

## POWER RELAY SETS

### IDENTIFICATION, INSTALLATION, AND MAINTENANCE

#### 1.00 GENERAL

1.01 This section covers power relay sets used in auxiliary signaling systems and code calling systems. It is reissued to:

- Add information covering KS-16626, List 6 and KS-16626, List 7 relay sets.

1.02 Codes and operating information for power relay sets are listed in Table A.

#### 2.00 IDENTIFICATION

##### KS-16626 Relay Set

2.01 The KS-16626 relay set shown in Fig. 1 is for indoor and outdoor use and consists of a relay and associated apparatus assembled in a beige-gray cylindrical aluminum housing.

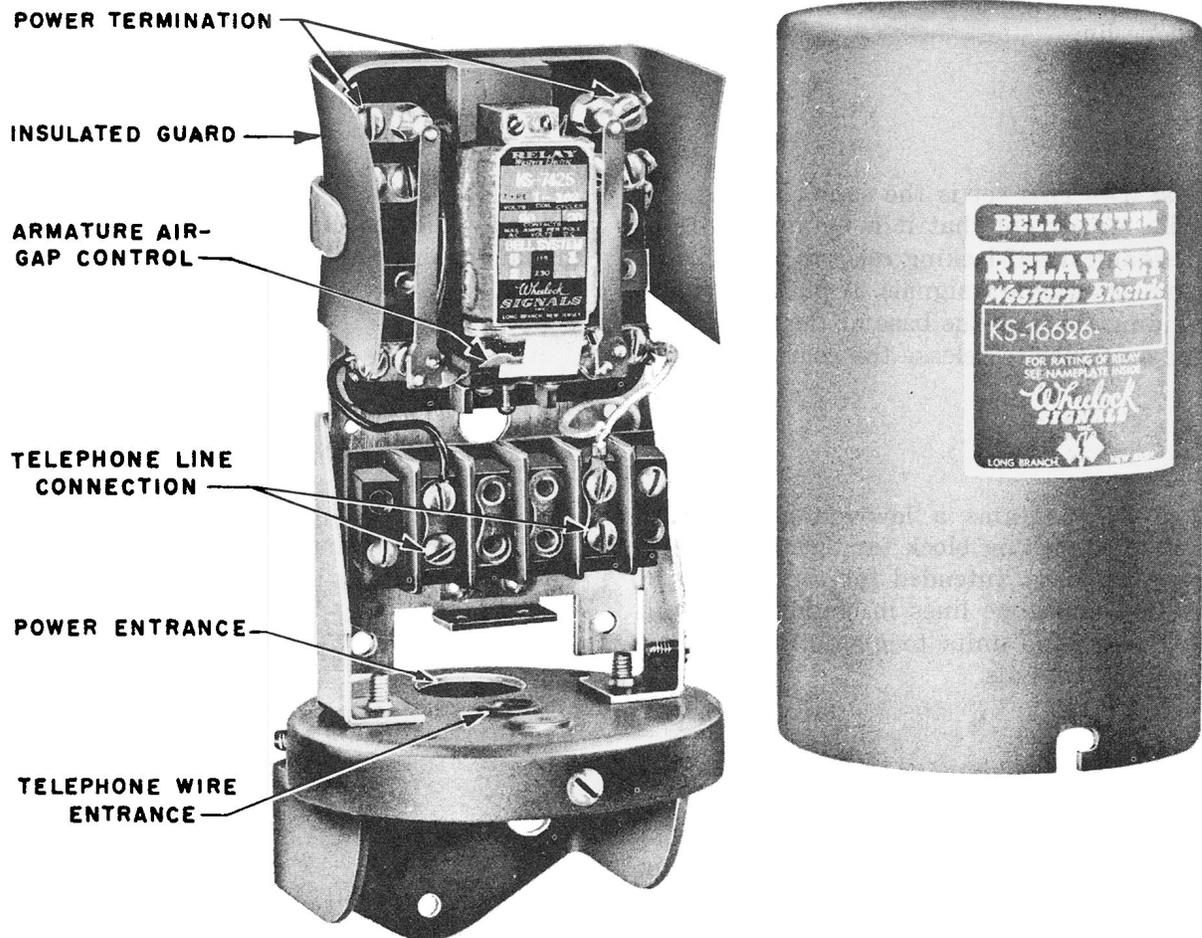


Fig. 1 - KS-16626, List 1 Relay Set, Cover Removed

**2.02** This relay set is available under five list numbers and is intended for use in place of a number of existing relay codes (see Table A).

- **List 1** — Contains a ringing relay in series with a 0.5-uf capacitor and a connecting block for terminating telephone line. Intended for use as a ringup relay on manual or dial telephone lines to operate auxiliary signals.
- **List 2** — This set is the same as the list 1 relay set except that it is equipped with a toggle switch to permit the customer to disconnect the relay set manually from telephone line.
- **List 3** — This set is the same as the list 1 relay set except that it is equipped with a mechanical self-locking relay to control continuous auxiliary signals. A pushbutton extending through the base of the set enables the customer to release the relay armature.
- **List 4** — Contains a low-voltage dc relay and a connecting block for terminating the signaling line. Intended for use on manual or dial telephone lines in conjunction with key telephone units to operate continuous auxiliary signals.
- **List 5** — Contains a dc relay and a connecting block for terminating the signaling line. Intended for use in a 3A code calling system to control the power supply to the signals when more than 15 signals are used.



- **List 6** — Performs the same functions as the list 1 relay set. It is designed for use on Civil Air Defense Warning Systems. The list 6 relay set is equipped with a 526A capacitor in place of the 198C capacitor. This capacitor is capable of high voltage and high temperature operation which prevents possible false operation of sirens due to capacitor breakdown.
- **List 7** — Developed for use in Public Emergency Reporting Systems where an outdoor set is required to perform the same functions as a 687B subscriber set. The list 7 relay set is a modified list 5 relay set with a 426A electron tube and a 20A varistor mounted on the base. It operates to close the dc relay contacts which will control warning sirens when a properly polarized signal is applied at the input terminals.



**2.03** The KS-16527, List 1 relay set shown in Fig. 2 is for indoor use and consists of an ac relay and associated apparatus assembled in a metal housing having a hinged cover.

**2.04** This relay set is intended primarily for use in a 1A code calling system; however, it may be used in auxiliary signaling systems as an auxiliary relay to operate additional signals when contact current-carrying capacity of KS-16626 or similar relay set is insufficient.

#### KS-5381, List 6 Relay Set

**2.05** The KS-5381, List 6 relay set is for indoor use and consists of a low-voltage ac relay and associated apparatus assembled in a metal housing having a hinged cover.

TABLE A  
POWER RELAY SETS

Relay Set	List Number	Type		Relay Operates On						Contact Current Carrying Capacity at 115 volts 60 cycles			Used In		Replaced by Relay Set	
		Indoor	Outdoor	Ringing Current	18 to 30 volts 60 cycles ac	48 volts 60 cycles ac	115 volts 60 cycles ac	2.4 to 4.5 volts dc	14 to 52 volts dc	48 volts dc	Amperes			Auxiliary Signaling Systems		Code Calling Systems
											5	10	20			
KS-16626	1	•	•	•							•					
	2	•	•	•							•					
	3	•	•	•							•					
	4	•	•					•			•					
	5	•	•						•				•			
	6	•	•	•							•					
	7	•	•						•					•		
KS-16527	1	•				•					•	•	•			
KS-5381	6	•			•						•					
KS-7340		•		•						•				KS-16626, L1		
KS-7341			•	•						•				KS-16626, L1		
KS-7357		•		•						•				KS-16626, L2		
KS-7362			•	•						•				KS-16626, L3		
KS-8230	1	•				•					•	•		KS-16627, L1		
KS-8232	1	•					•	•		•		•		KS-16626, L4		
	2		•				•	•		•		•		KS-16626, L4		
	3	•								•			•	KS-16626, L5		
	4		•							•			•	KS-16626, L5		
KS-8233 Transformer Relay Set	1	•			•					•			•			
	2	•		•						•		•				
KS-8646	1	•	•	•						•		•		KS-16763, L1		
	2	•	•			•				•			•	KS-16763, L2		
	3	•	•					•		•			•	KS-16763, L3		
KS-16763	1	•	•	•						•		•				
	2	•	•			•				•			•			
	3	•	•					•		•			•			

Note: The total number of signals that may be connected to a power relay set is limited by the individual signal operating currents, the sum of which cannot exceed the current carrying capacity of the relay contacts.



Fig. 2 — KS-16527, List 1 Relay Set

**2.06** This relay set is intended for use on manual or dial telephone lines in conjunction with key telephone units to operate continuous auxiliary signals.

#### KS-8233 Transformer Relay Set

**2.07** The KS-8233 transformer relay set is for indoor use and consists of a stepdown trans-

former, a relay, and associated apparatus assembled in a metal housing having a hinged cover. It is furnished with a backboard, a 4-foot cord for power connection, and two 9-inch cords for connection to the signal and control circuits.

**2.08** This relay set is available under two list numbers:

- **List 1** — Contains an ac relay and is intended for use in 1B and 2B code calling systems.
- **List 2** — Contains a ringing relay in series with a 0.5-uf capacitor. Intended for use as a ringup relay on manual or dial telephone lines to operate auxiliary signals.

#### KS-8646 Relay Set

**2.09** The KS-8646 relay set has been replaced by the KS-16763 relay set. The electrical characteristics of both relays are identical. The only difference is the housing. The new housing is cast aluminum; the old housing was cast iron.

#### KS-16763 Relay Set

**2.10** The KS-16763 relay set (Fig. 3) is for indoor and outdoor use at hazardous locations. All the parts are enclosed in a cast aluminum housing. Two threaded openings are provided in the housing for fastening conduits. A plug is supplied with each relay set to close one of the openings when it is not in use.

**2.11** The KS-16763 relay set is available under three list numbers (see Fig. 3).

- **List 1** — Contains a ringing relay in series with a 0.5-uf capacitor. Intended for use as a ringup relay on manual or dial telephone lines to operate auxiliary signals.
- **List 2** — Contains an ac relay and is intended for use in 1B and 2B code calling systems.

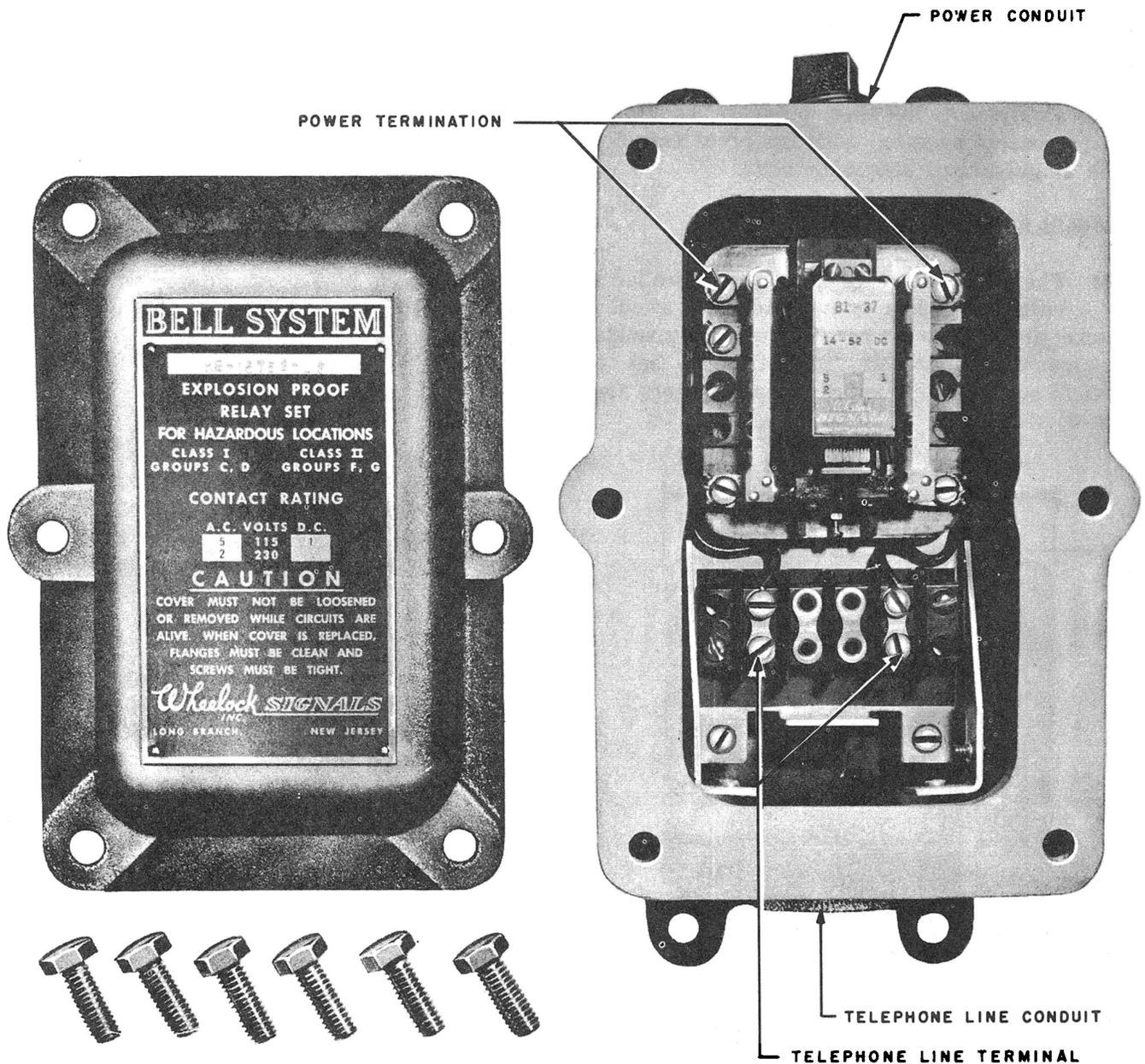


Fig. 3—KS-16763 Relay Set

- *List 3*—Contains a dc relay and is for use in a 3A code calling system.

### 3.00 INSTALLATION



Prior to installation, a definite agreement covering the provision of any necessary power wiring must be made with the customer.

- 3.01** Consider the following when locating relay sets:

- Locate relay set where it will not be damaged or made inaccessible by objects piled near or against it.
- Do not place in locations that might be hazardous (open stairs, moving machinery, etc.).
- Use surfaces where relay set can be fastened securely.

- 3.02** The armatures on power relay sets restore

to normal (open contacts) by gravity. Always mount relay sets on a vertical surface.

**3.03** Equipment installed outdoors should be securely mounted with rustproof fasteners such as galvanized screws or bolts.

**KS-16626 Relay Set**

**3.04** The KS-16626 relay set may be installed in either an indoor or an outdoor location. A bracket attached to the base of the set is provided for mounting purposes. Mount relay set on vertical surface with appropriate fasteners (see Fig. 4).



Fig. 4 — KS-16626, List 1 Relay Set

**3.05** Entrance holes are provided in base of set for telephone and power wiring. Terminate telephone wires on connecting block as shown in Fig. 5.

**3.06** The customer shall arrange to have commercial power wiring terminated on relay set as shown in Fig. 5. Power connections are shown on circuit diagram in C Section entitled Auxiliary Signals, Connections.

**3.07** Relay set framework shall be connected to power system ground in accordance with the National Electrical Code and any local regulations that may apply. A power ground screw terminal is provided for this purpose (see Fig. 5).

**3.08** The armature airgap of relays operated by ringing current may be adjusted by a 2-position control arm as shown in Fig. 5. Control arm pivots to the right engaging the notch for minimum airgap and to the left for maximum airgap. Use wide airgap for dial areas and close airgap for long loops or manual areas.

**4.00 MAINTENANCE**



Before performing any work on relay sets connected to commercial power, the power supply circuit shall be de-energized. The customer shall arrange for power disconnection and reconnection on power circuits other than plug and outlet.

**4.01** Power relay sets do not normally require adjustment other than the adjustment of the armature airgap when provided. Defective relay units shall be replaced.

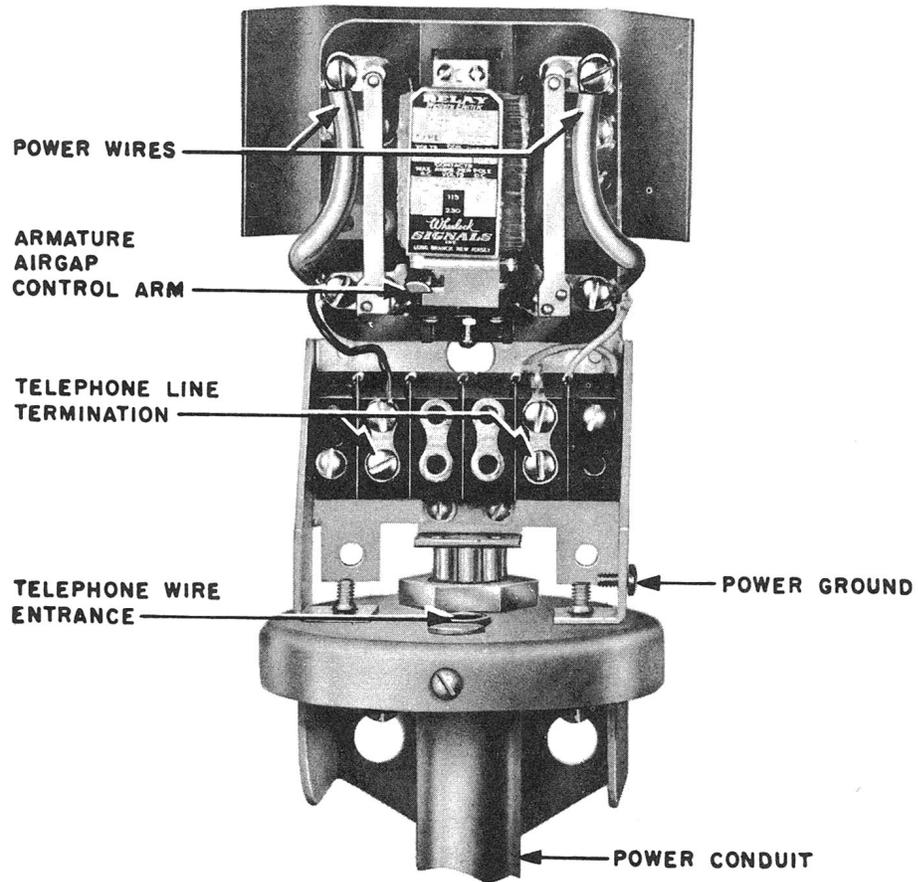


Fig. 5 — KS-16626, List 1 Relay Set, Cover Removed