

DT1-145g-63

SF₆-free Dead Tank Circuit Breaker 145 kV, 63 kA, 4,000 A

Grid Solutions, a GE Vernova Company, has more than 100 years of experience in the design, material selection, development, engineering, manufacturing and servicing of circuit breakers.

As compact as a SF₆ Breaker, just with reduced carbon footprint

Based on this expertise, we have developed a SF₆-free dead tank circuit breaker (DTCB) that is very similar to its SF₆ predecessor, the DT1-145-63. Using our g³ insulating and switching SF₆-free technology, the new DT1-145g-63 remains compact with the same footprint. Performance and life-cycle costs remain similar while offering a significant decrease in carbon footprint. The SF₆-free gas mixture used in the new DT1-145g-63 works on the same well-known principle for insulation and breaking purposes as that of SF₆ gas. Thus, the operational and maintenance procedures are similar to SF₆ dead tank circuit breakers.

The g³ gas is a mixture of carbon dioxide (CO₂) with oxygen (O₂) and an additive (C₄F₇N), whose physical properties are essential to g³. Its contribution to global warming is significantly lower than that of SF₆ gas: reduced by roughly 99% on average.

Reliable Performance

The DT1-145g-63 is suitable for application up to nameplate ratings, including definite-purpose switching. It meets the challenges of networks up to 145 kV for power generation, transmission and energy-intensive industry applications.

Our spring-spring-operated mechanism and extensive mechanical design testing to 10,000 operations and class M2 certification ensure trouble-free operation for the lifetime of the circuit breaker.

Certified Quality

We design, manufacture, test and deliver our dead tank circuit breakers in accordance with the latest IEEE/ANSI and IEC Standards, maintaining a quality assurance system according to ISO-9001 and ISO 14001 certifications.



The path to Decarbonization

- DT1-145g dead tank circuit breakers are part of GRiDEA, our portfolio of solutions designed to accelerate the decarbonization of the grid.
- SF₆-free circuit breakers
- Lower carbon footprint over a 40-year substation life cycle compared to other SF₆ alternatives
- The gas contribution to global warming is reduced by about 99% using g³ gas instead of SF₆
- Similar weight and dimensions as the SF₆ circuit breaker, thus no need to increase the overall size of the substation
- Fitted with digital gas monitoring

Main Characteristics

- Advanced self-blast interrupters
- Shares many components with the DT1-145-63 SF₆ circuit breaker
- Durable low-energy spring/spring operated mechanisms
- More than 100,000 circuit breakers with self-blast interrupters and FK springoperated mechanisms in service since 1989
- 2 μs chopped wave 838 kV
- Zero bar withstand capability

Easy System Integration

- Breakers are completely factory-assembled, wired and tested before shipment
- Similar operational and maintenance procedures as with SF₆ circuit breakers
- Compact design that's common to all substation applications, including extension of existing substations



GE VERNOVA

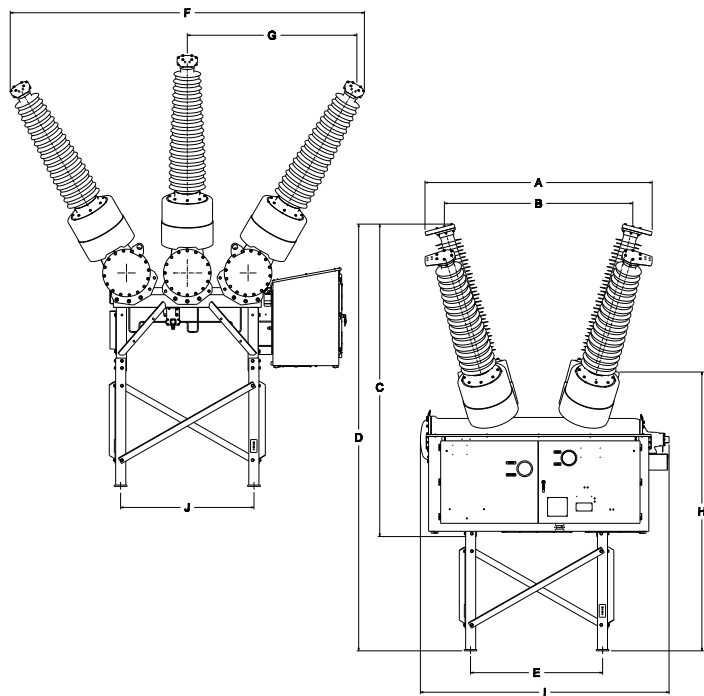
Dimensions

RATED MAX. VOLTAGE	145 kV
A (in/mm)	89.2/2264
B (in/mm)	73.85/1876
C (in/mm)	122.9/3120
D (in/mm)	167.5/4254
E (in/mm)	51.83/1316
F (in/mm)	137.4/3490
G (in/mm)	65.9/1674
H (in/mm)	107.85/2739.5
I (in/mm)	97.5/2476
J (in/mm)	51.83/1316

Technical Data

	VALUE	UNITS
Ambient temperature range*	-30° to +40° -22° to +104°	Celsius/ Fahrenheit
High seismic capability in accordance with IEEE 693-2018		
Weight (without current transformers)	4,413/2,006	lb/kg

* Optional values available on request



Ratings*

IEEE/ANSI	IEC	VALUE	UNITS
Rated maximum voltage	Rated voltage	145	kV
Rated power frequency	Rated frequency	60	Hz
Rated dielectric withstand capability <ul style="list-style-type: none"> dry withstand wet withstand 	Rated insulation level <ul style="list-style-type: none"> at power frequency, dry at power frequency, wet 	315 315	kV kV
Rated lightning impulse withstand voltage	at lightning impulse	650	kV
Rated chopped wave impulse voltage 2us		838	kV
Rated continuous current	Rated normal current	3000	A
Rated short-circuit current	Rated short-circuit breaking current	63	kA
Rated short-time current (1s)		63	kA
Rated peak withstand current		164	kA
Rated capacitance switching		Class C2	
Rated interrupting time		3	cycles
	Rated break time	50	ms
Rated standard operating duty	Rated operating sequence	O-CO-15s-CO / O-0.3s-CO-180s-CO	

(*) Standard values; further data is available on request.



GE VERNOVA

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

Proprietary Information - This document contains GE Vernova proprietary information. It is the property of GE Vernova and shall not be used, disclosed to others or reproduced without the express written consent of GE Vernova, including, but without limitation, in the creation, manufacture, development, or derivation of any repairs, modifications, spare parts, or configuration changes or to obtain government or regulatory approval to do so, if consent is given for reproduction in whole or in part, this notice and the notice set forth on each page of this document shall appear in any such reproduction in whole or in part. The information contained in this document may also be controlled by the US export control laws. Unauthorized export or re-export is prohibited. This presentation and the information herein are provided for information purposes only and are subject to change without notice. NO REPRESENTATION OR WARRANTY IS MADE OR IMPLIED AS TO ITS COMPLETENESS, ACCURACY, OR FITNESS FOR ANY PARTICULAR PURPOSE. All relative statements are with respect to GE Vernova technology unless otherwise noted.

© 2025 GE Vernova and/or its affiliates. All rights reserved. GE and the GE Monogram are trademarks of General Electric Company used under trademark license.



GE VERNOVA

GEA-33278-(E)
English
250530