

Medium Voltage VR-Series Circuit Breakers



A brand new replacement vacuum circuit breaker

All VR-Series breakers are brand new from the ground up. These breakers are not "retrofits," and do not use any parts from the original air-magnetic circuit breakers. They are designed to replace the existing air-magnetic circuit breakers with little or no cell modifications. If required, cell modifications are kept to a minimum and are reversible. VR-Series breakers allow installation to comply with the customer's schedule, which can save \$1,000 - \$3,000 per breaker on initial installation costs.

Designed and Tested to IEEE/ANSI Standards in an ISO certified facility

All VR-Series circuit breakers are designed and tested in compliance with applicable IEEE/ANSI Standards. Since they modernize and extend the useful life of the existing switchgear, they comply with the testing, interfaces, and compatibility of C37.59-2007 Standards. IEEE/ANSI certificates and certified factory production test reports are available for each design. The final product is assembled in an ISO 9001:2015 certified facility assuring the finest quality.

Reduce maintenance cost and downtime with reliable vacuum technology

Maintenance procedures commonly associated with air-magnetic circuit breakers average 6-10 man-hours per breaker, as compared to Eaton's vacuum technology, which reduces normal maintenance to approximately one hour. Both the mechanism and control components can be easily inspected and maintained with the maintenance free patented current transfer system and contacts. Spare parts inventory is also considerably reduced because VR-Series breakers have 50% fewer parts than air magnetic breakers. This saves \$600-\$2500 per breaker.

Solve parts availability problems for old air-magnetic circuit breakers

Replacement parts for old air-magnetic circuit breakers are becoming harder to find and may not comply with the original manufacturer's specifications. VR-Series mechanism and control components are compatible with Eaton's VCP-W breakers and are current production items, in stock and available on a 24/7 basis. This can save \$2,500 - \$6,000 per design in future spare parts investments.

Increased interrupting capability

Power system changes may have increased your available short current beyond the capabilities of your existing switchgear. VR-Series breakers and bus bracing upgrades can increase your switchgear's capabilities to handle higher short circuit currents in the same space as your original air-magnetic circuit breakers. This provides a possible savings of \$5,000 - \$12,000 per breaker versus the costs of replacing the switchgear.

Patented SURE CLOSE MOC Technology

Eaton's patented **SURE CLOSE** technology for vacuum replacement breakers with de-coupled stored energy is guaranteed not to stall the breaker during closing and prevents damage to the existing cell MOC components. MOC switch replacement costs average \$1,750 - \$4,000 each.

Eliminate arc chutes

Arc chutes degrade with usage and must eventually be replaced. VR-Series breakers use sealed interrupters and do not require arc chutes. Arc chutes raise environmental and legal issues due to asbestos. Eliminating the need to replace the arc chutes could save up to \$3000-\$10,000 each.

EATON

Powering Business Worldwide

Eaton Type WSA-VR Vacuum Replacement Breakers for McGraw-Edison Type WSA

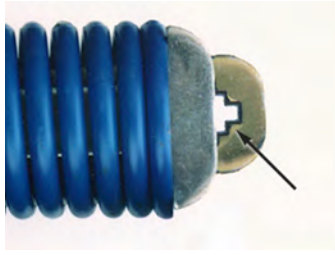
Identification

Rated Values

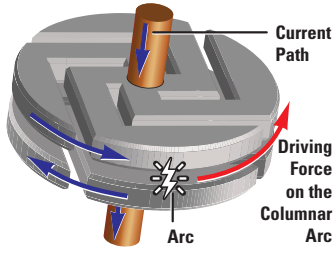
VR-Series Circuit Breaker Type	Nominal 3-Phase Class	Nominal Voltage Class	Max. Voltage	Voltage Range Factor	Impulse Test Voltage	Continuous Current at 60 Hz	Short Circuit Current (at Rated Max. kV)	Interrupting Time	Current Values Max. Sym. Interrupting Capability (K Times Rated Short Circuit Current)	Closing and Latching / Momentary Capabilities (Rated Short Circuit Current)	Nominal Weight
	MVA	kV	E kV rms	K	kV Peak	Amperes	I kA rms		kA rms		
WSA-VR											
250	250	4.16	4.76	1.24	60	1200 / 2000	29	5	36	58 / 97	690
WSA-VR											
500	500	13.8	15.0	1.3	95	1200 / 2000	18	5	23	37 / 62	800
500U	750	13.8	15.0	1.3	95	1200 / 2000	28	5	36	58 / 97	926
500XU	1000	13.8	15.0	1.3	95	1200 / 2000	37	5	48	77 / 130	980



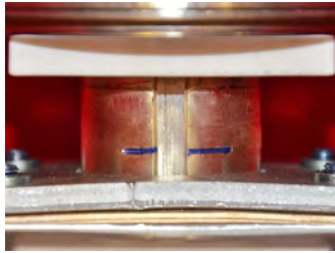
Reliable Vacuum Technology



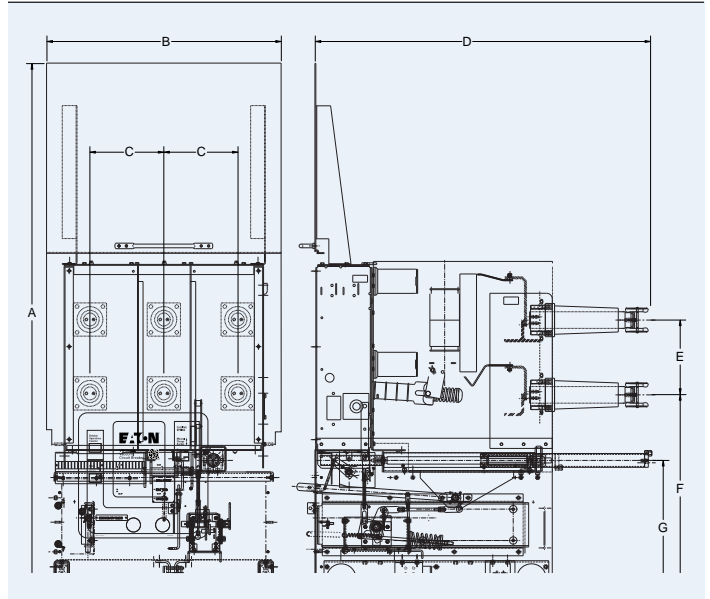
T-Cutout



Columnar Arc

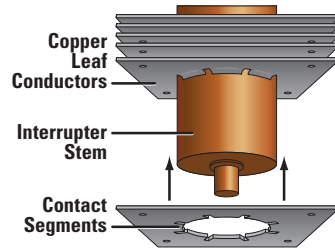


Contact Erosion Indicator



Dimensional Data In Inches (WSA-15-VR Shown)

	WSA-5-VR 1200A	WSA-5-VR 2000A	WSA-15-VR 1200A/2000A
A	68.11	67.60	71.75
B	20.36	30.17	31.75
C	6.81	10.00	10.00
D	35.83	35.62	45.10
E	10.00	10.00	10.00
F	27.13	27.13	27.00
G	18.13	18.06	18.00



Non Sliding Current Transfer



Rotary Racking System

Allows safe insertion/removal with the RPR-2 Remote Racking System.

- Improves safety by allowing operator to be outside the Arc Flash boundary during the racking process

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