



Gerapid

High Speed DC Breakers
2 600 - 8 000 A



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The Gerapid line of high speed d.c. circuit breakers is designed for protection of main d.c. circuits at Traction Power Substations.

In addition, Gerapid is widely used for protection of d.c. drives, as field discharge breakers or commutation switches in d.c. shunt excitation systems of synchronous generators, as protection for super-conducting coils and in many specialized d.c. power distribution systems, whenever high speed opening and efficient energy dissipation is required.

Gerapid breakers operate all over the world, being recognized as the top class line of d.c. circuit breakers. Gerapid breakers are manufactured and tested in GE's factory in Bielsko-Biala, Poland. All breakers are type tested as per EN 50123-2, IEC 60947-2 or IEEE C37.14 standards and are certified by UL, CCC, CESI and GOST organizations.



GE's factory in Bielsko Biala, Poland



Gerapid 4207 2x2 4 200 A, 2 000 V dc



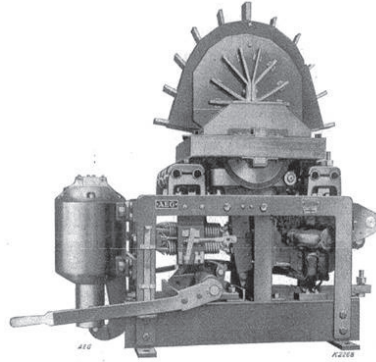
Gerapid installed on drawout truck

References

Long history, worldwide application

Gerapid DC circuit breaker line is the successor of DC high speed circuit breakers manufactured by the AEG company since 1920's. General Electric acquired AEG Germany in 1996, and the Gerapid line was launched two years later. Since its inception and with unique features, Gerapid has gained recognition of key rail infrastructure suppliers including Balfour Beatty Rail, Siemens and ABB.

Today, over 16 000 Gerapid breakers have been sold and installed in more than 40 countries worldwide. Over 1 500 breakers are installed in Germany alone, in cities such as Berlin, Bonn, Frankfurt, Dortmund, Hamburg, Munich and Stuttgart. Over 1 000 have been sold to UK, over 8 000 to China, and several hundred to USA & Canada. Detail reference list as well as credentials from our key customers and end users are available on request.



AEG DC Circuit Breaker, ca. 1926
Rated 2 500 A, 1 650 V dc



GE Gerapid DC Circuit Breaker
Rated 4 200 A, 1 000 V dc



Applications

Traction market

- Metro, tramways, trolleys
- Light & heavy rail

Industrial

- DC Drives in metal works
- Metal processing & electrolysis
- Mining

Power Generation

- Wind
- Photovoltaic
- Static excitation systems

Other

- DC data centers
- Research/testing labs
- Marine propulsion systems



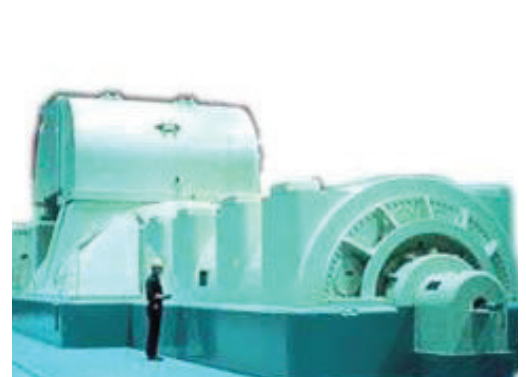
Gerapid - an Overview

Models

- Rated currents from 2 600 A up to 8 000 A.
- Rated voltages up to 3 600 V.
- Short circuit capacity up to 200 kA.
- Type Tested as per EN/IEC/ANSI standards.
- UL and CCC certified.
- Gerapid Line Feeder Breakers (FCB) – 2508, 2607, 4008, 4207, 5008, 6007, 6008, 8007.
- Gerapid Rectifier Cathode Breakers (RCB) – 8007R, 10007R.
- DC OEM Cell – solution for panel builders up to 6 000 A ANSI with UL approval.

Complete line of Gerapid DC High Speed circuit breakers

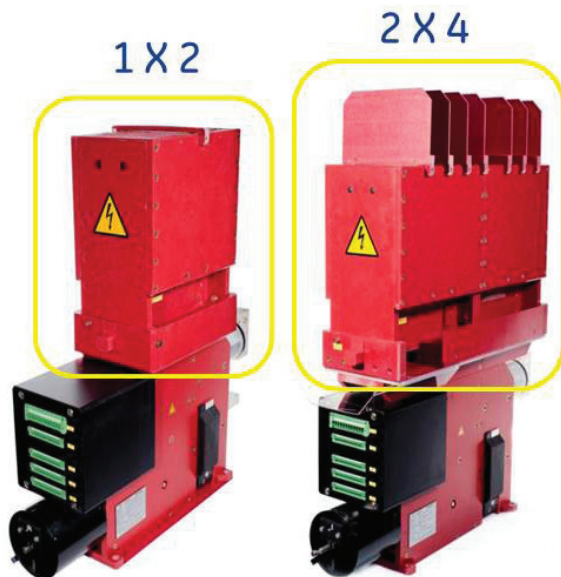
3 600 V (IEC)	2607 2x4 2607 EF4-12	4207 2x4 4207 EF4-12			
3 000 V (IEC)	2607 2x3	4207 2x3		6007 2x3	8007 2x3
2 000 V (IEC)	2607 2x2 2607 1x4	4207 2x2 4207 1x4		6007 2x2 6007 1x4	8007 2x2
1 200 V (ANSI)	-	-		8007R 1x3	10007R 1x3
1 000 V (IEC)	2607 1x2	4207 1x2		6007 1x2	8007 1x2
800 V (ANSI)	2607 1x2 2508 1x2 UL DC OEM CELL	4207 1x2 4008 1x2 UL DC OEM CELL	5008 1x2 DC OEM CELL	8007 1x2 6008 1x2 UL DC OEM CELL 8007R 1x2	10007R 1x2
IEC/EN	2 600 A	4 200 A		6 000 A	8 000 A
ANSI/UL	2 500 A	4 000 A	5 000 A	6 000 A	



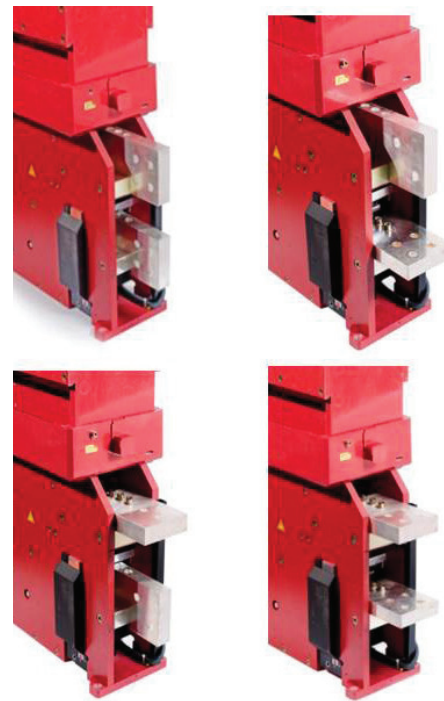
Gerapid - Features

Safe & robust

- Compact modular design, the same for each rating.
- Arc Chute selection for different voltages and applications.
- Variety of main terminals orientation.
- Easily maintainable contacts system.
- Two stage contact system protects main contacts from wear.
- Mechanical latching system, no holding coil or external energy required after closing.
- Integrated control system provides safety functions and protects breaker's devices.
- Fast closing by means of power solenoid drive. No spring charging process.
- Several options and accessories available for specific applications.



Different arc chutes on the same breaker's body



Examples of different main terminals orientation



Gerapid - Features

New and improved



4 200 A 900 V frame available for 180 kA / 125 kA making/ breaking capacity and $T_{nc}=100$ ms as per EN 50123-2 and IEC 61992-2.

Padlockable switch for closing interlock circuit enables implementing of LOTO safety rules.



Cluster terminals with receptacle for withdrawable solutions to work with GE's DC OEM cell solution for panel builders.

New hand grips for easier handling of arc chutes.



Side access, mechanical Change Over Interlock for easy deactivation of magnetic over current release and for switching the breaker into DC disconnect mode.

Trip-free padlockable mechanical closing interlock.



New line of Gerapid type 2508/4008/5008/6008 with UL approval and certificated as per ANSI C37.14. Designed to work with DC OEM cells and trolleys. Ready to use by panel builders for assembly of DC switchgear.



Cardless version of Gerapid circuit breakers for use in EMC harsh environment or in combination with advanced DC relay solutions.

Ready-to-use Gerapid withdrawable retrofit solution for earlier AEG's type GEARAPID SE breakers.



Accessories

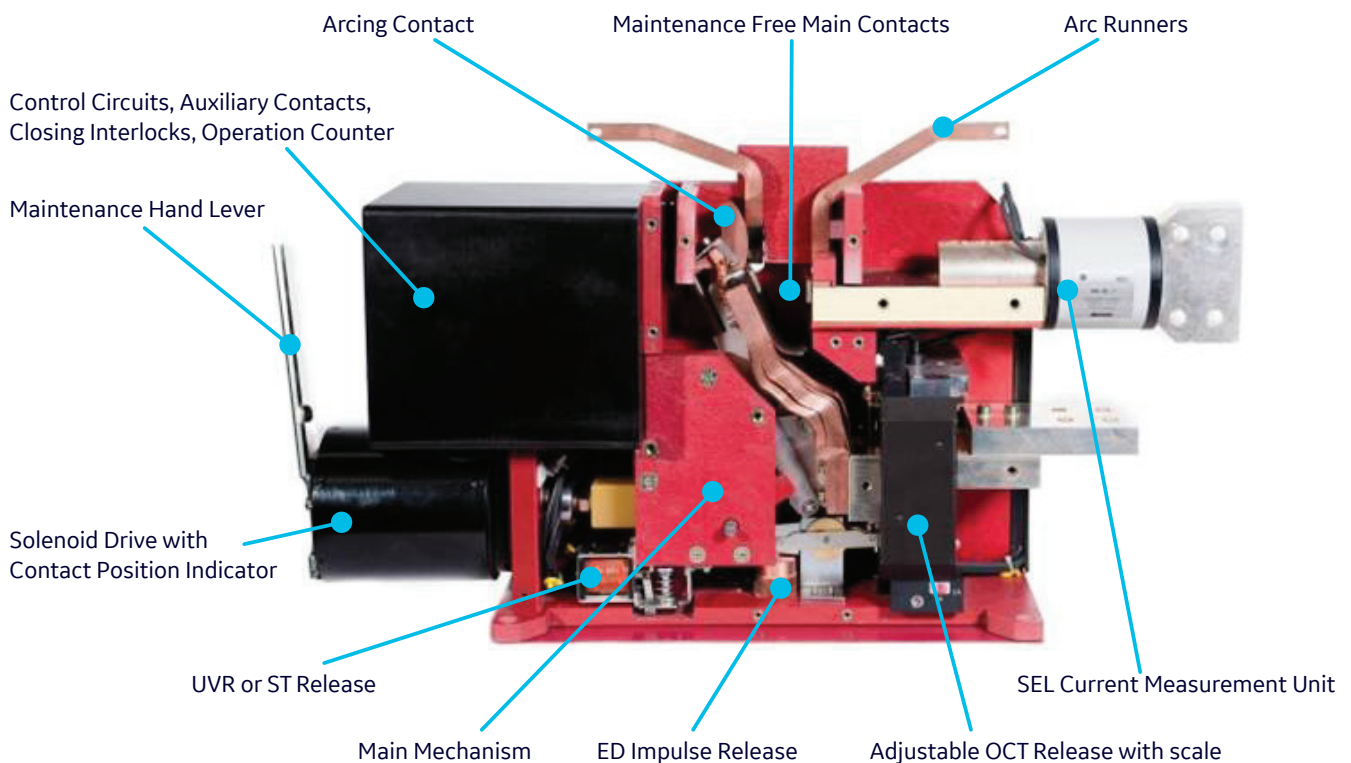
Flexible & versatile

Releases

- Adjustable Overcurrent Release (OCT)
- Zero Voltage Release (UVR)
- Shunt Trip Release (ST)
- High-Speed Impulse Release (ED)
- Forced Trip Release (FTU)

Other options & accessories

- Current Measuring System (SEL)
- Maintenance Hand Operation Lever
- OC Release Trip Target
- Auxiliary Contacts
- Contacts Position Indicator
- Close-STOP Interlock
- Operation Counter
- Arc Chute Indicator



Specifications

EN 50123-2 / IEC 61992-2 & IEEE/ANSI C37.14

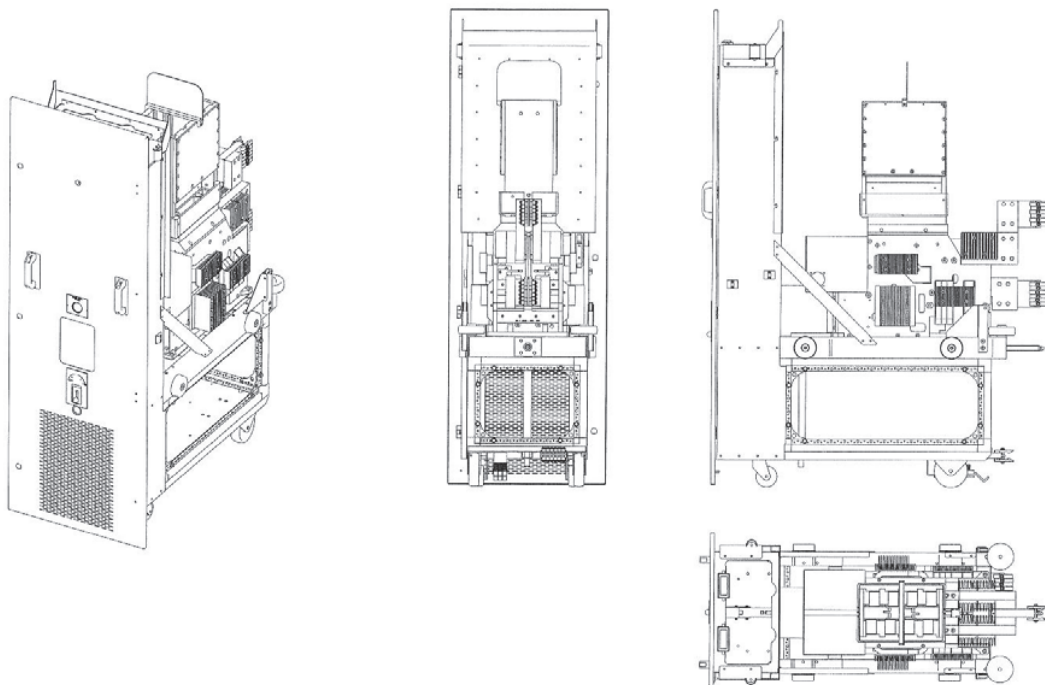
EN 50123-2 / IEC 61992-2 “Railway applications. Fixed installations. D.C. switchgear. D.C. circuit breakers.”

GErapid Type	2607	4207	6007	8007
Rated current	2 600 A	4 200 A	6 000 A	8 000 A
Rated voltage	1 000 V - 3 600 V		1 000 V - 3 000 V	
Rated insulation voltage	2 000 V - 4 000 V		2 000 V - 3 000 V	
Rated withstand voltage	10 kV - 15 kV / 50 Hz / 60 sec			
Rated impulse voltage	18 kV - 30 kV			
Rated breaking capacity	30 - 125 kA			

IEEE/ANSI C37.14 “IEEE Standard for Low-Voltage DC Power Circuit Breakers Used in Enclosures.”
UL certified types are 2508, 4008, 5008 and 6008.

GErapid Type	2607 2508 UL	4207 4008 UL	5008 UL	8007 6008 UL	8007R*	10007R*
Rated current	2 600 A 2 500 A	2 600 A 2 500 A	5 000 A	6 000 A	6 000 A	8 000 A
Rated voltage	800 V				800 V - 1 200 V	
Rated withstand voltage	3 700 V				10 000 V	
Rated S.C. peak current	200 kA					
Withstand peak current	25 kA - 35 kA				150 kA	

* Rectifier Circuit Breaker



GE Industrial Solutions is a first class global supplier of low and medium voltage products including wiring devices, residential and industrial electrical distribution components, automation products, enclosures, switchboards and uninterruptible power supplies. Demand for the company's products comes from wholesalers, installers, panelboard builders, contractors, OEMs and utilities worldwide.

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