

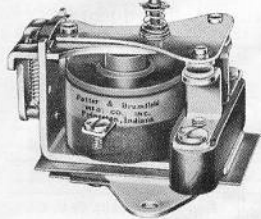


# POTTER & BRUMFIELD

## PR Series— HEAVY DUTY POWER RELAYS



PR 11



PR 3

On these pages we list a few of the relay types we class as standard. Stocks of either completed relays or component parts are kept on hand for quick assembly, resulting in unusually prompt delivery and lower prices. From these relays a type can be selected for almost any application.

All contact ratings given are for 115 volt 50-60 cycle, non-inductive load. Coils of all open relays baked varnish impregnated to government specifications, protects against moisture and mechanical damage. Sealed relay coils cellulose acetate wrapped.

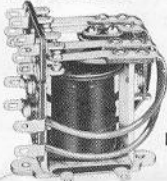
Designed for power circuits such as across-the-line, starting, up to 1 HP., heater loads up to 20 amperes, remote break-in control of transmitters, electro plating devices, elevator controls, or any high load circuit requiring fast, positive switching. AC types operate on approximately 10 volt amperes. DC types require approximately 2 watts.  $\frac{3}{16}$ " dia. pure silver contacts rated (double break) 20 A (single break) 15 A. Also available with U/L label under type designator PRAX. Auxiliary contacts up to SPDT with 1A rating can be provided for operation by the armature tail piece. Dimensions: PR1 to PR11  $2\frac{1}{16}$ " x  $2\frac{1}{2}$ " x  $2\frac{5}{16}$ " Max. High. PR11— $3\frac{3}{8}$ " x  $2\frac{1}{2}$ " x  $2\frac{5}{8}$ " high.

When ordering, specify coil voltage and frequency.

Contacts	A.C. RELAYS 6-12-24-115-230 Volts 50-60 Cy.		D.C. RELAYS 6-12-24-110 Volts	
	Normally Open	Net	Normally Open	Net
SPST	PR1A	\$3.50	PR1D	\$3.50
Heavy-Duty SPST-DB	PR3A	3.60	PR3D	3.60
DPST	PR7A	4.25	PR7D	4.25
SPDT	PR5A	3.80	PR5D	3.80
DPDT	PR11A	5.70	PR11D	5.70
Add 65c for coils 150 to 230 V.			Add 65c for coils 50 V. DC to 110 V. DC.	

Other voltages and contact combinations on request.

## KL Series—MULTIPLE CONTACT RELAYS



KL 17

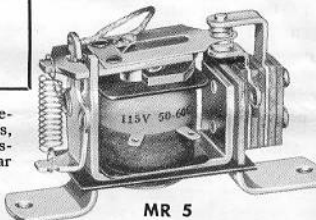
Similar in design to KR but actuating coil approximately twice as long. Permits double the ampere turns giving more power to actuate additional contacts and maintain 25 grams minimum on all. Dimensions: KL17 (4PDT)  $1\frac{1}{16}$ " x  $1\frac{1}{16}$ " x  $1\frac{1}{8}$ " high.

When ordering, specify coil voltage and frequency.

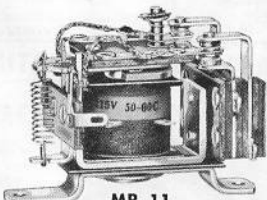
Contacts	A.C. RELAYS 6-12-24-115 Volts 50-60 Cy.		D.C. RELAYS 6-12-24-110 Volts	
	Type	Net	Type	Net
SPDT	KL5A	\$2.95	KL5D	\$2.75
DPDT	KL11A	3.40	KL11D	3.20
3PDT	KL14A	4.30	KL14D	4.00
4PDT	KL17A	5.80	KL17D	5.50
Add 65c for coils 50 V. DC to 110 V. DC.				

Other voltages and contact combinations on request.

## MR Series— MEDIUM DUTY POWER RELAYS



MR 5



MR 11

Ideal for safety and signal devices, call systems, heater loads, radio protective circuits, transmitter keying circuits, burglar alarms, photographic applications, electric sign controls, etc. Particularly adaptable to multiple panel mounting. Available in all contact arrangements up to and including 3 pole double throw. AC types operate on approximately 4 volt amperes and DC types on approximately 2 watts. Pure silver contacts rated 8 A. Dimensions: single pole units  $2\frac{3}{16}$ " x  $1\frac{1}{16}$ " x  $1\frac{1}{8}$ " high. Double pole units  $2\frac{1}{2}$ " x  $2\frac{1}{8}$ " x  $1\frac{1}{16}$ " high.

When ordering, specify coil voltage and frequency.

Contacts	A.C. RELAYS 6-12-24-115-230 Volts 50-60 Cy.		D.C. RELAYS 6-12-24-110-220 Volts	
	Normally Open	Net	Normally Open	Net
SPST	MR1A	\$2.25	MR1D	\$2.25
SPST-DB	MR3A	2.90	MR3D	2.90
DPST	MR7A	3.20	MR7D	3.20
SPDT	MR5A	2.40	MR5D	2.40
DPDT	MR11A	3.65	MR11D	3.65
3PDT	MR14A	4.40	MR14D	4.40
Add 45c for coils 150 to 230 V.			Add 45c for coils 50 V. DC to 110 V. DC. Add 70c for coils above 110 V. DC.	

Other voltages and contact combinations on request.

## KR Series—SMALL—LIGHT DUTY



KR 11

Designed for applications where size and weight are important. Sturdy and efficient. Can be made to withstand high vibration and shock with either voltage or current actuated coils. High dielectric phenolic insulation makes the KR series suitable for either power AF or RF switching. Coin silver contacts rated 5 A. Dimensions: KR-11 (DPDT)  $1\frac{1}{16}$ " x  $1\frac{1}{16}$ " x  $1\frac{1}{16}$ " high. Mounting: single 6-32 screw.

When ordering, specify coil voltage and frequency.

Contacts	A.C. RELAYS 6-12-24-115 Volts 50-60 Cy.		D.C. RELAYS 6-12-24-110 Volts	
	Type	Net	Type	Net
SPDT	KR5A	\$2.20	KR5D	\$2.10
DPDT	KR11A	2.75	KR11D	2.65
3PDT	KR14A	3.50	KR14D	3.40
Add 40c to above prices for coils 50 V. to 100 V. DC. For coils above 100 V. add 75c.				

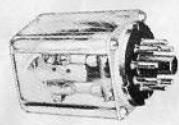
Other voltages and contact combinations on request.

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## KRP—ENCLOSED KR SERIES

The KRP is the KR relay enclosed in a clear polystyrene, dust and weatherproof cover through which the actual working of the relay may be seen. Supplied with standard octal plug only. Dimensions:  $1\frac{3}{8}'' \times 1\frac{3}{8}'' \times 2''$  high.

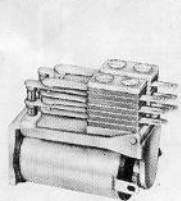
KRP 11

When ordering, specify coil voltage and frequency.

Contacts	A.C. RELAYS 6-12-24-115 Volts 50-60 Cy.		D.C. RELAYS 6-12-24-110 Volts	
	Type	Net	Type	Net
SPDT	KRP5A	\$5.50	KRP5D	\$5.40
DPDT	KRP11A	6.05	KRP11D	5.95
Add 40c to above prices for coils 50 V. to 100 V. For coils above 100 V. add 75c.				

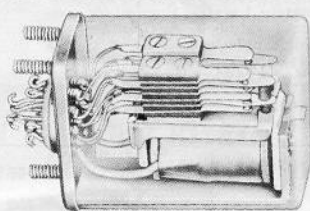
Other voltages and contact combinations on request.

## MH Series—MINIATURE TELEPHONE RELAYS



MH 17

Open Dimensions:  
 $1\frac{1}{32}'' \times \frac{3}{4}'' \times 1\frac{1}{16}''$  high.



MH 17-M

Sealed Dimensions:  
 $1\frac{1}{16}'' \times 1\frac{1}{32}'' \times 2\frac{5}{32}''$  high.

Smallest and most versatile of the telephone type relays. 4 form C (4PDT)  $\frac{3}{8}''$  diameter pure silver contacts rated 5 A. Tinned solder terminals. Stack insulation, laminated phenolic. Vibration and shock resistance to better than 10G with minimum of 1.5 watts in coil. Coils in molded bakelite bobbin, 500 volts RMS breakdown.

The hermetically sealed version resists all environmental conditions and extends relay life indefinitely. The header is all glass with Kovar solder terminals with a minimum leakage resistance of 10,000 megohms at 50% humidity. Will stand extremely high thermal shock. Sealed relays are desiccated and evacuated at high temperature and sealed in one atmosphere of dry nitrogen, which eliminates oxidation and reduces contact arcing. Housing finish hot tin dipped. Mounting three 6-32 studs on  $\frac{1}{2}'' \times 1\frac{1}{4}''$  centers.

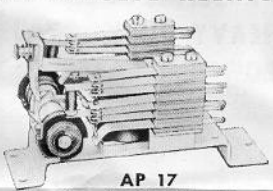
When ordering, specify type, voltage and frequency.

OPEN CONSTRUCTION (4 Form C Contacts)		
MH17A	6 V. 50-60 Cy.	\$5.15
MH17A	24 V. 50-60 Cy.	5.30
MH17A	115 V. 50-60 Cy.	5.40
MH17D	6 V. DC	4.85
MH17D	24 V. DC	4.95
HERMETICALLY SEALED CONSTRUCTION Solder Header—(4 Form C Contacts)		
MH17AM	6 V. 50-60 Cy.	\$12.45
MH17AM	24 V. 50-60 Cy.	12.55
MH17AM	115 V. 50-60 Cy.	12.65
MH17DM	6 V. DC	12.10
MH17DM	24 V. DC	12.20

MH relays for other voltages and sensitive current operation on request. Max. coil winding 22,000 ohms. Min. operating power .050 watt per movable spring. Max. coil power 4 watts. Bar palladium contacts available.

## AP Series—RACHET OR IMPULSE RELAYS

The AP series will actuate on impulses as short as 20 MS. An ingenious stop mechanism prevents overtravel of the cam, giving accurate positive operation on each impulse, regardless of speed. Windings up to 230 volts either AC or DC. Contact combinations up to 4 pole double throw (4 form C). Contacts  $\frac{3}{16}''$  fine silver rated 5 A. Coils wound on molded bobbins with minimum breakdown 500 volts RMS. Phenolic cams, hardened steel pawl and ratchet with pin hinged armature for long life. Tinned solder terminals, hum-free on AC. Dimensions:  $4'' \times 2\frac{1}{8}'' \times 2\frac{1}{8}''$  high.



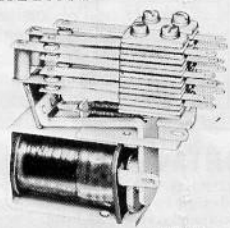
AP 17

When ordering, specify coil voltage and frequency.

Contacts	A.C. RELAYS Coil 6-12-24-115 Volts 50-60 Cy.		D.C. RELAYS Coil 6-12-24-110 Volts	
	Type	Net	Type	Net
DPDT	AP11A	\$7.50	AP11D	\$7.50
4PDT	AP17A	9.00	AP17D	9.00
Add 65c for coils 50 V. DC to 110 V. DC.				

Other voltages and contact combinations on request.

## SU Series— MULTIPLE LEAF RELAYS



SU 17

Large coil permits most efficient winding for lower dissipation. May be mounted in either vertical or horizontal position. Suitable for applications such as signal or alarm controls, remote indicators, temperature controls, overload or underload protective devices, etc. Pure silver contacts rated at 5 A. Any contact arrangement up to 4 pole double throw (4 form C). DC types require 2.5 watts, AC coils 10 V.A. Dimensions of SU17:  $2\frac{3}{16}'' \times 1\frac{1}{16}'' \times 2\frac{7}{16}''$  high.

When ordering, specify coil voltage and frequency.

Contacts	A.C. RELAYS 6-12-24-115 Volts 50-60 Cy.		D.C. RELAYS 6-12-24-110 Volts	
	Type	Net	Type	Net
SPDT	SU5A	\$2.35	SU5D	\$2.35
DPDT	SU11A	2.95	SU11D	2.95
3PDT	SU14A	3.45	SU14D	3.45
4PDT	SU17A	4.00	SU17D	4.00
Add 65c for coils 50 V. DC to 110 V. DC.				

Other voltages and contact combinations on request.

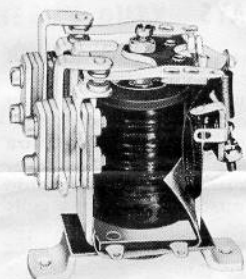
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# Potter & Brumfield

## LM Series—SENSITIVE PLATE CIRCUIT RELAYS



LM 11

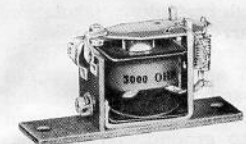
Designed to meet demand for high grade medium cost plate circuit relays in both single and double pole contact arrangements. Large coil for many ampere turns particularly sensitive. The single pole LM operates on as low as .015 watt with standard adjustment .100 watt and the double pole operates on .070 watt with standard adjustment .200 watt. Applicable to photo electric control, packaging, counting and other electronic circuits. Adjustable tail spring and residual screw for regulation of sensitivity and drop out point. Contacts  $\frac{3}{16}$ " fine silver rated 5 A. Dimensions: LM11 (DPDT)  $2\frac{3}{16}$ " x  $2\frac{5}{32}$ " x  $2\frac{1}{2}$ " high.

When ordering, specify coil resistance.

Contacts	Type	Resistance Ohms	Standard Adjustment Pull In MA	Net
SPDT	LM5	2500	6.3	\$2.80
SPDT	LM5	5300	4.5	2.95
SPDT	LM5	10000	3.2	3.30
DPDT	LM11	2500	9.0	4.20
DPDT	LM11	5000	6.3	4.35
DPDT	LM11	10000	4.5	4.70

Other contact combinations and resistances on request.

## LC Series—PLATE CIRCUIT RELAYS



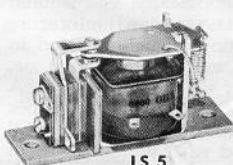
LC 5

Small, fast acting relay offering dependable operation. Fitted with molded bakelite bobbin with breakdown of 500 volts RMS minimum, baked varnish impregnated coil. Contacts rated 5 A. Sensitivity adjustable by bending tailspring hook. Available in all resistances up to 10,000 ohms. Requires .09 watt minimum actuating power with standard adjustment .2 watt. Dimensions:  $2\frac{5}{8}$ " x  $1\frac{1}{4}$ " x  $1\frac{11}{32}$ " high.

When ordering, specify coil resistance or sensitivity.

Contacts	Type	Resistance Ohms	Standard Adjustment Pull In MA	Net
SPDT	LC5	2500	9.0	\$2.15
SPDT	LC5	5000	6.3	2.25
SPDT	LC5	10000	4.5	2.40

## LS Series—PLATE CIRCUIT RELAYS



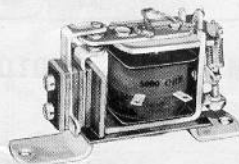
LS 5

Designed for applications where size and cost are important. Windings up to 10,000 ohms. Contact combination DPDT, pure silver rated 5 A, requires .09 watt actuating power minimum with standard adjustment .2 watt. Sensitivity adjustable by bending tailspring hook. Dimensions:  $2\frac{5}{8}$ " x  $1\frac{1}{4}$ " x  $1\frac{5}{16}$ " high. When ordering, specify coil resistance.

Contacts	Type	Resistance Ohms	Standard Adjustment Pull In MA	Net
SPDT	LS5	2500	9.0	\$2.25
SPDT	LS5	5000	6.3	2.35
SPDT	LS5	10000	4.5	2.55

## LP Series—PLATE CIRCUIT RELAYS

The LP is similar to the LS but has a sturdy metal base that can be riveted or bolted to the chassis. Molded bakelite bobbin with minimum breakdown of 500 volts RMS. Adjustable tailspring for sensitivity. Contacts  $\frac{3}{16}$ " silver rated 5 A. Available in all resistances up to 10,000 ohms. Requires .09 watt minimum actuating power with standard adjustment .2 watt. Dimensions:  $2\frac{15}{16}$ " x  $1\frac{1}{4}$ " x  $1\frac{5}{8}$ " high.



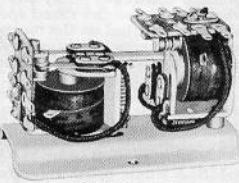
LP 5

When ordering, specify coil resistance or sensitivity.

Contacts	Type	Resistance Ohms	Standard Adjustment Pull In MA	Net
SPDT	LP5	2500	9.0	\$2.85
SPDT	LP5	5000	6.3	2.95
SPDT	LP5	10000	4.5	3.15

## LK Series—LATCHING RELAYS

Electrical latch, electrical release that will stand 10 G vibration and 50 G shock while operating. For multiple circuit switching of power loads. 35 grams minimum contact pressure. Available open or hermetically sealed in any contact combination up to 4 pole double throw (4 form C). Coil voltages up to 230 volts AC or 110 volts DC. Contacts  $\frac{1}{4}$ " diameter fine silver rated at 5 A. Coils on molded bakelite bobbins with 500 volts breakdown. Dimensions: Open relay  $2\frac{15}{16}$ " x  $1\frac{3}{4}$ " x  $1\frac{13}{16}$ " high; sealed relay  $3\frac{1}{16}$ " x  $1\frac{3}{16}$ " x  $2\frac{3}{16}$ " high.



LK 11

When ordering, specify voltage and frequency for both coils.

### PRICES FOR 4PDT OPEN RELAY BOTH COILS SAME VOLTAGE

LK17A	6 V. 50-60 Cy.	\$6.90	LK17D	6 V. DC	\$6.75
LK17A	12 V. 50-60 Cy.	6.90	LK17D	12 V. DC	6.75
LK17A	24 V. 50-60 Cy.	6.90	LK17D	110 V. DC	8.25
LK17A	115 V. 50-60 Cy.	6.90	LK17D	24 V. DC	6.75

Other voltages and contact combinations on request.

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## SM Series—SUPER MIDGET RELAYS



SM5-S

Subminiature relay fits standard miniature tube socket and hold-down shield. Sealed in deep drawn steel can, weighs less than 1 oz. Contacts SPDT, silver-rhodium rated  $\frac{1}{4}$  A at 115 V. AC or  $\frac{1}{2}$  A at 28 V. DC. "D" types for any specified DC voltage up to 110; "L" types, current actuated with windings up to 10,000 ohms. Sensitivity 75 MW. Coil dissipation 1.8 watts max. All sealed types stand 10 G vibration to 55 c.p.s. and pass government environment specs.

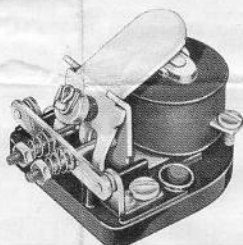
When ordering, specify voltage or resistance.

SM5DS			SM5LS		
Nom. Voltage	Pull In V	Net	Coil Resistance Ohms	Pull In MA	Net
6.0	4.0	\$4.35	5000	3.8	\$4.85
24.0	18.0	4.35	10000	2.7	5.55

## MS Series—MOTOR STARTING RELAYS VOLTAGE ACTUATED



MS 2A



MS 4A

Voltage controlled relay insures throw-out of the starting winding when motor reaches rated speed regardless of the load on the motor. May be mounted on the motor or remotely located. Ideally suited for use with hermetically sealed or explosion-proof motors that are capacitor start, induction run. Operates on back EMF of running winding.

Pull in voltage can be varied over a wide range by adjusting armature gap. Unusual design permits an exceptionally wide differential between pull in and drop out voltages. Normal adjustment for 115 volt motors is to pull in at 140 V and release at 40 V or less. For 230 V motors, pull in at 255 V and release at 80 V or less.

MS2A single break relay for capacitor start induction run motors up to 1 HP.

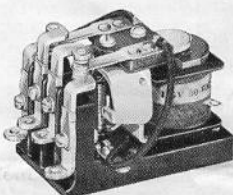
MS4A double break relay with special high current contacts for use on capacitor start induction run motors up to 3 HP. Dimensions:  $2\frac{3}{4}$ " x  $2\frac{1}{8}$ " x  $1\frac{1}{8}$ " high.

When ordering, specify type and voltage or resistance.

Type		Net
MS2A	800 ohms (for 115 volt 50-60 cycle motor)	\$2.55
MS2A	2100 ohms (for 230 volt 50-60 cycle motor)	2.65
MS4A	800 ohms (for 115 volt 50-60 cycle motor)	3.75
MS4A	2100 ohms (for 230 volt 50-60 cycle motor)	3.85

Other voltages and adjustments on request.

## SP Series—HEAVY DUTY SHOCK PROOF RELAYS



SP 11

Constructed to withstand shock and vibration, SP series presents a heavy duty relay of balanced armature construction which may be mounted in any position. Thick molded bakelite base and contact supports, coils wound on molded bakelite bobbins with breakdown of

500 volts RMS minimum. Average power for DC types 1.5 watts, for AC types 3 to 4 V. A. Contacts are  $\frac{3}{16}$ " diameter fine silver rated at 8 A on double break and 5 A on single break. Minimum contact pressure 25 grams. Dimensions of SP11 (DPDT)  $2\frac{1}{16}$ " x  $1\frac{5}{8}$ " x  $1\frac{1}{32}$ " high.

When ordering, specify coil voltage and frequency.

Contacts	A.C. RELAYS 6-115 Volts 50-60 Cy.		D.C. RELAYS 6-24 Volts	
	Type	Net	Type	Net
DPDT	SP11A	\$4.75	SP11D	\$4.30

Other voltages and contact combinations on request.

## FR Series—PHOTO FLASH RELAYS

Designed for photo flash units using a high voltage discharge through a gas filled tube requires a relay with extremely high voltage breakdown insulation. When the bulb is flashed, the contacts must carry an extremely high surge of current without sticking, burning or pitting. The repetitive accuracy must be as uniform as a precision built shutter on a fine camera. Unfailing positive contact is vital to synchronization of the shutter with the high voltage capacitor discharge.

The FR relay has been proven under the most severe conditions of temperature, humidity and shock. Special contact material and extremely high breakdown insulation between ground and all current carrying parts combine to give a reliable relay at economy prices. Available in all contact combinations up to DPDT and coil voltages up to 230 V AC and 110 V DC. Coil power 1.5 to 2 watts DC and 3 to 4 VA AC. Breakdown 3,000 volts minimum between current carrying elements and to ground. Dimensions:  $2\frac{1}{32}$ " x  $1\frac{1}{16}$ " x  $1\frac{1}{8}$ " high.

When ordering, specify voltage and frequency.

Contacts	A.C. RELAYS 6 Volts 50-60 Cy.		D.C. RELAYS 2 Volts	
	Type	Net	Type	Net
SPDT	FR5A	\$3.60	FR5D	\$3.60
DPDT	FR11A	4.70	FR11D	4.70

Other voltages and contact combinations on request.

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