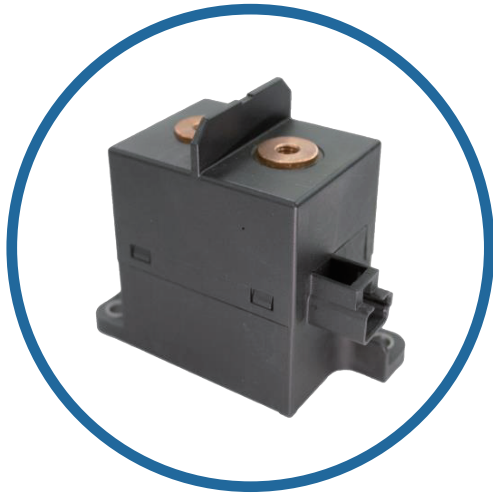




# High Voltage DC Contactor

SGX250 250A CERAMIC BI-DIRECTIONAL CONTACTOR



## Feature

- Hermetically seal rated to 175°C – Reduced risk of fire or meltdown in over current conditions.
- Backfilled with gas (primarily hydrogen) to effectively inhibit oxidation, resulting in low and stable contact resistance.
- Continuous current carry 250 A at 85°C
- High short circuit current withstanding: 8000A, 5ms.
- Comply with IEC 60664-1 and RoHS standards.

## Applications

- Material Handling
- Residential ESS
- DC Fast Charging

## SPECIFICATIONS

### Contact data

Specifications	Data
Contact Arrangement	1 Form A
Contact Resistance	≤0.5mΩ @ 200A
Rated Load Current	250A(@60mm <sup>2</sup> wire)
Rated Switching Voltage	450Vdc / 750Vdc
Rated Switching Power	112.5kW @450Vdc / 187.5kW @750Vdc
Min. Applicable Load	6Vdc, 1A
Max. Switching Voltage	1000Vdc
Max. Switching Power	187.5kW (750Vdc)
Max. Breaking Current	2000A(450Vdc), 1cycle

### Characteristics

Specifications	Data	
Dielectric Strength	Between Open contacts	2600Vac 1min
	Between Coil&Contacts	2600Vac, 1min
Insulation Resistance	1000MΩ at 1000Vdc	
Operate Time (at nomi. volt.)	≤30ms	
Release Time (at nomi. volt.)	≤10ms	
Vibration Resistance (sine)	10Hz~500Hz, 49m/s <sup>2</sup>	
Shock Resistance	Functional Open: 196m/s <sup>2</sup> Functional Close: 588m/s <sup>2</sup>	
	Destructive: 490m/s <sup>2</sup>	
Ambient Temperature	-40°C~85°C	
Humidity	5% RH~85% RH	
Termination	M6 female screw	
Mounting	M5 screw	
Unit Weight	Approx. 430g	
Outline Dimensions	Refer to the drawings	



## Coil

Nominal Voltage Vdc	Pick-up Voltage Vdc	Drop-out Voltage Vdc	Coil Power W
12	≤9	≥1	~6.0 @23°C
24	≤18	≥2	

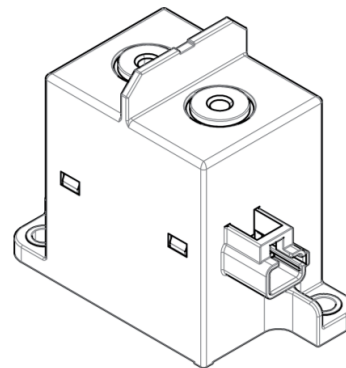
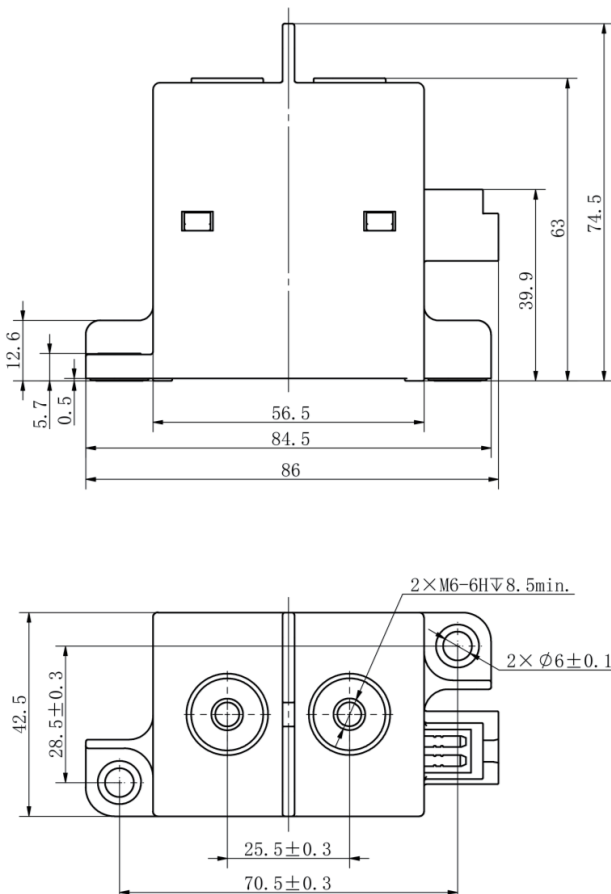
Notes: The values above are conservative values within the temperature range(-40°C to 85°C).

## Endurance

Specifications	Data
<b>Electrical Endurance</b>	Switch on :7.5×10 <sup>4</sup> cycles (20Vdc, 140A)
	Switch off :1000cycles (450Vdc, 250A)
	Switch off : 200cycles (750Vdc, 250A)
	Switch off :0.2s on 1cycle (450Vdc, 2000A)
	Switch off : 0.2s on 1cycle (500Vdc, 1800A)
<b>Short Circuit Current</b>	500Vdc, 8000A t ≤ 5ms, 1cycle (no smoke, no fire)
<b>Current Endurance</b>	250A, Cont.
	350A, 8min
	500A, 2min
	900A, 25s
	1000A, 20s
<b>Mechanical endurance</b>	2 x10 <sup>5</sup> cycles, on-off ratio: 0.5s : 0.5s

## DIMENSIONS

### Shape1



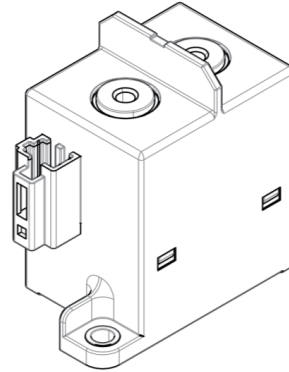
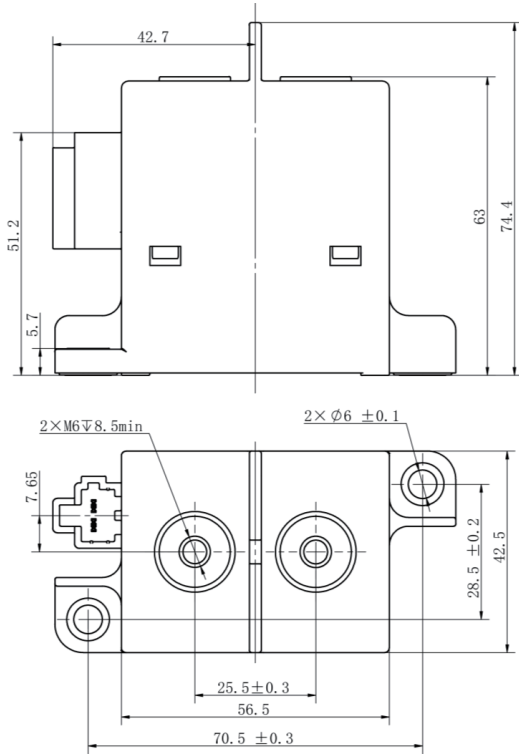
Notes:

- (1) Until special statement, the temperature of electrical endurance is at 23°C and the on-off ratio is 0.6s: 5.4s.
- (2) Coil is not connected to surge suppressor during tests. Attention: If the coil is used in parallel with the diode, the release time of the contactor will be prolonged and the service life will be reduced.

General Tolerance	
Outline Dimension	Tolerance
≤10mm	+0.3mm
10-50mm	+0.6mm
>50mm	+1.0mm

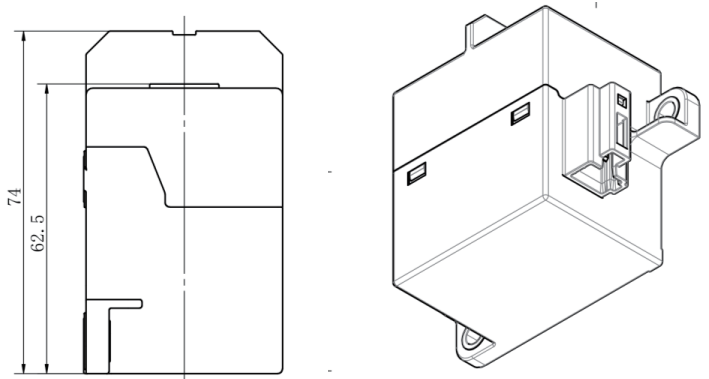
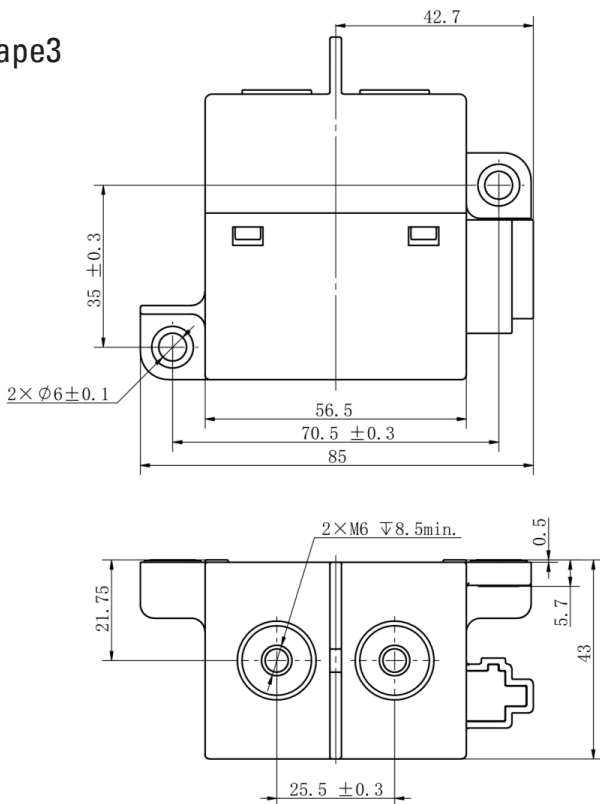


**Shape2**



General Tolerance	
Outline Dimension	Tolerance
≤10mm	+0.3mm
10-50mm	+0.6mm
>50mm	+1.0mm

**Shape3**

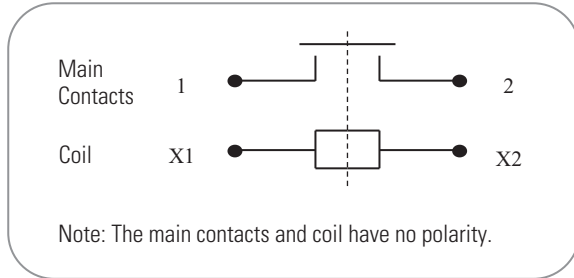


General Tolerance	
Outline Dimension	Tolerance
≤10mm	+0.3mm
10-50mm	+0.6mm
>50mm	+1.0mm

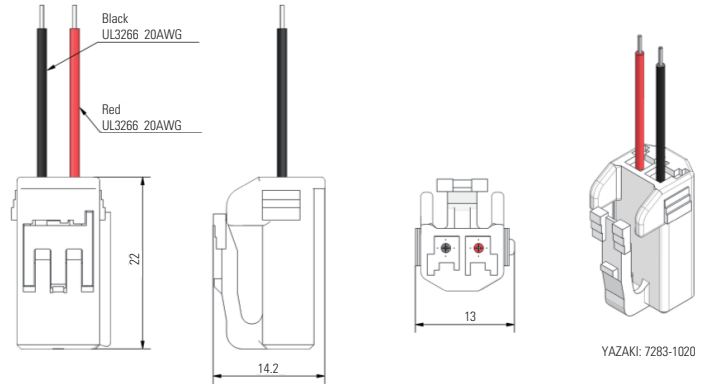


## ● INSTALLATION

### ① Wiring Diagram



### ② Recommended connector



### ③ Installation Torque

Load Terminal Installation				
Installation Mode	Screw Installation Depth	Torque	Copper Busbar Diameter	Copper Busbar Thickness
M6 Screw	7.0mm~8.5mm	6N·m~8N·m	6.0mm~6.5mm	2.0mm~3.0mm

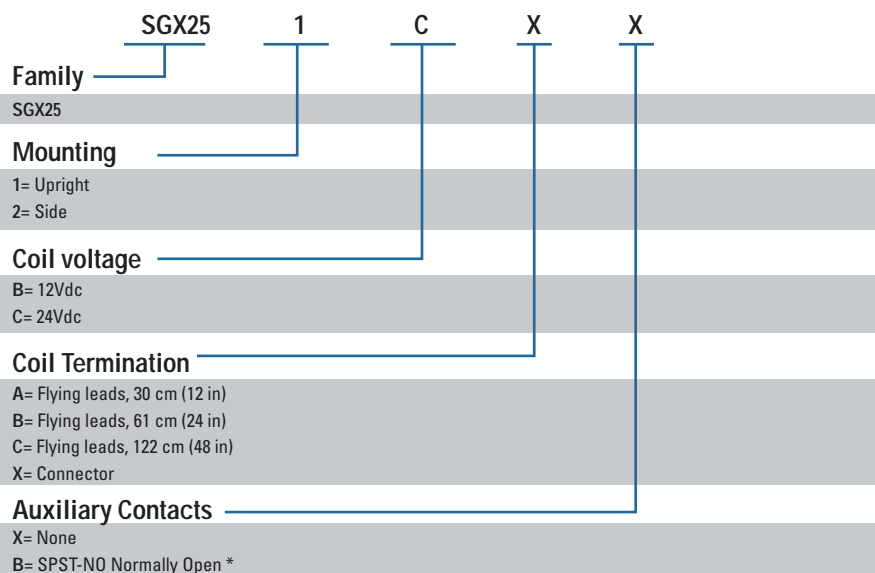
Contactor Installation	
Installation Mode	Torque
M5 Screw	3N·m~4N·m

Note:

- In order to prevent loosening, please use extra washer when installing relay: spring washer + flat washer.
- Please avoid grease and other foreign matter in the terminal, please use the connecting wire with a cross section area  $\geq 50\text{mm}^2$ , otherwise they may cause abnormal heating in the terminal part.
- When installing the contactor at the load using an electric screwdriver, it is recommended to use a three stage step speed mode: the first stage 35rpm, the second stage (100-150) rpm, and the third stage 35rpm.

## ● ORDERING OPTIONS

Example SGX251CXX



Note\*:  
in development



**WARNINGS**



**RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE**

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

**Failure to follow these instructions can result in serious injury, or equipment damage.**



**HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH**

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

**Failure to follow these instructions will result in death or serious injury.**

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