

# Low Voltage AR-Series Circuit Breakers



## Maximize Life Extension

All AR-Series breakers are brand new from the ground up, and are designed as electrical and mechanical equivalents of the breakers they replace. They are not “Retrofits” and no parts are reused from the original breakers which reduces out-of-service time. This yields consistent product designs, while reducing initial installation costs by \$350-\$1,000 per breaker. AR-Series breakers correctly interface with compartment cell switches and safety interlocks are maintained or improved.

## Reduce Maintenance Cost & Downtime With Reliable Magnum DS Breaker Technology

Eaton’s Magnum DS Breaker technology reduces up to 50% of maintenance procedures commonly associated with vintage power circuit breakers. The arc chutes, contacts, mechanism and control components can be easily inspected. Minor maintenance (such as lubricating the mechanism) can also be easily accomplished. Arc chutes can be removed with two bolts and visually inspected or replaced. Once the arc chutes are removed, viewing the main contacts along with their contact wear indicator results in a quick and simple decision to replace if necessary.

## Solve Parts Availability Problems For Old Breakers

Replacement parts for old breakers are becoming more difficult to find as technology advances. Parts availability issues are basically eliminated with AR-Series breakers. Mechanism parts and control components are current production items across the product line and are in stock. This can save \$1,200-\$3,000 or more per design in future spare parts investment.

## Increase Interruption Rating

Dynamic changes resulting from larger transformers, bus ties, parallel generation, and new sources of incoming power can drastically increase the level of available short circuit current in LV power distribution systems. The bus system’s momentary capability can be increased and the entire switchgear structure can be re-certified to the new higher levels by Eaton’s factory qualified service engineers. Many AR-Series breakers are available to increase interrupting capabilities while still maintaining the original circuit breaker dimensions, providing savings of \$5,000-\$12,000 per breaker versus the cost of replacing the switchgear. Cell-to-breaker coding systems are maintained or corrected to comply with IEEE/ANSI standards.

## Increase Continuous Current Rating

Changes to industrial and commercial facilities, such as increased manufacturing operations, will typically increase the demand for electrical power. Often, an increase in electrical demand can cause the load on a circuit to exceed the circuit breaker’s continuous current rating. Eaton’s factory qualified service engineers can inspect existing LV metal-enclosed switchgear, including the existing breaker cubicles, line and load power stabs, load cables, and bus system to verify the application for a circuit breaker ampacity upgrade. Many AR-Series breakers are available with increased continuous current ratings.

## Designed And Tested to IEEE/ANSI Standards

All AR-Series LV power air circuit breakers are designed and tested to meet or exceed IEEE/ANSI C37.59-2007 standards. This assures compatibility with existing installations and IEEE/ANSI application guidelines. IEEE/ANSI certification and certified factory production test reports are available.

# EATON

Powering Business Worldwide

**Eaton LV-AR Direct Air Replacement Breakers for General Electric Type AK-2A**

**Identification**

**Rated Values**

AR-Series Circuit Breaker Type	Continuous Current Rating Amperes	480 Volts		600 Volts		Nominal Weight Breaker/Cassette lbs.
		Short-Circuit Rating	Short-Time Rating	Short-Circuit Rating	Short-Time Rating	
		kA rms	kA rms	kA rms	kA rms	
<b>AK-2A-25-AR</b>						
600NM	600	30	22	22	22	145 / 75
<b>AK-2A-50-AR</b>						
1600M	1600	50	50	42	50	185 / 100

**AR-Series Breakers are 100% rated, use UL listed components, assembled and tested in an ISO 9001:2008 and 14001 certified facility.**

**Safety Features.**

The cell door can remain closed with the breaker in connect, test, or disconnect position. Simultaneously, the trip unit, open-close controls, and breaker nameplate data all are readily visible.

**Designed for easy access, inspection, and minimal maintenance.**

The stored energy mechanism, control devices, accessories, and secondary contacts are easily accessible by removing the front cover. The contact wear indicator eliminates the need for elaborate testing to determine if the contact assembly needs replacing. The arc chutes can also be easily removed and inspected.

**Installation savings and robust interface.**

Reduce installation and commissioning time with our unique design concept. No modifications required to the original line/load power stabs or secondary disconnect contacts. Modifications to the original cubicle are often eliminated with an easy to install cubicle adapter (cassette). The cassette includes new extension rails and levering-in adapters, resulting in a more robust breaker-to-cubicle interface. We also provide a new door to match the replacement breaker.



**Arcflash Reduction Maintenance System**

An optional 520MC Digitrip Unit can be added to LV-AR breakers to modify trip level settings (determined and selected by a person who is experienced in power system analysis), reducing the effective level of arc flash for downstream devices.

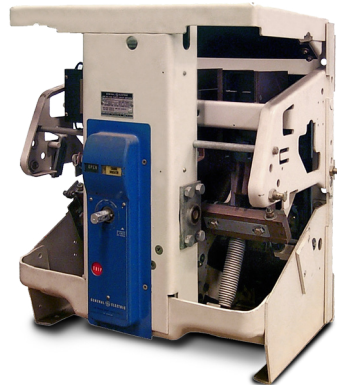
**Innovative Arc Running System provides 1 higher interrupting capacity in less space.**

- **Heel-Toe Contact Structure** is a single contact finger design that performs both main and arcing contact functions by controlling the arc direction. This design provides for longer contact life.
- **Patented Alternating V Arc Chute™** quickly divides and extinguishes the arc. The V Arc Chute reaction speed protects contact material, extending contact life.

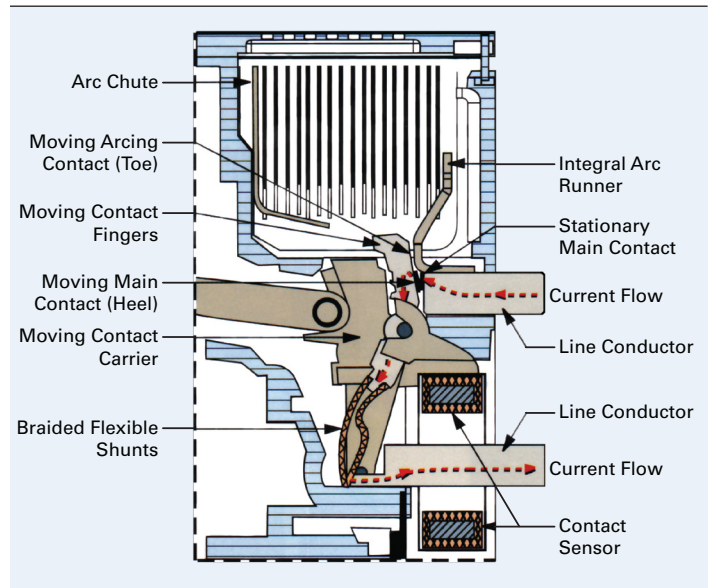


**Rotary Racking System**

Rotary racking allows insertion and removal with the RPR-2 Remote Power Racking System.



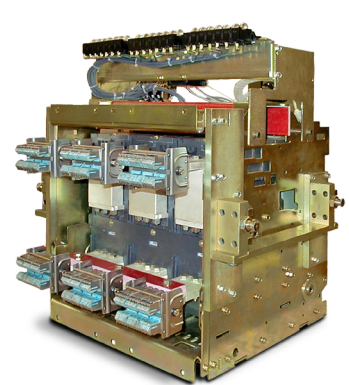
**Original Magnetic Circuit Breaker**



**Cross-Section of Magnum DS Heel-Toe Contact**



**AR-Series Replacement Breaker (AK-2A-50-AR Shown)**



**AR-Series Rear View**

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