



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 con-

sidered 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

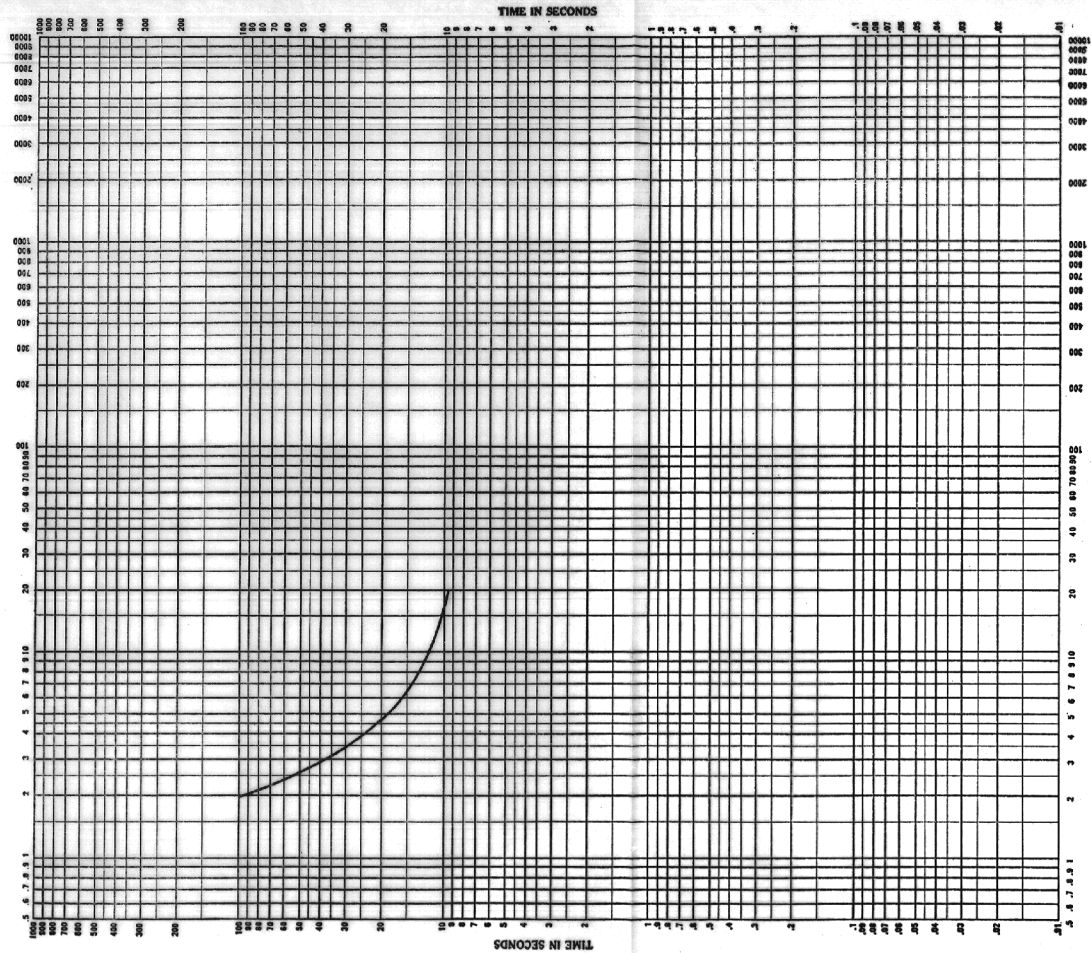
Example: A given starter is equipped with a 100/5 ampere current transformer, ratio 20:1, and relay coil number 1D5G25 with a rated tripping current of 3.52 amperes and a relay setting of 100%.

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

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.

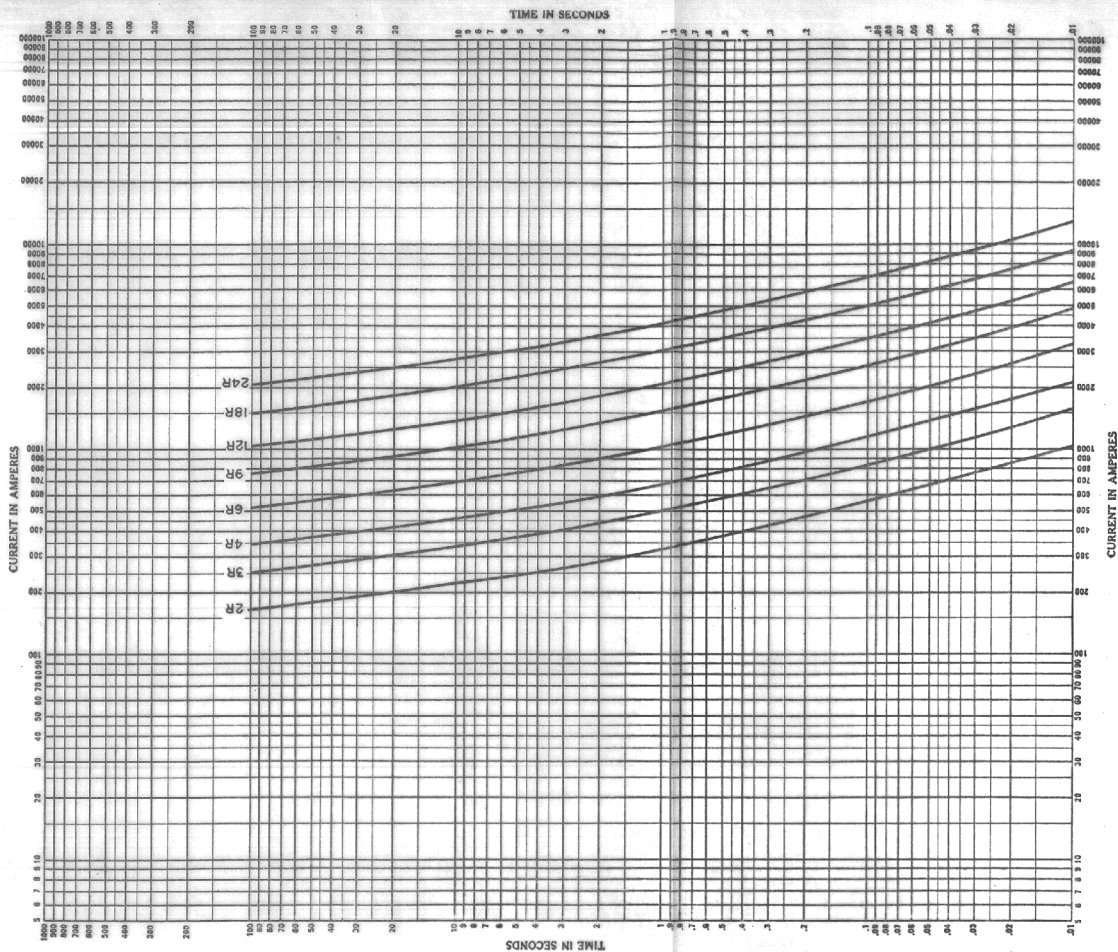
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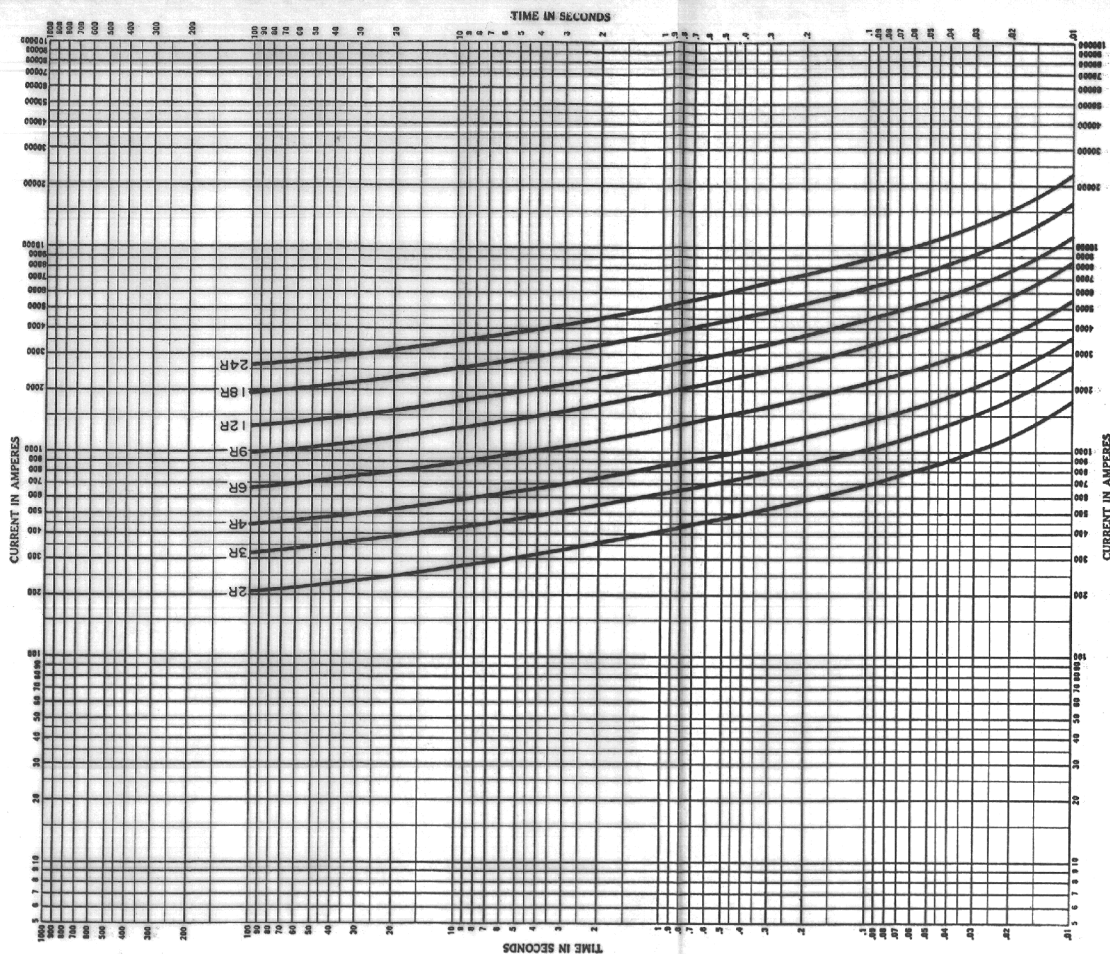
MULTIPLES OF RATED RELAY TRIPPING CURRENT
 TIME-CURRENT CHARACTERISTIC CURVES
 Type IC-2824-34H Thermal Overload Relay

GRT-2408A
 Date: Feb. 1, 1954



E1-2 & E10-2 SIZES D & DD 2400 & 4800 VOLTS

For Types E1-2 and E10-2, Current Limiting
 Basis for Data: Standard No. 1
 1. Tests made at 125, 250, 500, 1000, 2000, 4000, 8000, 16000, 32000, 64000, 128000, 256000, 512000, 1024000, 2048000, 4096000, 8192000, 16384000, 32768000, 65536000, 131072000, 262144000, 524288000, 1048576000, 2097152000, 4194304000, 8388608000, 16777216000, 33554432000, 67108864000, 134217728000, 268435456000, 536870912000, 1073741824000, 2147483648000, 4294967296000, 8589934592000, 17179869184000, 34359738368000, 68719476736000, 137438953472000, 274877906944000, 549755813888000, 1099511627776000, 2199023255552000, 4398046511104000, 8796093022208000, 17592186044416000, 35184372088832000, 70368744177664000, 140737488355328000, 281474976710656000, 562949953421312000, 1125899906842624000, 2251799813685248000, 4503599627370496000, 9007199254740992000, 18014398509481984000, 36028797018963968000, 72057594037927936000, 144115188075855872000, 288230376151711744000, 576460752303423488000, 1152921504606846976000, 2305843009213693952000, 4611686018427387904000, 9223372036854775808000, 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E1-2 & E10-2 SIZES D & DD 2400 & 4800 VOLTS

For Types E1-2 and E10-2, Current-Limiting Fuse in Types D and DD

Time-Current Characteristic Curves

Tested at 25°C with no initial load

Curves are plotted to Maximum

Test points so variations should be

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 in a protecting device in a co-ordination scheme.

8-26 (184)

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

GBT-2663A

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