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## Rating of Ground Bus in Metal-Enclosed Switchgear

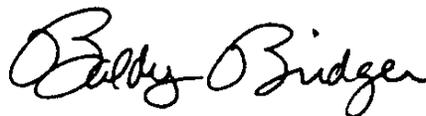
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All metal-enclosed switchgear built to ANSI standards is required to include a ground bus to connect together all items in the switchgear that are required to be grounded. This includes such things as the enclosures, circuit breaker frames, CT and VT secondary circuits, relay and instrument cases, etc. The purpose of the ground bus is to keep these items at a common potential under normal conditions and to carry ground fault current when a ground fault occurs.

The ground bus is rated for short-circuit and short-time duty. For metal-clad switchgear, ANSI/IEEE C37.20.2, §6.12, requires the ground bus to carry the rated short-time current of the switchgear for 2 seconds. For low voltage metal-enclosed switchgear, ANSI/IEEE C37.20.1, §6.1.2, requires the ground bus to carry the rated short-time current of the switchgear for 0.5 second. Tests to demonstrate these ratings are included in the conformance test standards, ANSI C37.51 for low voltage switchgear and ANSI C37.55 for metal-clad switchgear.

Ground bus is not expected to carry any continuous current. If a 4-wire system with line-to-neutral loads is in use, a neutral bus may be needed to carry any current unbalance. This is quite common in low voltage switchgear, and much less common but not unknown in metal-clad switchgear.

None of the ANSI standards require a continuous current rating for ground bus, and none of these standards describe any test to demonstrate such a rating. While a ground bus, like any conductor, will carry a certain amount of current continuously without damage, just how much and under what circumstances is not defined. Therefore, specifying a continuous current rating for ground bus has little or no meaning, and should be avoided.



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