



DESIGN MAKES A DIFFERENCE

\$5

Have you ever had a cutout fuse link operate for no apparent reason?

Every utility has these nuisance fuse link operations, and they cause unplanned outages for you and your customers.



1.5%

Percentage of fuse links purchased annually that operate when they shouldn't, causing unplanned outages.*

WHAT IS YOUR TOTAL COST PER FUSE LINK?

Unplanned outages caused by nuisance operations affect your O&M costs. This, in turn, affects the total cost of your fuse link, making your \$5 fuse link in reality a **\$13** fuse link or even higher. The table below illustrates how O&M costs and total cost per fuse link are affected as the percentage of nuisance operations changes.

Annual Quantity of Fuse Links Purchased*	Percentage of Nuisance Operations*				
	1.5%	2.0%	2.5%	3.0%	3.5%
25,000	\$187,500	\$250,000	\$312,500	\$375,000	\$437,500
50,000	\$375,000	\$500,000	\$625,000	\$750,000	\$875,000
75,000	\$562,500	\$750,000	\$937,500	\$1,125,000	\$1,312,500
100,000	\$750,000	\$1,000,000	\$1,250,000	\$1,500,000	\$1,750,000
200,000	\$1,500,000	\$2,000,000	\$2,500,000	\$3,000,000	\$3,500,000
TOTAL COST Per Fuse Link†	\$13	\$15	\$18	\$20	\$23

*Based on data provided by utilities, independent third-party testing of industry fuse tolerances, and S&C's own testing performed in its Advanced Technology Center.

†Noted at the right of these totals are the total expected fuse link nuisance operation costs based on the percentage of nuisance operations.

†Rounded up to the nearest dollar.

THESE NUISANCE OPERATIONS COST YOU REAL MONEY

1.5% may not seem like a lot, but consider this: If a utility purchases 200,000 fuse links annually and uses just **1.5%** of them for nuisance-operation replacements, the result is 3,000 unnecessary and unplanned truck rolls.

At a conservative \$500 per truck roll, these nuisance fuse link operations amount to an unnecessary expense:

3,000 x \$500 = \$1.5 million cost to the utility annually.



The key to eliminate these unnecessary expenses for utilities lies in removing the fuse link nuisance operations from their system. This is achieved by using **Positrol® Fuse Links** that are properly designed to provide superior fault protection and operate only when required (no nuisance operations). Further Positrol Fuse Link details are listed below:

POSITROL® FUSE LINKS



Silver Elements - Silver melts at a higher temperature. During 90% of its melting time, silver is in the heating phase and absorbs a lot of heat before melting. This allows fuse links with silver* elements to carry currents very close to the minimum melting time without any damage to the element itself.

* Refer to TCC Curves for element material

Helically Coiled - When a fuse link is installed in a cutout, it is subject to mechanical tension. In addition, the fuse link element experiences mechanical stress as it heats and cools under typical load-current variation. A helically coiled design allows for these mechanical stresses and avoids damage to the fuse element under normal operating conditions.

Swaging Connection - How a fuse link element is connected to the fuse link influences how reliably it will operate. Swaging allows the fuse element to be securely attached to the other components of the fuse link. This provides a reliable connection for current transfer and a secure connection while the fuse link is subject to mechanical tension.