Application Engineering FAQ

Fuse Fatigue

“Do fuses fatigue and wear out over time - requiring them to be replaced?”

This perception is a hold over from years ago when fuses were commonly constructed using zinc fuse elements. Zinc has a relatively low melting temperature and a high expansion coefficient. Through repeated circuit energizing and de-energizing, the zinc elements would heat up and cool down (expand and contract) causing them to fatigue over time and lower their current carrying capacity.

This is NOT the case with modern, current-limiting fuses that are made with either silver or copper fuse elements. These have a higher melting temperature than zinc and are not typically susceptible to fatiguing over time.

Your modern, current-limiting fuses should retain their performance characteristics for the life of the installation under normal operating conditions and proper sizing methods for the application. We frequently get reports that our current-limiting fuses are still working fine forty or fifty years after being installed.

There is no recommended replacement schedule for our fuses. When properly applied, they retain their performance characteristics until they are called upon to interrupt an overcurrent event – then they open and need replacing. We hope this gives you a clearer understanding of how fuses operate and how the old perception of fuse fatigue developed.

If you have any questions about this information or about overcurrent protection in general, please contact us at:

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