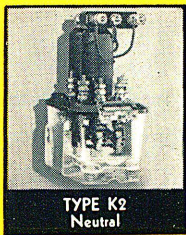
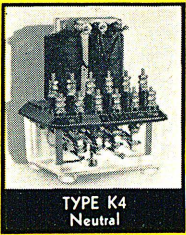


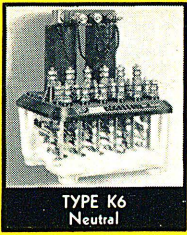
G-R-S D-C. RELAYS FOR EVERY APPLICATION



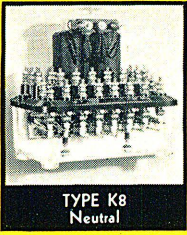
TYPE K2
Neutral



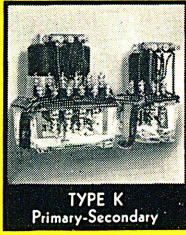
TYPE K4
Neutral



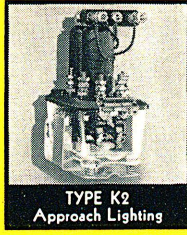
TYPE K6
Neutral



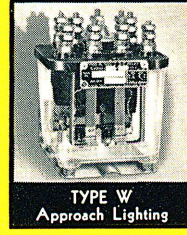
TYPE K8
Neutral



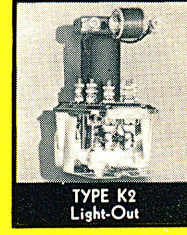
TYPE K
Primary-Secondary



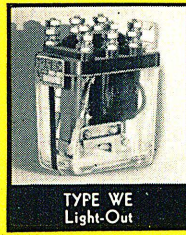
TYPE K2
Approach Lighting



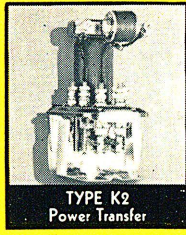
TYPE W
Approach Lighting



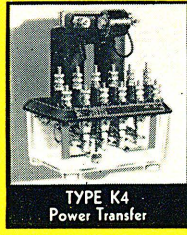
TYPE K2
Light-Out



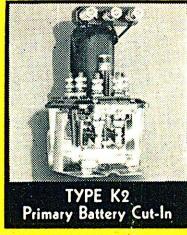
TYPE WE
Light-Out



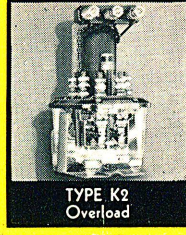
TYPE K2
Power Transfer



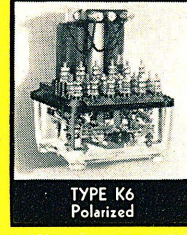
TYPE K4
Power Transfer



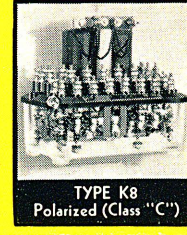
TYPE K2
Primary Battery Cut-In



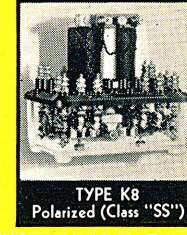
TYPE K2
Overload



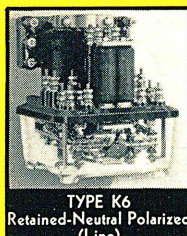
TYPE K6
Polarized



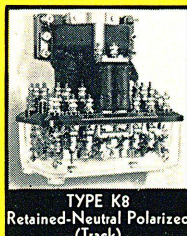
TYPE K8
Polarized (Class "C")



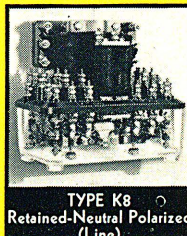
TYPE K8
Polarized (Class "SS")



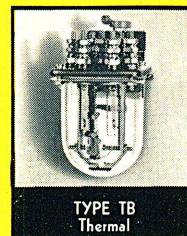
TYPE K6
Retained-Neutral Polarized
(Line)



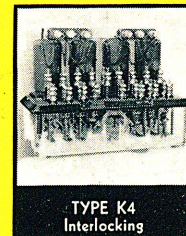
TYPE K8
Retained-Neutral Polarized
(Track)



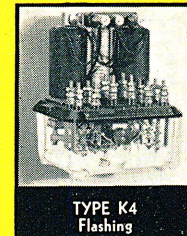
TYPE K8
Retained-Neutral Polarized
(Line)



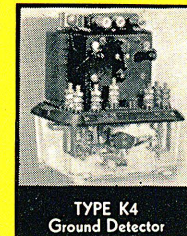
TYPE TB
Thermal



TYPE K4
Interlocking



TYPE K4
Flashing



TYPE K4
Ground Detector

	D-C. RELAYS	CONTACTS		SIZE			USE	TIME CHARACTERISTICS	CATALOG AND BULLETIN REFERENCE	REMARKS
		NEUTRAL	POLAR	WIDTH	DEPTH	HEIGHT				
NEUTRAL	Type K2	2 FB		3 7/8"	6 1/4"	8 1/4"	Line or Track	Quick Release Slow Release—.1 to .9 Secs.—as required	Catalog Plates E 2105 and E 2106 Bulletin 162	For general use As a track relay it provides quick shunting.
	Type K4	4 FB		7 3/8"	6 3/8"	8 5/8"	Line or Track	Regular Release Quick Release—Quick Pickup	Catalog Plates E 2109 and E 2110 Bulletin 162	For general use.
							Heavy-Duty Line or Track	As required.		With heavy duty contacts and connectors for carrying switch machine current or equivalent.
							Line	Slow release—relatively quick pickup .5 to 3 Seconds—as required Partial slow release—relatively quick pickup— Approx. .1 Second	Catalog Plates E 2109 and E 2110 Bulletin 162	For general use.
								Slow Pickup—relatively quick release 1/2 to 1 1/2 seconds—as required Slow Pickup and Slow Release—Pickup and release time as required		
	Type K6	6 FB—2 F		7 11/16"	7 5/16"	9 1/4"	Same as Type K4	Same as Type K4	Catalog Plates E 2113 and E 2114 Bulletin 162	For general use.
	Type K8	8 FB—4 F		10 1/8"	6 1/2"	9 1/8"	Same as Type K4	Same as Type K4	Catalog Plates E 2117, E 2119 and E 2121. Bulletin 162	For general use.
PRIMARY SECONDARY	Type K2	2 FB		3 7/8"	6 1/4"	8 1/4"	Primary Track	Quick Release		
	Type K4	1—Make-before-break 3 FB		7 3/8"	6 3/8"	8 5/8"	Secondary Line	Slow Pickup	Catalog Plate E 1901	This combination is composed of a Type K2 Primary and a K4, K6 or K8 Secondary and is used to provide improved track circuit operation especially for light-weight, high speed trains.
	Type K6	1—Make-before-break 5 FB		7 11/16"	7 5/16"	9 1/4"				
	Type K8	1—Make-before-break 7 FB		10 1/8"	6 1/2"	9 1/8"				
APPROACH LIGHTING	Type K2	2 FB		3 7/8"	6 1/4"	8 1/4"	Series Line Approach Lighting	Regular Release Slow Release Partial Slow Release, relatively quick pickup	Catalog Plates E 2105 and E 2106	This relay was designed to meet A.A.R. Spec. 15432 for approach lighting relays.
	Type W	1 FB or 2 FB		4 3/8"	5 1/4"	6 1 1/16"	Series Track or Line Approach Lighting	Regular	Catalog Plate E 2401 Bulletin 162	Only for use in existing circuits when there is insufficient energy available for the operation of Type K2 Approach Lighting Relay.
LIGHT- OUT	Type K2	2 FB		4"	7 3/8"	8 5/8"	Light-Out	Quick Release	Catalog Plates E 2107 and E 2108	For use in series with lamp circuits. Has much lower voltage drop than a-c. relays, thereby eliminating extra resistors or impedance.
	Type W Class E	1 F—1 B or 2 B		2 1/2"	3 7/8"	5 3/16"	Light-Out	Quick Release	Bulletin 162	Can be supplied with or without rectifier. The use of rectifier results in low voltage drop across relay, thereby eliminating the use of resistors or impedance.
POWER TRANSFER	Type K2	2 FB		4"	7 3/8"	8 5/8"	Line	Quick Release	Catalog Plates E 2107 and E 2108	For connecting across low voltage side of transformer, transfers load to reserve supply on reduction of service supply. Has very high percent dropaway and transfers load at 68% of nominal line voltage.
	Type K4	4 FB		7 3/8"	6 3/8"	8 5/8"	Line	Quick Release		
	Type K2 Primary Battery Cut-In	2 FB		3 7/8"	6 1/4"	8 1/4"	Line or Track	Quick Release Releasing time externally adjusted	Catalog Plates E 2107 and E 2108	For connecting across the a-c. side of a rectifier that normally feeds a bus or track circuit. If the source is interrupted the relay transfers the load to a reserve supply.
OVER- LOAD	Type K2	2 FB		3 7/8"	6 1/4"	8 1/4"	Overload	Externally Adjusted		For operating in series with switch machine, with contacts operating the circuit breaker of switch machine.
POLARIZED	Type K6	4 FB	2 NR	7 3/4"	7 13/32"	9 1/8"	Line or Track	Regular Release	Catalog Plates E 2201, E 2202 and E 2203 Bulletin 162	For general use in polarized circuits.
	Type K8 Class "C"	4 FB	4 NR	10 1/8"	6 3/8"	9 1/8"	Same as Type K6 Polar	Partial slow release or Slow Release, relatively quick pickup	Catalog Plates E 2211 and E 2213 Bulletin 162	For general use in polarized circuits.
	Type K8 Class "SS"	4 FNR—Neutral and Polar heels internally connected		10 1/8"	6 3/8"	9 1/8"	Line	Regular Release	Catalog Plates E 2205, E 2206 and E 2207. Bulletin 162	For WP and similar uses where all circuits must pass through a neutral and a polar contact in series.
RETAINED- NEUTRAL POLARIZED	Type K6	4 FB	2 NR	7 3/4"	7 13/32"	9 1/8"	Line	Partial slow pickup and partial slow release. Slow release feature may be cancelled by external circuits	Catalog Plates E 2251 and E 2253 Bulletin 162	For general use in polarized circuits where it is desired to retain the neutral armature in its energized position while the relay is being pole changed. These relays eliminate the need of a slow release repeater relay.
	Type K8	4 FB	4 NR	10 1/8"	6 3/8"	10 9/16"	Track	Same as Type K6 R-N.P.	Catalog Plates E 2257 and E 2259	
	Type K8	4 FB	4 NR	10 1/8"	6 3/8"	9 1/8"	Line	Same as Type K6 R-N.P.	Catalog Plates E 2267 and E 2269 Bulletin 162	
TIMING	Type T Class A	1—Normally open Contact		2 11/16"	3 13/16"	5 3/16"	Line Relay from Local Battery	Non-adjustable Closing Time—4.5 to 21 Secs. as required	Catalog Plate E 2501 Bulletin 162	This relay is used to bridge the time interval between the picking up of the track relay in the track section in rear and the shunting of the track relay in the track section in advance, which may occur when a light engine or gas-electric car passes from one track section to the next at high speed.
	Type T Class B	1—Normally open and 1—Normally closed Contacts INDEPENDENT		3 1/2"	4 27/32"	5 15/16"		Has Voltage Regulating Resistor Total Operating Time—45 to 180 Seconds as required	Catalog Plate E 2503 Bulletin 162	This relay is commonly used in those circuits where a longer time delay is required, up to about 3 minutes and also where every operation of the relay must be checked by a pair of normally closed contacts.
	Type T Class D	1—Dependent Contact		3 1/2"	4 27/32"	5 9/16"		Non-adjustable—Total Operating Time 10 to 45 Seconds—as required	Catalog Plate E 2507	This relay is used in those circuits where a short time delay and a normally closed checking contact are required.
	Type T Class E	1—Dependent Contact		3 1/2"	4 27/32"	5 15/16"		Has Voltage Regulating Resistor Total Operating Time—10 to 45 Seconds as required	Catalog Plate E 2509	This relay may be used in any circuit that the Class D serves and is also recommended for those circuits subject to a fluctuating voltage.
	Type T Class F	1—Normally open and 1—Normally closed Contacts INDEPENDENT		3 1/2"	4 27/32"	5 15/16"		Has Voltage Regulating Resistor Total Operating Time—10 to 45 Seconds as required	Catalog Plate E 2511	This relay has a short time delay and is recommended for highway crossing circuits requiring two timings, one for slow trains and one for fast trains.
	Type T Class G	1—Normally open and 1—Normally closed Contacts INDEPENDENT		3 1/2"	4 27/32"	5 15/16"		Has Externally Adjustable Contact Total Operating Time—45 to 180 Seconds as required	Catalog Plate E 2513	Same as Type T Class B, however the externally adjusted contact gives it a much wider variation in timing and therefore is recommended for those circuits which require a different timing for different locations, depending upon operating conditions.
	Type T Class H	1—Normally open and 1—Normally closed Contacts INDEPENDENT		3 1/2"	4 27/32"	5 9/16"		Non-Adjustable Total Operating Time—10 to 45 Seconds as required	Catalog Plate E 2515	This relay may be used in any circuit that the Class F serves when a voltage regulating resistor is not required.
INTER- LOCKING	Type K4	4 FB—On each Side Flaggerman adjustment on any or all contacts as required		12 1/8"	7 7/16"	8 5/8"	Line or Track	Same as Standard Type K4 Neutral Relay	Catalog Plate E 2303 Bulletin 162	Consists of 2 Type K4 Neutral Relays mounted on common top and mechanically interlocked to provide directional operation on single track.
FLASH- ING	Type K4	4 Sets of Lamp Contacts		7 3/8"	6 1/4"	8 5/8"	Local	30 to 45 flashes per minute for each lamp	Catalog Plates E 2304, E 2306 and E 2309. Bulletin 162	For operation of flashing highway crossing signals, meeting A.A.R. Signal Section requirements. Each of 4 sets of lamp contacts has 5 amp. capacity.
GRND- D CTOR	Type K4	1—Normally Closed Contact	1 NR	7 3/8"	6 1/4"	8 5/8"	Special for Ground Detection		Catalog Plates E 2333 and E 2335	This relay provides a visible indication of positive or negative ground on battery. Contact may be used for an audible or visible indication at a remote point.



GENERAL RAILWAY SIGNAL COMPANY

New York

Chicago

ROCHESTER, N. Y.

St. Louis

FO93



G-R-S TYPE K RELAYS

Modern research and development have made available better materials, better design, improved processes and methods of production in which every operation entering into the manufacture of direct-current relays is controlled between close limits.

The Type K Relay is not an old design revamped but an entirely new design in which full advantage is taken of every improvement made available to date.

Type K Neutral Relays may be supplied to meet any varied and unusual conditions in track or line applications requiring slow pickup, slow release, quick pickup or quick release.

These relays have many desirable features not obtainable otherwise, for example

- 1—Articulated neutral and polarized contact fingers.
- 2—High dead-weight armature torque
(Size 4 – 18 inch ounces)
- 3—Universal front and polarized contacts.

Articulated contact fingers provide perfect contact seating; uniform, stable, and high contact pressure; and a “trap” pressure at the moment of break.

The high mechanical armature torque results in extraordinary performance,—armature release is positive, back contact pressure is substantially equal to front contact pressure, back contact resistance is low, and operation under adverse conditions is dependable.

Universal contacts provide the characteristics of silver for carrying the current and the characteristics of carbon for interrupting the current. Uniformity of their inherent low resistance is assured because every contact block is X-Ray inspected.

All Type K Relays meet the latest A. A. R. Specifications in every respect