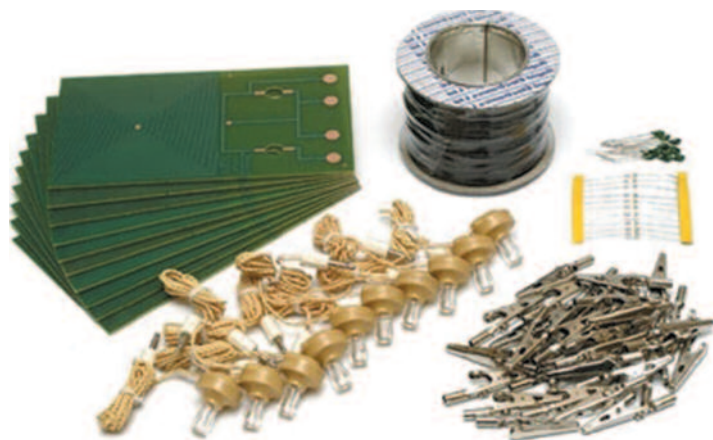
Crystal Radio Bulk Pack

Each kit includes: crystal earpiece, aerial wire, and self-adhesive postcard.

283701   Bulk Pack of 10 ....**$250**

Stereo Headphones
Lightweight.100 dB. 4-32 Ohms. 3.5mm stereo plug.

350043 ..**$4.95** or **$4.45** ea./10+

Project Speaker
8 Ohms, 0.1 W,PM, 2 in. Dia.

350009 ....**85¢** or **75¢** ea./4+

Project Microphone
10V DC. 1K.

350041 ..**$2.25** or **$1.95** ea./10+

Inductive Coil
Make an antenna with magnet wire. PCM. 100 mH.

290014 ....**$4.94** or **$3.95** ea./3+

Kits may require soldering, assembly, shaping & sanding of wood, balsa or foam. ⚠ **Warning**: Cancer and Reproductive Harm - **www.P65Warnings.ca.gov**.
www.kelvin.com • KELVIN®, 280 Adams Blvd., New York 11735, USA • Copyright © Kelvin L.P. • Prices shown are for educational institutions.

Circuit Wizard CONTROL & PCB DESIGN Software

By integrating the entire design process, Circuit Wizard provides you the tools necessary to produce an electronics project from start to finish – including on-screen testing of the PCB prior to construction! Designing is easy with Circuit Wizard. Just grab the components you need from the library, connect them together using the intelligent wiring tool and then press the 'Play' button to begin simulation. Features SPICE, a new circuit simulation engine based on Berkeley SPICE. This industry-standard technology is the most advanced in the world, so you can be confident that results will be very fast and accurate.
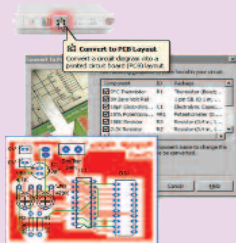
A revolutionary system that combines circuit design, PCB design, simulation and CAD/CAM in one complete package. Easy to teach and easy to learn!

HOBBYIST Circuit Wizard
121747   v1.7, Single User **$175**

PROFESSIONAL Circuit Wizard has these extra features:
- 1,000 extra components.
- More virtual instruments including logic analyzer, DC power supply, function & word generator.
- Double-sided and Interactive PCB routing.
- DXF export for CAD/CAM.

121748   v1.7, Single User **$275**

EDUCATIONAL Circuit Wizard has Professional features plus:
- Component fault simulation for teaching students fault-finding.
- Educational support material and courseware authoring tools.
- Network support for Educational Versions.

121743   v3, Single User ★ **$275**
121744   v3, 5-Users ★ **$695**
121745   v3, Add. 5-Users ★ **$245**
121818   v3, 25-Users ★ **$1,495**

Livewire CIRCUIT DESIGN Software

Livewire is a simulated electronics lab that uses animation and sound to demonstrate principles of electronic circuits. 100's of components can be connected to investigate behavior of circuits. Simple interface helps to build circuits quickly. Livewire integrates with PCB Wizard 3, so when you've simulated a circuit, transfer it with the click of a button. PCB Wizard 3 automatically places all components & routes the circuit.

HOBBYIST Livewire
121442   Single User **$79.95**

PROFESSIONAL Livewire has these additional features:
- 1000 extra components to choose from.
- More virtual instruments, including logic analyzer, function generator and word generator.

121443   Single User **$175**

EDUCATIONAL Livewire has Professional features plus:
- Component fault simulation for teaching fault-finding.
- Educational support material and courseware authoring tools.
- Network support (Standard/Pro editions don't run on networks).

121764   Single User ★ **$175**
121444   5-Users ★ **$495**
121445   Additional 5-Users ★   **$195**

Control Studio 2 SYSTEMS MODELING Software

Control Studio 2 provides a rapid method of developing circuit ideas, allowing you to consider different scenarios before a final design solution. Compatible with Circuit Wizard, Livewire & PCB Wizard 3, it is easy to turn your ideas into a schematic or PCB. Creating circuits could not be easier. Drag and drop subsystem blocks from the parts gallery onto your document, link them with connectors and press "play". Edit with built-in tools such as panning, clipboard and grid.

HOBBYIST Control Studio 2
121446   Single User **$79.95**

PROFESSIONAL Control Studio 2 has these additional features:
- Larger component library.
- Electronics-systems theory teaching courseware.

121447   Single User **$175**

EDUCATIONAL Control Studio 2 has Professional features plus:
- Courseware authoring tools.
- Network support (Standard and Pro editions won't run on networks).

121765   Single User ★ **$175**
121448   5-Users ★ **$495**
121449   Additional 5-Users ★ **$195**
121831   Site License ★ **$1,495**

PCB Wizard 3
PCB DESIGN Software

PCB Wizard 3 is great for designing single- and double-sided PCBs. It provides a range of tools for all traditional steps in PCB production and eliminates steep learning curves. Drag and drop components to a document and connect them with the intelligent wiring tool. Select "Convert to PCB" and PCB Wizard 3 does the rest.

Bright Spark THEORY TEACHING Software

Bright Spark combines on-screen animation with realistic simulation to bring circuits to life. It assumes no prior knowledge and includes built-in courseware to learn key electronics principles. Experiment with over 40 components as well as a voltmeter, ammeter and oscilloscope to record circuit measurements. Interactive worksheets teach principles behind electricity and electronics. Activities include Ohm's law, Series and parallel circuits, AC and DC circuits, Kirchoffís laws, Resistance, Capacitance, Logic and Transistors.

HOBBYIST Bright Spark
121438   Single User **$79.95**

PROFESSIONAL Bright Spark has these additional features:
- Large component library.
- Electronics theory teaching courseware.

121439   Single User **$175**

EDUCATIONAL Bright Spark has Professional features plus:
- Courseware authoring tools.
- Network support (Standard and Pro editions won't run on networks).

121766   Single User ★ **$175**
121440   5-Users ★ **$495**
121441   Additional 5-Users ★ **$195**

Hobbyist PCB Wizard 3
121450   Single User **$79.95**

PROFESSIONAL PCB Wizard 3 has these additional features:
- 1000 extra components to choose from.
- Double-sided and Interactive PCB routing.
- DXF export for CAD/CAM

121451   Single User **$175**

★ Educational versions sold to schools only

EDUCATIONAL PCB Wizard 3 has Professional features plus:
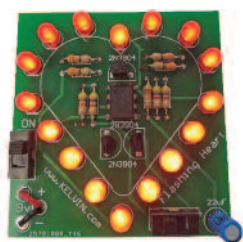- More virtual instruments, incl. logic analyzer & word generator
- Component fault simulation for teaching students fault-finding.
- Educational support material and courseware authoring tools.
- Network support (Standard/Pro editions won't run on networks)

121763   Single User ★ **$175**
121452   5-Users ★ **$495**
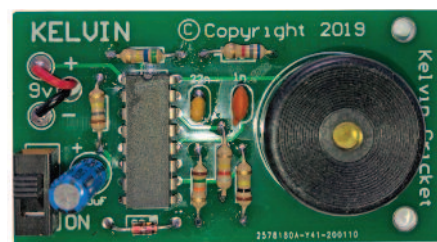121453   Additional 5-Users ★ **$195**

KELVIN® Flashing LED Heart

Kit includes 16 LEDs that can either blink the whole heart or half the heart then the other. Requires a 9V DC battery.

842519   Kit ....**$11.95** or **$10.95** ea./10+

KELVIN® Christmas Tree

Kit includes: [16] LEDs that can either blink in pattern or all at once with two switches. Requires 9V battery.

842520, **$10.95** or **$9.95** ea./10+

KELVIN® Electronic Chirp

Makes repeating cricket sound (time between two crickets) using piezo electric buzzer and a switch. Requires a 9V battery.

842507   Kit ....**$9.95** or **$8.95** ea./10+

KELVIN® Stroboscope

The powerful flash effect created by the finished kit can be used for warning signs, eye-catcher, etc. Auto on at dark with adjustable sensitivity. Requires 9V battery or 12V DC.

842529   Kit ....**$15.95** or **$12.95** ea./10+

KELVIN® 3D Christmas Tree

Kit includes 32 LEDs that can either blink in pattern or all at once with two switches. Requires 9V battery. Kit.

842521, **$15.95** or **$12.95** ea./10+

KELVIN® Sound to Light

7 super bright LEDs flash in time with sound fed through the onboard microphone. Sensitivity can be adjusted through the volume control.

842032   Kit ....**$12.95** or **$10.95** ea./10+

Bulk Pack Per Kit Price As Low As **$6**

KELVIN® Police Siren

Mimics a police car siren with tone adjustment. Can also be used as burglar alarm. Requires 9V battery.

841567   Kit....................**$7.95** or **$6.95** ea./10+
842245   Bulk Pack of 20 ....**$6 Per Kit** **$120**
842189   Assembled Demo **$59.95**
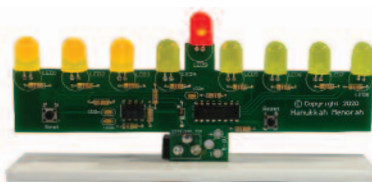
KELVIN® Hanukkah Menorah

Candles are simulated with 10mm LEDs. Kit includes: pc board, switches, LEDs and mounting base. Finished board is 6 in. L x 3 in. H. Requires 9V battery (220019) or 110 V AC power adapter.

842524   Kit ....**$34.95** or **$29.95** ea./10+
842582   Assembled Demo **$85**

Bulk Pack Per Kit Price As Low As **$7⁴⁵**

KELVIN® Light Activated

Light triggers a relay for an alarm or robot. Requires a 9V battery.

841129   Kit....................**$9.95** or **$8.95** ea./10+
842224   Bulk Pack of 20 ......**$7.45 Per Kit** **$149**
842161   Assembled Demo **$59.95**
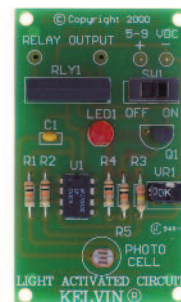
Bulk Pack Price Per Kit As Low As **$12⁵⁰**

KELVIN® Motor Speed Control

Vary the speed of any DC motor (3-25V DC; 3A max.) from 0 to 100%. Control a fan, motor, etc.

841732   Kit ....**$15.95** or **$14.95** ea./10+
842227   Bulk Pack of 10 ....**$12.50 Per Kit** **$125**
842166   Assembled Demo **$69.95**
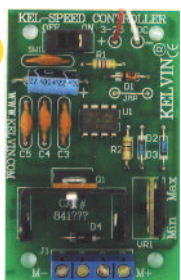
Bulk Pack Per Kit Price As Low As **$9⁹⁹**

KELVIN® Hollywood Marquee

Kit includes: PC board, parts and instructions. Requires a 9V battery.

840556   Kit ....**$12.95** or **$11.95** ea./10+
842229   Bulk Pack of 10 ..**$9.99 Per Kit** **$99.95**
842168   Assembled Demo **$69.95**
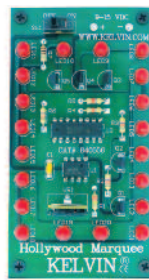
Bulk Pack Per Kit Price As Low As **$10⁵⁰**

KELVIN® Sound Activated

Using sound or voice, a relay is energized. Increase or decrease the sensitivity as desired. Requires 9V battery.

841128   Kit ....**$12.95** or **$11.95** ea./10+
842226   Bulk Pack of 10 ....**$10.50 Per Kit** **$105**
842165   Assembled Demo **$59.95**

Kits may require soldering, assembly, shaping & sanding of wood, balsa or foam.   ⚠ **Warning**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.
www.kelvin.com • KELVIN®, 280 Adams Blvd., New York 11735, USA • Copyright © Kelvin L.P. • Prices shown are for educational institutions.
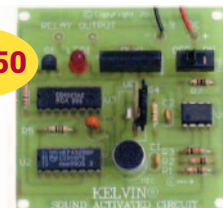
KELVIN® Micro-Mazer

Bulk Pack Price Per Kit As Low As **$3⁹⁵**

Blinking LED eyes and a jumbo LED gives this kit a 'robotic face'. Requires a 9V battery.

841124   Kit....................$6.95 or $5.95 ea./10+
842225   Bulk Pack of 20..........$3.95 Per Kit $79
842164   Assembled Demo $49.95

KELVIN® Night Light

Bulk Pack Per Kit Price As Low As **$3⁹⁵**

PROJECT LEAD THE WAY

Photocell turns a super bright LED on as the room gets dark or off when it gets light. Requires [2] AA batteries.

842141   Kit....................$5.95 or $5.45 ea./10+
                                 or $4.95 ea./20+
842142   Bulk Pack of 30.....$3.95 Per Kit $118.50

KELVIN® Blinking LEDs

Bulk Pack Per Kit Price As Low As **$1⁹⁵**

Demonstrates how to blink two LEDs with many basic electronic parts. Requires a 9V battery.

841123   Kit....................$3.95 or $2.95 ea./10+
842162   Bulk Pack of 30 ..$1.95 Per Kit $58.50
842163   Assembled Demo $49.95
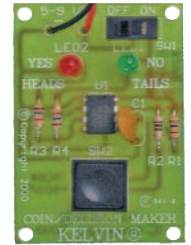
KELVIN® Sound Effects v2

New design features a programmed Arduino chip. Make four different sound effects; from a Laser Gun to Police Siren. Requires a 9V battery.

842505   Kit ....$13.95 or $11.95 ea./10+

KELVIN® Solar Battery Charger with Light & Sensor

Sunlight and a solar cell charges a rechargeable battery during the day. An IC senses voltage change and turns on a LED at dark.

Kit includes: PC board, LED light, battery holder for rechargeable AA battery (rechargeable battery not included), and solar panel.

842432   Kit ....$12.95 or $11.95 ea./10+

KELVIN® Reaction Tester

Bulk Pack Per Kit Price As Low As **$3³⁰**

Anticipate when the LED lights and release the switch. Stays lit up when right. Requires a 9V battery.

841134   Kit....................$3.95 or $3.65 ea./10+
842191   Bulk Pack of 30..........$3.30 Per Kit $99
842192   Assembled Demo $49.95

KELVIN® Continuity Tester
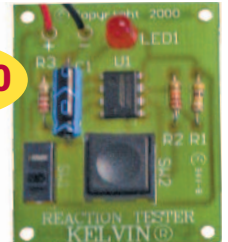
Bulk Pack Price Per Kit As Low As **$2⁹⁵**

Requires 9V battery.
LED Light Only Continuity Tester

842407   Bulk Pack of 30 ..$2.95 Per Kit $88.50

Mechanical Buzzer & LED Light Continuity Tester Bulk Pack

842405   Bulk Pack of 20..........$4.95 Per Kit $99

KELVIN® Continuity Tester w/ Buzzer

Bulk Pack Price Per Kit As Low As **$3⁹⁵**

Features an electric buzzer with LED light. Requires 9V battery.

841241   Kit....................$4.45 or $4.25 ea./10+
842233   Bulk Pack of 20..........$3.95 Per Kit $79
842172   Assembled Demo $59.95

KELVIN® Flashing & Adjustable Jumbo LED

Bulk Pack Per Kit Price As Low As **$4²⁵**

Uses an adjustable potentiometer and large LEDs (10mm).

842490   Kit....................$5.95 or $4.95 ea./10+
842528   Bulk Pack of 30..$4.25 Per Kit $127.50
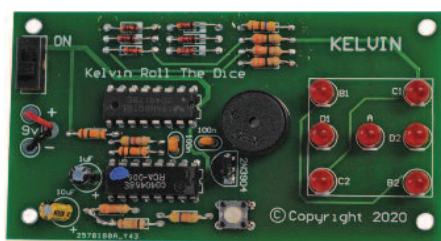
KELVIN® Dice

Electronic die with an LED indication. Rolls slowly out when the push button is released. Requires a 9V battery.

842518   Kit ....$12.95 or $9.95 ea./10+

KELVIN® Speedy Brain

Repeat a random pattern with 4 LEDs and 4 pushbuttons. Micro-processor controlled. Auto power off. Requires [4] AA batteries.

842506   Kit...............$19.95 or $16.95 ea./10+

KELVIN® Touch Control

Bulk Pack Per Kit Price As Low As **$6⁵⁰**

Activates a relay just by touching the ON probe. Requires a 9V battery. Enclosure not included.

841130   Kit....................$7.95 or $7.45 ea./10+
842223   Bulk Pack of 20 ......$6.50 Per Kit $130
842160   Assembled Demo $49.95
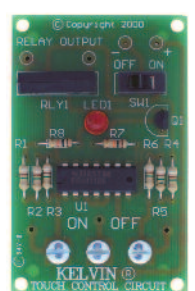
KELVIN® Moisture Sensor

Bulk Pack Per Kit Price As Low As **$7⁴⁵**

Check the soil moisture of plants with probes and keep them alive. Requires a 9V battery.

841132   Kit.......................$9.95 or $8.95 ea./10+
842235   Bulk Pack of 20 ......$7.45 Per Kit $149
842175   Assembled Demo $59.95
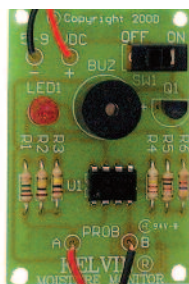
KELVIN® Decision Maker

Bulk Pack Per Kit Price As Low As **$3³⁰**

Great tool for making any "YES," "NO," or "Heads or Tails" decisions. Requires a 9V battery.

841131   Kit.......................$3.95 or $3.65 ea./10+
842193   Bulk Pack of 30 Kits ..$3.30 Per Kit $99
842194   Assembled Demo $49.95
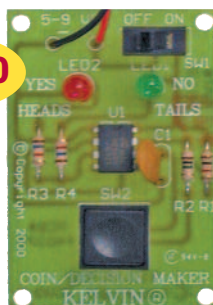
KELVIN® PaceMaker™

Bulk Pack Per Kit Price As Low As **$12**

Attach to belt and it will keep track of pace when walking or jogging. Req. 9V battery.

842252   Kit ....$13.95 or $12.95 ea./10+
842254   Bulk Pack of 10 ....$12 Per Kit $120
842253   Assembled Demo $49.95
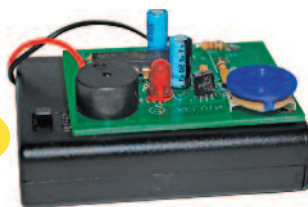
KELVIN® Water Level

Bulk Pack Per Kit Price As Low As **$9⁹⁵**

A great tool to determine the liquid level in a container. Requires a 9V battery.

841126   Kit ....$13.95 or $12.95 ea./10+
842531   Bulk Pack of 10 ..$9.95 Per Kit $99.50
842173   Assembled Demo $59.95

KELVIN® Decision Stick

Bulk Pack Per Kit Price As Low As **$7⁴⁵**

Push the button to display the answer to your question. Requires a 9V battery.

841569   Kit.......................$9.95 or $8.95 ea./10+
842248   Bulk Pack of 20 ......$7.45 Per Kit $149
842195   Assembled Demo $59.95

KELVIN® Strobe Light

Bulk Pack Per Kit Price As Low As **$15**

Controls flash rate. Includes: pre-drilled PC board, parts and instructions. Requires a 9V battery.

840662   Kit ....$17.95 or $16.95 ea./10+
842231   Bulk Pack of 10 ....$15 Per Kit $150
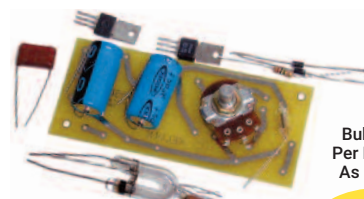
KELVIN® Temperature Control

Bulk Pack Per Kit Price As Low As **$11⁵⁰**

Thermostat with range of 41° F – 86°F. High power load control. Req. 9V battery. Enclosure not included.

841591   Kit ....$13.95 or $12.95 ea./10+
842230   Bulk Pack of 10 ....$11.50 Per Kit $115
842169   Assembled Demo $59.95

KELVIN® Big Ear

Bulk Pack Per Kit Price As Low As **$16**

Build an ultra sensitive listening device. Requires a 9V battery. Enclosure not included.

841598   Kit ....$19.95 or $18.95 ea./10+
842239   Bulk Pack of 10 ....$16 Per Kit $160
842182   Assembled Demo $69.95

KELVIN® Fiber Optics Alarm Chain

Wrap the fiber optic cord around a valuable possession. If the fiber optic wire is cut, it's relay will trigger the alarm circuitry (not included). Alarm can be shut off by pressing reset. Requires 9VDC battery.

841125   Kit ....$29.95 or $26.95 ea./10+
842247   Bulk Pack of 10...$24.50 Per Kit $245

KELVIN® Audio Level

Bulk Pack Price Per Kit As Low As **$19**

Uses an ATMEGA328 IC and audio pre-amp to measure an audio level. Requires a 9V battery.

841127   Kit ....$24.95 or $22.95 ea./10+
842232   Bulk Pack of 10 ....$19 Per Kit $190
842170   Assembled Demo $59.95
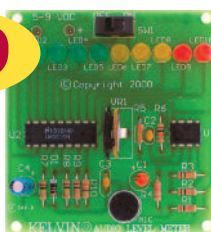
KELVIN® KGB Ear

Bulk Pack Per Kit Price As Low As **$14**

Listen to a clear broadcast over a 100 ft. away using any FM radio. Includes a pre-drilled board, parts and instructions. Requires FM radio.

840557   Kit ....$16.95 or $15.95 ea./10+
842244   Bulk Pack of 10 ....$14 Per Kit $140
842187   Assembled Demo $69.95
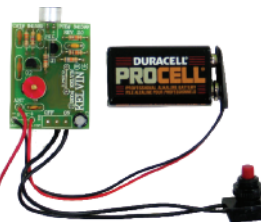
KELVIN® Hands-On Science® Telegraph & Buzzer

Wind coil, connect wires and learn to operate and communicate with this system. Have students take an interdisciplinary journey into the world of telecommunications.

Each kit includes materials, instructions and [4] carbon batteries. Requires assembly.

841978   Kit ....$44.95 or $42.95 ea./10+
283119   Bulk Pack of 10..........$39.50 Per Kit $395

Kits require batteries, soldering and assembly.

KELVIN® Metal Stud Finder
Bulk Pack Price Per Kit As Low As **$9⁹⁹**

Detects metal studs behind a wall. Requires a 9V battery. Enclosure not included.

841594 Kit. ....$12.75 or $11.95 ea./10+
842241 Bulk Pack of 10 ....$9.99 Per Kit $99.95
842184 Assembled Demo $69.95

KELVIN® Metal Detector
Detect metal objects in or behind surfaces. Requires a 9V battery. Enclosure not included.

841595 Kit. ....$14.95 or $13.95 ea./10+
842240 Bulk Pack of 10 ....$12 Per Kit $120
842183 Assembled Demo $69.95

KELVIN® Intercom x 2 Way
Features include a big easy to use "push-to-talk" button and LED indicator that light up when in use. Small low profile, lightweight intercom with excellent sound quality and long battery life. Convenient screw-type connectors for attaching and detaching wires. Comes with 20 feet of cable.

842532 Kit ....$38.95 or $36.95 ea./10+

KELVIN® Dual Power Supply
Adjustable.. Outputs positive-negative voltages from +/-1.25 to +/-15VDC at 700mA per supply. Requires wall adapter. 110 V AC. USA plug.

841590 Kit ....$23.95 or $22.45 ea./10+
842174 Assembled Demo $79.95

KELVIN® Wheel of Fortune
Bulk Pack Per Kit Price As Low As **$8⁹⁰**

Push the button and see 10 LEDs appear to spin around the wheel Requires a 9V battery.

841572 Kit..........................$10.95 or $9.95 ea./10+
842251 Bulk Pack of 10 ....$8.90 Per Kit $89
842197 Assembled Demo $59.95

KELVIN® Number Picker
Bulk Pack Per Kit Price As Low As **$9⁹⁹**

Select numbers from 0-9. Push the button and 7-seg. display will show. Req. 9V battery.

841568 Kit...............$13.95 or $12.95 ea./10+
842250 Bulk Pack of 10 ....$9.99 Per Kit $99.95
842196 Assembled Demo $59.95

KELVIN® Bicycle Safety Light
Bulk Pack Per Kit Price As Low As **$9⁹⁹**

Connect to a bicycle for safety. Requires [2] AA batteries.

841596 Kit...............$11.95 or $10.95 ea./10+
842228 Bulk Pack of 10 ....$9.99 Per Kit $99.95
842167 Assembled Demo $59.95

KELVIN® Audio Amplifier Booster
Bulk Pack Per Kit Price As Low As **$7**

Amplify music from any audio signal up to 1W. Relays to included speaker with volume control. Requires a 9V battery.

841133 Kit....................$9.95 or $8.95 ea./10+
842236 Bulk Pack of 20 ....$7 Per Kit $140
842177 Assembled Demo $59.95

KELVIN® 20W Audio Amplifier
Bulk Pack Per Kit Price As Low As **$16**

Amplify small signals and drive an 8 ohm speaker with 1% THD. Requires a power supply.

841570 Kit ....$19.95 or $18.95 ea./10+
842237 Bulk Pack of 10 ....$16 Per Kit $160
842178 Assembled Demo $69.95

KELVIN® 20W+20W Stereo Audio Amplifier
High quality; uses an LM1875 to amplify any small signal and to drive an 8 ohm speaker with 1% THD. Requires 12-30 V DC power supply.

841593 Kit ....$31.95 or $30.95 ea./10+
842179 Assembled Demo $69.95

KELVIN® Wireless Microphone
Bulk Pack Per Kit Price As Low As **$26**

Transmit a voice to any FM radio up to 100 feet away. Each kit includes: PVC pipe, microphone, foam cover, wire and other parts. Requires a 9V battery.

841599 Kit ....$29.95 or $26.95 ea./10+
842238 Bulk Pack of 10 ....$26 Per Kit $260
842181 Assembled Demo $69.95

KELVIN® S.T.E.M. Bin Fillers Each Bin Filler saves you money versus the retail price of buying each item individually.

Electronic Kits Bin Filler

Valued at $116

5	Blinking LEDs Kit	5	Reaction Tester Kit
5	Decision Maker Kit	5	Police Siren Kit
5	Night Light Kit	430516	..**$105** or **$99.95** ea./3+

Electronics Bin Filler

Valued at $230

10	Battery Holder w/ Leads, AA, 2	10	Super Bright LED, Red
10	Battery Holder w/ Leads, AA, 4	10	Diffused LED, Green
50	Pre-Cut Wire, Stranded, Red	100	Resistors, 100 Ohm, 1/4 Watt
50	Pre-Cut Wire, Stranded, Black	10	Wire Lead Buzzer
1	Electrical Tape, Black	10	Pushbutton Switch, 110V, Red
20	Alligator Clips w/ Leads, 9 in.	2	Electronics Tool Set
6	Knife Switch, SPST	10	LED Holder, 5mm
6	Slide Switch, SPST	3	Solder w/ Pocket Pak Dispenser
6	Mini Bulb Socket, Clip-On	5	Project Motor w/ Leads, 3 - 6 V
6	Bulb Socket, Threaded, E10	5	Project Motor w/ Leads, 1.2-3 V
10	Bulb, Threaded Base	2	Multimeter w/ Buzzer, 50LE

430512 ....Valued at $230 **$225** or **$195** ea./3+

Soldering Bin Filler

Valued at $155

5	Soldering Iron, 20 W	5	Desoldering Wick, 0.19 in. W
5	Solder w/ Dispenser	5	Desoldering Wick, 0.10 in. W
5	Soldering Iron Holder	5	Desoldering Bulb
5	Sponge for Holder, Extra	430521	........**$135** or **$125** ea./3+

Advanced Electronics Bin Filler

Valued at $331

10	Battery Holder w/ Leads, AA, 2	3	Project Motor, 0.7 - 5 V
5	Battery Holder w/ Leads, AA, 4	5	Super Bright LED, Red
50	Pre-Cut Wire, Stranded, Red	5	Diffused LED, Green
50	Pre-Cut Wire, Stranded, Black	5	Wire Lead Buzzer
2	Electrical Tape, Black	10	Photo Cell, 450 Ohm
20	Alligator Clips w/ Leads, 9 in. L	10	Battery Snap, 9 V, I-Shape
10	Slide Switch, SPST	10	Pushbutton Switch, 110 V, Black
5	Pushbutton Switch, 14 V, On-Off	5	Slide Switch, SPDT
10	Bulb Socket, Threaded, E10	5	Slide Switch, DPDT
5	Pushbutton Switch, 110 V, Red	5	Piezo Buzzer
10	Bulb, Threaded Base	10	Transistor
10	LED Holder, 5 mm	10	Potentiometer, Vert. PCB Mount
10	Solar Battery Chrgr, 2 V, 200 mA	5	Breadboard, 400 Contacts
5	Solder w/ Pocket Pak Dispenser	2	Multimeter w/ Buzzer, 50LE
5	Project Motor w/ Leads, 3 - 6 V	1	Desoldering Bulb
5	Project Motor w/ Leads, 1.2-3 V	1	Soldering Iron, 20 W

430513 ....Valued at $331 **$275** or **$245** ea./3+

MAKER SPACE

KELVIN® Storage Units for New Standards® S.T.E.M. Labs and Bin Fillers

Mix and match to create S.T.E.M. areas within your classroom, organize inventory and store student projects. Each cabinet includes heavy duty plastic storage bins (with or without lids) that slide in on wood runners. Bin color may vary. Constructed from 3/4 in. cabinet grade Maple plywood. Sides are shipped flat and must be assembled after delivery.

★ **FREE SHIPPING ON STORAGE UNITS (SHIPPED FLAT)**

Balsa & Wood Storage Unit (Multi-Compartment)
430461 A 18 x 18 in. ★ **$295**

Parts Storage Unit w/ 3 Bins & Lids
430459 B 16-3/4 L x 26-1/4 W x 34-3/4 in. H ★ **$345**

Parts Storage Unit w/ 6 Bins & Lids (Countertop Height)
430460 C 17-3/4 L x 31-3/4 W x 35-3/4 in. H ★ **$645**

Tall Storage Unit w/ 16 Bins (Anchors to the wall)
430458 D 12-1/2 L x 18-1/2 W x 68-1/2 in. H ★ **$645**

Storage Unit w/ 16 Bins (Countertop Height)
430456 E 16-3/4 L x 26-1/4 W x 34-3/4 in. H ★ **$645**

Tool Panel w/ Hooks & Changeable Sign
430457 F Panel is 26 x 26 in. & Sign is 24 x 8-1/2 in. ★ **$175**

Use the Polarity Box to Switch Power Polarity

Buy 50 or More and Price Each As Low As

$5⁹⁵

Features:
- **Buzzer**
- Square Wave Output
- Low Battery Indicator
- Overload Protection

Measure:
- AC/DC Volts
- AC/DC Amps
- Ohms
- Resistance

Tests:
- Diode
- Transistor
- Continuity

NEW KELVIN® Variable Power Supply w/ Polarity Box

Backlit, 3-digit LED can display 0-30 V and 0-5 A. Constant modes for voltage (CV) and current (CC) automatically switch with connection of the load. Adjustable with fine and coarse knobs. Low noise output and ripple with built-in protection for thermal, short circuit and overload. 8.8 x 3.2 x 6.5 in. Recommended for PowerPole™ and Maglev Racer™.

Use polarity box to conveniently switch power polarity. Can be used with other power supplies that have a round jack. Standard banana plugs for output with regular lab cables. 110 V AC. USA plug.

842639   0-30 V / 0-5 A Power Supply w/ Polarity Box **$145**

KELVIN® 50LE Multimeter w/ Buzzer

Comes with 9V battery, holster, test lead, and manual. LCD display measures 49 x 16 mm. Overall size is 124 x 70 x 26 mm.

990177 ....**$6.95** or **$6.45** ea./25+ or **$5.95** ea./50+
990343   Replacement Leads for 990177 ....**80¢**

KELVIN® Dual Power Supply

Adjustable.. Outputs positive-negative voltages from +/-1.25 to +/-15VDC at 700mA per supply. Requires wall adapter. 110 V AC. USA plug.

841590   Kit ....**$23.95** or **$22.45** ea./10+
842174   Assembled Demo **$79.95**

Find More KELVIN® Electronic Kits on pgs. 14-17.

Find Plugs, Jacks, and Test Leads on pg. 25.

KELVIN® Hands-On Science® Alternative Energy Battery Charger w/ Solar Cell

Includes: Solar Cell (2 V, 200 mA, 2 x2 in.), AA battery holder and insulated alligator clips with leads. Requires [1] AA NiCad battery (220025, see below).

220163 ....**$5.95** or **$5.65** ea./10+

KELVIN® Hands-On Science® Alternative Energy Battery Charger w/ Solar Cell and Solar Motor

842411 ....**$6.95** or **$6.75** ea./6+
220025   Ni-Cad Battery, AA, 500 mAH..**$1.95** or **$1.75** ea./10+

2 V, 200 mA Solar Cell
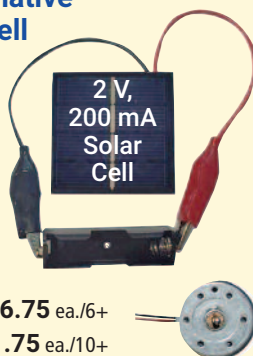
KELVIN® Turn On At Night Light & Battery Charger

Sunlight and a solar cell charges a rechargeable battery during the day. An IC senses voltage change and turns on a LED at dark.

Kit includes: PC board, LED light, battery holder, rechargeable AA battery and solar panel.

842432   Kit ....**$12.95** or **$11.95** ea./10+

Find the KELVIN® Night Light Kit on pg. 5.
Find More Solar Cells & Kits in Science on pg. PE 7.
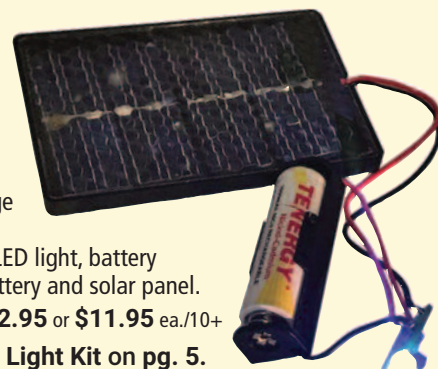
BATTERY HOLDERS

AAA Battery Holders
Plastic

Cells	Stock #	$ ea.	$ ea./10+
2	220131	1.55	1.45

AA Battery Holders Plastic

Cells	Stock #	Fig.	$ ea.	$ ea./10+
1	220089	A	.55	.45
1	220128	B	.85	.75
2	220129	C	1.50	1.45
2	220090	D	.95	.85
4	220091	E	2.95	2.75
4	220004	F	2.95	2.75
6	220092	G	4.95	4.75

C Battery Holders Plastic

Cells	Art	Stock #	$ ea.	$ ea./10+
1	L	220093	2.25	1.95
2	M	220094	3.25	2.95

D Battery Holders Plastic

Cells	Art	Stock #	$ ea.	$ ea./10+
1	N	220096	.85	.75
1	O	220133	1.95	1.85
2	P	220097	3.95	3.75
4	Q	220098	4.25	4.15

AAA Battery Box w/ Switch & Leads

Cells	Stock #	$ ea.	$ ea./10+
4	220132	4.95	4.45

AAA Battery Box w/ Switch, Leads & 10 ft. of Wire

Cells	Stock #	$ ea.	$ ea./10+
4	851510	19.95	17.95

AA Battery Box with Switch and Leads

Cells	Stock #	$ ea.	$ ea./5+	$ ea./10+
1	220147	2.25	1.95	1.85
2	220148	2.95	2.75	2.45
4	220149	4.25	3.95	3.75

T-Snap

I-Snap

9V Battery Snaps

Type	Stock #	$ ea.	$ ea./10+
T-Snap	220001	.25	.19
I-Snap	220017	.25	.19

9V Battery Clips

Type	Stock #	Fig.	$ ea.	$ ea./10+
Metal	220013	A	1.15	.99
Plastic	220078	B	2.75	2.45

Stackable D Battery Holder
Snap units together to form series and parallel battery packs. Plastic.

Cells	Stock #	$ ea.	$ ea./10+
1	220083	1.49	1.29

BATTERIES

Alkaline Batteries
Eveready or Duracell Quality

Type	V	Stock #	$ ea.	$ ea./10+
AAA	1.5	220033	.99	.79
AA	1.5	220016	.99	.79
C	1.5	220015	2.25	1.95
D	1.5	220014	2.95	2.75
Radio	9	220019	2.75	2.45

Carbon Batteries

Type	V	Stock #	$ ea.	$ ea./10+
AA, 4pk	1.5	220009	2.95	2.75
D, 4pk	1.5	220007	6.95	6.75
Radio	9	220010	2.45	2.25
Lantern	6	220045	16.95	15.95

Button Batteries
For watches, calculators and more!

Type	V	Stock #	$ ea.
CR2032	3	220154	.95
Holder	3	250075	2.25

POWER CORDS

Power Strip
Six outlets. Power surge protection, On/off switch. 110 V AC. USA plug.
340060 ...**$16.95** or **$14.95** ea./3+

Extension Cord
Polarized. 16/3 cord. 25 ft. long. 110 V AC. USA 3-prong plug.
350325 ...**$22.95** or **$21.95** ea./3+

RECHARGEABLE

Rechargeable Ni-Cad Batteries
1.2V (except the 9V radio) sealed Nickel Cadmium cells provide up to 1,000 charge/discharge cycles.

Type	mAH	Stock #	$ ea.	$ ea./15+
AAA	—	220039	1.95	1.75
AA	500	220025	1.95	1.75
C	1200	220027	4.45	4.25

Quick Charger w/ [4] AA Ni-MH Batteries
Charges in 1 to 2.5 hours, 4000 mW.
220155 ....**$49.95**

Ni-Cad/Ni-MH 4-Cell Battery Charger
Charges D, C, AA, AAA, 6V, and 9V Ni-Cad/Ni-mh batteries. LEDs indicate proper charging and switch charges at 50 mAH or 120 mAH.

Cells	Stock #	$ ea.	$ ea./10+
4	220035	34.95	31.95

WALL ADAPTERS

2.1 mm plug. 110 V AC. USA plug.

V	A	Stock #	$ ea.	$ ea./3+
9	500	220069	19.95	18.95
12	500	220068	19.95	18.95
12	800	220121	19.95	18.95
12	2000	220100	19.95	18.95

POWER TRANSFORMER

Use to design a power supply or in circuits. Center tapped output. 12 V, 4 A.
320047..**$22.95** or **$20.95** ea./10+

Electronics Tool Set

Set includes:

- 30 W Soldering Iron (110 V AC, USA plug)
- Sponge
- Mini Needle Nose Pliers
- Diagonal Cutter
- Wire Stripper/Cutter
- Slotted Screwdriver
- Phillips Screwdriver

840213 ....**$24.95** or **$22.95** ea./6+

Diagonal Cutters

4-1/2 Long
520023 ....**$7.95** or **$7.45** ea./6+
6 Long
520303 ....**$5.95** or **$5.45** ea./6+
6-1/2 Long
520022 ....**$7.95** or **$7.45** ea./6+

Economy Wire Stripper

For wire up to 10 AWG.
520298 ....**$4.25** or **$3.95** ea./6+

Long Nose Pliers

4-1/2 Long
520021 ....**$7.95** or **$7.45** ea./6+
6 Long
520020 6 in. L **$9.95** or **$9.45** ea./6+
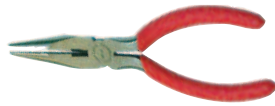
Inch Crimping Tool & Wire Stripper

Crimps insulated and non-insulated lugs. Strips 10 to 22 AWG wire. Cuts bolts from #4 to #10.
520002 ....**$5.95** or **$5.75** ea./6+

Wire Stripper, Premium

7-in-1 all-purpose wire stripper, cutter, pliers, and crimper. Cushion grip, strips AWG 16 - 26. 6 in. long.
520302 ....**$8.95** or **$8.45** ea./6+

Electrician Pliers

Use to cut or twist wire or remove metal electrical box knockouts. 7 in. L.
520026 ....**$9.95** or **$9.75** ea./6+

Automatic Wire Stripper

Holds wire in place while the blade strips off the insulation. Use to strip 12 to 22 AWG wire. 7-1/2 in. long.
520194 ....**$27.95** or **$25.95** ea./6+

Wire Stripper/Cutter

Self adjusting. Strips 0.2-6mm wire.
520069 ....**$29.95** or **$27.95** ea./6+

ETCHING

Etch in 4 minutes!

Fast Etching Tank

Max. PC board size is 160 x 250 mm. Includes electric agitator and hanging accessories. Requires tank heater. ★ 110 V AC. USA plug.
440142 ★ Fast Etching Tank **$195**
450069 ★ Air Circulation & Agitation Pump Only ....**$12.95** or **$11.95** ea./3+

Acid Brushes 3/8 in. wide
580045 10/pkg.....**$2.95** or **$2.75** ea./6+

Ammonium Persulphate

Economical! Etchant powder features an indefinite shelf life. Mix with water as needed; 4 lbs. makes up to 2 gallons of 20% solution.
440026 4 lbs. ....**$125** or **$120** ea./3+

Transfer Film

Photocopy or print designs on film then iron on copper board. Peel off film before etching. [5] 8.5 x 11 in. sheets.
440198 ....**$13.95** or **$12.95** ea./6+

Direct Etch Tape

1/8 in. W x 54 ft. L. 440010,
$9.95 or **$9.65** ea./6+
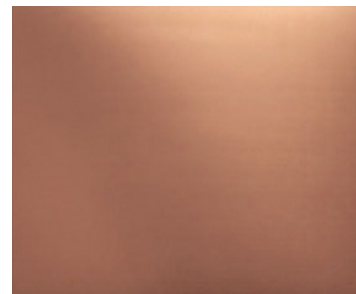
Copper-Plated Boards

One-sided. 1/16 in. thick. 1 oz.

L in.	W in.	Stock #	$ ea.	$ ea./10+
6	4-1/2	440002	5.95	5.75
7	5	440003	6.95	6.75
15.5	7.5	440014	13.95	12.95
36	34	440065	99.95	94.95

PCB Etch Resist Pens

Tip Dia. in.	Stock #	$ ea.	$ ea./6+
1/64	440116	4.95	4.45
1/32	440115	4.95	4.45

Practical Soldering Project Kits

Learn good soldering techniques. Each kit includes parts. Requires 9V battery.

Project I w/ Soldering Iron & Side Cutters
282459 Kit ....**$29.95** or **$26.95** ea./10+

Project II w/ Color Code Calculator
282460 Kit ....**$19.95** or **$18.95** ea./3+

WELLER Stained Glass Soldering Iron

Ideal for hobby work, stained glass and minor repairs. Soldering iron rest included. 3/8 in. dia. replaceable iron-plated copper tip. 900°F/482°C temperature. Indicator light allows you to instantly see that the iron is on. 9-3/4 in. long. 110 V AC. USA plug.

820051   80W ....**$39.95** or **$37.95** ea./3+

WELLER Thread-On Soldering Iron Tip

Pencil-type silver-plated.
820068   1/4 dia. ....**$7.95** or **$7.15** ea./5+

WELLER Soldering Gun

All-purpose. Features built-in, pre-focused spotlight with pull of trigger. Pistol-grip with replaceable tip. 110 V AC. USA plug.

810001   ....**$79.95** or **$74.95** ea./3+
810007   High Heat, 200-260 W **$105**

DESOLDERING

Electric Desoldering Iron w/ Cleaning Wand
820083   ....**$48.95** or **$46.95** ea./3+

Vacuum Desoldering Pump, Metal
450030   ....**$6.95** or **$6.75** ea./6+

Desoldering Wick 5 ft. long.
580009   0.150 in. W ......**$6.95** or **$6.75** ea./6+
580026   0.190 in. W ......**$6.95** or **$6.75** ea./6+

Imported Desoldering Wick 5 ft. long.
580004   0.075 in. W ......**$1.95** or **$1.75** ea./6+
580025   0.100 in. W ......**$1.95** or **$1.75** ea./6+
580009   0.150 in. W ......**$6.95** or **$6.75** ea./6+
580026   0.190 in. W ......**$6.95** or **$6.75** ea./6+

Desoldering Bulb
Economical! Includes a high heat resistant, removable tip for removing solder, but without scratching or damaging delicate PC boards.

990084   ....**$4.45** or **$3.95** ea./6+

Project Soldering Iron

Soldering iron with 3/16 in. long tapered tip and break-resistant plastic handle. 30W, 117V, 60Hz (UL). 110 V AC. USA plug.

990098   2-Prong Iron ....**$9.95** or **$8.95** ea./6+
990099   2-Prong Iron Tip Only ....**95¢** or **85¢** ea./12+
990072   3-Prong Iron ....**$14.95** or **$13.95** ea./6+

Soldering Iron Holder w/ Sponge

Heavy-duty spring with bakelite support, steel base, and sponge.
830010   ....**$2.95** or **$2.75** ea./10+
990083   Sponge Only ....**85¢** or **79¢** ea./10+

WELLER Marksman Soldering Irons

Featherweight (1-3/4 oz.); ideal for reaching hard to get spots on PC boards. 110 V AC. USA plug.

810002   [A] 25 W   **$46.95** or **$44.95** ea./6+
810005   40 W ....**$49.95** or **$47.95** ea./6+

WELLER Marksman Soldering Set

Includes: soldering iron, [3] copper tips, 40/60 solder, soldering aid and instructions. 110 V AC. USA plug.

810029   25 W ....**$49.95** or **$47.95** ea./3+

Replaceable Soldering Iron Tips

Cone
810004   25 W ....**$14.95** or **$13.95** ea./6+
Chisel, 2/pkg.
810006   40 W ....**$16.95** or **$15.95** ea./6+
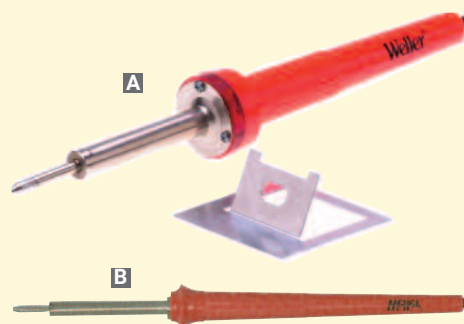
WELLER Pencil Soldering Iron

Ideal for reaching tight spots. Tip temp. is 800°. Use Weller MP auto slide-in soldering iron tips. 110 V AC. USA plug.

810054   [B] 12 W ....**$24.95** or **$22.95** ea./6+

Wire Glue

Join together wires and components in small electrical projects where soldering is unsafe or impractical. Great for elementary grades.

580059   ....**$7.95** or **$7.75** ea./6+

Solder Paste

Designed for applications where a liquid flux may be hazardous or inconvenient to use. 50 grams
580052 ...**$13.95** or **$12.95** ea./3+

60/40 Solder

Kester-brand, Flux Resin Core.
1/16 in. dia., 1 lb. Spool
580001 ...**$59.95** or **$57.95** ea./4+
1/32 in. dia., 1 lb. Spool
580005 ...**$59.95** or **$57.95** ea./4+

60/40 Solder Pocket-Pack Flux Resin Core
580022   1/2 oz. ....**$4.95** or **$4.45** ea./4+

Heat Sinks

Protect heat-sensitive parts when soldering.
450034   [A] Clip-On ....**$1.25** or **$1.15** ea./10+
480024   [B] Snap-On ....**80¢** or **75¢** ea./10+

Soldering Aids Set

Heat sink, fine probe, slotted probe and brush/scraper.
450032   ....**$4.25** or **$3.95** ea./10+

Solder Brush with Metal Bristles
580043   ....**$1.95** or **$1.75** ea./3+

Project Wire
22 AWG, Solid

Color	L ft.	Stock #	$ ea.	$ ea./3+
Red	100	330193	9.95	8.95
	1000	330017	77.95	74.95
Black	100	330208	9.95	8.95
	1000	330011	77.95	74.95
Blue	100	330192	9.95	8.95
	1000	330012	77.95	74.95
Brown	100	330209	9.95	8.95
	1000	330013	77.95	74.95
Green	100	330210	9.95	8.95
	1000	330014	77.95	74.95
Gray	100	330211	9.95	8.95
	1000	330015	77.95	74.95
Violet	100	330213	9.95	8.95
	1000	330018	77.95	74.95
White	100	330214	9.95	8.95
	1000	330019	77.95	74.95
Yellow	100	330194	9.95	8.95
	1000	330020	77.95	74.95
Orange	100	330212	9.95	8.95
	1000	330016	77.95	74.95

22 AWG, Stranded 1000 ft. Long

Color	Stock #	$ ea.	$ ea./3+
Red	330032	79.95	75.95
Black	330026	79.95	75.95
Blue	330027	79.95	75.95
Brown	330028	79.95	75.95
Green	330029	79.95	75.95
Gray	330030	79.95	75.95
Violet	330033	79.95	75.95
White	330034	79.95	75.95
Yellow	330035	79.95	75.95
Orange	330031	79.95	75.95

22 AWG, Pre-Cut
10 in. long with both ends stripped.

Type	Color	Stock #	Qty.	$ ea.	$ ea./3+
Solid	Red	330425	50	9.95	8.95
Solid	Black	330426	50	9.95	8.95
Strnd	Red	330427	50	9.95	8.95
Strnd	Black	330428	50	9.95	8.95
Strnd	R / B	391489	20	4.95	—

Test Lead Wire
18 AWG, Solid

Type	Color	Stock #	L ft.	$ ea.
Rubber	Red	330369	50	22.95
Rubber	Black	330370	50	22.95
PVC	Red	330007	100	35
PVC	Black	330008	100	35
PVC	Red	330166	1000	249
PVC	Black	330167	1000	249

Building Wire
Solid, THHN, 500 ft.
* Stranded Version

AWG	Color	Stock #	$ ea.	$ ea./3+
14	Black	330247	150	140
14	Green	330259	150	140
14	Red	330260	150	140
14	White	330261	150	140
14	* White	330270	99.95	—

Bell Wire
18 AWG
Solid, PVC

Color	L ft.	Stock #	$ ea.
Red	100	330365	12.95
Red	1000	330118	115
Black	100	330366	12.95
Black	1000	330116	115
Brown	100	330367	12.95
Brown	1000	330117	115
Yellow	100	330368	12.95
Yellow	1000	330364	115

Copper Wire
Solid. Non-Insulated.

AWG	L ft.	Stock #	$ ea.	$ ea./3+
18	50	330343	24.95	23.95

Magnet Wire
Copper Enamel

AWG	Spool	Stock #	$ ea.	$ ea./3+
22	1 lb.	330128	18.95	17.95
24	1 lb.	330130	25.95	24.95
26	1 lb.	330132	18.95	17.95
28	1 lb.	330134	19.95	18.95
30	1 lb.	330136	22	21
20	10 lb.	330037	130	125
22	10 lb.	330038	215	199
24	10 lb.	330039	140	135
26	10 lb.	330040	160	158
28	10 lb.	330041	150	140

Speaker Wire
Clear

Stock #	L ft.	$ ea.	$ ea./3+
330154	25	6.95	6.45

Phone Wire
Solid. 4-Conductor

Stock #	L ft.	$ ea.	$ ea./3+
860017	7	2.95	—
860025	50	4.95	4.45

Control Wire
Stranded. 2-Conductor.

Color	Stock #	L ft.	$ ea.
Red/White	330348	50	14.95

BREADBOARDS
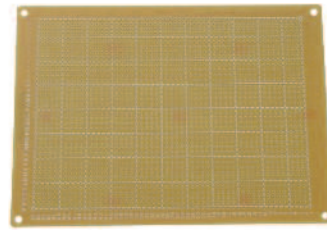
General Purpose Boards
Multi-purpose boards for circuit design featuring pre-drilled and solder-ringed holes. Accept DIPs, sockets, headers. Indexed for pin-out ID.

HOLES	Stock #	$ ea.	$ ea./6+
356	440209	3.75	3.25
750	440208	6.95	6.45
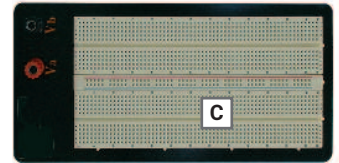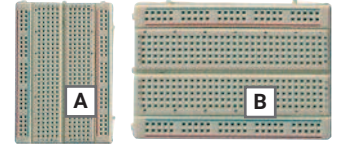
Breadboards
Works with most electronic parts.

Contacts	Stock #	Fig.	$ ea.	$ ea./3+
400	680093	A	6.95	6.45
840	680097	B	10.95	9.95
1380	680098	C	21.95	19.95
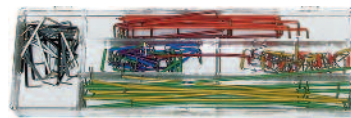
Wire Jumper Kit
Quick test sockets, bus strips and 22 AWG wire (pre-cut/pre-stripped).

Stock #	Pieces	$ ea.	$ ea./3+
330289	140	7.95	6.95
330290	350	18.95	17.95

Zip Cords
Stranded, Vinyl, UL-listed, 250 ft.

Type	Color	Stock #	$ ea.	$ ea./3+
18/2	Black	330010	34.95	32.95
18/2	Clear	330120	59.95	56.95
18/2	White	330152	59.95	56.95
16/3	Black	330082	194	174.95

Locking Cable Ties 100/pkg.

Stock #	Dia. in.	$ ea.	$ ea./10+
390169	4	3.95	3.55
390299	8	5.95	5.55

Plastic Spacers
All dimensions in inches. 100/pkg.

Stock #	Type	Size	$ ea.	$ ea./6+
390146	#4	1/4	24.95	23.95
390151	#6	1/4	22.95	21.95
390152	#6	3/8	24.95	23.95
390153	#6	1/2	24.95	23.95
390154	#6	5/8	24.95	23.95
390157	#8	1/4	24.95	23.95
390159	#8	1/2	24.95	23.95
390161	#8	3/4	24.95	23.95
390162	#8	1	24.95	23.95

Heat Gun
Top quality gun with dual temperature and a 6 ft. long cord. 1000 W. 110 V AC. USA plug.
820054 ....$69.95 or $64.95 ea./6+

Heat Shrink Tubing
Shrinks to 50% of inside diameter. 10 ft. long.

Dia. in.	Stock #	$ ea.	$ ea./10+
1/8	330078	3.95	3.65
3/16	330079	3.95	3.65
1/4	330080	5.45	4.95
5/16	330081	7.95	6.95

Wire Nuts
100/pkg.

Stock #	Color	Size	$ ea.
340024	Black	Small	25
340085	Orange	Small	25
340025	Black	Med.	36

Electrical Tape
Useful for electronics and other projects. 3/4 in. W; 60 ft. L.

Stock #	color	$ ea.	$ ea./3+
340005	Black	1.95	1.75
340006	Red	2.25	1.95
340157	White	2.25	1.95
340158	Green	2.25	1.95
340139	4 Colors	7.45	6.95

Kits may require soldering, assembly, shaping & sanding of wood, balsa or foam. ⚠ **Warning**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.
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ALLIGATOR CLIPS

Micro Alligator Clip Solder-Type

Type	Stock #	$ ea.	$ ea./10+
#34	310009	.59	.55

Mini Alligator Clip Solder-Type

Type	Stock #	$ ea.	$ ea./10+
#30	310008	.50	.45

Mini Alligator Clip Insulated

Color	Stock #	$ ea.	$ ea./10+
Black	990013	.75	.68
Red	990012	.75	.68

Banana Alligator Clip Solder-Type

Type	Stock #	$ ea.	$ ea./10+
#60	310001	.50	.45

Alligator Clip Threaded

Type	Stock #	$ ea.	$ ea./10+
#70	310010	.80	.70

TERMINALS

Terminal Strip Solder-Type

Pins	Stock #	$ ea.	$ ea./10+
6	390099	2.25	1.95
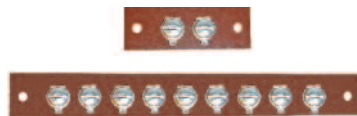
Terminal Strip Threaded

Pins	Stock #	$ ea.	$ ea./10+
2	390056	2.45	2.15
9	390106	5.95	5.45
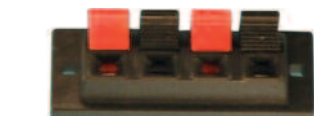
Pushbutton Terminal

Includes spring-loaded posts for easy connection. 2 red, 2 black.

Pos.	Stock #	$ ea.	$ ea./10+
4	390737	4.25	3.95

Terminal Barrier Strip

Equivalent to Cinch Jones 140 series

Pins	Stock #	$ ea.	$ ea./10+
2	390111	3.25	2.95
4	390113	4.25	3.95
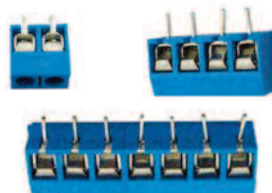
Low Profile Terminal Blocks. 5mm, Blue.

Pins	Stock #	$ ea.	$ ea./10+
2	390323	1.15	.95
4	390319	1.95	1.75
7	391071	12.95	10.95

JACKS

Right Angle Phone Jack Solder-Type. Black.

Color	Stock #	$ ea.	$ ea./10+
Black	370058	2.95	2.75

Phone Jack Chassis Solder-Type.

Color	Stock #	$ ea.	$ ea./10+
Black	370052	1.95	1.75

PLUGS

Phone Plug

3.5mm. Solder-Type.

Color	Stock #	$ ea.	$ ea./10+
Black	990043	.75	.65

Stereo Phone Plug Solder-Type.

Color	Stock #	$ ea.	$ ea./10+
Black	400041	4.95	4.25

DC Power Barrel Tip Plug Solder-Type. |2.1mm x 5mm

Color	Stock #	$ ea.	$ ea./10+
Black	370051	.75	.65

TEST LEADS

BNC to Mini Alligator Clips

BNC Plug to [2] Mini Alligator Clips. Pair of black/red leads.

L in.	Stock #	$ ea.	$ ea./3+
39	990070	7.95	7.45

Banana to Alligator Clip

L in.	Stock #	$ ea.	$ ea./3+
7	282442	4.95	4.45

Stackable Banana to Alligator Clip

L in.	Stock #	$ ea.	$ ea./3+
36	282440	9.95	8.95

Alligator to Alligator Clip

Set of 10 leads in assorted colors.

AWG	L in.	Stock #	$ ea.	$ ea./3+
20	24	330114	7.95	7.45
22	20	330009	5.95	5.45
22	180	330410	10.95	10.45

Stackable Banana Cables

Banana leads. 10/pk. 2mm plug. Yellow and white.

990136 ...$29.95 or $26.95 ea./10+

COMPUTERS

D-Sub Mini Connector

Panel and cable mount. Right angle, Solder-type, no hood. 9-pin.

120288 .....$1.45 or $1.30 ea./10+

D-Sub Connector

Socket-type. Panel and cable mount. Solder-type, no hood. 9-pin.

391073 ....95¢ or 85¢ ea./10+

USB Connector

Type B.

391073 .....$1.45 or $1.30 ea./10+

Connector Cover/Hood

9-Pin. Accepts plugs or socket ends.

370056 ....95¢ or 85¢ ea./10+

BINDING POSTS

5-way type binding posts. Includes 1/4 in. long post. Insulated.

Round Mounting Hole

Color	Stock #	$ ea.	$ ea./10+
Black	400022	4.95	4.50
Red	400021	4.95	4.50

Hex Mounting Hole

Color	Stock #	$ ea.	$ ea./10+
Black	400013	3.95	3.75
Red	400012	3.95	3.75

DIP SWITCHES

For flow soldering on PC boards or mounting with standard sockets.

Type	Stock #	$ ea.	$ ea./10+
4	270026	1.25	1.15
8	270029	1.65	1.45

LEDs

Diffused LEDs
5mm. T 1-3/4. Min. order of 20.

Color	Stock #	$ ea./20+	$ ea./100+
Red	260020	.15	.10
Green	260027	.15	.10
Yellow	260026	.15	.10
Br. Red	260067	.22	.19

Mini Diffused LEDs
3mm. T1. Minimum order of 20.

Color	Stock #	$ ea./20+	$ ea./100+
Red	260080	.20	.18
Green	260081	.20	.18
Yellow	260082	.20	.18

Blinking Diffused LEDs
5mm. Minimum order of 10.

Color	Stock #	$ ea./20+	$ ea./100+
Red	260075	.95	.85
Green	260076	.95	.85
Yellow	260077	.95	.85

Rectangular Diffused LEDs
2x5mm

Color	Stock #	$ ea./20+	$ ea./100+
Red	260083	.22	.18
Green	260084	.26	.24

Triangular LEDs
Minimum order of 10.

Color	Stock #	$ ea./20+	$ ea./100+
Red	260102	.28	.25
Green	260103	.28	.25
Yellow	260107	.28	.25

Extra Large LEDs
10mm. Minimum order of 10.

Color	Stock #	$ ea./20+	$ ea./100+
Red	260085	.39	.35
Green	260086	.39	.35
Yellow	260087	.39	.35

Dual Color LEDs Red/Green,
T 1-3/4. Min. order of 10.

Legs	Stock #	$ ea./20+	$ ea./100+
2	260078	.36	.29
3	260079	.36	.29

PC Board Mount LEDs
5mm. Minimum order of 10.

Color	Stock #	$ ea./20+	$ ea./100+
Red	260104	.25	.22
Green	260105	.28	.24
Yellow	260106	.28	.24
Orange	260160	.25	.22
White	260159	.50	.40
Blue	260158	.50	.40

Super Bright LEDs
4000-8000 mcd

Color	Stock #	$ ea./20+	$ ea./100+
Orange	260172	.99	.85
Red	260170	.99	.85
Yellow	260171	.99	.85
White	260168	.99	.85
Green	260169	.99	.85

Ultra Violet LED
Use to expose UV sensitive PC boards, light up fluorescent and phosphorescent materials, cure UV adhesives, and demonstrate color change in photochromic pigments.

Color	Stock #	$ ea.	$ ea./10+
Clear	260200	3.95	3.75

KELVIN® LED Bulk Pack
An assortment of LEDs in various colors, sizes, and styles.

# of Pieces	Stock #	$ ea.	$ ea./3+
670	840485	95	85

LED Holders
5mm

Color	Stock #	$ ea./10+	$ ea./100+
Black	250019	.49	.45

LED Readouts
7-Segment. Red. Anode

Pin #	Stock #	$ ea.	$ ea./20+
14	260022	2.50	2.25
10	260021	2.50	2.25

BULBS

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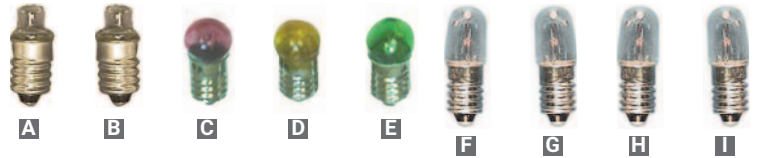
E-10 Base Mini Bulbs

Description	Color	Stock #	Fig.	Qty.	$ ea.	$ ea./10+
2.2 V. 0.25 A. Threaded. #222.	Clear	260016	A	1	.35	.30
2.3 V. 0.27 A. Threaded. #233.	Clear	260156	B	1	.75	.65
3.5 V. 0.2 A. Threaded.	Red	260138	C	10	5.95	5.45
3.5 V. 0.2 A. Threaded.	Yellow	260139	D	10	5.95	5.45
3.5 V. 0.2 A. Threaded.	Green	260140	E	10	5.95	5.45
6.3 V. 0.15 A. Threaded. #40.	Clear	260019	F	1	.35	.30
6.3 V. 0.25 A. Threaded. #46.	Clear	260025	G	1	.35	.30
7.5 V. 0.22 A. Threaded. #50.	Clear	260051	H	1	.35	.30
14 V. 0.20 A. Threaded. #1449	Clear	260024	I	1	.35	.30

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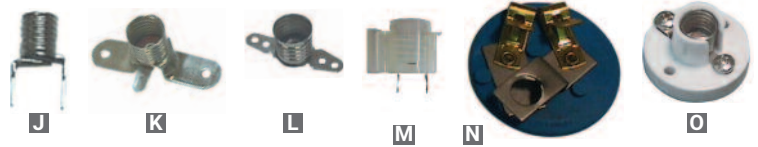
E-10 Base Mini Bulb Sockets

Description	Stock #	Fig.	Qty.	$ ea.	$ ea./10+
PCB Mount	250059	J	10	4.95	4.45
Solder Tab. Raised. Threaded.	250057	K	10	4.95	4.45
2 Solder Tabs. Threaded.	250056	L	10	4.95	4.45
Clip-On. Can slide on a craft stick.	260130	M	10	6.45	5.95
Fahnestock. Screw-type.	260117	N	1	1.25	1.15
Classic. Screw-type. 1-3/8 in. dia.	250036	O	10	6.95	6.75

Bayonet Base Mini Bulb Clear.

V	A	#	Stock #	$ ea.	$ ea./10+
2	.06	49	260015	.85	.75
6.3	.15	47	260002	.85	.75

Bayonet Base Mini Bulb Socket
Bare. 6 in. Lead.

Quantity	Stock #	$ ea.	$ ea./10+
1	250012	.95	.75

Insulated. 2 Solder Tabs.

Stock #	$ ea.	$ ea./10+	$ ea./100+
260127	1.95	1.45	1.25

PCB Base Mini Bulb
12 V. Clear

A	Stock #	$ ea.	$ ea./10+
.27	260109	1.25	.99

E-5 Base Mini Bulb
12 V. Clear. Threaded.

A	#	Stock #	$ ea.	$ ea./10+
.27	1769	260157	.75	.55

Neon Bulb Panel Kits
Each kit includes NE2 neon bulb, high temperature lens cap (colored plastic), Tinnerman mounting clip, and a current limiting resistor (68K, 1/2W). Solder tabs.115V AC. 7/8 in. long. 11/32 in. diameter. Requires a 5/16 in. dia. mounting hole.

Color	Stock #	$ ea.	$ ea./100+
Clear	260009	.95	.89
Green	260005	.95	.89
Red	260004	.95	.89

Neon Bulb Only
0.059 W, #NE2. Includes lead.

Color	Stock #	$ ea.	$ ea./20+
Clear	260003	.29	.25

Neon Bulb Assembly
Includes red indicator and housing.

V	Stock #	$ ea.	$ ea./10+
125	260113	5.95	5.45

Kits may require soldering, assembly, shaping & sanding of wood, balsa or foam. ⚠ **Warning**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.
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TRIMMERS

Vertical Mini Trimmers
PC board mount.

Ohms	Stock #	$ ea.	$ ea./10+
2.2M	110106	1.95	1.75

Top adjustable.

Ohms	Stock #	$ ea.	$ ea./10+
1k	110099	2.25	1.95

CTS.

Ohms	Stock #	$ ea.	$ ea./10+
2 k **	110109	1.95	1.75

Horizontal Trimmers
Horizontal mount.

Ohms	Stock #	$ ea.	$ ea./10+
10 k	110121	4.95	4.65

CTS, PC board mount.

Ohms	Stock #	$ ea.	$ ea./10+
5 k	110083	1.95	1.75
100 k	110111	1.95	1.75
500 k	110102	1.95	1.75

Top adjustable. PC board mount.

Ohms	Stock #	$ ea.	$ ea./10+
47k	110107	2.95	2.75

XENON STROBE TUBE

Strobe Tube Only
Used for photoflashes. Features a 4KV trigger with a 200-300V DC anode.

V	Stock #	$ ea.	$ ea./10+
4k	260050	2.95	2.75

Trigger Coil
For xenon strobe tube.

V	Stock #	$ ea.	$ ea./10+
4k	320037	1.95	1.75

Project Cases
For projects and storage. Cover snaps off. Plastic.
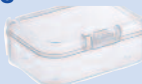
2-1/8 x 1-5/8 x 1 in.

Stock #	$ ea.	$ ea./10+
430014	.69	.65

3-1/2 x 2-9/16 x 1

Stock #	$ ea.	$ ea./10+
430017	1.25	1.15

4-5/8 x 3-1/2 x 1-3/4

Stock #	$ ea.	$ ea./10+
430064	2.25	1.95

POTENTIOMETERS

Linear Taper Potentiometers

Ohms	Stock #	$ ea.	$ ea./10+
500	110051	3.95	3.65
1 k	110052	3.95	3.65
5 k	110054	3.95	3.65
10 k	110055	3.95	3.65
50 k	110057	3.95	3.65
100 k	110058	3.95	3.65
500 k	110060	4.95	4.45
5 M	110063	4.95	4.45

Audio Taper Potentiometers

Ohms	Stock #	$ ea.	$ ea./10+
1 k	110064	2.95	2.50
100k	110068	2.45	2.25

PCB Mount Potentiometers

Ohms	Stock #	$ ea.	$ ea./10+
1 k	110132	2.29	1.95
2 k	110136	2.29	1.95
10 k	110130	2.29	1.95
100 k	110133	2.29	1.95
500k	110135	2.29	1.95
1M	110134	2.29	1.95

High Quality Potentiometers
2W, 10-Turn

Ohms	Stock #	$ ea.	$ ea./10+
100 k	110088	13.95	11.95

Rotary Switches
30° indexing, single phenolic wafer sections and silver-plated contacts.

Positions	Stock #	$ ea.	$ ea./10+
3	990035	3.95	3.15
6	990031	3.95	3.15
12	990029	3.95	3.15

CIRCUIT BREAKERS

A	Stock #	$ ea.	$ ea./10+
2	380074	16.95	15.95
4	380073	17.95	16.95

BUZZERS

Wire Lead
80 db. 3-12 V DC.
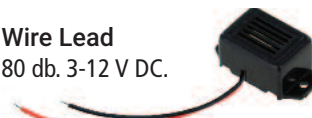
Stock #	$ ea.	$ ea./10+
680089	1.95	1.85

Piezo
80 db. 3-6 V DC

Stock #	$ ea.	$ ea./10+
680135	2.95	2.75

PCB Mount 80 db.
With leads. 6-9 V DC

Stock #	$ ea.	$ ea./10+
680104	1.95	1.75

Bell for Doorbells, etc.
Double Coil, 6-10 V AC, 3-6 V DC.
340040 ....$29.95

FUSES

Slow-Blow Fuses
125 V. 1/4 x 1/4 in. Minimum order of 10.

A	Stock #	$ ea.	$ ea./10+
2	380014	.85	.75

Fast-Acting Fuses
250 V. AGC. 1/4 x 1/4 in. Minimum order of 10.

A	Stock #	$ ea.	$ ea./10+
1	380002	.49	.45
1.5	380024	.49	.45
2	380003	.49	.45
3	380004	.49	.45

Test Instrument Fuses
250 V. GMA. 1/4 x 1/4 in. Minimum order of 10.

A	Stock #	$ ea.	$ ea./10+
0.5	380034	.15	.11
1	380035	.15	.11

Fuse Holders
Post-Type. Includes mounting nut.

Quantity	Stock #	$ ea.	$ ea./10+
1	380019	1.60	1.50

Bayonet-Type. With mounting nut.

Qty.	Stock #	$ ea.	$ ea./10+
1	380001	14.95	14.25

SENSORS

Thermistors
Raises the temperature as resistance goes down.

Ohms	Stock #	$ ea.	$ ea./10+
100	110097	1.35	1.00
1 K	110108	1.35	1.00
10 K	110098	1.55	1.45

IR Switch / Sensor Detector

Stock #	$ ea.	$ ea./20+
260093	.99	.85

Photo Cells
Variable Resistance

Ohms	Stock #	$ ea.	$ ea./100+
450	260017	.99	.85
1.5 K	260018	.99	.85

Ultrasonic Sensor Set
Aluminum Case

Stock #	$ ea.	$ ea./10+
680115	13.95	12.95

Tilt Switches
Metal Can
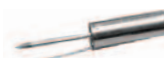
Stock #	$ ea.	$ ea./10+
270086	2.65	2.45

Magnetic

Stock #	$ ea.	$ ea./10+
270065	2.25	1.95

Magnet switch with magnet. 1 set.

Stock #	$ ea.	$ ea./10+
842603	3.25	2.95

Key Switch
Normally Open

Quantity	Stock #	$ ea.	$ ea./6+
1	270081	.49	.44

Momentary Switches

Type	Stock #	$ ea.	$ ea./10+
SPST, NO	270052	1.25	.99
SPDT, NO/C	270074	3.45	2.95

Right Angle. SPST. 12mm.

Quantity	Stock #	$ ea.	$ ea./10+
1	270104	1.75	1.58

Hall Effect Switch & Sensor

Quantity	Stock #	$ ea.	$ ea./10+
1	270051	2.75	2.45

TOGGLE SWITCHES

SPST. 125 V AC, 4 A
Includes nut.

Stock #	$ ea.	$ ea./10+	$ ea./100+
270007	1.45	1.35	1.25

SPST. 125 V AC, 6A
Includes nut.

Stock #	$ ea.	$ ea./10+	$ ea./100+
270034	1.45	1.35	1.25

SPST. 125 V AC, 8 A
Includes nut.

Stock #	$ ea.	$ ea./10+	$ ea./100+
270001	3.95	3.75	3.65

SPST. 125 V AC, 20 A
Includes nut.

Stock #	$ ea.	$ ea./10+	$ ea./100+
270059	4.45	4.35	4.25

SPDT. 125 V AC, 0.3 A
PCB Mount

Stock #	$ ea.	$ ea./10+	$ ea./100+
990097	9.95	8.95	7.95

SPDT. 125 V AC, 6A
Includes nut.

Stock #	$ ea.	$ ea./10+	$ ea./100+
270035	1.25	1.15	.99

SPDT. 125 V AC, 6 A
Includes nut. Center-off

Stock #	$ ea.	$ ea./10+	$ ea./100+
270036	1.25	1.15	.99

SPDT. 125 V AC, 15 A
Includes nut. Center-off

Stock #	$ ea.	$ ea./10+	$ ea./100+
270005	5.95	5.45	4.95

DPST. 125 V AC, 6 A
Includes nut. Center-off

Stock #	$ ea.	$ ea./10+	$ ea./100+
270011	1.35	1.25	1.15

DPDT. 125 V AC, 6 A
Includes nut. Center-off

Stock #	$ ea.	$ ea./10+	$ ea./100+
270037	1.95	1.85	1.75

DPDT. 125 V AC, 15 A
Includes nut. Center-off

Stock #	$ ea.	$ ea./10+	$ ea./100+
270013	2.65	2.45	2.35

SLIDE SWITCHES

SPST
Solder-type
125 V AC, 0.5 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270042	.95	.85	.75

SPST
Includes nut.
125 V AC, 3 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270004	.70	.66	.63

SPST
Horiz. PCB Mount
125 V AC, 0.5 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270111	3.45	3.25	2.95

SPDT. PCB Mount.
30 V DC, 0.2 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270064	1.45	1.25	.95

SPDT. PCB Mount.
50 V DC, 0.5 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270099	.95	.85	.75

SPDT. Solder-type.
125 V DC, 0.5 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270002	2.95	2.85	2.75

SPDT. PCB Mount.
125 V DC, 0.5 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270089	3.45	3.25	2.95

DPDT. Side Mount.
50 V DC, 0.5 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270092	1.75	1.65	1.55

DPDT. Solder-type.
125 V DC, 0.5 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270009	3.45	3.25	2.95

DOLLHOUSE SWITCHES

Toggle
SPST. Screw-type.
On/Off.

Stock #	$ ea.	$ ea./10+	$ ea./25+
270095	10	10.95	9.95

Lever
SPST. Fahnestock.
On/Off

Stock #	$ ea.	$ ea./10+	$ ea./25+
270077	1	1.25	1.15

PUSHBUTTON SWITCHES

Normally Closed
14 V, 2 A Black w/ nut.

Hole in.	Stock #	$ ea.	$ ea./100+
3/8	270023	1.85	1.75

On/Off
14 V, 2 A White w/ nut.

Hole in.	Stock #	$ ea.	$ ea./100+
3/8	270021	1.85	1.75

Normally Open
14 V, 2 A Red w/ nut.

Hole in.	Stock #	$ ea.	$ ea./100+
3/8	270022	1.85	1.75

Normally Closed
Black w/ Nut
110 V, 3 A

Hole in.	Stock #	$ ea.	$ ea./100+
1/4	990074	.39	.35

Normally Closed
Red w/ Nut
110 V, 3 A

Hole in.	Stock #	$ ea.	$ ea./100+
17.81/4	990002	.39	.35

On/Off
Red w/ Nut
230 V, 3 A

Hole in.	Stock #	$ ea.	$ ea./100+
1/2	270058	3.25	2.95

On/Off
Black
250 V, 1.5 A

Hole mm	Stock #	$ ea.	$ ea./100+
17.8	270125	.65	.50

Normally Open
Red w/ Nut
125 V, 3 A

Hole in.	Stock #	$ ea.	$ ea./100+
3/8	270110	3.95	3.75

Normally Open
Black w/ Nut
125 V, 3 A

Hole in.	Stock #	$ ea.	$ ea./100+
1/2	270109	3.95	3.75

KNIFE SWITCHES

SPST
Screw Terminal

Stock #	$ ea.	$ ea./100+
990193	2.45	1.95

SPDT
Screw Terminal

Stock #	$ ea.	$ ea./10+	$ ea./25+
990194	3.55	3.45	3.25

DPST
Screw Terminal

Stock #	$ ea.	$ ea./10+	$ ea./25+
990192	2.50	2.25	1.95

DPDT
Screw Terminal
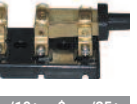
Stock #	$ ea.	$ ea./10+	$ ea./25+
990195	9.95	8.95	7.95

DPDT
Binding Post

Stock #	$ ea.	$ ea./10+	$ ea./25+
990085	8.95	8.45	8.25

ROCKER SWITCH

Lighted. SPST. Snap
Action. 250 V, 10 A.
Requires panel cutout.

Stock #	$ ea.	$ ea./10+	$ ea./25+
340130	3.25	2.95	2.75

LEVER SWITCHES

Submini. Snap Action,
SPST. 125 / 250 V, 6 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270084	1.95	1.75	1.65

Mini, Snap Action,
SPDT, w/ Nut.
125 / 250 V, 10 A

Stock #	$ ea.	$ ea./10+	$ ea./25+
270061	11.95	9.95	8.95

Check Out the KELVIN® website at www.kelvin.com

RESISTORS

1/4 W Resistors
200/pkg., **$10**

Ohms	Stock #	Ohms	Stock #
10	010016	5.1K	010105
33	010081	6.8K	010119
47	010101	10K	010017
82	010137	15K	010034
100	010018	20K	010054
150	010035	22K	010058
220	010059	33K	010082
330	010083	47K	010102
470	010103	68K	010126
560	010115	82K	010138
680	010127	100K	010019
820	010139	150K	010036
1K	010014	220K	010060
2K	010051	330K	010084
2.7K	010049	470K	010104
3.3K	010069	1M	010015
4.7K	010095	4.7M	010096

1/2 W Resistors
200/pkg., **$14**

Ohms	Stock #	Ohms	Stock #
10	030016	5.1K	030110
33	030085	6.8K	030126
47	030106	10K	030017
82	030145	15K	030036
100	030019	20K	030060
150	030038	22K	030064
220	030065	33K	030086
330	030087	47K	030107
470	030108	68K	030133
560	030121	82K	030146
680	030134	100K	030020
820	030147	150K	030039
1K	030014	220K	030066
2K	030057	330K	030088
2.7K	030055	470K	030109
3.3K	030075	1M	030015
4.7K	030100	4.7M	030101

CARBON FILM RESISTOR

1/2 W Resistors Bulk Pack
Selected to be the most useful values for any electronics project. Resistors are conveniently separated in plastic bags, sorted by value. Bulk pack contains 5 each of 73 standard resistor values from 1 to 1M ohms. 365 total.
282452 ....**$23.95** or **$20.95** ea./3+
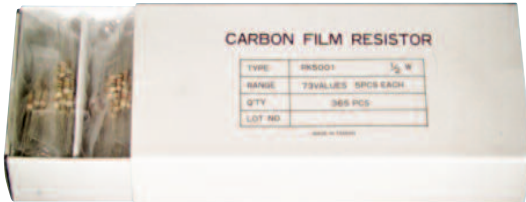
1 W Resistors
50/pkg., **$16**

Ohms	Stock #
2.7k	050052
10	050016
33	050086
100	050018

5 W Resistor
080000, **$2.50**

CAPACITORS

Monolithic Capacitors 50V. 10/pkg.

mF	Stock #	$ ea.	$ ea./10+
0.01	140046	2.20	1.95
0.047	140047	2.50	2.25
0.1	140048	2.50	2.25
0.22	140049	2.75	2.60
0.47	140050	2.75	2.60

Mini Radial Capacitors

Farads	V	Stock #	$ ea.	$ ea./10+
1	50	180036	.50	.45
10	35	180035	.50	.45
100	16	180037	.50	.45

Polyester Metallized. ±10% 250V.

Farads	V	Stock #	$ ea.	$ ea./10+
0.22	250	130060	1.15	.95
0.47	250	130061	1.25	1.05

Radial Capacitors
Electrolytic Aluminum. *Low ESR.
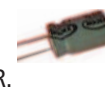
Farads	V	Stock #	$ ea.	$ ea./10+
1	50	180012	.50	.45
4.7	50	180015	.50	.45
10	16	180002	.50	.45
10	35	180017	.50	.45
22	35	180019	.50	.45
47	25	180004	.50	.45
100	16	180023	.50	.45
100	25	180006	.50	.45
220	16	180026	.50	.45
1000	16	180005	.50	.45
1000	35*	180034	1.20	1.08
2200	16	180029	.99	.95

Axial Capacitors
Electrolytic, insulated.

Farads	V	Stock #	$ ea.	$ ea./10+
1	50	190022	.95	.85
4.7	50	190002	.85	.75
10	25	190001	.99	.95
10	50	190021	.95	.85
22	50	190024	.95	.75
22	450	190006	4.95	4.65
100	15	190028	.25	.23
100	25	190007	2.95	2.45
100	50	190020	.95	.85
220	25	190008	1.55	1.45
470	25	190019	2.25	1.95
1000	25	190009	.85	.75
1000	50	190010	2.95	2.75

Disc Capacitors
Ceramic. 50V. 20/pkg.

mF	Stock #	$ ea.	$ ea./10+
0.0010	140001	6.00	5.50
0.0022	140003	6.00	5.50
0.0047	140005	6.00	5.50
0.022	140009	6.00	5.50
0.10	140011	6.00	5.50

pF	Stock #	$ ea.	$ ea./10+
12	140014	6.00	5.50
33	140028	6.00	5.50
120	140015	6.00	5.50
330	140029	6.00	5.50
470	140034	6.00	5.50

Tantalum Capacitor Resin. 10/pkg.

Farads	Stock #	$ ea.	$ ea./10+
2.2	190054	9.00	8.00

DIODES

1N Series

Type	Stock #	$ ea.	$ ea./10+
1N34A	620043	.59	.49
1N914	620080	.39	.35
1N4148	620051	.39	.35

Shottky Diodes 40V, 3A

Type	Stock #	$ ea.	$ ea./10+
1N5822	620145	.99	.89

Zener Diodes

V	Stock #	$ ea.	$ ea./10+
2.7	620132	.20	.18
5.1	620023	.20	.18
12	620008	.20	.18

RELAYS

SPST. Contacts: 200 V DC, 0.5 A. Coil: 5 V DC, 10 mA.

Ohms	Stock #	$ ea.	$ ea./10+
500	410030	3.95	3.75

SPDT. Contacts: 120 V AC / 24 V DC, 10A. Coil: 6 V DC, 60 mA.

Ohms	Stock #	$ ea.	$ ea./10+
100	410024	2.75	2.55

SPDT. Contacts: 250 V AC / 30 V DC, 7A. Coil: 12 V DC, 30 mA.

Ohms	Stock #	$ ea.	$ ea./10+
400	410027	4.95	4.45

DPDT. Contacts: 110 V AC / 24 V DC, 5A. Coil: 6 V DC, 86 mA.

Ohms	Stock #	$ ea.	$ ea./10+
700	410025	8.45	7.95

Valued at **$155**

Soldering Bin Filler

5	Soldering Iron, 20 W	5	Desoldering Wick, 0.19 in. W
5	Solder w/ Dispenser	5	Desoldering Wick, 0.10 in. W
5	Soldering Iron Holder	5	Desoldering Bulb
5	Sponge for Holder, Extra		430521 ....**$135** or **$125** ea./3+

INTEGRATED CIRCUITS

RECTIFIERS

PLEASE NOTE: As ICs become obsolete, we'll substitute an equal series one.

A 7400 Series ICs

Type	Stock #	$ ea.
7400	590001	1.30
7404	590005	1.75
7447	590043	2.45
7473	590052	.75
74HC-08	590275	1.25
74LS-00	590088	1.25
74LS-47	590144	1.99
74LS-74	590080	.85
74LS-90	590111	1.50
74LS-161	590094	.65
74LS-163	590180	.65
74LS-194	590100	.95
74LS-240	590081	2.95
74LS-283	590213	.65

CD4000 Series ICs

Type	Stock #	$ ea.
4011	590229	.55
4017	590228	.95
4027	600178	.95
4046	600181	1.35
4078	590343	.55
4081	600186	.55
4528	600188	1.45

B Arrays

Type	Stock #	$ ea.	$ ea./10+
ULN2803A	590421	2.25	1.95
ULN2003	590269	.95	.90

A   B   C   D   E

F   G   H   I   J
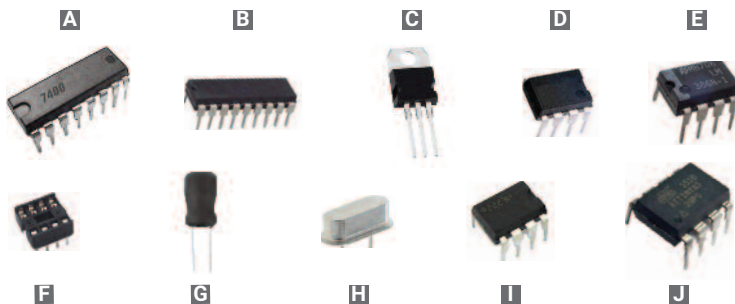
C Voltage Regulators

Type	Stock #	$ ea.	$ ea./5+
7805	600023	.99	.90
7815	600025	1.15	.95
LM317T	600044	1.25	1.05
LM337T	600093	1.45	1.25
LM78L05	620151	.65	.60

D Operational Amplifiers

Type	Stock #	$ ea.	$ ea./5+
741C	600018	1.65	1.55
1458	600026	1.55	1.45
LM324N	600027	1.25	1.15

E Power Amplifiers

Type	Stock #	$ ea.	$ ea./5+
LM386	600096	1.25	1.20

F IC Sockets Solder-Type

Pins	Stock #	$ ea.	$ ea./10+	$ ea./100+
8	250013	.20	.15	.12
16	250005	.17	.13	.10
20	250049	.85	.80	.75
40	250022	.45	.35	.25

G Coils

Type	mH	Stock #	$ ea.	$ ea./10+
DC	1	290015	1.95	1.75
DC	10	290016	1.95	1.75
PCM	100	290014	4.95	3.95

H Crystals

Type	Stock #	$ ea.
3.57 MHz	590258	1.65

I Timers

Type	Stock #	$ ea.	$ ea./10+	$ ea./100+
555	600021	.35	.30	.25
556 Dual	600029	1.25	1.15	.99
7555	600164	1.25	1.15	.99

ATtiny85 Microcontroller

Low-power CMOS 8-bit microcontroller based on the AVR enhanced RISC architecture. By executing instructions in a single clock cycle, the ATtiny85 achieves throughputs approaching 1 MIPS per MHz. 8-pin PDIP. 8 KB Flash. 2.7 -5.5 V.

590451 J **$8.95**

Controlled Rectifiers Silicon

A	PIV	Stock #	$ ea.	$ ea./10+
1.5	50	600002	3.75	3.45
4	200	600014	.99	.95

Bridge Rectifier

A	V	Stock #	$ ea.	$ ea./10+
8	200	620152	2.75	2.60

Power Rectifiers Silicon, 1A

Type	Stock #	$ ea.	$ ea./5+
1N4001	620103	.15	.12
1N4003	620104	.25	.20
1N4004	620089	.20	.18
1N5400	620098	.22	.18
1N5401	620094	.22	.18

Full Wave Bridge Rectifiers Min. order of 100

A	V	Stock #	$ ea./100+
2	50	620099	1.45
2	100	620100	1.25
4	50	620110	1.35
4	100	620111	1.35

TRANSISTORS

Type	Stock #	$	$ ea./10+	$ ea./100+
2N2222	630041	.75	.65	.40
2N2222A	630042	.75	.65	.40
2N2907	630056	.85	.65	.60
2N3904	630117	.25	.20	.15
2N3906	630119	.25	.20	.15
PN2222A	630383	.25	.20	.15

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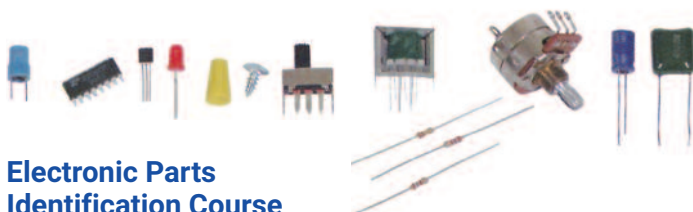
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Parts include: resistors, LEDs, capacitors, trim pots, switches, displays, transistors, ics, timer, diodes, etc. plus plastic container.

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