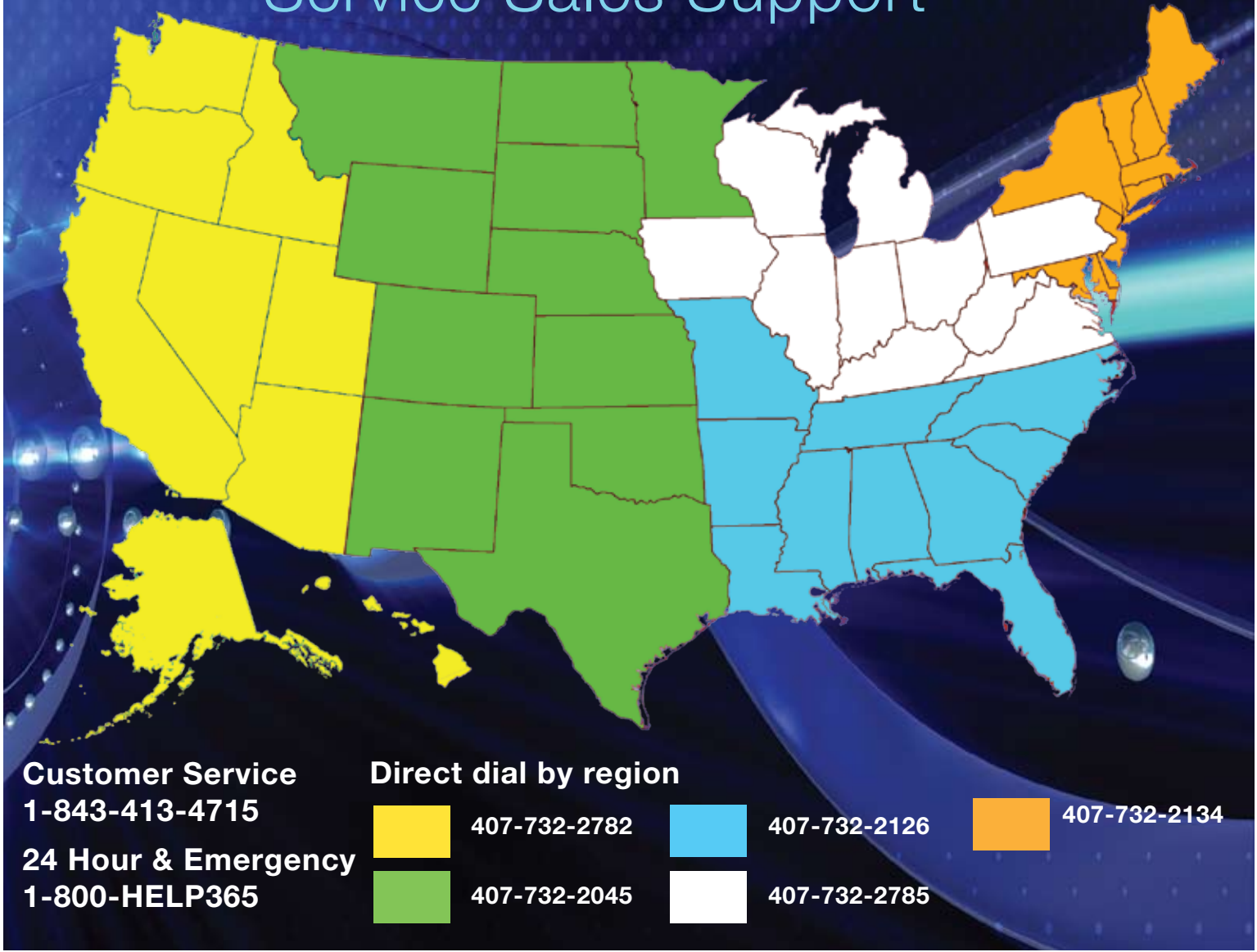




Low & medium voltage circuit breakers
Aftermarket solutions
Field service for every situation

Service Sales Support



Service & Support

Refurbishments & Repairs

Roll-in Replacements & Retrofits

Aftermarket Solutions Overview

ABB factory-trained technicians offer comprehensive field maintenance and repair services for planned and emergency work, 24 hours a day, 365 days a year. Service personnel have direct contact with the factory for authentic parts, original equipment drawing and technical support.

Field Service Support

- Emergency Repairs
- Supervision
- Bus Modifications
- Specific Turnkey Installation/Maintenance
- Breaker Upgrades
- Retrofit/Upgrade
- Bus Upgrades
- Engineered Solutions
- Installation/Maintenance
- Start-Up and Commissioning
- Maintenance Agreements
- Spare/Obsolete Parts Support
- Retrofit Solutions
- Reliability Assessment
- Training Services
- Life Extension Programs



Emergency Repairs

Factory-trained technicians are available 24 hours a day, 365 days a year to support emergency repairs.

800.HELP.365 (Option 7)

800.435.7365 (Option 7)



Service & Support

ABB's factory trained technicians provide refurbishment services for both nuclear and non-nuclear low and medium voltage circuit breakers. ABB refurbishes circuit breakers to a "like new operating condition" and provides a full one year warranty that covers parts and labor.

"One Price" Refurbishment Program

ABB offers an exclusive refurbishment program for ABB legacy circuit breakers. ABB will provide a complete circuit breaker refurbishment that includes all standard parts normally replaced during breaker refurbishment plus any additional components that do not meet ABB acceptance standards.

Other Manufacturer's Circuit Breakers

ABB has expertise in refurbishing other manufacturer's circuit breakers to a "like new condition". The refurbishment process is the same as with ABB circuit breakers. Base prices are quoted to cover typical refurbishment components and labor from qualified technicians. Other parts and repairs are performed based on additional quotations and customer approval.

ABB Customer-Specific Service Solutions

In addition to providing circuit breaker refurbishments, ABB works with customers to create refurbishment programs to meet specific needs and time frames. Examples of customer service solutions include:

- Loaner/spare breakers for refurbishment
- Rotation and minimized down time
- On-site refurbishments
- Reusable shipping crates to protect the breakers during transit



Refurbishments & Repairs

ABB roll-in replacement breakers can be inserted directly into existing switchgear and provide customers with the most cost effective way to upgrade switchgear without completely replacing it. The replacement breakers are installed with minimal to no modifications to the switchgear. All roll-in replacement breakers are tested to ANSI/IEEE standards. Testing includes: interface/interlocks, dielectric, temperature rise and mechanical life in accordance with ANSI C37.59, C37.50, and C37.09.

Medium Voltage Roll-In Replacement Circuit Breakers

ABB medium voltage roll-in replacement circuit breakers utilize proven operating mechanisms. ABB operating mechanisms are specifically designed to operate with vacuum interrupters and include the ADVAC® spring charged mechanism and the AMVAC™ magnetic operating mechanism.

ABB AMVAC - Magnetically Actuated Breaker

The AMVAC roll-in replacement circuit breaker brings all the benefits of increased performance, with reduced maintenance intervals. It features encapsulated vacuum interrupter assemblies, providing maximum protection from dust and humidity, greatly reducing the potential for tracking and partial discharge (corona). The need for lubrication is virtually eliminated, while providing the capability of performing over 100,000 mechanical operations without replacement of mechanism parts and 30,000 operations before the interrupter assemblies need maintenance.



Benefits of ABB Medium Voltage Roll-in Replacement Circuit Breakers

- Minimal lubrication required and extended maintenance intervals
- Incorporates the latest technology in rotating spiral contact designs to maximize contact life and are rated for 30,000 full load operations and over 100 full short circuit operations
- Vacuum interrupter and current carrying assemblies are fully encapsulated in epoxy, for most frame sizes, to provide maximum protection from dirt and humidity, greatly reducing the potential for tracking and partial discharge
- Modification of the existing circuit breaker switchgear compartment is usually not necessary
- Switchgear interlocking safeguards are incorporated
- Vacuum circuit breaker frame is constructed of rugged steel and counter weighted as required to easily and safely connect during the racking process
- Able to incorporate AMVAC across different manufacturers switchgear
- Standardization of AMVAC operating mechanism reduces inventory and training costs and increases safety with product familiarization

Roll-in Replacements & Retrofits

Low Voltage Roll-in Replacement Circuit Breakers

Low voltage replacement breakers use state-of-the-art EMAX circuit breakers. This modular and compact circuit breaker is extremely reliable with over 250,000 global installations, making it a perfect fit for replacement applications.

ABB EMAX - Power Circuit Breaker

Emax breakers feature up to 20,000 mechanical operations and up to 10,000 electrical operations. The Emax has communication capabilities for use in automation and control systems and incorporates bluetooth capabilities providing safe remote circuit breaker interrogation.



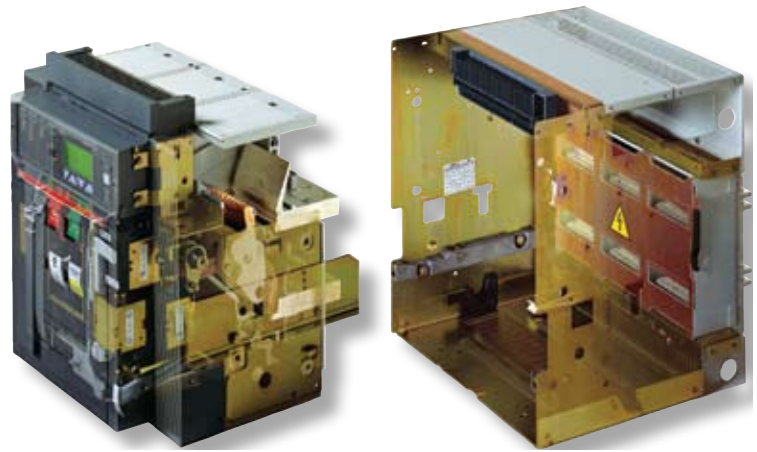
Benefits of ABB Low Voltage Roll-in Replacement

- ANSI C37.50 compliant
- UL Listing available for low voltage replacement circuit breakers
- The Emax roll-in replacement breaker is a self-contained air magnetic breaker with a stored energy operating mechanism. The breaker is built with sturdy components, including a metal frame structure
- Replacement breakers are interchangeable and can be inserted directly into existing switchgear, minimizing downtime
- Low maintenance circuit breaker elements offer greater reliability than older power circuit breaker technology
- New breaker elements with new trip units improve interruption performance, increase interval required to perform preventive maintenance and improve equipment protection
- Complete new breaker and chassis minimizes outage time and allows direct replacement in minutes
- All electrical accessories are AC and DC powered, allowing reduced stock levels and avoids costly mistakes during installation
- Current transformers are extremely easy to replace
- Each element pole is independently isolated, guaranteeing total isolation between phases, phases and neutral, and to ground

Low Voltage Cradle-in-Cradle Breakers

Low voltage replacement breakers are typically either direct replacements, where the EMAX breaker is mounted directly into the switchgear cubicle, or cradle-in-cradle replacements. The cradle-in-cradle replacement is an increasingly popular option because it provides the ability to standardize on the ABB Emax circuit breaker for all low voltage replacements regardless of the switchgear manufacturer.

The cradle-in-cradle is a double interface frame with inner and outer interfaces. The outer interface mounts physically and electrically in the switchgear cubicle. The inner interface matches up with the EMAX draw out breaker, allowing for quick and easy installation and removal.



Cradle-in-Cradle Benefits

- Easy to standardize on Emax and reduce inventory across different switchgear types
- Simplifies personnel training and increases personnel safety through standardization
- Fits into and strengthens breaker cubicles that may have settled or shifted over time
- Allows for the replacement Emax breaker to easily rack into and out of the cubicle
- Avoids misalignments of circuit breaker connections

Retrofits

Retrofit solutions or upgrades are available for low and medium voltage switchgear and circuit breakers. Retrofits aim at extending the life of equipment and reducing operating costs.

Low voltage circuit breakers

Retrofits involve the replacement of electromechanical controls with new solid state control units that incorporate the current standards of overcurrent and ground fault protection

Medium voltage circuit breakers

Retrofits involve upgrading the operating and interrupting mechanisms to current technologies and possible higher interrupting capabilities.

Switchgear

Retrofits include upgrading to a higher operating and interrupting rating which includes bus upgrades. Retrofits also include a retrofit offering where a new switchgear cell and circuit breaker is inserted into an existing switchgear cell.

ABB medium and low voltage service provides solutions and services for all types of breaker, switchgear, and field service applications. ABB has a full complement of experienced engineers and technicians available to perform breaker and equipment evaluations, refurbishments, repairs, retrofit/fill, roll-in replacements, cradle in cradle, field service, and facility maintenance contracts.

Technical Evaluations

ABB has factory certified technicians available to evaluate Low Voltage and Medium Voltage circuit breaker mechanical and electrical conditions.

Refurbishments & Repairs

- ABB offers breaker services from light repair to full refurbishments.
- Refurbishments are for circuit breakers that have a high duty cycle and/or are near the end of the lubrication life cycle and where renewal parts are readily available. ABB refurbishes circuit breakers to a “like new operating condition” and provides a full one year warranty that covers parts and labor.

Roll-in Replacements, Retrofits & Retrofills

- ABB provides retrofit and retrofill conversions or upgrades of breakers to the latest technologies, usually including new trip units for low voltage breakers, or new vacuum interrupters and operating mechanisms for medium voltage breakers.
- ABB provides roll-in replacement engineering and services to replace competitive breakers with ABB breakers.

Service & Support

- ABB has a staff of engineers and technicians available to perform maintenance, repairs, and refurbishments on-site.
- ABB offers end user training to certify customers to perform their own maintenance.
- Custom training programs can be tailored to meet specific customer needs including product orientation, application, installation, calibration, operation, inspection, maintenance, testing, commissioning, troubleshooting, and safety.

Parts and Components

- ABB maintains an extensive inventory of new and remanufactured parts for many types and vintages of Low Voltage and Medium Voltage circuit breakers.
- All parts are manufactured to the original drawings and specifications assuring that any part purchased from ABB is interchangeable and of the highest quality and reliability.
- Parts kits are available for field rebuilds of components and sub-assemblies.
- Life extension and upgrade kits are available for field installation.



Aftermarket Solutions Overview

Contact us

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Florence, SC 29501
Phone: 843.413.4715 - Customer service
800.HELP365 - 24 Hour & Emergency/Repair, Option 7