

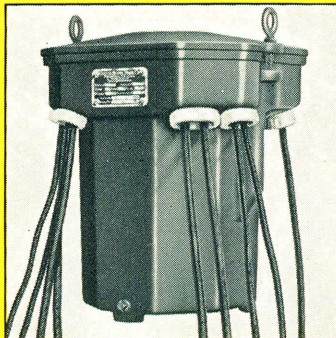
# A G-R-S TRANSFORMER FOR EVERY SIGNALING NEED



**S1**  
0.060 KVA. ON 60 CYCLES  
Transformer for small rectifiers, signal lighting.



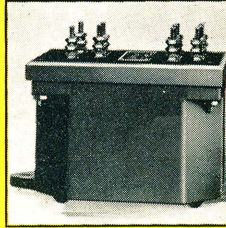
**S2**  
0.005 KVA. ON 60 CYCLES  
Transformer for track diagram lights, lock lights.



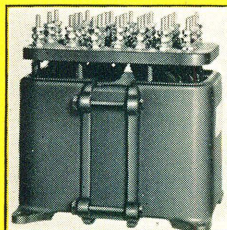
**L1 to L6**  
UP TO 25,000 KVA.  
ON 60 CYCLES  
Transformer for stepping down transmission line voltage.



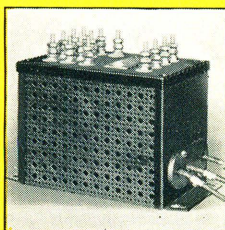
**K $\frac{1}{2}$**   
0.100 KVA. ON 60 CYCLES  
Transformer for signal lighting, battery charging, line and track circuits.



**K1**  
0.300 KVA. ON 60 CYCLES  
Transformer for signal lighting, battery charging, line and track circuits.



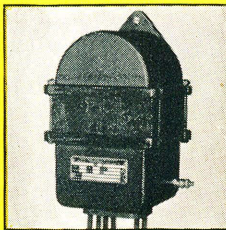
**K2**  
0.600 KVA. ON 60 CYCLES  
Transformer for signal lighting, battery charging, line and track circuits.



**U1**  
0.300 KVA. ON 60 CYCLES  
Transformer for signal lighting, battery charging, line and track circuits.



**K1 Pole-Mounted**  
0.300 KVA. ON 60 CYCLES  
Transformer pole-mounted for stepping down transmission line voltage.



**K2 Pole-Mounted**  
1.500 KVA. ON 60 CYCLES  
Transformer pole-mounted for stepping down transmission line voltage.

NEED	TYPE	GENERAL INFORMATION
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## A. TRANSFORMERS FOR SMALL LOADS (UP TO 0.060 KVA. AT 60 CYCLES)

- For **low capacity rectifiers** a convenient, small transformer having good regulation, low core loss, and high insulation. Not equipped with A.A.R. binding posts.
- For **track diagram lights, lever lights, lock lights, etc.**, a small transformer having good regulation, low core loss, and high insulation. Not equipped with A.A.R. binding posts.

<b>S</b>	Size 1	0.030 kva. 25 cycles 0.060 kva. 60 cycles H.V. winding max. 220 V. 12 terminals max. *3 $\frac{3}{8}$ " x 5 $\frac{5}{8}$ " x 3 $\frac{1}{4}$ "
<b>S</b>	Size 2	0.002 kva. 25 cycles 0.005 kva. 60 cycles H.V. winding max. 110 V. 4 terminals max. *1 $\frac{3}{4}$ " x 2 $\frac{3}{4}$ " x 3 $\frac{1}{8}$ "

When ordering, give voltage and frequency of high voltage winding; current and voltage of low voltage winding with taps desired; power factor or nature of load.

## B. TRANSFORMER FOR BATTERY CHARGING AND SIGNAL LIGHTING

- For **charging, through a rectifier**, lead storage battery sets of from 1 to 6 cells.

<b>K</b>	Size $\frac{1}{2}$	0.050 kva. 25 cycles 0.100 kva. 60 cycles H.V. winding max. 220 V.
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A separate winding is required for each set of batteries and an external resistance or reactance is necessary with rectifier for close adjustment of charging rate.

A signal lighting winding is generally added if line battery is to be charged.

A charging winding, having  $\frac{1}{4}$ -volt steps, can be furnished when very close adjustment of the charging rate is required without the use of external resistances and reactances. Since this winding requires more binding posts, the number of separate windings is reduced.

		15 terminals max. One or two regular charging windings; or, one regular charging winding and one signal lighting winding; or, one $\frac{1}{4}$ -volt-step charging winding. *4 $\frac{1}{8}$ " x 6 $\frac{1}{8}$ " x 5 $\frac{3}{8}$ "
<b>K</b>	Size 1	0.150 kva. 25 cycles 0.300 kva. 60 cycles H.V. winding max. 550 V. 18 terminals max. Four regular charging windings; or, two regular charging windings and one signal lighting winding; or, one $\frac{1}{4}$ -volt-step charging winding and one regular charging winding. *5" x 8 $\frac{7}{8}$ " x 6 $\frac{1}{8}$ "

<b>K</b>	Size 2	0.300 kva. 25 cycles 0.600 kva. 60 cycles H.V. winding max. 550 V. 35 terminals max. Five regular charging windings; or, two regular charging windings and two signal lighting windings; or, two $\frac{1}{4}$ -volt-step charging windings and one signal lighting winding. *7" x 10 $\frac{3}{4}$ " x 8 $\frac{1}{8}$ "
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- Same as B1, only transformers are housed in ventilated sheet metal cases, and more terminal room is provided on the terminal block.

<b>U</b>	Size 1	0.150 kva. 25 cycles 0.300 kva. 60 cycles H.V. winding max. 550 V. 24 terminals max. Four regular charging windings; or, two regular charging windings and one signal lighting winding; or, one $\frac{1}{4}$ -volt-step charging winding and one signal lighting winding. *5 $\frac{3}{8}$ " x 9 $\frac{3}{4}$ " x 7 $\frac{3}{8}$ "
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When ordering, give voltage and frequency of high voltage winding; current and voltage of low voltage windings with taps desired; number of cells; type of rectifier.

## C. TRANSFORMERS FOR SIGNAL LIGHTING ONLY

- When an **adjustable voltage** is required across the lamps. Transformer can be provided with fractional voltage steps; also percentage taps on primary winding to compensate for line drop.

<b>S</b>	Size 1	One light winding See Section A1.
<b>K</b>	Size $\frac{1}{2}$	One light winding See Section B1.

NEED	TYPE	GENERAL INFORMATION
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<b>K</b>	Size 1	Two light windings See Section B1.
<b>K</b>	Size 2	Four light windings See Section B1.
<b>U</b>	Size 1	Two light windings See Section B2.

When ordering, give voltage and frequency of high voltage winding; current and voltage of low voltage windings with taps desired; voltage and wattage of lamps.

## D. TRANSFORMERS FOR TRACK CIRCUITS

- For **steam or electric propulsion roads, single or double rail track circuits.**

<b>K</b>	Size $\frac{1}{2}$	See Section B1.
<b>K</b>	Size 1	See Section B1.
<b>K</b>	Size 2	See Section B1.
<b>U</b>	Size 1	See Section B2.

When ordering, give voltage and frequency of high voltage winding; current and voltage of low voltage windings with taps desired.

## E. POLE-MOUNTED TRANSFORMERS

- For **stepping down transmission line voltage. Air-cooled** transformers enclosed in a weatherproof housing especially designed for **pole mounting**. Leads are flexible, three feet long. One secondary only.

<b>K Pole-Mounted</b>	Size 1	0.150 kva. 25 cycles 0.300 kva. 60 cycles H.V. winding max. 550 V. 10 external leads max. *4 $\frac{7}{8}$ " x 11 $\frac{1}{4}$ " x 4 $\frac{3}{8}$ "
<b>K Pole-Mounted</b>	Size 2	0.750 kva. 25 cycles 1.500 kva. 60 cycles H.V. winding max. 550 V. 10 external leads max. *7" x 16" x 5 $\frac{1}{8}$ "

When ordering, give voltage and frequency of high voltage winding; current and voltage of low voltage winding with taps desired; power factor or nature of load.

## F. TRANSFORMERS FROM 0.600 KVA. TO 25,000 KVA. ON 6.6 KV. AT 60 CYCLES

- For **stepping down transmission line voltage** to signal system voltage. **Oil-cooled** transformers. Supplied with three low-voltage windings. High-voltage windings designed for 2200, 3300, 4400, and 6600 volts.

<b>L</b>	Size 1	0.400 kva. 25 cycles 3300 volts 0.600 kva. 60 cycles 6600 volts *13 $\frac{1}{4}$ " x 15 $\frac{1}{8}$ " x 11 $\frac{1}{4}$ "
<b>L</b>	Size 2	1.000 kva. 25 cycles 2200 volts 0.500 kva. 25 cycles 6600 volts 1.500 kva. 60 cycles 2200 volts 1.000 kva. 60 cycles 6600 volts *14 $\frac{1}{8}$ " x 16 $\frac{3}{4}$ " x 13"
<b>L</b>	Size 3	1.500 kva. 25 cycles 4400 volts 1.000 kva. 25 cycles 6600 volts 3.000 kva. 60 cycles 3300 volts 2.000 kva. 60 cycles 6600 volts *15 $\frac{3}{8}$ " x 19 $\frac{1}{8}$ " x 15"
<b>L</b>	Size 4	3.000 kva. 25 cycles 2200 volts 2.000 kva. 25 cycles 6600 volts 5.000 kva. 60 cycles 6600 volts *18 $\frac{1}{4}$ " x 21 $\frac{3}{8}$ " x 18 $\frac{3}{8}$ "
<b>L</b>	Size 5	5.000 kva. 25 cycles 4400 volts 4.500 kva. 25 cycles 6600 volts 10.000 kva. 60 cycles 6600 volts *21" x 25" x 18 $\frac{3}{8}$ "
<b>L</b>	Size 6	15.000 kva. 25 cycles 6600 volts 25.000 kva. 60 cycles 6600 volts *25 $\frac{1}{4}$ " x 32 $\frac{1}{8}$ " x 23"

When ordering, give voltage and frequency of high voltage winding; current and voltage of low voltage windings; power factor or nature of load.

\*In all overall dimensions, the width is first, the length second, the depth third.

For further information, please refer to Catalog Section P, Parts 1 and 2.



# GENERAL RAILWAY SIGNAL COMPANY

New York

Chicago

ROCHESTER, N. Y.

St. Louis

A-1336





# G-R-S TRANSFORMERS

G-R-S Transformers are not merely an assemblage of cores, windings, cases, and terminals. Another element of far greater importance is the 30 years of experience in designing and manufacturing appliances for the particular and exacting requirements of railway signaling.

Consider the impregnating compounds which assure high dielectric strength between windings. The selection of these compounds has been determined by numerous experiments and tests in laboratory and field. In our laboratory

there is a scale model of our factory impregnating system, in which a constant investigation for better materials and processes is being made.

Commercial impregnation in the factory is closely controlled by frequent inspections and tests by laboratory assistants in accordance with rigid specifications.

Impregnation is one of several important features which assure reliable operation of G-R-S Transformers.

SELECT THE PROPER TRANSFORMER FROM CHART ON OTHER SIDE  
HANG CHART ON WALL FOR REFERENCE