

Experimenters General Purpose Boards

Use these boards to quickly assemble prototype, school, and hobby projects. Available in different sizes to accommodate different project needs. Boards also feature number markings for easy positioning. #21-4570 is a dual project board.

| Fig. | Order # | # of holes | Dimensions | (1-9) | (10-up) |
|------|---------|------------|----------------------|--------|---------|
| Α | 21-4570 | 220 | 1%" x 1%" x 3/2" | \$1.08 | \$0.87 |
| В | 21-4600 | 375 | 2" x 213/16" x 3/12" | 1.08 | 0.87 |
| C | 21-4605 | 2200 | 4½" x 6¼" x ¾2" | 1.60 | 1.39 |

Small IC **Prototype Board**

Board was designed for ICs to straddle center of board. There are 26 rows designated for IC pin connections



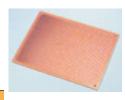
with 2 additional connections for IC with added connections toward outer edges of board. Board measures 115/16" x 111/16" x 3/12

| Order # | (1-9) | (10-up) |
|---------|--------|---------|
| 21-4575 | \$1.07 | \$0.86 |

Large PC Board

Large PC board has 2,036 holes for multiple connections and connected traces Board measures 5½" x





Small PC Prototype Board

This prototype board features 25 rows of connections. The center two rows are one connection the length of the board.



The outside 2 holes are common connection on both sides of the board and all rows. Each row also features 2 separate holes, 3 separate holes with 2 sets of 3 holes with common connections. Board measures 213/16" x 113/16" x 3/12'

| Order # | (1-9) | (10-up) |
|---------|--------|---------|
| 21-4590 | \$1.07 | \$0.86 |

Medium Size Prototype Board

This board was designed for medium sized circuits with room for several ICs and lots of



components. The outside traces are all connected while the center was designed to accept multiple ICs with 45 traces available for multiple connections. Board dimensions are 5½" x 1½" x ½2"

| Order # | (1-9) | (10-up) |
|---------|--------|---------|
| 21-4580 | \$1.40 | \$1.07 |

IC Experimenters Board

Both boards are small boards which can be separated. Both board are



capable of holding a 4 pin to 10 pin DIP IC. Excellent boards for prototyping, schools and hobbyist.

| Fig. | Order # | Dimensions | (1-9) | (10-up) |
|------|---------|---------------------------|--------|---------|
| Α | 21-4595 | 1¾" x 1¾" x ¾2" | \$1.08 | \$0.87 |
| В | 21-4610 | 113/16" x 113/16" x 3/32" | 1.08 | 0.87 |



GLOBAL SPECIALTIES

Proto-Board Bench-Top Work Station LIFETIME WARRANTY

• Ideal for analog, digital and microprocessor circuits
• Eight channel logic monitor • Function generator
with continuously variable sine, square and triangle
wave-forms and TTL pulses • Triple output power supply offers fixed 5VDC plus two variable outputs
•Two digital pulsers •Audio experimentation speaker •Multiple features in one complete speaker *Mutuple reactures in one competer test instrument **Specifications: Power: •** Input: 3 wire AC line input 117V, 60Hz • Fixed DC output: +5V, 1.0A, <5mV ripple • Variable DC output: ±1.3V~±15V, 0.5A, <5mV ripple **Function** generator: •Frequency range: 0.1Hz~100KHz in six ranges •Output voltage: 0 ±10V (20V p-p) •Output impedance: 6000hm (except TTL) •Output current: 10mA maximum General: •Dimensions: 16" (W) x 16%" (H) x 11%" (D) • Weight: 7 lbs. • Lifetime warranty on all bread boarding sockets and three years on all parts and workmanship

| Order # | Mfr. # | (ea.) |
|---------|--------|----------|
| 21-4480 | PB-503 | \$299 99 |

Solderless Breadboards

• The perfect breadboards for circuit designing, testing electronic devices and educational uses •Great for high frequency,

- high speed and low noise circuits
 •Red and black binding posts
- 1260 terminal strip tie points
- •100 distribution strip ti points •Dimensions: 4"(W) x 8½" (L) x ¾" (D)

| Order # | (1-9) | (10-up) |
|---------|---------|---------|
| 72-340 | \$20.35 | \$18.32 |

Solderless Breadboards

•Red, yellow, green and black binding posts •1890 terminal strip tie points and 500 distribution strip tie points •Dimensions: 6%" (W) x 9" (L) x ¾" (D)

| Order # | (1-9) | (10-up |
|---------|---------|---------|
| 72-345 | \$29.95 | \$27.50 |





GLOBAL SPECIALTIES Jumper Wire Kit

•Contains pre-cut/ pre-stripped/pre-formed 22AWG insulated solid hook-up wire •25 pieces each of 14 color-coded lengths - 0.1"~5.0" for a total of 350 wires $\bullet Compartmental$ plastic case • Each group

of wires are individually wrapped to prevent mix-up.

| Order # | Mfr. # | (kit) |
|---------|--------|---------|
| 72-7845 | WK-1 | \$14.75 |

Jumper Wire Kit

•An absolute must for fast and efficient breadboard projects •350 pieces, 25



| Order # | (kit) |
|---------|---------|
| 108-550 | \$20.38 |

Project Accessories



Section 19

Project Accessories

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| Prototype | |
| Boards | 409, 410 |

Jumper Wire Kit

Contains 140 lengths of

pre-stripped, pre-formed #22 solid wire in various colors. Contains 14 different lengths of ten pieces each. Includes a plastic case. Dimensions: 2" (H) x 6½" (W) x ½" (D).

| Order # | (1-4 kits) | (5 kits-up) |
|---------|------------|-------------|
| 102-145 | \$5.19 | \$4.89 |

ELENCO

102-155

Jumper Wire Kit

Contains 350 lengths of pre-stripped, pre-formed #22 solid



Contained in a large 14 compartment plastic case. Dimensions: $5''(H) \times 10\frac{1}{2}''(W) \times 1\frac{1}{2}''(D)$. Order # (1-4 kits) \$12.95

Power Transformers

These high-quality power transformers can be used in new equipment or as replacements. Popular high-current outputs. Heavy-duty casing has



\$10.95

holes for chassis mounting. Standard solder lugs on the input and output. Primary: 117VAC, 60Hz.

| Order # Description | Dimensions (W) x (H) x (D) | Primary | Secondary | (ea.) |
|-------------------------|-------------------------------|---------|--------------------------|--------|
| 28-0010 12.6V | 2½" x 1½6" x 1½" | 117VAC | Center tap 12.6V 1.2A | \$5.45 |
| 28-0015 25.6V | 2½" x 2¾" x 2½" | 117VAC | Center tap 25.6V 2.0A | 7.54 |



•Perfect for beginners and students Includes: • Solderless $breadboard \bullet DC$ power pack power supply rated +5VDC @ 1A, +12VDC @ 250m, -12VDC @ 250mA •Power connector to connect power supply to breadboard •Jumper



wires, 25 precut pieces of color-coded, 22AWG, insulated solid hook-up wire.

| Uraer # | Witr. # | (ea.) |
|---------|---------|---------|
| 72-7840 | Pro-S | \$75.00 |













Section 19



NEMA-4 Rated Die-Cast Aluminum Boxes

Provides all of the same benefits as the standard die—cast aluminum boxes, plus they meet IP65 of IEC 529 NEMA-4 specifications. These water—proof aluminum alloy enclosures are ideal for mounting sensitive electronic assemblies in harsh commercial and industrial environments. Separately available cable glands allow similarly rated cable to exit the enclosure, and maintain the NEMA-4 rating.

| Order # | Dimensions (L) x (W) x (H) | (1-2) | (3-up) |
|---------|----------------------------|--------|--------|
| 28-8645 | 2.52" x 2.28" x 1.38" | \$5.70 | \$5.13 |
| 28-8646 | 4.53" x 2.56" x 1.18" | 8.27 | 7.44 |
| 28-8647 | 4.53" x 2.56" x 2.17" | 10.07 | 9.06 |
| 28-8648 | 4.53" x 3.54" x 2.17" | 11.78 | 10.60 |
| 28-8649 | 8.75" x 5.75" x 2.17" | 22.61 | 20.35 |

Cable Glands (sold individually)

| Ordon # | Mounting | Usable | (1.2) | (2 un) |
|---------|-------------|--------------|--------|--------|
| Order # | Hole (dia.) | Cable (dia.) | (1-2) | (3-up) |
| 28-8650 | 0.5" | 0.12"~0.26" | \$1.62 | \$1.46 |
| 28-8651 | 0.61" | 0.16"~0.31" | 1.62 | 1.46 |
| 28-8652 | 0.73" | 0.20"~0.39" | 1.72 | 1.55 |
| 28-8653 | 0.81" | 0.24"~0.47" | 2.15 | 1.94 |
| 28-8654 | 0.89" | 0.39"~0.55" | 2.34 | 2.11 |
| 28-8655 | 1.12" | 0.51"~0.71" | 2.97 | 2.67 |
| 28-8656 | 1.47" | 0.71"~0.98" | 6.43 | 5.78 |

ABS Project Enclosures

These highly popular black finish ABS boxes feature a textured finish, close fitting interlocking lids, and threaded screw inserts for lid attachment. Each meets flammability rating



UL94-5VA and have a suggested service temperature of -20°~70°C (-4~158°F).

| Order # | Dimensions (H x W x L) | (1-2) | (3-up) |
|---------|------------------------|--------|--------|
| 28-8675 | 4.60" x 3.10" x 1.87" | \$6.84 | \$6.16 |
| 28-8676 | 4.60" x 4.60" x 2.37" | 7.22 | 6.50 |
| 28-8677 | 6.00" x 4.60" x 2.37" | 8.74 | 7.87 |
| 28-8678 | 7.60" x 4.60" x 2.37" | 10.07 | 9.06 |
| 28-8679 | 8.25" x 5.15" x 3.12" | 16.35 | 14.72 |

ABS Project Enclosures with Aluminum Lid

These highly popular black finish ABS boxes include a 0.05" thick anodized aluminum lid. Internal card guides are spaced at 0.53" centers, and accept 0.06" thick cards. Each meets flammability rating UL94-HB.

| Order # | Dimensions (H x W x L) | (1-2) | (3-up) |
|---------|------------------------|---------|--------|
| 28-8682 | 6.10" x 3.54" x 1.97" | \$10.74 | \$9.67 |
| 28-8683 | 8.66" x 5.32" x 2.95" | 20.62 | 18.55 |



410









Order Online www.mcminone.com

Die-Cast Aluminum **Project Box**

Thick aluminum enclosures feature close tolerance flanges providing excellent strength and shielding



characteristics. They are perfect for highly sensitive audio and RF applications. The lid is attached via six included machine screws. Natural gray color.

| Order # | Dimensions (L) x (W) x (H) | (1-2) | (3-up) |
|---------|----------------------------|--------|--------|
| 28-8641 | 4.37" x 2.37" x 1.21" | \$6.84 | \$5.90 |
| 28-8642 | 4.68" x 3.68" x 2.21" | 11.02 | 9.92 |
| 28-8643 | 7.39" x 4.70" x 2.21" | 18.62 | 16.76 |
| 28-8644 | 7.39" x 4.70" x 3.21" | 21.85 | 19.67 |

ABS Project Enclosures

Standard low-cost enclosures are ideal for most typical project applications. Flush mounted black colored screws match the black



textured ABS surface for improved looks. Internal PCB mounting bosses allow easy insertion of custom PC boards. Each meets flammability rating UL94-5VA.

| Order # | Dimensions (H x W x L) | (1-2) | (3-up) |
|---------|------------------------|--------|--------|
| 28-8685 | 3.33" x 2.48" x 1.10" | \$4.94 | \$4.45 |
| 28-8686 | 2.54" x 2.54" x 1.00" | 4.66 | 4.19 |
| 28-8687 | 3.35" x 3.35" x 1.35" | 5.61 | 5.04 |
| 28-8688 | 4.21" x 2.85" x 1.10" | 5.42 | 4.87 |
| 28-8689 | 4.60" x 3.35" x 1.35" | 6.46 | 5.81 |
| 28-8690 | 5.60" x 3.85" x 1.35" | 7.51 | 6.75 |



Aluminum Chassis

These chassis are perfect for top mounted external components, where easy access underneath is required. 0.04" (minimum) welded aluminum construction provides outstanding durability. Natural finish. Note: Bottom cover plate is not included.

Dimensions (L.v.W.v.II)

| Oraer # | Dimensions (L x w x H) | (1-2) | (3-up) |
|---------|------------------------|--------|--------|
| 28-8605 | 4" x 6" x 2" | \$8.65 | \$7.78 |
| 28-8607 | 5" x 9.5" x 2" | 11.40 | 10.26 |
| 28-8609 | 7" x 7" x 2" | 9.88 | 8.89 |
| 28-8610 | 7" x 9" x 2" | 11.88 | 10.69 |
| 28-8611 | 7" x 11" x 2" | 14.50 | 13.00 |
| 28-8612 | 7" x 13" x 2" | 15.80 | 14.20 |
| 28-8613 | 7" x 17" x 2" | 23.95 | 21.56 |
| 28-8615 | 5" x 7" x 3" | 12.07 | 10.86 |
| 28-8616 | 5" x 9.5" x 3" | 14.35 | 12.91 |
| 28-8619 | 7" x 12" x 3" | 19.25 | 17.29 |
| 28-8621 | 7" x 17" x 3" | 25.69 | 23.00 |

Aluminum "Converta' **Project Boxes**



0.05" welded

aluminum base, and two sided cover allow greater flexibility when mounting controls and components.

| Order # | Dimensions (L x W x H) | (1-5) | (6-up) |
|---------|------------------------|---------|---------|
| 28-8595 | 1.5" x 4.0" x 3.0" | \$11.12 | \$10.00 |
| 28-8596 | 2.0" x 5.0" x 4.0" | 12.07 | 10.86 |
| 28-8597 | 2.0" x 8.0" x 4.0" | 13.68 | 12.31 |
| 28-8598 | 2.5" x 9.5" x 5.0" | 15.01 | 13.51 |
| 28-8599 | 2.5" x 12.0" x 6.0" | 19.76 | 17.78 |
| 28-8600 | 2 5" x 15 0" x 7 0" | 27.17 | 24.45 |

Mini Project

"Bud" Boxes Standard two-piece enclosures are popular for all types of hobbyist

and prototype projects, as well as

sub-enclosures in larger assemblies. Flanged sections assure proper shielding and may be either snapped or screwed together. Constructed from 0.04" aluminum alloy, natural finish.

| Order # | Dimensions (L x W x H) | (1-5) | (6-up) |
|---------|------------------------|--------|--------|
| 28-8570 | 2.75" x 2.12" x 1.62" | \$3.33 | \$3.00 |
| 28-8571 | 3.25" x 2.12" x 1.62" | 3.23 | 2.91 |
| 28-8572 | 4.00" x 2.12" x 1.62" | 4.09 | 3.67 |
| 28-8573 | 4.00" x 2.25" x 2.25" | 3.80 | 3.51 |
| 28-8574 | 5.00" x 2.25" x 2.25" | 4.56 | 4.10 |
| 28-8575 | 5.00" x 4.00" x 3.00" | 5.80 | 5.22 |
| 28-8576 | 5.25" x 3.00" x 2.12" | 4.66 | 4.19 |
| 28-8577 | 6.00" x 5.00" x 4.00" | 9.50 | 8.55 |
| 28-8578 | 7.00" x 5.00" x 3.00" | 7.41 | 6.67 |
| 28-8579 | 8.00" x 6.00" x 3.50" | 13.49 | 12.09 |
| 28-8580 | 10.00" x 6.00" x 3.50" | 15.11 | 13.59 |
| 28-8581 | 12.00" x 7.00" x 4.00" | 21.40 | 19.20 |

Steel Wall Mount Box

All steel construction features a hinged front door, and slotted rear surface, allowing easy mounting to wall, panel or post. Equipment mounting panels and panel mounting brackets are available as optional accessories. All have textured white finish



| Order # | Dimensions (L x W x H) | (1-2) | (3-up) |
|---------------------|------------------------------------|---------|---------|
| 28-8626 | 8" x 10" x 4" | \$47.80 | \$43.00 |
| 28-8627 | 10" x 12" x 4" | 58.00 | 52.00 |
| 28-8629 | 12" x 12" x 6" | 89.00 | 80.00 |
| Panel Mo Order # | ounting Accessories Description | (1-2) | (3-up) |
| 28-8632 | 11.0" mounting bracket pair | \$5.35 | \$4.80 |

HAMMOND MANUFACTURING...

ABS General Purpose Cases

•Molded in smooth, black styrene plastic which is ideal for



labels, silk screens, and decals •Cases come with interlocking flange lid, 0.062" molded PC card guides, and self tapping screws •Average wall thickness is 0.079'

| Order # | | | | |
|---------------------------|-----------------------------|--------|---------|---------|
| Mfr.# | (H) x (W) x (D) | (1-9) | (10-24) | (25-up) |
| | 3.34" x 2.20" x 1.38" | \$3.38 | \$3.07 | \$2.75 |
| 1591LSB | 3K | | | |
| 21-4802 1591ASE | 3.93" x 1.97" x 0.82" 3K | 3.11 | 2.78 | 2.47 |
| | 4.72" x 2.55" x 1.41" | 3.64 | 3.33 | 3.00 |
| 1591CSE | 3K | | | |
| 21-4808 1591DSE | 5.90" x 3.14" x 1.80" 3K | 4.50 | 4.19 | 3.86 |
| 21-4810 1591ESB | 7.47" x 4.33" x 2.24" BK | 6.25 | 5.61 | 5.29 |
| 21-4818 1591USF | 4.72" x 4.72" x 2.17" 3K | 5.91 | 5.59 | 5.37 |

Breadboard Module

 \bullet Snap together design lets

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any size breadboard by combining segments •630 plug-in tie points and four distribution strips, each with 50 plug-in tie points •Dimensions: 2½" (W) x

| Order # | (1-9) | (10-up) |
|---------|---------|---------|
| 72-337 | \$10.25 | \$9.23 |

HAMMOND MANUFACTURING **Diecast**

Aluminum Boxes



· Aluminum alloy boxes with countersunk lid and tumbled surface have RF shielding capabilities, making them ideal for RF connectors •Aluminum allow allows for easy drilling and punching with the durability of metal \bullet All units include four 6-32 x Phillips screws •Part #'s 21-4832 to 21-4848 are natural finish •#21-4878 is black

| Order # Mfr.# | (H) x (W) x (D) | (1-9) | (10-24) | (25-up) |
|--------------------------|-----------------------|--------|---------|---------|
| 21-4832 1590A | 3.62" x 1.50" x 1.07" | \$7.31 | \$6.55 | \$6.34 |
| | 4.37" x 2.47" x 1.07" | 7.83 | 7.20 | 6.77 |
| 21-4836 1590BB | 4.68" x 3.69" x 1.18" | 9.43 | 8.89 | 8.58 |
| 21-4838 1590C | 4.68" x 3.69" x 2.06" | 10.38 | 9.95 | 9.53 |
| 21-4840 1590D | 7.39" x 4.70" x 2.06" | 17.54 | 16.45 | 15.92 |
| 21-4848 1590S | 4.33" x 3.23" x 1.58" | 10.43 | 10.10 | 9.67 |
| 21-4878 1590V | 4.72" x 4.72" x 3.54" | 25.78 | 24.70 | 23.63 |



Nylon PC Board Spacers

•Provides board to board or chassis to board connection •Arrow-type locking head snaps into 0.187" diameter hole •No tools required •Single and dual sided mounting •25 per bag

| | | | Price Per Bag | | | |
|---------|----------------|--------------|---------------|--------|--|--|
| Order# | Mount type | Space Height | (1-4) | (5-up) | | |
| 83-2235 | Dual sided | 1/4" | \$1.83 | \$1.32 | | |
| 83-2240 | Dual sided | 3/8" | 1.83 | 1.32 | | |
| 83-2250 | One sided | 1/4" | 1.83 | 1.32 | | |
| 83-2255 | One sided | 3/8" | 1.83 | 1.32 | | |
| 83-2260 | One sidedslide | 5/32" | 1.83 | 1.32 | | |





·Anodized natural or black finish •Anti-static plastic insert in shelled aluminum knobs • Straight knurl with line indicator on top and side • Two #6-32 set screws • Height: .638"

| Order # | Finish | Shaft Size | Diameter | (1-9) | (10-49) | (50-up) |
|-----------|---------|------------|-------------|--------|---------|---------|
| Solid alu | minum | knobs | | | | |
| 26-1530 | Natural | 1/4" | | \$2.55 | \$2.31 | \$2.04 |
| 26-1535 | Black | 1/8" | .5" | 2.55 | 2.31 | 2.04 |
| 26-1540 | Black | 1/4" | .5" | 2.55 | 2.31 | 2.04 |
| Shelled a | aluminu | m knobs w | ith plastic | insert | | |
| 26-1545 | Natural | 1/4" | .75" | 2.86 | 2.65 | 2.35 |
| 26-1555 | Black | 1/4" | .75" | 2.86 | 2.65 | 2.35 |
| 26-1560 | Black | 1/4" | .94" | 3.06 | 2.65 | 2.35 |



Control Knobs

• Molded phenolic with black gloss finish

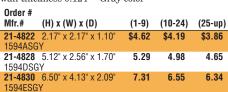
- •Ribbed with white line indicator on side •Anti-static plastic •Spun aluminum inlay •#6-32 set screw •Approximately ½" height

| Order # | Shaft Size | Diameter | (1-9) | (10-49) | (50-up) |
|---------|------------|----------|--------|---------|---------|
| 26-1490 | 1/8" | .410" | \$1.22 | \$1.01 | \$0.91 |
| 26-1495 | 1/8" | .550" | 1.22 | 1.01 | 0.91 |
| 26-1500 | 1/4" | .550" | 1.22 | 1.01 | 0.91 |
| 26-1505 | 1/4" | .660" | 1.22 | 1.01 | 0.91 |
| 26-1510 | 1/4" | .740" | 1.22 | 1.01 | 0.91 |
| 26-1520 | 1/4" | 1.050" | 1.42 | 1.28 | 1.12 |

HAMMOND MANUFACTURING...

Plastic Enclosures

•Rugged enclosures come with interlocking flanged lid and self tapping screws •Ideal for mounting printed circuit boards •Average wall thickness 0.124" • Gray color



Piezo Electronic Buzzers

 Operating voltage: 3~28VDC •Rated

maximum current: 20mA •Sound output level: Minimum 85dB at 10cm

| Order # | Resonant Freq. (KHz) | (dia) | (1-9) | (10-up) |
|---------|-------------------------|-------|--------|---------|
| 28-735 | 6.6~0.6 | 28mm | \$1.99 | \$1.45 |
| 28-740 | 4.7~0.5 | 35mm | 1.99 | 1.45 |
| 28-745 | 2.8~0.5 | 50mm | 1.99 | 1.45 |

Element (Transducer)

•Commonly used in alarm glass breakage detectors

•Works as microphone or buzzer •Generates voltage when flexed by sound or pressure •Ten per package

| Order # | (1-3 pkgs.) | (4-9 pkgs.) | (10 pkgsup) |
|---------|-------------|-------------|-------------|
| 35-610 | \$3.39 | \$3.19 | \$2.89 |

Control Knobs

High impact black plastic knobs have metal bushings and set screws. Fits ¼" diameter shaft. Ideal for projects,

prototype or replacement use. Two per package. Note: Height and diameter are approximate.

| | | Description | Pric | e Per Pac | kage |
|------|---------|-------------------------|--------|-----------|---------|
| Fig. | Order # | (H) x (D) | (1-9) | (10-49) | (50-up) |
| В | 50-1935 | Line pointer %" x ¾" | \$1.99 | \$1.79 | \$1.49 |
| С | 50-1955 | Bar pointer ½" x 1½" | 1.99 | 1.79 | 1.49 |

Rubber Grommets

•100 per bag •Black

| Order # | (I.D.) | (O. D.) | (1-9 pkgs.) | (10 pkgsup) |
|---------|--------|---------|-------------|-------------|
| 28-1075 | 1/8" | 5/16" | \$5.11 | \$4.70 |
| 28-1080 | 3/16" | 3/8" | 5.63 | 5.11 |
| 28-1085 | 5∕16" | %16" | 5.93 | 5.42 |
| 28-1090 | 1/4" | 1/2" | 6.14 | 5.73 |
| 28-1095 | 3/" | 5/" | 6 55 | 6 1/ |

Cord Strain Relief Bushings

•Accommodates standard 18 gauge zip cord •½" hole required for installation •100 per package

| Order # | (1-9 pkgs.) | (10 pkgsup) |
|---------|-------------|-------------|
| 28-680 | \$5.42 | \$4.29 |



Project Accessories



Section 19

Project Boxes

•Gray plastic boxes with slots inside to hold PC boards •Lid with hardware included •Measurements are inside dimensions



| morac ami | 311010110 | |
|-----------|----------------------------|--------|
| Order # | Dimensions (W) x (L) x (D) | (ea.) |
| 28-960 | 2" x 4" x 1%" | \$2.99 |
| 28-965 | 2%6" x 4%" x 1%" | 3.49 |
| 28-970 | 35/16" x 511/16" x 2" | 3.99 |
| 28-975 | 45/16" x 71/16" x 23/8" | 4.99 |

Solid State Electronic Buzzers

•All purpose buzzers ideal for burglar alarms, fire alarms, car back-up alarms and much more •High reliability •Thin and

lightweight •4.5mA



| | Voltage | | | |
|---------|---------|-----------|--------|---------|
| Order # | (VDC) | Type | (1-9) | (10-up) |
| 28-1650 | 12 | Lead wire | \$1.66 | \$1.45 |
| 28-1675 | 12 | Lead wire | 1.56 | 1.35 |
| 28-1645 | 6 | Lead wire | 1.66 | 1.45 |
| 28-1680 | 6 | Lead wire | 1.53 | 1.33 |

Piezo Electronic Buzzers

•Ideal for use in computers, telephones and door bells
•For 3~20VAC •PC pin type 2mA resonant current

•Frequency: 6.5±0.5KHz

| Diameter: 24mm | | |
|----------------|--------|---------|
| Order # | (1-9) | (10-up) |
| 28-1610 | \$1.03 | \$0.83 |

Adhesive Rubber Feet

Perfect for finishing off the latest project or prototype. Also great for replacing lost or damaged feet on existing equipment. Non-skid rubber material helps stabilize enclosure while protecting shelf finish. Peel and stick adhesive allows easy application. Black color, four per package.

| | | Pr | ice Per P | 'ackage |
|---------|-----------------------|--------|-----------|---------|
| Order # | Dimensions | (1-4) | (5–9) | (10-up) |
| 28-940 | 0.82" x 0.82" x 0.31" | \$0.99 | \$0.87 | \$0.74 |
| 28-941 | 0.51" x 0.51" x 0.25" | 0.99 | 0.87 | 0.74 |
| 28-942 | 0.49" x 0.49" x 0.24" | 0.99 | 0.87 | 0.74 |
| 28-943 | 0.51" x 0.51" x 0.16" | 0.99 | 0.87 | 0.74 |

KORALLY









•Includes a total of 28 pieces •Assorted sizes: ½", 1/16" and 5/8" • Black

| Order # | (1-9 pkgs.) | (10 pkgsup) |
|---------|-------------|-------------|
| 95-575 | \$3.06 | \$2.55 |

KORALLY Vinyl Grommet Variety Pack







•Includes a total of 26 pieces •Assorted sizes: ¼", 1/6", %", 1/6", ½", 5%", 21/32", 5%" and 1" • Black

| Order # | (1-9 pkgs.) | (10 pkgsup) |
|---------|-------------|-------------|
| 95-580 | \$3.02 | \$2.51 |















AC/DC Brushless Cooling Fans

MCM's line of square cooling fans will help you prolong the life and reliability of your computer, office machine, power supply and much more. Available in ball or sleeve bearing design.

•115VAC

| Order # | (A) | (CFM) | Size | Bearing | (1-4) | (5-up) |
|---------|-----|-------|---------------|---------|---------|---------|
| 28-1720 | .13 | 32 | 31/8" x 11/2" | Ball | \$21.95 | \$20.50 |
| 28-1690 | .24 | 105 | 4%" x 1½" | Sleeve | 19.95 | 18.50 |
| 28-1725 | .24 | 105 | 4%" x 1½" | Ball | 22.95 | 21.50 |

DC Fans

•12VDC

| Order # | (A) | (CFM) | Size | Bearing | (1-4) | (5-up) |
|---------|-----|-------|------------|---------|--------|--------|
| 28-1730 | .10 | 5.4 | 1%6" x ¾" | Ball | \$7.99 | \$6.50 |
| 28-1700 | .09 | 12.7 | 2%" x 1" | Sleeve | 9.99 | 8.75 |
| 28-1735 | .09 | 12.7 | 2%" x 1" | Ball | 9.99 | 8.50 |
| 28-1705 | .12 | 19.8 | 31/4" x 1" | Sleeve | 10.99 | 9.75 |
| 28-1740 | .12 | 19.8 | 3%" x 1" | Ball | 10.99 | 9.50 |
| 28-1710 | .16 | 25.2 | 3%" x 1" | Sleeve | 11.99 | 10.75 |
| 28-1745 | .16 | 25.2 | 3%" x 1" | Ball | 11.99 | 10.50 |
| 28-1750 | .20 | 54.0 | 4¾" x 1" | Ball | 16.99 | 15.50 |

ELENCO

Basic Parts Kit

Contains: Resistors: ${}^{1}\!\!\!/ W$, five each, 10Ω , 100Ω , 470Ω , $1K\Omega$, $2.2\text{K}\Omega$, $4.7\text{K}\Omega$, $8.2\text{K}\Omega$, $10\text{K}\Omega$, $18\text{K}\Omega$, $27\text{K}\Omega$, $47K\Omega$, $82K\Omega$, $100K\Omega$, 220KΩ, 330KΩ,



470KΩ, 1MΩ. Electrolytic Capacitors: 50V radial, two each, 1µF, 4.7µF, 10µF, 47µF, 100µF, 470µF, 1000µF. **Mylar Capacitors:** 100V Radial DIP, two each, .001mF, .0047mF, .01mF, .047mF, .1mF, .33mF. Ceramic Disc Capacitors: 500V, two each, 2.2pF, 4.7pF, 10pF, 1pF, 22pF, 47pF, 100pF, 220pF, 47pF, 100pH, 47pH, 10pH, 47pH, 100pH, 470pH, 1pH, 10pH, 33pH. Trimpots: Single turn, one each, 500Ω , $1K\Omega$, $5K\Omega$, $50K\Omega$, $100K\Omega$, $500 K\Omega, 1 M\Omega.$ Switches: Two each, push-button, SPDT slide, DPDT slide, 8-position DIP. LEDs: Standard T 1 % size, 5 each, red, green, yellow. Displays: Two each, 7-segment common cathode, Displays: I wo each, 7-segment common catnode, 7-segment common anode. Integrated Circuits: Two each, 7805, 7812 regulators, LM386 audio amp, 555 timer, 741 Op-amp, 74LS00, 74LS02, 74LS08, 74LS10, 74LS47, 74LS74, 74LS86, CD4013, CD4017. Transistors: Two each, PN2222, PN2907, 2N3055, 2N3904, 2N3906, 2N5457. Diodes: Two each, 1N4148, 1N4001, 1N34, 1N4728, 1N4733, 1N4739, 1N4743, 1N4747, Miscal Language 13, 22, 2006, book proving 1N4747. **Miscellaneous**: 25' 22AWG hook-up wire, alligator lead sets (red and black), 5V DIP relay, photo cell, microphone, speaker, buzzer, 9V battery snap, 1.5A 100V bridge, 4A 200V SCR. All housed in a plastic parts container, dimensions: 11" x 7" x 1½"

| Order # | (1-4 kits) | (5 kits-up) |
|---------|------------|-------------|
| 102-150 | \$69.95 | \$65.95 |



412













SPC TECHNOLOGY AC Tubeaxial Fans

Black die-cast aluminum housing and thermoplastic impeller, rated UL94V-0. Life-lubricated ball bearing system or oil-impregnated sintered sleeve bearing system. Reliable shaded-pole motor. Connect by two 24AWG lead wires or two 0.120W x 0.020" thick (3.0 x 0.5) terminals. All models are 50/60Hz. UL recognized.



| Order # | Туре | Connect | Bearing | VAC | Watts | rpm | cfm | dBA | (1-9) | (10-24) |
|--------------|----------------|------------|------------|--------------|-------|------|-----|------|--------|---------|
| 4.76" Square | x 1.50" Deep (| 120 SQ. x | 38) High-s | peed version | | | | | | |
| N-84N1519 | MC1123HST | T | S | 115 | 18 | 2900 | 105 | 48 | \$9.45 | \$8.50 |
| N-84N1520 | MC1123HBT | T | В | 115 | 18 | 3050 | 107 | 50 | 14.85 | 14.02 |
| N-92N4751 | MC1123HSL | L | S | 115 | 18 | 2900 | 105 | 48 | 12.36 | 11.66 |
| N-84N1521 | MC2123HST | T | S | 220/240 | 19 | 2900 | 105 | 48 | 12.36 | 11.66 |
| N-84N1522 | MC2123HBT | T | В | 220/240 | 19 | 3050 | 107 | 50 | 14.85 | 14.02 |
| N-92N4752 | MC2123HSL | L | S | 220/240 | 19 | 2900 | 105 | 48 | 12.36 | 11.66 |
| 4.76" Square | x 1.50" Deep (| 120 SQ. x | 38) Low-si | eed version | | | | | | |
| N-84N1517 | MC1123LST | T | S | 115 | 11 | 2200 | 76 | 38 | 12.36 | 11.66 |
| N-92N4753 | MC1123LSL | L | S | 115 | 11 | 2200 | 76 | 38 | 12.36 | 11.66 |
| N-84N1518 | MC2123LST | T | S | 220/240 | 10 | 2200 | 76 | 38 | 12.36 | 11.66 |
| N-92N4754 | MC2123LSL | L | S | 220/240 | 10 | 2200 | 76 | 38 | 12.36 | 11.66 |
| 4.76" Square | x 1.00" Deep (| 120 SQ. x | 25) High-s | peed version | | | | | | |
| N-84N1515 | MC1122HBT | T | В | 115 | 18 | 2300 | 78 | 46 | 14.85 | 14.02 |
| N-92N4755 | MC1122HBL | L | В | 115 | 18 | 2300 | 78 | 46 | 14.85 | 14.02 |
| N-84N1516 | MC2122HBT | T | В | 220/240 | 18 | 2300 | 78 | 46 | 14.85 | 14.02 |
| N-92N4756 | MC2122HBL | L | В | 220/240 | 18 | 2300 | 78 | 46 | 14.85 | 14.02 |
| | x 1.00" Deep (| 92 SQ. x 2 | | | | | | | | |
| N-84N1511 | MC1092HST | T | S | 115 | 12 | 2750 | 36 | 39 | 12.36 | 11.66 |
| N-84N1513 | MC1092HSL | L | S | 115 | 12 | 2750 | 36 | 39 | 12.36 | 11.66 |
| N-84N1512 | MC2092HST | T | S | 220/240 | 14 | 2750 | 36 | 39 | 12.36 | 11.66 |
| N-84N1514 | MC2092HSL | L | S | 220/240 | 14 | 2750 | 36 | 39 | 12.36 | 11.66 |
| | x 1.50" Deep (| 80 SQ. x 3 | 8) | | | | | | | |
| N-92N4757 | MC1083HSL | L | S | 115 | 12 | 2750 | 30 | 35 | 12.36 | 11.66 |
| | x 1.00" Deep (| 80 SQ. x 2 | | | | | | | | |
| N-92N4758 | MC1082HBL | L | В | 115 | 11 | 2900 | 22 | 34.5 | 14.85 | 14.02 |
| N-92N4759 | MC2082HBL | L | В | 220/240 | 13.5 | 2900 | 22 | 34.5 | 14.85 | 14.02 |

*Not UL recognized; Connection: T = terminals, L = lead wires; Bearings: S = sleeve, B = ball

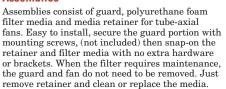
Ovaltek

Plastic Fan Filter Assemblies









| Mfr. # | Center Hole | (ea.) |
|------------|---|---|
| | | |
| 09325-F/30 | 2.81" | \$3.06 |
| media | | |
| 09325-F/45 | 2.81" | 3.06 |
| media | | |
| | | |
| 09362-F/45 | 3.25" | 3.37 |
| media | | |
| | | |
| 09450-F/45 | 4.13" | 4.09 |
| media | | |
| | 09325-F/30 media 09325-F/45 media 09362-F/45 media | 09325-F/30 2.81° media 09362-F/45 2.81° media 09362-F/45 3.25° media 09450-F/45 4.13° |



Qualtek

Wire Form **Fan Guards** For use with





#28-4407



tube-axial fans, #28-4409 #28-4410 .25" maximum ring spacing for compliance with domestic and

| international safety requirements. | | | | | |
|------------------------------------|--------|----------|--------------------|--------|--|
| Order # | Mfr. # | Fan Size | Hole Center | (ea.) | |
| 28-4405 | 08149 | 1.5" | 1.26" | \$1.63 | |
| 28-4407 | 08147 | 2.5" | 1.97" | 1.73 | |
| 28-4408 | 08172 | 3.125" | 2.81" | 1.63 | |
| 28-4409 | 08174 | 3.625" | 3.25" | 1.73 | |
| 28-4410 | 08170 | 4.5" | 4.13" | 2.01 | |







#28-4438



Fan Power Cords

Tube-axial fan power cords with strain relief. UL listed 10A/125VAC and CSA certified 7A/125VAC. 24" SPT-1, two-conductor cord.

| Order # | Mfr. # | Description | (ea.) |
|---------|----------|----------------|--------|
| 28-4437 | 07100-24 | Straight style | \$1.73 |
| 28-4438 | 07145-24 | 45 Style | 1.73 |
| 28-4439 | N719N-24 | 90 Style | 1 73 |



Snap Bushings

| •Black • | o0 per ba | | | |
|----------|-----------|--------------------|-------------|-------------|
| Order # | (I.D.) | (O. D.) | (1-9 pkgs.) | (10 pkgsup) |
| 28-2000 | 3/16" | 5∕ ₁₆ " | \$2.18 | \$1.98 |
| 28-2005 | 1/4" | %" | 2.18 | 1.98 |
| 28-2006 | 5∕16" | 7/16" | 2.88 | 2.55 |
| 28-2010 | 3/8" | 1/2" | 2.18 | 1.98 |
| 28-2015 | 1/2" | 5%" | 2.82 | 2.50 |
| 28-2020 | %16" | 3/" | 2.82 | 2.50 |
| 28-2025 | 11/16" | 7∕8" | 3.34 | 2.82 |
| 28-2030 | 3/4" | 1" | 3.96 | 3.65 |
| 28-2035 | 15/4." | 11//" | 4 38 | 3 96 |

Continuous Grommets

•Protects wires, cables and cords against damage from sharp panel edges
• Simply cut to fit any

size or shape opening •Clear •100' length







Developing and Etching Trays

Set of three for developing and etching PC boards. Plastic tray for positive method developing and for etching. Aluminum trays for negative method developing. Kit includes two 5½" x 7½" plastic trays and one 4¼" x 6¾" aluminum tray (inside dimensions).

| Order # | (1-4 kits) | (5 kits-up) |
|---------|------------|-------------|
| 21-3930 | \$6.12 | \$5.69 |

PC Board Etching Solution

This ferric chloride solution is one of the most effective and safest etching materials for copper clad PC boards. 6 oz. will etch about 180 sq. inches of PC board. Use only in plastic or glass trays. •Size: 32 fl. oz.

| Order # | (1-4) | (5-up) |
|---------|---------|---------|
| 21-3881 | \$13.11 | \$11.50 |



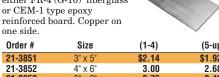
6' roll of self-adhesive pure copper tape for quick repairs or circuit modification. Adheres readily to PC boards and similar surfaces; solders readily. Flexible enough to be used around corners, between PC boards, between board and chassis, etc. Extremely low resistance (.020" thick). Supplied on 1" I.D. core.

| Order # | Width | (1-4) | (5-up) |
|---------|-------|--------|--------|
| 21-3840 | 1/16" | \$3.00 | \$2.78 |
| 21-3841 | 1/8" | 3.43 | 3.11 |



Printed Circuit Boards

One ounce copper on base of either FR-4 (G-10) fiberglass or CEM-1 type epoxy reinforced board. Copper on



| Order # | Size | (1-4) | (5-up) |
|---------|-----------|--------|--------|
| 21-3851 | 3" x 5" | \$2.14 | \$1.92 |
| 21-3852 | 4" x 6" | 3.00 | 2.68 |
| 21-3853 | 6" x 6" | 3.76 | 3.43 |
| 21-3854 | 6" x 9" | 5.37 | 4.83 |
| 21-3855 | 8" x 10" | 8.27 | 7.63 |
| 21-3856 | 11" x 14" | 15.88 | 15.02 |

Positive Pre-Sensitized PC Boards

Made of 1/16" thick glass epoxy base with one ounce copper. Coated with positive etch resist photo sensitizer. Base is FR-4 (G-10) fiberglass. Dielectric constant at 1MHz = 5.3.

| Order # | Size | (1-4) | (5-up) |
|--------------|-----------|--------|--------|
| Copper One S | ide | | |
| 21-3871 | 3" x 4" | \$5.91 | \$5.37 |
| 21-3872 | 3" x 6" | 6.45 | 5.91 |
| 21-3873 | 4" x 6" | 7.41 | 6.77 |
| 21-3875 | 6" x 9" | 12.38 | 11.30 |
| 21-3876 | 7" x 10" | 15.02 | 13.72 |
| 21-3877 | 12" x 12" | 30.08 | 27.71 |
| Copper Both | Sides | | |
| 21-3862 | 6" x 9" | 15.60 | 14.26 |
| 21-3863 | 12" x 12" | 32.61 | 29.96 |

Project Accessories



Section 19



Small Printed Circuit Repair Kit

For repair and servicing of printed circuits. Kit contains: Solder aid tool, low-melt solder, PC repair foil, fiberglass eraser, tweezers, 2 oz. Print-Kote, 2 oz. Print-Kote solvent and assorted fluxed solder washers.

| Order # | (kit) |
|---------|---------|
| 21-3825 | \$32.50 |







SPC TECHNOLOGY

Combo Pan **Head Sheet Metal Screw Kits**

Combo pan head sheet metal screws are steel with zinc plating. Combo head allows for installation and removal with either



hat of Filmips screw drivers. Kit contains a total of 16 items and 330 pieces including: 25 each of #6 x ½", #6 x 1", #8 x ½", #8 x ½", #8 x ½", #10 x ½"; 20 each of #10 x ½", #10 x 1", #10 x ½", #12 x ½", #12 x 1", #14 x ½", #14 x 1"; 10 each of #12 x 1½", #14 x 1½". Includes 18 compartment storage case

| Order # | (kit) |
|---------|---------|
| 28-6510 | \$27.22 |



SPC TECHNOLOGY

Flat Head Machine Screws

•Nickel-plated steel binder head screws

•100 per package

| Order # | Thread | Length | (1-9) | r Package (10-up) |
|---------|--------|--------|--------|----------------------|
| 28-6660 | #4-40 | 1/4" | \$2.39 | \$1.89 |
| 28-6665 | #4-40 | 1/2" | 2.59 | 2.09 |
| 28-6670 | #4-40 | 3/4" | 2.79 | 2.29 |
| 28-6690 | #6-32 | ½" | 1.59 | 1.29 |
| 28-6705 | #8-32 | 3/8" | 1.89 | 1.49 |
| 28-6720 | #10-32 | 1/2" | 3.09 | 2.49 |
| 28-6725 | #10-32 | 3/4" | 3.69 | 2.89 |
| | | | | |



SPC TECHNOLOGY

Hex Machine Screw Nuts

KEYSTONE

Round Nylon Spacers

•Unthreaded round nylon spacers •Available in different lengths with two different clearance hole

sizes: #4 and #6 •100 pieces per package

#6 clearance

(pkg.)

\$11.22

13.27

hole

Order #

28-5751

28-5752

#4 clearance

hole

Length

0.375

Order #

28-5743

28-5749

| Order # | Thread | Width | Price Pe (1-9) | r Package (10-up) |
|---------|--------|--------------------|-------------------|----------------------|
| 28-6885 | #2-56 | ³/ ₁₆ " | \$1.99 | \$1.59 |
| 28-6895 | #4-40 | 1/4" | 1.29 | 0.99 |
| 28-6900 | #6-32 | 1/4" | 0.99 | 0.79 |
| 28-6905 | #6-32 | 5/16" | 1.39 | 1.09 |
| 28-6925 | #10-32 | 3/8" | 1.39 | 1.09 |



SPC TECHNOLOGY

Hex Head "Tek" Screw Kit

Screws are steel with zinc plating and self-drilling points. Kit contains 18 items and

215 pieces including: •15 each: #6 x ½", #6 x ¾", #6 x 1", #8 x ½", #8 x ¾", #8 x 1", #8 x 1¼

#10 x ½", #10 x 1", #10 x 1½" • 10 each: #10 x 1½", #12 x ½", #12 x 1", #12 x 1½", #14 x 1" • 5 each: #12 x 1½", #14 x 1½", #14 x 1½" • Includes 18 compartment

| Order # | (kit) |
|---------|---------|
| 28-6520 | \$22.50 |



KEYSTONE

Threaded

Nylon Spacers •Threaded hex nylon spacers • Available in

different lengths with two different thread sizes: 4-40 and 6-32 •100 pieces per package

| | 4-40 thread size | 6-32 thread size | |
|--------|------------------|------------------|---------|
| Length | Order # | Order # | (pkg.) |
| 0.250" | - | 28-5715 | \$30.70 |
| 0.375" | 28-5709 | - | 32.75 |
| 0.500" | 28-5710 | 28-5717 | 32.75 |
| 0.750" | - | 28-5719 | 43.00 |
| 0.875" | - | 28-5720 | 44.02 |
| 1.000" | 28-5714 | - | 40.95 |



1001 Piece Hardware Assortment

•Wide assortment of machine screws, cotter pins, split, flat and tooth washers, hex nuts, sheet metal screws,



wood screws, wire, common and finish nails •Heavy-duty 25 drawer cabinet •25 identification labels •Safety stop trays prevent spillage

| Order # | (ea.) |
|---------|---------|
| 28-1180 | \$19.52 |













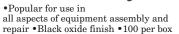






Section 19

Philips Pan Head Screws



| Order # | Size | (1–9) | Price Per Box (10–19) | (20-up) |
|----------|-----------|--------|--------------------------|---------|
| 28-18295 | #8 x 1/4" | \$0.83 | \$0.67 | \$0.54 |
| 28-18300 | #8 x ½" | 1.03 | 0.78 | 0.55 |
| 28-18305 | #8 x ¾" | 1.21 | 1.02 | 0.82 |
| 28-18310 | #8 x 1" | 1.37 | 1.17 | 0.97 |
| 28-18315 | #8 x 1½" | 1.91 | 1.58 | 1.24 |
| 28-18320 | #8 x 2" | 2.34 | 2.01 | 1.59 |
| 28-18325 | #8 x 3" | 3.41 | 2.87 | 2.33 |
| 28-18330 | #10 x 1" | 1.70 | 1.42 | 1.15 |
| 28-18335 | #10 x 2" | 2.84 | 2.41 | 1.93 |

Speed Clips

•Commonly used in many applications including autosound speaker installation •For use with #8 screws • Packaged in bags of 100



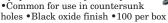
1.55

Order # Description (1-9 bags) (10-24 bags) (25 bags-up) \$5.59

Philips Oval Head Screws

28-18350

•Popular for use in all aspects of equipment assembly and repair

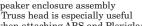


| | holes •Black oxide finish •100 per box | | | | |
|---------------|--|-----------|--------|---------|--------|
| Price Per Box | | | | | |
| | Order # | Size | (1–9) | (10–19) | (20-up |
| | 28-18340 | #8 x 1/2" | \$0.99 | \$0.85 | \$0.65 |
| | 00 40045 | // 0 4 !! | 4 07 | 4 40 | 0.04 |

Philips Truss Head Screws

#8 x 2

•Popular for use in cabinet and



• Propular for use in cabinet and speaker enclosure assembly
• Truss head is especially useful when attaching ABS and Plexiglas sheets to wood cabinets • Sharp "stinger type" point requires no pilot hole and easily pierces metal and wood surfaces
•Black oxide finish •100 per box

| | | Price Per Box | | |
|----------|---------|---------------|---------|---------|
| Order # | Size | (1–9) | (10–19) | (20-up) |
| 28-18370 | #8 x ½" | \$1.28 | \$1.08 | \$0.85 |
| 28-18375 | #8 x 1" | 1.58 | 1.38 | 1.09 |

Philips Drywall Screws

•Popular for use in cabinet and speaker enclosure assembly •Sharp "stinger type" point requires no pilot hole •Black oxide finish •100 per box

| Order # | | | Price Per Box (10-19) | | |
|----------|----------|--------|--------------------------|--------|--|
| 28-18355 | #6 x 1" | \$0.99 | \$0.85 | \$0.65 | |
| 28-18360 | #6 x 1½" | 1.28 | 1.08 | 0.85 | |
| 28-18365 | #6 x 2" | 1.58 | 1.38 | 1.09 | |
| 28-18366 | #6 x 3" | 2.69 | 2.39 | 1.97 | |



414







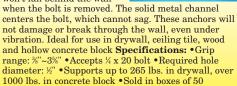


Order Online www.mcminone.com



Toggler® Wall Anchors

Toggler bolts replace old-fashioned toggle wings They may be pre installed without using a bolt and won't fall behind the wall



| Order # | (box) |
|---------|---------|
| 28-8545 | \$31.95 |

Toggle Bolts

•Spring bolts are popular for mounting light fixtures ceiling baffles to sheet rock



and drop ceilings $\bullet \%$ " diameter screws are 4" length \bullet Requires ¾" diameter hole •Toggle opens to 2"•100 per box

| Order # | (1-9 boxes) | (10-19 boxes) | (20 boxes -up) | |
|----------|-------------|---------------|----------------|--|
| 28-18550 | \$21.19 | \$17.65 | \$14.63 | |

#8 Trim Rings

•Commonly used to add finished look to #8 wood screws •Ideal for use on carpeted enclosures and Plexiglas panels •Black oxide finish •100 per box



| Order # | (1-4 boxes) | (5 boxes-up) |
|---------|-------------|--------------|
| 60-4375 | \$4.19 | \$3.77 |

Philips Pan Head Sheet Metal Screws

•8-18 stainless steel •Popular in all aspects of equipment repair and assembly •100 per box

| | A CONTRACTOR OF THE PARTY OF TH |
|---|--|
| 1 | |

| | | Price Per Box | | |
|----------|-----------|---------------|---------|---------|
| Order # | Size | (1–9) | (10–19) | (20-up) |
| 28-18510 | #10 x 1" | \$5.47 | \$4.67 | \$3.70 |
| 28-18515 | #10 x 1½" | 7.29 | 6.38 | 5.10 |

Lag Bolts

·Commonly used for mounting outdoor



| dictiffe di | biicb /4 didii | icter a o rengun | 100 per box |
|-------------|----------------|------------------|---------------|
| Order # | (1-9 boxes) | (10-19 boxes) | (20 boxes-up) |
| 28-18/20 | ¢7 /0 | \$6.33 | \$5.16 |

Buildex

Dynabolt® Concrete Sleeve Anchors

• Designed for heavy loading capacity in concrete, masonry, grout filled and hollow block *Excellent for exterior walls *Perfect for antenna/dish supports, speaker brackets, wall mount racks and panels

•Durable zinc plated carbon steel •Provides full 360° hole contact over a large area •Reduces concrete stress \bullet Pre-assembled for fast, easy installation

| Order # | Bolt Diameter | Sleeve Diameter | Length | Box Qty. | Price F (1-3) | Per Box (4-up) |
|----------|------------------|--------------------|--------|-------------|------------------|-------------------|
| 28-18570 | 3⁄8" | 1/2" | 21/4" | 50 | \$26.75 | \$24.25 |
| 28-18571 | 3/s" | 1/2" | 3" | 25 | 31.25 | 29.95 |
| 28-18575 | 1/2" | 5/16" | 21/4" | 25 | 43.50 | 39.25 |
| 28-18576 | 1/3" | 5/16" | 3" | 25 | 47.75 | 42.99 |

Fender Washers

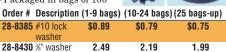
- •Black oxide finish
- $\bullet 100 \text{ per box}$



| | | | Price Per Box | | |
|----------|------|------|---------------|---------|---------|
| Order # | I.D | 0.D. | (1-9) | (10-19) | (20-up) |
| 28-18425 | 1/4" | 1" | \$2.46 | \$2.34 | \$2.09 |
| 28-18430 | 3/8" | 1" | 3.11 | 2.99 | 2.81 |

Washers

•Packaged in bags of 100



Fender Washers

•1" outside diameter •3/16" inside diameter •Black oxide finish •100 per bag



| Order # | (1-9) (10-24) (25-up) | | |
|---------|-----------------------|--------|--------|
| 28-8400 | \$2.59 | \$2.29 | \$2.09 |

E-Z Ancor® Drywall Anchors

Ideal for hanging pictures, shelves, speakers and other moderate weight items to standard sheetrock drywall. Very easy to install, these anchors require only a Philips

duty plastic or metal, 100 per box.

| Order # | Type | (box) |
|---------|---------|---------|
| 28-8535 | Plastic | \$19.74 |
| 28-8536 | Metal | 27.25 |

head screwdriver for installation. Available in light

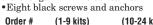
Plastic Drywall Anchors

Ideal for hanging lightweight items such as pictures and small speakers to standard sheetrock drywall. Anchors require only a small pilot hole for use. 100 per box.

| | | Price Per Box | | |
|----------|------------------|---------------|---------|---------|
| Order # | Туре | (1–9) | (10-19) | (20-up) |
| 28-18525 | For screw #8~10 | \$1.36 | \$1.11 | \$0.87 |
| 28-18526 | For screw #10~12 | 1.35 | 1.09 | 0.89 |
| 00 40500 | Fan aanau #C 0 | 4 00 | 4 00 | 0.00 |

Screw Anchor Kit

•Anchor fits permanently behind panel face to allow repeated removal and replacement of screws •Screw shaft length: 1½" **Kit contains:**



| Order # | (1-9 kits) | (10-24 kits) | (25 kits-up) |
|---------|------------|--------------|--------------|
| 50-630 | \$1.59 | \$1.39 | \$1.19 |





Ramset/Red Head **Tapcon® Self-Tapping Concrete Anchors**

 \bullet Designed for use with high powered drill and hammer drivers \bullet Climaseal TM coated for excellent corrosion protection \bullet Works on all masonry materials, excellent for exterior walls •Self tapping design cuts their own threads •Fully removable •¼" diameter •100 per box

| Order # | Length | (1-3 boxes) | (4 boxes-up) |
|---------|--------|-------------|--------------|
| 28-8850 | 2.25" | \$29.95 | \$26.96 |
| 28-8851 | 1.25" | 24.75 | 22.28 |





Compact Panel Mount Ammeters

DC moving coil ammeters provide accurate measurement of amperage in microamp, milliamp and amp scales. Mirrored scale provides accurate readings at any angle. Front panel dimensions 2%" (H) x 1%" (W). Requires 1½" diameter cutout. Includes all mounting

hardware.

Required

mounting

depth, 1",

PM11279

Order #

50-1905

Order #

50-1635

2¾" Swivel Caster Set

•Set of four •Two locking

swivel caster • Two non-locking swivel casters • 16 T-nuts and

¼" x 1" Phillips head screws •Wheels have hard rubber cover •Mfr. #HW960/995

•Blue wheel with bearings





| - | | #PM11199 |
|-------|-------|-------------------------|
| 0 | 2 4 6 | 8 huday 10 |
| MONAC | A A | Ω <u>1</u> κι. 2.0 η |
| | 0 | |

8.86

7.54

| overall | | | |
|------------|-------------------|--------|---------|
| depth 1½". | | # | PM11278 |
| Order # | Measurement Range | (1-3) | (4-up) |
| PM11271 | 30μΑ | \$8.81 | \$7.54 |
| PM11272 | 50μA | 9.37 | 7.95 |
| PM11119 | 100μA | 8.86 | 7.54 |
| PM11120 | 1mA | 9.30 | 7.92 |
| PM11121 | 10mA | 8.86 | 7.54 |
| PM11199 | 100mA | 9.07 | 7.74 |
| PM11122 | 1A | 9.07 | 7.74 |
| PM11277 | 3A | 8.86 | 7.74 |
| PM11123 | 5A | 8.86 | 7.54 |
| PM11278 | 10A | 8 86 | 7 54 |

(1-9 sets)

\$30.70

(10-49)

Compact **Panel Mount DC Voltmeters**

DC moving coil meters provide accurate measurement of DC voltage from 0~30V, in three ranges. Mirrored scale



provides accurate readings at any angle. Front panel dimensions 1¾" (H) x 1¾" (W). Requires 1½" diameter cutout. Includes all mounting hardware. Required mounting depth, 1", overall depth 1½".

| Order # | Measurement Range | (1-3) | (4-up) |
|---------|-------------------|--------|--------|
| PM11280 | 10VDC | \$9.37 | \$7.95 |
| PM11281 | 25VDC | 8.86 | 7.54 |
| PM11189 | 30VDC | 8.86 | 7.54 |

15VDC **Panel Mount Meter**

DC moving coil meter provides accurate measurement from 0~15VDC. Mirrored scale provides accurate readings at any angle. Front panel

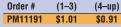


dimensions 2%'' (H) \times 3%'' (W). Requires 1%'' diameter cutout. Includes all mounting hardware. Required mounting depth 1%'', overall depth 1%''.

| Order # | (1–3) | (4-up) |
|---------|--------|--------|
| PM11124 | \$8.86 | \$7.54 |

Backlight Assemblies

Dual 6V incandescent lamps mount in all PM Series panel meters. All meters are pre-wired and have special inserts for backlit use.





Surface Mount Handle with Spring

•Mfr. #H1052

| Orde | # | Type | (1-9) | (10-49) |
|-------|----|-------|--------|---------|
| 50-16 | 00 | Zinc | \$3.02 | \$2.72 |
| 50-16 | 05 | Black | 3.52 | 3.22 |



Recessed Flip Handle

Cabinet Corner Pieces

•Protect the corners of your

cabinets with these plastic or metal corner pieces
•#50-500 has grooved design for stacking •Screws not

included • Four per package

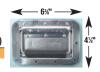
A **50-500** Plastic 2½" x 3½" x ¾" B **50-580** Metal 1½" x 1½" x 1½"

Dimensions

Fig. Order # Type (W) x (H) x (D) (1-9) (10-24) (25-up)

•Mfr. #H1051

| Order # | Туре | (1-9) | (10-49) |
|---------|-------|--------|---------|
| 50-1590 | Zinc | \$4.74 | \$3.42 |
| 50-1595 | Black | 7.88 | 7.68 |



Surface Mount Draw Latch

(1-9)

\$15.10

•Black •Mfr. #L0566

4" Swivel Caster

•Mfr. #W0990

| Order # | (1-9) | (10-49) |
|---------|--------|---------|
| 50-1555 | \$1.00 | \$0.90 |



(10-49 sets)

\$28.19

Square Recessed Dish with Butterfly Latch

•Mfr. #L905/915

| Order # | Type | (1-9) | (10-49) |
|---------|------|--------|---------|
| 50-1545 | Zinc | \$5.99 | \$5.79 |



Surface Mount Butterfly Latches

•Mfr. #L925

| Order # | Туре | (1-9) | (10-49) |
|---------|-------|--------|---------|
| 50-1525 | Zinc | \$6.05 | \$5.85 |
| 50-1530 | Black | 8.19 | 7.88 |



Square Recessed Dish with Two 1/4" Jack Holes

•Mfr. #D0938

| Order # | Type | (1-9) | (10-49) |
|---------|-------|--------|---------|
| 50-1560 | Zinc | \$2.04 | \$1.83 |
| 50-1565 | Black | 2.55 | 2.35 |



Price Per Package

2.25

\$2.03 \$1.62

2.67

Project Accessories

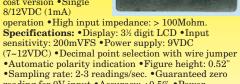


Section 19

NEW! NEW! NE

vellemen-kit 4 **LCD** Digital Panel Meter

Features: •Low cost version •Single 8/12VDC (1mA)



reading for 0V input •Accuracy: ±0.5% •Power consumption: 1mA DC •Size: 2.7" x 1.7"

| Order # | (1-4) | (5-up) |
|---------|--------|--------|
| 72-8100 | \$5.99 | \$4.99 |

velleman-kit 4 **LED Digital** Panel Meter

Features: •3½ LED

digital panel meter
• Single 9VDC operation

•High input impedance: > 100Mohm.

**Right imput impedance: > 100Mohm.

**Specifications: **Input sensitivity: 200mV FS

**Power supply: 9VDC **Decimal point selection with wire jumper **Automatic polarity indication **Figure height: 0.56" **Sampling rate: 2-3 readings/sec.

**Guaranteed zero reading for 0V input **Accuracy: ±0.5% **Power consumption: 50~60mA **Size: 2.7" x 1.7"

| Order # | (1-4) | (5-up) |
|---------|---------|---------|
| 72-8105 | \$16.95 | \$14.95 |

Square Recessed Dish with **Two EP Connector Cutouts**

•Mfr. #D028 •Black

| Order # | (1-9) | (10-49) |
|---------|--------|---------|
| 50-1575 | \$5.75 | \$5.44 |



Metal Cabinet Handles

•Heavy-duty metal construction • Handle is spring loaded for added convenience •Wide rubber grip •Ideal for large and heavy cabinets •Black finish •Screws not included



| Order # | (1-3) | (4-9) | (10-up) |
|---------|--------|--------|---------|
| 50-505 | \$5.14 | \$4.52 | \$4.01 |

Small Recessed Steel Handle

•Black •Mfr. #H1105

•8%" x 6%"

Order # (1-9)(10-49)50-1610 \$5.69 \$5.99



Large Recessed Steel Handle

•Mfr. #H1070 •10¾" x 6%

| Order # | (1-9) | (10-49) |
|---------|--------|---------|
| 50-1615 | \$6.55 | \$6.35 |















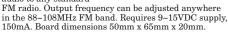


Section 19



High Power FM Transmitter

Pre-assembled board accepts line level input (300mV), and transmits audio to any standard



| Order # | Description | (ea.) |
|---------|----------------|---------|
| 28-4851 | FM transmitter | \$25.45 |
| 28-4775 | 12V, 1A supply | 20.35 |



Digital Message Recorder with

Pre-assembled board digitally records any audio signal supplied to its onboard electret microphone, and plays it back through its built in amplifier. Recording time is up to 60 seconds, and information is stored, even when power is removed Volume is controlled via board

woutne is controlled via board mounted potentiometer.
Requires 9~12V power supply, 300mA. Amplifier delivers
5W/7W RMS/peak. Output impedance 4~80hm, speaker not included. Board dimensions: 3.74" x 2.56" x 1.18".

| Order # | Description | (ea.) |
|---------|-------------------|---------|
| 28-6245 | Digital recorder | \$89.71 |
| 28-4772 | 12V, 300mA supply | 15.25 |



Voice Activation (VOX) Relay

Pre-assembled board switches output relay when audio signal level is detected. Input level 50mV, 10Kohm. Sensitivity is adjusted

via a board mounted potentiometer. Output relay contacts rated at 5A. Required supply voltage 12VDC, 50mA. Board dimensions 75mm x 40mm x 30mm.

| Order # | Description | (ea.) |
|---------|-------------------|---------|
| 28-4825 | VOX module | \$18.31 |
| 28-4772 | 12V, 300mA supply | 15.25 |

Two Digit LED



Pre-assembled counter circuit board provides digital count from 0 to 99. Contact closure input provides one count up and reset-to-zero function. Each digit is 0.5" high. Requires 12VDC, 100mA. Dimensions 70mm x 52mm x 46mm.

| Order # | Description | (ea.) |
|---------|-------------------|---------|
| 28-4785 | Counter | \$15.40 |
| 28-4772 | 12V, 300mA supply | 15.25 |

















Pre-assembled audio amplifier boards may be used for many applications including repair or modification of equipment, projects or prototype work. They are easily installed into existing enclosures, speaker cabinets or audio equipment. Single and two channel models are available. All accept line level input, provide rated output, RMS into 80hm load, and are usable with 40hm loads. Each may be powered with a single DC supply, voltage as listed. All boards are pre-tested and include a three year limited warranty.

| 01 # | Power | Power | Dimensions | (\ |
|---------|---------------|-----------------|------------------|--------|
| Order # | Output | Requirements | (H) X (W) X (D) | (ea.) |
| 28-5180 | 75mWx2CH. | 3~6VDC, 50mA | 0.59"x1.38"x1.38 | \$9.26 |
| (he | adphone ampli | fier) | | |
| 28-5175 | 500mWx2CH | 12VDC, 100mA | 0.59"x2.17"x1.57 | "14.59 |
| 28-5170 | 1Wx2CH. | 4~14VDC, 250mA | 0.78"x2.83"x1.97 | "15.80 |
| 28-4800 | 5Wx2CH. | 6~15VDC, 500mA | 1.06"x3.54"x2.17 | 26.00 |
| 28-4801 | 15Wx2CH. | 12~35VDC, 1A | 1.77"x3.54"x2.17 | 41.16 |
| 28-5165 | 500mWx1CH | 6~12VDC, 50mA | 0.59"x1.10"x1.18 | 7.95 |
| 28-4795 | 1Wx1CH. | 4~14VDC, 200mA | 0.79"x1.38x1.97" | 7.71 |
| 28-4796 | 5Wx1CH. | 6~15VDC, 250mA | 0.79"x1.57x1.97 | 14.37 |
| 28-4797 | 15Wx1CH. | 12~35VDC, 500m/ | 1.77"x2.56"x3.15 | "20.35 |
| 28-4798 | 20Wx1CH. | 9~15VDC, 2A | 1.57"x2.76"x2.76 | 26.08 |
| 28-4799 | 30Wx1CH. | 12~35VDC, 1.5A | 1.77"x2.56"x3.62 | "30.86 |
| | | | | |





<u> Lebek</u> Audio Input Modules

Each pre-assembled circuit module may be used with Cebek amplifiers, or any audio amplifier having a line level input. Microphone and guitar input modules feature board mounted level adjustments. The four channel mixer is unity gain on all channels, unless individual (optional) potentiometers are used. The stereo magnetic cartridge module also features RIAA equalization circuitry. All will operate from a single DC power supply, and require less than 50mA (#28-6225 requires 100mA). All boards are pre–tested and include a three year limited warranty.

| Description Order # | Power Requirements | Dimensions (H)x(W)x(D) | (ea.) |
|---------------------------|-----------------------|---------------------------|--------|
| Microphone p | oreamplifier | | |
| 28-4805 | 6~18VDC | 0.78"x1.38"x1.97" | \$9.22 |
| Guitar pream | | | |
| 28-4815 | 6~18VDC | 0.78"x1.38"x1.97" | 9.35 |
| Stereo phono | | | |
| 28-5205 | | 0.78"x2.05"x2.95" | 15.40 |
| Guitar effects | | | |
| | 9~15VDC | 0.59"x1.85"x2.91" | 20.86 |
| Noise gate 28-6220 | 12VDC | 0.79"x1.57"x2.56" | 29.22 |
| Audio compre | essor | | |
| 28-6230 | 9~15VDC | 0.79"x1.57"x2.56" | 13.07 |
| Bass/treble co | | | |
| | 9~24VDC | 0.79"x2.95"x3.46" | 15.63 |
| | alance/volume con | | |
| 28-4835 | 12~24VDC | 0.79"x4.14"x5.51" | 28.51 |
| | | | |



Amplifier Module Compact audio amplifier circuit is housed in a fully potted

plastic enclosure and is great for a variety of hobby, service and prototype applications. Amplifier accepts line level input (80mV), and provides 12W output into a 40hm load. Requires 6~16VDC, 12VDC optimum (800mA). Dimensions: 2½' (W) x 1½" (D) x 1" (H).

| Order # | (1-4) | (5-9) | (10-up) |
|---------|--------|--------|---------|
| 28-6402 | \$9.58 | \$8.67 | \$7.84 |







Modules

These pre-assembled circuit modules provide accurate, consistent timing functions for a variety of uses. All delay times are adjustable via board–mounted potentiometers, and each has SPDT relay outputs which handle 5A. Power requirements: 12VDC, <100mA. All boards are pre-tested and include a three year limited warranty.

| Order # | Timer Mode | Time Range | Dimensions (H)x(W)x(D) | (ea.) |
|---------|----------------------------|---------------|---------------------------|---------|
| 28-4735 | Single event (one shot) | 1~180 sec. | 1.18"x1.69x2.95" | \$18.49 |
| 28-4736 | Single event (one shot) | 2~45 min. | 1.18"x1.69"x2.95" | 18.49 |
| 28-4750 | On delay | 1~180 sec. | 1.18"x1.69"x2.95" | 20.86 |
| 28-4751 | On delay | 2~45 min. | 1.18"x1.69"x2.95" | 20.86 |
| 28-4745 | Sequential dual time del | | 1.18"x2.36"x3.03" | 30.86 |
| 28-6175 | Retriggerable | 1~180 sec. | 1.18"x2.95"x1.69" | 17.46 |
| 28-6176 | Retriggerable | 2~45 min. | 1.18"x2.95"x1.69" | 18.77 |
| 28-4740 | Repeat cycle | 0.3~60 sec. | 1.18"x1.69"x2.95" | 21.37 |
| 28-4741 | Repeat cycle | 1~30 min. | 1.18"x1.69"x2.95" | 21.37 |



Hi-Fi Amplifier Power Supplies

Power supplies include center

tapped AC transformer and pre–assembled circuit board, and are designed specifically for use with the Hi–fidelity audio amplifiers. specifically for use with the H1-floenty audio amplifiers. Each features necessary positive and negative voltage output and has sufficient current to power two amplifier modules. Additionally, each includes a regulated 18VDC output for additional preamplifier or other input module. Listed dimensions are for PC board only. AC line cord is not included.

| Order # | Power Output | Dimensions (H) x (W) x (D) | (ea.) |
|---------|-----------------|-------------------------------|---------|
| 28-6111 | ±24VDC, 2A | 1.38" x 1.97" x 3.15" | \$32.94 |
| 28-6116 | ±28VDC, 2.5A | 1.38" x 1.97" x 3.15" | 38.63 |
| 28-6121 | ±32VDC, 3.0A | 1.77" x 1.97" x 3.54" | 50.13 |
| 28-6126 | ±42VDC, 4,4A | 1.77" x 1.97" x 3.54" | 66.86 |



High Fidelity Audio Amplifier Modules

Pre-assembled single audio amplifier boards are ideal





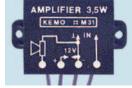
modification or prototype projects requiring high output models may be used for powered monitors, active subwoofers and similar applications. All models utilize discrete output devices and require specific \pm symmetrical power supplies. All accept line level input, provide rated output, RMS into 80hm load, and are usable with 40hm loads. THD: <0.1%, @ 1W, 20Hz~20KHz. All boards are pre-tested and include a three year limited warranty

| | Power | Power | Dimensions | |
|---------|--------|---------------|-----------------------|---------|
| Order # | Output | Requirements | (H) x (W) x (D) | (ea.) |
| 28-6110 | 25W | ±24VDC, 1A | 1.50" x 2.75" x 4.41" | \$26.08 |
| 28-6115 | 35W | ±28VDC, 1.25A | 1.50" x 2.75" x 4.41" | 33.49 |
| 28-6120 | 60W | ±32VDC, 1.5A | 1.50" x 2.75" x 4.41" | 52.22 |
| 28-6125 | 100W | ±42VDC, 2.2A | 2.76" x 4.33" x 4.33" | 61.30 |



Single Channel Audio Amplifier Module

Ultra compact audio amplifier circuit is housed in a fully potted plastic enclosure and is



great for a variety of hobby, service and prototype applications. Amplifier accepts line level input (80mV), and provides 3.5W output into a 40hm load. Requires $4\%{\sim}12VDC,\,12VDC$ optimum (500mA). Dimensions: 1%'' (W) x 1" (D) x %'' (H).

| Order # | (1-4) | (5-9) | (10-up) |
|---------|--------|--------|---------|
| 28-6400 | \$7.20 | \$6.48 | \$5.93 |



Electronic Traffic Light

Pre-assembled module will suit numerous novelty and practical applications. The three timer circuit is designed



to simulate the operation of a traffic light. The on board potentiometer may be adjusted for time settings from $5{\sim}50$ seconds for "red" and "green" output. The "yellow" output is automatically % of the time setting. Board mounted red, yellow and green LEDs show status of solid state output devices. Each output is capable of switching a 12~15VDC load 2A max. Requires 12~15VDC, 40mA max.

| Order # | Description | (ea.) |
|---------|---------------------|---------|
| 28-6215 | Timer | \$20.55 |
| 28-4772 | 12VDC, 300mA supply | 15.25 |



Flip-Flop Relay Module

With momentary contact at the input, the output relay closes and latches. Upon a second momentary closure of the same input, the relay opens. Relay contacts 5A.



12V, 300mA supply



28-4772



15.25

#28-5116

#28-5117

Sequential Relay Modules

Upon a single contact closure at the input, the output relays (either four

or eight) sequentially close. The delay time between each relay closing is adjustable from 0.3-10 seconds. Each relay is capable of switching 5A. Requires 12VDC, 50mA.

| Order # | Relays | Dimensions | (ea.) |
|---------|----------|-----------------------|---------|
| 28-5116 | Four | 11 mm x 78mm x 30mm | \$41.16 |
| 28-5117 | Eight | 155 mm x 112mm x 35mm | 61.76 |
| 28-4772 | 12V, 300 | mA supply | 15.25 |



Photoelectric (Sunset) Relay Module

Pre-assembled control module utilizes an external sensor to detect the absence of light. Output relay energizes when there is no light present. Sensitivity is adjusted via board mounted potentiometer

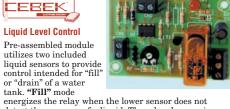


| Order # | Description | (ea.) |
|---------|-------------------|---------|
| 28-5131 | Light detector | \$20.86 |
| 28-4772 | 12V, 300mA Supply | 15.25 |



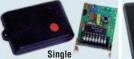
Liquid Level Control

Pre-assembled module utilizes two included liquid sensors to provide



detect the presence of a liquid. The relay de-energizes when the top sensor then detects liquid. "Drain" mode energizes the relay when the top sensor detects the presence of liquid, and de-energizes when the lower sensor no longer detects liquid. Relay is SPDT with 5A contacts. Requires 12VDC, 50mA. Board dimensions 3" 2.17" x 1.18". **Note:** This device is intended for use with water. Use with flammable or corrosive liquids could have hazardous results.

| Order # | Description | (ea.) |
|---------|----------------------|---------|
| 28-6185 | Liquid level control | \$27.70 |
| 28-4772 | 12V, 300mA supply | 15.25 |



CEBEK



Pre-assembled receiver and transmitter modules provide wireless operation of single or dual relay outputs. UHF operation (433.92MHz) allows optimal signal penetration through walls and other obstructions. Eight position dip switch selector allows over 13,000 code possibilities to prevent accidental activation by other transmitters on the same frequency. Single and dual channel transmitters require 12VDC Source such as a GP23A battery, and measure 2.24" x 1.42" x 0.63". Receivers measure approximately 4" x 2.5" x 1% and are available in 120VAC and 12VDC (140mA) models. Relay contacts are SPDT, 5A.

| Order # | Description | (ea.) |
|---------|---------------------------------|---------|
| 28-6237 | Single channel transmitter | \$18.49 |
| 28-6242 | Dual channel transmitter | 20.86 |
| 28-6235 | Single channel receiver, 12VDC | 33.49 |
| 28-6240 | Dual channel receiver, 12VDC | 44.43 |
| 28-6236 | Single channel receiver, 120VAC | 43.79 |
| 28-6241 | Dual channel receiver, 120VAC | 54.09 |

CEBEK Ideal

Regulated DC Power Supply Modules

for any low voltage application. these power supply modules are easily incorporated into existing enclosures. Each pre–assembled board features an oversized heat sink, for added

near sink, for added reliability, and includes the necessary AC transformer. Standard models have conventional V+ and ground connections, symmetrical models have V+, ground and V-connections, both are fixed voltage. Variable models are continuously adjustable within the stated range, via a board mounted potentiometer. Listed dimensions are for PC board only. AC line cord is not included.

| | | | Dimensions | |
|---------|-----------|-------------|-------------------|---------|
| Order # | Type | Output | (H)x(W)x(D) | (ea.) |
| 28-4771 | Standard | 5V, 300mA | 1.00"x1.69"x1.97" | \$15.63 |
| 28-4772 | Standard | 12V, 300mA | 1.00"x1.69"x1.97" | 15.25 |
| 28-4774 | Standard | 9V, 1A | 1.38"x1.69"x2.76" | 20.86 |
| 28-4775 | Standard | 12V, 1A | 1.38"x1.69"x2.76" | 20.35 |
| 28-4776 | Standard | 24V, 1A | 1.38"x1.69"x2.76" | 26.41 |
| 28-4777 | Standard | 12V, 2A | 1.57"x3.94"x2.56" | 36.40 |
| 28-4778 | Standard | 12V, 5A | 2.17"x3.15"x4.13" | 52.83 |
| 28-7874 | Variable | 12~24V, 1A | 1.77"x2.09"x2.80" | 31.20 |
| 28-4780 | Variable | 12~24V, 2A | 1.57"x2.95"x4.33" | 52.22 |
| 28-4779 | Variable | 3~15V, 1A | 1.57"x2.09"x2.01" | 30.86 |
| 28-7882 | Symmetric | ±15V, 500mA | 0.98"x2.20"x3.66" | 31.71 |
| 28-7886 | Symmetric | ±15V, 1A | 0.98"x2.20"x3.66" | 39.06 |

PC Controlled Eight Channel Switch

Pre-assembled circuit module has numerous possibilities for computer controlled automation of electrical devices. Simply connect to LPT1 parallel port of any 486 or higher PC and solid state output of eight channels is provided via 25 pin female sub "D" connector. Each output switches 6~40VDC @ 400mA, or

4~40VAC @ 200mA. Especially suitable for switching external relays. Included 3½" diskette contains necessary software and a complete reference manual which may be printed. Separately available 15' cable (#83-0470), not included, has a DB-25 male connector (#63-04/07), not included, has a DB-20 male connector to stripped leads, greatly easing connection of external components. Dimensions: $2^{\prime\prime\prime}$ (W) x $3^{\prime\prime}$ (D) x $1^{\prime\prime\prime}$ (H).

| Order # | Description | (1-4) | (5-9) | (10-up) |
|---------|-------------|---------|---------|---------|
| 28-6420 | PC switch | \$26.08 | \$23.52 | \$20.12 |
| 83-0470 | DB-25 cable | 9.49 | - | - |



Pre-assembled thermostat accurately displays temperature from -20°-120°C. 0.5". LED display clearly displays temperature with accuracy to 0.1°C. Requires 12VDC, 160mA. Board dimensions 84mm x 66mm x 51mm.

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|--------------------------|------------------|---------|--|--|
| Order # | Description | (ea.) | | |
| 28-4760 | Thermometer | \$51.46 | | |
| 28-4772 | 12V 300mA sunnly | 15 25 | | |

Project Accessories



Section 19

NEW! NEW! NEW

Infrared 4 x 7 LED Array

Compact circuit is housed in a fully potted plastic enclosure and requires only 12VDC @ 300mA. Intended

12VDC © 300mA. Intended for CCTV applications, this device will light up any area when viewed through a CCD camera, yet leave that area dark to the naked eye. The array of 28 LEDs provides considerably more illumination than that included with CCTV cameras, with much lower cost and power consumption than typical infrared lights. Dimensions: 2%" (W) x 2" (D) x %" (H), black color.

| Order # | (1-4) | (5-9) | (10-up) |
|---------|---------|---------|---------|
| 28-6419 | \$17.95 | \$15.95 | \$14.95 |

Infrared 4 x 7 LED Array

Compact circuit is housed in a fully potted plastic enclosure and requires only 12VDC @



requires only 12VDC @ 300mA. Intended for CCTV applications, this device will light up any dark area when viewed through a CCD camera, yet leave that area dark to the naked eye. The array of 28 LEDs provides considerably more illumination than that included with CCTV cameras, with much lower cost and power consumption than typical infrared lights. Dimensions: 2%" (W) x 2" (D) x %" (H).

| Order # | (1-4) | (5-9) | (10-up) |
|---------|---------|---------|---------|
| 28-6418 | \$19.56 | \$17.46 | \$15.97 |



Recorder Pre-assembled board digitally records any audio signal supplied to

its mic level input, and plays it back through its built-in 100mW

amplifier. Recording time is up to 16 seconds, and information is stored even when power is removed. Electret microphone is included. Requires 9–12VDC supply, 150mA. Board dimensions 80mm x 60mm x 25mm.

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|---------------------|------|-------------------|---------|--|
| Order # | | Description | (ea.) | |
| 28-4 | 1855 | Digital recorder | \$36.01 | |
| 28-4 | 1772 | 12V, 300mA supply | 15.25 | |

Ultrasonic Signal Generator Module

Compact circuit is housed in a fully potted plastic enclosure and can be powered from any 12~24V power supply (50mA). When



supply (50mA). When connected to any piezo electric speaker, such as MCM #53-071 (not included), device emits ultrasonic tones from 20KHz~40KHz, ideal for repelling insects, birds, rodents and other pests. Up to four piezo speakers may be connected to a single module. Top mounted 10 position rotary BCD switch selects output frequency. Dimensions: 2%" (W) x 1%" (D) x %" (H).

| Order # | (1-4) | (5-9) | (10-up) |
|---------|--------|--------|---------|
| 28-6404 | \$9.81 | \$8.88 | \$8.04 |









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