IEEE Std 1584™-2018
CHANGES EXPLAINED

With development participation from Eaton, IEEE published IEEE Std 1584-2018 which provides a new mathematical model and calculation procedure. The updated guide is more comprehensive, accurate and complex than before and is the first update since 2002.

Here's what you need to know:

IEEE Std 1584-2002 Based on 300 laboratory tests	IEEE Std 1584-2018 Based on more than 1,800 laboratory tests	Eaton's recommendation Based on more than 2,500 studies annually
Excluded <240V locations fed from transformers smaller than 125 kVA.	**Further testing has shown that it may be possible** for an arc to sustain at those locations, so the exception has been removed, thus expanding the analysis scope. **While it is less likely** for an arc to sustain at equipment locations at 240V and below with a short circuit current of 2000A, an arc flash is still possible.	**All 3 phase locations should be included in the arc flash scope and calculations.** Even for locations with available short circuit current below 2000A, it is still possible for an arc to occur. Excluding these locations is not recommended but can be reviewed on a case by case basis with the facility owner.
Two vertical conductor configurations • Vertical conductors in open air • Vertical conductors in a metal box enclosure	**Five electrode configurations must be considered, adding complexity to the analysis.** The equipment conductor and enclosure arrangement that most closely resembles the actual equipment electrode configuration must be identified for arc flash analysis. **Added configurations:** • Horizontal conductors in open air • Horizontal conductors in a metal box enclosure • Vertical conductors in a box that end at an insulating barrier	**Evaluate** the type and class of equipment to determine the possible electrode configurations that a worker would be exposed to. **Identify** the equipment conductor and enclosure arrangement that most closely resembles the actual equipment electrode configuration. **Choosing** an incorrect electrode configuration may underestimate the incident energy, causing employees to not be properly protected from the hazard, or yield overly conservative results, introducing other hazards as a result of wearing incorrect personal protective equipment.
Typical enclosure dimensions for various classes of equipment provided.	**Can now specify the actual equipment enclosure dimensions for increased accuracy of calculation, in addition to several new typical equipment classes.**	**Careful consideration and expertise is needed to determine cost-benefits of actual vs. typical dimensions.** While using actual field-measured values may result in more accurate results, consideration must also be given to the time, effort and increased complexity in obtaining dimensions for all enclosures. Eaton recommends that this trade-off be considered when performing arc flash studies.

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