



Total Clearing Time-Current Characteristic Curves

Positrol® Fuse Links-S&C Standard Speed

BASIS—These fuse links are tested in accordance with the procedures described in IEEE Standard C37.41 to comply with IEEE Standard C37.42. As required by these standards, the total clearing current is not less than 200% of fuse-link ampere rating, and the total clearing and total clearing curves are based on tests starting with the fuse link at an ambient temperature of 25°C (77°F) and no initial load.

CONSTRUCTION—Fusible elements for fuse links rated 1 through 5 amperes are nickel-chrome; fusible elements for fuse links rated 7 through 100 amperes are silver, helically coiled; and fusible elements for fuse links rated 125 through 200 amperes are silver-tin. All are of solderless construction.

TOLERANCES—Curves are plotted to maximum test points. All variations are minus.

APPLICATION—Like all high-voltage fuses, these fuse links are intended to accommodate overloads, not to interrupt them. Accordingly, they feature fusible elements designed with a total clearing current of 200% of the fuse-link ampere rating (for fuse links rated 100 amperes or less) or 220% of the fuse-link ampere rating (for fuse links rated over 100 amperes). As a result, these fuse links have considerable peak-load capabilities; however, they should never be exposed to loading in excess of the peak-load capabilities listed in S&C Information Bulletin 352-190.

Because fuse links having nickel-chrome or silver element construction are not subject to damage by aging or transient overcurrents, it is unnecessary to replace unblown fuse links of either of these constructions in single-phase or three-phase installations when one or more fuse links has blown. However, it is advisable to replace unblown silver-tin element fuse links under the same conditions because, while not subject to aging, they may be damaged by transient overcurrents.

COORDINATION—These curves represent the total time required for a fuse link to melt and interrupt a fault current, and they should be followed in coordination problems where fuse links are applied as “protecting” devices.

Any preloading reduces melting time. With respect to the “protected” fuse, the effect of preloading must be determined and adjustments made to its total clearing curve:

- When close coordination is required
- When automatic circuit reclosers or three-shot cutouts are involved
- When, regardless of the preciseness of coordination, the fuse link is subjected to temporary overloads

If close coordination is to be achieved, overloading must be avoided because it causes a significant shift in time-current characteristics.

The exclusive use of S&C Positrol Fuse Links—because of their inherently narrower tolerance band and because of their nondamageability—will expand the scope of coordination as follows:

- Coordination of adjacent ratings, giving twice as many sectionalizing points (This is true for the sequence operation of fuse links alone or for the sequence operation of fuse links coordinated with automatic circuit reclosers.)
- Coordination of a larger number of fuse-link ratings with a given automatic circuit recloser between the fast and slow curves
- Coordination through a greater range, and to higher levels of fault current, with respect to automatic circuit reclosers
- Coordination to higher levels of fault current with respect to sequence operation of fuse links

The breadth of coordination described above can be obtained only by the use of S&C Positrol Fuse Links. No fuse link of low-temperature element construction (tin, lap-joint) can provide similar performance.

NOTE: A coordination scheme designed to take full advantage of the nondamageability and the superior coordination capabilities of S&C Positrol Fuse Links may not function satisfactorily if fuse links of a similar speed but of other makes are substituted.

FUSE LINKS AVAILABLE

Style	Ampere Ratings
Universal	1 through 200
Extra-Performance●	1 through 100
Indicating	3 through 100
Open	1 through 25

● No longer available; listed for reference only.

