



中熔电气
SINO FUSE

RS309-MD-EV(600-900) A Bolt-Connected Fuse

Specification

ZR/YC-0265 A5

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DC500V 600A-900A**Content**

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DC500V 600A-900A

Basics

- Conform to: IEC60269, ISO8820, GB/T 31465
- Rated Voltage: DC 500V
- Rated Current: 600A-900A
- Utilization Category: EV
- Breaking Capacity: DC 20kA (Time Constant: $2 \pm 0.5\text{ms}$)
- RoHS Compliant

Designed for road vehicles applications, conforms to environment requirements. Features in wider breaking range and high current withstand; Used for HV electric system as backup protection of power battery, drive power, power conversion systems and charging equipment. Also suitable for backup protection of relays, disconnectors, circuit breakers and super capacitors.

	Part Number	Size	Current A	I^2t (A ² s)		I_n Loss W	0.5 I_n Loss W	Weight (g)	Min Package (pcs)	Max Package (pcs)	Mounting
				Prearc	Clearing						
1	RS309-MD-EV600A	7ZB	600	71200	249000	115	22.5	389±12	3	48	Bolt M10 Torque 21±1N·m
2	RS309-MD-EV700A		700	103000	335000	135	25				
3	RS309-MD-EV750A		750	116985	380201	145	26				
4	RS309-MD-EV800A		800	159100	513000	155	27				
5	RS309-MD-EV900A		900	218700	729000	165	30				

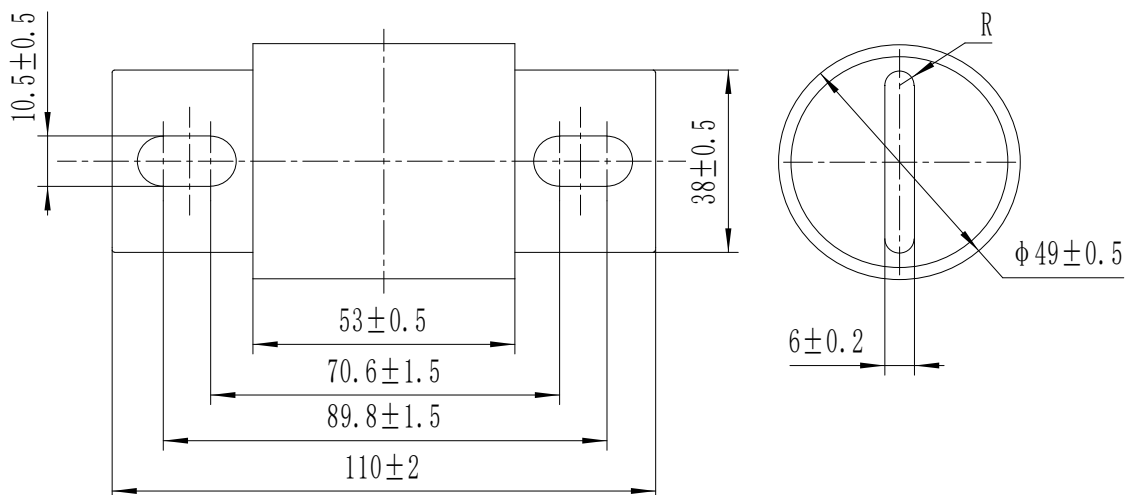
Note: 1) Above data are under standard test environment: 500+5V and time constant $2 \pm 0.5\text{ms}$;

2) $1.1I_n$ and I_n temp rise test with connector: 500mm²; 0.5 I_n with 700A-200mm², 750A/800A-240mm², 900A-300mm²;

3) $2I_n$ with 95mm².

Outline Dimensions (mm)

Mounting Dimensions

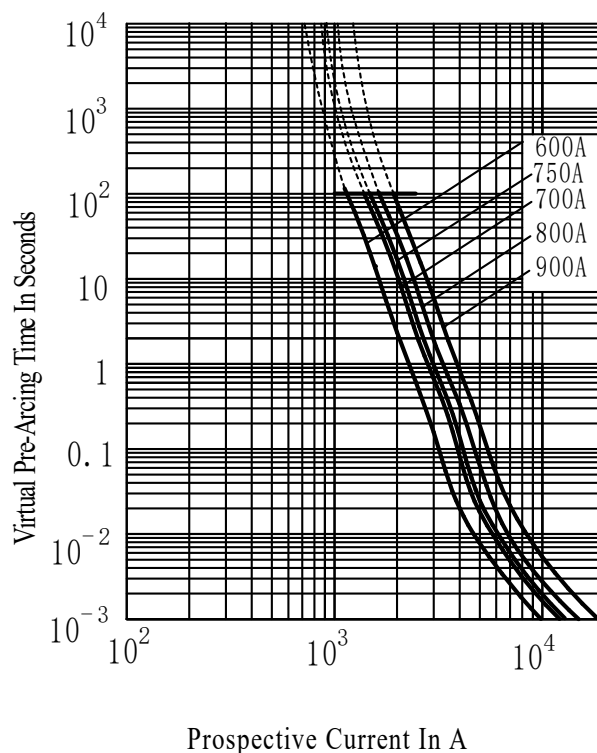


Note: levelness of terminal blades max 0.3

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Characteristic Curves

Prearc time current



- Note:
1. Breaking test voltage of I_1, I_2 : DC500+5V; Time constant: $2 \pm 0.5\text{ms}$;
 2. Minimum breaking current at least $2I_n$;
 3. Above curves are equivalent time;
 4. Prearc time curves: current tolerance $\pm 15\%$.

Transport and Storage

Transport

Avoid rain/snow or mechanical damage during transportation.

Storage

Storage temp: $-40^\circ\text{C} \sim 120^\circ\text{C}$, Maximum 90% RH at 40°C ; Avoid moderate dewing or above.

Package and Storage temp: $-40^\circ\text{C} \sim 70^\circ\text{C}$, Maximum 90% RH, no dewing.

Usage Conditions

Normal Condition and Corrections

Correction is not required under normal conditions.

For other conditions, if they are within tolerable range, certain correction measures may be required.

If conditions are beyond tolerable range, please consult our team for evaluation and testing.

Long-term operation current is recommended to be less than 80% of rated current.

Ambient Temperature

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Normal Condition

-5° C ~ 40° C

Tolerable Range

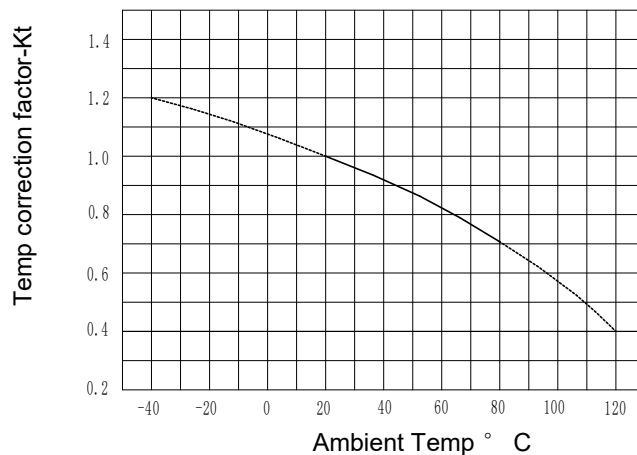
-40° C ~ 120° C

Ambient temperature correction: operating below -5° C, resulting in longer pre-arc time under small overcurrent and slightly increased rated current.

If above 40° C, rated current is corrected as per factor -Kt.

Note 1: Kt value has considered safety margin of rated current during normal operation.

Note 2: ambient temperature should last 1-2 hrs. before it has a significant impact on fuse.



Altitude

Normal Condition

Below 2000m

Tolerable Condition

Below 4500m

Correction: higher altitude would affect insulation and dissipation, also changes air pressure.

a) For every 100m higher, fuse temperature rise increases by 0.1-0.5k.

b) For every 100m higher, ambient temperature drops by 0.5k approximately.

c) Normally for fuses in open environment, altitude condition is negligible.

d) For closed environment, if ambient temperature inside remains almost stable under different altitude.

If exceed 40° C, fuse should be degraded. For every 1000m, rated current should be degraded by 2%-5%.

Note: for same series, larger rated fuse should use higher degrade %, and lower degrade % for smaller one.

Air Insulation Strength (Breakdown)

a) Air insulation reduces with higher altitude. For 2000-4500m, insulation decreases by 12-15% for every 1000m as per GB/T16935.1. Thus adjust clearing space.

b) Space between fuse terminals is often much larger than specified value in standard.

c) User should consider altitude impact on spacing between fuse and other electric component, earthing etc.

Atmosphere

Normal Conditions

Clean atmosphere, maximum 50% RH at 40° C.

Higher RH is allowed when temperature is low, e.g. maximum 90% at 20 ° C.

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Moderate dewing may occur under temperature changes.

Tolerable Conditions

If dewing is minor, RH could be up to 95%.

Vibration

It has great withstand to anti-vibration and mechanical shock, up to 5g acceleration.

Conform to rail transport vibration grade II.

Anti-vibration and mechanical shock withstand suitable for road vehicles.

For severe vibration application, please consult our team for evaluation and testing.

Pollution Class

Grade 3 pollution withstand

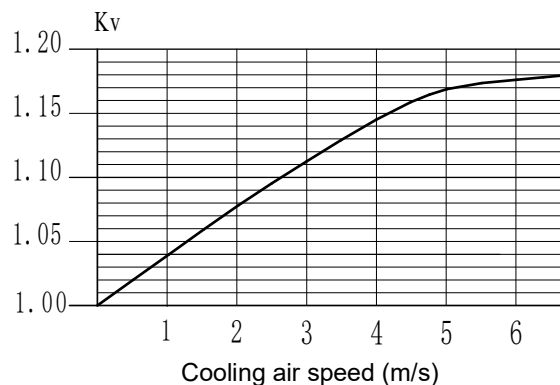
Mounting Condition

Normal Condition

- a) Installed in open air without any ventilation. No heat source within 1m except for conductors
- b) Contact of fuses must be securely connected. Contact resistance should not affect operation.
- c) Fuse can be mounted in any orientation. If spring compression is adopted, make sure it is properly mounted to avoid harmful effect due to gravity or vibration.

Forced Air Cooling

Current carrying capacity of fuse can be improved by implementing forced air or liquid cooling.



Safety and Maintenance

- a) Sufficient space must be ensured between installed fuses. Install insulation if necessary. This is to avoid possible inter-phase short circuit while replacing fuse.
- b) Periodic maintenance of fuses includes removal of oxidation layer and dusts.
- c) It is compulsory to replace all mechanically damaged fuses.
- d) Unless permissive (e.g. fused load-switch), do not replace fuses while energized.
- e) While servicing, fuse will not generate gas, dust, noise or others that may harm the environment
- f) Metallic part of fuse can be recycled. Non-metal part can be crushed and treated as normal industry waste. It will not cause further pollution to the environment.