

FKG1X

Generator Circuit Breaker for Power Plants from 450 to 600 MW*

Power plant owners are concerned with the availability and reliability of their plants. That is why it is crucial to rely on equipment capable of safely interrupting fault conditions while protecting connected equipment and reduce outage periods.

Higher Reliability

FKG Generator circuit breakers are equipped with a fully spring-operated mechanism for high reliability, maximum energy stability and low maintenance requirements. This model is equipped with a full natural cooling system, ensured by an external heat exchanger using natural convection phenomena for SF₆ cooling.

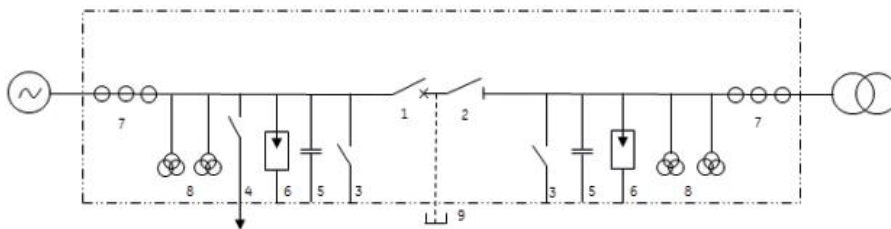
Keep an Eye on your Generator Circuit-Breaker

The FKG1X figures out optional add-on CBWatch monitoring system (automatic diagnosis) for maintenance on real status of the switchgear.

Higher Safety

A true electro-mechanical sequential interlocking system assures a reliable mechanical and electrical coordination for higher safety.

Components & Single Line Diagram



1 - Circuit breaker

2 - Disconnecter

3 - Earthing switch

4 - Starting switch

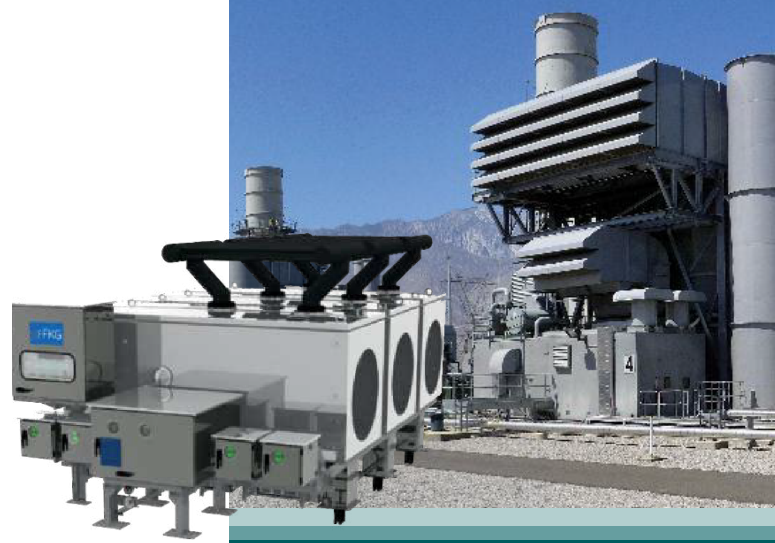
5 - Capacitors

6 - ZnO Surge arresters

7 - Current transformers

8 - Voltage transformers

9 - Manual short-circuiting bar



Technical Data

- 17,000 A - 160 kA - 50 Hz
- 16,500 A - 160 kA - 60 Hz

Key Benefits

- Utmost reliability of the full spring mechanism
- CBWatch makes proactive maintenance possible
- Interrupting chambers with natural cooling system
- Ideal for large & very large turbines or generators

Testing and Quality

- Product in full compliance with IEC/IEEE 62271-37-013 GCB standard
- Manufacturing ISO 9001 and ISO 14001 certified
- S.E.I. - S.N.E. and national packing procedures



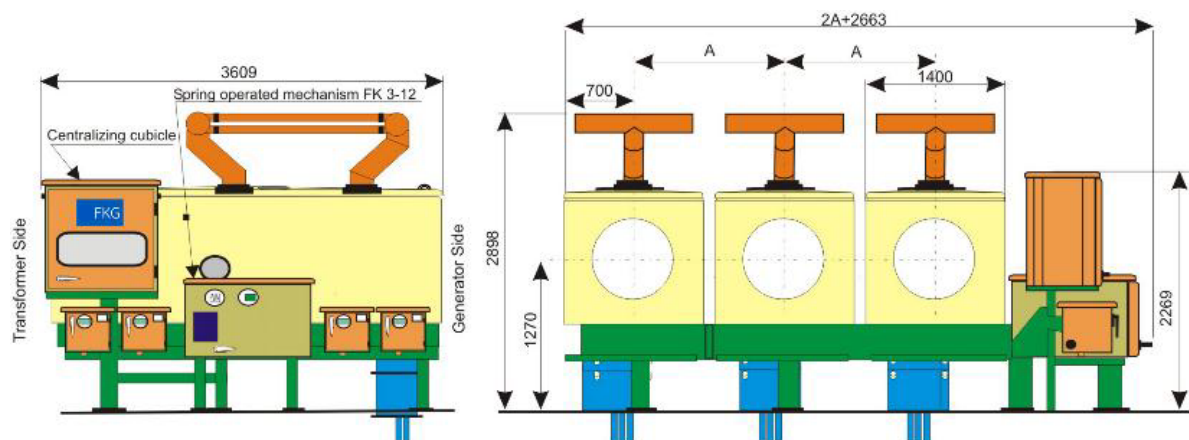
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** Depending upon the power station's specifications, Grid Solutions may propose an alternative GCB power rating.*

Technical Specifications

		FKG1X			
Rated maximum voltage	kV	32.4			
Short-circuit breaking current	kA	up to 160			
Rated out-of-phase breaking current	kA	80			
Rated breaking time	ms	75			
Rated closing time	ms	100			
Insulating gas		SF ₆			
Rated absolute pressure at 20°C	kPa	950			
Minimum absolute pressure at 20°C	kPa	800			
Location		Indoor / Outdoor (protected)			
Breaker cooling type		Natural			
Ambient air temperature limits	°C	-20°C (-25°C)/+40°C			
Busbars temperature limit/Enclosure temperature limit	°C	90/70°C		105/80°C	
Frequency	Hz	50	60	50	60
Maximum Rated normal current (natural cooling)					
- Indoor with ambient air 40°C	A	17,000	16,500	15,500	15,000
- Outdoor with ambient air 40°C	A	16,400	15,850	14,900	14,450
Phase spacing A with 100 mm step	mm	1,500 to 2,000			
Protection degrees (enclosure/cubicles)		IP65 /IP55			
SF ₆ monitoring by densimeter		3-phase			
Pressure reading		Yes			
		FKG1X	SKG1X Disconnecter	MKG1X Earthing Switch	IKG1 Starting Switch
Rated peak withstand current	kA peak	440	440	440	330
Rated short time withstand current	kA	160	160	160	100
Rated duration of short-circuit	s	3	3	2	1
Rated insulation level (at sea level) - Phase to earth					
- Rated power frequency withstand voltage	kV	80	80		30
- Rated lightning impulse withstand voltage: wave 1,2/50 µs	kV peak	150	150		60
Rated insulation level (at sea level) -Across terminals					
- Rated power frequency withstand voltage	kV	80	90	80	80
- Rated lightning impulse withstand voltage: wave 1,2/50 µs	kV peak	150	165	150	150

Dimensions



For more information, visit
gevernova.com/grid-solutions

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