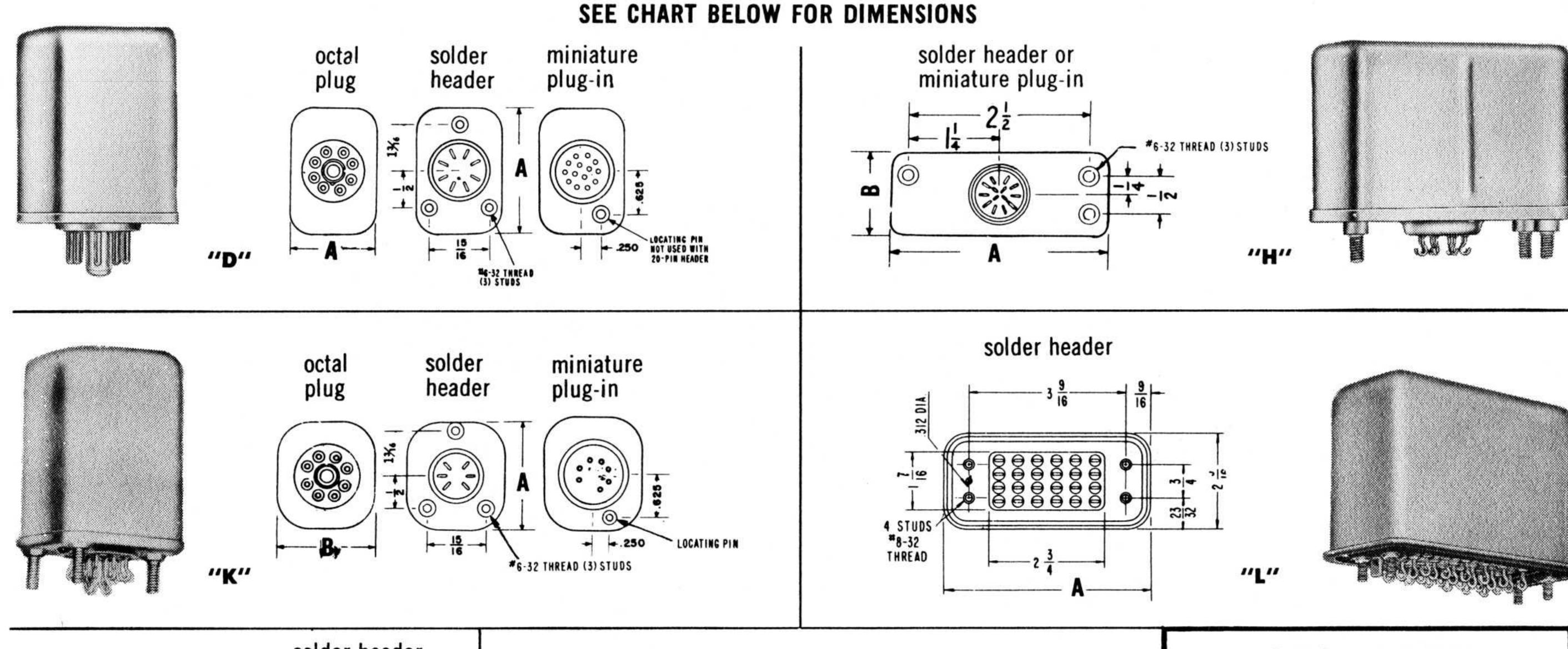
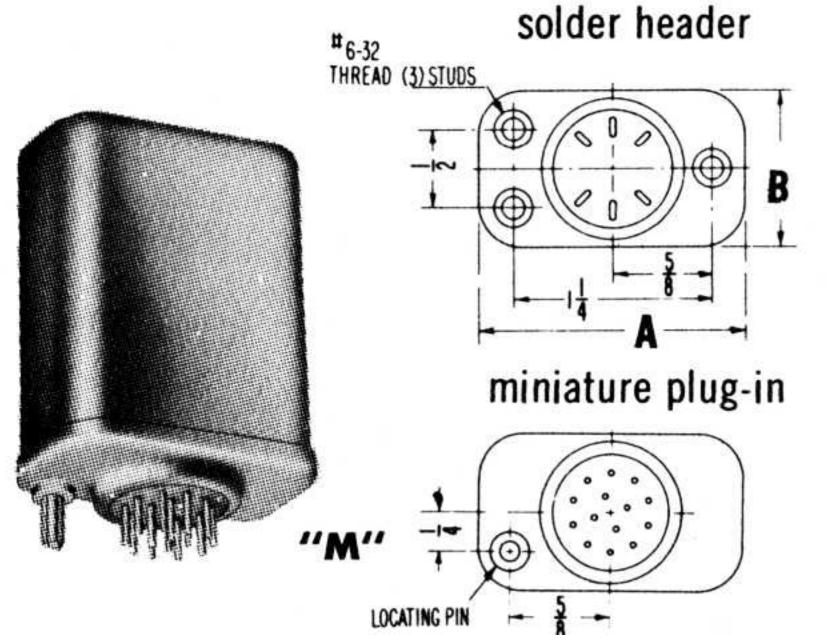
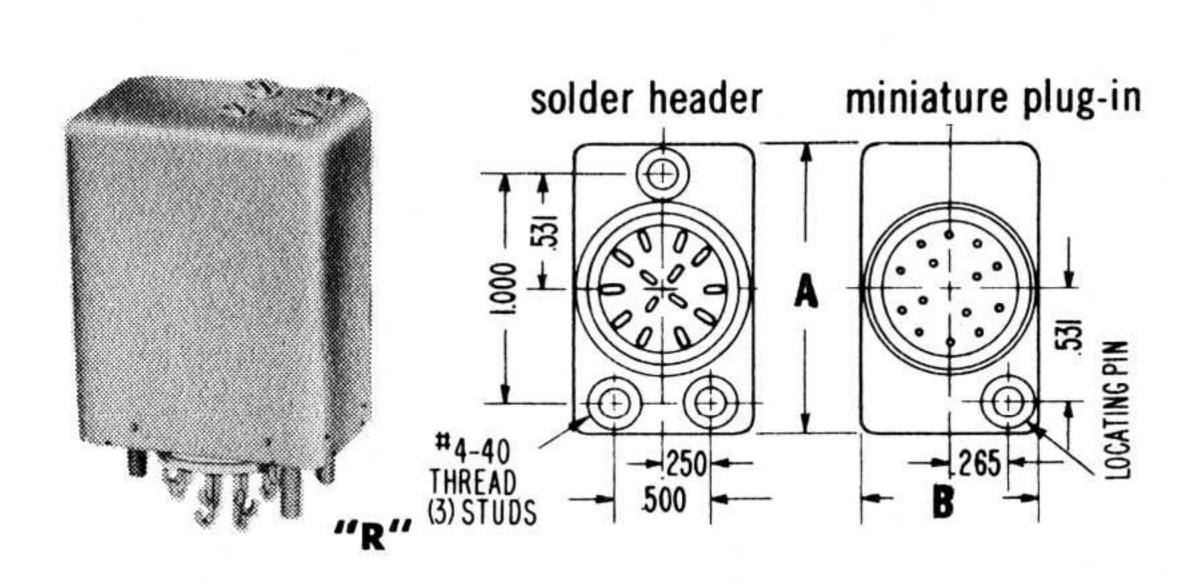
SEALED ENCLOSURES SFF CHART RELOW FOR DIMENSION









MH ENCLOSURE CHART

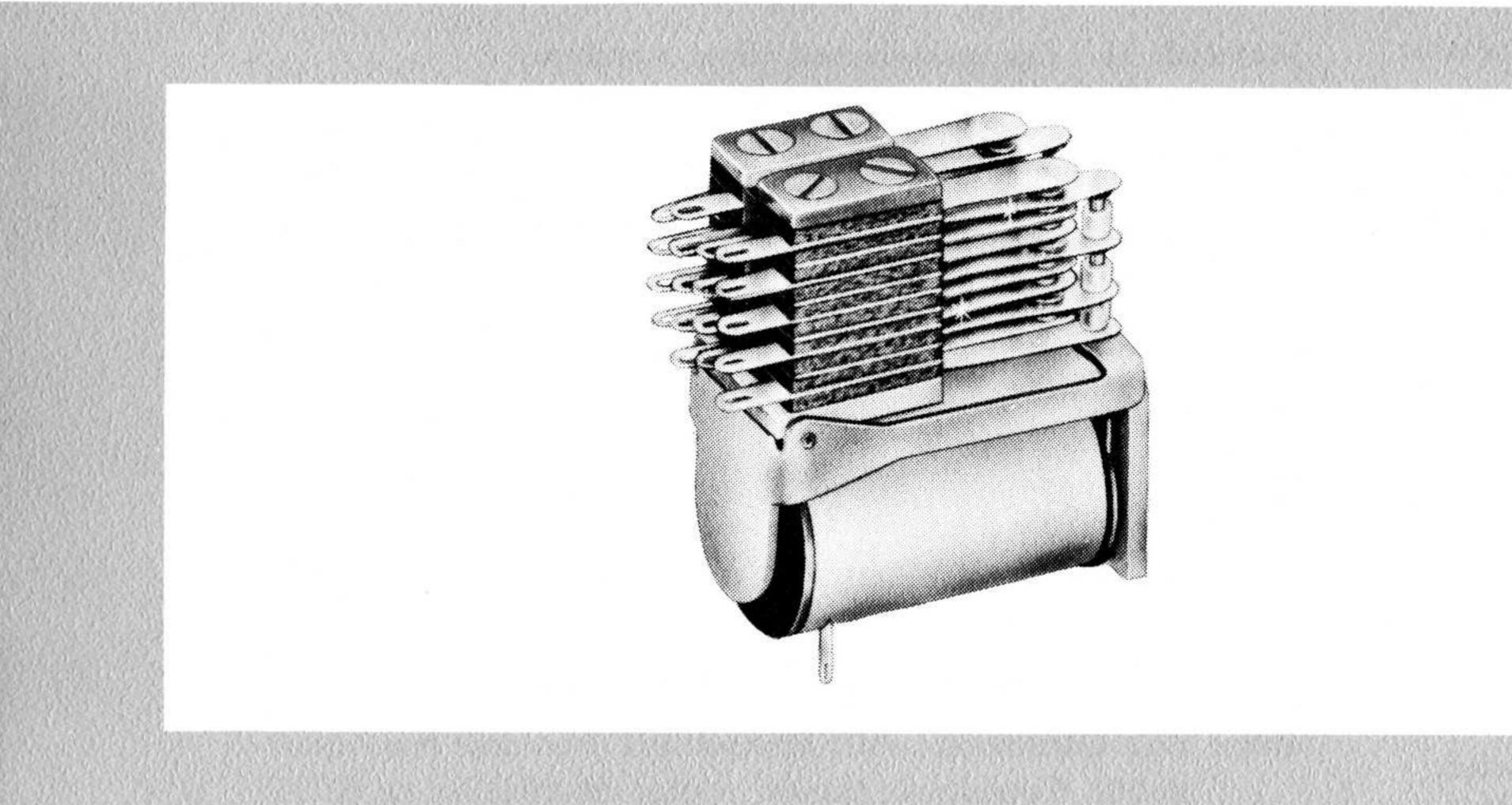
Type Enclosure	Contact Arrangements (maximum)			Туре	Length	Width	Seated Height (maximum)			Mounting
	Standard Enclosure	Long Enclosure	Short Enclosure	Header	A (maxi- mum)	B (maxi-	Standard Enclosure	Long Enclosure	Short Enclosure	(See diagrams for dimensions)
"D"	6 Form C or 8 Form A or B	6 Form C or 8 Form A or B w/internal rectifier	6 Form C or 8 Form A or B	Solder Header with 4 to 20-pins. ① ②	1-15/16"	1-11/32"	2-9/16"	2-23/32"	2-1/16"	Three 6-32 threaded studs 3/8" long.
				Octal Type Plug-In with 8, 9 or 11-pins.	1-15/16"	1-11/32"	2-21/32"	2-25/32"	2-7/32"	Plugs into standard octal type socket.
				Miniature Plug-In with 14 or 20-pins.	1-15/16"	1-11/32"	2-11/16"	2-13/16"	21/4"	One 1/8" dia. locating pin 13/32" long.
"H"	Two MH Relays (6 Form C total)			Solder Header with 8 to 20-pins. ① ②	1-3/16"	3-1/16"	2-5/32"			Three 6-32 threaded studs 5/16 long.
"K"	4 Form C	4 Form C w/internal rectifier		Solder Header with 4 to 14-pins. ①	15/8″ ⑥	1-13/32" ⑥	2-1/16"	2-9/16"		Three 6-32 threaded studs 3/8" long.
				Octal Type Plug-In with 8, 9 or 11 pins.	15/8″ ⑥	1-13/32" ⑥	2-1/16"	2-11/16"		Plugs into standard octal type socket.
				Miniature Plug-In 7, 9 or 14-pins.	15/8″ ⑥	1-13/32" ⑥	2-3/16"	23/4"		One ½" dia. locat- gin pin 13/32" long.
"L"	6 MH Relays (4 Form C each relay)			Solder Header with 24 individual pins. 4 5	4-11/16"	2-3/16"	3-5/32"			Four 8-32 threaded studs 5/16" long.
"M"	6 Form A	6 Form A or	4 Form C	Solder Header with 4 to 14-pins. ①	1-11/16"	1-1/32"	2-7/32"	2-13/32"	1-15/16"	Three 6-32 threaded studs 7/16" long.
	or 4 Form C	4 Form C w/internal rectifier		Miniature Plug-In 7, 9 or 14-pins.	1-11/16"	1-1/32"	2-11/32"	21/2"	2-1/16"	One ½" dia. locating pin 13/32" long.
"P" Dust Cover	2 Form C			Octal Type Plug-In 8 or 11-pins.	1-13/32"	1-13/32"	2-1/16"			Plugs into standard octal type socket.
"R"	4 Form C			Solder Header with 4 to 14-pins. ③	1-27/64"	57/64"	1-25/32"			Three 4-40 threaded studs 5/16" long.
				Miniature Plug-In 7, 9 or 14-pins.	1-27/64"	57/64"	1-29/32"			One ½" dia. locating pin 13/32" long.

NOTES:

- 1. Solder headers with 4 to 14-pins require a 15/16" dia. clearance hole.
- 2. Solder headers with 16 to 20-pins require a 1-1/32" dia. clearance hole.
- 3. Solder headers for the "R" can with 4 to 14-pins require a 13/16" dia. clearance hole.
- 4. Solder headers with 24 individual pins require a 1-7/16" x $2\frac{3}{4}$ " clearance hole. A clearance hole of 5/16" dia. and $\frac{3}{8}$ " deep is required when an evacuation tube is used.
- 5. Other headers available with up to 40 solder terminals.
- 6. For AC MH relays with a built-in rectifier. "A" dim. 121/32, "B" dim. 13%4.

POTTER & BRUMFIELD'S RELAY SERIES





miniature telephone relay

ENGINEERING DATA

MH relays are miniature telephone types flexible enough to fit most miniature programs requiring low operating powers and a wide range of switching capabilities. Primarily a DC relay, the MH operates on voltages up to 110 volts DC. If AC operation is required, the relay can be furnished for intermittent duty in a two pole version. This version is available for operating voltages up to 240 volts 60 Hz. For continuous AC duty a sealed MH is equipped with an internal rectifier for operating frequencies up to 400 Hz. Coils can be wound up to resistances to to 22,000 ohms.

The MH can be furnished to switch loads from dry circuits to 5 amps at 120 volts AC resistive. Gold alloy contacts are used for dry circuits and silver contacts for standard rated load applications. For applications involving low contact pressures,

palladium contacts are used. Bifurcated contact arms are also available for these applications.

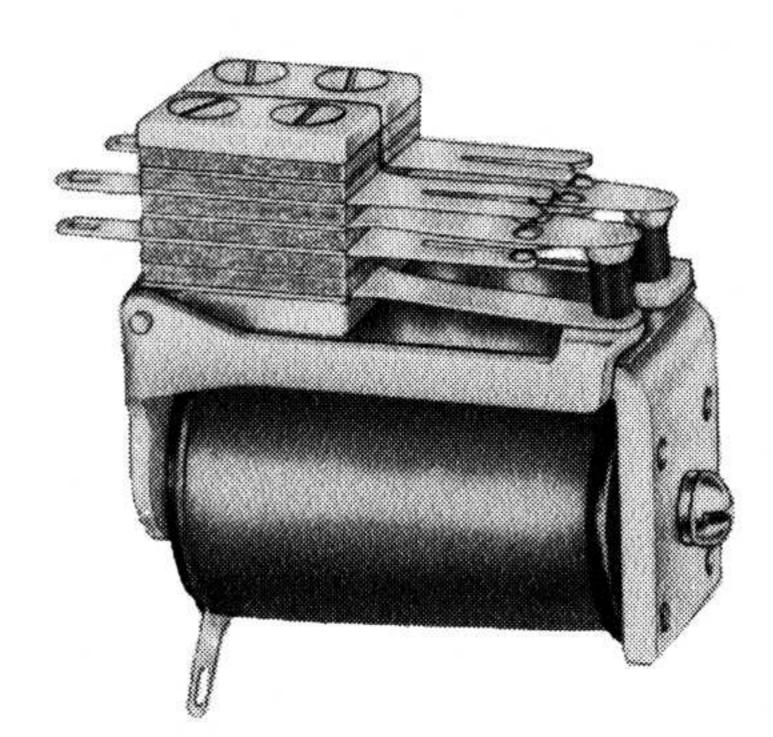
This series can be equipped for severe environmental conditions. They can be insulated for ambient temperature ranges from -65° C. to $+125^{\circ}$ C. Special versions can be built to withstand shocks of 30g and vibrations of 10g from 55 to 500 Hz.

Switching arrangements up to six pole double throw can be furnished.

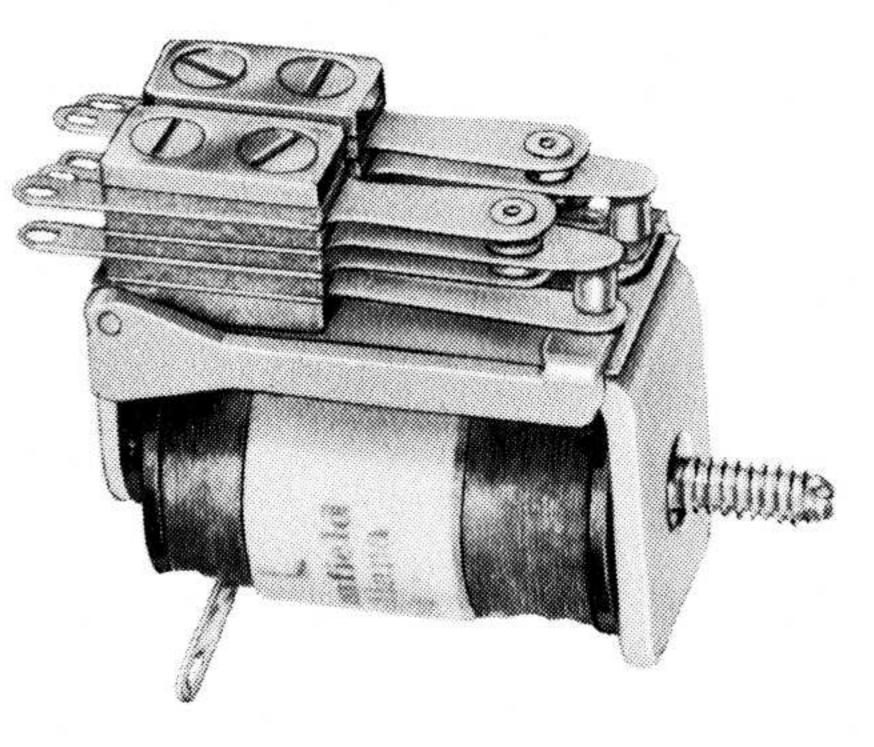
Open relays mount as shown below. Pierced solder lug terminals are standard. Special lugs for printed circuits or taper tabs (AMP No. 78) are available.

Sealed relays are available in seven different enclosures as shown on page 4.

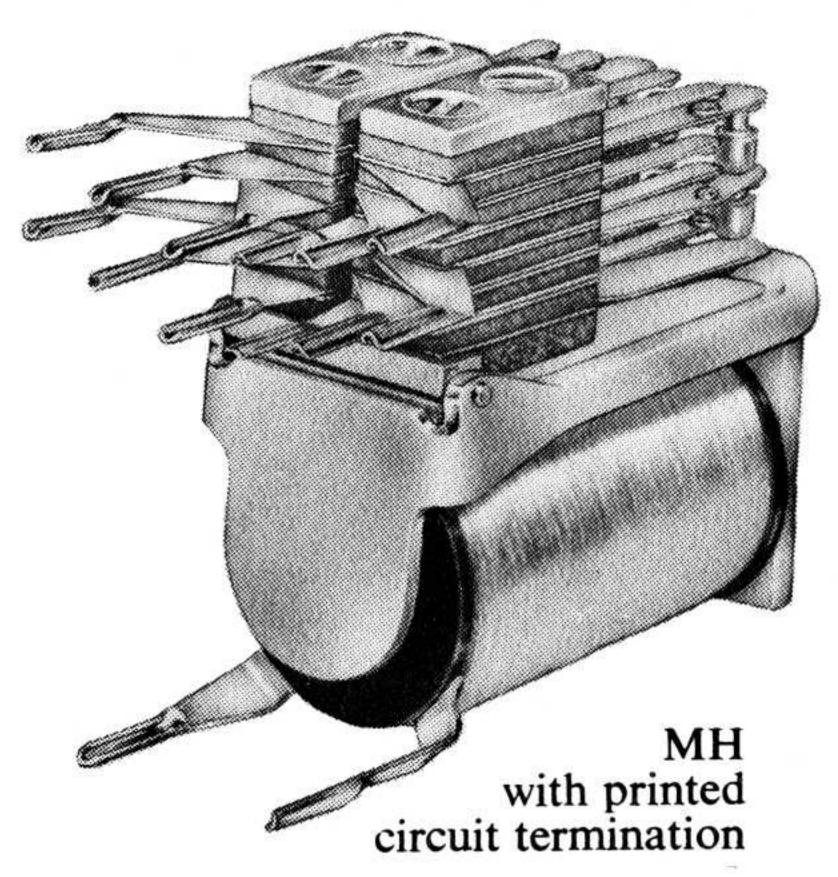
MOUNTINGS



MH-2 Form C Bifurcated Contact Arms



MH with single stud mounting





FORM NO. 13C109 1-67

PRINTED IN U.S.A.

ENGINEERING DATA for MH Relay

GENERAL:

Description: Miniature Telephone Relay.

Insulating Material: Laminated phenolic. Other materials available on special order.

Insulating Resistance: 100 megohms minimum.

Expected Life: 10 million mechanical operations minimum.

100,000 operations minimum at rated load.

@ 25°C. (open relay).

Breakdown Voltage: 500 volts rms between all elements. Higher voltages available on special order.

Shock: 30g on special order.

Vibration: .065" max. excursion from 10 to 55 Hz.

10g from 55 to 500 Hz on special order.

Ambient Temperature: -45° C. to $+85^{\circ}$ C. (-65° C. to $+125^{\circ}$ C. on special order).

Weight: 2½ ozs. maximum (open relays).

Pick Up: Approximately 75% of nominal voltage.

Time Values:

Operate: Approximately 15 milliseconds at nominal voltage. Release: Approximately 10 milliseconds at nominal voltage.

Terminals: Pierced solder lugs standard.

Coil: Two 18 AWG wires.

Contacts: Two 20 AWG wires.

Special lugs for printed circuits, or taper tab (AMP No. 78)

are available.

Enclosures: See page 4.

TOR DC. WAX. 125 WAX. 1.25 WAX. 1.53 ± .03 RECUIRES 7/30 DIA. CLEARANCE HOLE 1.63 ± .03 RELAYS RELAYS

CONTACTS:

Arrangements: Up to nine springs per stack.

Material: 1/8" dia. gold-flashed silver standard.

Palladium or gold alloy also available.

Rating: Dry circuit to 5 amps at 120V AC resistive.

COILS:

Voltage: AC: Up to 240 volts 60 Hz (intermittent duty only).

DC: Up to 110 volts (see duty below).

Resistance: 22,000 ohms maximum.

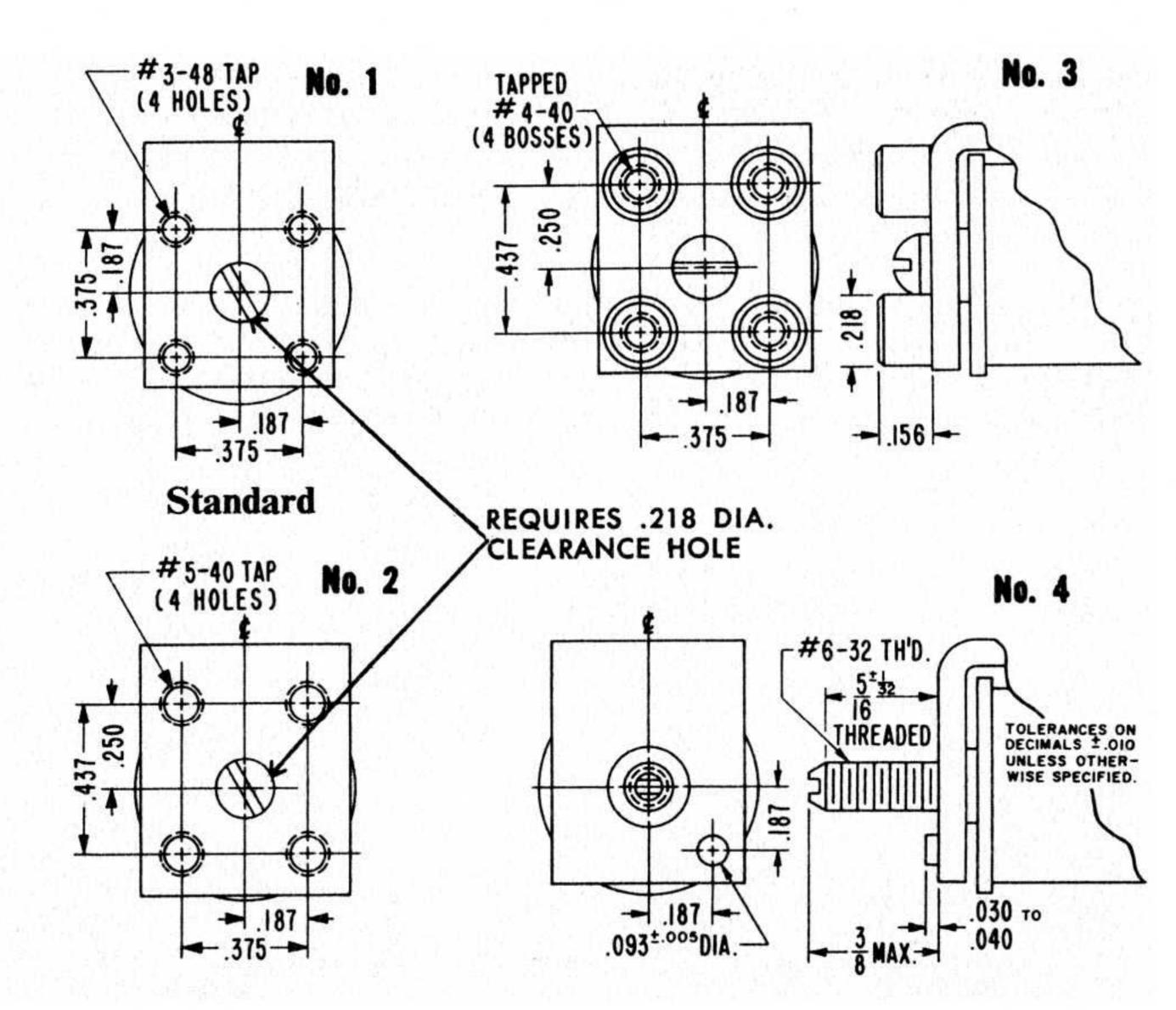
Power: 100 milliwatts per movable minimum at specified pickup, 4 watts at +25°C. maximum. (200 milliwatts per movable minimum at specified pick-up to meet shock/ vibration specifications.)

Current: 2.5 milliamperes to 10 amperes DC.

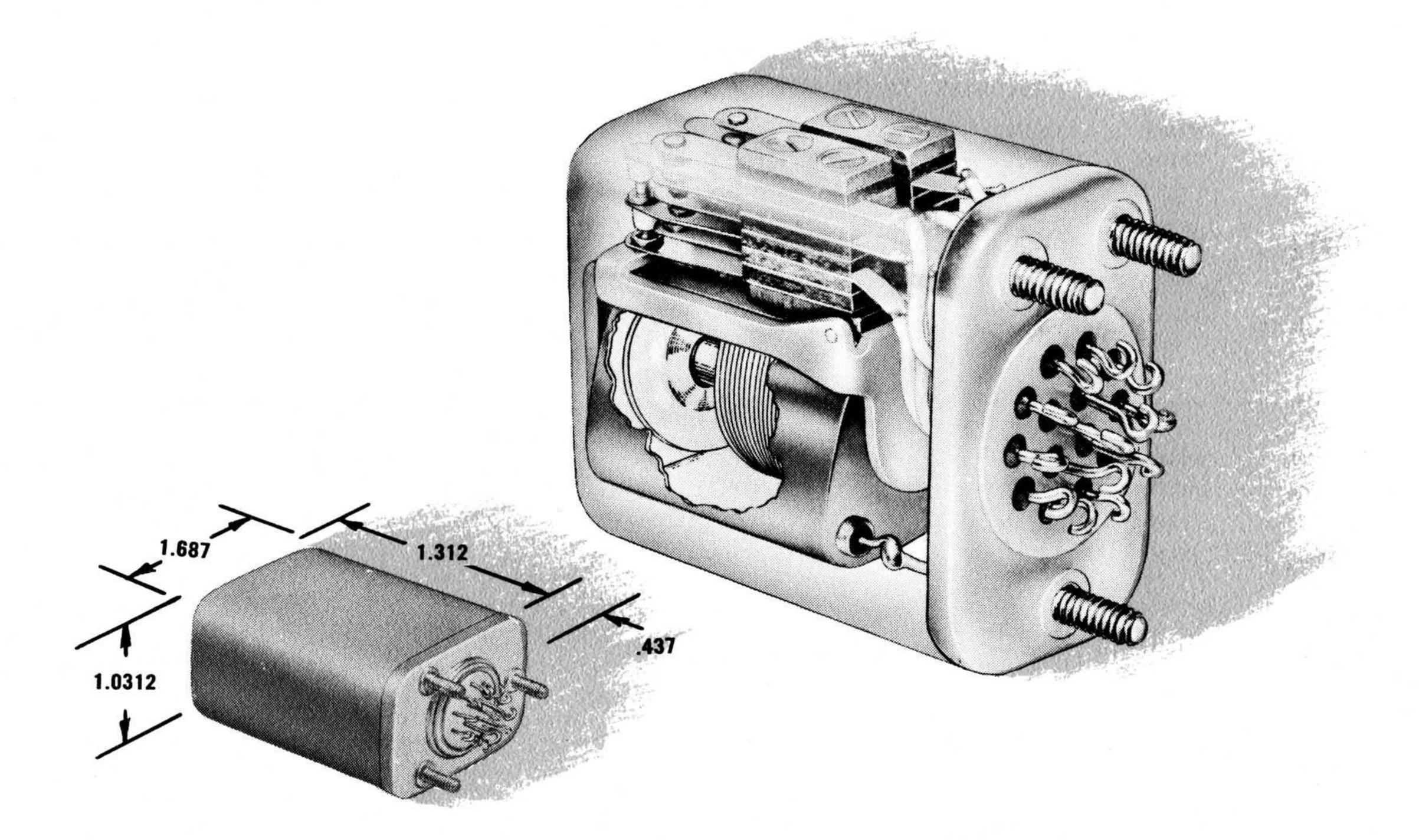
Duty: DC: Continuous. AC: Intermittent (two pole relay maximum). Continuous (sealed version rectified up to 6PDT) for up to 400 Hz.

Treatment: Coils for open relays are centrifugally impregnated with high quality electrical varnish.

MOUNTINGS



Other mountings available on special order.



This is a high temperature (+125°C.) relay that features a double hermetic seal. The inner seal completely envelopes the coil forming a separate chamber to eliminate coil outgassing from contaminating the contact area. This insures more reliable operation by significantly reducing contact failures caused by organic films that increase contact resistance and lower insulation resistance.

The "Seal-Temp" features a fabricated bobbin. The core is wrapped with teflon tape and brass plates are soldered to each end. Teflon washers insulate the end plates and class 180°C. magnet wire is used to form the coil. The coil is wrapped in Teflon tape and hermetically sealed in a special brass sleeve. The fabricated bobbin provides additional space resulting in more ampere turns for the same coil resistance.

"SEAL-TEMP" ENGINEERING DATA

GENERAL:

Insulating Material: Ceramic and mycalex.

Insulation Resistance: 10,000 megohms minimum.

Breakdown Voltage: 500 volts rms between coil and case, 1,000 volts rms contacts to case.

Shock: 30g available on special order.

Vibration: 10g, 55 to 500 Hz, .065" maximum excursion 5 to 55

Hz available on special order.

Ambient Temperature: -65° to +125°C.

Weight: 5 ozs. maximum.

Pick-Up: Approximately 75% of nominal voltage.

Time Values:

Operate: Approximately 15 milliseconds at nominal voltage.

Release: Approximately 10 milliseconds at nominal voltage.

Terminals: Miniature plug-in or hook end solder terminals.

Enclosure: Short "M" can.

CONTACTS:

Arrangements: 4 Form C maximum.

Material: 1/8" dia. silver (others available).

Load: 5 amps at 120 volts AC resistive.

COILS:

Voltage: Up to 110 volts DC (DC only).

Resistance: 22,000 ohms maximum.

Power: 100 milliwatts per movable arm minimum; 4 watts maximum at +25°C. (200 milliwatts minimum to meet shock or vibra-

tion specifications).

Duty: Continuous. Insulation: Teflon.

Coil Chamber: Hermetically sealed.

-Brass can

2—Teflon insulated magnet wire coil

3—Magnet core

4—Teflon tape

5—Teflon washer

6—Brass end plates

