

Momentary power loss

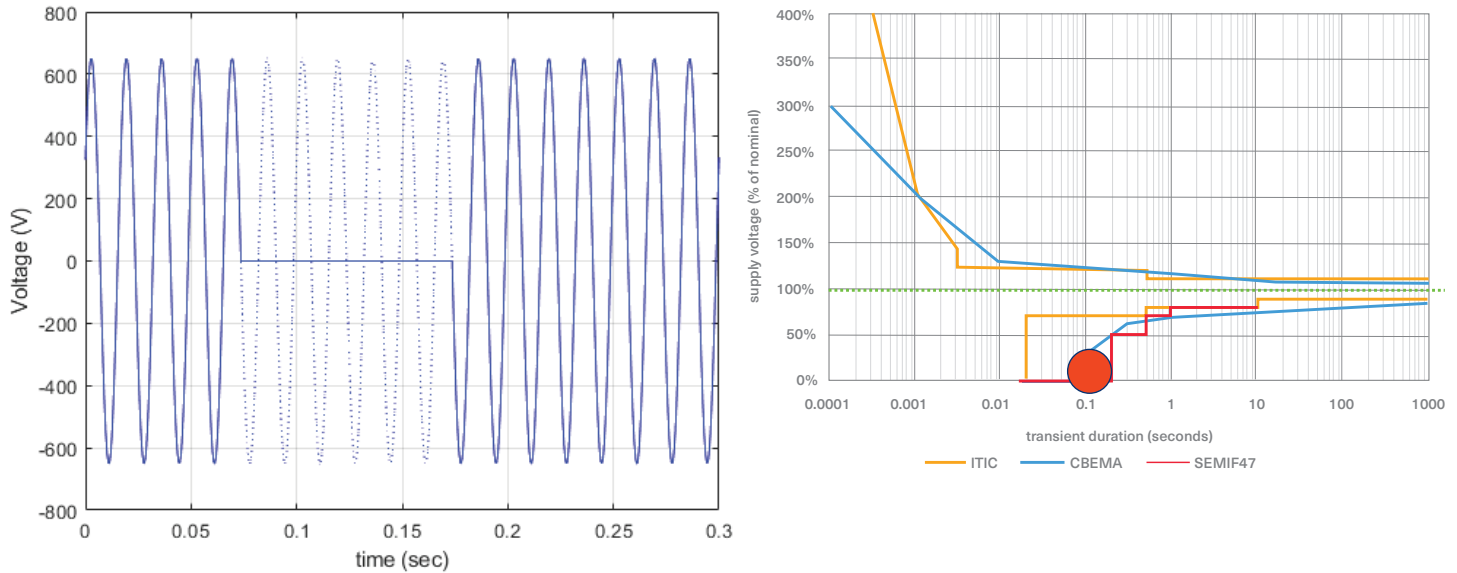
The waveform in Figure 11 shows a momentary power loss for six electrical cycles (0.1 seconds).

Causes: Short duration power outage or switching between power sources (e.g., between utility and generator)

Effects: Equipment should “ride through” or continue operating with momentary power loss of 2 to 3 electrical cycles (0.034 to 0.05 seconds). Longer duration power loss should result in equipment shutdown and subsequent restart when power returns.

Potential solutions: If the momentary power loss is due to electrical transfer switches in the building, check the transfer switch timing. Open transfers should be set for one second or longer.

Figure 11. Example of a momentary power loss waveform



Voltage imbalance

Causes: Feeder transformer issues or unbalanced load distribution

Effects: Small voltage imbalances can cause large current imbalances (e.g., if one phase voltage is 1 percent higher than the others, that phase may draw 10 percent higher current). The phase that draws higher current may become overloaded, triggering a diagnostic or blowing a fuse. VFD harmonic levels go up during voltage imbalance (Figure 12).

Potential solutions: Check for unequal loading between phases, such as distribution of single-phase transformers. Check the upstream supply voltage and feeder transformer output voltage.

Figure 12. Current unbalance caused by applied voltage unbalance

