

Eaton's Electrical Engineering Services & Systems Frequently Asked Questions: IEEE Std 1584™ -2018

What are the changes?

What is IEEE Std 1584?

IEEE Std 1584 is the "IEEE Guide for Performing Arc-Flash Hazard Calculations"

IEEE Std 1584 provides a procedure to calculate the incident energy (cal/cm²) that will be released during an arc flash event and is the most widely used arc flash guide that is referenced by NFPA-70E.

What has changed in the 2018 version of IEEE Std 1584?

The 2018 version of IEEE Std 1584 is based on hundreds of additional tests and contains a new procedure with more complicated equations and calculation model.

There are three major changes to IEEE Std 1584:

1. Removal of the <125kVA transformer exception
2. Addition of electrode configurations
3. Addition of enclosure correction factors

Do all arc flash studies need to be revised with the new IEEE Std 1584 Guide?

IEEE Std 1584 is not a binding law or consensus standard, but is a guide that can be used as a part of the arc flash risk assessment required by NFPA-70E. While NFPA-70E, Annex D, currently references IEEE Std 1584-2002, it states that the most prudent action for the NFPA-70E user is to consult the latest adopted version or amended of IEEE Std 1584.

It is up to the customer and consulting engineer to specify which version of IEEE Std 1584 should be used. Eaton's recommendation is that the latest version should be utilized, as it is considered the most accurate.

How can Eaton help understand the new guide?

With 95 engineers across the US, Eaton performs over 2500 arc flash studies each year. Eaton is actively involved in the IEEE Std 1584 working group and can help determine how the changes will affect your facility's arc flash analysis.

As an arc flash industry leader, Eaton can help balance the additional requirements and complexity of the new guide to provide the most accurate and conservative results.

How does the new guide affect the scope of an arc flash study?

The removal of the exception to exclude locations fed from a transformer smaller than 125kVA may expand the scope of an arc flash study. Depending on the equipment in the system, additional data collection and analysis must be performed at equipment with voltages less than 240V.

How does the new guide affect data collection?

The removal of the 125kVA transformer exception will expand the scope of an arc flash study to include more locations with voltages less than 240V. Additional data collection may be required for equipment locations fed from small transformers that were previously excluded.

The new IEEE Std 1584 guide allows for consideration of additional equipment parameters, such as electrode configuration and enclosure size. If these parameters are considered, additional data collection may be needed to gather the additional data.