This envelope contains

Time-current Characteristic Curves for IC7160 Limitamp* Control

Curves for Co-ordinating Limitamp Control with Other Protective Devices

When Limitamp starters are applied on a power system, it is usually necessary to co-ordinate the time-current characteristics of protective devices further back in the system with those of the controllers. The enclosed curves are for use in preparing a time-current curve of the controller for this purpose.

IC2824-34H RELAY CURVES

The characteristic curve for the IC-2824-34H overload relay is plotted in terms of multiples of relay tripping current. Before this curve can be used it is necessary to convert this scale to actual current values. To do this:

1. Obtain the catalog number of the relay coil, the ratio of the current transformer to which it is connected, and the relay setting. The relay setting can be found by removing the relay cover and examining the small pointer. It is ordinarily set at 100% when shipped.

2. Next, select the rated tripping current of the coil from the table included here, and multiply this current by the current transformer ratio and the relay setting. The value of current thus calculated is 1 multiple of relay tripping current.

3. The curve for the overload relay may then be laid over the curve for the fuse by aligning the time scales and placing the numeral "1" on the relay current scale over the computed value of 1 multiple relay tripping current as read on the fuse current scale. The time and current scales as printed on the fuse curve sheet then become the scales for both curves and the complete time-current characteristic of the starter may be read.

FUSE CURVES

If the controller time-current curve is to be transferred to another curve sheet (e.g., Keuffel and Esser Form No. 336E, which matches these in size and scale) both the total clearing time and the minimum melting time curves should be used. Together these will identify a band of operation which allows for normal fuse manufacturing tolerances plus fuse-arcing time. A tolerance band need not be applied to the relay since the relay opening can be set for an exact value.

When the enclosed curves are to be used without consideration for the complete band of operation, the total clearing time curve should be considered when the controller is intended selectively to trip ahead of the device further back in the system and the minimum melting time curve should be considered when another device such as a ground-fault relay is selectively to trip ahead of the controller fuses or overload relay.

RELAY COIL TABLE

Coil No.	Relay Tripping Current
1D5G23	2.92 amp
1D5G24	3.20 amp
1D5G25	3.52 amp
1D5G26	3.87 amp
1D5G27	4.25 amp
1D5G28	4.68 amp

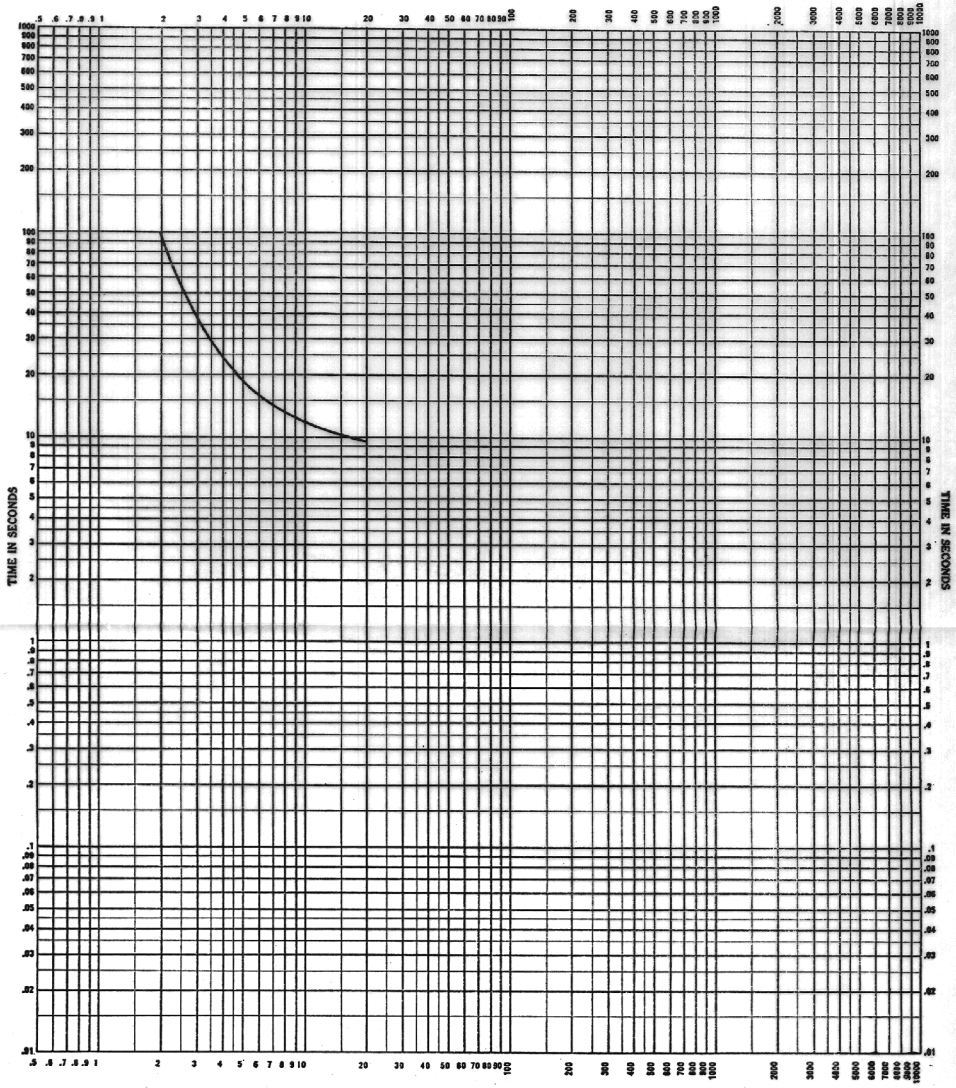
Example: A given starter is equipped with a 100/5 ampere current transformer , ratio 20:1, and relay coil number 1D5G25 with a rated tripping current of 3.52 amperes and a relay setting of 100%.

$$20 \times 3.52 \times \frac{100\%}{100} = 70.4 \text{ amperes}$$

The value 70.4 is 1 multiple relay tripping current and the "1" on the current scale of the relay curve sheet should be placed over 70.4 amperes on the fuse curve sheet with the time scale coinciding.

*Registered trade-mark of General Electric Company.

GENERAL ELECTRIC

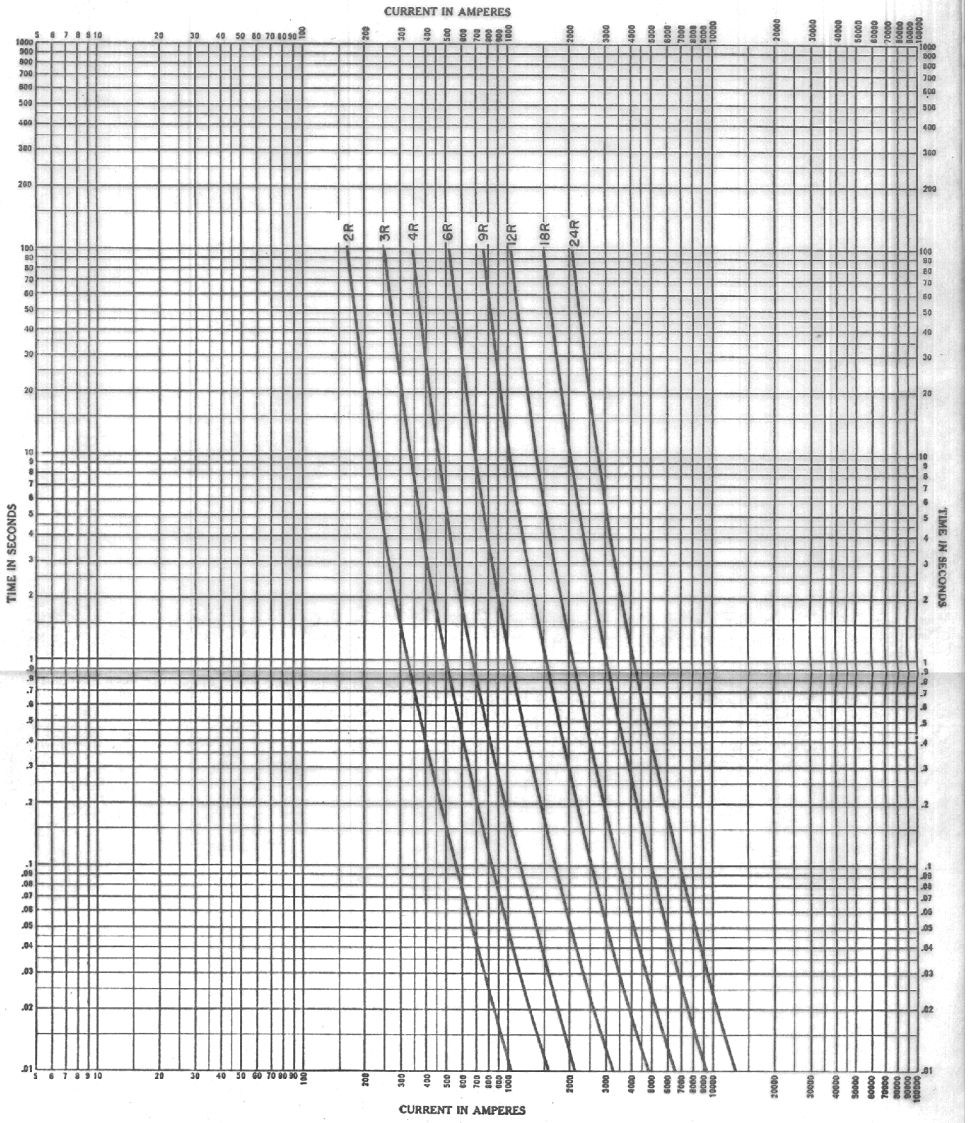


MULTIPLES OF RATED RELAY TRIPPING CURRENT

TIME-CURRENT CHARACTERISTIC CURVES

Type IC-2824-34H Thermal Overload Relay

GET-2408A
Date: Feb. 1, 1954



EJ-2 & EJO-2 SIZES D & DD 2400 & 4800 VOLTS

Minimum Melting TIME-CURRENT CHARACTERISTIC CURVES

For Types EJ-2 and EJO-2 Current-Limiting Fuse In Tube Sizes D and DD

BASIS FOR DATA Standards None Dated

1. Tests made at 12, 2750, 5500 Volts a-c at Low p-f., Starting at 25C with no initial load

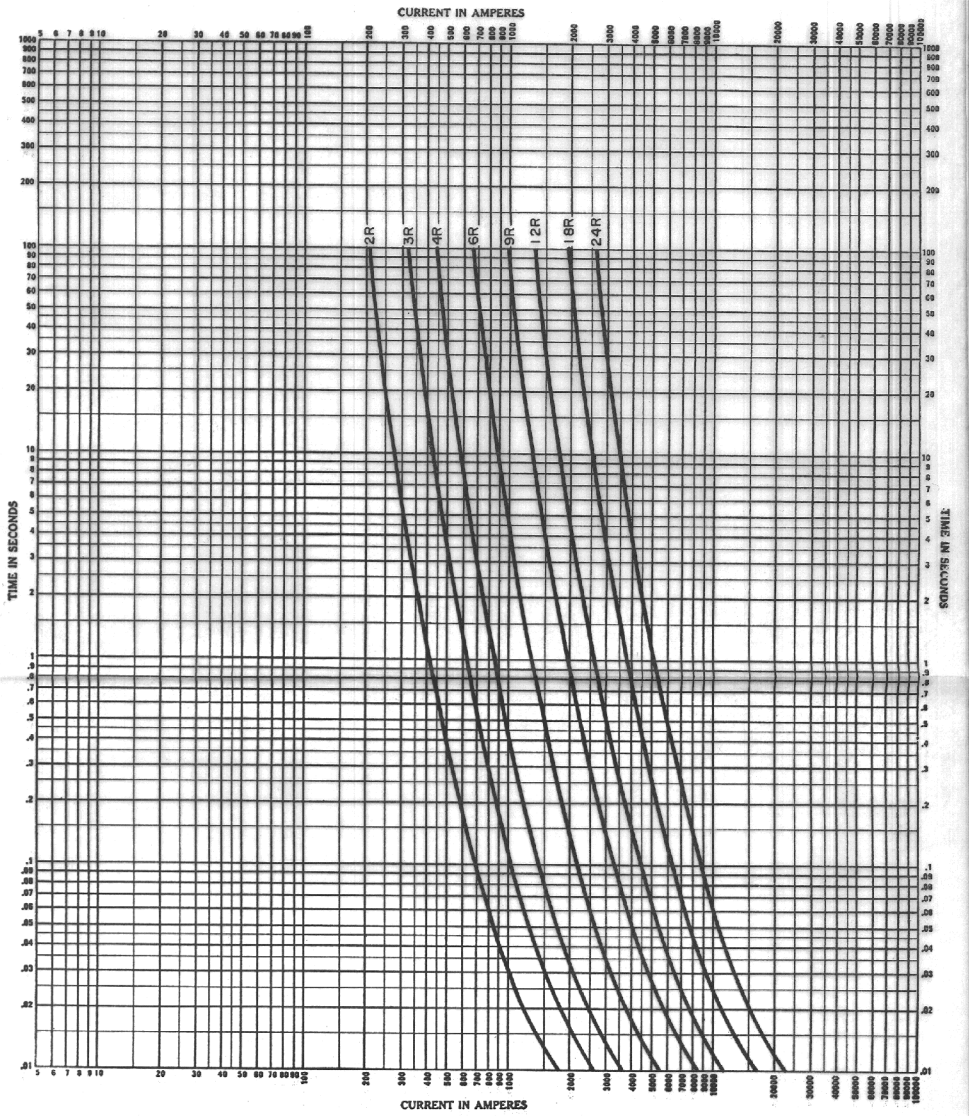
2. Curves are plotted to Minimum Test points so variations should be + 20% - 0% in Current

GET-2662A

1. The time given by these curves is that required to melt the fusible element and is of interest when the fuse is the protected device in a co-ordination scheme.

2. When the fuse is a protecting device, the total clearing time is of interest; this is show on GET-2663A.

8-56 (4M)



EJ-2 & EJO-2 SIZES D & DD 2400 & 4800 VOLTS

Total Clearing ..... TIME-CURRENT CHARACTERISTIC CURVES

For Types EJ-2 and EJO-2 Current-Limiting ..... Fuse In Tube Sizes D and DD

BASIS FOR DATA Standards None ..... Dated .....

1. Tests made at 2750 and 5500 ..... Volts a-c at Low ..... p-f., Starting at 25C with no initial load .....

2. Curves are plotted to Maximum ..... Test points so variations should be Including Arcing Time .....

GET-2663A

1. The time given by these curves is the maximum time required to melt the fusible element plus the arcing time, and is of interest when the fuse is a protecting device in a co-ordination scheme.

2. When the fuse is the protected device, the minimum melting time is of interest; this is shown on GET-2662A.

8-56 (4M)

Progress Is Our Most Important Product

GENERAL ELECTRIC

INDUSTRY CONTROL DEPARTMENT, SALEM, VIRGINIA

4-60 (2M) 1870

PRINTED IN U.S.A.