



# INSTRUCTIONS

GEK-49798B

Insert Booklet GEH-2029

## TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT

TYPE IJCV99AA  
TYPE IJCV99AB

### INTRODUCTION

These instructions supplement instruction book GEH-2029 which is included with this book. The combination of the two form complete instructions for these relays.

The Type IJCV99AA relay is similar to the Type IJCV51B relay except it is for use on 15 hertz systems.

The Type IJCV99AB relay is similar to the Type IJCV51B relay except it is for use on 12.5 hertz systems.

The time-current curves for the type IJCV99AA are shown in Fig. 1 and Fig. 2.

The time-current curves for the Type IJCV99AB are shown in Fig. 3 and Fig. 4.

The curve showing the relation between minimum current pickup as a function of restraint voltage is shown in Fig. 5 for the Type IJCV99AA and Fig. 6 for the Type IJCV99AB

### BURDENS

The potential circuit burdens at 115 volts and rated frequency are as shown below:

<u>RELAY</u>	<u>FREQ.</u>	<u>WATTS</u>	<u>VARs</u>	<u>VOLT-AMPS</u>
IJCV99AA	15.0	11.6	5.6	12.9
IJCV99AB	12.5	10.8	4.0	11.5

*These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.*

*To the extent required the products described herein meet applicable ANSI, IEEE and NEMA standards; but no such assurance is given with respect to local codes and ordinances because they vary greatly.*

**POWER SYSTEMS MANAGEMENT DEPARTMENT**

**GENERAL  ELECTRIC**

**PHILADELPHIA, PA.**

The current circuit burdens at 5 amps and rated frequency flowing in the 4-ampere tap are listed below. The burden on any other tap with 5 amperes flowing is approximately  $(4/\text{Tap})^2$  times the burden for the 4-ampere tap.

<u>RELAY</u>	<u>FREQ.</u>	<u>WATTS</u>	<u>VARs</u>	<u>VOLT-AMPS</u>
IJCV99AA	15.0	5.3	8.5	10.0
IJCV99AB	12.5	4.4	6.7	8.0

#### INSTANTANEOUS UNIT

These relays have a 10 to 40 ampere instantaneous unit. Due to the low frequency these units will pick up and drop out every half cycle if the current is between pickup current and 1.5 times pickup current. If the unit is connected to trip a breaker or a Type HEA relay it will do so at any current above pickup current. If the instantaneous unit is connected to pick up an auxiliary relay, such as a Type HGA or Type HFA relay, then it may require as much as 1.5 times minimum pickup current to be assured that the instantaneous contacts will remain closed long enough to pick up the auxiliary relay.

#### INSTALLATION

##### MOUNTING

The outline and panel drilling dimensions are the same as shown in GEH-2029 for the Type IJCV51B (Fig. 16).

##### INTERNAL CONNECTIONS

The internal connections are the same as shown in GEH-2029 for the Type IJCV51B (Fig. 13).

#### MAINTENANCE

##### RECALIBRATION - Induction Unit

These units can be recalibrated per Page 13 of attached GEH-2029 except as follows:

###### Pickup Setting

- c. The spring should be adjusted so that the contacts will just close at approximately 1.4 amperes (1.36 to 1.48 amperes) for the Type IJCV99AA (15 hertz) relay or at approximately 1.6 amperes (1.52 to 1.68 amperes) for the Type IJCV99AB (12.5 hertz) relay.

###### Time Setting

- b. Connect the relay as in (b) of the PICKUP section and adjust the load box for tap value (4 amperes).
- c. With zero restraint voltage and the time dial set at Number 10, adjust the drag magnet for a closing time of approximately 4.8 seconds (4.7 to 4.9 seconds) for the IJCV99AA (15 hertz) relay or at approximately 6.9 seconds (6.7 to 7.1 seconds) for the Type IJCV99AB (12.5 hertz) relay.

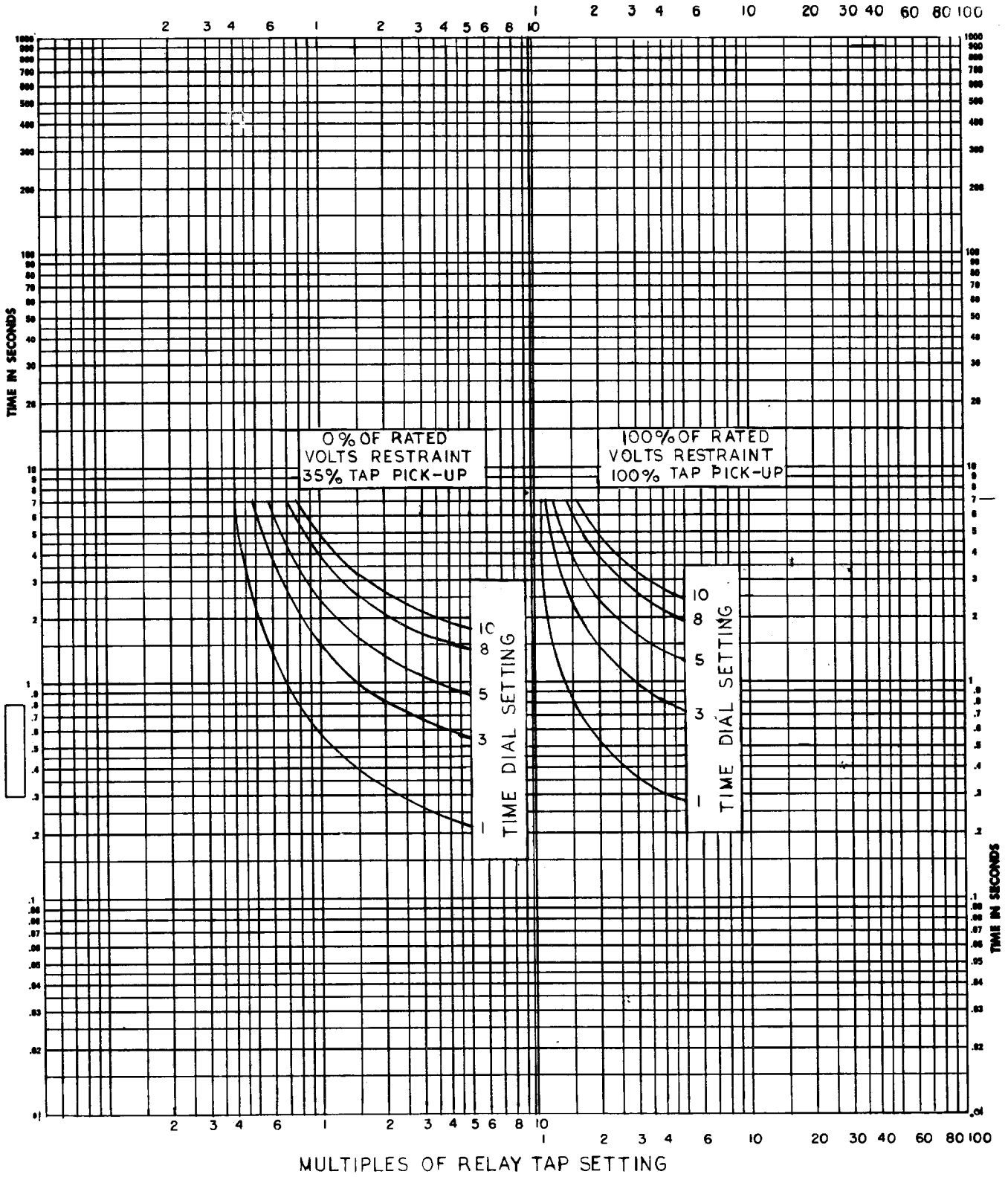


Fig. 1 (0108B8977-0 Sh. 1) Time Overcurrent Curves for Type IJCV99AA Relay  
0 Percent and 100 Percent Restraint Voltage

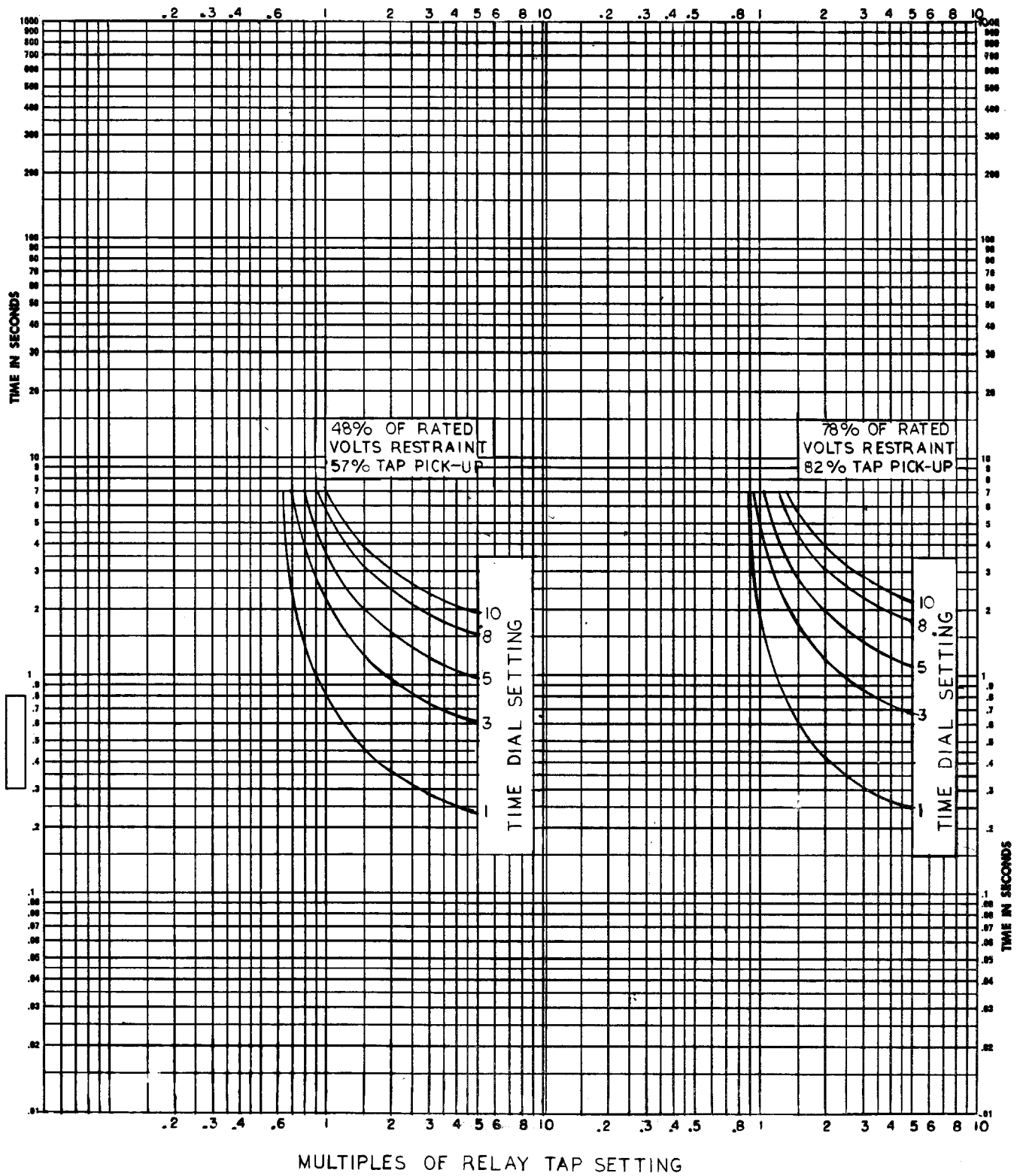


Fig. 2 (0108B8977-0 Sh. 2) Time Overcurrent Curves for Type IJCV99AA Relay  
48 Percent and 78 Percent Restraint Voltage

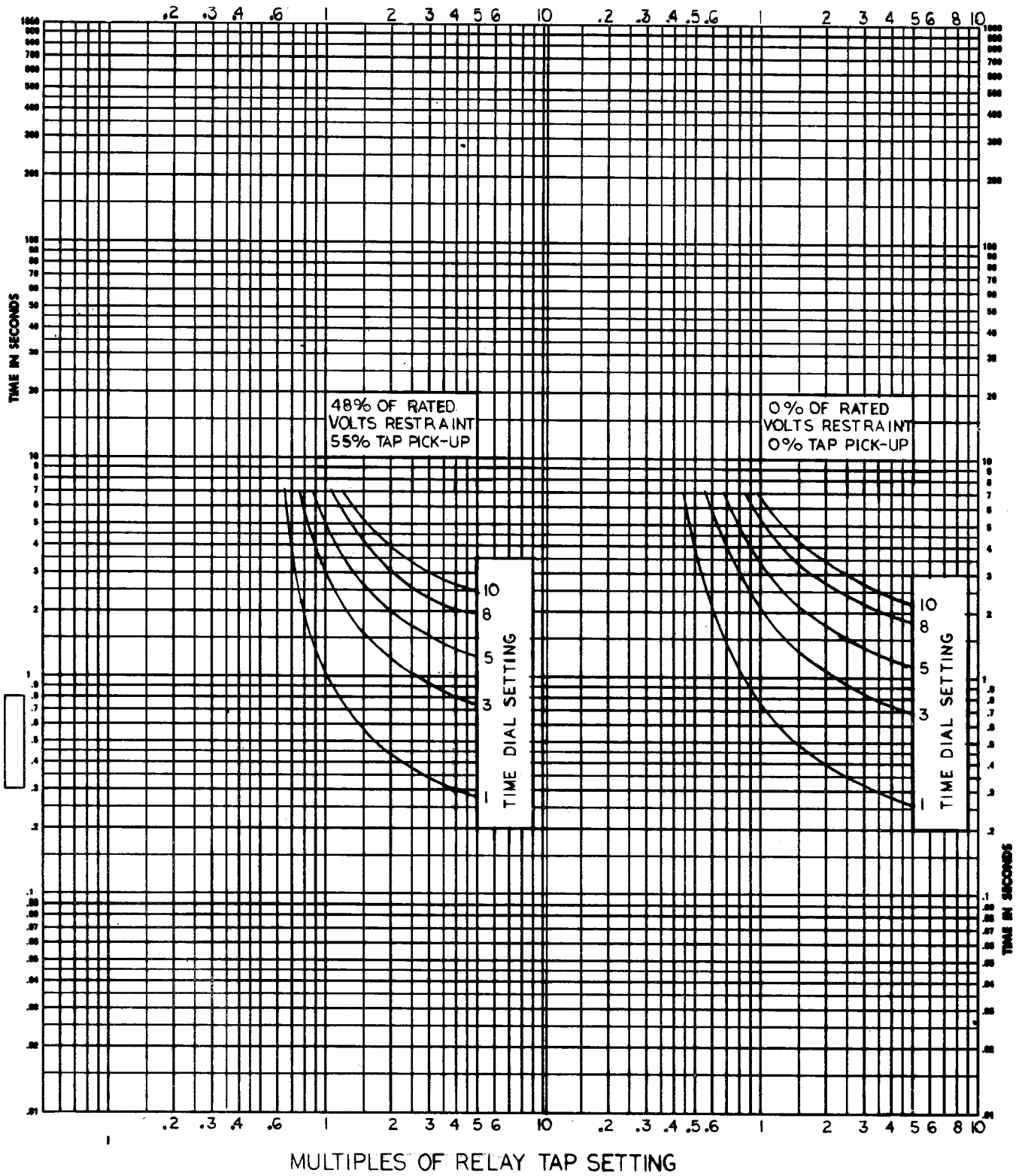


Fig. 3 (0108B8982-0 Sh. 1) Time Overcurrent Curves for Type IJCV99AB Relay  
0 percent and 48 Percent Restraint Voltage

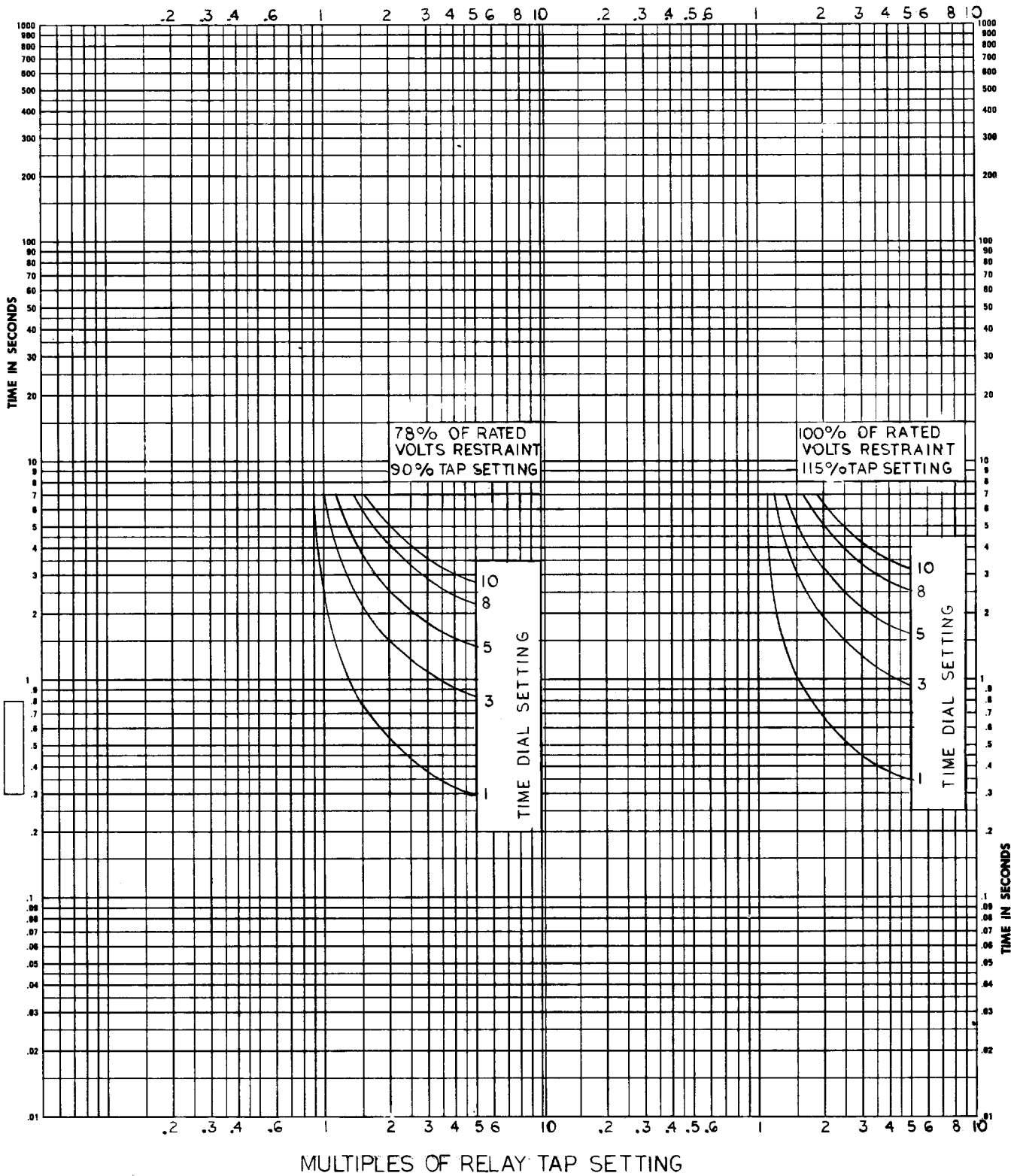


Fig. 4 (0108B8982-0 Sh. 2) Time Overcurrent Curves for Type IJCV99AB Relay  
78 Percent and 100 Percent Restraint Voltage

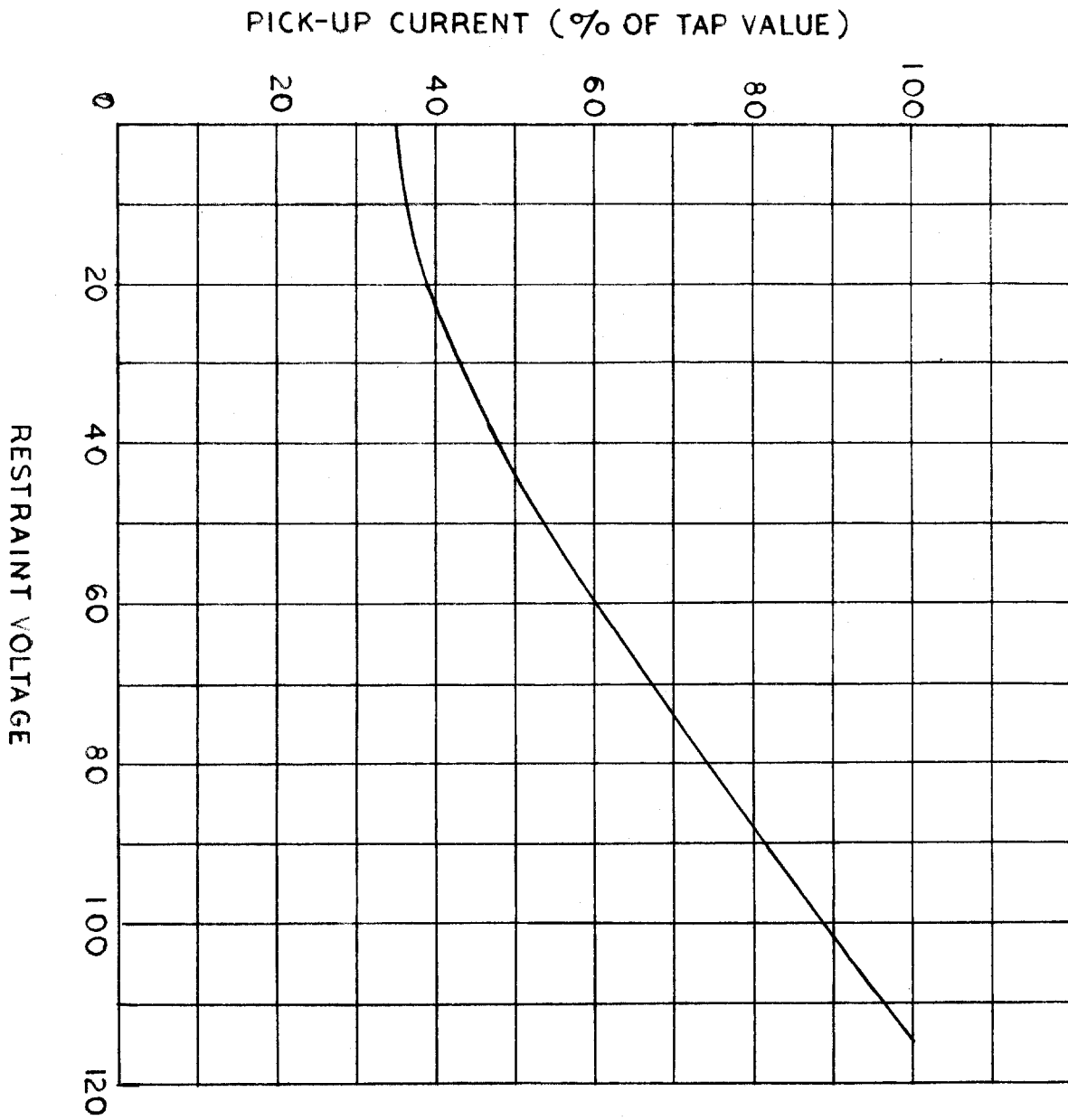


Fig. 5 (0269A3086-0) Pickup Vs. Restraint Voltage Characteristic for Type IJCV99AA Relay

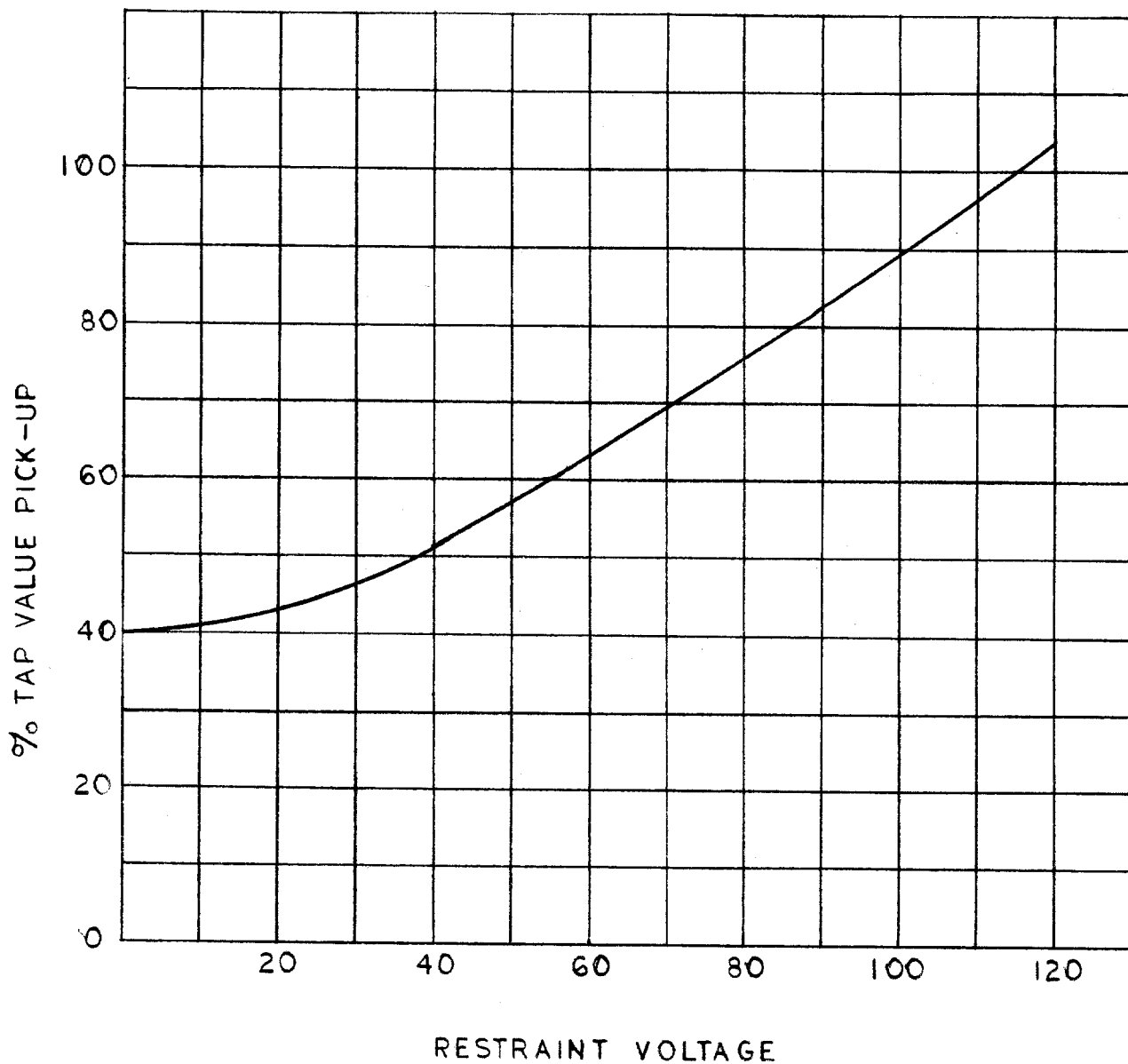


Fig. 6 (0269A3088-0) Pickup Vs. Restraint Voltage Characteristic for Type IJCV99AB Relay