

# VA51

- Fully Intelligent, high breaking capacity, zero arcing distance, etc.
- Rated current (AC): 630-6300 A.
- Short circuit breaking capacity: 80-120 kA.
- Number of Poles: 3P, 4P.
- Installation method: withdrawable type, fixed type.
- Power supply: the circuit breakers can be supplied from either upper or lower terminals.
- Functions of electronic trip unit: displaying, setting, monitoring, fault memory, communication interface available, telemetry, remote control, remote adjust remote communication.
- VA51 series air circuit breaker has complete protection features, such as Instantaneous, short-time delay, long-time delay, singlephase grounding, and the setting is convenient with high precision.



## Applications And Functions

- VA51 series air circuit breaker is applied to distribute electrical energy and protect circuit and power supply equipments in AC power distribution network with 50 Hz, rated voltage up to 660 V (690 V) and rated current from 630 A to 6300 A to prevent it from overload, under voltage, short circuit, single phase rounding hazards and other faults.
- The circuit breaker has intelligent protecting functions, and the selective protection accuracy, which can improve the reliability of power supply and avoid unnecessary power faults. it has an open communication interface for “four remote patterns” to meet the requirements of control centers and automation systems.
- The circuit breaker has a pulse withstand voltage of 8000 V at an altitude of 2000 meters (it will be modified according to the different altitudes, and the maximum is no more than 12000 V).
- The circuit breaker can be used as an isolator without an intelligent controller and sensor.
- The circuit breaker complies with standard IEC 60947-2, Lowvoltage switchgear and controlgear-Part 2: Circuit-breakers.

## Instruction of classification

- Installation Type:
  - a. Fixed type
  - b. Withdrawable type
- Number of poles: 3P, 4P
- Operation method
- Electric operation
- Manual operation (for text and maintenance)
- Release type:
  - electronic trip unit undervoltage release shunt release

## Normal working and installation conditions

- Ambient air temperature
- The upper limit does not higher than +40 °C, the lower limit is not lower than -5 °C, and the average temperature of 24 h does not higher than +35 °C.
- Note: For working conditions where the upper limit exceeds +40 °C or the lower limit is lower than -10 °C or -25 °C, the user should inform us and the altitude of the installation site should not exceed 2000 m.

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- The relative humidity of the atmosphere is no more than 50% when the ambient air is +40 °C. It can have a higher relative humidity at a lower temperature. The maximum relative humidity of the wettest month is 90%, and the average minimum temperature of the month is 20 °C, in the meanwhile we should also consider the condensation on the surface of the product due to temperature changes. The requirements' exceeding shall be negotiated with the manufacturer.
- Degree of Protection: IP30
- Pollution level: 3
- Use category: B
- Installation Category:
- Circuit breakers with rated operating voltages equal to or below 660 V (690 V) and under-voltage release and primary coils for power transformers shall be applied to the installation category IV
- The auxiliary circuit and control circuit installation category shall be III.
- Installation conditions
- The circuit breaker shall be installed in accordance with the requirements of this manual. The vertical inclination of the circuit breaker shall not exceed 5 degrees (the mining circuit breaker shall not exceed 15 degrees)

## Technical data for circuit breakers

### Technical data for circuit breakers

#### Rated current

Size	Rated current In (A)
VA5120	630, 800, 1000, 1250, 1600, 2000
VA5132	2000, 2500, 2900, 3200
VA5140	3200, 3600, 4000
VA5163	4000, 5000, 6300

#### Breaking capacity

Size		VA5120	VA5132	VA5140	VA5163	
Rated ultimate short-circuit breaking capacity	Icu (kA)	400 V	80	100	100	120
		690 V	50	65	65	80
Rated operational short-circuit breaking capacity	Ics (kA)	400 V	50	65	65	80
		690 V	40	50	50	70
Rated short-time withstand current	Icw (kA) 1 s	400 V	50	65	65	85
		690 V	40	50	50	65
Rated short-circuit making capacity	n×Icu (kA)/cosφ	400 V	176/0.2	220/0.2	220/0.2	264/0.2
		690 V	105/0.25	143/0.2	143/0.2	187/0.2

#### Power losses

Maximum power losses of the circuit breaker is 360 W.

#### Temperature derating

Ambient temperature °C	630 A	800 A	1000 A	1250 A	1600 A	2000 A
40	630 A	800 A	1000 A	1250 A	1600 A	2000 A
50	630 A	800 A	1000 A	1250 A	1550 A	1900 A
60	630 A	800 A	1000 A	1250 A	1550 A	1800 A

Note: The derating coefficients is 0.9 for circuit breakers with rated current 2500 A and above, but there is no derating for circuit breaker with rated current 4000 A underside VA5163.

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