

ABB General description

Arc Guard System

Arc monitor

Current sensing unit



Function

The purpose of the arc guard system is to quickly disconnect the energy source if an arcing fault should occur. The watchful eye of the arc monitor detects any large increase in light intensity. The detector transfers light from the arc through a state-of-the-art solid state electronics package. Within an interval of one to two milliseconds, the detector sends a trip signal to the disconnecting upstream circuit breaker located in the switchgear, bypassing delays caused by the selective features of relaying schemes. This protects your equipment and personnel.

Current sensing unit

The detectors can also be sensitive to other forms of intense light, such as camera flashes, lightning, direct sunlight, switching arcs in circuit breakers and other large apparatus. By combining the arc monitor with a current sensing unit set just over the normal operating level, a current dependent condition is introduced which prevents triggering from irrelevant light sources. This prevents nuisance tripping the switchgear and causing an unintentional power outage.

Insensitivity to interference

A switchgear environment is often subjected to extreme electromagnetic interference, especially during an arcing fault. High currents in the busbars and cables, switching arcs in contactors and circuit breakers generate fields that interfere with communication between relays

and meters. Fiber optic cables eliminate the risk of electromagnetic interference. All communication between the detectors, arc monitor and the current sensing unit are through fiber optics. Fiber optic signal transmission makes the systems immune to interference.

System security

The arc guard system is a product that seldom (or never!) has to take action, but which must then always operate with absolute dependability. Its performance should be checked after installation and subsequently at certain intervals, e.g. once a year. The design of the system makes it easy to check. The procedure is described in the instructions provided with the equipment.

Approvals

- Underwriters Laboratories
File #E155370
- Factory Mutual system
Reference FMRC J.I. 1B1A4.AF
- Lloyds Register of Shipping
Cert. #97/00189
- Det Norske Veritas
Cert. #A-6702
- Germanischer Lloyd
Cert. #99.342-97
- CE Marked
- Earthquake tested according to ANSI / IEEE
C37.98 – 1987
- Y2K compliant
- US Coast Guard ①
- American Bureau of Shipping ①

① Certificate number pending. Call factory for more information.