

# Zachary C. Gillihan 2008

## TABLE OF CONTENTS

### SECTION E

#### RELAYS, INDICATORS AND ELECTRIC LOCKS

	PLATE
PREFACE.....	
STYLE SLV-13 VANE RELAY, COMPLETE.....	E-1005
STYLE SLV-13 VANE RELAY OPERATING MECHANISM DETAILS.....	E-1007
STYLE SLV-13 VANE RELAY CIRCUIT CONTROLLING MECHANISH DETAILS.....	E-1009
STYLE SV-12 VANE RELAY, COMPLETE.....	E-1015
STYLE SV-12 VANE RELAY OPERATING MECHANISM DETAILS.....	E-1017
MODEL 15 TWO-POSITION VANE RELAY, COMPLETE.....	E-1020
MODEL 15 THREE-POSITION VANE RELAY, COMPLETE.....	E-1025
VANE RELAYS WITH INDICATOR ATTACHMENT.....	E-1030
MODEL 15 TWO AND THREE-POSITION VANE RELAY OPERATING MECHANISM DETAILS.....	E-1033
MODEL 15 TWO AND THREE-POSITION AND SV-12 VANE RELAY CIRCUIT CONTROLLING MECHANISM DE- TAILS.....	E-1035
MODEL 15 TWO AND THREE-POSITION AND SV-12 VANE RELAY MECHANISM CASE, CONDENSER AND COUNT- ERWEIGHT DETAILS.....	E-1037
MODEL 15 VANE RELAY LIGHTNING ARRESTERS.....	E-1039
CENTRIFUGAL FREQUENCY RELAY USING 3-ARM CENT- RIFUGE.....	E-1045
CENTRIFUGAL FREQUENCY RELAY USING 3-ARM CENT- RIFUGE DETAILS.....	E-1046
STYLE SV-20 AND SV-21 TIME ELEMENT VANE RELAY..	E-1050
STYLE SV-30 SLOW RELEASE VANE RELAY.....	E-1060
STYLE SV-31 A C FLASHER VANE RELAY.....	E-1062
CASE AND OPERATING MECHANISM DETAILS FOR STYLE SV-30 SLOW RELEASE AND STYLE SV-31 FLASHER VANE RELAYS.....	E-1065
STYLE "SV-32" SLOW RELEASE VANE RELAY.....	E-1067

## Zachary C. Gillihan 2008

	PLATE
STYLE "SV-32" SLOW RELEASE VANE RELAY DETAILS..	E-1069
STYLE "TV-30" 2-POSITION VANE RELAYS , COMPLETE..	E-1071
STYLE "TV-30" 3-POSITION VANE RELAY, COMPLETE..	E-1072
STYLE "TV-30" 2-POSITION VANE RELAY DETAILS.....	E-1073
STYLE "TV-30" 3-POSITION VANE RELAY DETAILS.....	E-1075
STYLE "ANL-2" RELAY.....	E-1090
STYLE "ANL-2" RELAY DETAILS.....	E-1093
MODEL 16 VANE ARMATURE TYPE INTERLOCKING RE- LAY.....	E-1100
MODEL 16 VANE ARMATURE TYPE INTERLOCKING RE- LAY DETAILS.....	E-1105

### VANE RELAYS

Section E, as indicated in the Preface, will include ordering references for Relays, Indicators and Electric Locks. Both direct and alternating current apparatus will be included in this Section, but in distinct sequence of plate numbers.

Underneath or on the opposite page from each Plate showing a general assembly of the various types of Vane Relays will be found brief statements outlining their recommended applications. A detailed description of the more important Vane Relays may be found in Bulletin 92. Other Vane Relays are catalogued in Plates 101, 101 $\frac{1}{4}$  and 110 of our Section H Catalog.

### INFORMATION TO ACCOMPANY ORDERS

Reference to the piece number given on paster in a relay will be sufficient to insure receiving a relay which will be an exact duplicate. If uncertain as to the relay which will best meet operating requirements, information outlined below should accompany the order.

#### GENERAL

- (a) Voltage and frequency of alternating current available.
- (b) Whether two or three-position operation is required.
- (c) Single or double-element relay desired.
- (d) Number of contacts, front and back or normal and reverse.

Unless otherwise specified, front and back, normal and reverse contacts will be non-independent.

If three-position relays are to be equipped with contacts closed when the relay is de-energized, this should be stated.

If indicator attachment, as shown in Plate E-1030, is desired, this should be stated.

## Zachary C. Gillihan 2008

### TRACK RELAY ONLY

- (e) Maximum, minimum, and average length of track circuits.
- (f) Weight and length of rail.
- (g) Ties: Kind, condition, and whether treated, stating treatment.
- (h) Ballast: Whether stone, gravel, slag, cinders or dirt.
- (i) Condition of track: Whether rails are kept free of ballast and whether track is properly drained.
- (j) Leakage: If possible, state ballast leakage resistance per thousand feet of track for both wet and dry weather conditions.
- (k) Bonding: Size, kind and number of bond wires per joint.
- (l) Steam or Electric traction. **If electric, the following additional information is needed:**
- (m) Propulsion: A-C. or D-C. (A special form of vane relay, or a centrifugal frequency relay, is required where propulsion is A-C.)
- (n) One or both rails required for propulsion return.
- (o) Normal propulsion return current through rails, stating number of parallel tracks which can be utilized for this.
- (p) Maximum propulsion return current and its duration, with time intervals between.
- (q) If impedance bonds are to be used, state their capacities and impedance at given voltage.

### LINE RELAY ONLY

- (r) Length of complete line circuit and size and kind of wire, or resistance of complete circuit.
- (s) Is relay to be used for "SS" ("KR") indication?

If relay is required for application to an existing signal system, as much information as possible should be furnished regarding accessory apparatus in service, such as transformers, resistors, reactors, impedance bonds, etc., and voltages available at various locations.

Unless otherwise specified, silver tipped contact springs and graphite posts will be supplied.

Where an option is permitted and purchaser does not express his preference, relays which are apparently best adapted to the service required will be furnished.