



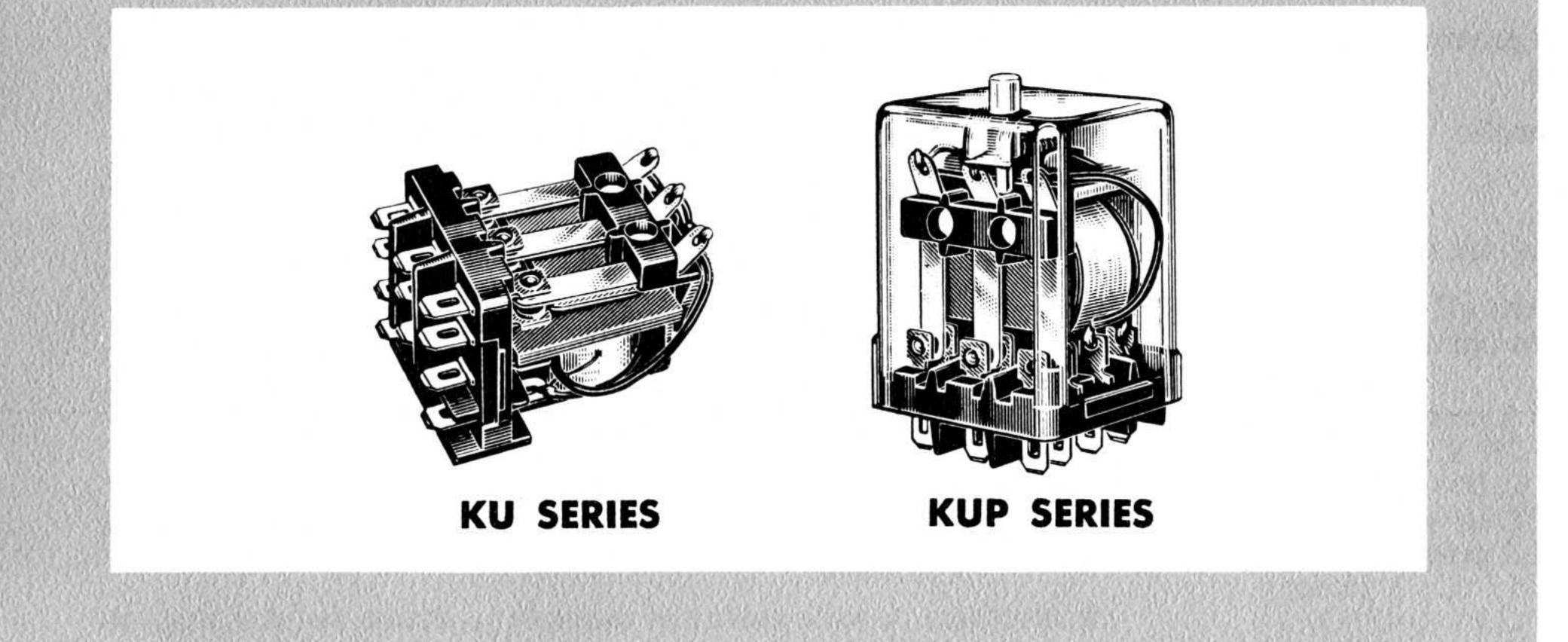
# POTTER & BRUMFIELD

DIVISION OF AMERICAN MACHINE & FOUNDRY COMPANY, PRINCETON, INDIANA

FORM 13C199 10-66 . PRINTED IN U.S.A.

POTTER & BRUMFIELD'S RELAY SERIES





versatile,
low cost relays
with
many optional
features

### ENGINEERING DATA

Low priced KU and KUP series relays have been engineered for reliability, ease of installation and replacement and have a wide choice of optional features. Their quick-connect/solder terminals are a substantial cost saver on modern production lines. They also fit custom nylon sockets, making the KU/KUP series convenient plug-in relays.

Two general types, the KU open series and the KUP enclosed series relays are available.

The KU series open relays are furnished with .187" terminals and are also available with .205" terminals. They can be furnished with either a .218" or a .125" long locating tab and with or without a mounting stud.

Two styles of clear polycarbonate dust covers are available for the KUP series relays. One is plain, for use when the relay is mounted in a socket. This case also can be furnished with a stud-and-locating-tab plate mounted on the end. The other case has two slotted flanges for mounting the relay directly to a chassis. It is not suitable for socket mounting.

Relays with either type of dust covers (except the model

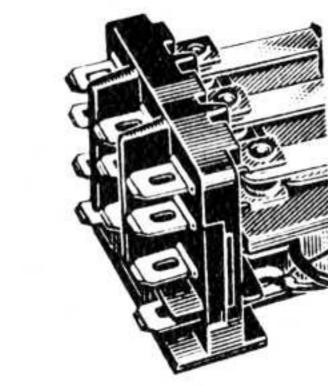
with stud on end of case) can be furnished with a handy external push-button for checking circuits by manually operating the movable contacts. When desired, the KUP 120V and 240V AC types can be supplied with a neon lamp wired in parallel with their coil to indicate power is reaching the relay. All optional features are listed on the next page.

Reliability and long life of the KU/KUP series are enhanced by long contact arms and a unique method of staking the stationary contacts, as well as barriers molded into the front which meet U/L and CSA requirements. Also, an unusual retainer designed to protect the armature from excess motion which could change the factory adjustment of the movable arms adds to dependability.

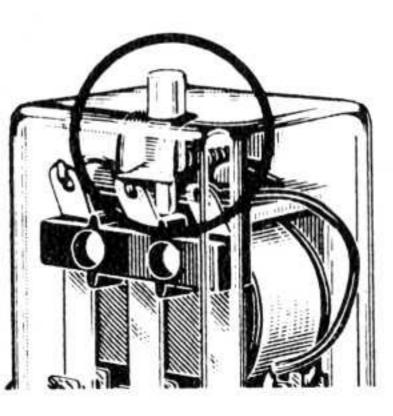
Two types of custom nylon sockets are available. They accommodate all open KU\*series and plain case KUP series when these relays have .187" terminals. The standard socket is furnished with pierced solder-type terminals rated 10 amperes. The printed circuit socket features printed circuit pin terminals. Chassis layouts for both types of sockets are included in the outline drawings.

\*Caution should be exercised in handling socket-mounted open relays due to the inherent shock hazard.

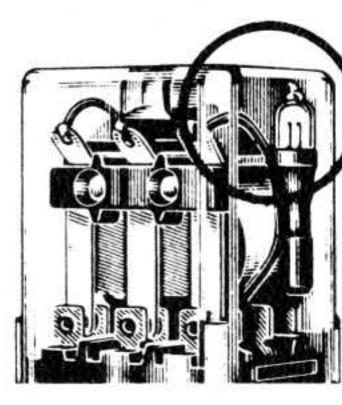
## AVAILABLE WITH A WIDE CHOICE OF OPTIONAL FEATURES



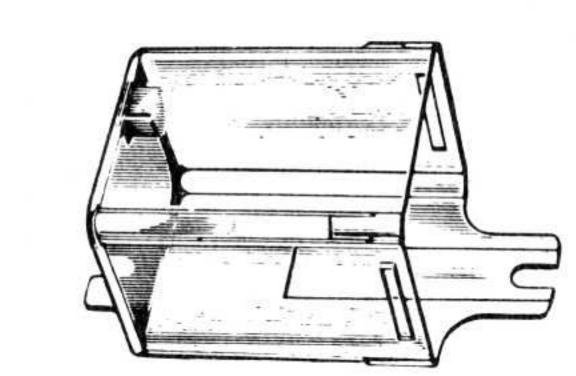
Both KU-KUP series are equipped with quick-connect terminals punched for soldering. .187" terminals are standard but .205" are available. Molded barriers meet U/L and CSA requirements.



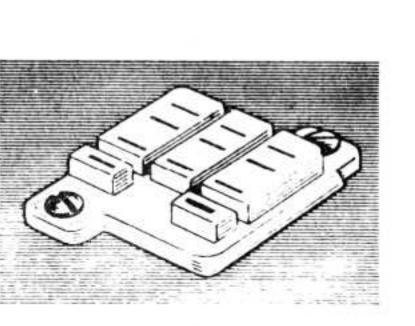
All KUP relays (except with stud on end of case) are available with pushto-test button which operates the movable contacts for manually checking circuits.



A neon lamp wired in parallel with its coil to indicate that power is reaching the relay is available on KUP 120V and 240V AC types.



Two styles of heat and shock resistant polycar-bonate dust covers can be furnished. One plain, the other with slotted flanges for direct-to-chassis mounting.



A nylon socket with solder terminals—rated for carrying 10 amperes—or with printed circuit tabs, can be supplied for the KU and KUP (plain case) series making them plug-in relays.

### QUALITY SPECIFICATIONS

### **GENERAL:**

**Description:** Versatile, low cost 5 or 10 amperes general purpose relays with many optional features.

Insulating Materials: Molded and laminated phenolic.

Insulation Resistance: 100 megohms minimum.

Expected Mechanical Life: 10 million mechanical operations.

Breakdown Voltage: 1500 volts rms 60 Hz between all elements; 500 volts rms 60 Hz between open contacts.

Temperature Range: KU open relays: AC: 1 and 2 poles -45°C to  $+70^{\circ}$ C; 3 poles

 $-45^{\circ}$ C to  $+60^{\circ}$ C. DC:  $-45^{\circ}$ C to  $+85^{\circ}$ C. KUP enclosed: AC: 1 and 2 poles -45°C

to  $+55^{\circ}$ C; 3 poles  $-45^{\circ}$ C to  $+45^{\circ}$ C. DC:  $-45^{\circ}$ C to  $+70^{\circ}$ C.

Weights: KU open relay: 2.3 ozs. KUP enclosed relay: 3.0 ozs.

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

Enclosures: Two styles of heat and shock resistant, clear plastic (Lexan). Please see opposite and back pages.

Terminals: .187" standard, or .205" quick connect. Either is punched for solder-connecting.

**CONTACTS:** 

Arrangements: 1, 2 and 3 Form C.

Material: Gold-flashed fine silver and silver-cadmium-oxide is standard. Tungsten and  $\frac{3}{32}$ " gold alloy available.

Rating: 5 or 10 amps @ 28 volts DC resistive, or 120 volts AC. 80% PF

#### COILS:

Voltage: DC: to 110 volts. AC: to 240 volts 60 Hz.

Power: DC: 1.2 watts. AC: 1 and 2 poles 2.0 VA; 3 poles 2.7 VA.

Resistance: Please see coil data table below.

Duty: Continuous.

Treatment: Centrifugally impregnated with high quality electrical varnish.

MOUNTING: A wide choice of mountings. Please see drawings on back page.

#### CUSTOM SOCKETS:

Standard: Molded nylon, rated 10 amperes. Will accept .187" terminals of all KU and plain case KUP relays. Slotted solder terminals.

Printed Circuit: Molded nylon. Will accept .187" terminals of all KU open and plain case KUP relays. Printed circuit pin terminals. See suggested board layout on back page

### OPTIONAL FEATURES AND CODE EXPLANATION

KU (Tuna)	/Contact	X (Coil	(Mounting)	/Torminals	XX Volts (Coil	
Basic Open Relay	Arrangement)		1 = # 6-32 stud, .218"locating tab.	& Contact Voltage)  Material)  1 = .187 quick-connect/solder, silver, 5 amps.		
			# 6-32 tapped.  3 = # 6-32 tapped core, .125"locating tab.  4 = # 6-32 tapped core, .218"locating tab.	2 = .205 quick-connect/solder, silver, 5 amps. 5 = .187 quick-connect/solder, silver-cad-oxide, 10 amps. 6 = .205 quick-connect/solder, silver-cad-oxide, 10 amps.		
KU P	XX	X	X	X	XX Volts	
(Type)	(Contact Arrangement)	(Coil Power)	(Mounting)	(Terminals & Contact Material)	(Coil Voltage)	
Basic Enclosed Relay	5 = SPDT 11 = DPDT 14 = 3PDT	A = AC D = DC	1 = Plain case: 2 = with test button. 3 = with neon light.	1 = .187 quick-connect/solder silver, 5 amps. 2 = .205 quick-connect/solder		
EXAMPLE: KUP11A21 = En- closed relay, DPDT, AC, plain case with test button, .187 quick-connect/solder terminals and silver contacts.			<ul> <li>4 = with test button &amp; neon light</li> <li>5 = Bracket-mount case:</li> <li>6 = with test button.</li> <li>7 = with neon light</li> <li>8 = with test button &amp; neon light.</li> <li>9 = Stud on end of case.</li> </ul>	silver, 5 amps.  5 = .187 quick-connect/solder, silver-cad-oxide, 10 amps.  6 = .205 quick-connect/solder, silver-cad-oxide, 10 amps.		



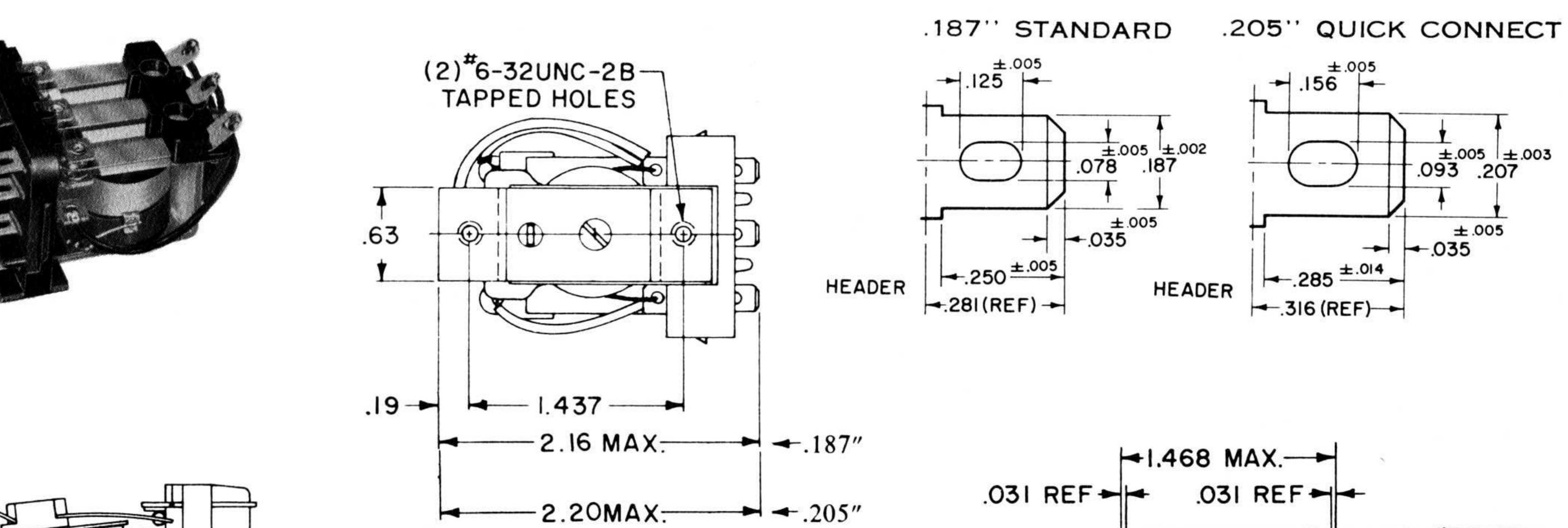
#### COIL DATA FOR STANDARD KU AND KUP RELAYS

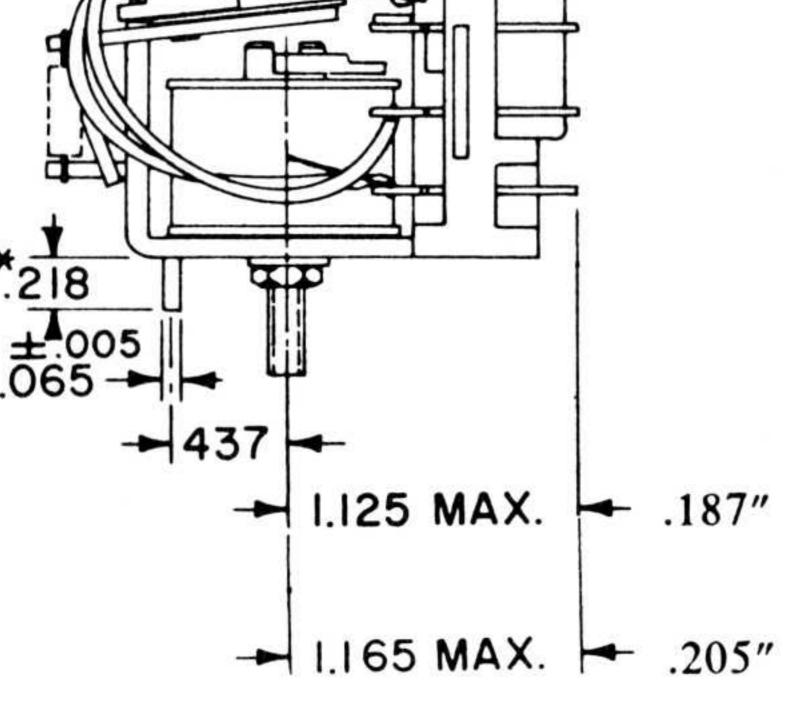
DC COILS			AC COILS-1 & 2 POLE			AC COILS—3 POLE		
Voltage	DC Resistance In Ohms	Nominal Current In Milliamperes	Voltage	DC Resistance In Ohms	Nominal Current In Milliamperes	Voitage	DC Resistance In Ohms	Nominal Current In Milliamperes
6	32.1	188	6	6.0	335	6	4.2	460
12	120	100	12	21	168	12	18	230
24	472	51	24	75	84	24	72	115
48	1,800	26.6	120	2,250	17.5	120	1,700	24
110	10,000	11.5	240	9,110	8.75	240	7,200	12
220	USE 110V RELAY WITH A 10,000 OHM 5W WIRE-WOUND RESISTOR IN SERIES.							

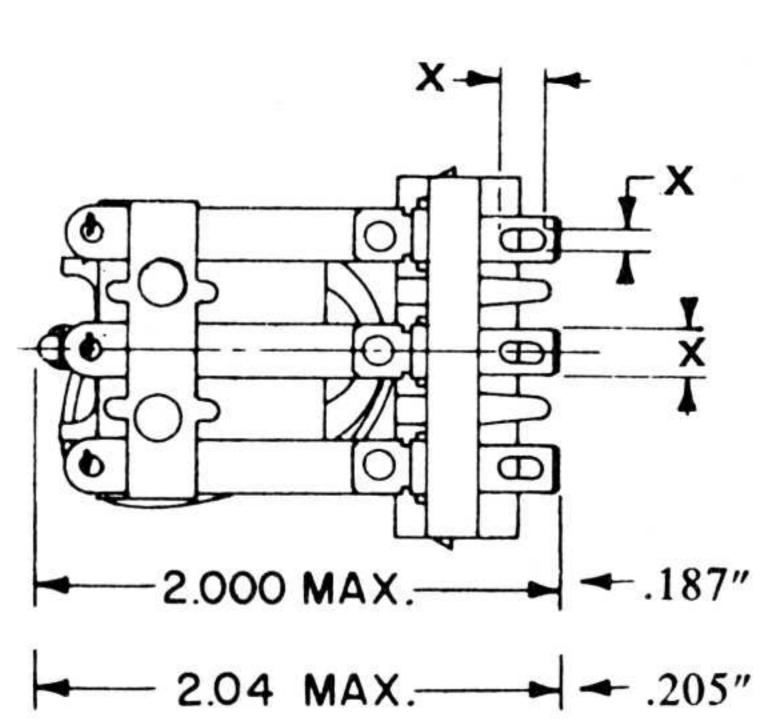
### OUTLINE DIMENSIONS

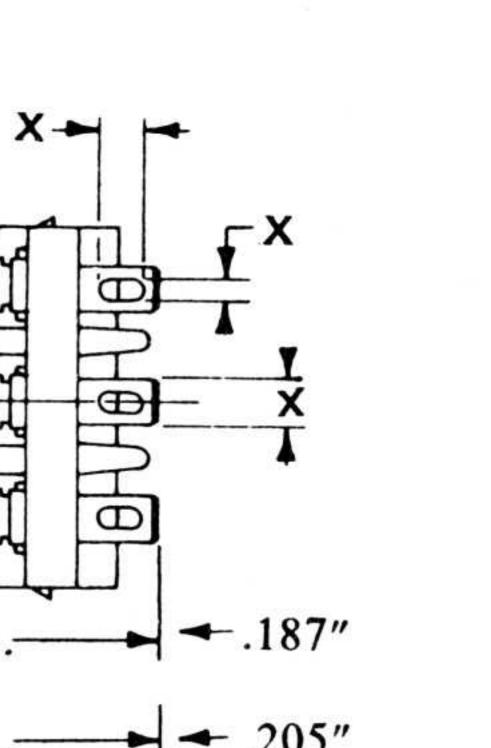
### KU SERIES

### TERMINAL DIMENSIONS









1.391" FOR #6-32 STUD WITH .218" LOCATING TAB.

.109 ¬

#6-32UNC-2A-THREAD

1.52" FOR 2-BRACKET WITH #6-32 TAPPED.

SEATED HEIGHTS

1.282" FOR #6-32 TAPPED CORE WITH .125" LOCATING TAB OR.218" LOCATING TAB.

→.150 TAB WIDTH

1.282 MAX.

1.687 MAX.

\*ALSO AVAILABLE WITH .125 LOCATING TAB. AVAILABLE WITHOUT STUD AND LOCAT-ING TAB.

X IS FOR .187 AND .205 TERMINAL DIMENSIONS. SEE TERMINAL DRAWINGS