

DT1-145R-40

145 kV Dead Tank Circuit Breakers with Pre-insertion Resistors (PIRs)

The DT1-145R-40 is a dead tank circuit breaker suitable for application at 145 kV and below. It is specifically designed and tested for general or definite purpose applications such as shunt capacitor, shunt reactor, and transformer switching, as well as for severe environmental conditions including low temperature, highly active seismic areas, and regions with high pollution levels or corrosive atmospheres.

Reliable Performance

The DT1-145R-40 is suitable for applications up to nameplate ratings, including definite purpose ratings. Extensive mechanical design testing to 10,000 operations, Class C2 and Class M2 certification ensure trouble-free operation for the lifetime of the circuit breaker.

Gas Tightness Guarantee & Superior Manufacturing

Grid Solutions at GE Vernova leads the industry in SF₆ gas tightness testing technology including seals, castings, and plumbing systems. Each breaker is factory tested using our industry-first gas tightness testing system which provides measurable, quantifiable test results on the breaker in its fully assembled, as-shipped condition.

Grid Solutions at GE Vernova designs, manufactures, tests, and delivers its 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 Center of Excellence for dead tank circuit breakers is located in Charleroi, PA (USA).

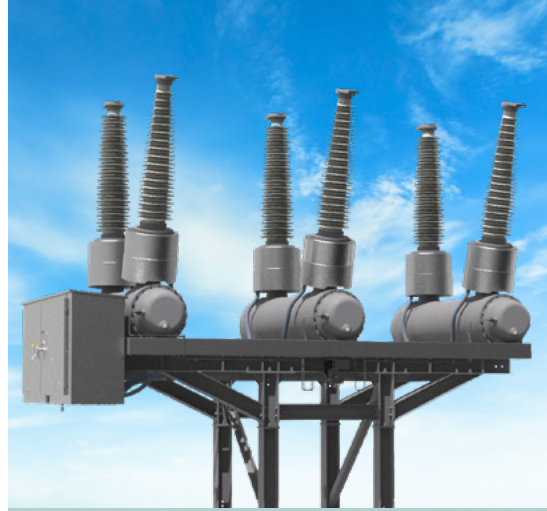
Enhanced Installation and Maintenance

The DT1-145R-40 dead tank circuit breakers are factory tested and adjusted and do not require any special tools for installation. Designed with the smallest symmetrical footprint to allow for minimized foundation costs, they are recognized worldwide as circuit breakers that are easy to install and operate. Thanks to the low energy mechanism and lifetime lubricants, the DT series is virtually maintenance-free. For installations where truck shipment is impossible, all DT series circuit breakers can be readied for standard container shipment with only their bushings disassembled.

Pre-insertion Resistors

The DT1-145R-40 is furnished with integral PIRs and may be used for switching of lines, transformers, shunt capacitors, or shunt reactors. With a gang-operated spring/spring mechanism the circuit breaker has been qualified as Class M2 for mechanical endurance.

Resistance values are available from 150 ohms to 2250 ohms.



Main Characteristics

- Switching and protection with the same device
- Pre-insertion (closing) resistor
- Advanced self-blast interrupters
- Leak-resistant cast aluminum enclosures
- Gang-operated
- Durable low energy spring-spring-operated mechanism
- More than 100,000 circuit breakers with self-blast interrupters and FK spring-operated mechanism in service since 1989

Key Benefits

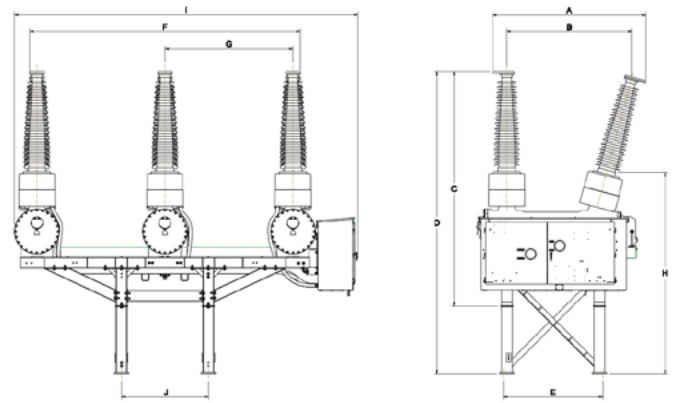
- Mitigation of inrush current
- SF₆ gas tightness guarantee
- High performance ratings
- Reliability under the most severe conditions
- Design customization
- Virtually maintenance-free
- Easy to install



Technical Data

	VALUE	UNITS
Ambient temperature range*	-30° to +40°	Celsius
High seismic capability in accordance with IEEE 693-2018		
Weight (without current transformers)	72.5 kV: 5,658/2,572 145 kV: 6,170/2,798	lb/kg

* Optional values available on request



Dimensions

RATED MAX. VOLTAGE	A (in/mm)	B (in/mm)	C (in/mm)	D (in/mm)	E (in/mm)	F (in/mm)	G (in/mm)	H (in/mm)	I (in/mm)	J (in/mm)
72.5 kV	79/1996	63/1597	105/2676	143/3624	55/1393	149/3777	71/1793	112/2857	189/4806	48/1215
145 kV	84/2145	69/1752	129/3279	166/4228	55/1393	149/3785	71/1793	111/2819	189/4806	48/1215

Ratings

IEEE/ANSI	IEC	VALUE	UNITS
Rated maximum voltage*	Rated voltage	72.5/123/145	kV
Rated power frequency	Rated frequency	50/60	Hz
Rated dielectric withstand capability	Rated insulation level		
- dry withstand	- at power frequency, dry	160/260/310/365	kV
- wet withstand	- at power frequency, wet	140/230/275/315	kV
Rated lightning impulse withstand voltage	- at lightning impulse	350/550/650/750	kV
Rated chopped wave impulse voltage 2us		452/710/838/968	kV
Rated continuous current	Rated normal current	1,200/2,000/3,000	A
Rated short-circuit current	Rated short-circuit breaking current	40	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.

**Please contact Grid Solutions for special purpose, high TRV, high X/R or other ratings requirements.

For more information visit GEGridSolutions.com

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