



## TOTAL CLEARING TIME-CURRENT CHARACTERISTIC CURVES

### POSITROL® FUSE LINKS—S&C “QR” SPEED

**BASIS**—These fuse links are tested in accordance with the procedures described in ANSI Standard C37.41-1981. As required by this standard, the minimum melting and total clearing curves are based on tests starting with the fuse link at an ambient temperature of 25°C and no initial load.

**CONSTRUCTION**—Fusible elements for fuse links rated 1 QR through 7 QR amperes are nickel-chrome; fusible elements for fuse links rated 10 QR through 200 QR amperes are silver-copper eutectic, helically coiled. All are of solderless construction.

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

**APPLICATION**—These fuse links should never be exposed to loading in excess of the peak-load capabilities listed in S&C Data Bulletin 350-190.

Since fuse links having nickel-chrome or silver-copper eutectic 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 have blown.

**COORDINATION**—These curves represent the total time required for a fuse link to melt and interrupt a fault current, and 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 minimum melting curve:

1. When close coordination is required;
2. When automatic circuit reclosers or three-shot cutouts are involved;
3. 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 since 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:

1. 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.
2. Coordination of a larger number of fuse-link ratings with a given automatic circuit recloser between the fast and retarded curves.
3. Coordination through a greater range, and to higher levels of fault current, with respect to automatic circuit reclosers.

4. 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. However, S&C “QR” Speed Positrol Fuse Links can replace, on a one-for-one basis, Kearney Type “QA” fuse links in existing coordination schemes. Such replacements, unlike tin-element fuse links, are not subject to nuisance fuse operations (“sneak-outs”) due to damage from surge currents, load cycling, vibration, and aging.

#### FUSE LINKS AVAILABLE—

Style	Ampere Ratings
Universal . . . . .	1 QR through 200 QR
Extra-Performance . . . . .	1 QR through 200 QR