

**SIEMENS***Ingenuity for life*

## Designed to defend.

Siemens Arc Defense Technology is your best defense against the dangers of arc faults.

[usa.siemens.com/perfectharmony](http://usa.siemens.com/perfectharmony)

### **The world's leading drive system now offers a fully reinforced structural arc solution**

In the Siemens Large Drives Applications facility, where medium voltage drives are running at all times, safety is more than just a watchword—it's a guiding principle. With over twenty years of experience operating in a medium-voltage environment, Siemens has set the standard in medium voltage drive safety. In 2016, the Siemens medium voltage drive manufacturing facility reached the impressive record of over 4 million hours without a lost-time incident. It is the Siemens mission to extend this exemplary safety record to medium voltage drive users.

### **Superior quality performance**

Through rigorous testing and stringent safety certification, Siemens has always upheld the highest quality and safety standards in the manufacturing of medium voltage drives.

Siemens is raising the bar and taking safety a step further. By introducing the new Arc Defense Technology,

Siemens is the first in the industry to apply passive arc-resistant features to medium voltage drives with integral transformers.

Smart upgrades such as pressure-relief panels and custom arc filters help to contain dangerous arc energy in the event of an arc occurrence. When used along with personal protective equipment (PPE), Arc Defense Technology can help provide a superior level of protection for your personnel and plant equipment.

### **Superior operator safety**

Despite the challenges associated with drives that feature integral transformers, Siemens used the existing design to its advantage. A reinforced structure and the addition of integrated pressure-relief panels to the cabinet roof made it possible for the drive to effectively redirect arc energy up and out. This top-venting approach has the added benefit of being more cost-efficient than ducted solutions.

### **Maximum equipment protection**

Additionally, standard air filters were replaced with custom arc filters that are nonflammable and metalized. IP42-rated louvers add another potential layer of safety. All of these solutions were designed to meet testing requirements consistent with the existing switchgear standard that defines burn indicators and their positions, as well as cabinet integrity requirements.

### **Key safety features**

- Integral pressure-relief panels
- Enhanced internal bracing
- More robust mechanical structure
- Inclusion of special arc filters
- Optional arc-flash detection



**1** Integral pressure-relief panels to ensure all material is vented up and away from personnel

**2** More robust mechanical design to significantly increase the level of safety in the event of an arc incident

**3** Enhanced internal cable bracing to eliminate cabinet burnthrough and the possibility of cable separation

**4** Inclusion of special arc filters to ensure the highest level of safety

**Proactive regulatory compliance**

Though not yet mandatory, arc resistance requirements are right around the corner. Siemens first began arc-fault-testing its medium voltage drives in 1998. Ever since, all Siemens medium voltage drives have been—and continue to be—rigorously tested and certified to the most current safety standards, including IEC, UL and CSA.

**Reduced operational losses**

Protecting your people and your equipment from an arc occurrence also protects against lost production. Combined with personal protective equipment, a drive with Arc Defense Technology is another valuable layer of defense against arc-related dangers and downtime. Optional arc-flash detection can help prevent further intensification of an arc event by sensing the arc energy and blocking the influx of additional power.

Arc protection starts with the drive itself. Siemens Arc Defense Technology helps

direct the hazards of arc events away from personnel and plant equipment to mitigate damage and allow a faster return to normal operations. The result is a highly efficient, fault-tolerant drive that can help limit operational losses and prepare you for future regulations.

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**Compliance and Testing Standards**

- Complies with:*
- IEC 62271-200 Edition 2.0 (2011)
  - CSA C22.2 No. 0.22 (2011)
  - IEEE C 37.20.7 (2007—including Corrigendum 1-2010)

Successfully passed the following testing criteria:

- Accessibility grade—Type A, FLR for IEC and Type 2A for IEEE
- Short circuit current—35 kA @ 7.2 kV
- Time duration—500ms