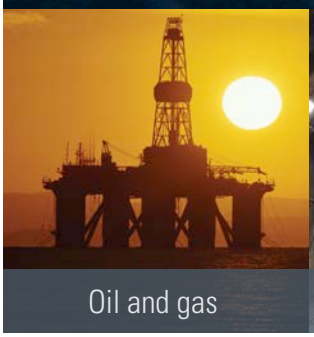
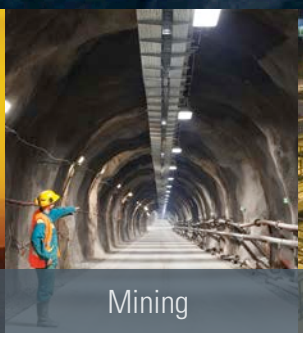
Medium-voltage motor control

Ampgard

The name motor applications rely on


Oil and gas


Mining


Water/wastewater


Pulp and paper


Utility

EATON

Powering Business Worldwide

Ampgard

medium-voltage control solutions

Eaton has been an industry leader for more than 40 years, providing UL® 347 certified medium-voltage control. When it comes to controlling and protecting medium-voltage motors, the Ampgard™ family is the premier high-performance choice.

15 kV standard MVC

7.2 kV standard MVC

A legacy of reliability for more than 4 decades

1950 1960 1970 1980* 1990 2000 2010 Present	Actual years
AMI Ampgard	1955–1962
Classic Ampgard	
LF airbreak 25L2 200 A	1962–1985
LF airbreak 50L2 200 A	1963–1981
LF airbreak 50L4 400 A	1965–1985
LF airbreak 50L7 700 A	1968–1988
SJ vacuum SJ72V4	1982–2000
SJ vacuum SJ72V8	1988–2010
SL vacuum SL72V4	2000–2010
Ampgard	
7.2 kV/SL400	2005–present
7.2 kV/SJ800	2005–2014
15 kV/SL300	2010–present
7.2 kV/SL800	2014–present
SC9000 MV drive	2008–present
*Manufacture point moved from Buffalo, NY to Asheville, NC in 1978	

Classic Ampgard

Air to vacuum retrofit

Ampgard

Ampgard has a dedicated aftermarket sales team that has access to your original order information. Using this information, the sales team can identify the exact parts required to maintain or upgrade your existing starters.

Replacement parts are available for three generations of Ampgard starters. The original Ampgard design was built from the 1950s to the 1960s.

The second generation design (now known as Classic Ampgard) was introduced in the 1960s and remained in production through the early 2000s. The current generation of Ampgard was introduced in 2005.

The aftermarket team can also quote parts for SC9000™ medium-voltage drives.

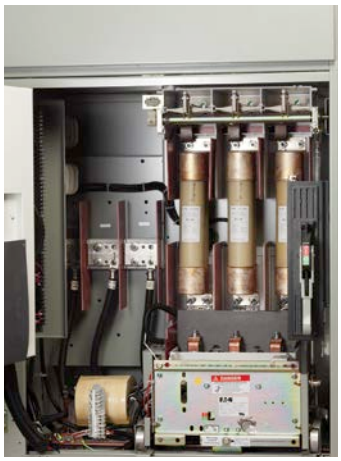
Starters

All major starter components are manufactured by Eaton, providing increased reliability and equipment support.

- Vacuum contactors
- Isolation switches
- Power fuses
- Control power transformers
- Potential transformers

With a wide selection of starter types at voltages from 2.3 kV to 13.8 kV and ratings up to 8000 hp, Eaton is equipped to provide an Ampgard starter specifically designed for your critical application including:

- Full voltage
- Reduced voltage—reactor
- Reduced voltage —autotransformer
- Reduced voltage—solid-state
- Two-speed, two-winding
- Two-speed, one-winding
- Synchronous
- Reversing



Full-voltage starter

Contactors

400 A vacuum contactor

- Ampgard vacuum contactors provide the highest interrupting ratings in the industry, with field-selectable control voltage and dropout time
- Long life—300,000 electrical operations
- Available with bolted or finger-and-stab connection to 400 A, finger-and-stab only at 800 A

Isolation switches

Isolation switch

- Long life isolation switch rated for 10,000 operations, simplifies lock-out/tag-out while minimizing maintenance
- Mechanical interlocks to prevent operation of isolation switch with main contactor closed
- Mechanical interlocks to prevent access to medium-voltage compartment until isolation switch is open
- Visible verification of isolation switch operation through viewing window
- Optional remote operator for connection/disconnection from power bus while personnel is outside the arc flash zone

Fuses

Bolted and clip-in main fuse

- Current limiting to minimize the effects of high fault currents
- Sized to ensure repeated motor starts without fatigue
- Available as bolted or clip-in up to 400 A, bolted only at 800 A
- Blown fuse indicator standard

Reduced-voltage solid-state starter

Increased reliability and equipment support

Protective relays

E-series relays for traditional applications

Starter with EMR relay

- EMR-3000 for current protection
- EMR-4000 for current and voltage protection
- URTD for temperature protection

Eaton.com/relays

Enclosures

Ampgard motor control solutions are all seismic certified and available in an enclosure type for nearly every operating environment:

- NEMA® 1—general purpose
- NEMA 1G—general purpose with gasketed doors
- NEMA 12—dust-tight
- NEMA 3R—outdoor (non-walk-in)

Arc flash solutions

Arc-resistant Ampgard AR

Arc-resistant Ampgard AR™ is available for applications requiring increased operator protection. Extensively tested to IEEE® C37.20.7-2007 requirements for Type 2B accessibility, Ampgard AR incorporates the key features of traditional models, plus:

- Rear arc chamber, roof flaps and plenum to allow arc gasses to flow away from the operator
- Strengthened front doors and latches to ensure doors remain closed
- Insulated main bus minimizes risk of bus fault
- Low-voltage control compartment verified to meet arc-resistant requirements (Type 2B)

Ampgard AR arc-resistant can be close-coupled with the following, for a coordinated, tested, arc-resistant customer solution:

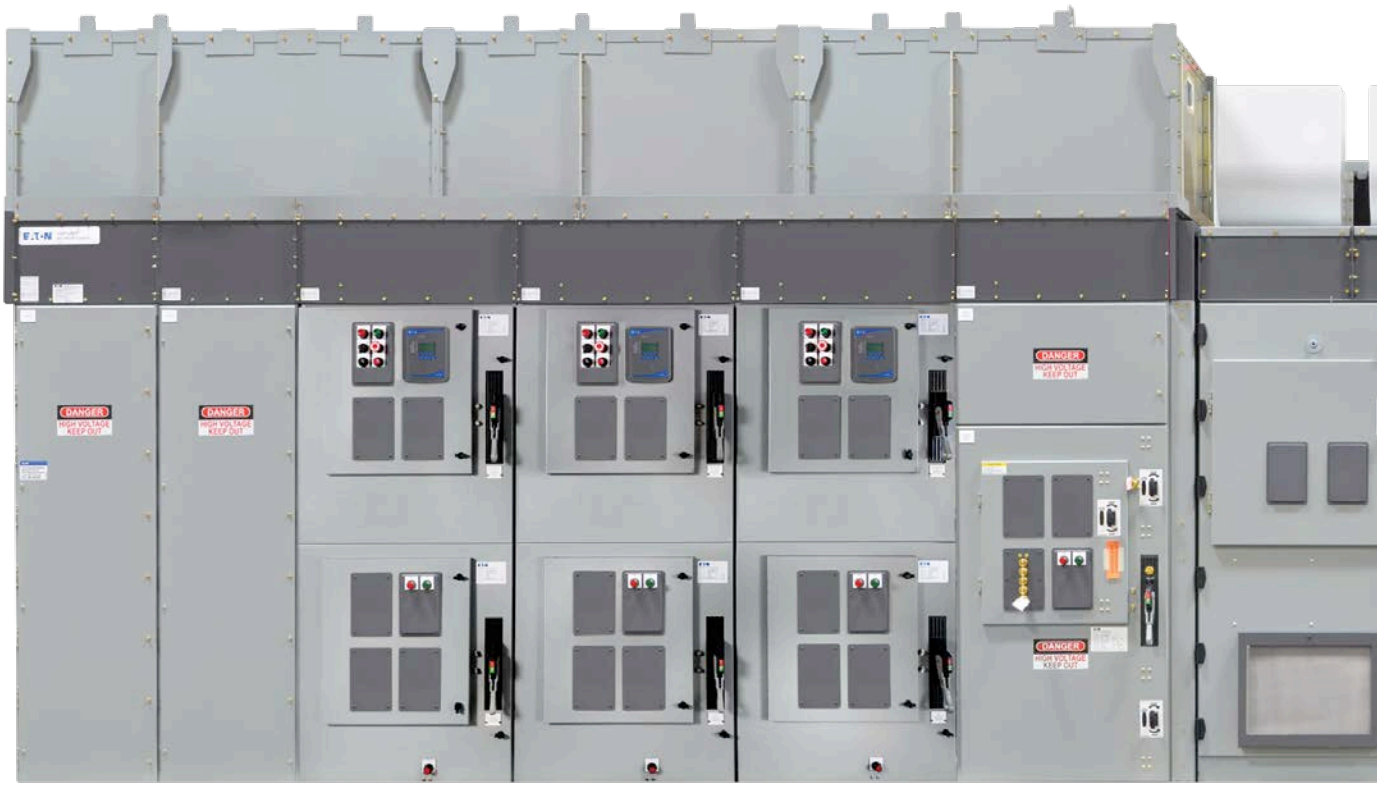
- ArcGard™ arc-resistant metal-clad switchgear
- Arc-resistant metal-enclosed medium-voltage switches
- SC9000™ EP arc-resistant medium-voltage drive

Ampgard remote operator

The Ampgard remote operator enables users to open or close the starter's isolation switch through the use of a pushbutton station operated up to 30 feet from the starter, allowing the user to remain out of the starter arc flash zone.

- The remote operator is easily attached to the front of an Ampgard starter when the isolation switch needs to be opened or closed
- 120 Vac is required for operation
- All starter mechanical interlocks remain operational during use

Ampgard remote operator



Ampgard AR arc-resistant close-coupled with SC9000 EP arc-resistant drive

Enhancements

Main breaker

LBS

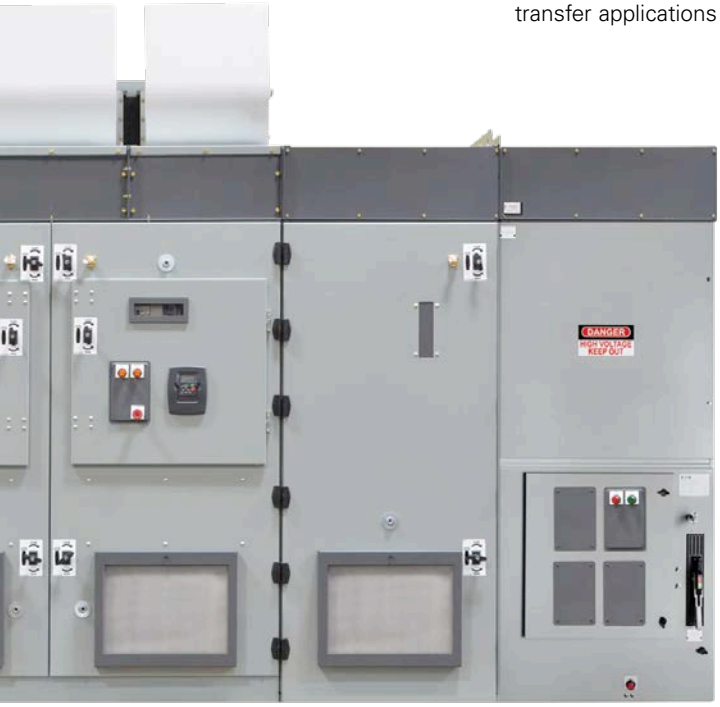
Synchronous transfer with medium-voltage drive

Integrated disconnect

- Eaton VCP-W main breaker
  - 1200 A, 2000 A, 3000 A, 50 kA
  - Metal-enclosed, totally front accessible
  - Optional remote racking
- LBS switch for main, tie or feeder disconnect applications
  - 600 A, 1200 A, fusible and non-fusible

Double-bus design

Double-bus design for close-coupling with medium-voltage drives for synchronous transfer applications



Manufacturing flexibility

Multiple manufacturing sites develop and manufacture customized products and solutions locally and provide you with local access to witness tests and inspections, in-depth technical skills and market knowledge.

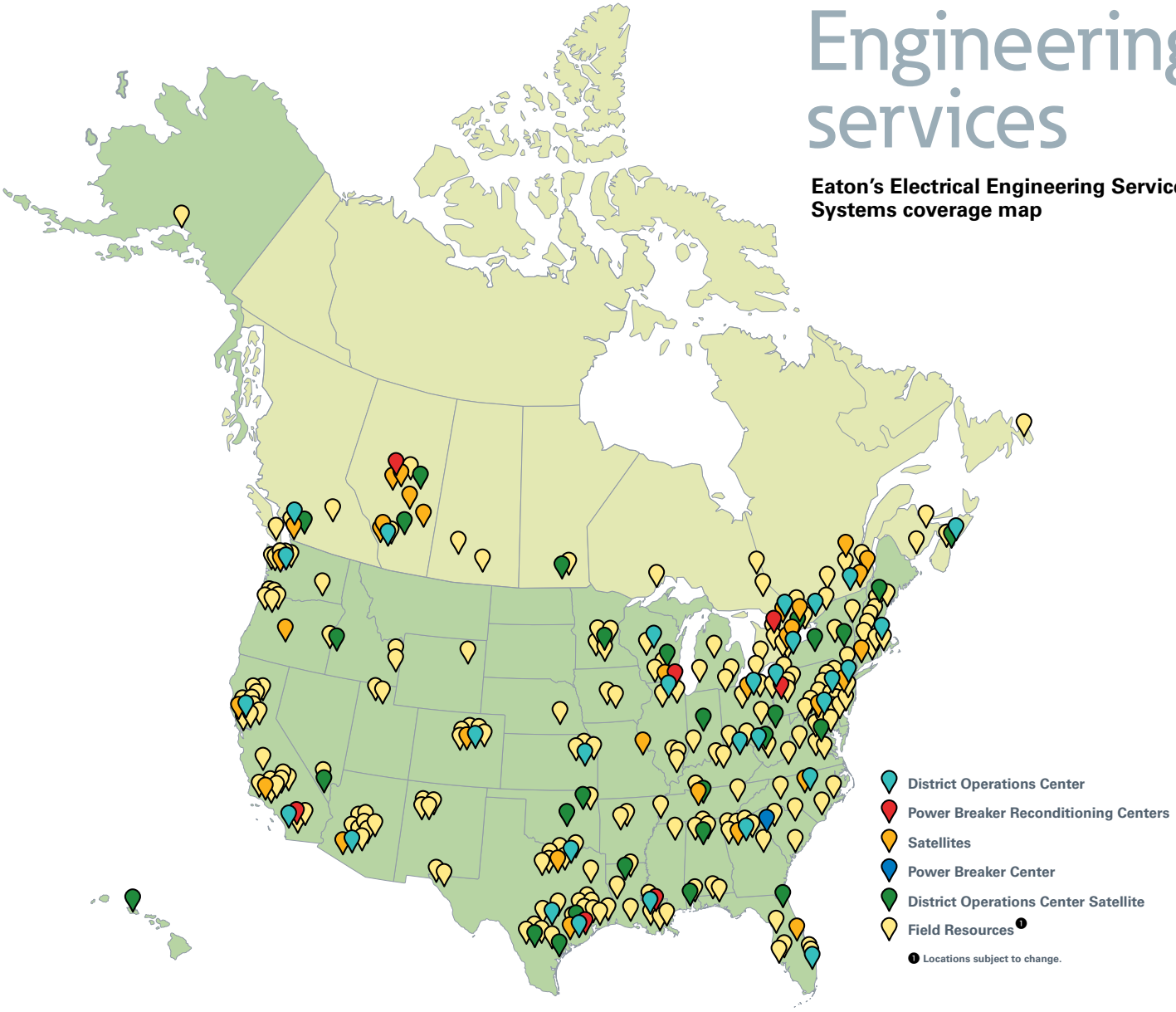
Asheville, NC

Edmonton, Canada

Portland, OR

Engineering services

Eaton's Electrical Engineering Services & Systems coverage map



About Eaton's Electrical Engineering Services & Systems

Eaton's Electrical Engineering Services & Systems is one of the largest and most experienced industrial service organizations in North America. With more than 1500 highly trained professionals in 60 engineering service locations throughout the U.S. and Canada, Eaton's Electrical Engineering Services & Systems has complete local, national and international capabilities to provide a full range of electrical, civil and mechanical equipment services. In addition, Eaton provides an additional year of warranty, beyond our standard warranty, when site acceptance testing and power system studies are performed by Eaton's Electrical Engineering Services & Systems field service organization. This broad range of service capabilities has established us as a leader in the engineering service industry.

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Printed in USA
Publication No. BR02003002E / Z21147
July 2018

Powering Business Worldwide

Follow us on social media to get the latest product and support information.