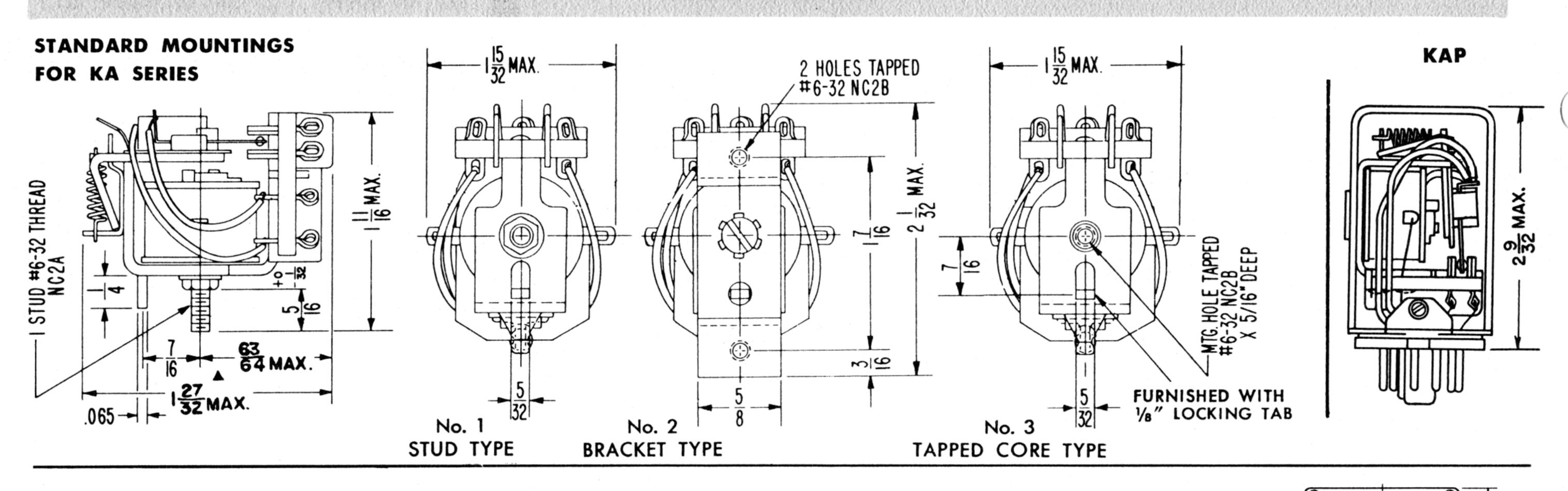
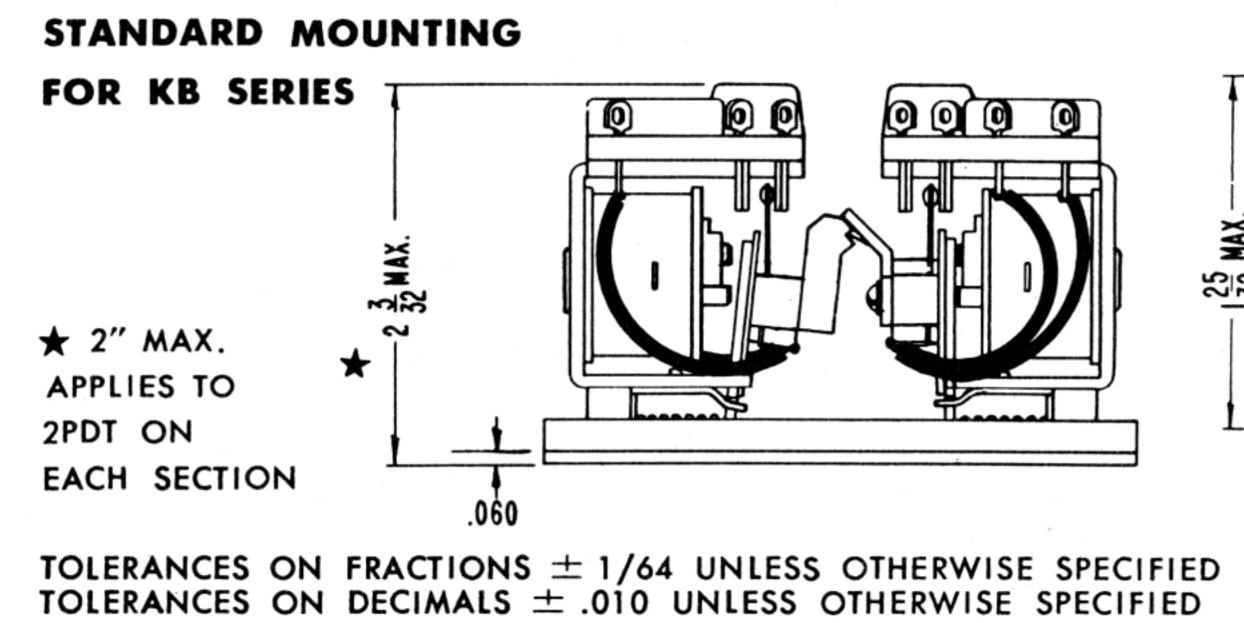
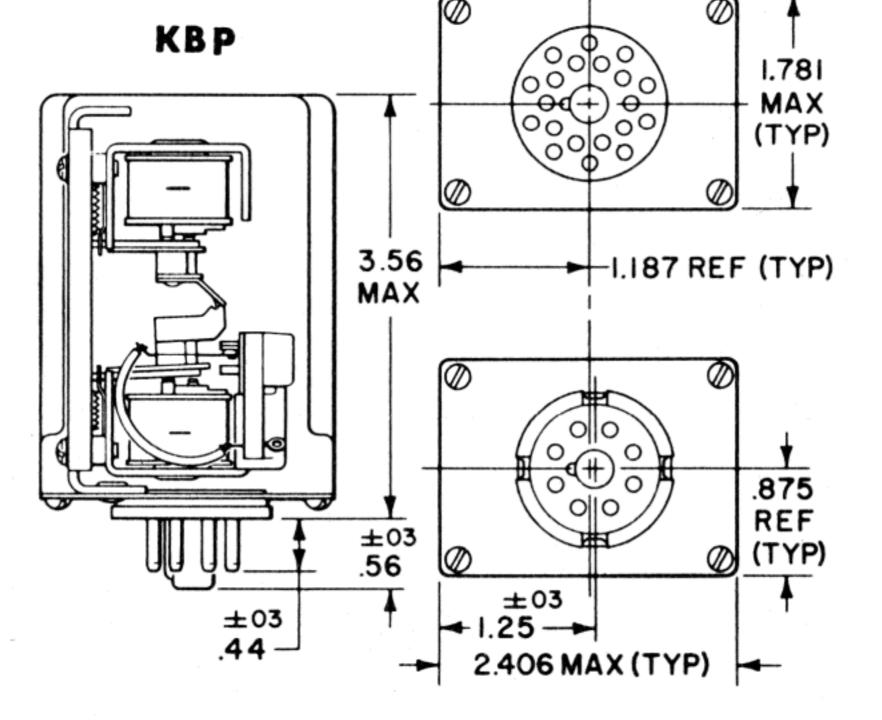
MOUNTINGS

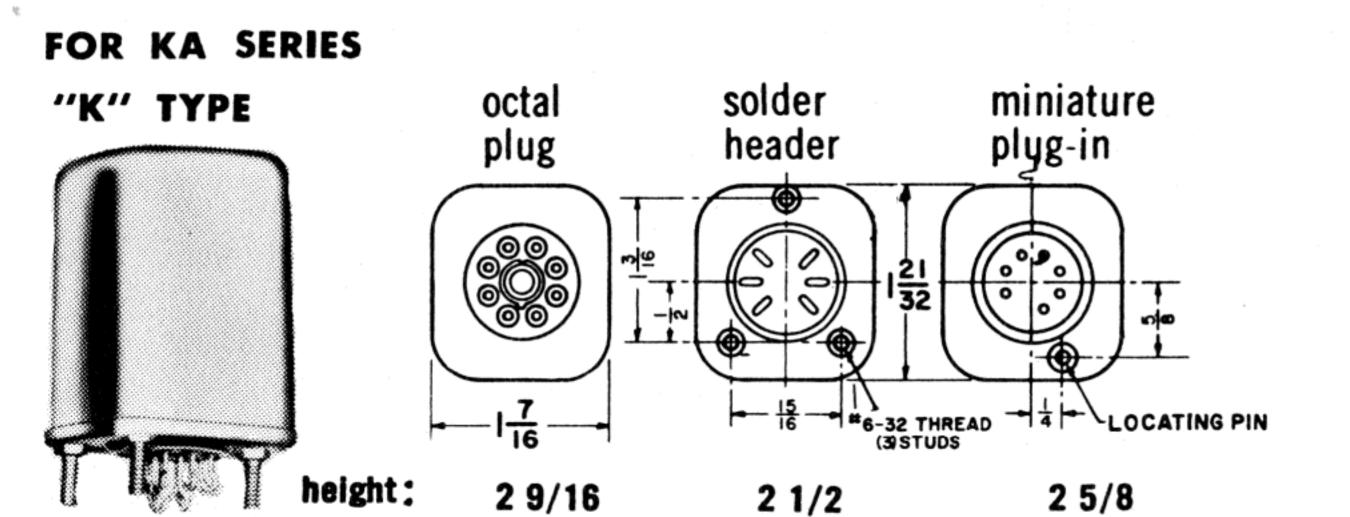




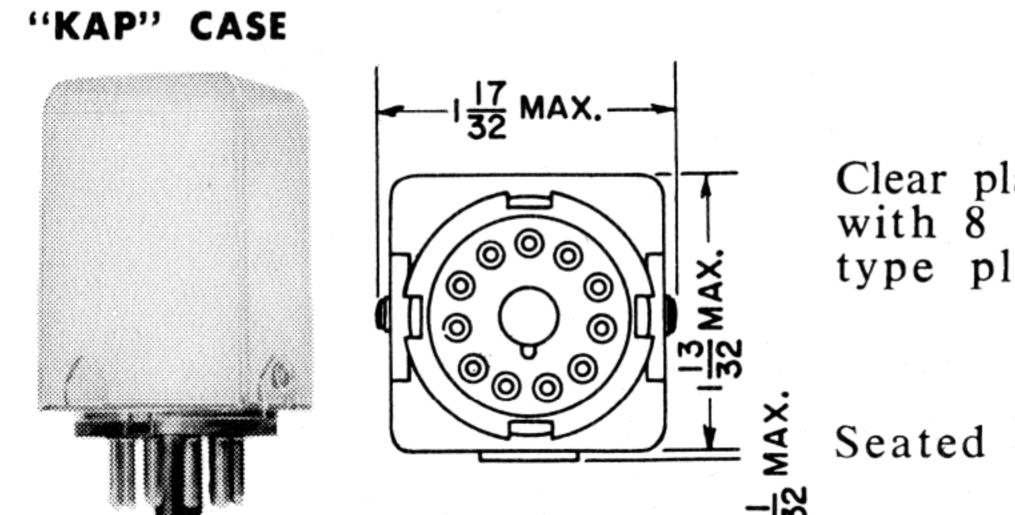
29 - 15 MAX. (2 MTG. HOLES)



ENCLOSURES



(can be furnished with or without post.)



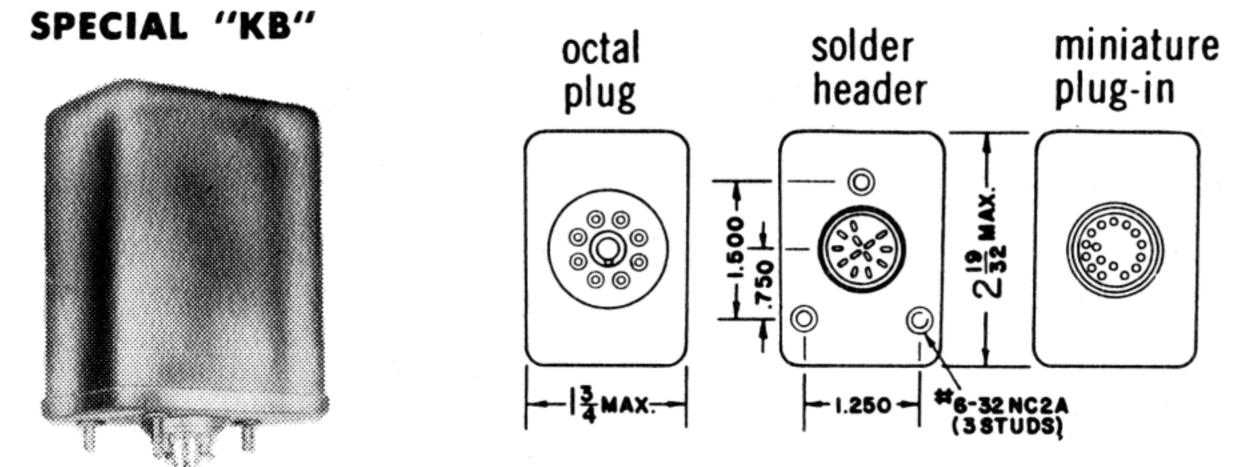
Clear plastic dust covers with 8 or 10-pin octal type plugs.

Seated height: 2\%2'

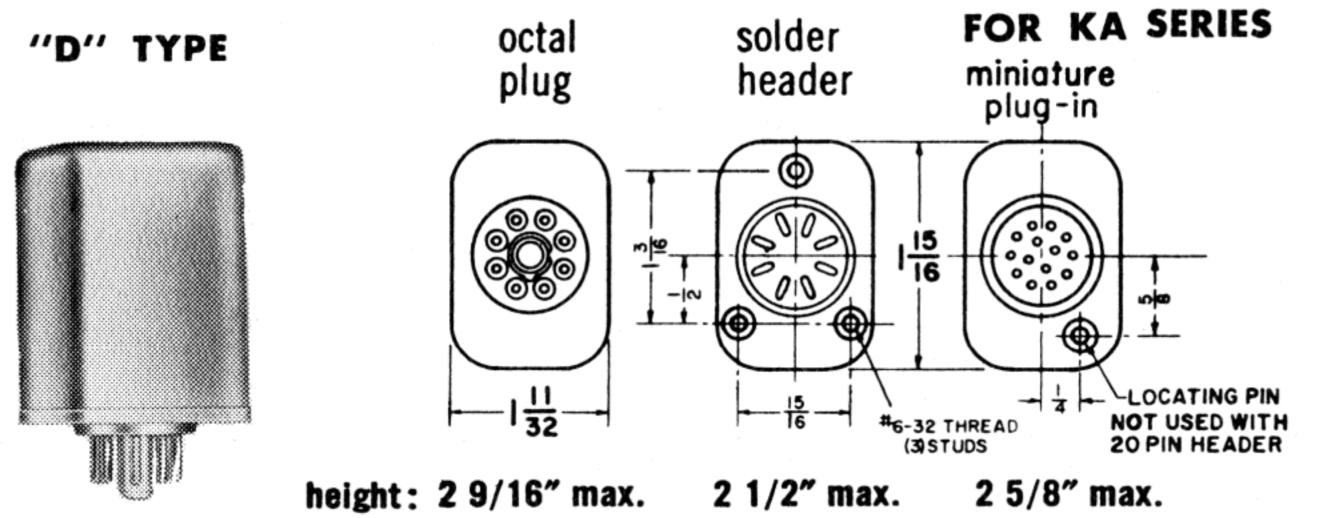
| | TERMINALS | | | | | | | | | | , | | | | | |
|---------------|----------------------|----------------|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| En- | Type Header | Number of Pins | | | | | | | | | | | | | | |
| closure | Type Header | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 20 | 22 |
| | Octal Plug-in | | | T | | • | • | | • | | | | | | | |
| Types " "D" & | Solder ① | • | • | • | • | • | • | • | • | • | • | • | | | | |
| "K" | Miniature Plug-in | | | | • | | • | | | | | • | | | | |
| | Octal Plug-in | | | | | • | • | | • | | | | | | | |
| Special | Solder ① ② | | | • | • | • | • | • | • | • | • | • | • | • | • | • |
| "KB" | Miniature Plug-in | | | | • | | • | | | | | • | | • | | |

1 4 to 14 pin solder headers require 15/16" dia. clearance hole.
 2 14 to 22 pin headers require 1-1/16" dia. clearance hole.



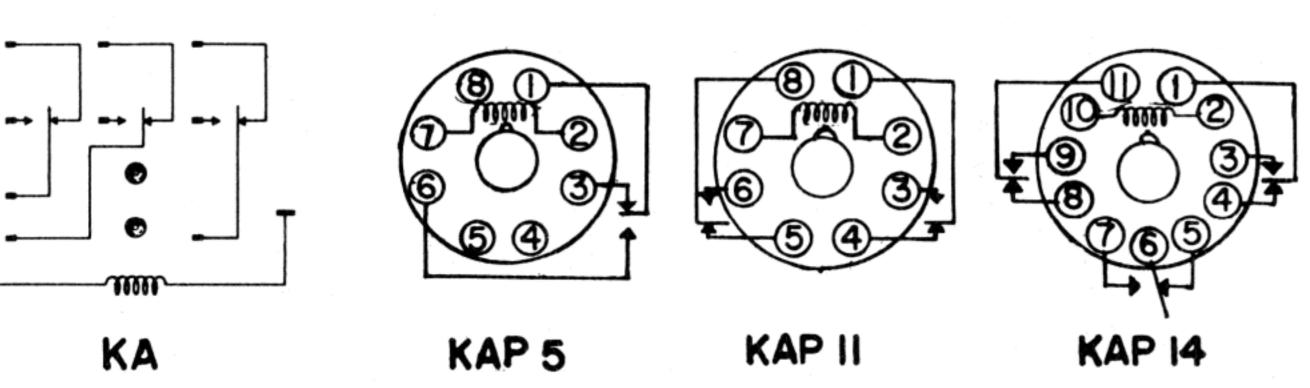


height: 3 7/16" max. 3 13/32" max. 3 17/32" max.



(can be furnished with or without post.)

CIRCUIT DIAGRAMS



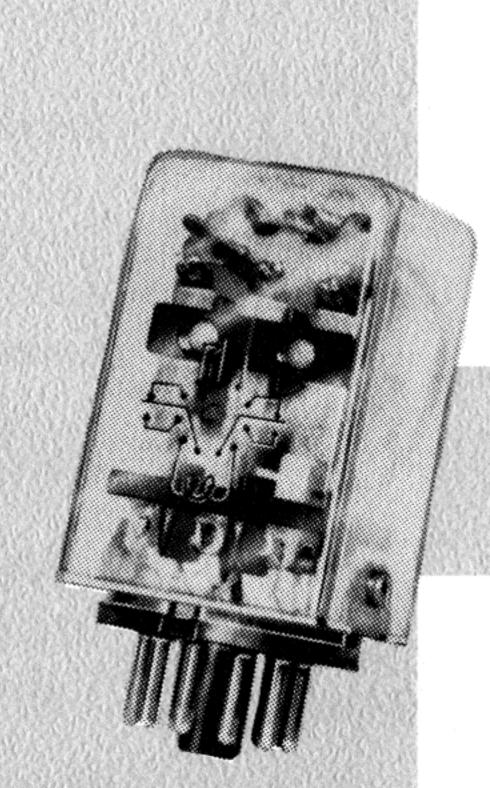
STANDARD KA, KAP AND KB RELAYS ARE STOCKED BY LEADING ELECTRONIC PARTS DISTRIBUTORS.



FORM NO. 13C192 9-66

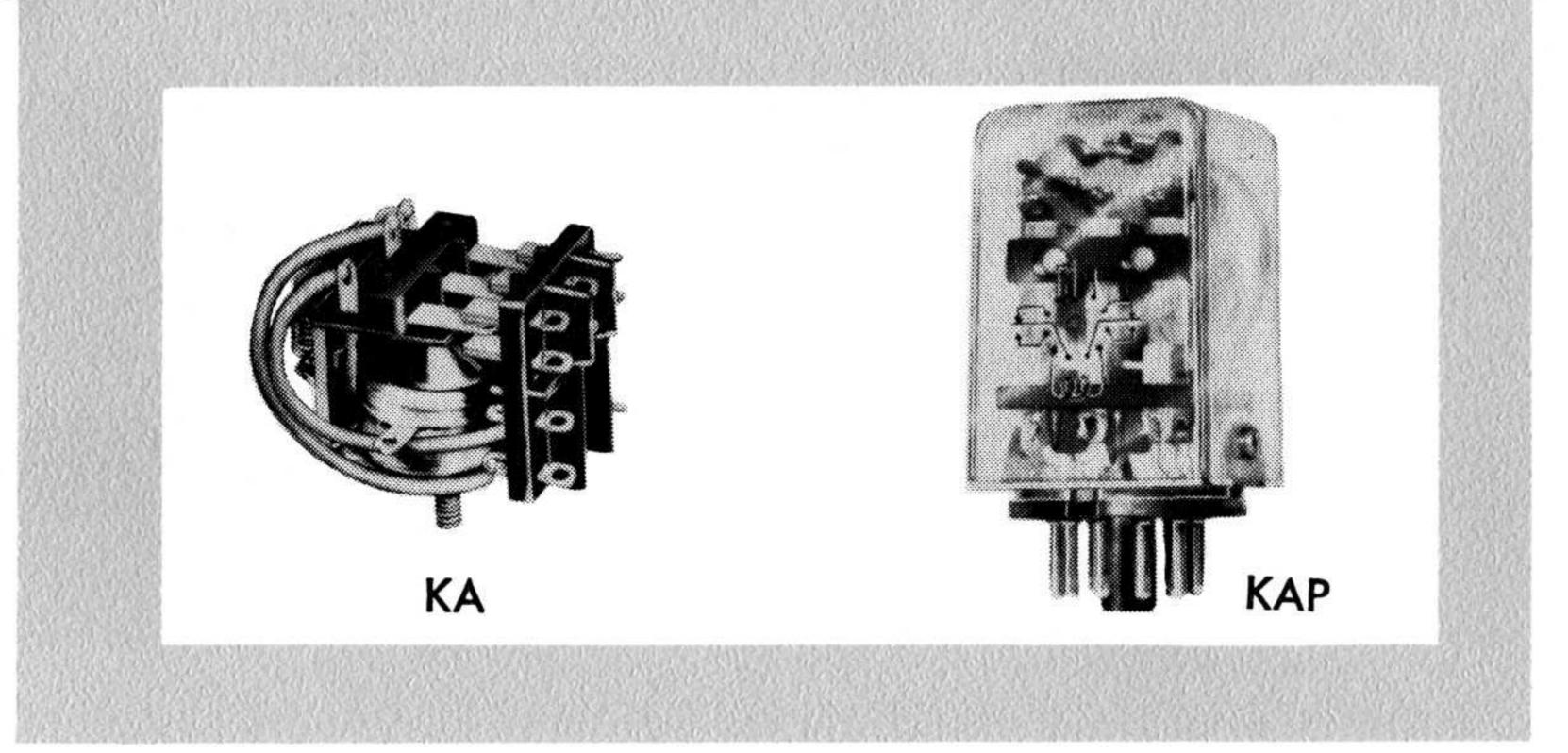
PRINTED IN U.S.A.

POTTER & BRUMFIELD



"KA" & "KB" SERIES RELAYS

general purpose low cost relays



ENGINEERING DATA

Suitable for multi-pole switching, the KA series, although low in price, is a rugged, high quality general purpose relay. It is available in a wide variety of AC and DC coil voltages, contact arrangements and ratings. A broad selection of mountings and terminations, including for printed circuit boards, is offered. Many standard models are U/L recognized and CSA listed (See chart below).

The KAP is enclosed in a transparent, high impact plastic dust cover, with 8 or 11-pin octal type plugs for socket mounting.

GENERAL:

Insulating Material: Molded phenolic.

Insulation Resistance: 100 megohms minimum.

Expected Life: Mechanical: 10 million operations.

Electrical: 100,000 operations minimum @

rated load.

Breakdown Voltage: 1,500 volts rms 60 Hz between all elements;

500 volts rms 60Hz between open con-

tacts.

Temperature Range: Open:

AC: -45° C min. to $+70^{\circ}$ C max.

DC: -45° C min. to $+85^{\circ}$ C max.

KA and KB Relays recognized by Underwriters' Laboratories and Canadian Standards Association*. U/L File No. E29244 and E22575. CSA File No. 15734.

| Tyno | Rating | Contact | AC & DC Coil Voltages | | | | |
|---------------------|--------|--------------|-----------------------|-------------|--|--|--|
| Type | Codes | Arrangements | 6 to 240 AC | 6 to 110 DC | | | |
| KA5AY1, KAP5AY1† | A-B-C | SPDT | • | | | | |
| KA11AY1, KAP11AY11 | A-B-C | DPDT | • | | | | |
| KA14AY1, KAP14AY11 | A-B-C | 3PDT | • | | | | |
| KA5DY1, KAP5DY1† | A-B-C | SPDT | | • | | | |
| KA11DY1, KAP11DY1+ | A-B-C | DPDT | | • | | | |
| KA14DY1, KAP14DY1† | A-B-C | 3PDT | | • | | | |
| KA5AG ² | D-E-F | SPDT | • | | | | |
| KA11AG ² | D-E-F | DPDT | • | | | | |
| KA14AG ² | D-E-F | 3PDT | • | | | | |
| KB17AY1 | G | 4PDT | • | | | | |
| KB23AY1 | G | 6PDT | • | | | | |

^{*} Suffix "AY" relays have CSA contact ratings of 5 amps @ 120V AC. Notes:

1. Gold-flashed silver contacts for movable arms. 2. Silver cadmium oxide contacts for movable arms. † Component listing.

Enclosed:

AC: -45° C min. to $+55^{\circ}$ C max.

DC: -45° C min. to $+70^{\circ}$ C max.

Time Values (approx): Operate: 15 milliseconds. Release: 10 milliseconds.

Approx. Weight: KA: 1.7 ozs. KAP: 2.9 ozs.

Operate: AC: 85% of nominal voltage @ 25°C.

DC: 75% of nominal voltage @ 25°C.

Terminals: Please see Mountings on back page. Contacts will take two 16 AWG wires. Coil: two 18 AWG wires.

Enclosures: Please see Enclosures on back page.

CONTACTS:

Arrangements: AC and DC to 3 Form C (3PDT). Please see

chart on opposite page.

Materials: Silver and silver overlay, silver overlay and cadmium

oxide. Other materials available.

Rating: Please see chart below.

COILS:

Voltage: To 110 volts DC; to 240 volts AC. Please see Coil Data chart below.

Data chart belov

Resistance: Please see Coil Data chart below.

Power: DC: 100 MW min. per movable arm; 4 watts max. open; 3 watts max. enclosed. AC: 2.0 volt-amps

nominal.

Duty: Continuous.

Underwriters' Laboratories and CSA Contact Ratings*

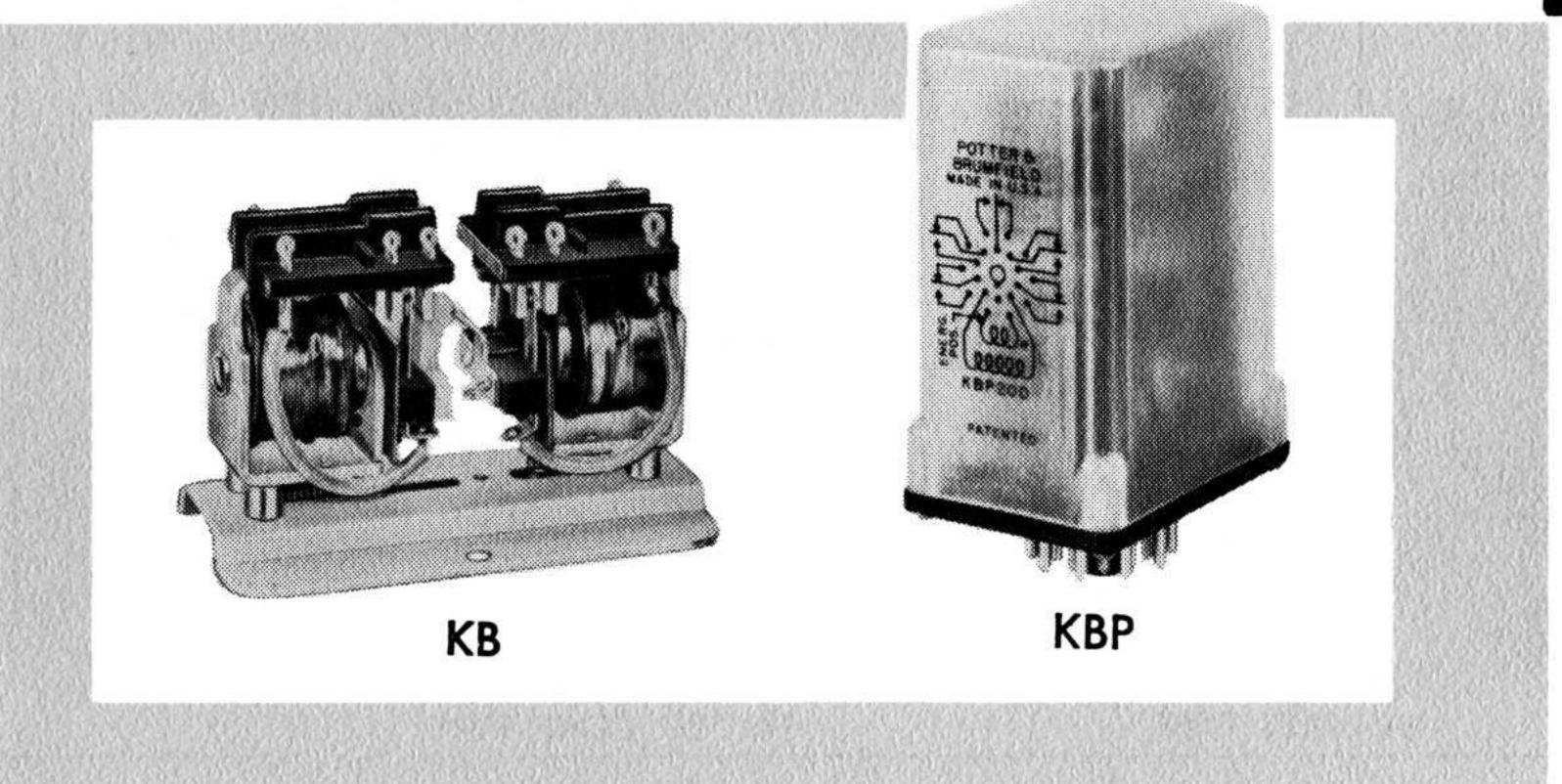
| CODE | SERIES | RATING | VOLTS AC | SINGLE PHASE |
|------|--------|---------|----------|--------------|
| Α | KAAV | 5 amps | 120 | • |
| В | KA-AY | 1/10 HP | 120 | • |
| С | KAP-AY | 1/6 HP | 240 | • |
| D | | 10 amps | 120 | • |
| E | KA-AG | 1/6 HP | 120 | • |
| F | | 1/3 HP | 240 | |
| G | KB-AY | 5 amps | 120 | • |

^{*} Suffix "AY" relays are listed by CSA for 5 amps @ 120V AC. KA and KB relays deviating electrically or physically from the standard relays listed will not carry U/L or CSA labels.

Coil Data for KA Series Relays

| | DC | | AC | | | |
|-------|--------------------|-----------------------------|----------|--------------------|-----------------------------|--|
| Volts | Resistance in Ohms | Av. Current Milliamperes | Volts | Resistance in Ohms | Av. Current Milliamperes | |
| 6 | 32 | 188 | 6 | 6 | 335 | |
| 12 | 120 | 100 | 12 | 21 | 168 | |
| 24 | 472 | 51 | 24 | 75 | 84 | |
| 48 | 1,800 | 26.6 | 120 | 2,250 | 17.5 | |
| 110 | 10,000 | 11.5 | 240 | 9,110 | 8.75 | |
| 220 | Use 110V relay | with 10,000 ohm | 5 W wire | -wound resistor in | n series. | |





dual coil latching relay

ENGINEERING DATA

Especially designed for overload or memory work, the KB series is a dual coil mechanical latching relay. A momentary impulse to one of the coils operates the relay to set the latch; a second pulse to the other coil releases it. Coils may be specified to operate on the same or different voltages. (See Coil Data chart for latch and release voltages.)

The KBP is enclosed in a translucent polypropylene dust cover and is furnished with 8-pin, 11-pin and 20-pin octal type

plugs for socket mounting.

These fast acting, positive-latching relays can be furnished with contact arrangements to 6PDT (3PDT each coil). U/L recognized and CSA listed versions are available in 4PDT and 6PDT AC versions for 5 amps @ 120 volts. (See chart on opposite page.)

GENERAL:

Insulating Material: Molded phenolic.

Insulation Resistance: 100 megohms.

Expected Life: Mechanical: 500,000 operations.

Electrical: 50,000 operations min. @ rated load.

Breakdown Voltage: Open: 1,500 volts; Enclosed: 1,000 volts rms between all elements. 500

volts rms between open contacts.

Temperature Range: AC and DC: -45°C min. +85°C max.

(intermittent duty).

Time Values: Operate: 25 milliseconds.

CONTACT ARRANGEMENTS for KA and KB Series

| DESIGNATOR | FORM | Arrangement | KA | KB | |
|------------|--------------|---------------|----|----|--|
| 1 | 1 1 Form A | | • | • | |
| 2 | 1 Form B | SPST-NC | • | • | |
| 5 | 1 Form C | SPDT | • | • | |
| 7 | 2 Form A | DPST-NO | • | | |
| 8 | 2 Form B | DPST-NC | • | • | |
| 11 | 2 Form C | DPDT | • | • | |
| 12 | 3 Form A | 3PST-NO | • | • | |
| 13 | 3 Form B | 3PST-NC | | • | |
| 14 | 3 Form C | 3PDT | • | • | |
| 15 | 4 Form A | orm A 4PST-NO | | | |
| 16 | 4 Form B | 4PST-NC | | • | |
| 17 | 4 Form C | 4PDT | | • | |
| 18 | 5 Form A | 5PST-NO | | • | |
| 19 | 5 Form B | 5PST-NC | | • | |
| 20 | 5 Form C | 5PDT | | • | |
| 23 | (2) 3 Form C | 6PDT | | • | |

Approx. Weight: Open: 5.2 ozs. Enclosed: 10.8 ozs.

Operate: AC: 85% of nominal voltage @ 25°C. DC: 75% of nominal voltage @ 25°C.

Terminals: Please see Mountings on back page. Contacts will take two 16 AWG wires. Coil: two 18 AWG wires.

Enclosures: Please see Enclosures on back page.

CONTACTS:

Arrangements: AC and DC to 6 Form C (6PDT) (3PDT each coil). Please see chart below.

Materials: Silver and silver overlay, silver overlay and cadmium oxide. Other materials available.

Rating: Please see chart on opposite page.

COILS:

Voltage: To 110 volts DC; to 240 volts AC. Specify voltage for both latch and release coils. Please see Coil Data chart

below.

Resistance: Please see Coil Data chart below.

Power: DC: 2.5 watts min., 4 watts max.

AC: 5.0 volt-amps to 4-pole; 7.8 volt-amps to 6-pole.

Duty: DC: Continuous to +50°C (open).

AC: Intermittent.

COIL DATA For KB Series Specify coil voltage for both latch and release coil

| DC Coils | | | AC Coils (50/60 cycles) | | | | |
|----------|-----------------------------------|-------------------------------------|-------------------------|--------------------|-----------------------------|--|--|
| | Up to 6 Pole Re | elays | | Up to 4 Pole R | elays | | |
| Volts | Volts Resistance in Av. Mill | | Volts | Resistance in Ohms | Av. Current Milliamperes | | |
| 6 | 13.1 | 460 | 6 | 2.3 | 850 | | |
| 12 | 52.0 | 230 | 12 | 10 | 425 | | |
| 24 | 230 | 104 | 24 | 42 | 210 | | |
| 48 | 850 | 56.5 | 120 | 1030 | 44 | | |
| 110 | 4560 | 24 | 240 | 4100 | 22 | | |
| 220 | Use 110 volt re Ohms, 5 watt r | elay with 5000 esistor in series | For 5 and 6 note relays | | | | |
| | 83 | † | 6 | 1.8 | 1300 | | |
| | | Ţ | 12 | 7.2 | 650 | | |
| | | 1 | 24 | 27 | 325 | | |
| | | Ī | 120 | 700 | 68 | | |
| | | 1 | 240 | 2750 | 34 | | |