



Generator Circuit-Breaker Switchgear **Type HB1**

With integrated main disconnect and earthing switch,
and IAC type-tested for increased personal safety

[siemens.com/hb1](https://www.siemens.com/hb1)

The state-of-the-art generator switchgear HB1 – designed to increase the availability of your power plant

The HB1 is rated for applications with a rated current of up to 5,500 A, a breaking capacity of up to 72 kA, and IAC A FLR 63 kA/0.5 s. With its air-insulated, metal-enclosed, and non-phase segregated design, this generator switchgear integrates the latest standardized vacuum generator circuit-breaker (tested as per IEC/IEEE 62271-37-013:2021 and IEC 62271-200:2021) with integrated main disconnect and earthing switch, providing maximum flexibility in connection and accessibility for increased personal safety.

Features

- Up to 72 kA breaking capacity
- Up to 5,500 A rated continuous current
- Up to 17.5 kV rated voltage
- IAC A FLR 63 kA/0.5 s
- Up to IP55
- Type-tested according to IEC/IEEE 62271-37-013:2021 and IEC 62271-200:2021
- Integrated low-voltage control cubicle



Inside view

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Benefits

- Up to 75% OPEX savings thanks to vacuum technology
- Maintenance-free vacuum technology with up to 10,000 operating cycles at rated continuous current
- High reliability due to spring-operated mechanism stated to be the most reliable* way to operate a GCB, with a service life of up to 10,000 operating cycles
- Equipped with sealed-for-life** vacuum interrupter
- Flexibility allows the connection of NSPB, cable, and IPB
- All components and functions are type-tested and routine-tested together. It allows the HB1 to deliver a native interlocking system with a high reliability level
- The HB1-C can be removed via an external metal frame

Technical data

Rated values and related capabilities	IEC/IEEE 62271-37-013 standard	Units	Generator circuit-breaker system (up to)
Rated voltage	5.2	kV	17.5
Rated frequency	5.4	Hz	50/60
Rated continuous current with natural cooling	5.5	A	5,500
Rated insulation level	5.3, Table 1		
1. Power frequency (dry)		kV	50
2. Full-wave impulse (1.2 x 50)		kV peak	110
Rated operating sequence	5.106		CO-30 min-CO
Rated short-circuit making and breaking current capability (up to)			
1. System source (100% I)	5.101.2	kA sym	72
• DC component		%	70
• Asymmetrical (total)		kA rms	101
2. Generator source	5.101.2.4	kA sym	36, 25
• DC component		%	110, 130
• Asymmetrical (total)		kA rms	67, 52
Close and latch capability (2.74% I)		kA peak	197
Rated short-time withstand current (100% I)	5.6	kA sym	72
Rated duration if short circuit	5.8	s	3
Out-of-phase current making and breaking capability	5.104	kA	36
Mechanical endurance		operating cycles	10,000
Electrical endurance		operating cycles	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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