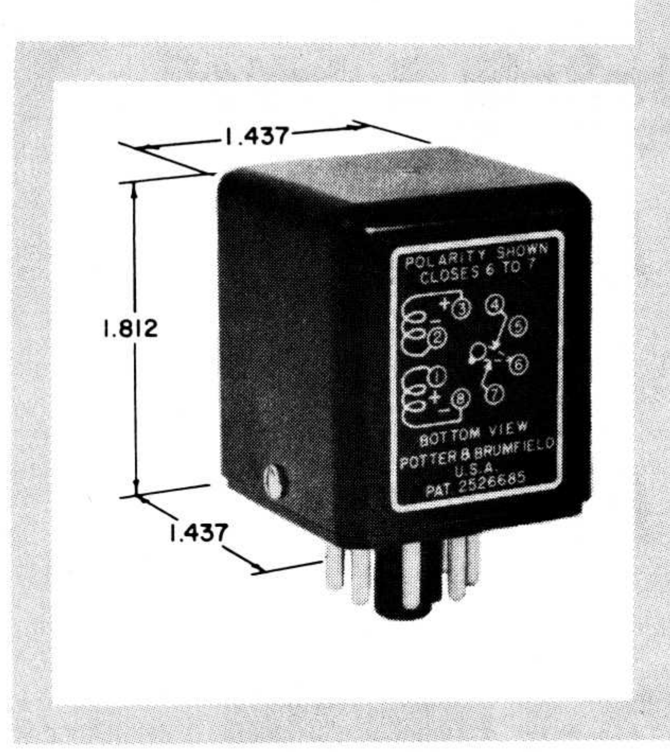
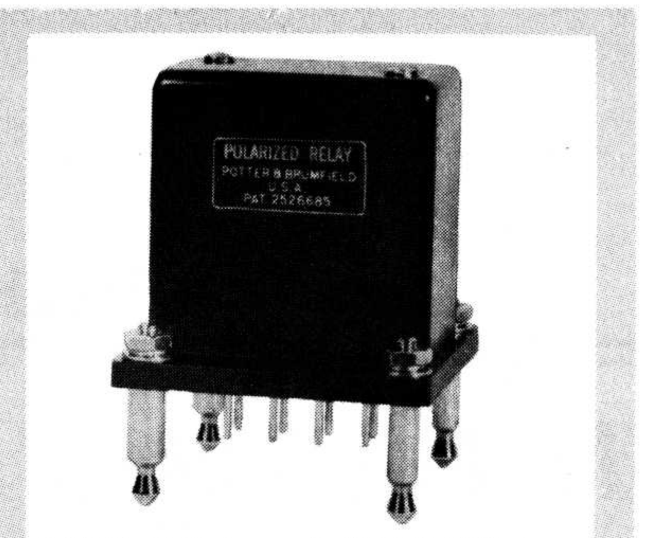




MDP-900-1 and MDP-930-1 Replace Western Electric Type 255

MDP SERIES SMALL POLARIZED RELAYS

- **Sensitive**
- **High Speed**
- **Bounce-free**

For Bi-Stable or Center-Stable Operation

Small size, ultra-sensitivity and high speed switching together with efficient, bounce-free contact action characterize MDP polarized relays. Their operation depends on both the magnitude and direction of the coil current. Two types of contact arrangements provide the following action when the coils are de-energized: *Bi-stable* — armature remains in its last energized position; *Center-stable* — armature remains in center-off position with contacts open. Contact materials as listed. Temperatures: —60°C to +85°C. Measuring only $1\frac{7}{16}$" sq. by $1\frac{13}{16}$" high (seated), MDP relays are equipped with a plastic dust cover and 8 or 12-pin plugs. Weight: $4\frac{1}{4}$ ozs.

Types MDP-900-1 and MDP-930-1 (with extra long life contacts) will directly replace Western Electric Type 255 relays. $2\frac{11}{16}$" square x $3\frac{3}{4}$" overall height. Weight: 10 ozs.

9MDP51 Holddown Bracket to adapt MDP relays to Barber-Colman socket. Box of 10 Net $2.75

TYPE	COILS			CONTACTS		SUGG. RESALE PRICE
	Pull-in Current In MA	Resistance In Ohms Each Coil*	Pull-In Power In Micro Watts	Arrangement	Rate In Amps Resitsive	
Center-stable:						
MDP-306-5	1.5	250 (4)	562	1 Form K①	.005-.5A† 5-150V	33.40
Bi-stable:						
MDP-300-1	1.5	150 (2)	338	1 Form C②	.01-1A† 25-150V	22.35
MDP-900-1	2.0	150 (2)	600	1 Form C②	.01-1A† 25-150V	29.00
MDP-930-1	2.4	150 (2)	863	1 Form C③	.01-1A† 25-150V	29.55
MDP-1300-1	1.4	150 (2)	294	1 Form C②	.01-1A† 25-150V	22.35
MDP-1300-8	0.28	4000 (2)	314	1 Form C②	.01-1A† 25-150V	22.35
Center-stable:						
MDP-1001	1.75	12 (1)	36.8	1 Form K①	3 @ 28 VDC	25.55
MDP-1004	0.49	130 (1)	31.2	1 Form K①	3 @ 28 VDC	25.55
MDP-1006	0.32	330 (1)	33.8	1 Form K①	3 @ 28 VDC	25.55
MDP-1007	0.27	480 (1)	35.0	1 Form K①	3 @ 28 VDC	25.55
MDP-1008	0.23	900 (1)	47.6	1 Form K①	3 @ 28 VDC	25.55
MDP-1009	0.18	1460 (1)	47.3	1 Form K①	3 @ 28 VDC	25.55
MDP-1011	0.10	3500 (1)	35.0	1 Form K①	3 @ 28 VDC	25.55
MDP-1013	0.067	7200 (1)	32.3	1 Form K①	3 @ 28 VDC	25.55
MDP-2001	3.50	6 (2)	73.5	1 Form K①	3 @ 28 VDC	25.55
MDP-2008	0.46	360 (2)	76.2	1 Form K①	3 @ 28 VDC	25.55
MDP-2009	0.32	1000 (2)	102.0	1 Form K①	3 @ 28 VDC	25.55
MDP-2011	0.17	2300 (2)	66.5	1 Form K①	3 @ 28 VDC	25.55
MDP-2101	5.30	6 (2)	169	1 Form K①	3 @ 28 VDC	25.55
MDP-2107	0.80	240 (2)	154	1 Form K①	3 @ 28 VDC	25.55
MDP-2112	0.22	3300 (2)	160	1 Form K①	3 @ 28 VDC	25.55

*Number of coils shown in ( ) parenthesis. † With suitable arc suppression

Contact materials shown in O circles:

① Silver. ② Tungsten and Paliney. ③ Silver-tungsten-carbide.

See ordering information on page 1.

THESE ARE
STANDARD STOCK RELAYS
AVAILABLE THROUGH A
LOCAL FRANCHISED DISTRIBUTOR

STOCK CATALOG 100

ISSUED MARCH 1967

QUALITY RELAYS BY POTTER & BRUMFIELD FOR EVERY APPLICATION

ORDERING INSTRUCTIONS — File-O-Matic Sec. 23

All relay contacts are rated at 120V, 60 Hz, non inductive load. When ordering specify relay type and coil voltage or resistance.

Example: PR5AY, 120 Volts AC, 60 Hz or LB5, 2500 ohms resistance.

To operate 110V DC relays on 220V DC use a 5 watt wire-wound resistor of a value approximately the relay coil resistance in series with the relay coil.

CONTACT LEGEND: S-Single; D-Double; P-Pole; T-Throw; N-Normally; O-Open; C-Closed; B-Break; M-Make.

Prices and Specifications subject to change without notice. For latest prices refer to United Pricing Service.

ALPHABETICAL INDEX

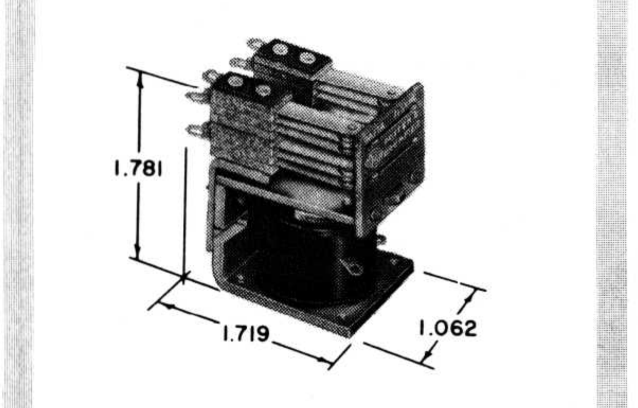
KEY TO SUFFIXES

SUFFIX		STANDS FOR	EXAMPLE
A	—	Alternating Current	BS17A
D	—	Direct Current	BS17D
DD	—	DC in a sealed "D" can	MH23DD
G	—	Silver Cad.-Oxide Contacts	KRP5AG
L	—	Plate Circuit	SM5L
M	—	Sealed in "M" can	MH17DM
N	—	Neon Light	KRP11AN
P	—	Enclosed in Plastic Dust Cover	MG11DP
R	—	With Built-in Rectifier	MH17AMR
S	—	Sealed in can	PW5DS, SM5DS
T	—	Sealed in "T" can	MG11DT
Y	—	U/L Component Recognition or Listing	AB11AY

IN STOCK AT LEADING ELECTRONIC PARTS DISTRIBUTORS

GA SERIES Low cost, all purpose, multiple contact, voltage switching relay. Used for many industrial control applications. Tinned, pierced solder type terminals. Contacts: $\frac{3}{16}$" dia. silver, designed for maximum self-cleaning action. Mounting: No. 8-32 tapped core with locating boss. Weight: $3\frac{1}{2}$ ozs.

See GF series for similar relays having 10 amp ratings. (Page 4).

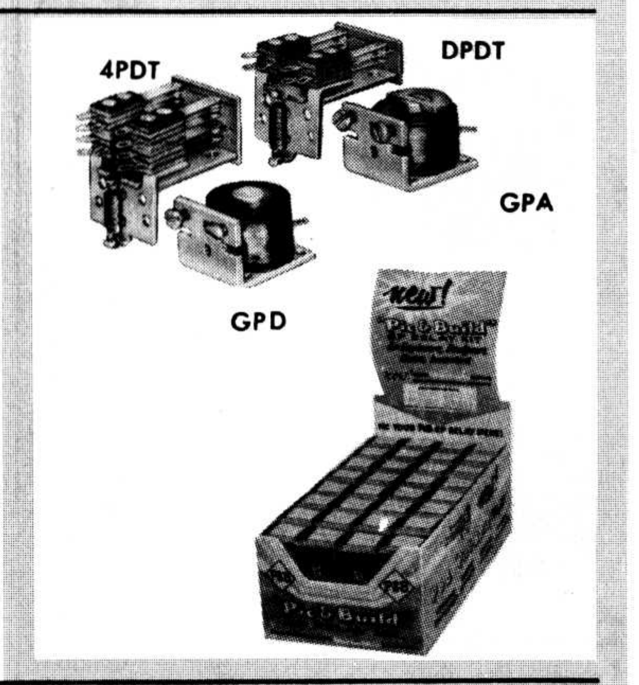


GP SERIES Separate AC and DC coils to match with 2PDT or 4PDT switches. AC coils (GPA) available in 6, 12, 24, 120 and 240 volts. DC coils (GPD) available in 6, 12, 24 and 110 volts; current coils: 2,500, 5,000 and 10,000 ohms. Contacts: $\frac{3}{16}$" dia. silver.

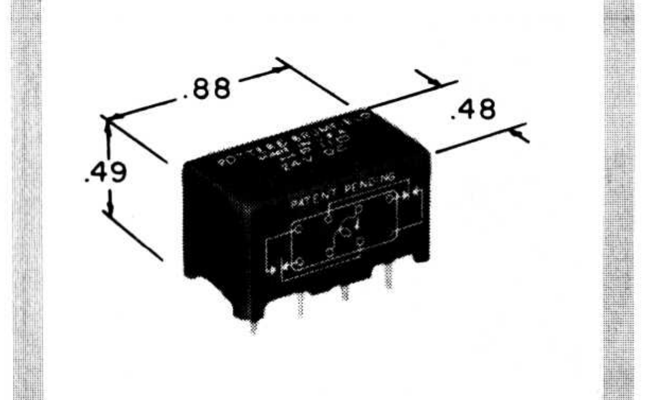
GP11 Switch Assembly DPDT 5 amps $1.80
GP17 Switch Assembly 4PDT 5 amps 3.10

GP-100 A complete kit of GP Series coils and switches consisting of the following: AC coils: Two 6V., two 12V., four 24V., six 120V., two 240V. DC coils: Two 6V., two 12V., two 24V., four 110V. Also two 2,500 and four 10,000 ohm coils; eighteen DPDT switch assemblies. Fourteen 4PDT switch assemblies. The complete kit is ideal for experimenters, school and industrial laboratories.

NET $140.35



HP SERIES This commercial microminiature relay is recommended for applications requiring high performance in minimum space, such as TV cameras, dictating machines, desk top computers, copying machines and others. For circuit board or socket mounting and encased in a high impact dust cover, the HP is a half crystal case size relay with terminals on a .200" grid. Please see additional specifications on page 14.



GENERAL PURPOSE RELAYS

TYPE	COILS			CONTACTS		SUGG. RESALE PRICE
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrange-ment	Rate in Amps	
GA11A	6V	1.7	6VA	DPDT	5	$3.50
GA11A	12V	6.8	6VA	DPDT	5	3.50
GA11A	24V	24	6VA	DPDT	5	3.50
GA11A	120V	690	6VA	DPDT	5	3.50
GA11D	6V	18	2.0W	DPDT	5	3.50
GA11D	12V	72	2.0W	DPDT	5	3.50
GA11D	24V	288	2.0W	DPDT	5	3.50
GA11D	110V	6,050	2.0W	DPDT	5	4.00
GA14A	24V	24	6VA	3PDT	5	4.25
GA14A	120V	690	6VA	3PDT	5	4.25
GA14D	24V	288	2.0W	3PDT	5	4.25
GA17A	6V	1.7	6VA	4PDT	5	5.10
GA17A	12V	6.8	6VA	4PDT	5	5.10
GA17A	24V	24	6VA	4PDT	5	5.10
GA17A	120V	690	6VA	4PDT	5	5.10
GA17A	240V	2,950	6VA	4PDT	5	5.50
GA17D	6V	18	2.0W	4PDT	5	5.10
GA17D	12V	72	2.0W	4PDT	5	5.10
GA17D	24V	288	2.0W	4PDT	5	5.10
GA17D	110V	6,050	2.0W	4PDT	5	5.60
GPA	6V	1.7	6VA	None	—	1.75
GPA	12V	6.8	6VA	None	—	1.75
GPA	24V	24	6VA	None	—	1.75
GPA	120V	690	6VA	None	—	1.75
GPA	240V	2,950	6VA	None	—	2.20
GPD	—	2,500	—	None	—	1.60
GPD	—	5,000	—	None	—	1.85
GPD	—	10,000	—	None	—	2.20
GPD	6V	18	2.0W	None	—	2.20
GPD	12V	72	2.0W	None	—	2.20
GPD	24V	288	2.0W	None	—	2.20
GPD	110V	6,050	2.0W	None	—	3.30
HP11D§	12V	218	.662W	DPDT	2	9.95
HP11D§	24V	870	.662W	DPDT	2	9.95

§Enclosed Relay

POTTER & BRUMFIELD

3-67

DIVISION OF AMERICAN MACHINE & FOUNDRY COMPANY • PRINCETON, INDIANA 47570 • Phone: Area Code 812 — 385-5251 TWX: 812-291-4125

KA AND KAP SERIES

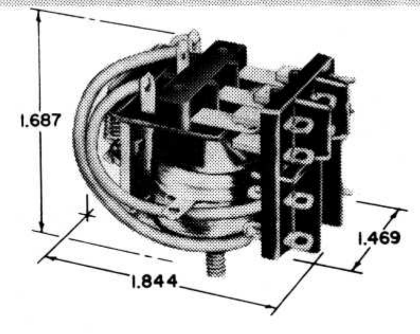
KA AND KAP SERIES Small, low cost, highly efficient general purpose relays for handling light power loads such as small motors, solenoids and other relays, and general automation work. All KA and KAP relays with "Y" suffix bear CSA* listing and carry U/L component recognition (File No. E22575). Mechanical life expectancy: 10 million operations. Duty: Continuous. Contacts: Movable, ⅛" dia. gold-flashed silver; stationary, 5/32" dia. wide silver overlay.

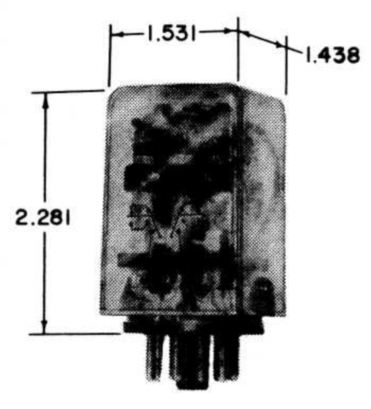
The KA is the open version of this series. Mounting: One No. 6-32 threaded stud and locating tab on 7/16" centers. Weight: 2 ozs. The KAP is the enclosed model and is protected by a clear, high impact plastic dust cover. Terminals: 8 or 11-pin plug. Weight: 3 ozs.

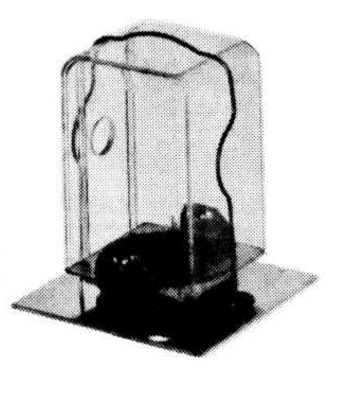
"G" suffix indicates silver-cadmium-oxide contacts on movables rated 10 amps.

KAP hold down spring.

9KA1 50 per box, weight 3 ozs. Net $5.50







KHP AND KHS SERIES

KHP AND KHS SERIES Small, rugged, 4PDT, available for AC or DC operation, KHP has nylon dust cover; KHS is hermetically sealed in metal enclosure. These relays are designed to meet the exacting requirements of data processing, computer and process control applications. Contacts are 3/32" gold-flashed silver and are rated 3 amps @ 30V DC or 120V AC resistive for 100,000 operations. "12" suffix indicates silver-cadmium-oxide contacts. Mounting: Solder terminals with a No. 3-48 stud 5/16" long. Adaptable to sockets (below) with printed circuit or solder lug terminals. Weights without sockets: KHP 1¼ ozs.; KHS 1⅝ ozs.

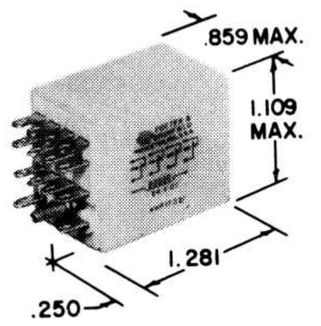
KHP hold down spring (similar to KCP-KRP, page 3).

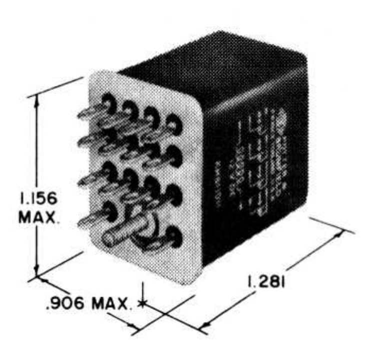
9KH3 50 per box, weight 3 ozs. Net $5.50

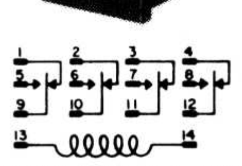
9KH1 Solder terminal sockets and retainers. Box of 10 Net $6.60

9KH2 Printed circuit terminal sockets, Box of 10 Net $6.60

Weight per box: 4 ozs.

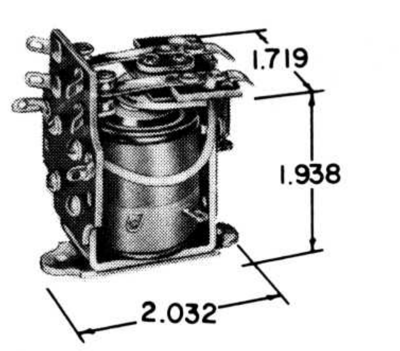






KL SERIES

KL SERIES Multiple contact relay. Varied contact combinations and high dielectric phenolic insulation affords extreme versatility and utility. Widely used in such applications as industrial controls, elevator controls, communications equipment and electronic measuring devices. Mounting: All models—Two No. 6-32 tapped holes on 1 7/16" centers. Contacts: ⅛" dia. gold-flashed silver. Weight: 5 ozs.



*Canadian Standards Association File No. LR-15734

GENERAL PURPOSE RELAYS

TYPE	COILS: Voltage or Current	COILS: Resistance in Ohms	CONTACTS: Nominal Power	CONTACTS: Arrangement	CONTACTS: Rate in Amps	SUGG. RESALE PRICE
KA5AY	6V	6	2VA	SPDT	5	$3.35
KA5AY	12V	21	2VA	SPDT	5	3.35
KA5AY	24V	75	2VA	SPDT	5	3.35
KA5AY	120V	2,250	2VA	SPDT	5	3.35
KA5AY	240V	9,110	2VA	SPDT	5	3.80
KA5AG	6V	6	2VA	SPDT	10	3.40
KA5AG	12V	21	2VA	SPDT	10	3.40
KA5AG	24V	75	2VA	SPDT	10	3.40
KA5AG	120V	2,250	2VA	SPDT	10	3.40
KA5AG	240V	9,110	2VA	SPDT	10	3.85
KA5DY	6V	32.1	1.2W	SPDT	5	3.20
KA5DY	12V	120	1.2W	SPDT	5	3.20
KA5DY	24V	472	1.2W	SPDT	5	3.20
KA5DY	110V	10,000	1.2W	SPDT	5	3.85
KA5DG	6V	32.1	1.2W	SPDT	10	3.25
KA5DG	12V	120	1.2W	SPDT	10	3.25
KA5DG	24V	472	1.2W	SPDT	10	3.25
KA5DG	110V	10,000	1.2W	SPDT	10	3.90
KA11AY	6V	6	2VA	DPDT	5	4.05
KA11AY	12V	21	2VA	DPDT	5	4.05
KA11AY	24V	75	2VA	DPDT	5	4.05
KA11AY	120V	2,250	2VA	DPDT	5	4.05
KA11AY	240V	9,110	2VA	DPDT	5	4.45
KA11AG	6V	6	2VA	DPDT	10	4.15
KA11AG	12V	21	2VA	DPDT	10	4.15
KA11AG	24V	75	2VA	DPDT	10	4.15
KA11AG	120V	2,250	2VA	DPDT	10	4.15
KA11AG	240V	9,110	2VA	DPDT	10	4.55
KA11DY	6V	32.1	1.2W	DPDT	5	3.55
KA11DY	12V	120	1.2W	DPDT	5	3.55
KA11DY	24V	472	1.2W	DPDT	5	3.55
KA11DY	110V	10,000	1.2W	DPDT	5	4.20
KA11DG	6V	32.1	1.2W	DPDT	10	3.70
KA11DG	12V	120	1.2W	DPDT	10	3.70
KA11DG	24V	472	1.2W	DPDT	10	3.70
KA11DG	110V	10,000	1.2W	DPDT	10	4.30
KA14AY	6V	6	2VA	3PDT	5	4.45
KA14AY	12V	21	2VA	3PDT	5	4.45
KA14AY	24V	75	2VA	3PDT	5	4.45
KA14AY	120V	2,250	2VA	3PDT	5	4.45
KA14AY	240V	9,110	2VA	3PDT	5	4.90
KA14AG	6V	6	2VA	3PDT	10	4.60
KA14AG	12V	21	2VA	3PDT	10	4.60
KA14AG	24V	75	2VA	3PDT	10	4.60
KA14AG	120V	2,250	2VA	3PDT	10	4.60
KA14AG	240V	9,110	2VA	3PDT	10	5.05
KA14DY	6V	32.1	1.2W	3PDT	5	4.05
KA14DY	12V	120	1.2W	3PDT	5	4.05
KA14DY	24V	472	1.2W	3PDT	5	4.05
KA14DY	110V	10,000	1.2W	3PDT	5	4.65
KA14DG	6V	32.1	1.2W	3PDT	10	4.20
KA14DG	12V	120	1.2W	3PDT	10	4.20
KA14DG	24V	472	1.2W	3PDT	10	4.20
KA14DG	110V	10,000	1.2W	3PDT	10	4.85
KAP5AG§	24V	75	2VA	SPDT	10	5.80
KAP5AG§	120V	2,250	2VA	SPDT	10	5.80
KAP5DG§	24V	472	1.2W	SPDT	10	5.70
KAP5DG§	110V	10,000	1.2W	SPDT	10	6.35
KAP11AY§	24V	75	2VA	DPDT	5	6.35
KAP11AY§	120V	2,250	2VA	DPDT	5	6.35
KAP11AY§	240V	9,110	2VA	DPDT	5	6.75
KAP11AG§	6V	.6	2VA	DPDT	10	6.45
KAP11AG§	24V	75	2VA	DPDT	10	6.45
KAP11AG§	120V	2.250	2VA	DPDT	10	6.45
KAP11DG§	24V	472	1.2W	DPDT	10	6.40
KAP11DG§	110V	10,000	1.2W	DPDT	10	7.05
KAP11DY§	12V	120	1.2W	DPDT	5	6.30
KAP11DY§	24V	472	1.2W	DPDT	5	6.30
KAP11DY§	110V	10,000	1.2W	DPDT	5	6.95
KAP14AY§	24V	75	2VA	3PDT	5	7.90
KAP14AY§	120V	2,250	2VA	3PDT	5	7.90
KAP14AY§	240V	9,110	2VA	3PDT	5	8.30
KAP14AG§	24V	75	2VA	3PDT	10	8.05
KAP14AG§	120V	2,250	2VA	3PDT	10	8.05
KAP14DG§	24V	472	1.2W	3PDT	10	8.00
KAP14DG§	110V	10,000	1.2W	3PDT	10	8.60
KAP14DY§	12V	120	1.2W	3PDT	5	7.80
KAP14DY§	24V	472	1.2W	3PDT	5	7.80
KAP14DY§	110V	10,000	1.2W	3PDT	5	8.45
KHP17A11§	6V	10.5	1.2VA	4PDT	3	5.55
KHP17A11§	12V	43	1.2VA	4PDT	3	5.55
KHP17A11§	24V	160	1.2VA	4PDT	3	5.55
KHP17A11§	120V	3,900	1.2VA	4PDT	3	6.05
KHP17D11§	6V	40	900MW	4PDT	3	5.05
KHP17D11§	12V	160	900MW	4PDT	3	5.05
KHP17D11§	24V	650	900MW	4PDT	3	5.05
KHP17D12§	24V	650	900MW	4PDT	3	5.20
KHP17D11§	48V	2,600	900MW	4PDT	3	5.25
KHP17D11§	90V	9,000	900MW	4PDT	3	5.90
KHP17D11§	110V	11,000	900MW	4PDT	3	5.90
KHP17D12§	110V	11,000	900MW	4PDT	3	6.05
KHS17A11†	6V	10.5	1.2VA	4PDT	3	9.55
KHS17A11†	12V	43	1.2VA	4PDT	3	9.55
KHS17A11†	24V	160	1.2VA	4PDT	3	9.55
KHS17A11†	120V	3,900	1.2VA	4PDT	3	9.90
KHS17D11†	6V	40	900MW	4PDT	3	8.55
KHS17D11†	12V	160	900MW	4PDT	3	8.55
KHS17D11†	24V	650	900MW	4PDT	3	8.55
KHS17D11†	110V	11,000	900MW	4PDT	3	9.40
KL5A	120V	760	2.9VA	SPDT	5	4.05
KL5D	12V	140	1.1W	SPDT	5	3.80
KL5D	24V	600	1.1W	SPDT	5	3.80
KL11A	12V	7.8	2.9VA	DPDT	5	5.05
KL11A	24V	33	2.9VA	DPDT	5	5.05
KL11A	120V	760	2.9VA	DPDT	5	5.05
KL14A	24V	33	2.9VA	3PDT	5	5.60
KL14A	120V	760	2.9VA	3PDT	5	5.60
KL14D	24V	600	1.1W	3PDT	5	5.40
KL14D	110V	10,000	1.1W	3PDT	5	6.05
KL17A	6V	2.25	2.9VA	4PDT	5	6.60
KL17A	24V	33	2.9VA	4PDT	5	6.60
KL17A	120V	760	2.9VA	4PDT	5	6.60
KL17D	12V	140	1.1W	4PDT	5	6.30
KL17D	24V	600	1.1W	4PDT	5	6.30
KL17D	110V	10,000	1.1W	4PDT	5	6.95

†Sealed Relay
§Enclosed Relay

See ordering information on page 1.

KR3-H SERIES

KR3-H SERIES Ruggedly constructed but of small size, KR3-H is a heavy duty relay especially designed for applications where limited space is a factor. Its heavy duty copper alloy movable contact carrier has twin ¼" dia. silver-cadmium-oxide contacts rated 20 amps @ 120V AC 60 Hz resistive, or 28V DC; 1 HP 120/240V 60 Hz. Contact arrangement is 1 Form X (SPST-NO-DB) only. Terminals: suitable for ¼" quick connect, also solder; for contacts: solder only for coil. Size: 1.6" x 1.671" x 1.52". Seated height: 1.21". Mounting: One 6-32 stud and locating tab on .437" centers. Weight: 2 ozs.

KRP3-H SERIES All electrical specifications listed above for the KR3-H series relays apply to the KRP3-H. However, the KRP3-H is enclosed in a clear, high impact plastic dust cover and features an octal plug-in base. Weight: Approximately 3 ozs.

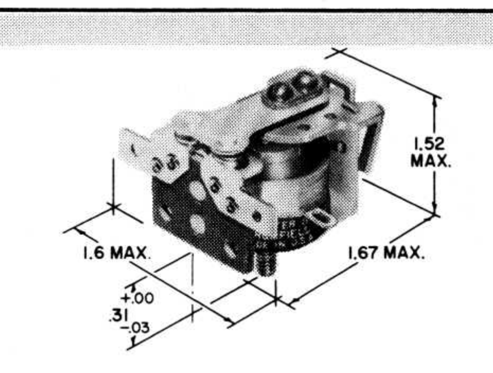
KRP SERIES Versatile, multi-contact arrangement. Enclosed in a clear high impact plastic dust cover. Standard 8-pin octal-type plug for KRP5 and KRP11, 11-pin for KRP-14. Weight: Approx. 3 ozs. Contacts: 5 amp, 3/16" dia. gold-flashed silver, 10 amp 3/16" dia. silver cadmium-oxide. See KCP-KRP hold down spring for special mounting applications. See KRP-N indicator lamp relay for current monitoring applications.

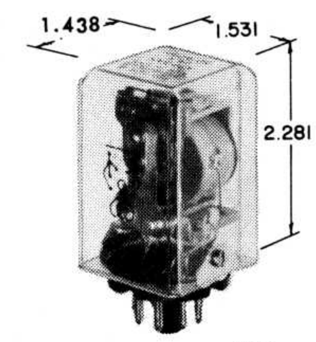
KRP-N INDICATOR LAMP RELAY A general purpose relay incorporating a lamp to indicate current or voltage availability in power circuit. Contacts: 3/16" dia. silver cadmium-oxide. Enclosure: Clear, high impact plastic dust cover. Mounting: Standard octal plug. Weight: Approx. 3 ozs.

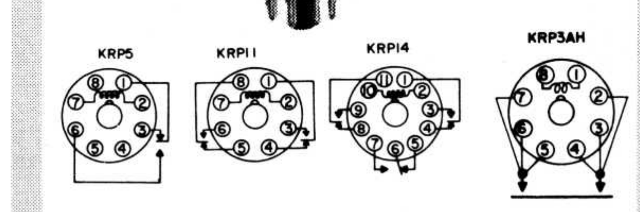
"P" — CASE A clear high impact plastic case for mounting rectifiers, capacitors, resistors or a combination of these. Available with octal-type plug with 8 or 11-pins. Comes complete with four screws. Weight: .5 ozs. each. See KCP-KRP Hold Down Spring for special mounting applications.

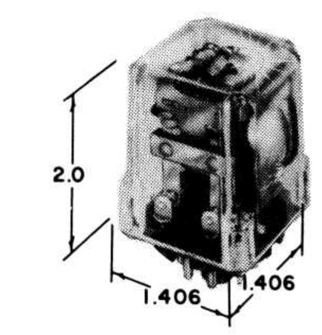
35DO70 Case (8-pin plug) NET $ .60

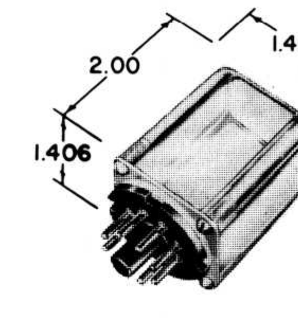
35DO72 Case (11-pin plug) NET $ .75







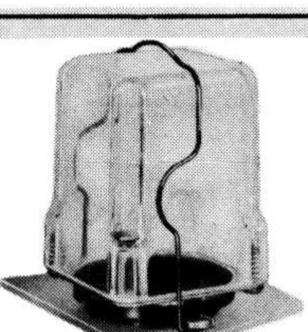




KCP-KRP HOLD DOWN SPRING

Designed to insure secure mounting of relay in any position. Fits all KCP or KRP plug-in relays. Durable stainless steel spring can be moved aside for relay removal or installation. Mounting: Two 5/32" dia. holes on 1 5/16" centers; will accommodate machine screws or rivets. Available in quantities of 50 per box. Weight: 3 ozs. per box.

9-KR-15 NET $5.50



KUP SERIES This reliable 10-ampere relay for industrial control is available with a socket that is also rated 10 amperes. The .187" terminals of the relay are of the quick-connect/solder type. Sockets are priced separately and their terminals are of the pierced solder type. The KUP is enclosed in a clear, high impact plastic dust cover. Silver-cadmium-oxide contacts assure long contact life. Operation: Continuous. Weight: 3 ozs.

9KU1 pierced solder terminals sockets for KUP plain case relays. Rated 10 amperes; molded nylon. Mounting hole .165"dia.

Box of 5 NET $3.75

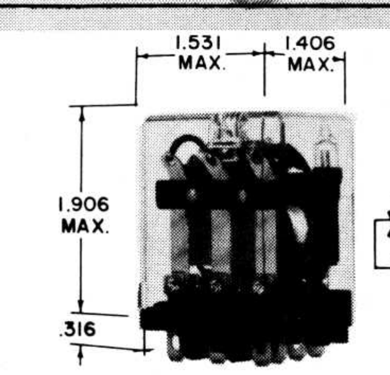
9KU2 printed circuit pin terminal sockets for KUP relays. Will accept .187" terminals of KUP in plain case. Molded nylon. Mounting hole .165"dia.

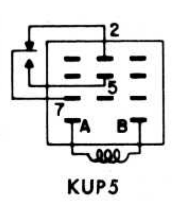
Box of 5. NET $4.50

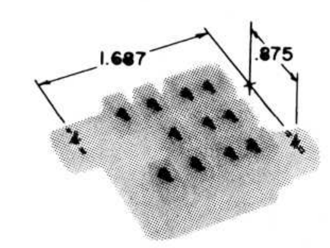
9KU3 hold down springs for KUP plain case relays. Spring fits mounting holes of either of above sockets. Allows mounting of relays in any position.

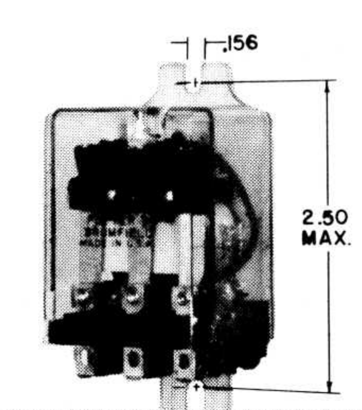
Box of 50. NET $5.00

KUP SERIES with slotted flange case for direct-to-chassis mounting. Identical in both electrical and mechanical specifications as the KUP described above, except that they are not suitable for socket mounting. The .187" terminals are of the quick-connect/solder type. Slot width: .156". Weight: 3 ozs.









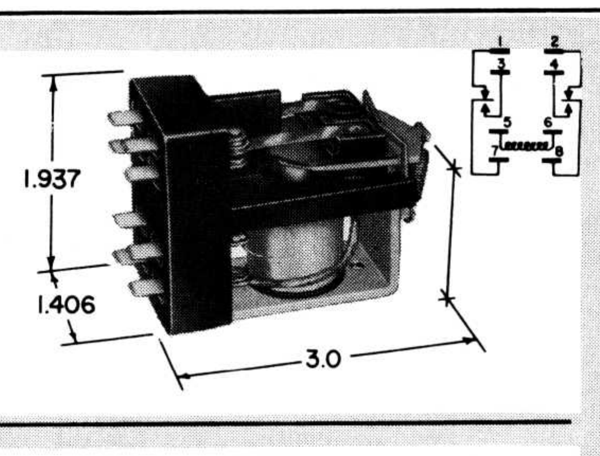
GENERAL PURPOSE RELAYS

TYPE	COILS: Voltage or Current	COILS: Resistance in Ohms	CONTACTS: Nominal Power	CONTACTS: Arrangement	CONTACTS: Rate in Amps	SUGG. RESALE PRICE
KR3AH	6V	6	2VA	SPST-NO-DB	20	$4.10
KR3AH	12V	21	2VA	SPST-NO-DB	20	4.10
KR3AH	24V	75	2VA	SPST-NO-DB	20	4.10
KR3AH	120V	2,250	2VA	SPST-NO-DB	20	4.10
KR3DH	6V	32	1.2W	SPST-NO-DB	20	3.90
KR3DH	12V	120	1.2W	SPST-NO-DB	20	3.90
KR3DH	24V	472	1.2W	SPST-NO-DB	20	3.90
KR3DH	110V	10,000	1.2W	SPST-NO-DB	20	4.50
KRP3AH§	6V	6	2VA	SPST-NO-DB	20	6.65
KRP3AH§	12V	21	2VA	SPST-NO-DB	20	6.65
KRP3AH§	24V	75	2VA	SPST-NO-DB	20	6.65
KRP3AH§	120V	2,250	2VA	SPST-NO-DB	20	6.65
KRP3DH§	6V	32	1.2W	SPST-NO-DB	20	6.45
KRP3DH§	12V	120	1.2W	SPST-NO-DB	20	6.45
KRP3DH§	24V	472	1.2W	SPST-NO-DB	20	6.45
KRP3DH§	110V	10,000	1.2W	SPST-NO-DB	20	7.10
KRP5A§	6V	6	2VA	SPDT	5	5.70
KRP5A§	24V	75	2VA	SPDT	5	5.70
KRP5A§	120V	2,250	2VA	SPDT	5	5.70
KRP5AG§	6V	6	2VA	SPDT	10	5.85
KRP5AG§	24V	75	2VA	SPDT	10	5.85
KRP5AG§	120V	2,250	2VA	SPDT	10	5.85
KRP5D§	6V	32.1	1.2W	SPDT	5	5.65
KRP5D§	12V	120	1.2W	SPDT	5	5.65
KRP5D§	24V	472	1.2W	SPDT	5	5.65
KRP5D§	110V	10,000	1.2W	SPDT	5	6.30
KRP5DG§	6V	32.1	1.2W	SPDT	10	5.80
KRP5DG§	12V	120	1.2W	SPDT	10	5.80
KRP5DG§	24V	472	1.2W	SPDT	10	5.80
KRP5DG§	110V	10,000	1.2W	SPDT	10	6.40
KRP11A§	6V	6	2VA	DPDT	5	6.35
KRP11A§	12V	21	2VA	DPDT	5	6.35
KRP11A§	24V	75	2VA	DPDT	5	6.35
KRP11A§	120V	2,250	2VA	DPDT	5	6.35
KRP11A§	240V	9,110	2VA	DPDT	5	6.75
KRP11AG§	6V	6	2VA	DPDT	10	6.55
KRP11AG§	12V	21	2VA	DPDT	10	6.55
KRP11AG§	24V	75	2VA	DPDT	10	6.55
KRP11AG§	120V	2,250	2VA	DPDT	10	6.55
KRP11AG§	240V	9,100	2VA	DPDT	10	7.00
KRP11D§	6V	32.1	1.2W	DPDT	5	6.30
KRP11D§	12V	120	1.2W	DPDT	5	6.30
KRP11D§	24V	472	1.2W	DPDT	5	6.30
KRP11D§	110V	10,000	1.2W	DPDT	5	6.95
KRP11DG§	6V	32.1	1.2W	DPDT	10	6.50
KRP11DG§	12V	120	1.2W	DPDT	10	6.50
KRP11DG§	24V	472	1.2W	DPDT	10	6.50
KRP11DG§	110V	10,000	1.2W	DPDT	10	7.15
KRP14A§	6V	6	2VA	3PDT	5	7.90
KRP14A§	12V	21	2VA	3PDT	5	7.90
KRP14A§	24V	75	2VA	3PDT	5	7.90
KRP14A§	120V	2,250	2VA	3PDT	5	7.90
KRP14A§	240V	9,110	2VA	3PDT	5	8.30
KRP14AG§	6V	6	2VA	3PDT	10	8.20
KRP14AG§	12V	21	2VA	3PDT	10	8.20
KRP14AG§	24V	75	2VA	3PDT	10	8.20
KRP14AG§	120V	2,250	2VA	3PDT	10	8.20
KRP14AG§	240V	9,100	2VA	3PDT	10	8.60
KRP14D§	6V	32.1	1.2W	3PDT	5	7.80
KRP14D§	12V	120	1.2W	3PDT	5	7.80
KRP14D§	24V	472	1.2W	3PDT	5	7.80
KRP14D§	110V	10,000	1.2W	3PDT	5	8.45
KRP14DG§	6V	32.1	1.2W	3PDT	10	8.10
KRP14DG§	12V	120	1.2W	3PDT	10	8.10
KRP14DG§	24V	472	1.2W	3PDT	10	8.10
KRP14DG§	110V	10,000	1.2W	3PDT	10	8.75
KRP11AN§	6V	6	2VA	DPDT	10	7.50
KRP11AN§	12V	21	2VA	DPDT	10	7.50
KRP11AN§	24V	75	2VA	DPDT	10	7.50
KRP11AN§	120V	2,250	2VA	DPDT	10	7.50
KRP11AN§	240V	9,110	2VA	DPDT	10	7.90
KRP11DN§	6V	32.1	1.2W	DPDT	10	7.45
KRP11DN§	12V	120	1.2W	DPDT	10	7.45
KRP11DN§	24V	420	1.2W	DPDT	10	7.45
KRP11DN§	110V	10,000	1.2W	DPDT	10	8.10
KRP14AN§	6V	6	2VA	3PDT	10	9.15
KRP14AN§	12V	21	2VA	3PDT	10	9.15
KRP14AN§	24V	75	2VA	3PDT	10	9.15
KRP14AN§	120V	2,250	2VA	3PDT	10	9.15
KRP14AN§	240V	9,110	2VA	3PDT	10	9.55
KUP5A15§	6V	5.1	2VA	SPDT	10	3.70
KUP5A15§	12V	21	2VA	SPDT	10	3.70
KUP5A15§	24V	75	2VA	SPDT	10	3.70
KUP5A15§	120V	2,250	2VA	SPDT	10	3.70
KUP5A15§	240V	9,110	2VA	SPDT	10	4.10
KUP5D15§	6V	32.1	1.2W	SPDT	10	3.55
KUP5D15§	12V	120	1.2W	SPDT	10	3.55
KUP5D15§	24V	472	1.2W	SPDT	10	3.55
KUP5D15§	110V	10,000	1.2W	SPDT	10	4.15
KUP11A15§	6V	5.1	2VA	DPDT	10	4.50
KUP11A15§	12V	21	2VA	DPDT	10	4.50
KUP11A15§	24V	75	2VA	DPDT	10	4.50
KUP11A15§	120V	2,250	2VA	DPDT	10	4.50
KUP11A15§	240V	9,110	2VA	DPDT	10	4.90
KUP11D15§	6V	32.1	1.2W	DPDT	10	4.05
KUP11D15§	12V	120	1.2W	DPDT	10	4.05
KUP11D15§	24V	472	1.2W	DPDT	10	4.05
KUP11D15§	110V	10,000	1.2W	DPDT	10	4.65
KUP14A15§	6V	4.2	2.75VA	3PDT	10	5.05
KUP14A15§	12V	18	2.75VA	3PDT	10	5.05
KUP14A15§	24V	72	2.75VA	3PDT	10	5.05
KUP14A15§	120V	1,700	2.75VA	3PDT	10	5.05
KUP14A15§	240V	7,200	2.75VA	3PDT	10	5.45
KUP14D15§	6V	32.1	1.2W	3PDT	10	4.65
KUP14D15§	12V	120	1.2W	3PDT	10	4.65
KUP14D15§	24V	472	1.2W	3PDT	10	4.65
KUP14D15§	110V	10,000	1.2W	3PDT	10	5.05
KUP14A55§*	6V	4.2	2.75VA	3PDT	10	5.05
KUP14A55§*	12V	18	2.75VA	3PDT	10	5.05
KUP14A55§*	24V	72	2.75VA	3PDT	10	5.05
KUP14A55§*	120V	1,700	2.75VA	3PDT	10	5.05
KUP14A55§*	240V	7,200	2.75VA	3PDT	10	5.45
KUP14D55§*	6V	32.1	1.2W	3PDT	10	4.65
KUP14D55§*	12V	120	1.2W	3PDT	10	4.65
KUP14D55§*	24V	472	1.2W	3PDT	10	4.65
KUP14D55§*	110V	10,000	1.2W	3PDT	10	5.05

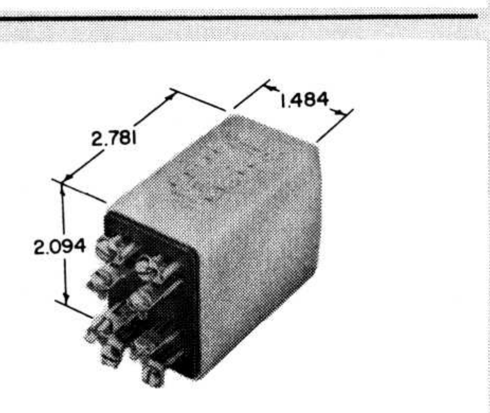
§Enclosed Relay
*KUP55 with slotted flange case

See ordering information on page 1.

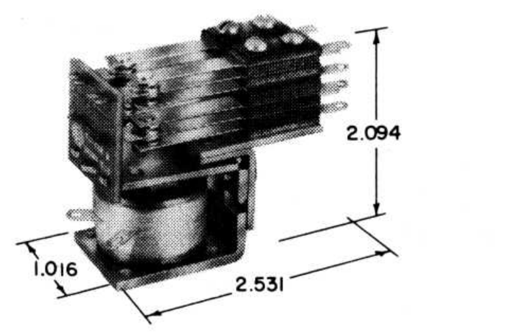
AB SERIES For appliance and general purpose applications where rugged construction, long life and quiet operation are required. All equipped with terminals to fit snap-on connectors and may also be applied to printed circuits using dip soldering. Snap-on screw adaptors packed with each relay. All AC models carry U/L component recognition (File No. E29244) and CSA* listing. Mounting: Two No. 8-32 tapped holes, on 1¼" centers. Silver contacts. Weight: Approx. 5 ozs.



ABC SERIES Medium duty power relay with dust cover. For small motors, industrial control and similar applications. All equipped with terminals to fit snap-on connectors and may also be applied to printed circuits using dip soldering. Snap-on screw adaptors packed with each relay. All AC models carry U/L component recognition (File No. E292-44) and CSA* listing. Mounting: One No. 8-32 threaded stud ⅜" long and locating tab on 9/16" centers. Contacts: ¼" dia. silver. Weight: Approx. 7 ozs.



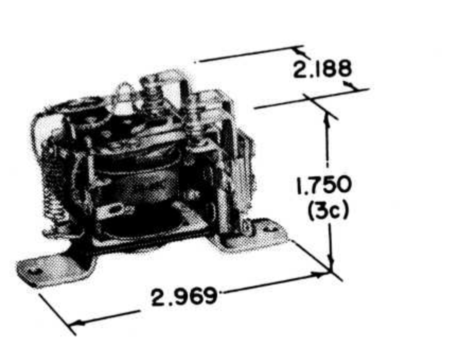
GF SERIES Medium duty power relay for industrial control applications. Long contact arms have ¼" dia. silver contacts rated at 10 amps at 120V AC or 28V DC resistive. Contacts have excellent wipe or self-cleaning action. Tinned, pierced solder terminals. Mounting: 8-32 tapped core with locating boss. Weight: 4.75 ozs. (See GA series, page 1, for similar voltage actuated relays.)



MR SERIES A medium duty power relay that can handle small motors, transmitters, and general purpose applications. Mounting: Two 5/32" dia. holes on 2¼" centers for MR3 and 11, 2⅝" centers for MR2, 5 and 14. Contacts: 7/32" dia. silver. Weight: 4 ozs.

MS/MR Metal dust cover similar to PM/PR shown below. 3⅝" x 2⅜" x 2 19/32". Weight: 7.5 ozs.

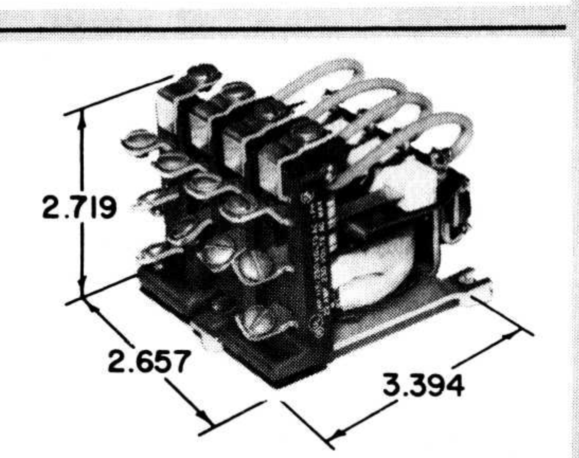
35D130 fits MS/MR NET $2.10



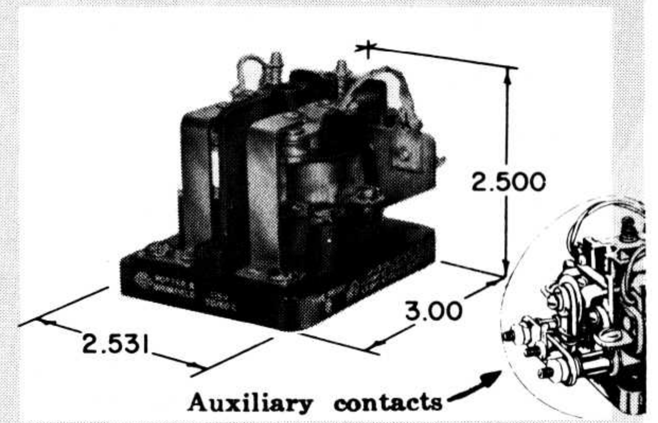
PM SERIES A compact heavy duty 4PDT power relay for polyphase and heavy duty switching applications. Screw terminals. Has ¼" silver-cadium-oxide contacts rated at 25 amps at 120V., 25 amps at 240V. 50/60 Hz resistive AC, 1HP per movable arm at 120V. or 240V. AC single phase, U/L (File No. E22575) and CSA* listed, except 480V. Mounts by one front key-hole and two rear channel slots for 8-32 screws on 2" x 2½" triangular centers. Weight: 14 ozs.

9PM1 Adaptor plates for mounting PM on PR mounting holes. Box of 10 NET $1.65

For metal enclosure see below.



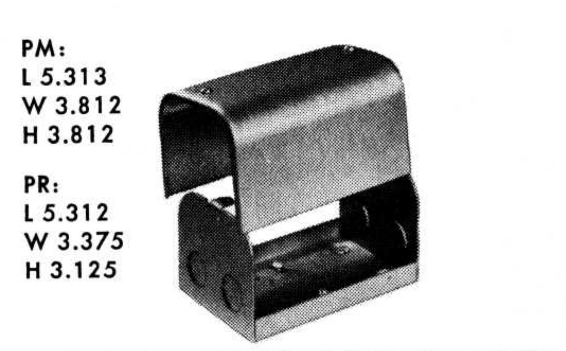
PR SERIES Heavy duty relay for industrial control applications requiring long life and fast action. Heavy duty screw type terminals. All AC and DC models except PR-11AL5 carry U/L (File No. E22575) and CSA* listing. Mounting: Two 3/16" dia. holes on 1⅞" centers. Weight: 11 ozs. max. Contacts: 5/16" dia. silver. Enclosure: See "PR" cover. The PR11AL5 relay is equipped with 3/16" dia. silver SPDT auxiliary contacts rated at 5 amps.



PM and PR DUST COVERS These dust covers have a sheet metal base with knockouts for ½" dia. conduit and an aluminum cover fitted with two screws. Finished in gray hammertone. Mounting: Three No. 10 holes on 1⅞" x 4⅛" centers. Approx. weight: 1 lb.

35D227 Metal cover for PM only NET $3.30

35D013 Metal cover for PR only NET $3.30



POWER RELAYS

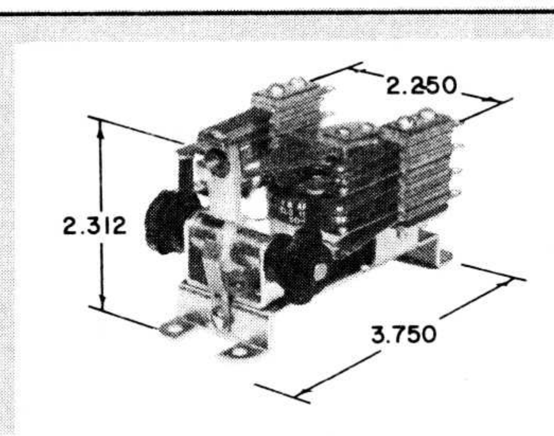
TYPE	COILS			CONTACTS		SUGG. RESALE PRICE
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrangement	Rate in Amps	
AB11AY	6V	1.3	6.4VA	DPDT	10	$ 5.55
AB11AY	24V	23	6.4VA	DPDT	10	5.55
AB11AY	120V	510	6.4VA	DPDT	10	5.55
AB11AY	240V	2,050	6.4VA	DPDT	10	6.00
AB11D	12V	72	2.0W	DPDT	10	5.45
AB11D	24V	288	2.0W	DPDT	10	5.45
AB11D	110V	6,050	2.0W	DPDT	10	6.00
ABC11AY§	6V	1.3	6.4VA	DPDT	10	6.70
ABC11AY§	24V	23	6.4VA	DPDT	10	6.70
ABC11AY§	120V	510	6.4VA	DPDT	10	6.70
ABC11AY§	240V	2,050	6.4VA	DPDT	10	7.15
ABC11D§	6V	18	2.0W	DPDT	10	6.60
ABC11D§	12V	72	2.0W	DPDT	10	6.60
ABC11D§	24V	288	2.0W	DPDT	10	6.60
ABC11D§	110V	6,050	2.0W	DPDT	10	7.15
GF17A	6V	1.7	6VA	4PDT	10	7.00
GF17A	12V	6.8	6VA	4PDT	10	7.00
GF17A	24V	24	6VA	4PDT	10	7.00
GF17A	120V	690	6VA	4PDT	10	7.00
GF17A	240V	2,950	6VA	4PDT	10	7.40
GF17D	6V	18	2.0W	4PDT	10	7.00
GF17D	12V	72	2.0W	4PDT	10	7.00
GF17D	24V	288	2.0W	4PDT	10	7.00
GF17D	110V	6,050	2.0W	4PDT	10	7.45
MR3A	6V	2.75	3.25VA	SPST-NO-DB	10	4.10
MR3A	24V	50	3.25VA	SPST-NO-DB	10	4.10
MR3A	120V	1,250	3.25VA	SPST-NO-DB	10	4.10
MR3D	6V	24	1.6W	SPST-NO-DB	10	3.70
MR3D	12V	96	1.6W	SPST-NO-DB	10	3.70
MR3D	24V	360	1.6W	SPST-NO-DB	10	3.70
MR5A	6V	2.75	3.25VA	SPDT	8	3.65
MR5A	12V	13.25	3.25VA	SPDT	8	3.65
MR5A	24V	50	3.25VA	SPDT	8	3.65
MR5A	120V	1,250	3.25VA	SPDT	8	3.65
MR5A	240V	4,600	3.25VA	SPDT	8	4.10
MR5D	6V	24	1.6W	SPDT	8	3.40
MR5D	12V	96	1.6W	SPDT	8	3.40
MR5D	24V	360	1.6W	SPDT	8	3.40
MR5D	110V	8,000	1.6W	SPDT	8	3.90
MR11A	6V	2.75	3.25VA	DPDT	8	5.15
MR11A	12V	13.25	3.25VA	DPDT	8	5.15
MR11A	24V	50	3.25VA	DPDT	8	5.15
MR11A	120V	1,250	3.25VA	DPDT	8	5.15
MR11A	240V	4,600	3.25VA	DPDT	8	5.55
MR11D	6V	24	1.6W	DPDT	8	4.90
MR11D	12V	96	1.6W	DPDT	8	4.90
MR11D	24V	360	1.6W	DPDT	8	4.90
MR11D	110V	8,000	1.6W	DPDT	8	5.40
MR14A	6V	2.75	3.25VA	3PDT	8	6.15
MR14A	12V	13.25	3.25VA	3PDT	8	6.15
MR14A	24V	50	3.25VA	3PDT	8	6.15
MR14A	120V	1,250	3.25VA	3PDT	8	6.15
MR14A	240V	4,600	3.25VA	3PDT	8	6.55
MR14D	6V	24	1.6W	3PDT	8	5.80
MR14D	12V	96	1.6W	3PDT	8	5.80
MR14D	24V	360	1.6W	3PDT	8	5.80
MR14D	110V	8,000	1.6W	3PDT	8	6.30
PM17AY	6V	.37	14VA	4PDT	25	12.95
PM17AY	12V	1.4	14VA	4PDT	25	12.95
PM17AY	24V	5.0	14VA	4PDT	25	12.95
PM17AY	120V	120	14VA	4PDT	25	12.95
PM17AY	240V	587	14VA	4PDT	25	13.40
PM17A	480V	1,790	14VA	4PDT	25	14.30
PM17DY	6V	8.2	4.4W	4PDT	25	12.40
PM17DY	12V	33	4.4W	4PDT	25	12.40
PM17DY	24V	132	4.4W	4PDT	25	12.40
PM17DY	110V	2,760	4.4W	4PDT	25	13.00
PR1AY	24V	12	9.8VA	SPST-NO	25	4.25
PR3AY	6V	.86	9.8VA	SPST-NO-DB	25	4.35
PR3AY	12V	3.2	9.8VA	SPST-NO-DB	25	4.35
PR3AY	24V	12	9.8VA	SPST-NO-DB	25	4.35
PR3AY	120V	290	9.8VA	SPST-NO-DB	25	4.35
PR3AY	240V	1,200	9.8VA	SPST-NO-DB	25	4.75
PR3DY	6V	18	2.0W	SPST-NO-DB	25	4.35
PR3DY	12V	71	2.0W	SPST-NO-DB	25	4.35
PR3DY	24V	288	2.0W	SPST-NO-DB	25	4.35
PR3DY	110V	6,050	2.0W	SPST-NO-DB	25	5.00
PR5AY	6V	.86	9.8VA	SPDT	25	4.55
PR5AY	12V	3.2	9.8VA	SPDT	25	4.55
PR5AY	24V	12	9.8VA	SPDT	25	4.55
PR5AY	120V	290	9.8VA	SPDT	25	4.55
PR5AY	240V	1,200	9.8VA	SPDT	25	5.00
PR5DY	6V	18	2.0W	SPDT	25	4.55
PR5DY	12V	71	2.0W	SPDT	25	4.55
PR5DY	24V	288	2.0W	SPDT	25	4.55
PR5DY	110V	6,050	2.0W	SPDT	25	5.20
PR7AY	6V	.86	9.8VA	DPST	25	5.15
PR7AY	12V	3.2	9.8VA	DPST	25	5.15
PR7AY	24V	12	9.8VA	DPST	25	5.15
PR7AY	120V	290	9.8VA	DPST	25	5.15
PR7AY	240V	1,200	9.8VA	DPST	25	5.60
PR7DY	6V	18	2.0W	DPST	25	5.15
PR7DY	12V	71	2.0W	DPST	25	5.15
PR7DY	24V	288	2.0W	DPST	25	5.15
PR7DY	110V	6,050	2.0W	DPST	25	5.80
PR11AY	6V	.86	9.8VA	DPDT	25	6.75
PR11AY	12V	3.2	9.8VA	DPDT	25	6.75
PR11AY	24V	12	9.8VA	DPDT	25	6.75
PR11AY	120V	290	9.8VA	DPDT	25	6.75
PR11AY	240V	1,200	9.8VA	DPDT	25	7.30
PR11AY	480V	4,500	9.8VA	DPDT	25	8.20
PR11AL5	6V	.86	9.8VA	DPDT	20	8.55
PR11AL5	12V	3.2	9.8VA	DPDT	20	8.55
PR11AL5	24V	12	9.8VA	DPDT	20	8.55
PR11AL5	120V	290	9.8VA	DPDT	20	8.55
PR11AL5	240V	1,200	9.8VA	DPDT	20	9.00
PR11DY	6V	18	2.0W	DPDT	25	6.75
PR11DY	12V	71	2.0W	DPDT	25	6.75
PR11DY	24V	288	2.0W	DPDT	25	6.75
PR11DY	110V	6,050	2.0W	DPDT	25	7.40

*Canadian Standards Association File No. LR-15734

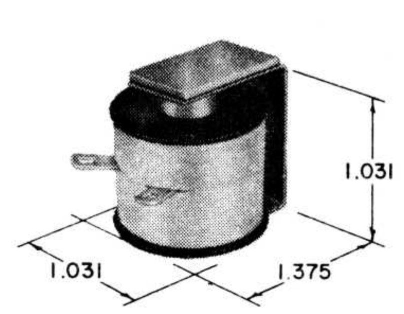
§Enclosed Relay

See ordering information on page 1.

AP SERIES RATCHET, IMPULSE
A reliable compact unit for applications requiring on-off or reversing action on alternate operations. Positive ratchet operation at all speeds on impulses as short as 60 ms. Intermittent operation only. Mounting: Three 5/32" dia. holes on 3⅜" x ⅞" triangular centers. Contacts: 3/16" dia. silver. Weight: 7 ozs. Coils for intermittent duty only.

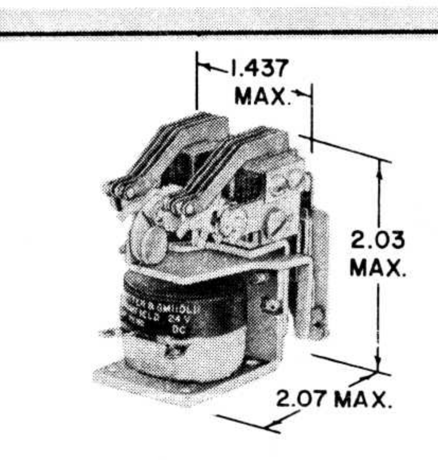


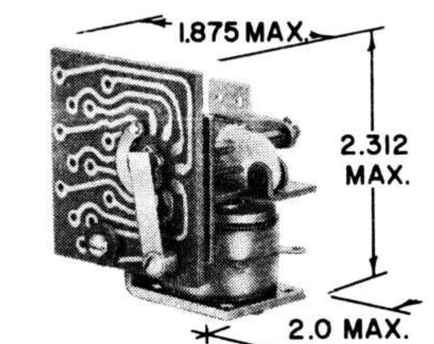
BU BUZZER AC operated coil with a spring steel armature which buzzes when coil is energized. Used extensively in test equipment, laboratories and a host of other applications where a small light weight, dependable buzzer is required. Weight: 1½ ozs. Mounting: No. 6-32 tapped core.



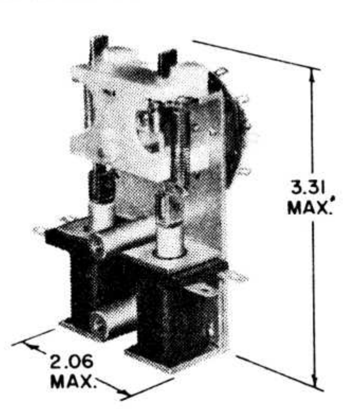
GM SERIES Unusually versatile switching makes this impulse/sequencing relay especially suitable for single coil latching. The 2 Form C contact arrangement is switched alternately by cam action during drop-out of the armature. It can also be furnished with additional 2 Form C auxiliary contacts (designated by "L"). AC version operates on a 50% coil duty cycle (5 Min. max.). Mounting: 8-32 tapped core with locating boss. Weights: With aux. contacts 4½ ozs. Without aux. contacts 4 ozs.

The GM1N10 and GM1N12 AC or DC use the basic GM structure with uni-directional printed circuit boards with 10 or 12-steps, respectively. The board is attached to an extension of the ratchet shaft. The movable contact arm advances one position each time the armature *drops out*. Contact rating: .25 amps. Contact arrangement: SP-10 pos. and SP-12 pos. Size: 2.312" x 1.875" x 2".

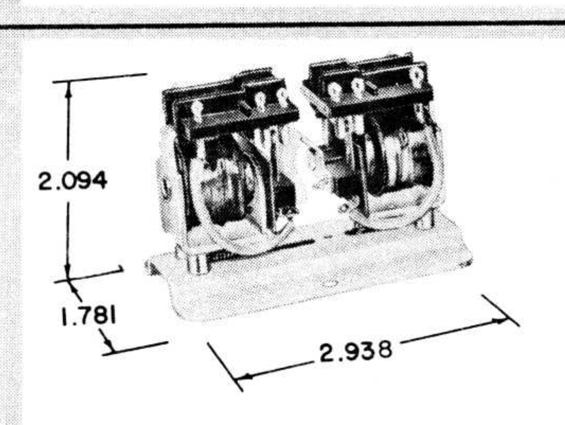




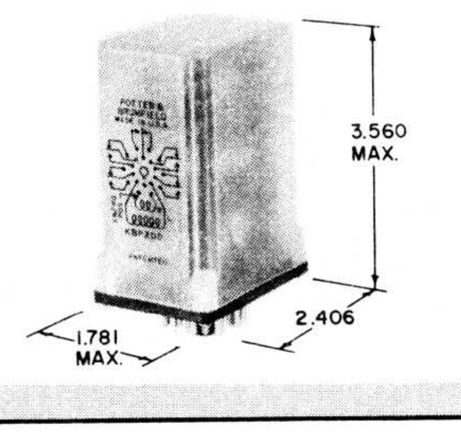
GR SERIES A unique bi-directional stepping relay employing two solenoids for contact operation. Audio control, speed, temperature or other factors may be increased or decreased remotely. Adding and subtracting functions are typical applications. Solenoid coils are epoxy potted. Mounting: Two 6-32 bosses on .875" centers. Pierced solder lug terminals. Coil duty cycle: Intermittent, 5 minutes max. on, 5 minutes min. off.



KB SERIES LATCHING RELAY Both release and trip coils must be for the same voltage. One coil operates relay to set latch and other coil releases it. Ideal for memory work and overload applications. Operates on momentary impulse to either coil. Mounting: Two 5/32" dia. holes on 1⅞" centers. Weight: 6 ozs. Contacts: ⅛" dia. silver rated 5 amps; "G" suffix indicates silver-cadmium-oxide contacts on movables rated 10 amps. AC relays with 5 amp. Contacts carry U/L component recognition (File No. 29244) and are CSA* listed. AC coil for intermittent duty only.



KBP SERIES LATCHING RELAY
Enclosed in a translucent polypropylene dust cover, the KBP is furnished with 20-pin octal type plugs for socket mounting. Contact arrangements of 4PDT and 5PDT are available. Otherwise all specifications are identical to the KB series described above. U/L component recognition does not apply to the KBP series. Weight: 8 ozs.



SPECIAL PURPOSE RELAYS

TYPE	COILS			CONTACTS		SUGG. RESALE PRICE
	Voltage or Current	Resistance in Ohms	Nominal Power	Arrangement	Rate in Amps	
AP11A	6V	.6	18.5VA	DPDT	5	$ 9.20
AP11A	12V	2.28	18.5VA	DPDT	5	9.20
AP11A	24V	8.8	18.5VA	DPDT	5	9.20
AP11A	120V	240	18.5VA	DPDT	5	9.20
AP11A	240V	900	18.5VA	DPDT	5	9.70
AP11D	6V	4.0	9.0W	DPDT	5	9.20
AP11D	24V	65	9.0W	DPDT	5	9.20
AP11D	110V	1,350	9.0W	DPDT	5	9.90
AP17A	24V	8.8	18.5VA	4PDT	5	11.15
AP17A	120V	240	18.5VA	4PDT	5	11.15
AP17D	12V	15.5	9.0W	4PDT	5	11.15
AP17D	24V	65	9.0W	4PDT	5	11.15
AP17D	110V	1,350	9.0W	4PDT	5	11.85
BU	6V	2.75	4.6VA	—	—	1.85
BU	12V	13.25	4.6VA	—	—	1.85
BU	24V	50	4.6VA	—	—	1.85
BU	120V	1,250	4.6VA	—	—	1.85
GM11A	24V	16	9.4VA	DPDT	3	7.60
GM11A	120V	420	9.4VA	DPDT	3	7.60
GM11AL11	24V	16	9.4VA	DPDT/DPDT	3	10.80
GM11AL11	120V	420	9.4VA	DPDT/DPDT	3	10.80
GM11D	12V	36	4W	DPDT	3	7.30
GM11D	24V	144	4W	DPDT	3	7.30
GM11D	110V	3,025	4W	DPDT	3	7.80
GM11DL11	12V	36	4W	DPDT/DPDT	3	10.60
GM11DL11	24V	144	4W	DPDT/DPDT	3	10.60
GM11DL11	110V	3,030	4W	DPDT/DPDT	3	11.10
GM1N10A	120V	510	9.4VA	SP-10 pos.	.25	9.40
GM1N12A	120V	510	9.4VA	SP-12 pos.	.25	9.50
GM1N10D	24V	144	4W	SP-10 pos.	.25	9.15
GM1N12D	24V	144	4W	SP-12 pos.	.25	9.30
GR1N10A	120V	420	15VA	SP-10 pos.	2	14.50
KB17AY	6V	2.3	5VA	4PDT	5	11.05
KB17AY	12V	10	5VA	4PDT	5	11.05
KB17AY	24V	42	5VA	4PDT	5	11.05
KB17AY	120V	1,030	5VA	4PDT	5	11.05
KB17AY	240V	4,100	5VA	4PDT	5	11.85
KB17AG	6V	2.3	5VA	4PDT	10	11.15
KB17AG	12V	10	5VA	4PDT	10	11.15
KB17AG	24V	42	5VA	4PDT	10	11.15
KB17AG	120V	1,030	5VA	4PDT	10	11.15
KB17AG	240V	4,100	5VA	4PDT	10	11.95
KB17D	6V	13.1	2.7W	4PDT	5	9.90
KB17D	12V	52	2.7W	4PDT	5	9.90
KB17D	24V	230	2.7W	4PDT	5	9.90
KB17D	110V	4,560	2.7W	4PDT	5	11.20
KB17DG	6V	13.1	2.7W	4PDT	10	10.15
KB17DG	12V	52	2.7W	4PDT	10	10.15
KB17DG	24V	230	2.7W	4PDT	10	10.15
KB17DG	110V	4,560	2.7W	4PDT	10	11.40
KB23AY	24V	27	7.8VA	6PDT	5	13.25
KB23AY	120V	700	7.8VA	6PDT	5	13.25
KB23AG	24V	27	7.8VA	6PDT	10	13.45
KB23AG	120V	700	7.8VA	6PDT	10	13.45
KB23D	24V	230	2.7W	6PDT	5	12.00
KB23DG	24V	230	2.7W	6PDT	10	12.35
KB23DG	110V	4,560	2.7W	6PDT	10	13.60
KBP17A§	120V	1,030	5VA	4PDT	5	15.50
KBP17AG§	120V	1,030	5VA	4PDT	10	15.70
KBP17D§	24V	230	2.7W	4PDT	5	14.45
KBP17DG§	12V	52	2.7W	4PDT	10	14.65
KBP17DG§	24V	230	2.7W	4PDT	10	14.65
KBP20A§	120V	700	7.8VA	5PDT	5	16.00
KBP20AG§	120V	700	7.8VA	5PDT	10	16.25
KBP20DG§	12V	52	2.7W	5PDT	10	15.45
KBP20DG§	24V	230	2.7W	5PDT	10	15.45

SPECIFY COIL VOLTAGE OR RESISTANCE WHEN ORDERING

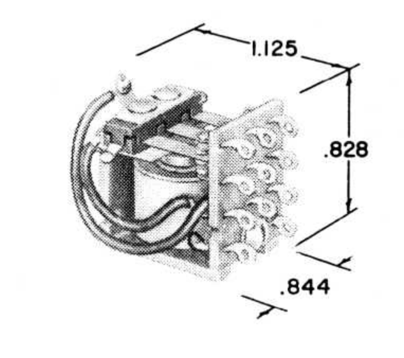
*Canadian Standards Association File No. LR-15734

§Enclosed Relay

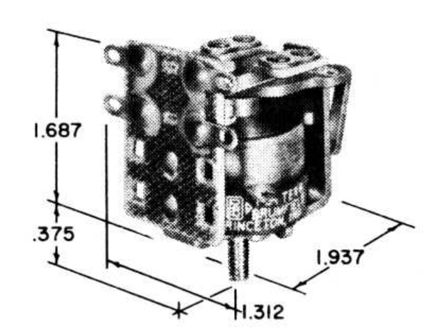
See ordering information on page 1.

SPECIAL PURPOSE RELAYS

KM SERIES Subminiature relay for applications requiring unusually small relays with up to 3-poles $\frac{3}{32}$″ dia. silver contacts. Withstands 30g mechanical shock and .06″ excursion 10 to 55 Hz mechanical vibration. Used extensively in small business machines, alarm systems, automatic toys and communications systems. Mounting: One 2-56 tapped core and locating .062″dia. half-punch on .187″centers. Solder terminals. Weight: .58 ozs.

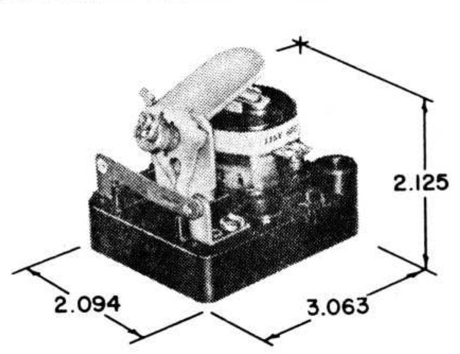


KT SERIES ANTENNA SWITCHING RELAY Glass base insulation for minimum RF loss to switch 300 ohm line. Mounting: One No. 6-32 threaded stud and locating tab on $\frac{3}{16}$″centers. Contacts: $\frac{1}{8}$″ dia. gold-flashed silver. Weight: $1\frac{1}{2}$ ozs.

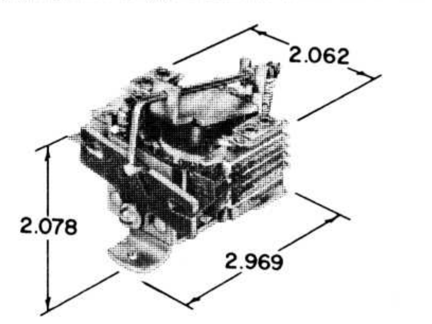


MS SERIES MOTOR STARTING RELAYS For starting capacitor start, induction-run motors. Operates on back EMF of start winding. Armature gap can be altered to change pull-in. Carries U/L component recognition (File No. 29245). Mounting: Two $\frac{5}{32}$″ dia. holes on $1\frac{3}{16}$″ centers. Contacts: $\frac{3}{4}$ HP, $\frac{5}{32}$″ dia. fine silver; 3 HP, $\frac{7}{32}$″ dia. silver cadmium. Weight: 5 ozs. max. MS/MR Metal dust cover similar to PM/PR shown on page 4. $3\frac{3}{8}$″ x $2\frac{3}{8}$″ x $2\frac{13}{16}$″. Weight: 7.5 ozs.

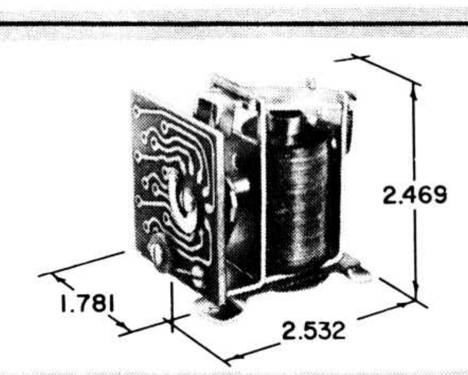
35D130 fits MS/MR NET \$2.10



PC SERIES Single coil impulse latching relay for on-off and current reversal switching on alternate pulses. Operates on 30 millisecond pulses to the coil. Mounting: Two $\frac{5}{32}$″ dia. holes on $2\frac{3}{8}$″ centers. Weight: 5 ozs. Contacts: $\frac{1}{4}$″ dia. gold-flashed silver-cadmium-oxide. Coils for intermittent duty only.



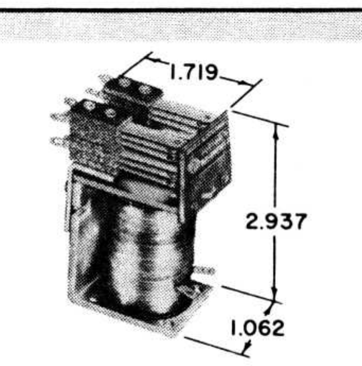
SA SERIES STEPPING SWITCH A twelve position stepping relay with printed circuit strips to switch currents up to 250 milliamps. Armature-driven pawl operates a ratchet wheel to drive the movable contact in steps of 30 degrees over 12 positions. Used widely for audio-level switching in TV remote control units, scoreboards and process controls. Mounting: Two 6-32 holes on $1\frac{13}{32}$″ centers. Weight: 4 ozs. AC coil for intermittent duty only.



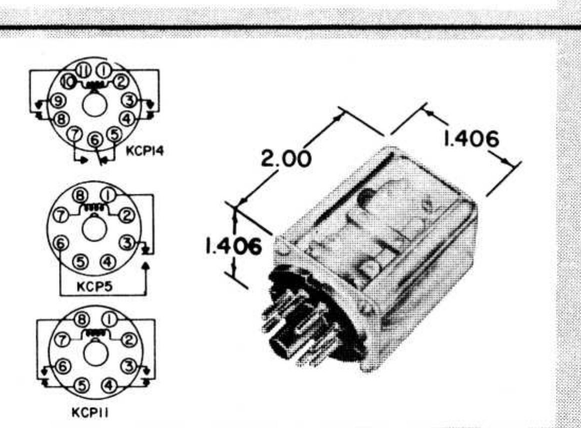
TYPE	COILS Voltage or Current	Resistance in Ohms	Nominal Power	CONTACTS Arrangement	Rate in Amps	SUGG. RESALE PRICE
KM5D	6V	36	1.1W	SPDT	2	\$3.60
KM5D	12V	144	1.1W	SPDT	2	3.60
KM5D	24V	500	1.1W	SPDT	2	3.60
KM11D	6V	36	1.1W	DPDT	2	3.95
KM11D	12V	144	1.1W	DPDT	2	3.95
KM11D	24V	500	1.1W	DPDT	2	3.95
KM14D	6V	36	1.1W	3PDT	2	4.55
KM14D	12V	144	1.1W	3PDT	2	4.55
KM14D	24V	500	1.1W	3PDT	2	4.55
KT11A	6V	6	2VA	DPDT	5	3.90
KT11A	120V	2,250	2VA	DPDT	5	3.90
KT11D	6V	32.1	1.2W	DPDT	5	3.90
KT11D	12V	120	1.2W	DPDT	5	3.90
MS2AY	120V	530	5.9VA	SPST-NC	¾HP	3.80
MS2AY	240V	2,100	5.9VA	SPST-NC	¾HP	4.25
MS4AY	120V	530	5.9VA	SPST-NC-DB	3HP	4.45
MS4AY	240V	2,100	5.9VA	SPST-NC-DB	3HP	4.85
PC11A	6V	.6	18.5VA	DPDT	7.5	5.90
PC11A	12V	2.28	18.5VA	DPDT	7.5	5.90
PC11A	24V	8.8	18.5VA	DPDT	7.5	5.90
PC11A	120V	240	18.5VA	DPDT	7.5	5.90
PC11D	6V	4	9.0W	DPDT	7.5	5.70
PC11D	12V	15.5	9.0W	DPDT	7.5	5.70
PC11D	24V	65	9.0W	DPDT	7.5	5.70
PC17A	24V	8.8	18.5VA	4PDT	7.5	8.15
PC17A	120V	240	18.5VA	4PDT	7.5	8.15
PC17D	24V	65	9.0W	4PDT	7.5	7.95
SA-1N-12A	120V	140	20VA	12-steps	.25	7.00

PLATE CIRCUIT AND SENSITIVE RELAYS

GB SERIES (See GA series page 1 for similar voltage actuated relays.) Sensitivity 115 milliwatts for single pole and 275 milliwatts for 4 pole. Medium cost, high quality relay. Pick-up is not adjustable. Mounting: No. 8-32 tapped core and locating boss. Contacts: $\frac{3}{16}$″ dia. silver. Weight: Approximately 5 ozs.



KCP SERIES Low cost plate circuit relay enclosed in clear high impact plastic cover. Sensitivity 125 mw single pole; 250 mw double pole; 375 mw three pole. Mounting: Standard octal plug-in type. Eight pin for KCP5 and KCP11. Eleven pin for KCP14. Contacts: $\frac{1}{8}$″ dia. gold-flashed silver. Weight: Approximately 3 ozs. Use KCP-KRP hold down spring when vibration is a factor or when using inverted or horizontal mounting. (see page 3).



TYPE	COILS Voltage or Current	Resistance in Ohms	Nominal Power	CONTACTS Arrangement	Rate in Amps	SUGG. RESALE PRICE
GB5D	6.8MA	2,500	115MW	SPDT	5	\$3.60
GB5D	4.8MA	5,000	115MW	SPDT	5	3.80
GB5D	3.4MA	10,000	115MW	SPDT	5	4.30
GB11D	7MA	2,500	125MW	DPDT	5	5.10
GB11D	5MA	5,000	125MW	DPDT	5	5.20
GB11D	3.53MA	10,000	125MW	DPDT	5	5.80
GB17D	10.5MA	2,500	275MW	4PDT	5	6.10
GB17D	7.4MA	5,000	275MW	4PDT	5	6.25
GB17D	5.25MA	10,000	275MW	4PDT	5	6.70
KCP5§	7.2MA	2,500	125MW	SPDT	2	6.20
KCP5§	5MA	5,000	125MW	SPDT	2	6.30
KCP5§	3.6MA	10,000	125MW	SPDT	2	6.70
KCP11§	10MA	2,500	250MW	DPDT	2	6.60
KCP11§	7.2MA	5,000	250MW	DPDT	2	6.70
KCP11§	5MA	10,000	250MW	DPDT	2	7.15
KCP14§	12.3MA	2,500	375MW	3PDT	2	8.15
KCP14§	8.7MA	5,000	375MW	3PDT	2	8.25
KCP14§	6.1MA	10,000	375MW	3PDT	2	8.65

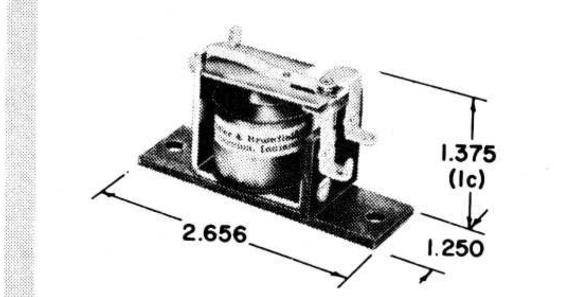
§Enclosed Relay

See ordering information on page 1.

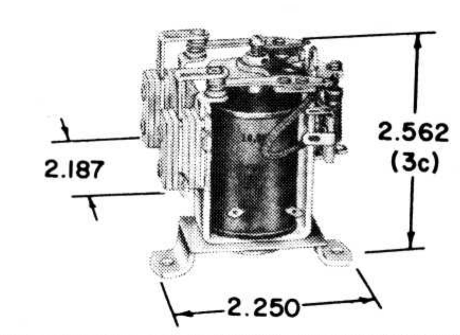
Potter & Brumfield Relays

PLATE CIRCUIT AND SENSITIVE RELAYS

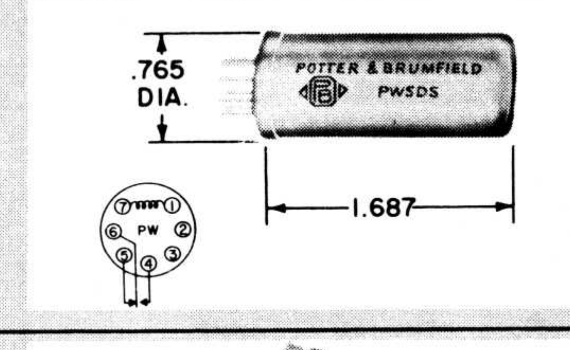
LB SERIES Designed for top performance, long life at an unusually low cost. Each coil is wound with a given coil resistance and factory adjusted to operate on minimum current requirements. Mounting: Two $\frac{5}{32}$″ dia. holes on $2\frac{7}{32}$″ centers. Contacts: $\frac{1}{8}$″ dia. silver. Weight: Approximately 2 ozs.



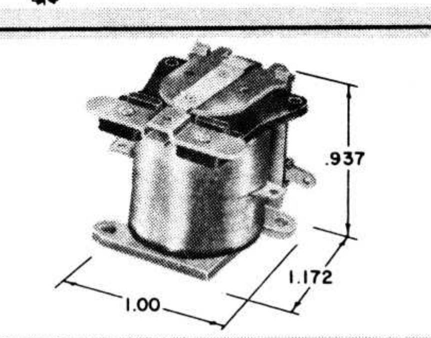
LM SERIES (See KL page 2 for similar voltage actuated relays.) Sensitivity: 100 milliwatts for single pole and 200 milliwatts for double pole. Medium cost, high quality relay with $\frac{3}{32}$″ dia. gold-flashed silver contacts. Pick-up adjustable by tail spring adjusting screw. Mounting: Two No. 6-32 tapped holes on $1\frac{13}{32}$″ centers. Weight: Approximately 5 ozs. DC Coils only.



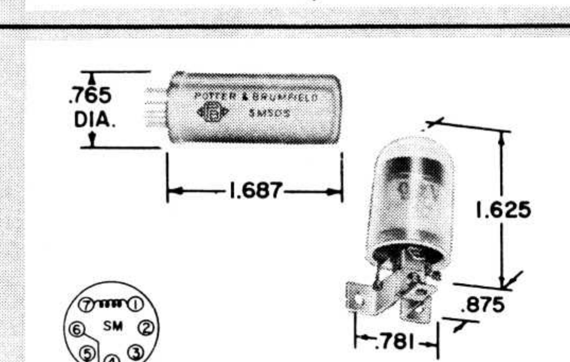
PW SERIES (In both voltage and current actuated models.) Sensitivity: 40 mw for current actuated models, 180 mw for voltage actuated models. Precision, light weight, hermetically sealed relay for aircraft and missile applications. Will withstand 10g vibration to 500 Hz. Mounting: Standard 7-pin miniature tube base. Weight: Approx. 1 oz.



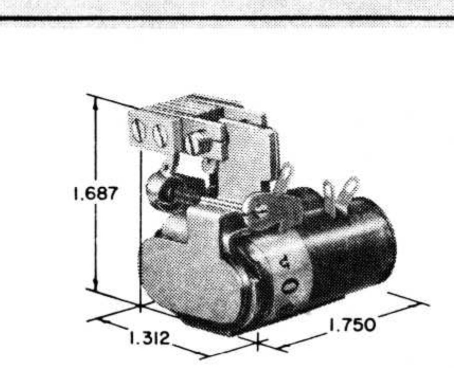
RS SERIES (In both voltage and current actuated models.) 60 mw. sensitivity. Low-cost, small, light weight, sensitive relay for radio-sonde, light dimmer and model applications. Mounting: Two No. 4-40 tapped holes on diagonal $\frac{7}{8}$″ x $\frac{5}{8}$″ centers. Contacts: Bar palladium. Weight: $1\frac{1}{4}$ ozs.



SM SERIES (In both voltage and current actuated models.) Sensitivity 75 mw for current actuated models. Medium cost, light weight, dust covered (right) or hermetically sealed (left) relay for light contact loads found in computers, model airplanes and similar applications. Extremely long mechanical life because of reed armature. Mounting: Sealed, standard 7-pin miniature tube socket; dust cover, two $\frac{3}{32}$″ dia. holes on $\frac{17}{32}$″ centers. Contacts: Stationary silver; movable rhodium. Weight: 1 oz. max.



SS SERIES Ultra sensitive precision relay. 10 mw sensitivity. Dual series-connected coils with balanced armature on needle-point bearings for all low energy circuits such as instruments and bridge balancing. May also be used as a differential relay by connecting the two coils in separate circuits. Mounting: Two No. 6-32 tapped holes on $\frac{31}{32}$″ centers. Contacts: $\frac{1}{8}$″ dia. silver. Weight: Approx. $3\frac{1}{4}$ ozs.



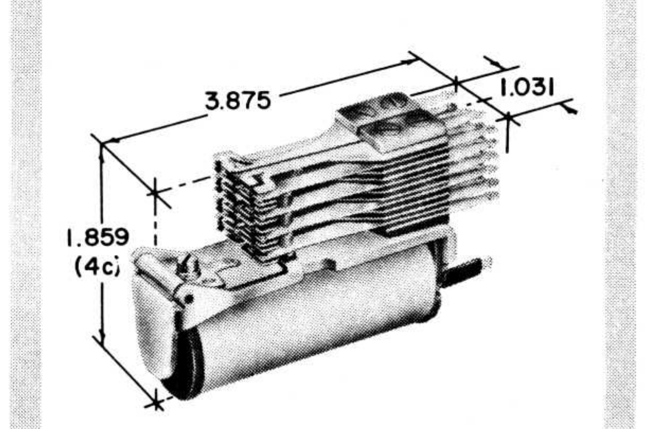
TYPE	COILS Voltage or Current	Resistance in Ohms	Nominal Power	CONTACTS Arrangement	Rate in Amps	SUGG. RESALE PRICE
LB5	9MA	2,500	200MW	SPDT	5	\$ 2.70
LB5	6.3MA	5,000	200MW	SPDT	5	2.90
LB5	4.5MA	10,000	200MW	SPDT	5	3.15
LM5	6.3MA	2,500	100MW	SPDT	5	4.15
LM5	4.5MA	5,000	100MW	SPDT	5	4.35
LM5	3.2MA	10,000	100MW	SPDT	5	4.65
LM11	9MA	2,500	200MW	DPDT	5	5.90
LM11	6.3MA	5,000	200MW	DPDT	5	6.10
LM11	4.5MA	10,000	200MW	DPDT	5	6.70
PW5DS†	6V	202	180MW	SPDT	1	11.30
PW5DS†	12V	810	180MW	SPDT	1	11.30
PW5DS†	24V	3,240	180MW	SPDT	1	11.30
PW5LS†	2.8MA	5,000	40MW	SPDT	1	11.65
PW5LS†	2.0MA	10,000	40MW	SPDT	1	12.10
RS5D	6V	335	110MW	SPDT	2	2.75
RS5D	12V	1,350	110MW	SPDT	2	2.90
RS5D	5MA	2,500	60MW	SPDT	2	3.00
RS5D	3.5MA	5,000	60MW	SPDT	2	3.30
RS5D	2.5MA	10,000	60MW	SPDT	2	3.80
SM5DS†	6V	80	500MW	SPDT	.25	6.90
SM5DS†	12V	360	500MW	SPDT	.25	6.90
SM5DS†	24V	900	500MW	SPDT	.25	6.90
SM5L§	2.7MA	10,000	75MW	SPDT	.25	6.55
SM5LS†	3.9MA	5,000	75MW	SPDT	.25	7.20
SM5LS†	2.7MA	10,000	75MW	SPDT	.25	7.70
SS5D	1MA	10,000	10MW	SPDT	2	14.50

TELEPHONE TYPE RELAYS

BS SERIES Long coil telephone type. Suited for computer and automatic test equipment applications requiring large number of poles. Tinned, pierced solder terminals for rear panel wiring. Mounting: Two No. 8-32 NC 2B tapped holes on $\frac{3}{4}$″ centers. Contact arms: Bifurcated with $\frac{1}{16}$″ dia. twin palladium contacts. Weight: Approximately 9 ozs.

BS DUST COVER Two sizes of sheet metal enclosures. Small size for BS relays up to 6 Form C (6PDT, BS23), measures: H: $2\frac{5}{16}$″, W: $1\frac{1}{2}$″, L: $3\frac{31}{32}$″ exclusive $\frac{5}{8}$″ knob; weight: 6.5 ozs. Medium size for up to 10 Form C, measures: H: $2\frac{3}{4}$″, other dimensions same as small size; weight: 7 ozs.

35D188, Small size NET \$2.00
35D189, Medium size NET \$2.00



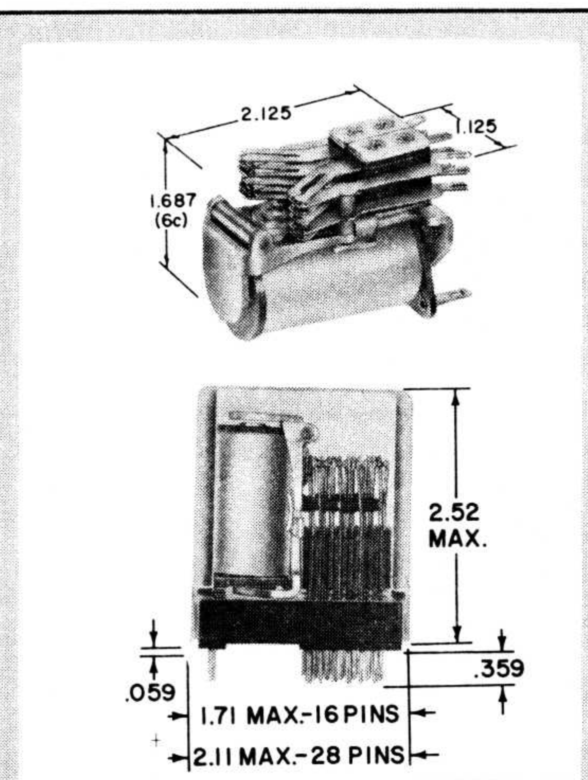
TYPE	COILS Voltage or Current	Resistance in Ohms	Nominal Power	CONTACTS Arrangement	Rate in Amps	SUGG. RESALE PRICE
BS17A	120V	103	16.5VA	4PDT	4	\$ 9.65
BS17D	24V	1,000	576MW	4PDT	4	7.90
BS17D	110V	6,500	1.8W	4PDT	4	8.55
BS17L	5.5MA	10,000	300MW	4PDT	4	8.55
BS23A	120V	103	16.5VA	6PDT	4	11.25
BS23D	24V	1,000	576MW	6PDT	4	9.60
BS23D	110V	6,500	1.8W	6PDT	4	10.15
BS23L	7.6MA	10,000	600MW	6PDT	4	10.15

†Sealed Relay
§Enclosed Relay

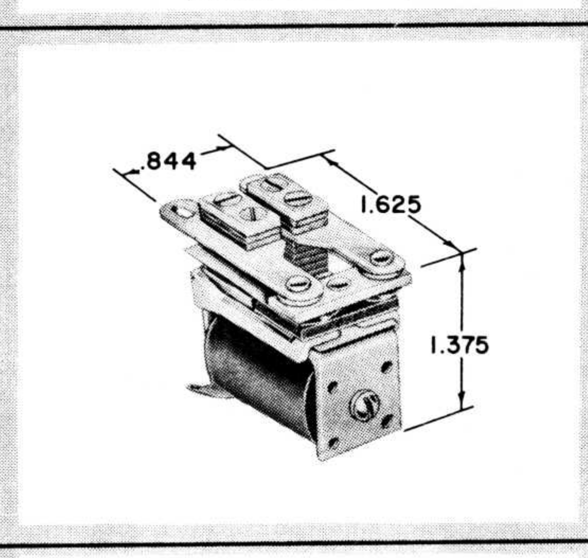
See ordering information on page 1.

LS SERIES Short springs and light weight armature provide fast action without sacrificing reliability and long life. Stainless steel hinge bearing designed to give 100 million operations. Tinned, pierced solder terminals. Mounting: Two No. 6-32 tapped holes on $\frac{3}{4}$" centers. Bifurcated contact arms with $\frac{1}{16}$" dia. twin palladium contacts. Weight: Approximately 4 ozs.

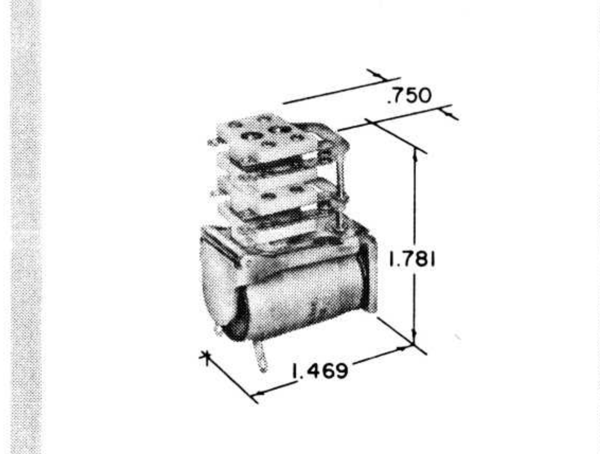
The LSP version has identical specifications as the LS, except that it is enclosed in a high impact, clear plastic cover and is provided with a rectangular socket with combination taper tab or solder terminations. Enables plug-in like any other plug-in component. Two sizes of sockets and covers are available: 16-pin for 4 Form C (4PDT) or 28-pin for 6 Form C (6PDT). Dimensions: LSP17D: 1.71" x 1.39" x 2.52" seated; weight: 4 ozs. LSP23D: 2.11" x 1.39" x 2.52" seated; weight: $4\frac{1}{2}$ ozs.



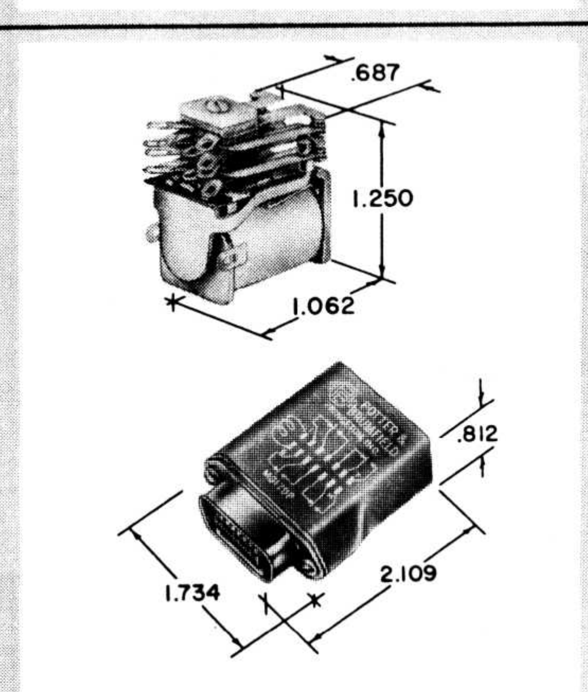
MB SERIES Miniature DC contactor. Designed for very high current applications. Extra rugged construction insures long life. Handles 150 ampere surges for 0.3 sec. Contact arms: Stationary, heavy brass, $\frac{1}{4}$" dia. silver contacts pierced solder terminals. Movable, $\frac{1}{4}$" x $\frac{13}{32}$" silver bar contact. Mounting: Four No. 3-48 tapped holes on $\frac{3}{8}$" x $\frac{3}{8}$" centers. Weight: 2 ozs.



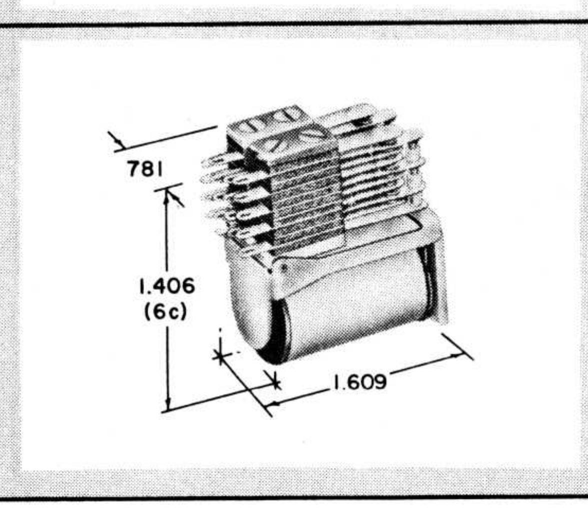
MC SERIES Built with ceramic contact spaces for RF switching to minimize losses at high frequencies. Intercontact capacitance 1.5 mmfd. max. Tinned, pierced solder type terminals. Mounting: Four No. 3-48 tapped holes on $\frac{3}{8}$" x $\frac{3}{8}$" centers. Contacts: $\frac{3}{32}$" dia. palladium. Weight: 2 ozs.



MG SERIES Sub-miniature telephone type relay can be furnished open, sealed or in nylon dust cover. Mounting: Open model has four No. 3-48 tapped holes on $\frac{3}{8}$" x $\frac{3}{8}$" centers. Sealed model has three No. 4-40 threaded studs on 1" x $\frac{1}{2}$" centers. Dust cover model has plug-in header that fits Amphenol receptacle No. 57-20140 or similar. Contacts: $\frac{3}{32}$" dia. silver. Weight: Open 1.2 ozs.; Dust cover 2.0 ozs.; Sealed 2.75 ozs.



MH SERIES MINIATURE TYPE Ideal for applications where space and weight are factors. Mounting: Open model, MH11L, one No. 6-32 threaded stud $\frac{11}{32}$" long plus locating boss. All other open models have four No. 3-48 holes on $\frac{3}{8}$" x $\frac{3}{8}$" centers. Sealed models, M enclosures, three 6-32 NC 2 threaded studs on $1\frac{1}{4}$" x $\frac{1}{2}$" centers. D enclosures, three 6-32 threaded studs on $1\frac{3}{16}$" x $\frac{15}{16}$" centers. All sealed models have hook end solder terminals. All models have $\frac{1}{8}$" dia. gold-flashed silver contacts. Weight: Open models $2\frac{1}{2}$ oz. max. Sealed models 5 ozs. max.



TELEPHONE TYPE RELAYS

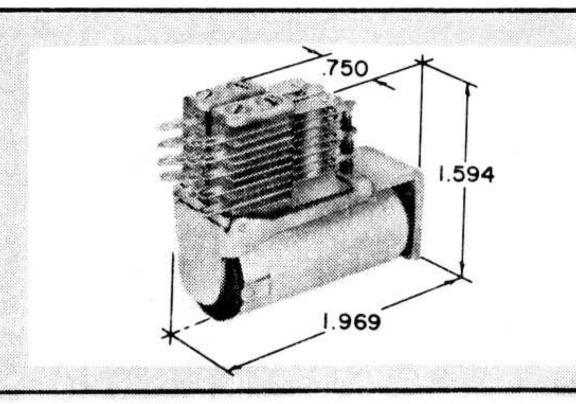
TYPE	COILS Voltage or Current	COILS Resistance in Ohms	COILS Nominal Power	CONTACTS Arrange-ment	CONTACTS Rate in Amps	SUGG. RESALE PRICE
LS17D	24V	300	1.9W	4PDT	4	$ 5.95
LS17D	48V	1,300	1.8W	4PDT	4	6.10
LS17D	110V	8,000	1.5W	4PDT	4	6.35
LS23D	24V	300	1.9W	6PDT	4	7.20
LS23D	48V	1,300	1.8W	6PDT	4	7.35
LS23D	110V	8,000	1.5W	6PDT	4	7.65
LSP17D§	24V	300	1.9W	4PDT	4	7.80
LSP17D§	48V	1,300	1.8W	4PDT	4	7.90
LSP17D§	110V	8,000	1.5W	4PDT	4	8.20
LSP23D§	24V	300	1.9W	6PDT	4	9.65
LSP23D§	48V	1,300	1.8W	6PDT	4	9.75
LSP23D§	110V	8,000	1.5W	6PDT	4	10.05
MB3D	6V	13.3	2.7W	SPST-NO-DB	60	5.65
MB3D	12V	62.3	2.7W	SPST-NO-DB	60	5.80
MB3D	24V	245	2.7W	SPST-NO-DB	60	5.80
MB3D	110V	5,000	2.7W	SPST-NC-DB	60	6.20
MC5A	6V	2.5	4.6VA	SPDT	1	5.50
MC5A	120V	800	4.6VA	SPDT	1	5.50
MC5D	12V	96	1.6W	SPDT	1	4.85
MC5D	24V	365	1.6W	SPDT	1	4.85
MC11A	120V	680	4.6VA	DPDT	1	7.60
MC11D	12V	96	1.6W	DPDT	1	7.00
MC11D	24V	365	1.6W	DPDT	1	7.00
MC11D	110V	6,200	1.6W	DPDT	1	7.55
MG11D	6V	23	1.6W	DPDT	2	5.45
MG11D	12V	90	1.6W	DPDT	2	5.45
MG11D	24V	365	1.6W	DPDT	2	5.45
MG11D	110V	7,560	1.6W	DPDT	2	5.95
MG11DT†	24V	365	1.6W	DPDT	2	11.05
MG17D	6V	23	1.6W	4PDT	2	7.30
MG17D	12V	90	1.6W	4PDT	2	7.30
MG17D	24V	365	1.6W	4PDT	2	7.30
MG17D	110V	7,560	1.6W	4PDT	2	7.65
MG17DP§	6V	23	1.6W	4PDT	2	12.15
MG17DP§	12V	90	1.6W	4PDT	2	12.15
MG17DP§	24V	365	1.6W	4PDT	2	12.15
MG17DP§	110V	7,560	1.6W	4PDT	2	12.75
MG17DT†	24V	365	1.6W	4PDT	2	13.25
MG17DT†	110V	7,560	1.6W	4PDT	2	13.85
MH11L	4.5MA	10,000	200MW	DPDT	3	6.25
MH11LM†	4.5MA	10,000	200MW	DPDT	3	10.60
MH17D	6V	23	1.6W	4PDT	5	6.25
MH17D	12V	96	1.6W	4PDT	5	6.25
MH17D	24V	365	1.6W	4PDT	5	6.25
MH17DM†	6V	23	1.6W	4PDT	5	12.65
MH17DM†	12V	96	1.6W	4PDT	5	12.65
MH17DM†	24V	365	1.6W	4PDT	5	12.65
MH17AMR†	120V	6,200	2VA	4PDT	5	20.65
MH23D	6V	13.3	2.5W	6PDT	5	7.90
MH23D	12V	62.3	2.5W	6PDT	5	7.90
MH23D	24V	245	2.5W	6PDT	5	7.90
MH23D	110V	5,000	2.5W	6PDT	5	8.40
MH23DD†	12V	62.3	2.5W	6PDT	5	16.80
MH23DD†	24V	245	2.5W	6PDT	5	16.80
MH23DD†	110V	5,000	2.5W	6PDT	5	17.40

SPECIFY COIL VOLTAGE OR RESISTANCE WHEN ORDERING

†Sealed Relay
§Enclosed Relay

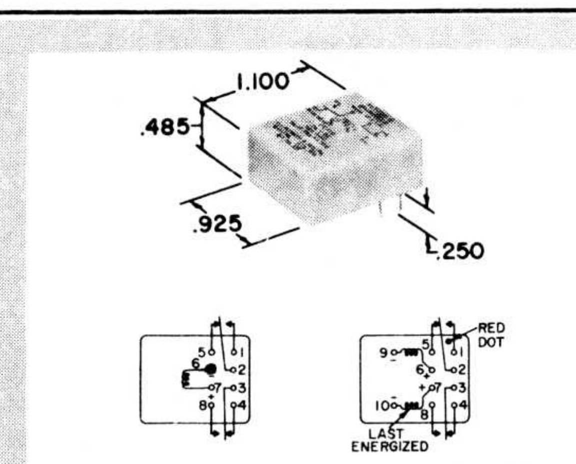
See ordering information on page 1.

ML SERIES A small telephone type relay having excellent sensitivity and outstanding switching capabilities. Ideal for transistorized computer networks, telephone systems and battery powered communications equipment. Single contact arms have $\frac{1}{8}$" dia. gold-flashed silver contacts rated at 3 amps for 100,000 operations. Pierced solder terminals. Mounting: Four 3-48 holes on $\frac{3}{8}$" centers. Weight: 2.5 ozs.

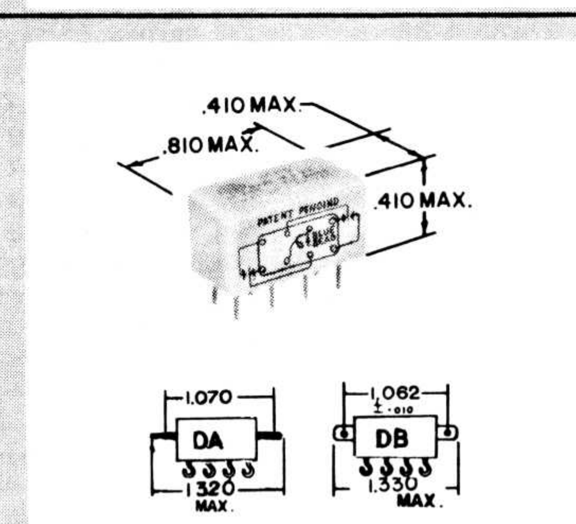


FC SERIES Conventional micro-miniature relay lies flat on printed circuit board. Withstands 150g shock, 400g linear acceleration, 30g vibration to 2000 Hz. Ambient temperature range: −65° to +125°C. Hermetically welded. Bifurcated contacts. Plugs in on .2" grid. Meets applicable sections of MIL-R-5757D, and MSFC-SPEC-339. Weight: .75 oz.

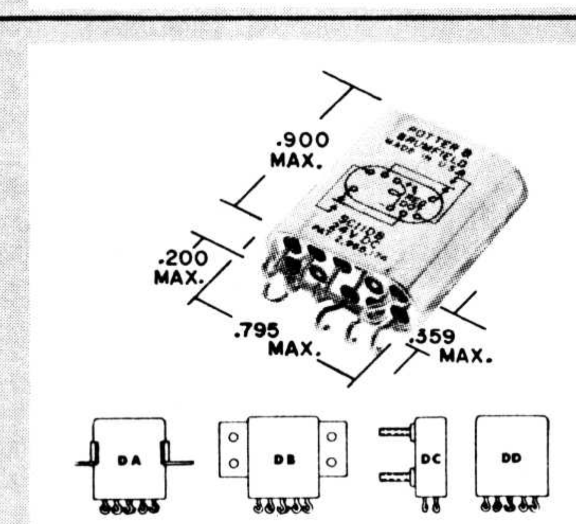
FL SERIES Dual-coil latching relay has same specs as above, except operates by pulsing each coil alternately (observing coil polarity); or connecting the coils in series from a reversing (polarized) source. Remains latched without coil power.



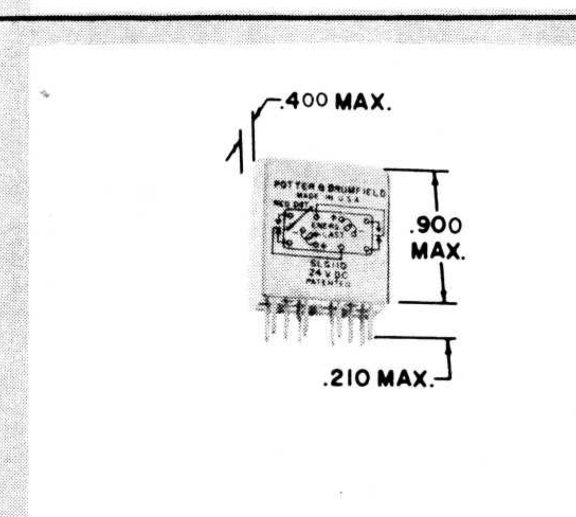
HC SERIES A micro-miniature, non-polarized, non-latching half-size crystal case relay for high reliability performance. Its high-torque motor structure and bifurcated, gold-plated silver DPDT contacts, rated dry circuit to 2 amps @ 28V DC resistive, provide positive performance in low level applications. Temperature range: −65°C to +125°C. Hermetically welded. HC11D has plug-in, plain case; HC11DA has hook-end solder terminals and shoulder brackets; HC11DB has hook-end solder terminals and flat mounting plate with 2 holes. The HC series meets or exceeds all applicable sections of MIL-R-5757D/9, and complies with MSFC-SPEC-339. Size: Plain case .8" x .4" x .4" (seated). Weight: $\frac{1}{4}$ oz.



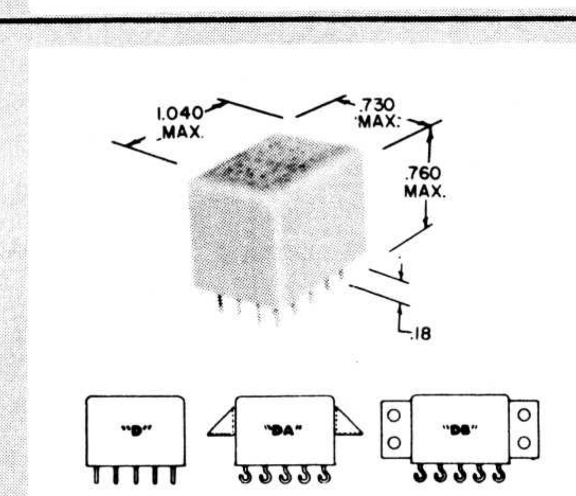
SC SERIES Micro-miniature permanent magnet relay for low power, high shock/vibration applications. 200g shock, 30g vibration to 2000 Hz with no contact openings. Ambient temperature range: −65°C to +125°C. Features single coil action and conforms to standard micro-miniature coil operation except polarized connections because of magnetic circuit . Positive terminal marked with red dot. Mounting: SC11D**, —DA, —DB, DC and DD correspond to similarly designed SL mountings. SCG11D has rectangular header with terminals on .2" grid. Weight: $\frac{3}{4}$ oz.
**Armel No. HRK-1, 8-pin receptables available from distributors for plug-in applications.



SL SERIES Dual coil micro-miniature magnetic latching relay with same shock/vibration, resistance and ambient temperature range as SC. Coils may be connected in series for polar operation. Mounting: SL11D* for plug-in applications: —DA has shoulder flanges with two .104" x .136" holes on a 1.062" center; —DB has a welded bracket with four .125" dia. holes on 1.062" x .281" centers; —DC has two No. 4-40 NC 2A threaded studs on .488" x .220" diagonal centers; —DD has plain case with hook end solder terminals. SLG11D has plug-in terminals on .2" grid.
*Viking No. P/N VB10/3DV 1 10-pin receptacles available from distributor for plug-in applications.



TL SERIES High performance 4PDT microminiature magnetic latching relay for severe environments. Hermetically welded relay case. Strong permanent magnetic forces keep the contacts locked in desired position when relay is de-energized. Approx. 0.5 ms transfer time. Temperature range: −65°C to +125°C. Meets or exceeds applicable sections MIL-R-5757D and MSFC-SPEC-339. Weight: Approx. $1\frac{1}{4}$ ozs. Mountings: D = plain case, plug-in header. DA = shoulder bracket .300" from base, hook-end solder. DB = flat plate, .593" wide x 1.60" long. 4 −.125" dia. holes on .281" x 1.30" centers, hook-end solder.



TELEPHONE TYPE RELAYS

TYPE	COILS Voltage or Current	COILS Resistance in Ohms	COILS Nominal Power	CONTACTS Arrange-ment	CONTACTS Rate in Amps	SUGG. RESALE PRICE
ML11D	4.0MA	2,500	40MW	DPDT	3	$ 6.65
ML11D	2.83MA	5,000	40MW	DPDT	3	6.80
ML11D	2.0MA	10,000	40MW	DPDT	3	7.15
ML17D	5.65MA	2,500	80MW	4PDT	3	7.90
ML17D	4.0MA	5,000	80MW	4PDT	3	8.10
ML17D	2.83MA	10,000	80MW	4PDT	3	8.40
ML23D	6.93MA	2,500	120MW	6PDT	3	8.95
ML23D	4.9MA	5,000	120MW	6PDT	3	9.15
ML23D	3.4MA	10,000	120MW	6PDT	3	9.45

HIGH PERFORMANCE RELAYS

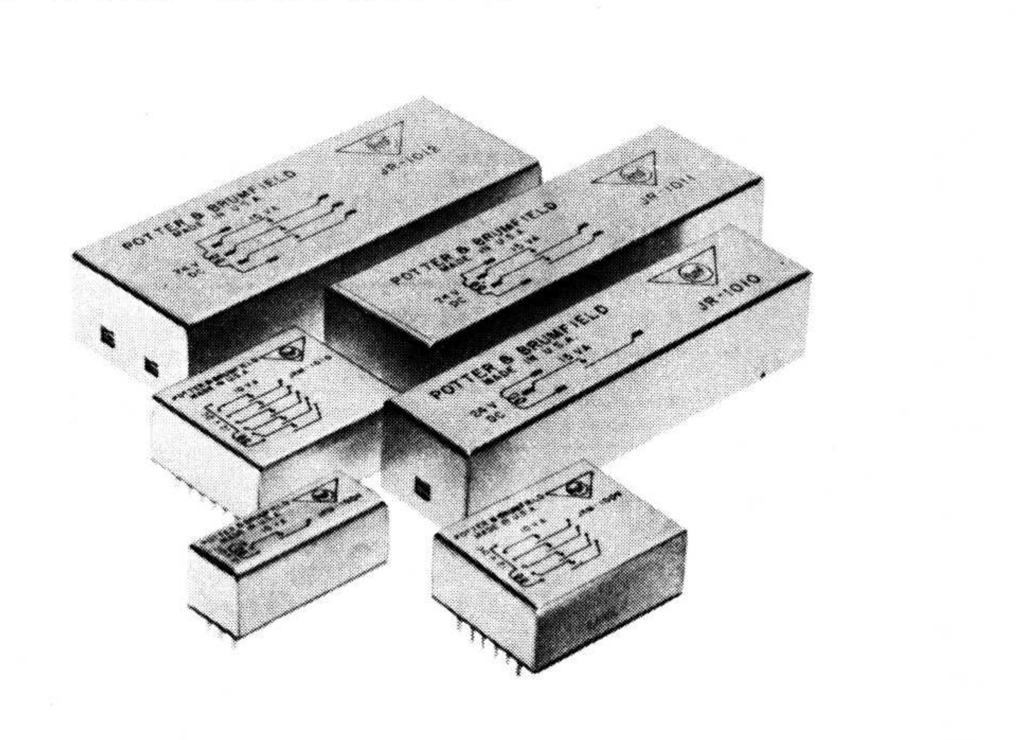
TYPE Hermetically Sealed	COILS Voltage or Current	COILS Resistance in Ohms	COILS Nominal Power	CONTACTS Arrange-ment	CONTACTS Rate in Amps	SUGG. RESALE PRICE
FC11D	6V	60	.65W	DPDT	3	$17.90
FC11D	12V	210	.65W	DPDT	3	17.90
FC11D	24V	900	.65W	DPDT	3	17.90
FC4037	26.5V	MIL-R-5757D or RY4YY4B3P				17.90
FL11D	6V	67.5	.65W	DPDT	3	20.15
FL11D	12V	230	.65W	DPDT	3	20.15
FL11D	24V	1,000	.65W	DPDT	3	20.15
FL4027	26.5V	MIL-R-5757D or RY4YY4B3P				20.15
HC11D	24V	814	.72W	DPDT	2	17.50
HC11DA	24V	814	.72W	DPDT	2	17.50
HC11DB	24V	814	.72W	DPDT	2	17.50
SC11D	6V	35	1W	DPDT	3	18.10
SC11D	12V	135	1W	DPDT	3	18.10
SC11D	24V	550	1W	DPDT	3	18.10
SC11DA	6V	35	1W	DPDT	3	18.10
SC11DA	12V	135	1W	DPDT	3	18.10
SC11DA	24V	550	1W	DPDT	3	18.10
SC11DB	6V	35	1W	DPDT	3	18.10
SC11DB	12V	135	1W	DPDT	3	18.10
SC11DB	24V	550	1W	DPDT	3	18.10
SC11DC	24V	550	1W	DPDT	3	18.10
SC11DD	24V	550	1W	DPDT	3	18.10
SCG11D	24V	550	1W	DPDT	3	18.10
SC7141	26.5V	MIL-R-5757D/10C-141		or RY4NA3B3L01		18.25
SL11D	6V	40	1W	DPDT	3	19.85
SL11D	12V	160	1W	DPDT	3	19.85
SL11D	24V	630	1W	DPDT	3	19.85
SL11DA	6V	40	1W	DPDT	3	19.85
SL11DA	12V	160	1W	DPDT	3	19.85
SL11DA	24V	630	1W	DPDT	3	19.85
SL11DB	6V	40	1W	DPDT	3	19.85
SL11DB	12V	160	1W	DPDT	3	19.85
SL11DB	24V	630	1W	DPDT	3	19.85
SL11DC	24V	630	1W	DPDT	3	19.85
SL11DD	24V	630	1W	DPDT	3	19.85
SLG11D	24V	630	1W	DPDT	3	19.85
TL17D	24V	600	1W	4DPT	3	28.75
TL17DA	24V	600	1W	4DPT	3	28.75
TL17DB	24V	600	1W	4DPT	3	28.75

SPECIFY COIL VOLTAGE OR RESISTANCE WHEN ORDERING

POTTER & BRUMFIELD
IS A MEMBER OF THE
NATIONAL ASSOCIATION OF RELAY MANUFACTURERS

See ordering information on page 1.

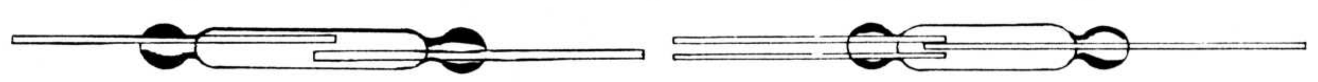
DRY REED RELAYS
TYPE JR STANDARD
TYPE JRM MINIATURE



Fast response, reliable performance, high sensitivity, and long life make JR standard and JRM miniature series relays especially suited for data processing applications, computer equipment, logic circuitry and various other sophisticated control circuits.

TWO TYPES OF BASIC CAPSULES

Both JR and JRM relays employ dry reed glass capsules with two basic types of contact arrangements, Form A (SPST-NO) or Form C (SPDT). Biasing with a permanent magnet changes Form A to a Form B (SPST-NC). This arrangement

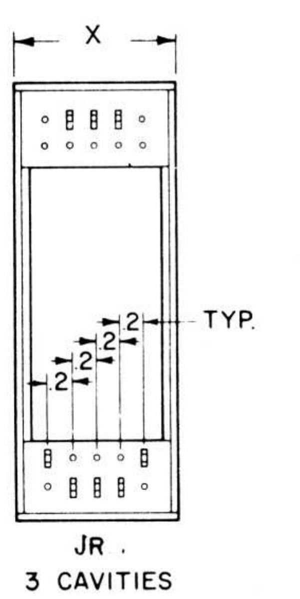


requires that coil polarity be observed. It uses a two-cavity bobbin. Combining one Form A with one Form B results in a single Form C (SPDT) break-before-make; this uses a three-cavity bobbin. A "true" Form C (SPDT) uses a reed switch with two stationary and one movable contact. The movable contact is normally closed until the coil is energized, causing a "true" Form C (SPDT) break-before-make; it uses a single-cavity bobbin.

SPECIFICATIONS

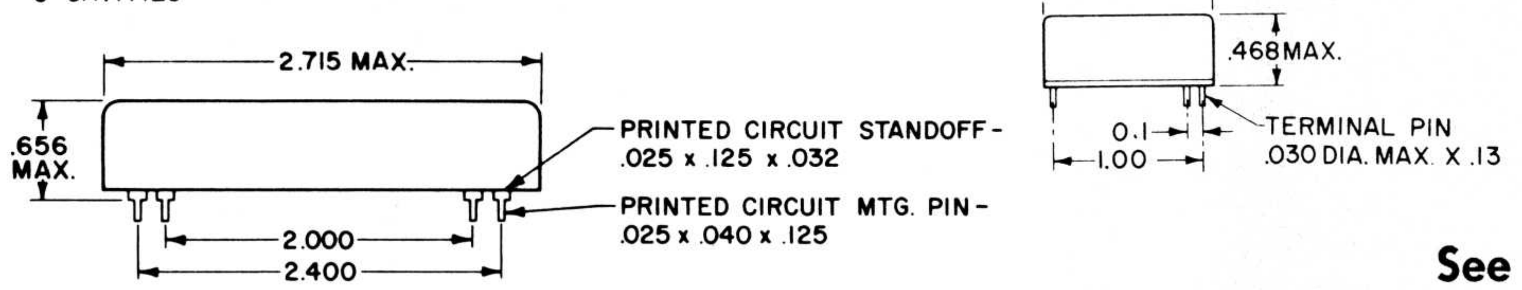
Pick-up: 75% of nominal @ 25°C.
Operate Time: At nom. voltage @ 25°C.: JR: 3ms. JRM: 1ms.
Release Time: At 25°C.: JR: .5ms. JRM: .05ms.
Coil Power: Based upon nom. voltage and resistance. JR: 1 capsule — 240 mw; 2 capsules — 360 mw; 3 capsules — 720 mw; 4 capsules — 960 mw; 5 capsules 1.5 w.
JRM: 1 capsule — 180 mw; 2 capsules — 275 mw; 3 capsules — 420 mw; 4 capsules — 540 mw; 5 capsules — 720 mw.
For additional specifications see columnar listings and drawings.

OUTLINE DIMENSIONS



JR Standard Relays — **Weights**
X = 1 Cavity = .687" max.—1.50 ozs.
X = 2 Cavities = .890" max.—2.00 ozs.
X = 3 Cavities = 1.094" max.—2.50 ozs.
X = 4 Cavities = 1.297" max.—3.00 ozs.
X = 5 Cavities = 1.516" max.—3.50 ozs.

JRM Miniature Relays
X = 1 Cavity = .432" max.—.366 oz.
X = 2 Cavities = .557" max.—.395 oz.
X = 3 Cavities = .698" max.—.530 oz.
X = 4 Cavities = .808" max.—.620 oz.
X = 5 Cavities = .963" max.—.781 oz.



JR STANDARD SERIES

TYPE	COILS: Sugg. Nominal Voltage	COILS: Resistance in Ohms	CONTACTS: Arrangement	CONTACTS: Reed Rating Watts	Number of Cavities	SUGG. RESALE PRICE
JR1000	6	150	1A	15	1	$ 2.65
JR1001	6	100	2A	15	2	3.55
JR1003	6	37.5	4A	15	4	4.95
JR1020	6	150	1A	50	1	3.75
JR1021	6	100	2A	50	2	5.75
JR1040	6	150	1C*	10	1	6.65
JR1041	6	100	2C*	10	2	7.30
JR1060	6	100	1B	15	2	3.55
JR1061	6	50	2B	15	3	4.65
JR1084	6	50	1A+1B	15	3	4.40
JR1085	6	24	2A+2B	15	5	7.20
JR1005	12	600	1A	15	1	2.65
JR1006	12	400	2A	15	2	3.55
JR1008	12	150	4A	15	4	4.95
JR1025	12	600	1A	50	1	3.75
JR1026	12	400	2A	50	2	5.75
JR1045	12	600	1C*	10	1	6.65
JR1046	12	400	2C*	10	2	7.30
JR1063	12	400	1B	15	2	3.55
JR1064	12	200	2B	15	3	4.70
JR1086	12	200	1A+1B	15	3	4.40
JR1087	12	96	2A+2B	15	5	7.20
JR1010	24	2,400	1A	15	1	3.10
JR1011	24	1,600	2A	15	2	3.80
JR1013	24	600	4A	15	4	5.20
JR1030	24	2,400	1A	50	1	4.00
JR1031	24	1,600	2A	50	2	6.00
JR1050	24	2,400	1C*	10	1	6.95
JR1051	24	1,600	2C*	10	2	7.40
JR1066	24	1,600	1B	15	2	3.60
JR1067	24	800	2B	15	3	4.80
JR1088	24	800	1A+1B	15	3	4.65
JR1089	24	384	2A+2B	15	5	7.25

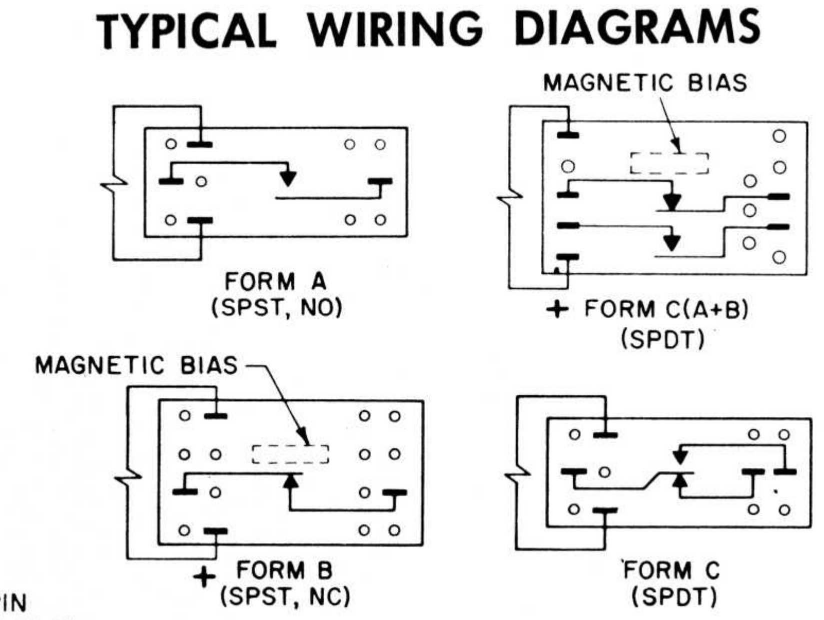
*True Form C

JRM MINIATURE SERIES

TYPE	Sugg. Nominal Voltage	Resistance in Ohms	Arrangement	Reed Rating Watts	Number of Cavities	SUGG. RESALE PRICE
JRM1000	6	200	1A	10	1	2.90
JRM1001	6	130	2A	10	2	4.20
JRM1003	6	67	4A	10	4	6.65
JRM1018	6	200	1C*	4	1	6.15
JRM1019	6	130	2C*	4	2	10.55
JRM1036	6	130	1B	10	2	3.65
JRM1037	6	86	2B	10	3	4.90
JRM1048	6	86	1A+1B	10	3	4.90
JRM1049	6	50	2A+2B	10	5	7.50
JRM1006	12	800	1A	10	1	2.90
JRM1007	12	520	2A	10	2	4.20
JRM1009	12	268	4A	10	4	6.65
JRM1024	12	800	1C*	4	1	6.15
JRM1025	12	520	2C*	4	2	10.55
JRM1040	12	520	1B	10	2	3.65
JRM1041	12	344	2B	10	3	4.90
JRM1050	12	344	1A+1B	10	3	4.90
JRM1051	12	200	2A+2B	10	5	7.50
JRM1012	24	3,200	1A	10	1	3.15
JRM1013	24	2,080	2A	10	2	4.30
JRM1015	24	1,072	4A	10	4	6.75
JRM1030	24	3,200	1C*	4	1	6.25
JRM1031	24	2,080	2C*	4	2	10.65
JRM1044	24	2,080	1B	10	2	3.75
JRM1045	24	1,376	2B	10	3	5.00
JRM1052	24	1,376	1A+1B	10	3	5.00
JRM1053	24	800	2A+2B	10	5	7.60

*True Form C

TYPICAL WIRING DIAGRAMS



FORM A (SPST, NO)
+ FORM C(A+B) (SPDT)
+ FORM B (SPST, NC)
FORM C (SPDT)

See ordering information on page 1.

MERCURY-WETTED CONTACT
JM SERIES RELAYS

Rare long life, high speed, and unvarying dependability—all are the result of the basic component of these relays: a hermetically sealed glass capsule. It contains the contact arrangement and a small reservoir of mercury sealed in a high pressure hydrogen atmosphere. A film of mercury is renewed for every operation —that's why you can think in terms of billions of operations without contact bounce, pits or welds.

TWO TYPES OF CAPSULES

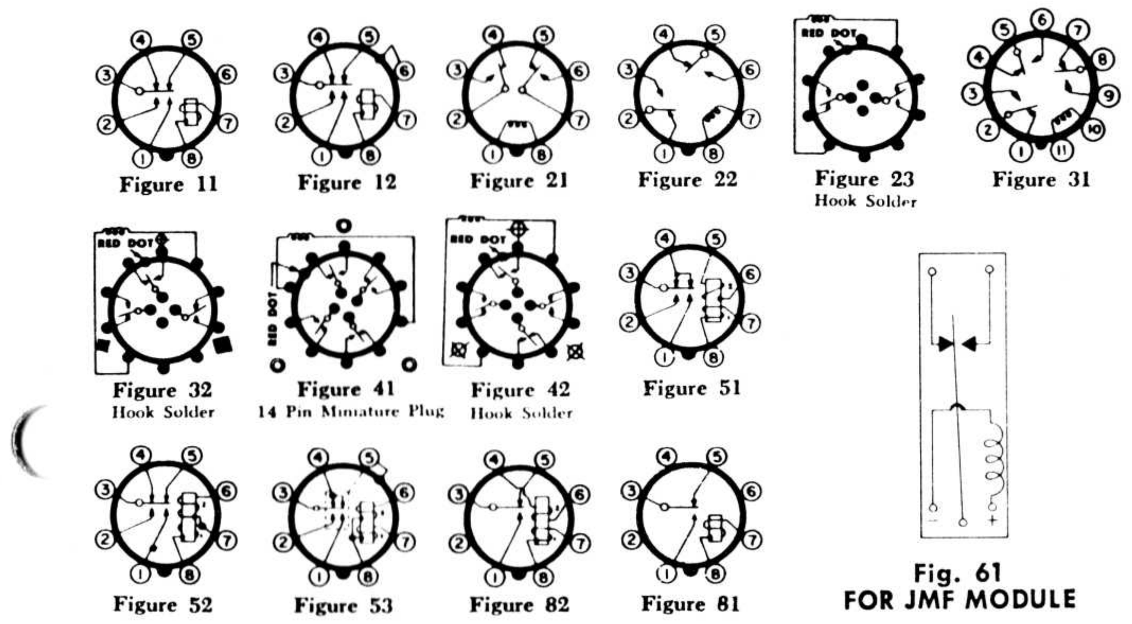
The capsule used in JMF modules and JML relays has a SPDT, break-before-make (Form C), non-bridging contact arrangement. Each capsule used in JMP, and JM1 to JM4 relays has a SPDT, make-before-break (Form D), bridging contact arrangement. JMF, JML and JMP series achieve a high rate of sensitivity by factory-adjusted magnet biasing.

CONTACT RATINGS

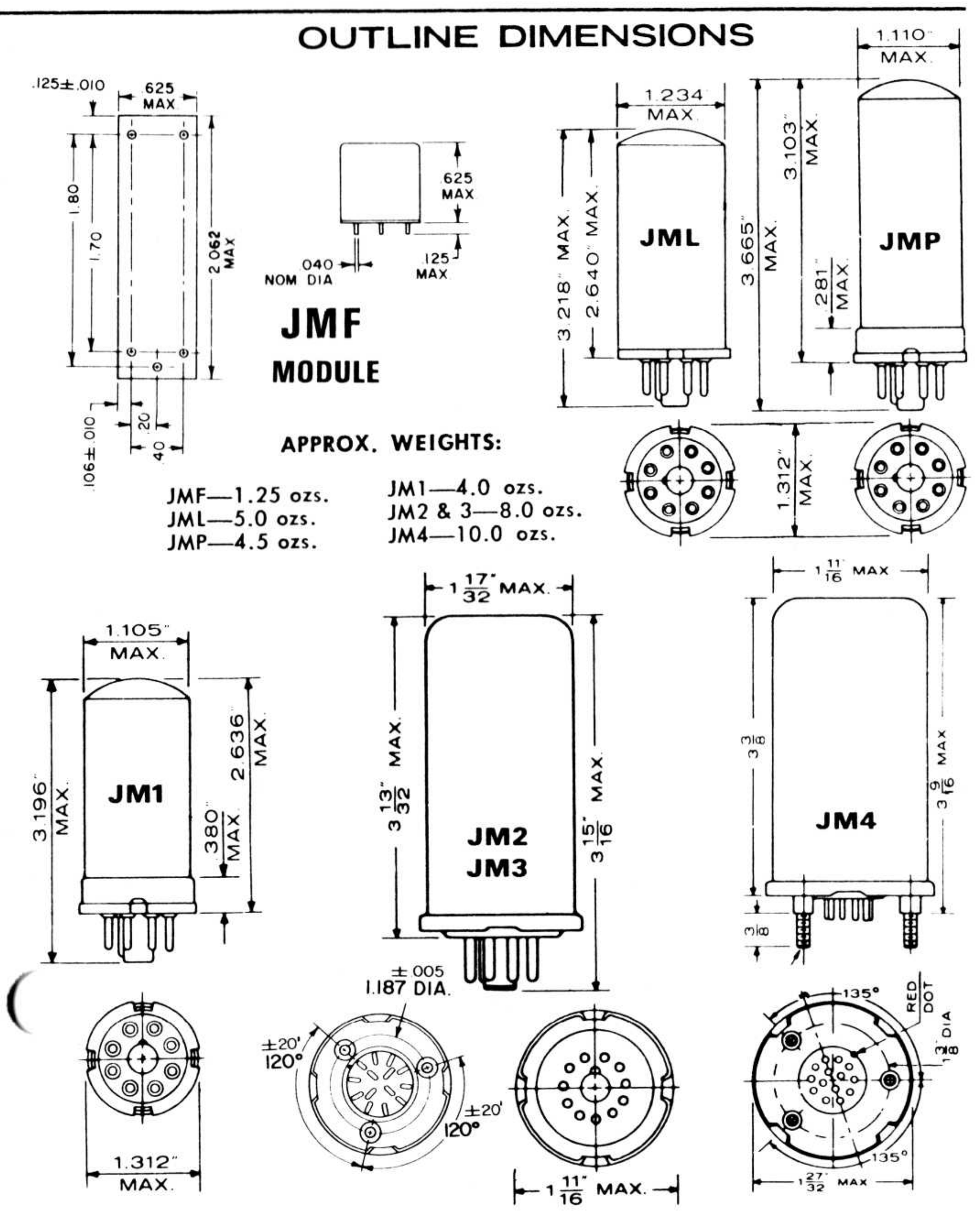
JMF and JML: 500V max., and 2 amps max., 100VA max.°
JMP and JM1 to JM4: 500V max., and 5 amps max., 250 VA max.°

°With contact protection unless in a low level circuit. Details of a simple protection circuit consisting of resistor and capacitor in series are packed with each relay.

TERMINATIONS



OUTLINE DIMENSIONS



APPROX. WEIGHTS:
JMF—1.25 ozs.
JML—5.0 ozs.
JMP—4.5 ozs.
JM1—4.0 ozs.
JM2 & 3—8.0 ozs.
JM4—10.0 ozs.

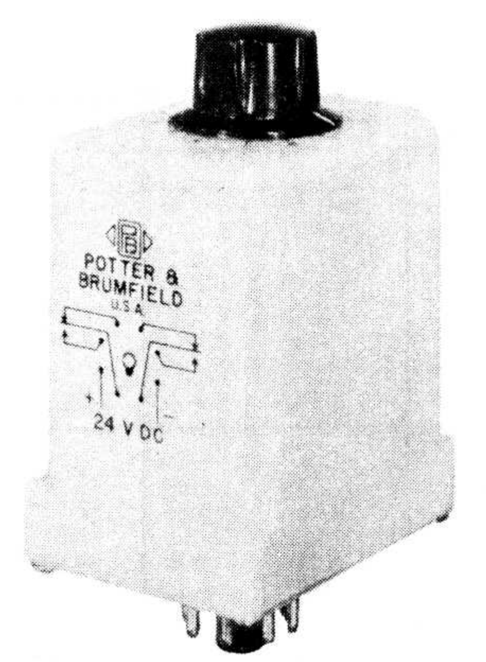
	SERIES: Capsule	Coil	Terminal Figure No.	COIL CHARACTERISTICS: Resistance in Ohms ±10%	Soak* ma. DC	Must Operate ma. DC	Must Release ma. DC	SUGG. RESALE PRICE
JMF PRINTED CIRCUIT MODULE. SENSITIVE FORM C NON-BRIDG.	SINGLE-SIDE-STABLE							
	JMF	1020	61	65	—	38.1	6.3	$9.40
	JMF	1070	61	450	—	12.9	2.1	9.40
	JMF	1080	61	675	—	11.6	1.9	9.40
	JMF	1120	61	1425	—	8.4	1.4	9.40
	JMF	1150	61	2400	—	7.8	1.3	9.40
	JMF	1160	61	4000	—	4.0	0.67	9.90
	BI-STABLE							
	JMF	5080	61	675	—	+5.4	-5.4	9.40
JML SENSITIVE FORM C NON-BRIDG.	SINGLE-SIDE-STABLE							
	JML	1061	81	40	36.0	9.75	1.68	12.20
	JML	1110	81	350	13.1	3.56	0.61	12.20
	JML	1160	81	1000	8.1	2.21	0.38	12.20
	JML	1190	81	2500	4.0	1.43	0.17	13.00
	JML	1200	81	4000	3.4	1.25	0.25	13.00
	JML	1240	81	11000	2.6	0.72	0.12	13.00
	JML	1260	81	25000	1.9	0.52	0.09	13.00
	JML	1440	82	(1) 4000 (2) 800	2.7	0.86 11.60	0.10	14.30
	BI-STABLE							
	JML	5160	81	1000		+1.24	—1.24	12.70
	JML	5200	81	4000		+0.53	—0.53	13.00
	JML	5430	82	(1) 1100 (2) 1100		+1.76	—1.76	14.30
	CHOPPER				Voltage RMS 60 Hz			
	JML	8130	81	600	6.3V			12.70
JMP POLARIZED FORM D BRIDGING	SINGLE-SIDE-STABLE							
	JMP	1081	11	90	46.25	16.0	1.3	15.95
	JMP	1160	11	1000	16.2	5.60	0.40	15.95
	JMP	1200	11	4000	8.55	2.96	0.24	17.10
	JMP	1260	11	25000	3.77	1.32	0.15	17.10
	JMP	1340	52	(1) 700 (2) 3300	33.80	14.20 5.70	2.80	18.10
	JMP	1470	53	(1) 1020 (2) 970	25.2	14.0 16.0	6.0	19.90
	BI-STABLE							
	JMP	5200	11	4000		+1.5	-1.5	17.10
	JMP	5340	52	(1) 700 (2) 3300		+6.0 +2.4	-6.0 -2.4	18.65
	CHOPPER				Voltage RMS 60 Hz			
	JMP	8120	12	500	6.3V			16.50
	JMP	8200	12	4000	18.5V			17.65
	JMP	8240	11	11000	117.0V with 1200 ohm (± 5%) ½ watt resistor in series with coil			17.65

*Current to be applied to the coil winding for at least 2 seconds just prior to current flow tests.

	SERIES: Capsule	Coil	Terminal Figure No.	COIL CHARACTERISTICS: Resistance in Ohms ±10%	MUST OPERATE Current ma DC	MUST OPERATE Voltage DC @ 25°C	MAX. VOLTAGE (at 35°C.)	SUGG. RESALE PRICE
JM1 FORM D BRIDGING 1 CAPSULE SPDT	SPDT Single Coil							
	JM1	106	12	40	67.7	2.98	9.0	14.75
	JM1	109	12	130	38.8	5.55	16.1	14.75
	JM1	112	11	500	20.1	11.10	31.6	14.75
	JM1	114	11	700	20.0	15.40	37.4	14.75
	JM1	114	12	700	20.0	15.40	37.4	14.75
	JM1	118	11	2500	10.1	27.80	70.7	15.00
	JM1	119	11	4000	8.1	35.60	89.5	8.55
	JM1	119	12	4000	8.1	35.60	89.5	15.55
	JM1	120	11	7000	6.0	46.20	117.0	15.55
	JM1	121	11	11000	5.0	60.50	148.0	15.55
	JM1	123	11	25000	3.6	99.00	224.0	15.55
	SPDT Dual Coil							
	JM1	405	51	(1) 700 (2) 3300	(1) 32.0 (2) 12.3		(1) 37.4 (2) 81.0	17.00
JM2 FORM D BRIDGING 2 CAPSULES DPDT	DPDT Single Coil							
	JM2	104	22	50	110.0	6.04	12.25	23.95
	JM2	106	21	140	66.5	10.00	20.5	23.95
	JM2	109	22	315	44.0	15.30	30.7	23.95
	JM2	110	22	500	34.8	19.20	38.7	23.95
	JM2	111	22	700	30.5	23.50	45.8	23.95
	JM2	112	22	1250	22.1	30.40	61.2	23.95
	JM2	112	23	1250	22.1	30.40	61.2	23.95
	JM2	115	21	5000	11.3	62.10	122.0	23.95
	JM2	115	22	5000	11.3	62.10	122.0	23.95
	JM2	115	23	5000	11.3	62.10	122.0	23.95
JM3 FORM D BRIDGING 3 CAPSULES 3PDT	3PDT Single Coil							
	JM3	109	31	315	44.0	15.30	30.7	31.00
	JM3	110	31	500	34.8	19.20	38.7	31.00
	JM3	111	31	700	30.5	23.50	45.8	31.00
	JM3	112	31	1250	22.1	30.40	61.2	31.00
	JM3	115	31	5000	11.3	62.10	122.0	31.00
	JM3	115	32	5000	11.3	62.10	122.0	31.00
JM4 FORM D BRIDGING 4 CAPSULES 4PDT	4PDT Single Coil							
	JM4	106	41	65	100.0	7.15	15.1	39.90
	JM4	110	41	390	42.0	18.00	37.0	39.90
	JM4	110	42	390	42.0	18.00	37.0	39.90
	JM4	112	41	700	35.4	27.20	49.5	39.90
	JM4	114	41	1400	23.0	35.40	70.0	39.90
	JM4	114	42	1400	23.0	35.40	70.0	39.90
	JM4	117	41	4000	15.6	68.50	118.0	39.90
	JM4	117	42	4000	15.6	68.50	118.0	39.90
	JM4	118	41	6500	10.5	75.00	151.0	39.90
	JM4	118	42	6500	10.5	75.00	151.0	39.90
	JM4	119	41	10000	8.6	94.30	187.0	39.90
	JM4	119	42	10000	8.6	94.30	187.0	39.90

*Octal style plugs, except Fig. 23, 32, 42 (Hook Solder), Fig. 41 (14-Pin miniature plug).

See ordering information on page 1.



SOLID STATE

TIME DELAY RELAYS

AS LOW AS $17.50

CH SERIES

CH series solid state time delay relays are engineered for a wide range of industrial applications where not-too-critical performance suffices and where economy is a factor. Enclosed in a molded white nylon dust cover, CH time delays are knob-adjustable and equipped with plug-in octal-type terminals. A quality P&B DPDT relay is mounted internally.

CD SERIES GENERAL PURPOSE

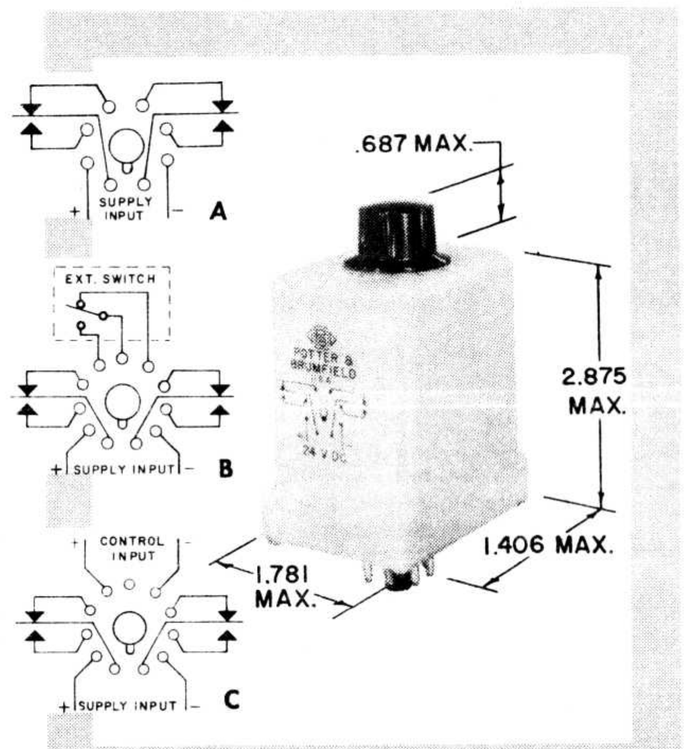
A wide selection of operational configurations, all with accurate time delay values, fast reset time and excellent repeatability, are available in the CD series solid state time delay relays. Three modes of timing are available: knob-adjustable, resistor-adjustable and fixed. CD types with delay "on operate" or delay "on release" are listed. Designed for the most sophisticated accuracy requirements.

DESCRIPTION

CH-38 and CD-38. Knob-adjustable delay "on operate" with internally mounted DPDT relay with contacts rated to 10 amps. Diagram A.

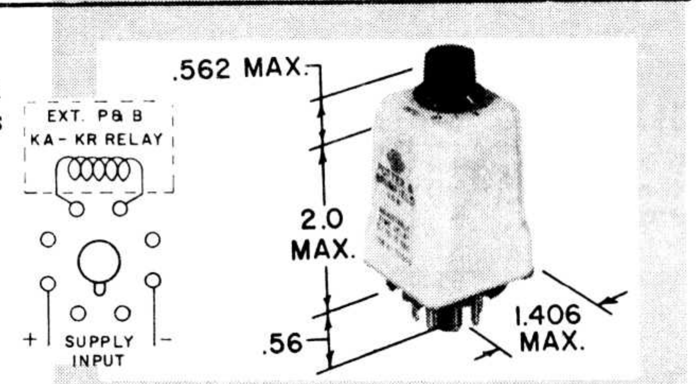
CHB-38-30001	CDB-38-70003
CHB-38-30003	CDB-38-70004
CHB-38-70001	CDB-38-70005
CHB-38-70003	CDD-38-30003
CHD-38-30001	CDD-38-30004
CHD-38-30003	CDD-38-30005

Delay "on release" CH requires auxiliary SPDT switch or relay contacts: CHB-38-70011, CHB-38-70013, CHD-38-30011, CHD-38-30013: Diagram B. CD "release" occurs when "Control" circuit is de-energized; supply circuit must be on continuously: CDB-38-70012, CDD-38-30012: Diagram C.



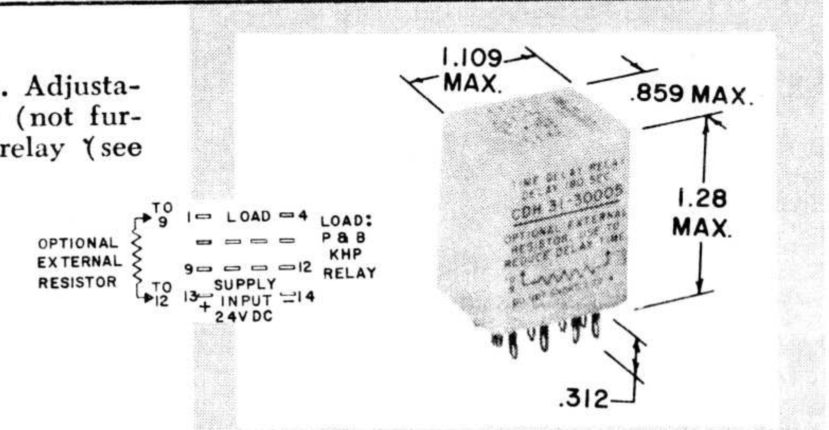
CD-21. Knob-adjustable. Use with P&B KRP relays (see page 7) as listed under Note 2.

CDB-21-70003
CDB-21-70001
CDD-21-30003
CDD-21-30001



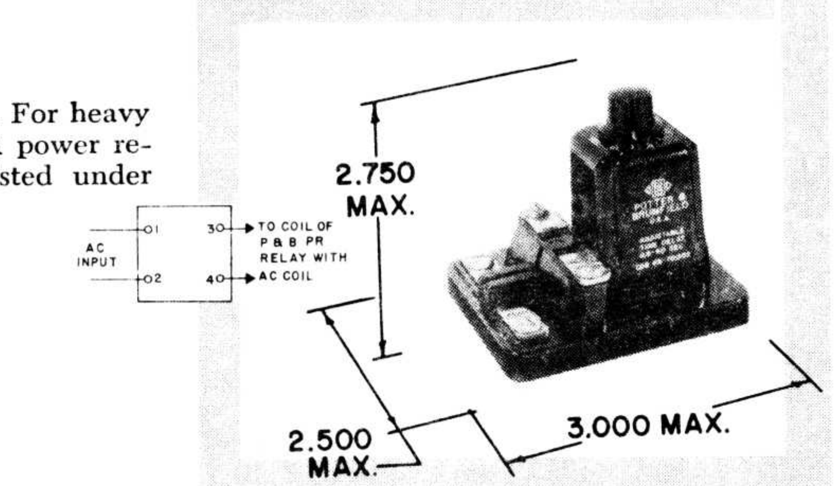
CD-31. Fixed time delay. Adjustable with external resistor (not furnished). Use with KHP relay (see page 6), Note 4.

CDH-31-30005



CD-45. Knob-adjustable. For heavy duty when used with PR power relay (see page 4) as listed under Note 6.

CDB-45-70002



SPECIFICATIONS

	CH SERIES	CD SERIES
Dial Setting	Reference scale	Time-calibrated ±5% of full scale
Temperature Range	−10°C to +55°C	−40°C to +55°C
Accuracy Over Temperature and Voltage Range	±10% of nominal	±5% of nominal
Transient Protection	Twice rated input voltage for 8 milliseconds	Tested to 1000V—½ cycle surges (on all 120V AC models)
Inherent False Operation	Contacts transfer momentarily if timing interval is interrupted	None
Reset Time	100 milliseconds	60 milliseconds
Repeatability	±2%	±1%
Polarity Reversal Protection on DC	Yes	Yes

APPROX. WEIGHTS: SERIES CD-31 2.00 ozs. SERIES CD-45 6.00 ozs. SERIES CD-21 4.25 ozs. SERIES CD-38 8.25 ozs. SERIES CH-38 4.00 ozs.

WIDE SELECTION OF TIME DELAY RANGES

TYPE	TIME DELAY IN SECONDS	INPUT VOLTAGE	NOTES	SUGG. RESALE PRICE
CHB38-30001	1.0—10	24V AC	1	$18.50
CHB38-30003	1.0—180	24V AC	1	18.50
CHB38-70001	1.0—10	120V AC	1	18.50
CHB38-70003	1.0—180	120V AC	1	18.50
CHD38-30001	1.0—10	24V DC	1	17.50
CHD38-30003	1.0—180	24V DC	1	17.50
CHB38-70011	1.0—10	120V AC	1 & 7	22.50
CHB38-70013	1.0—180	120V AC	1 & 7	22.50
CHD38-30011	1.0—10	24V DC	1 & 7	20.50
CHD38-30013	1.0—180	24V DC	1 & 7	20.50
CDB38-70003	0.1—10	120V AC	1	43.80
CDB38-70004	0.6—60	120V AC	1	43.80
CDB38-70005	1.8—180	120V AC	1	43.80
CDD38-30003	0.1—10	24V DC	1	41.55
CDD38-30004	0.6—60	24V DC	1	41.55
CDD38-30005	1.8—180	24V DC	1	41.55
CDB21-70003	0.1—10	120V AC	2	38.70
CDB21-70001	1.8—180	120V AC	2	38.70
CDD21-30003	0.1—10	24V DC	3	38.35
CDD21-30001	1.8—180	24V DC	3	38.35
CDH31-30005	180 Max.	24V DC	4 & 5	38.90
CDB45-70002	0.6—60	120V AC	6	37.05
CDB38-70012	0.6—60	120V AC	1 & 7	52.45
CDD38-30012	0.6—60	24V DC	1 & 7	49.50

NOTES

1. Has internal relay with DPDT contacts rated at 10 amperes, 120V AC. 2. Use with Potter & Brumfield relay KRP5AG- 120V AC, KRP11AG–120V AC or KRP14AG- 120V AC. 3. Use with Potter & Brumfield KRP5DG–24V DC, KRP11DG–24 DC or KRP14DG–24V DC relay. 4. Use with Potter & Brumfield KHP17D11–24V DC relay. 5. Supplied with 180 seconds delay; adjustable to 1.8 seconds with external resistor. 6. Use with Potter & Brumfield PR11AY- 120V AC relay. 7. Provides delay on release; all others have delay on operate.

See ordering information on page 1.

TM SERIES

TIME DELAY RELAYS AND AUTOMATIC RESET TIMERS

Built-in accuracy and dependability

THREE TYPES:

- **ON DELAY**
- **INTERVAL**
- **OFF DELAY**

Potter & Brumfield TM series timers are available in a wide variety of timing and adjustability ranges. Three types of timing sequences, on delay, interval, and off delay are offered by Type TM-01, Type TM-11, and TM-21, respectively. They assure accurate timing control for motors, pumps, heating, air conditioning, vending machines, machine tools and many other types of equipment. They are easy to install as all internal timer components are connected to external terminals. The self-lubricated 3 watt synchronous motor runs continuously and requires no shut-off switch. The durable, molded phenolic enclosure and base provides protection against dust and moisture.

U/L LISTED TM SERIES RESET TIMERS

Volts	Series	Model	Time Range	Range of Adjustability	Resale Price
120	ON DELAY	TM-01-020	1 minute	2-60 seconds	$40.00
120		TM-01-120	3 minutes	6-180 seconds	40.00
120		TM-01-220	5 minutes	10-300 seconds	40.00
120		TM-01-320	1 hour	2 min.-1 hour	40.00
120		TM-01-420	5 hours	10 min.-5 hours	40.00
240		TM-01-023	1 minute	2-60 seconds	42.00
240		TM-01-123	3 minutes	6-180 seconds	42.00
120	INTERVAL	TM-11-320	1 hour	2 min.-1 hour	40.00
120		TM-11-420	5 hours	10 min.-5 hours	40.00
120	OFF DELAY	TM-21-020	1 minute	2-60 seconds	40.00
120		TM-21-120	3 minutes	6-180 seconds	40.00
120		TM-21-220	5 minutes	10-300 seconds	40.00
120		TM-21-320	1 hour	2 min.-1 hour	40.00
240		TM-21-123	3 minutes	6-180 seconds	42.00

SPECIFICATIONS

Voltage: 120V or 240V, 50/60 Hz.

Switch Load Capacity: 690VA pilot duty — 120V — 600V AC.

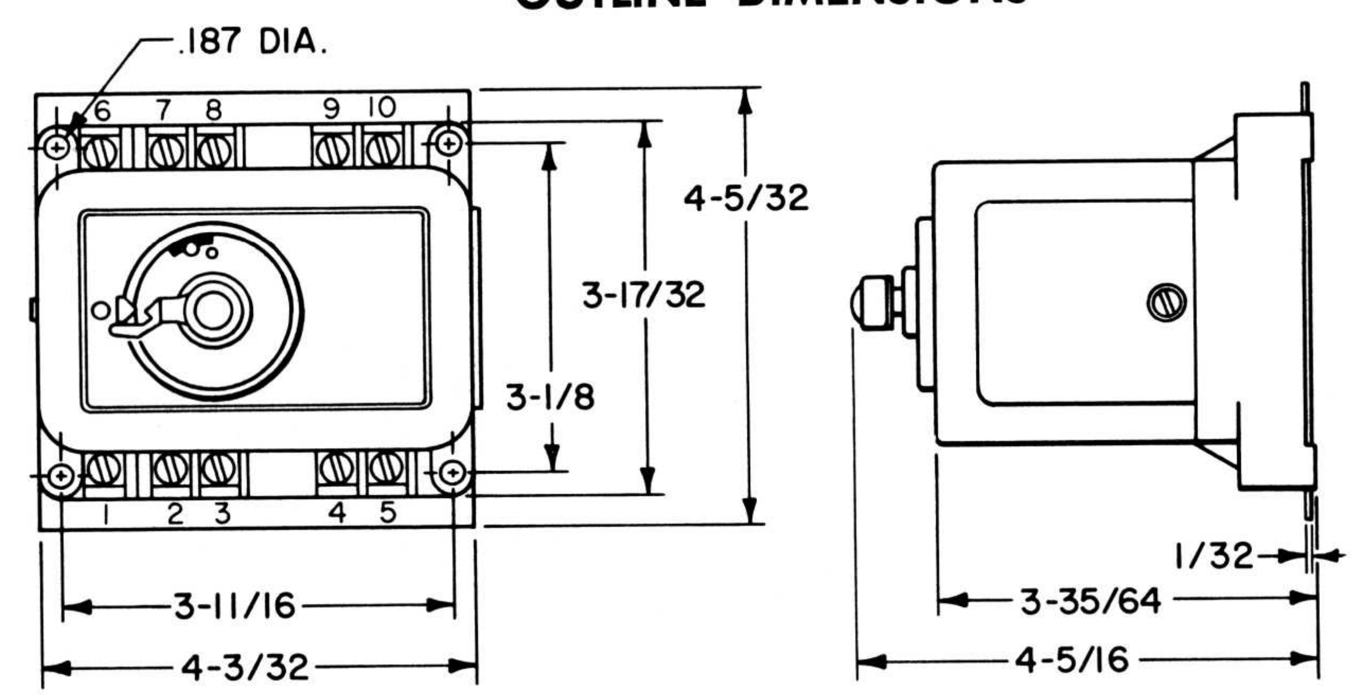
Motor: 3 watts, 240V AC maximum.

Accuracy: Plus or minus 1%, total dial range.

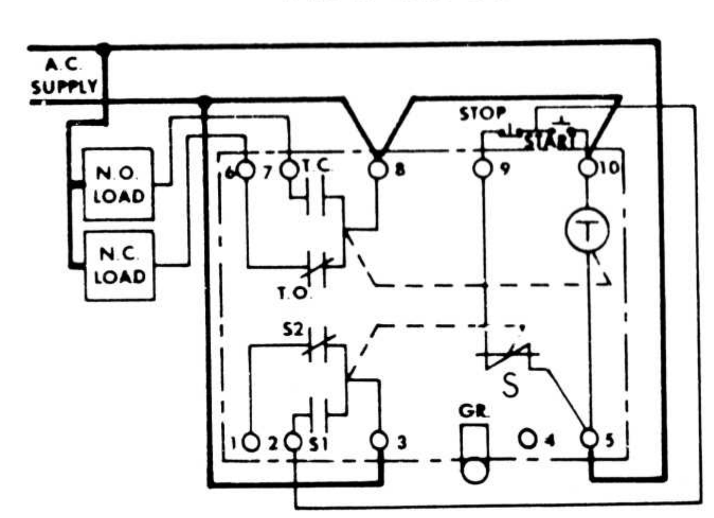
Minimum Setting: Two dial graduations, or two seconds out of 60 second range, or at zero position.

NOTE: Switches are independent of motor. Switches can be wired independently up to 600 volts. Zero set on each timer. If application requires by-passing of timer, the timer is set at zero and locked.

OUTLINE DIMENSIONS



TYPE TM-01

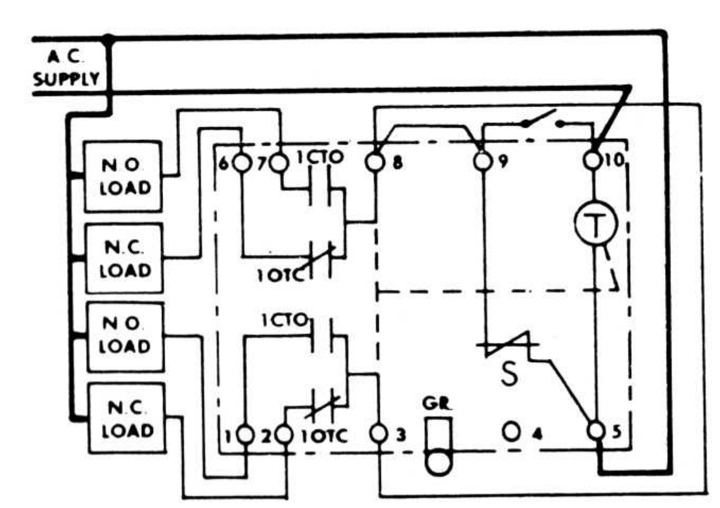


Type TM-01

Pushbutton or momentary pilot "on" delay application.

"S" switch operates as interlock.

TYPE TM-11

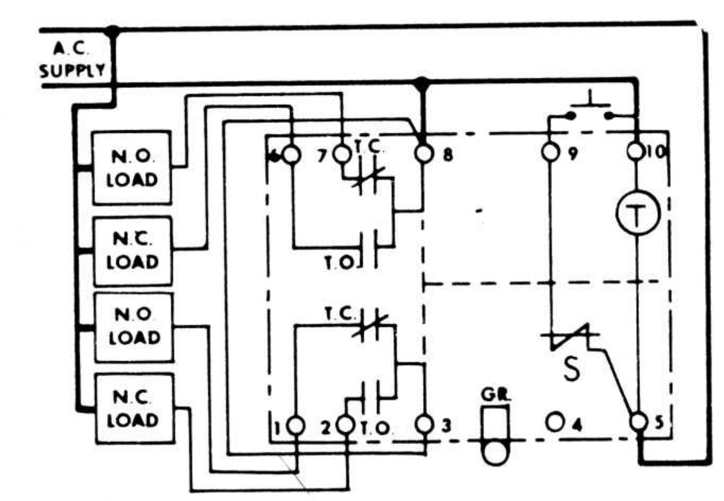


Type TM-11

Maintained contact pilot "interval" timing application.

Load switches may be wired independently.

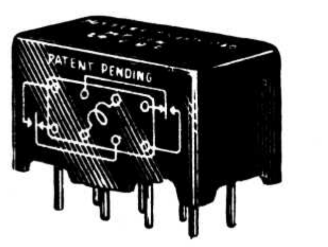
TYPE TM-21



Type TM-21

Momentary contact pilot no reset on power failure interval operation.

A NEW CONCEPT IN A COMMERCIAL MICROMINIATURE RELAY



Intended for printed circuit board or socket mounting, the HP series microminiature relay introduces a new concept of a half crystal case size relay for commercial applications. It is designed specifically for high density packaging and reliable performance. Encased in a polycarbonate dust cover, HP relays are suitable for plug-in or printed circuit board soldering. The terminals are arranged on a .200" grid.

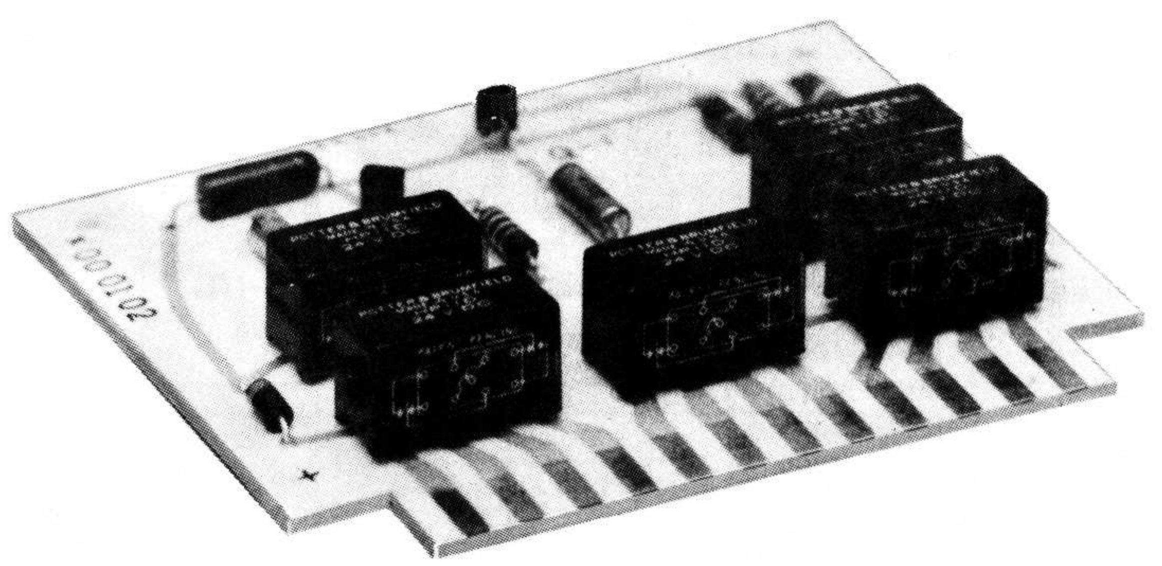
Design advantages include a high-torque motor structure, DPDT gold plated silver alloy contacts, and an engineered balance between electrical and mechanical parameters assuring an inherent reliability infrequently associated with commercial relay types.

QUALITY SPECIFICATIONS:

Insulation Resistance: 1,000 megohms min. at 500V DC.
Breakdown Voltage: 500V rms 60 Hz between all mutually insulated points.
Temperature Range: —45°C to +75°C.
Expected Life: Electrical: 100,000 operations at rated load. Mechanical: 1,000,000 operations.
Approximate Weight: 0.26 oz.

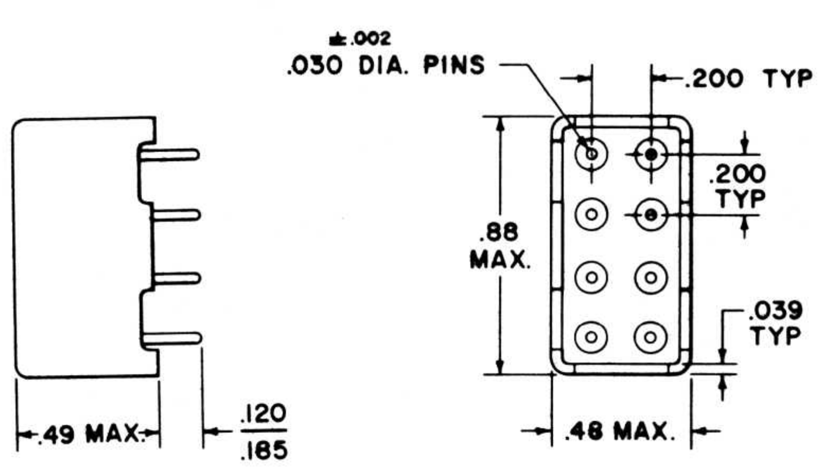
CONTACTS:
Arrangement: DPDT, 2 Form C.
Rating: Low level to 2 amps @ 30V DC, resistive; 0.5 amps max. @ 120V AC.
Contact Resistance: 50 milliohms before life measured at maximum rated load.

COILS:
Power: Approximately .662 watts nominal @ 25°C. 1.0 watt maximum @ 25°C.
Duty: Continuous.
Pick-up: 75% of nominal @ 25°C.
Operate Time: 5 milliseconds max. at nominal coil voltage and 25°C.
Release Time: 3 milliseconds max. at nominal coil voltage and 25°C.



TYPICAL LAYOUT OF HP MICROMINIATURE RELAYS ON PRINTED CIRCUIT BOARD

OUTLINE DIMENSIONS



HP COIL DATA

Nominal Coil Voltage DC	12V	24V
Coil Resistance in Ohms ± 10% @ 25°C	218	870

See ordering information on page 1.

FACTORS TO CONSIDER FOR SELECTING THE PROPER RELAY

Four inter-related factors, the contact system, the magnetic system, the environment, and the physical requirements for installation are prime considerations in the selection of the proper relay for a specific job.

CONTACTS

The contacts in an electromagnetic relay make or break connections in electric circuits. The contacts carry the inrush as well as the nominal load current. How well they perform physically is dependent on their arrangement, mechanical construction and on the suitability of the contact materials. Electrically, two important factors influence contact performance: first, the magnitude of load current and open circuit voltage; second, the specific characteristics of the circuitry.

Potter & Brumfield offers a wide selection of relays to fit practically any type of physical and electrical contact requirement.

P&B standard relays carry a number to designate contact arrangements. Abbreviations are used for indicating the switching arrangement of each number.

1—SPST-NO	11—DPDT
2—SPST-NC	14—3PDT
3—SPST-NO-DB	17—4PDT
5—SPDT	20—5PDT
7—DPST-NO	23—6PDT

SP—Single Pole 3P—Three Pole SB—Single Break ST—Single Throw
DP—Double Pole 4P—Four Pole DB—Double Break DT—Double Throw
NO—Normally Open NC—Normally Closed

For other than standard relays shown in the above table P&B series are designated in accordance with alphabetical indicators (Form A, B, C, etc.), which denote the switching arrangement:

CONTACT FORMS

Design	Sequence	Symbol	Form
SPST-NO	Make (1)		A
SPST-NC	Break (1)		B
SPDT	Break (1) -Make (2)		C
SPDT	Make (1) before Break (2)		D

COILS

The coil of the relay's magnetic system causes the contacts to open or close when power is applied to the coil. Except in special cases, the coil must be sufficiently energized by the voltage of the power source to operate the contact system at all times, and the power source should not drift to cause the coil to malfunction. AC relays are designed to operate within a range of 85 to 110% of rated voltage. DC relays are designed to operate within a range of 75 to 110% of rated voltage. While coil function is interrelated with the functions of other relay components, the coil design has a major effect on relay sensitivity, operating speed, and power consumption.

Potter & Brumfield pioneered the all-phenolic molded coil bobbin, assuring superior insulating qualities. In addition, all coils in unsealed P&B relays are centrifugally impregnated with varnish, preventing electrolytic action.

ENCLOSURES

Certain environments require dust-proof or hermetically sealed enclosures. Prior to sealing, all P&B relays are cleaned ultrasonically to remove all possible contaminants. When indicated, hermetically sealed relays are tested with Radiflo Leak Test equipment. P&B's high-voltage breakdown test automatically checks in sequence all of the relay's possible voltage breakdown points.

TERMINALS

The choice of terminals is almost infinite; screw type, threaded stud, snap-on tab, pierced or wire solder lug, taper tab, octal base and other plug-in types meet every connection requirement. Terminals are also supplied for printed or dip solder circuitry.

UNDERWRITERS' LABORATORIES LISTINGS

Certain appliance, motor control, industrial, and other relay applications require U/L listed relays. In Canada, the Canadian Standards Association listing may be necessary. Many P&B relays carry both U/L and CSA listings or U/L component recognition, thus saving relay users the extra cost and time required to have new designs examined.

See ordering information on page 1.