

EV Power EV300 Series DC Contactor

12-200VDC 300A

SPECIFICATION

Product Name: DC Contactor

Rating Voltage: 200Vdc

Rating Current: 300A

Coil voltage: 12-36Vdc



Features:

- ❖ Epoxy sealing, nitrogen insulation.
- ❖ Meets the reference standards for contactors: GB/T14048.4 and EN60947-4-1.
- ❖ It can control high voltage and high current switching.
- ❖ The coil and load are both non-polarized configurations.
- ❖ Install in any direction without any requirements for installation direction.

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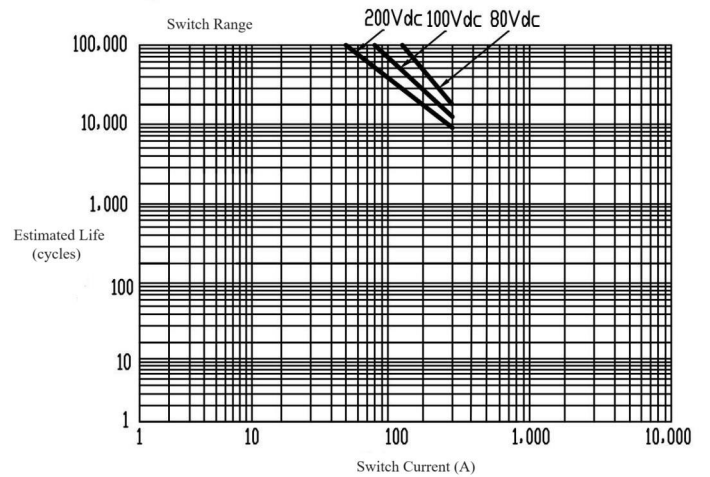
12-200VDC 300A

Parameters

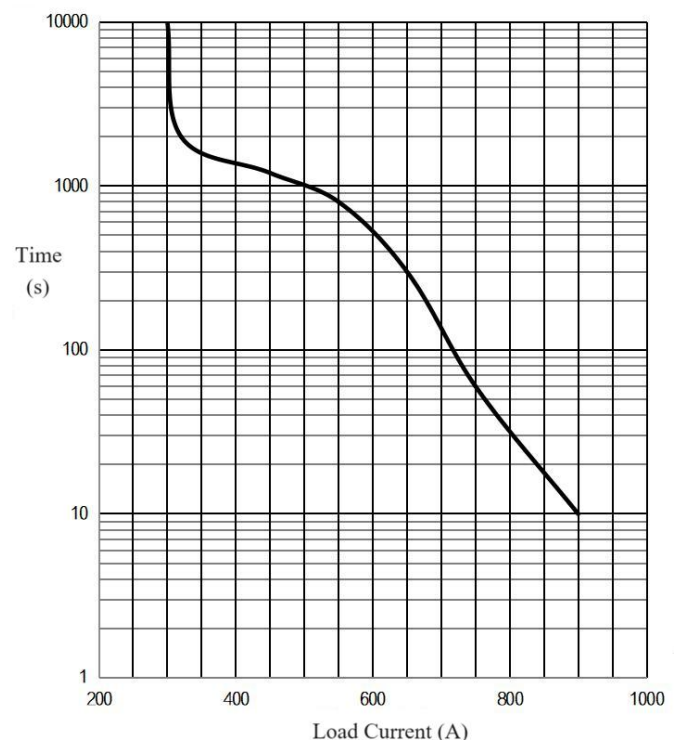
Contact Arrangement	SPST-NO
Auxiliary Contact	Min load:8VDC 100mA, resistance:≤100mΩ
Max breaking current	2000A 100Vdc (only 1 op)
Contact Resistance(initial)	≤1mΩ (at 300A)
Close Time (at 20℃)	30ms Max.
Bounce Time (at 20℃)	5ms Max.
Release Time (at 20℃) (includes arc time)	10ms Max.
Mechanical Life (0.5s:0.5s)	2×10 ⁵ cycles
Insulation Resistance (at 1000Vdc)	100MΩ (initial)
	50MΩ (after test)
Impulse withstand voltage (at sea level)	AC 3500 Vrms 1mA/1min. (initial)
Mechanical performance	
Shock Pulse duration 11 ms, 3000 cycles	196 m/s ²
Vibration Sinusoidal 10 Hz-500 Hz, 1.5 mm Double amplitude, 24h	49 m/s ²
Strength Pulse duration 6 ms, 300cycles	490 m/s ²
Temperture range	-40℃ to +85℃
Humidity range	5% to 95% RH.
Altitude	≤4000m
Weight (approx.)	430g

Power Switching

DC power switching cycles
(Resistive load, L/R≤1ms)



Current Carry VS Time



Note: ≥120mm² conductor for 300A continuous current.

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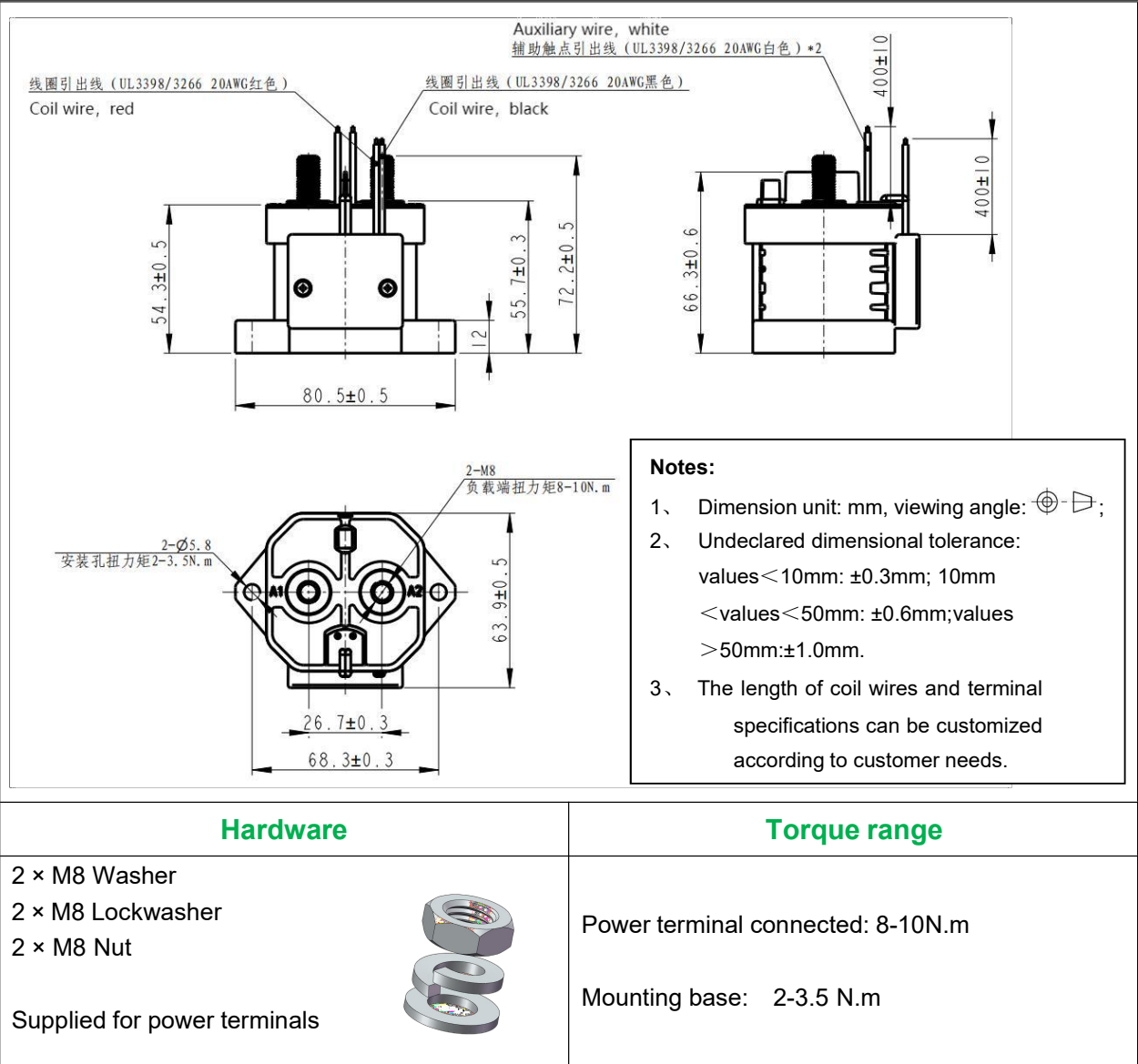
Coil Specifications (at 20°C)

Coil Type	PWM
Nominal Voltage (Vdc)	12-36
Pick-Up Voltage (Vdc)	8-9
Drop-Out Voltage (Vdc)	6-7
Coil resistance ($\pm 7\%$ Ω)	3.1
Coil current (Max.)	3.2A
Holding power (Approx.)	2.5W
Coil Back EMF (Approx.)	0V

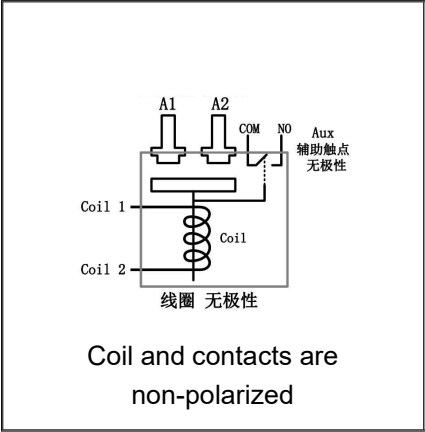
Rating Current	300=300A
Contacts Configuration	G=SPST-NO(main contacts), with auxiliary contacts E=SPST-NO(main contacts)
Coil Voltage	1=12-36Vdc
Load Voltage	200Vdc

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Wiring Diagram



Note: Models with an Economiser are polarised (coil) and have red/black coil wires.

Models with no Economiser have black/black coil wires and the coil requires a flyback diode in most applications.

Aux contact wires are not polarised and are white.

A precharge circuit is required for capacitive loads.

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Cautions

1. When installing contactors, anti loose washers should be used to prevent threaded fasteners from loosening. The torque range for tightening the fasteners should be within the specified range. Exceeding the maximum torque value may cause screw slippage or product breakage.
2. The rated values of the contacts are all values under resistive load. When using inductive load (L load) with $L/R \geq 1\text{ms}$, please take surge absorption measures in parallel with the inductive load. Without taking measures, it may lead to a decrease in electrical lifespan and poor disconnection.
3. Please avoid installing near strong magnetic boundaries (transformers, magnets) and heating objects.
4. Pay attention to the thickness and torque of the connecting copper bars. If the recommended values are exceeded, it may cause thread slippage or loose installation. It is not recommended to install two copper bars on the same side to avoid high-voltage short circuits or sparks.
5. Please ensure that there are no silicone substances (such as silicone rubber, silicone oil, silicone coating agents, silicone fillers, etc.) around the contactor, as they can generate volatile gases containing silicon, which may cause silicon to adhere to the contactor contacts and cause poor contact.
6. If the coil voltage, contact current, and service life exceed the rated parameters, there is a risk of the contactor temperature being higher than normal.
7. If multiple contactors are installed in close proximity, it is necessary to consider whether the heat dissipation and insulation meet the requirements.
8. If inductive loads are used, protective devices need to be connected in parallel with the load, otherwise the electrical life of the contactor will be reduced or the contactor cannot be cut off with load.
9. During the installation process, when connecting the copper bars, priority should be given to locking the copper bars at the contactor end to avoid poor contact.
10. Select appropriate cables or copper bars based on the current level. Contactors connected with high heat components, such as fuses, diverters, etc., can affect the heat dissipation of the contactor, resulting in temperature superposition. It is necessary to select appropriate copper bars and increase heat dissipation measures based on the actual temperature rise. It is prohibited to directly connect the contactor to the fuse and shunt.
11. If there is damage to the contact of a DC contactor, the contact resistance value may change, increasing or decreasing.
12. The screw of this product is partially silver plated and needs to be sealed for storage. If exposed to air for a long time, the screw will oxidize and sulfurize, causing the screw to turn yellow and black. If not installed and used for a long time, the storage period in a sealed environment is 1 year.
13. Diffusion life of internal gas: This contactor adopts sealed chamber contacts, which are filled with gas. The diffusion life of gas is determined by the temperature inside the contact chamber (i.e. ambient temperature+temperature rise generated by contact electrification), so the ambient temperature should be ensured to be -40 to $+85^\circ\text{C}$.
14. If the coil and contact of the contactor are continuously connected to the rated voltage (or current), and the power is cut off and immediately connected, the resistance of the coil will increase due to the increase in coil temperature, which may lead to an increase in the product's pull-in voltage and release voltage. In this case, the following measures should be taken: such as reducing the load current, Limit the continuous power on time or use a coil voltage higher than the rated pull-in voltage.
15. The driving circuit power of the product coil must be greater than the power of the product coil, otherwise it will reduce the cutting capacity of the product, or there may be situations where the DC contactor cannot be closed, resulting in damage to the contactor control board.
16. When using capacitive load (C load), please take measures such as pre charging the capacitive load to control the impact current below the rated current of the contactor. If no measures are taken, it may cause contact adhesion.