GE
Electrical Distribution

Out of the box thinking. Inside the box protection.

Arc Vault™ Protection System

The Arc Vault™ protection system from GE is an innovative leap forward in arc flash protection. Compared to existing products and systems, it offers significant benefits: the ability to offer arc flash protection with doors and compartments open, reduced energy of operation, reduced construction costs, and the ability to retrofit existing switchgear.

imagination at work

Arc Vault™ Protection System
for new switchgear installations

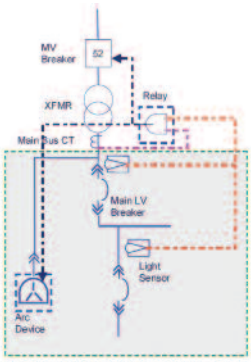
Arc resistant rating for new AKD-20 switchgear

Out of the box thinking

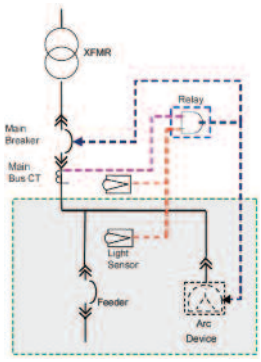
- The system consists of light sensors, a protective relay and a containment dome, all working together to provide fast protection from arc flash hazards.
- Light sensors placed throughout the switchgear line-up detect the moment an arc flash is initiated, and send a signal to the protective relay.
- The relay looks both for the signal from light sensors and a spike in system current to determine that an arc flash exists.
- The relay triggers the containment dome and calls for the main breaker to trip.
- A secondary arc fault is created within the containment dome, which extinguishes the arc flash within 8ms of the initial event.
- The secondary arc flash continues, protected in the containment dome, until the main breaker clears and de-energizes the entire system.

Inside the box protection

- GE's AKD-20 AR low voltage switchgear meets the ANSI / IEEE C37.20.7 standard when it is included within a system that contains an upstream medium voltage controllable device.
- The Arc Vault protection system from GE will contain an arc fault in less than 8ms, with the circuit breaker compartment doors open during operation and maintenance. The incident energy, in accordance with IEEE 1584, at 24" from the arc event will be less than 1.2 cal/cm², which is equivalent to HRC0, for a 480V HRG system with available fault currents up to 100 kA.
- AKD-20 AR low voltage switchgear reduces building construction costs because, unlike traditional arc resistant switchgear, it does not require exhaust chimneys or plenums to direct the arc flash energy outside of the building.
- If an arc flash incident occurs during normal operation and maintenance, the AKD-20 AR low voltage switchgear can be operational again within one working day, assuming appropriate replacement parts are available. This improves your overall system uptime when compared to traditional arc resistant switchgear.
- The Arc Vault protection system reduces the energy released by 63% or more compared to a bolted fault that would occur with a crowbar system. The energy reduction will lower the stress on other system components – such as transformers, circuit breakers and bus bar construction – and improve your overall system uptime when compared to traditional arc resistant switchgear.



Light detection option with upstream controllable device



Light detection option with LV main

Arc Vault™ Protection System
for retrofit applications

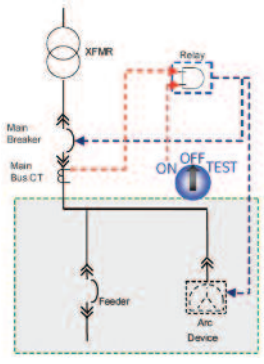
Arc flash protection for existing low voltage equipment

Out of the box thinking

- The system consists of an activation switch, a protective trip unit and a containment dome, all working together to provide fast protection from arc flash hazards.
- The activation switch can be set as part of a maintenance procedure to enable the system.
- With the activation switch enabled, the trip unit will look for a current spike, then trigger the containment dome and call for the main breaker to trip.
- A secondary arc fault is created within the containment dome, which extinguishes the arc flash within 8ms of the initial event.
- The secondary arc flash continues, protected in the containment dome, until the main breaker clears and de-energizes the entire system.

Inside the box protection

- The GE Arc Vault protection system will contain an arc fault in less than 8ms with the circuit breaker compartment doors open during operation and maintenance. In accordance with IEEE 1584, the incident energy at 24" from the arc event will be less than 1.2 cal/cm², which is equivalent to HRC0, for a 480V HRG system with available fault currents up to 100 kA.
- The system for low voltage equipment reduces building construction costs, when compared to traditional arc resistant switchgear, because it does not require exhaust chimneys or plenums to direct the arc flash energy outside of the building.
- If an arc flash incident occurs during maintenance, the low-voltage switchgear can be operational again within a working day, assuming appropriate replacement parts are available. This improves your overall system uptime when compared to traditional arc resistant switchgear.
- The system reduces the energy released by 63% or more, compared to a bolted fault that would occur with a crowbar system. The energy reduction will lower the stress on other system components – such as transformers, circuit breakers, and bus bar construction – and improve your overall system uptime when compared to traditional arc resistant switchgear.
- The system can be retrofit onto existing GE or other manufacturers' low voltage equipment, including switchgear, switchboards and MCCs.
- The system will protect the transformer transition section and the low-voltage line-up in a system that contains an upstream controllable device. In a system where an upstream controllable device does not exist, the Arc Vault protection system will provide protection to the downstream low voltage equipment only.
- The GE Arc Vault protection system can be retrofit without having to replace the existing low voltage equipment line-up.



Activation switch option with LV main

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imagination at work

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