



Safety Alert

Autotransformers

Autotransformers being used by machine manufacturers pose a potential ground fault hazard. It is hazardous when a ground fault within the autotransformer occurs and goes undetected by the ground fault protection circuit. Miners and electricians have reported being shocked when contacting shuttle cars. Shuttle cars equipped with autotransformers may cause a ground fault condition that goes undetected. These hazards exist when an autotransformer ground fault occurs, and the ground fault protection circuit is inadequate because the ground fault current is too low to be detected.



Autotransformer (highlighted in red) within an explosion proof (XP) enclosure

Best Practices

- Follow 30 CFR §§75.900 (coal) and 57.12003 (metal/nonmetal) to provide adequate protection.
- Train qualified personnel conducting electrical examinations to safely identify the use of autotransformers and their potential hazards.
- Examine all mining equipment with autotransformers currently in service to ensure safe operating condition.
- Consult with manufacturers for compliant/approved alternatives.
- Contact your local MSHA district office for additional assistance.