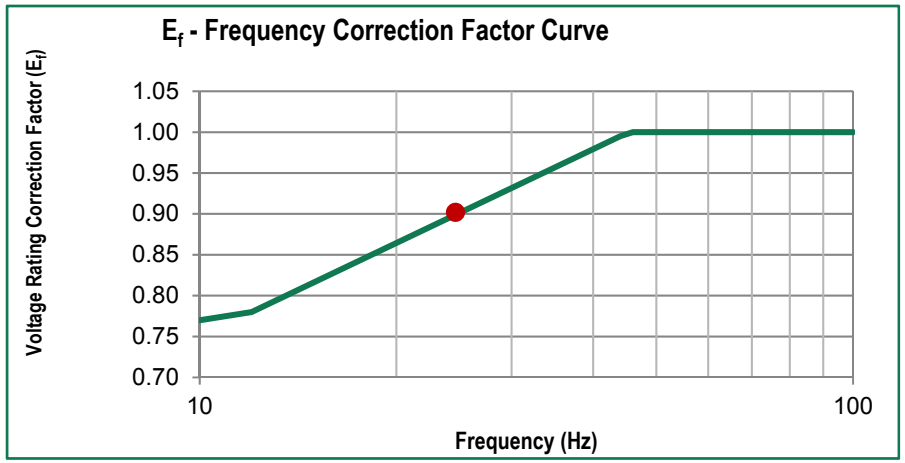
High-Speed Fuse Sizing
Effect of Frequency on Fuse Voltage Rating



$$E_n \geq \frac{E}{E_f}$$

Where,

E – Application Voltage Rating
$\mathbf{E_n}$ – Rated Voltage of the Fuse
$\mathbf{E_f}$ – Frequency Correction Factor

Example:

Application Voltage Rating (E) = 480Vac
Application Frequency= 25Hz
What is the Min. Fuse Voltage Rating?

Frequency correction factor (E_f)= 0.9

Min. Fuse AC Voltage $\mathbf{E_n} \geq \frac{E}{E_f} \geq \frac{480\text{Vac}}{0.9} \geq 533\text{Vac}$

And thus, the recommendation would be to use a 550Vac or 600Vac rated fuse.

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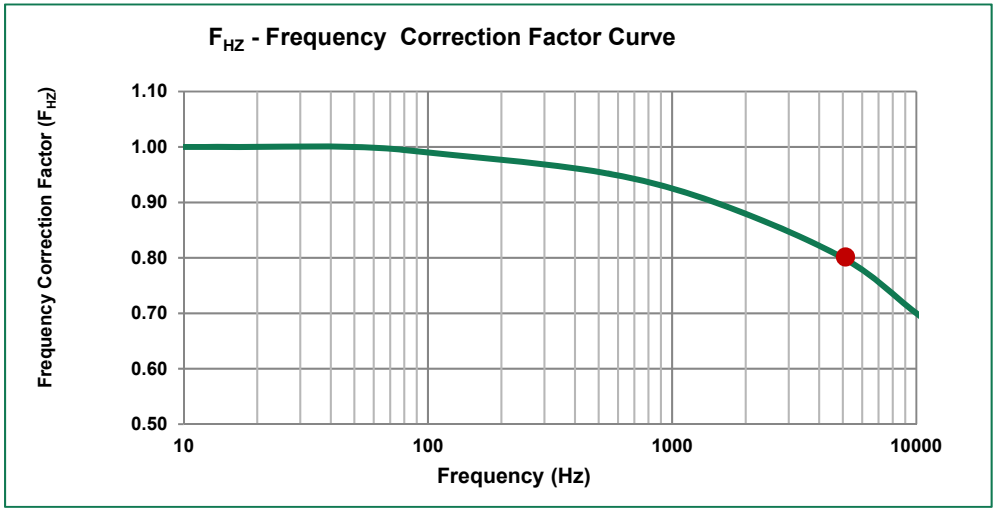
High-Speed Fuse Sizing
Effect of Frequency on Fuse Current Rating



$$I_N \geq \frac{I_{AL}}{F_{HZ}}$$

Where,

I_{AL} = Adjusted normal full-load current
I_N = Rated current of High-Speed fuse for the application
F_{HZ} = Frequency Correction Factor

Example:

Adjusted Normal Full-load Current Rating (I_{AL}) = 185A
Application Frequency= 5kHz (5000 Hz)
What is the Min. Fuse Rating to be selected?

Frequency correction factor (E_f)= 0.8

Min. Fuse Current Rating: $I_N \geq \frac{I_{AL}}{F_{HZ}} \geq \frac{185}{0.8} \geq 231.25$

And thus, the recommendation would be to use a 250A rated fuse.

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