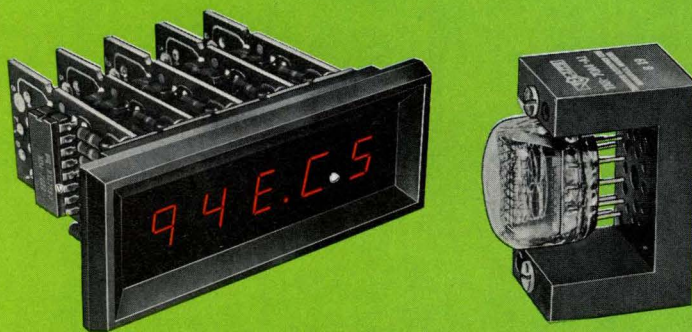# TEC LITE

YOUR COMPLETE SOURCE FOR *INDICATING DEVICES*
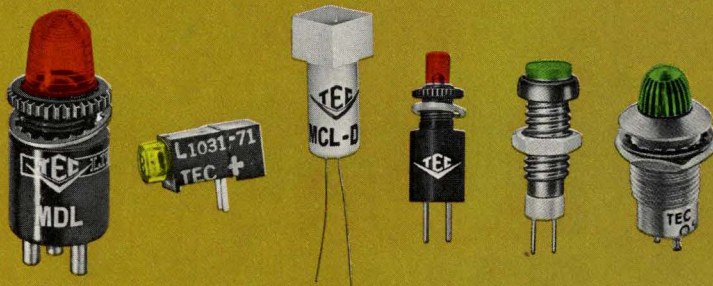
READOUTS
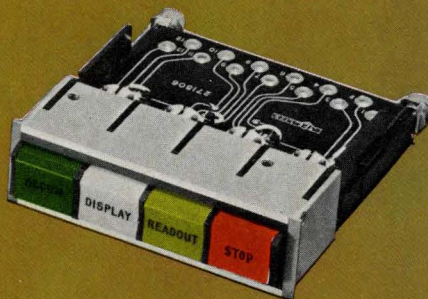
94 E.C.5
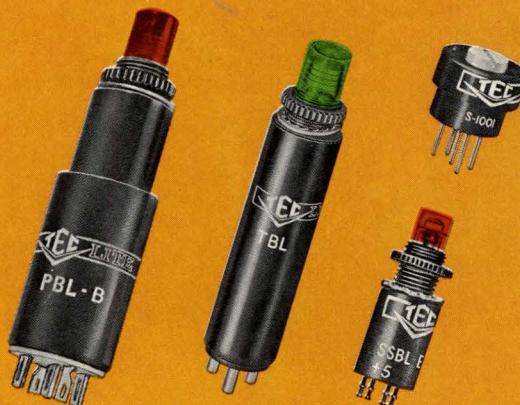
LAMPS **INDICATORS**

DATA—LINE SYSTEMS

SWITCHES & SWITCH/INDICATORS

DISPLAY PANELS

DIVIDE FAULT	MASTER ON	CHAN. ACTIVE	RADAR SCAN	DECIMAL
READ ADDRESS	PROGRAM STOP	TAPE REVERSE	DIVIDE SUB	LAMP ON
EXECUTE CYCLE	COMPUTE	PANIC	CHAN. 327	STORE OPERAND
INDEX ON	OPERAND CYCLE	RADIO LOCK	NEW CYCLE	MOTOR FIRE

INDEX

40

TEC®
INCORPORATED

TEC LITE
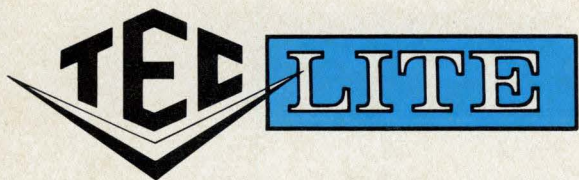
ONE-STOP SERVICE FROM THE DISPLAY/CONTROL SPECIALISTS

Complete Man-Machine Interface Line

Highly reliable, economically priced devices for every information display and control need: computers and peripherals, industrial controls, communications, test equipment, aircraft and missiles, navigation, guidance/control systems, consumer products—TEC serves all, with over 15 years of proven performance.

Choose from a wide selection of body styles, terminal types, lens colors, mounting options, operating ranges, switch types, plus other options such as RFI shielding, waterproof units and engraved legends. Write for detailed specifications on all products listed in this brochure.

Custom Designed Displays and Controls

And if what you need isn't in our inventory we'll custom build it for you at a surprisingly low cost. TEC has over 8,000 special designs on file—both electrical and mechanical—so let our innovative, problem-solving engineering staff help you with your unique requirements.

24-Hour Shipment on Many Devices

One-day service on a variety of in-stock lamps, indicators, switches and readouts—including our broad line of LED's—for orders of 1 to 99. Ask for "QUICK DRAW" Catalog No. 955.

DATA-SCREEN™ TERMINALS

TEC designed, built and delivered its first alphanumeric CRT terminals in 1963. More than a decade of experience serving countless businesses and industries has given TEC invaluable knowledge about interfacing CRT terminals with a host of business, scientific and process control computers. . .and at competitive prices.

Today, TEC's Series 400 DATA—SCREEN Terminals are available in 13 different models that offer screen capacities from 960 to 1920 characters and parallel, serial and teletypewriter replacement interfaces. Full edit capabilities in many models, plus buffered operation, allow off-line message composition and editing.

For more information on Series 400 DATA—SCREEN Terminals, write for 8-page, full-color brochure No. 884.

All devices shown approximately actual size, except where noted. Prices listed are unit prices in quantities of 100 (unless stated otherwise), F.O.B. factory, and represent the lowest-priced unit in a particular series. All prices and specifications subject to change without notice.
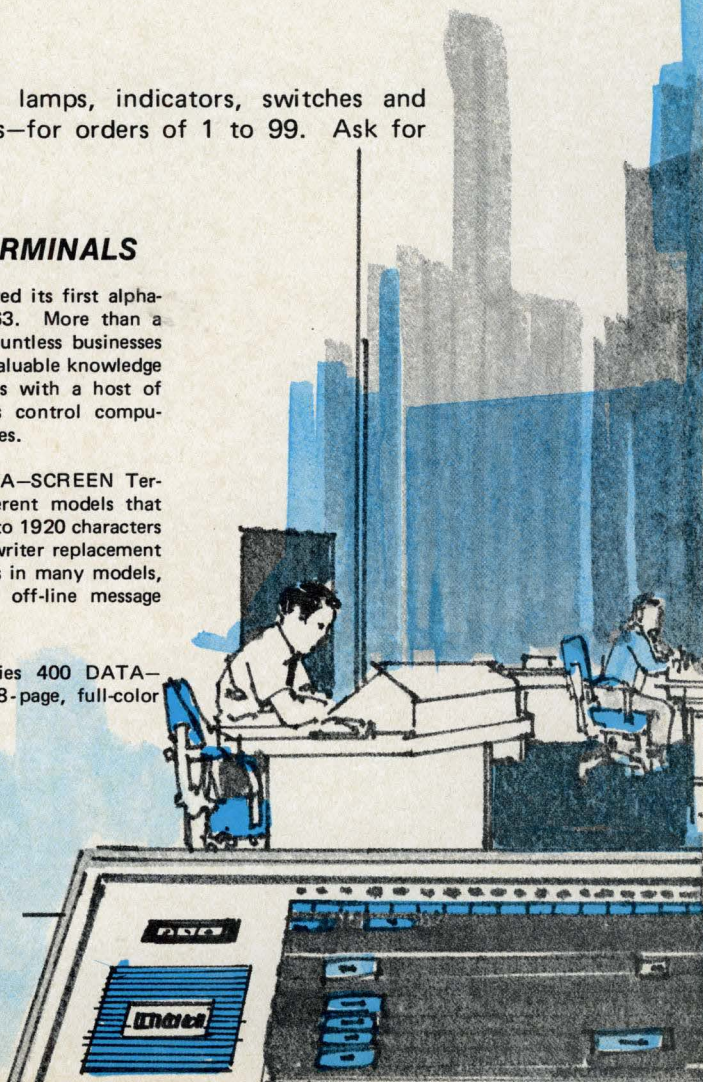
LED INDICATORS, LAMPS, SWITCHES, SWITCH/INDICATORS & PANEL DISPLAYS

TEC—LITE solid state, IC—compatible LED indicating devices feature high reliability and long life, coupled with high brightness and low power consumption. Rugged units are also resistant to shock, vibration and extreme temperature changes. For applicable models, Fresnel rings in lens distribute light for maximum readability.

Items A through E are easily mounted, compact indicators that replace incandescent or neon cartridge lites in low current, solid state applications. All five have the following common features: black or clear anodized aluminum body; red or green LED; and internal resistor that adapts unit for 2 to 28 VDC operation (L-1016 and L-1021) or 5 to 28 VDC (L-1010, L-1015 and L-1020).

A. L-1010 Series. Mounts in .290″ hole on 1/2″ centers in solderless cartridge holder or with Tinnerman clip (P/N 321212). $1.25

B. L-1015 Series. As above, but with flat top or spherical lens in red, green or clear. $1.30

C. L-1016 Series. Same as L-1015 above, but with .025″ square Wire-Wrap® terminals $1.35

D. L-1020 Series. Mounts in 5/16″ hole on 5/8″ centers in holder (P/N 781058-2) or lead wire connectors. $1.65

E. L-1021 Series. Similar to L-1020 above, but with turret lug terminals and flat top or spherical lens in red, green or clear. Mounts in 3/8″ hole on 11/16″ centers. $1.70

F. LS/LL Series. Direct replacements for flange-based T-1¾ incandescent or neon lamps. Internal resistors adapt units for 5 to 28 VDC operation. Red or green LED $1.25

G. L-1022 Series. Indicator with red or green LED and aluminum body in black or clear anodized finish or optional irridite for RFI shielding. Operates from 2 to 28 VDC supply. Flat top or spherical lens in red, green or clear. Mounts in 3/8″ hole on 9/16″ centers. Other finishes available on special order $1.90

H. S-1022 Series. Same features as L-1022 above, plus N.O. or N.C. switch with contact rating of 100 mA @ 115 VAC and life of 1 million operations at rated current. Flat top lens only $3.05

NOTE: All devices with green or yellow LED's are available only with 5-volt rating.
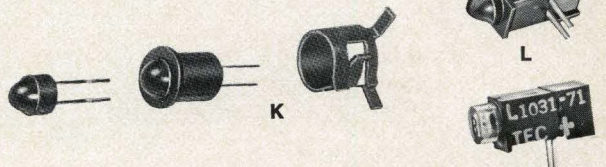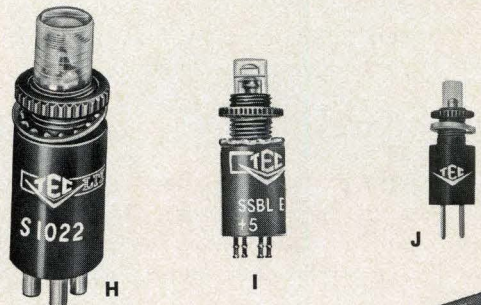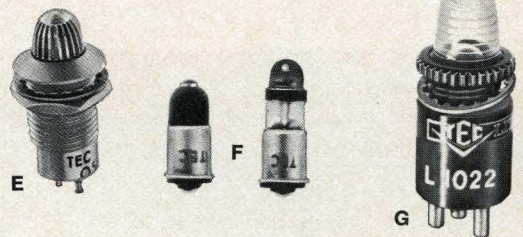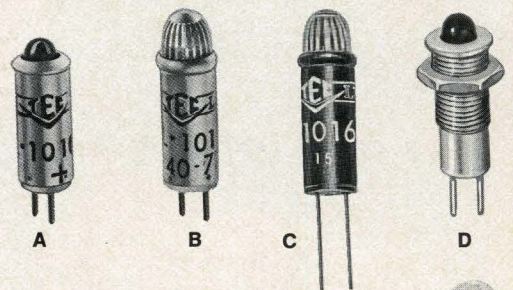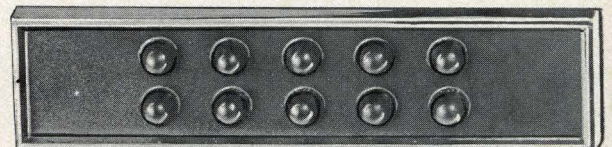
I. SSBL/SSIL Series. Subminiature devices with red, green or yellow LED and red, green, yellow or clear lens. Anodized aluminum body in black or clear. Mounts in 1/4″ hole on 3/8″ centers. SSBL has SPST N.O. DB switch with contact rating of 100 mA @ 115 VAC and life of 1 million operations at rated current; uses 5 VDC supply. SSIL is indicator only and uses 5 to 28 VDC supply.　　SSBL. . . $3.70　　SSIL. . . $2.70

J. L-1040 Series. Ultraminiature indicator with red LED and red or clear lens. Uses 5 to 28 VDC supply. Black or clear anodized aluminum body. Mounts in .170″ hole on .300″ centers $2.65

K. L-1025 Series. Panel-mounted, molded plastic indicator is only 21/64″ long. Red diffusing LED appears black in "off" state. Mounts in 1/4″ hole with clip provided. . . . .$.70

L. L-1030/L-1031 Series. Compact, rugged plastic, PCB-mounted indicators solder directly to board in 1/32″ holes. L-1030 has same LED as L-1025 above. L-1031 has red, green or yellow LED and red, green, yellow or clear lens.　　L-1030. . . $1.25　　L-1031. . . $1.35

M. L-1050/L-1051 Series. Panel display assemblies consisting of LED's mounted in handsome chrome-finished bezels. Mounts easily with two push-on clips and protrudes a maximum of 1/2″ behind panel. Red LED's appear black in "off" state. L-1050 (shown) holds up to 10 LED's; L-1051 holds up to 20 LED's.　　L-1050. . . $6.30　　L-1051. . . $11.20

A. Shown approx. 90% actual size

SSR-73 shown
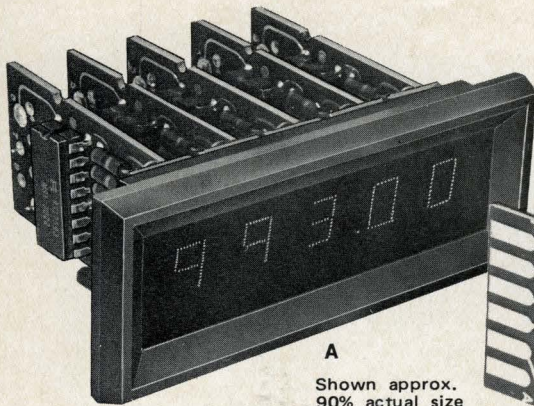
B

C

Shown approx. 70% actual size (2" model)

D

LED DISPLAYS

IC—compatible readouts, controlled by DTL and TTL signal levels, feature bright, sharply defined characters in *eight* different sizes. Infinite life LED and solid state circuitry afford ruggedness and high reliability—even under adverse environmental conditions. All models have solid state, 7-segment decoder/driver and accept 1, 2, 4, 8 BCD inputs. Units include lamp test, nondriven decimal point, and provision for automatic blanking of leading and/or trailing edge zeros in a multidigit assembly.
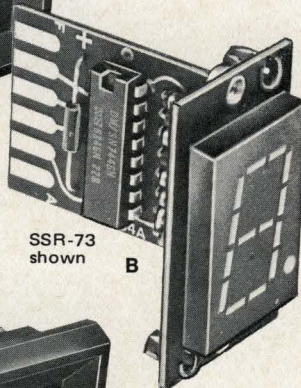
Readouts A, B and D are also available with memory option; C is a hexadecimal display with an A-F character sequence in addition to 0-9 and has a built-in memory. Memory for all units has an IC buffer storage unit with four gated-latch circuits and a common gate driver. One-line clear and set feature reduces the number of input circuits required.

Input logic levels are 0 to 0.8 VDC for logic "0" and 2.5 to 5 VDC for logic "1". Supply is 5 VDC +5% @ 200 to 750 mA maximum, depending on model. Optional anodized aluminum bezel in clear or black finish is available to enhance panel appearance. Bezel includes red or neutral polarizing filter and holds from 1 to 10 readouts. Character heights for each series are listed below.
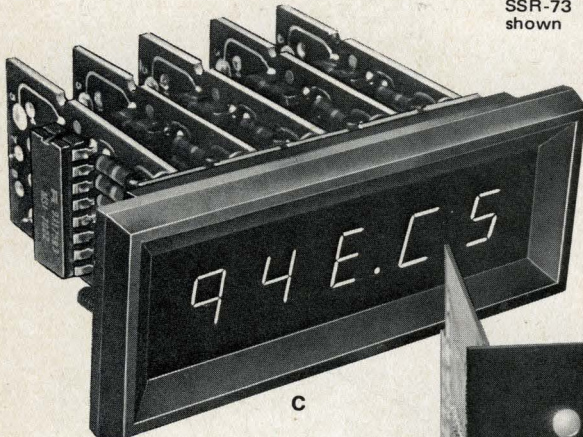
A.	SSR-70.	Height, .270"	$14.65
B.	SSR-59.	Height, .300"	10.60
	SSR-71.	Height, .334"	14.50
	SSR-72.	Height, .600"	17.70
	SSR-73.	Height, .770"	20.20
C.	SSR-58.	Height, .270"	8.35
D.	R-1001.	Height, 1"	25.00
	R-1002.	Height, 2"	27.05
	R-1003.	Height, 3"	37.35

Shown approx. 70% actual size

E

F

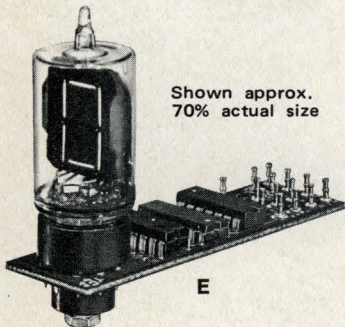Shown approx. 50% actual size

G

Shown approx. 30% actual size

TRANSISTORIZED DISPLAYS AND DECODER/DRIVER

E. TSR-71 Series. Bright, high-contrast segmented readout is clearly read even under sunlight conditions. Wide-angle, single-plane display uses RCA Numitron incandescent tube controlled by IC—compatible logic. MSI/IC logic provides BCD decoder/driver plus counter and buffer memory options. Driven decimal point or nonsignificant zero blanking (or ripple blanking for intensity control) are also offered. Input logic levels are 0 to 0.8 V for logic "0" and 2 to 5 V for logic "1". Display tube has 7-bar matrix .610" high and minimum life of 100,000 hours. Mounts on .90" centers. $16.85

F. TNR-70 Series. UL listed, ultracompact readout with rugged, low-power neon NIXIE® tube offers two logic level options and four logic function options. Numeral display controlled by signals as low as 2 volts. Accepts 1, 2, 4, 8 BCD inputs and is available with memory and/or decade counter. Characters are .610" high. Mounts with just two screws on 1" centers. $25.75

G. TPD Series. Display driver with solid state lamp control module designed for IEE Series 10 and 120H high-brightness projection readouts. Controls 6, 12 or 28 VDC incandescent lamps from logic levels as low as 1 mA. Other lamp supply voltages can be accommodated on special order. Also available as MTPD Series—designed to operate from low-level outputs of DTL and TTL IC modules. $41.25
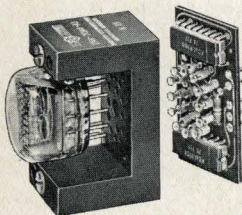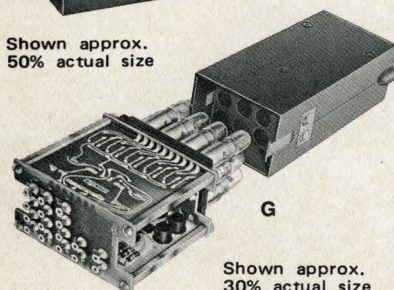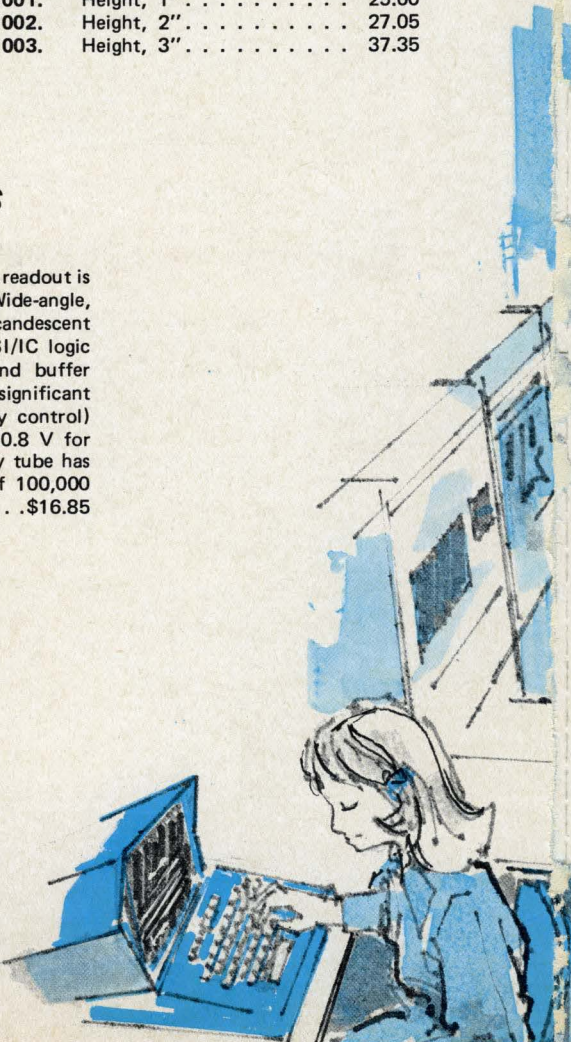
...LITE POWER SUPPLY ... LAMPS & DISPLAYS

A. FML Series. Miniature front-mounting indicator with permanently wired incandescent or neon lamp is ideal where rear panel access is limited. Flexible nylon collet type body slides into panel mounting hole from the front and is locked firmly in place by slip-in lens. Flat top or spherical lens in transparent red, amber, and white; clear; and translucent white. Mounts in 3/8" hole on 1/2" centers. . . . .$.80

B. SBL/SBS/SIL Series. Space-saving subminiature devices. SBL is switch/indicator with permanently wired incandescent lamp and SPST-N.O.-DB momentary switch. SBS is switch only with N.O. momentary contact. Switch contact rating for both is 100 mA @ 115 VAC, with life of 1 million operations at rated current. SIL is indicator only. All mount in 1/4" hole on 3/8" centers.   SBL. . .$3.75 SBS. . .$1.25 SIL. . .$2.25

C. S3L Series. Tri-lite indicator offers three information display capabilities in one unit—three permanently wired incandescent lamps with red, amber and green filters are contained in this subminiature device for use in aircraft panels, EDP equipment, process control consoles, and instruments. Available with clear lens only. Mounts in 1/4" hole on 3/8" centers. $6.50

D. L-1003 Series. Low-priced tri-lite indicator with same features as S3L. Clear flat top or spherical lens. Mounts in .290" hole on 1/2" centers. $4.60

E. S-1040 Series. Ultraminiature switch for use with computer consoles and computer maintenance, test equipment, etc. Momentary N.O., N.C., or N.O. & N.C. contact with rating of 100 mA @ 28 VAC and life of 1 million operations at rated current. Lens available in white, red, orange, blue, yellow, green and black. Mounts in .170" hole on .300" centers. $1.70

F. MCL Series. Exceptionally low-priced miniature indicator with permanently wired incandescent or neon lamp and round or square lens. Economical, single-unit plastic lens and body in transparent red, amber and white; translucent white; and clear. Mounts in 5/16" hole on 1/2" centers. . . . . $.20

G. RCL Series. Low-cost cartridge lite with replaceable incandescent or neon lamp and choice of three lens styles. Mounts in solderless cartridge holders or Tinnerman clip listed below or lead wire connectors. . . . .$.85

H. SCL Series. Subminiature cartridge lite with permanently wired incandescent lamp. One-piece, molded polycarbonate body and square or round lens in translucent white, red, green or yellow. Plugs into STCL Series or holder (TEC P/N 981364) which solders directly to PCB. $1.45

I. SDL Series. Super-small indicator with permanently wired incandescent lamp mounts on 1/4" centers. Ideal for small information display panels and displays requiring many indications. Available with connector hookup (as shown) or 6" wire leads $2.10

J. S-1001 Series. Compact, N.O. maintained selector switch for CRT terminals, computers, stereo amplifiers, tachometers—virtually any application requiring a 4-position switch mounted on a printed circuit board. Detented for positive stop and retention, with life exceeding 25,000 operations. Current rating of 50 mA @ 30 VDC. Plastic body with molded standoffs. . . . .$.75

RCLH Series Cartridge Holders. These holders make mounting and hookup faster and easier for MCL and RCL Series above and L-1010, L-1015 and L-1020 Series on LED page. The RCLH-1 (K) and RCLH-2 (L) are for mounting lites to panels and attach from the rear. Part number 781402 (M) is a push-on connector for soldering to printed circuit boards, and part numbers 781056 (N), 781058-1 (O) and 781058-2 (P) are connectors for panel-mounted lites . . . . $.75

Q. Tinnerman Clip. For mounting cartridge lites to panels. . . . . $.03

Shown approx. 30% actual size

R. LPS Series. Light, compact and inexpensive, this unit provides a high quality, highly reliable power source for transistorized and conventional neon indicators and readouts—up to 400! A solid state, unregulated choke input supply, the LPS is designed to provide supply and bias voltages and operates from a nominal line input of 115 VAC, 60 to 400 Hz. Device is 3.50" high, 3.62" wide and 5.75" deep and can be placed in any convenient location. Requires no adjustment once installed. . . (10-49 qty.) $57.80
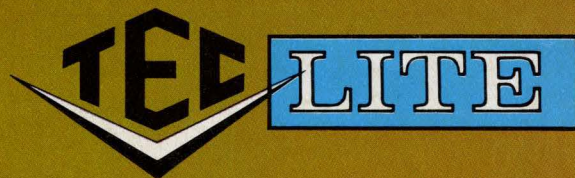
Lamps and Displays. For your convenience, **TEC** makes available a variety of incandescent, neon and LED lamps—plus LED displays—at economical prices. Incandescents range in price from $.33 to $.83; neons are $.10; LED's, $.40 to $1.60; and LED displays, $6.65 to $16.85. Handling charge of $5 for orders under $25. Send for "QUICK DRAW" Catalog No. 955 for complete listing.
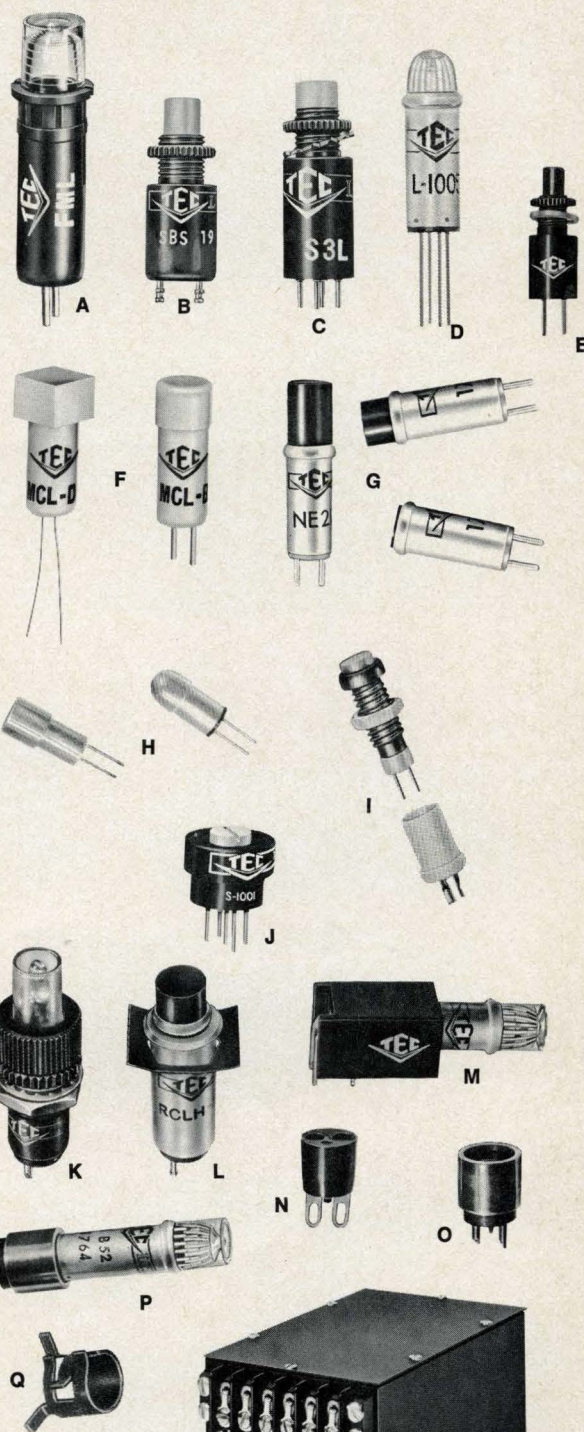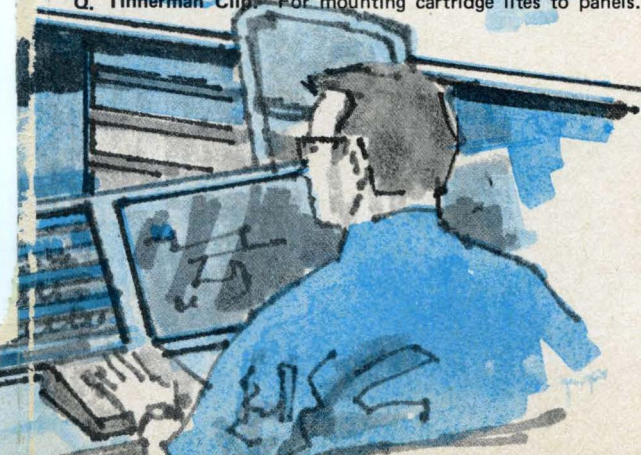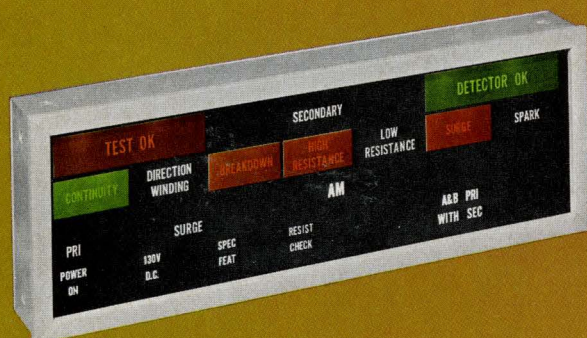
TEC•LITE DISPLAY SYSTEMS

DATA•PANEL® DISPLAY SYSTEMS

These integrated displays cost less per point than individual indicators and cut installation work by 50% or more . . . arrive ready to install and operate. Messages and symbols are brilliantly and colorfully conveyed in a single viewing plane, and optimum use of IC's lowers cost and increases reliability. Maintenance is greatly simplified also, because all logic is placed in one assembly.

A **DATA•PANEL** Display System easily interfaces with *your* system, particularly if a computer is involved, and may be installed in consoles, racks or walls. Permanently visible legends, symbols, grid lines and graphic mimics can be provided for optimum user application; and, if desired, only the vital "on" or illuminated messages can be seen. Size limitation is 3 feet square.

Unit functions as a total input/output system, and is modular-designed to grow with your needs. Just a few applications are: data processing, communications, materials handling and dispatch.

A complete display system can be yours for less than $20.

DATA-LINE DISPLAY MODULES

Here is a versatile system that combines switches, indicators and message displays in an in-line modular package that complements our basic **DATA•PANEL** Display System design. Gives designers a new, completely modular information display device for computers, industrial control and guidance systems, peripheral equipment, etc.

Modular in-line design permits intermixing of message display, incandescent and neon functions. Function options may be arranged in any sequence on .7" centers in an extruded aluminum frame that is available in lengths to 4 feet. The frame forms the front bezel and provides panel mounting hardware. All lamps are replaceable from either the front or rear of panel. Modules can also be gang-mounted, as shown in the illustration at left.

A typical **DATA—LINE** Display Module with five switch/indicators, lamps and engraved legends is only $15.75 in quantities of 50.
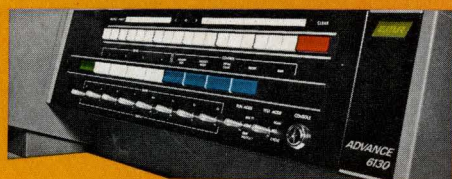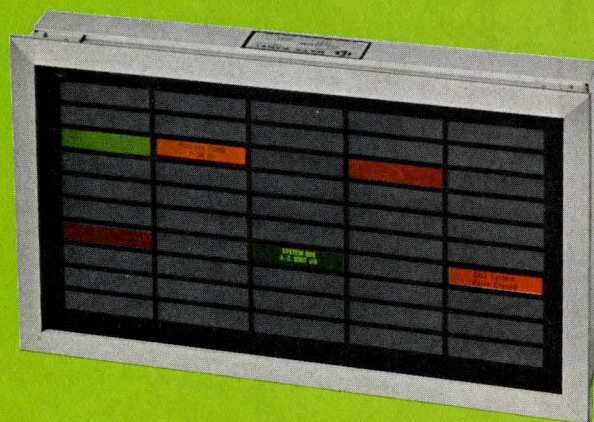
DATA-MONITOR™ ANNUNCIATOR SYSTEMS

A natural extension of our **DATA•PANEL** Display Systems, these systems provide high-density alarm displays at 1/3 the cost and 1/9 the space of conventional annunciators. Solid state memory logic insures indication of passing alarms. Models range from simple visual indications of off-normal points to audible flashing alarm. All models include lamp test feature at no extra cost.

Compact device is only 6-1/2" high by 11" wide, including handsome anodized aluminum bezel that accommodates up to 10 printed circuit cards. Standardized cards contain 10 lamps (for redundancy) and logic control; supervised model has 20 lamps per card. For those units with audible flashing alarm, operator response to the problem turns off audible alarm; however, indicator remains on until off-normal condition is corrected.

A **DATA—MONITOR** Annunciator System with 5-point card and visual indication only is priced as low as $145.