

3AH4 Arc Furnace Circuit Breaker

What makes an arc furnace circuit breaker different?

A typical medium-voltage distribution circuit breaker may operate 100 times per year, whereas arc furnaces can require more than 100 circuit breaker operating cycles every day. On top of the frequency of operation, these circuit breakers must withstand a grueling environment including factors such as extreme temperatures from the furnace, excessive dust and particulates including those from machining metals and constantly varying currents due to the frequently shifting electrical load. This combination means that arc furnace circuit breakers must be specifically engineered for high endurance and also means that reliability later in the circuit breaker lifecycle is more important than ever.

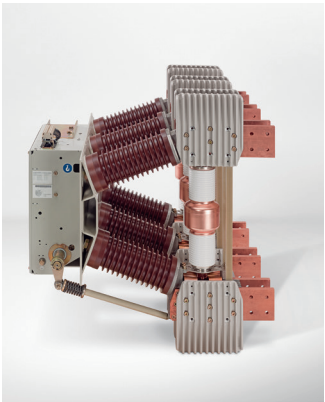
The Siemens type 3AH4 Vacuum Arc Furnace Circuit Breaker has a lifetime of 120,000 mechanical operations with a regular maintenance cycle of 10,000 operations and an overhaul period of 30,000 operating cycles. The minimal routine maintenance work can be performed on-site by the customer's own staff, while the overhaul rebuilds at 30,000 operating cycles are performed at a certified Siemens repair facility. These rebuilds replace all critical components of the circuit breaker and return it to like-new operating condition. Utilizing this field service repair shop ensures that the 3AH4 is in certified, experienced hands and minimizes downtime for customer operations.

Why choose Siemens 3AH4?

As one of the earliest adopters of vacuum switching technology, Siemens has over 45 years of vacuum interrupter design experience and an extensive network of over 900,000 vacuum circuit breakers installed to date. Siemens not only offers standard turnkey arc furnace circuit breaker solutions but also offers customers the ability to retrofit a Siemens 3AH4 Vacuum Circuit Breaker into most OEM enclosures. While some manufacturers have dropped support for aging arc furnace circuit breakers, the Siemens 3AH4 utilizes the same 3AH family of operators that is featured in the entire medium-voltage circuit breaker line up, ensuring that customers will receive the parts and expertise support that they need for years to come. With a 120,000 cycle lifetime, the 3AH4 offers an industry leading combination of reliability and performance across many ratings.

3AH4 Operator Features

- **Flexible 3AH4 operator** allows for solutions to many unique arc furnace applications with one standard solution
- **Proven 3AH family** of designs brings reliability and ease of use expected with Siemens vacuum circuit breakers
- **Standard parts list** composed of common parts shared across many of the 3AH operators creates short lead times and quick turn arounds to keep downtime minimal.



3AH4 Arc Furnace Circuit Breaker
Side View



3AH4 Arc Furnace Circuit Breaker
Rear View

3AH4 Technical Overview

Rated Voltage	Rated short-duration power-frequency withstand voltage	Rated lightning impulse withstand voltage	Rated frequency	Rated short-circuit breaking current	Rated short-circuit making current	Rated normal
Up to 36 kV (option: 40.5 kV)	70 kV* (option: 95 kV)	170 kV* (option: 195 kV)	50/60 Hz	Up to 40 kA	104 kA	Up to 4000 A

*Available for 24 and 36 kV models only

Service Offerings

Siemens service offerings for the 3AH4 Vacuum Circuit Breakers mitigate the challenges of operating in intense industrial environments.

Service offerings include:

- **New installation** of 3AH4 Vacuum Circuit Breakers and switchgear
- **Retrofits** for existing switchgear with Siemens 3AH4 Vacuum Circuit Breakers (available for third-party and obsolete products)
- **Field service** allows for a factory authorized field representative to asses your 3AH4 circuit breaker onsite
- **3AH4 rebuilds** by Siemens certified technicians in one of Siemens’ repair facilities, available at a fraction of the cost of a new breaker
- **Spare parts** available on demand with minimal lead time
- **Service agreements** in which Siemens will manage the spare parts necessary for the rebuilds every 30,000 cycles, eliminating the typical lead time that is associated with ordering spare parts and reserving your spot on the field service schedule for the next necessary rebuild.

Siemens Industry, Inc.

7000 Siemens Road
Wendell, NC 27591

For more information, please contact
our Customer Support Center.
Phone: 1-800-333-7421

usa.siemens.com

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