

Type
HB1-C



Generator Circuit-Breaker System **Type HB1-C**

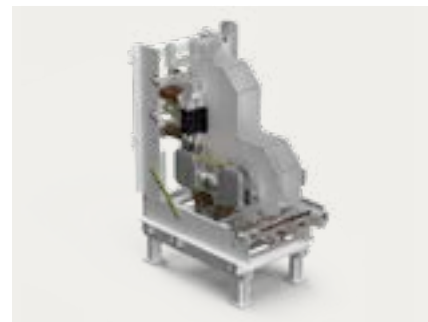
Without enclosure, with integrated main-disconnector and earthing switches
[siemens.com/hb1-c](https://www.siemens.com/hb1-c)

HB1-Compact is the all-around solution for your retrofit application and new projects

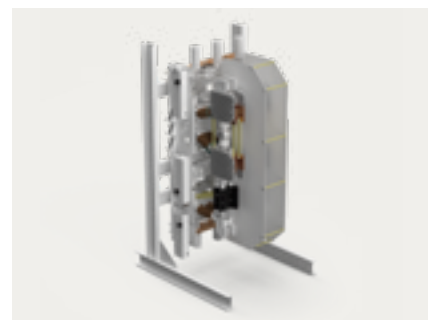
HB1-C provides a unique generator circuit breaker system to answer even the most challenging constraints. It offers one of the highest levels of customization: The HB1-C can be mounted either vertically or horizontally, its design (I-shape or L-shape) can be adjusted to match perfectly the existing busbar connection points. Optionally, the generator circuit-breaker and its integrated main-disconnector can be fitted with earthing switches on generator side and/or on transformer side.

Features

- Up to 72 kA breaking capabilities
- Up to 6,700 A rated nominal current
- Up to 24 kV rated nominal voltage
- Vertical and horizontal installation
- L-shape and I-shape design
- Can be delivered with integrated earthing switches on generator side and/or transformer side
- Module assembly with integrated main-disconnector and earthing switches as defined in the IEC/IEEE 62271-37-013:2021



HB1-C in L-shape design



HB1-C in vertical and I-shape configuration

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Benefits

- Up to 75% OPEX savings due to vacuum technology performance
- Maintenance-free vacuum technology with up to 10,000 CO operating cycles at full nominal rated current
- High reliability due to full-spring operating mechanism stated to be the most reliable* way to operate a GCB with lifespan up to 10,000 CO operation
- Equipped with sealed-for-lifetime** vacuum interrupter
- Its compact dimension enables replacement of single function equipment (GCB) to multiple function system with higher flexibility and personal safety
- All components and functions are type tested and routine tested together. It allows the HB1-C to deliver a native interlocking system with high reliability level

Technical data

Rated values and related capabilities	IEC/IEEE 62271-37-013 standard	Units	Generator circuit-breaker (up to)	Main-disconnector (up to)	Earthing switch (up to)
Rated maximum voltage	5.1	kV	24	24	24
Power frequency	5.2	Hz	50/60	50/60	50/60
Rated continuous current with natural cooling	5.3	A	6,700	6,700	
Rated dielectric strength (withstand voltage)	5.4.2 C37.013a, Table 4				
1. Power frequency (dry)		kV	60	60, 70	60
2. Full-wave impulse (1.2 x 50)		kV peak	125	125, 145	125
Rated short-circuit duty cycle	5.5		CO-30 min-CO		
Rated short-circuit current (up to)					
1. System source (100% I)	5.8.1	kA sym	72		
• DC component		%	70		
• Asymmetrical (total)		kA rms	101		
2. Generator source	5.8.2.3	kA sym	36, 25		
• DC component		%	110, 130		
• Asymmetrical (total)		kA rms	67, 52		
Close and latch capability (274% I)		kA peak	197		
Short-time current carrying capability (100% I)	5.8.2.7	kA sym	72	72	72
Short-time current duration	5.8.2.7	s	3	3	1
Out-of-phase current switching capability	5.12	kA	36		
Mechanical endurance		operations	10,000	10,000	2,000
Continuous current switching endurance		operations	10,000		

* Most reliable operating mechanism as per final report number A3-206 from the CIGRE 2012 General Report SC A3.

** R. Renz, D. Gentsch, P. Slade, H. Fink, M. Schlaug, "Vacuum Interrupters – Sealed for Life", 19th Int. Conf. on Electr. Distr. (CIRED), Paper 0156, 21 – 24 May 2007

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