The VDC-Series: High-Voltage DC Contactors

General

The VDC250 high-voltage DC contactor is a new generation of contactor developed by Kingser, especially for the field of new energy such as hybrid vehicles, full battery electric vehicles, fuel cell cars and vehicle charging systems. Compared with the traditional contactors, it uses the air convection type contact switch structure and high performance magnetic blow-out system, eliminating the risks of the operation failure caused by gas leakage and gas expansion and explosion in arc extinguishing chamber caused by the strong arc. It carries 250 A continuous operating current and 7 KA safe short-circuit current carrying capacity, with the advantages of large contact gap, fast breaking speed and quick electric arc extinguishing.

Application

1.DC high-voltage high current applications.
2.Main contactor for hybrid-, full battery-, electric-, fuel-cell-cars(HEV/PHEV/BEV/FCV).
3.DC control systems such as battery charging systems.

Features

1. Compact high-voltage contactor
2. Air convection type contact switch structure
3. Can be installed in any direction
4. Temperature-durable, strong magnetic blow-out system
5. High spring pressure anti-adhesion electromagnetic structure
6. Arc durable silver contacts

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Coil Data

Rated Voltage (VDC)	Max. operate Voltage (VDC)	Min. pull-in Voltage (VDC)	Min Holding Voltage (VDC)	Rated Operate Current (VDC)	Rated Power (VDC)
12	16	9	8	0.4	5
24	32	19	16	0.2	5

Performance Parameters

Item		Parameter
Rated Voltage		450VDC,800VDC*,1200VDC*
Max Operating Voltage		500VDC,1500VDC*
Rated Current		250A
Limiting short-circuit current 85℃		450A/5min, 650A/1min, 7000A/20ms
Limiting break current (forward) resistive load 23℃ 400VDC		once * 2000A, 2000 times * 200A, 15000 times * 100A
Limiting break current (reverse) resistive load 23℃ 400VDC		20 times * 200A, 5000 times *100A
Contact resistance		<30MΩ
Contact voltage drop at 100A		<40mV
Operate/release time max.		<30ms
Max. on-off time (excluding bouncing time)		<50ms
Withstand voltage	Between contacts	2500 VAC 1min (detection current:10mA)
	Between contact and coil	2500 VAC 1min (detection current:10mA)
Insulation resistance	Between contacts	Above 100MΩ (test voltage:500V/DC)
	Between contact and coil	Above 100MΩ (test voltage:500V/DC)
Vibration resistance	Misoperation vibration	10Hz ~ 200Hz, acceleration: 43m/s2 {4.4G} constant (detection time: 10 μs)
	Durable vibration	10Hz ~ 200Hz, acceleration: 43m/s2 {4.4G} constant front, back, left, down 4 hours each
Shock resistance	Misoperation vibration	When ON: 196m/s2, above {20G} (sine half-wave pulse: 11ms, detection time: 10μs);

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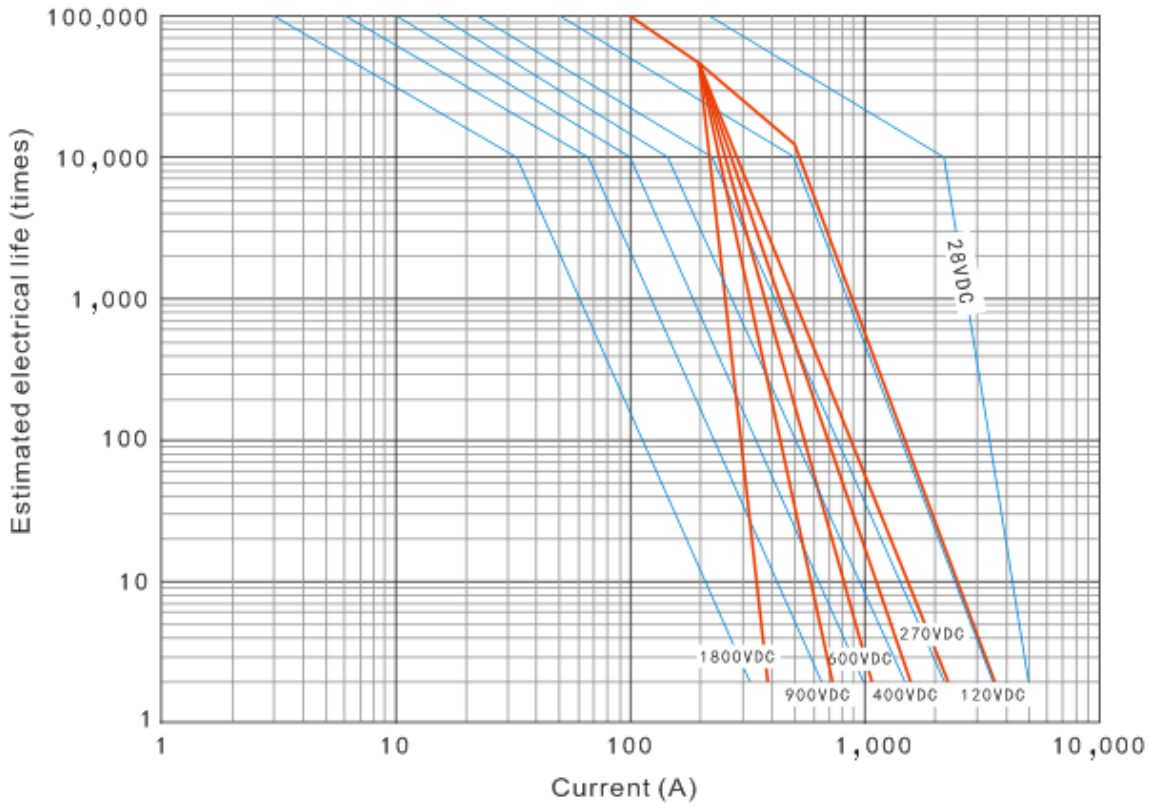
		When OFF: 98m/s2, above {10G} (sine half-wave pulse: 11ms, detection time : 10μs)
	Durable vibration	Above 490m/s2, above {50G} (sine half-wave pulse: 6ms)
Mechanical endurance		>200000 times (on-off frequency: 60 times/min)
Ambient temperature		-40℃ ~ +85℃
Ambient humidity		5%RH ~ 85%RH / with no icing or condensation
Degree of protection		IP54

Reference Data



The red curve shows the electric life of the product used in conjunction with KS-AAE device or KS-AMU.

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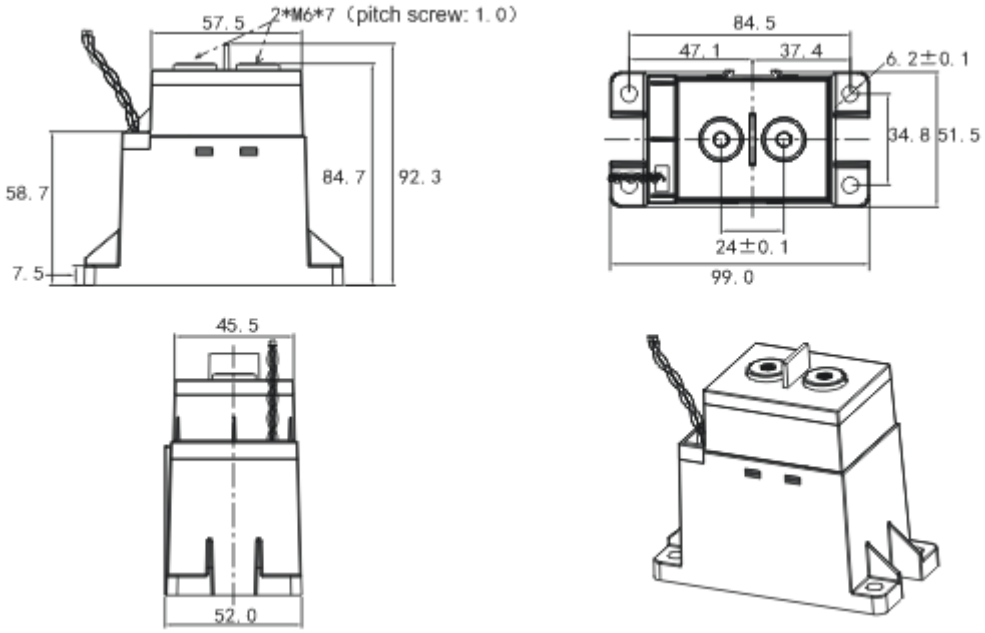
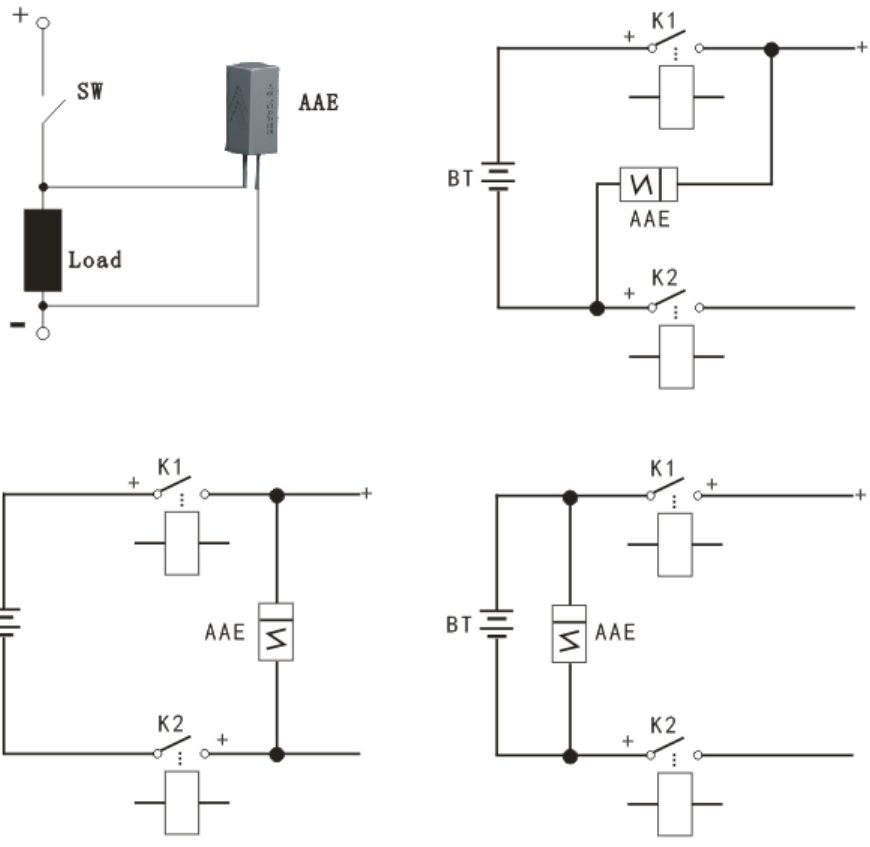
Dimension (unit: mm)



Typical Applications



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