

# Groundbreaking Eaton Vacuum Interruption Technology

## For Circuit Breakers Protection You Can Count On

Eaton is a worldwide leader in the design, manufacture and sale of vacuum interrupters used in medium voltage circuit breakers, supporting:

- **Commercial**  
High-rise convention centers, airports
- **Industrial**  
Automotive, petrochemical, pulp and paper, utility
- **Institutional**  
Universities, hospitals

### Reliable Operation, Enhanced Safety

Vacuum interrupters reliably switch high-currents. With Eaton vacuum interruption technology, circuit breakers provide numerous safety features to maximize protection.

### Sustainable Design

Providing reliable switching performance, Eaton's vacuum interrupters are sustainable by design.

- Unlike traditional insulation technology that relies on Sulfur Hexafluoride (SF6) gas, Eaton vacuum interrupters are made of ceramic, stainless steel, copper and copper-chromium – and have a low environmental impact over the entire product lifecycle
- In contrast, SF6 gas is a potent greenhouse gas and poses both environmental and safety concerns – during maintenance and ultimately at the end-of-life

### The Eaton Family of Vacuum Interrupters for Medium Voltage Circuit Breakers



### The Challenge

A circuit breaker is a complex electrical switching device designed to protect electrical power circuits.

- Circuit breakers are engineered to carry large currents continuously for years.
- Circuit breakers break short circuit currents in milliseconds to prevent or minimize damage in the connected circuit and equipment.
- Circuit breakers energize circuits and can immediately open to break the circuit when a dangerous overload current is present.

Eaton's vacuum interrupters used in circuit breakers are engineered to last and meet the most demanding electrical and mechanical requirements.



Powering Business Worldwide

## Benefits

- Built and tested to meet IEEE-ANSI, IEC and GB-DL standards
- Vacuum technology provides a long mechanical and electrical life with little maintenance
- Compact design, when space is at a premium
- Vacuum technology operates with no greenhouse gases
- Eaton vacuum interrupters can be designed and manufactured to meet specific customer requirements
- Reliable, maintenance-free operation: Eaton vacuum interrupters are incorporated into circuit breakers that exceed typical mechanical life requirements of 10,000 operations and need virtually no maintenance over the product life
- Sustainable, environmentally-friendly design: with a minimal environmental footprint
- Enhanced safety for applications requiring the global standards: Eaton vacuum interruption technology is incorporated into circuit breakers that are used in global applications

## Features

- Rated line-to-line voltages from 3.6 to 40.5 kV
- Rated continuous currents from 630 to 5000A (higher with forced cooling)
- Rated short circuit currents from 12.5 to 80 kA
- Eaton provides over 400 distinct designs of vacuum interrupters, encompassing the most widely used electrical ratings

## Typical Applications for Vacuum Circuit Breakers

- **Commercial**  
High-rise convention centers, airports, shipping facilities
- **Industrial**  
Automotive, petrochemical, pulp and paper
- **Utility**  
Indoor and outdoor substations, wind, solar, hydro and small turbine generator
- **Institutional**  
Universities, hospitals
- **Government**  
Water treatment, federal buildings, defense installations
- **Transportation**  
Rail in trackside and locomotive top locations, ships
- **Mining**  
Mining and earthmoving equipment

## Examples of Medium Voltage Vacuum Circuit Breakers using Eaton Vacuum Interrupters



An encapsulated vacuum circuit breaker



An air circulated vacuum circuit breaker

Eaton Corporation  
Electrical Sector  
1111 Superior Ave.  
Cleveland, OH 44114  
United States  
Eaton.com

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Printed in USA  
Publication No. xxxxxxxx / LFD20123