

Square D™ Brand Type VR Medium Voltage Vacuum Circuit Breaker

ANSI/NEMA Vacuum Circuit Breakers 5–15 kV; 1200, 2000, and 3000 A; 25–63 kA



Square D™ brand, Type VR medium voltage circuit breakers manufactured by Schneider Electric have been on the market for more than 30 years. Their quality, reliability, and performance are widely recognized across North America, as well as everywhere ANSI applications are required worldwide.

Standard features include:

- 3-cycle interrupting rating
- ANSI rated per C37.06, C37.09, C37.54
- UL Listed
- Spring-charged, stored-energy operating mechanism
- Permanently mounted manual charging handle
- Two “a” and “b” spare contacts
- Wheels that roll directly to floor level from lower cell for maintenance

The circuit breaker contacts are located where indicators are readily accessible. The front accessible mechanism allows for ease of maintenance. The circuit breaker operates at a high speed and, because of the hermetically sealed vacuum interrupters, has a longer life cycle.

With their wide range of ratings and benefits, the Type VR circuit breakers are offered not only in Masterclad™ medium voltage switchgear, but also in semi-assembled switchgear and OEM components.

Associated Drawings

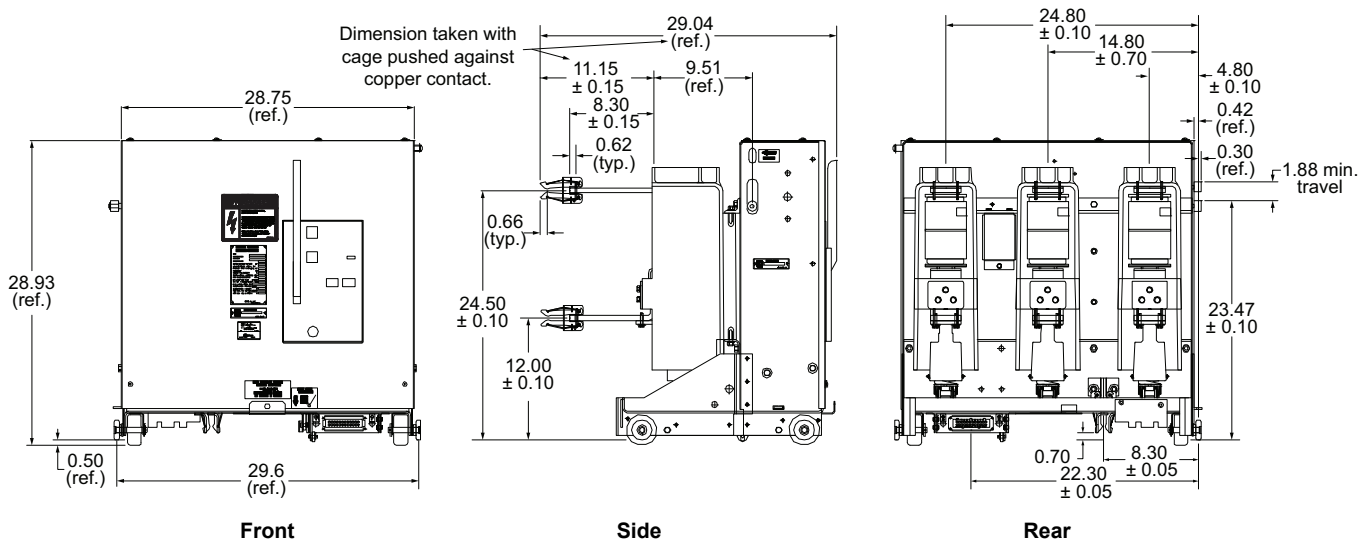
- Circuit breaker schematic diagram—drawing no. 46040-651
- Circuit breaker wiring diagram—drawing no. 46040-652

Instruction Bulletin

- Document no. 6055-33

Dimensions

The following diagram shows typical dimensions for Type VR medium voltage vacuum circuit breakers. A 1200/2000 A circuit breaker is pictured.



Weights

15 kV Circuit Breaker Rating	Weight (lbs.)
1200 A, 25/40 kA	380
2000 A, 25/40 kA	430
1200 A, 50 kA	450
2000 A, 50 kA	500
3000 A, 50 kA	700
1200/2000/3000 A, 63kA	800

5–15 kV Ratings

Nominal Voltage	k Factor	MVA Rating ▲	Rated Continuous Current	Insulation Level Rated Withstand		Interrupting Ratings					Mechanical Endurance	Catalog Number
				Power Frequency	Impulse 1.2x50 µs	System Interrupting	Close and Latch	Short Time	Short Time Duration	Interrupting Time		
kV rms			A rms	kV rms	kV peak	kA rms	kA peak	kA rms	Seconds	Cycles	Operations ■	
4.76	1	250	1200	19	60	40	104	40	2	3	10,000	VR-05025-12
	1	250	2000	19	60	40	104	40	2	3	10,000	VR-05025-20
	1	250	3000	19	60	40	104	40	2	3	5,000	VR-05025-30
	1	350	1200	19	60	50	130	50	2	3	5,000	VR-05035-12
	1	350	2000	19	60	50	130	50	2	3	5,000	VR-05035-20
	1	350	3000	19	60	50	130	50	2	3	5,000	VR-05035-30
	1	500	1200	19	60	63	170	63	2	3	2,000	VR-05050-12
	1	500	2000	19	60	63	170	63	2	3	2,000	VR-05050-20
8.25	1	500	1200	36	60	40	104	40	2	3	10,000	VR-08050-12
	1	500	2000	36	95	40	104	40	2	3	10,000	VR-08050-20
	1	500	3000	36	95	40	104	40	2	3	5,000	VR-08050-30
15	1	500	1200	36	95	25	65	25	2	3	10,000	VR-15050-12
	1	500	2000	36	95	25	65	25	2	3	10,000	VR-15050-20
	1	500	3000	36	95	25	65	25	2	3	5,000	VR-15050-30
	1	750	1200	36	95	40	104	40	2	3	10,000	VR-15075-12
	1	750	2000	36	95	40	104	40	2	3	10,000	VR-15075-20
	1	750	3000	36	95	40	104	40	2	3	5,000	VR-15075-30
	1	1000	1200	36	95	50	130	50	2	3	5,000	VR-15100-12
	1	1000	2000	36	95	50	130	50	2	3	5,000	VR-15100-20
	1	1000	3000	36	95	50	130	50	2	3	5,000	VR-15100-30
	1	1500	1200	36	95	63	170	63	2	3	2,000	VR-15150-12
	1	1500	2000	36	95	63	170	63	2	3	2,000	VR-15150-20
1	1500	3000	36	95	63	170	63	2	3	2,000	VR-15150-30	

▲ This rating is for reference only.

■ Number of no-load mechanical operations.

Control Voltage Operating Range (ANSI 37.06, Table 9)

Rated Voltage	Closing Voltage Range	Tripping Voltage Range
24 Vdc	Not available	14–28 Vdc
48 Vdc	38–56 Vdc	28–56 Vdc
125 Vdc	100–140 Vdc	70–140 Vdc
250 Vdc	200–280 Vdc	140–280 Vdc
120 Vac	104–127 Vac	104–127 Vac
240 Vac	208–254 Vac	208–254 Vac

Control Device Rating Standard

Circuit Breaker Rating	Control Description	Rated Voltage	Current At Rated Voltage (A)		Time Duration Of Current Flow	Burden (VA)		DC Resistance (Ohms)
			Inrush	Run		Inrush	Run	
All circuit breakers	Charging motor	24 Vdc 48 Vdc 125 Vdc 250 Vdc 120 Vac 240 Vac	15 (max.)	2.5 (max.)	5–10 sec. max.	▲ 720 1875 3750 1800 3600	▲ 120 313 625 300 600	Not applicable
	Anti-pump relay	24 Vdc 48 Vdc 125 Vdc 250 Vdc 120 Vac 240 Vac	Not applicable 0.025 0.009 0.004 0.016 0.008		Not applicable	▲ 1.2 1.2 1.2 2.0 2.0		Not applicable
15 kV, 25 kA, 500 MVA, 1200 A and 2000 A	Closing solenoid	24 Vdc 48 Vdc 125 Vdc 250 Vdc 120 Vac 240 Vac	Not applicable 1.8 1.8 3.7 6.8 3.5		20–25 msec	▲ 86 225 925 816 840	▲ 26.00 68.00 68.00 17.60 68.00	
	Trip solenoid	24 Vdc 48 Vdc 125 Vdc 250 Vdc 120 Vac 240 Vac	17.1 7.1 10.8 5.6 17.8 13.6		15 msec	410 341 1350 1400 2136 3264	1.40 6.75 11.60 44.50 6.75 17.60	
All other 15 kV circuit breakers	Closing solenoid	24 Vdc 48 Vdc 125 Vdc 250 Vdc 120 Vac 240 Vac	Not applicable 1.8 0.7 1.4 6.8 3.5		20–25 msec	▲ 86.4 87.5 350.0 816.0 840.0	▲ 26.00 184.00 184.00 17.60 68.00	
	Trip solenoid	24 Vdc 48 Vdc 125 Vdc 250 Vdc 120 Vac 240 Vac	3.6 1.8 0.7 1.4 4.6 2.1		15 msec	86.4 86.4 87.5 350.0 552.0 504.0	6.75 26.00 184.00 184.00 26.00 115.00	

▲ 0.8 PF

Circuit Breaker-Mounted Auxiliary Contact Ratings

Continuous Rating: 20 A, up to 600 V

Voltage	Interruption Rating	
	Non-Inductive	Inductive
24 Vdc	18 A	10 A■
48 Vdc	18 A	10 A■
125 Vdc	5 A	3 A■
250 Vdc	2 A	1 A■
120 Vac	20 A	20 A▲
240 Vac	18 A	18 A▲

▲ 0.8 PF

■ 0.08 H

Capacitor Switching Duty

Applies to single bank and back-to-back switching with de-rating factors applied per C37.012.

Catalog Number	Rated Continuous Current (A)	Rated Short Circuit Current (kA)	Rated Capacitor Switching Current - C1 (A)	Test Certificate
5 kV Circuit Breakers				
VR-05025-12	1200	40	—	TV5D32
VR-05025-20	2000	40	—	TV5D32
VR-05025-30	3000	40	—	TV5D33
VR-05035-12	1200	50	1260	TV5D42
VR-05035-20	2000	50	1260	TV5D42
VR-05035-30	3000	50	—	TV5D43
VR-05050-12	1200	63	660	TV5DC2
VR-05050-20	2000	63	660	TV5DC2
VR-05050-30	3000	63	660	TV5DC3
15 kV Circuit Breakers				
VR-15050-12	1200	25	660	TV5D61
VR-15050-20	2000	25	—	TV5D62
VR-15050-30	3000	25	—	TV5D63
VR-15075-12	1200	40	—	TV5D72
VR-15075-20	2000	40	—	TV5D72
VR-15075-30	3000	40	—	TV5D73
VR-15100-12	1200	50	1260	TV5D82
VR-15100-20	2000	50	1260	TV5D82
VR-15100-30	3000	50	—	TV5D83
VR-15150-12	1200	63	660	TV5DD2
VR-15150-20	2000	63	660	TV5DD2
VR-15150-30	3000	63	660	TV5DD3

Technical Publications

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