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^2 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^2
Shock Resistance		Functional Open: 196m/s^2 Functional Close: 588m/s^2
		Destructive: 490m/s^2
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).

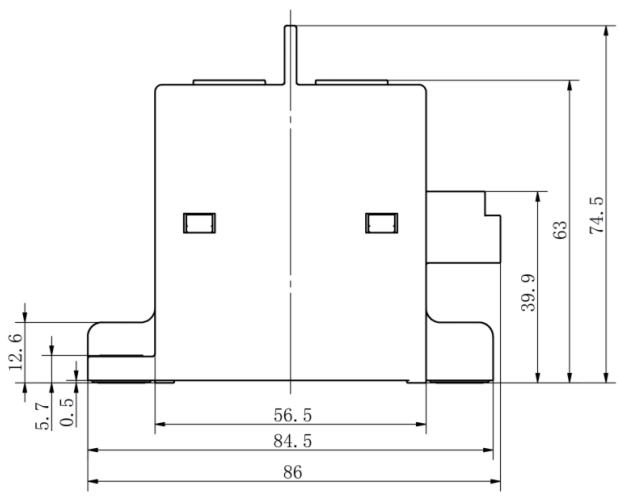
Endurance

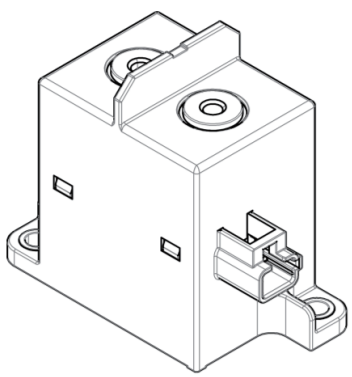
Specifications	Data
Electrical Endurance	Switch on :7.5×10^4 cycles (20Vdc, 140A)
	Switch off :1000cycles (450Vdc, 250A)
	Switch off : 200cycles (750Vdc, 250A)
	Switch off :0.2s on 1cycle (450Vdc, 2000A)
	Switch off : 0.2s on 1cycle (500Vdc, 1800A)
Short Circuit Current	500Vdc, 8000A t ≤ 5ms, 1cycle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

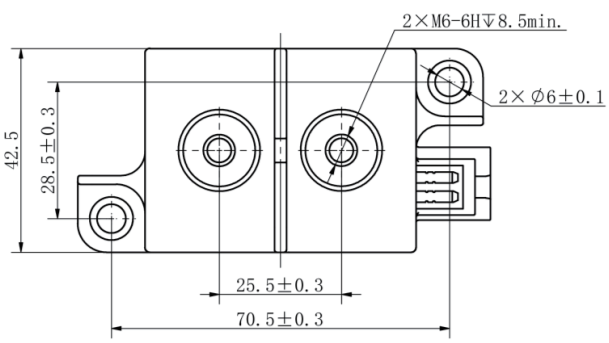
Notes:
(1) Until special statement, the temperature of electrical endurance is at 23°C and the on-off ratio is 0.6s: 5.4s.
(2) Coil is not connected to surge suppressor during tests. Attention: If the coil is used in parallel with the diode, the release time of the contactor will be prolonged and the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

DIMENSIONS

Shape1

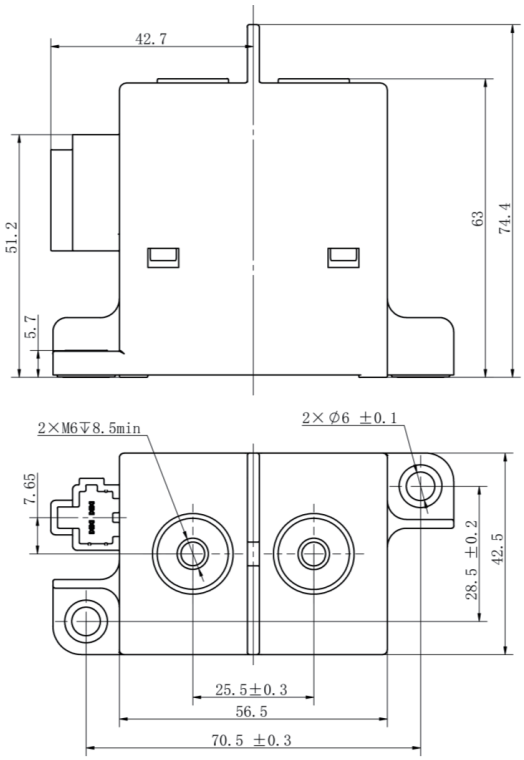


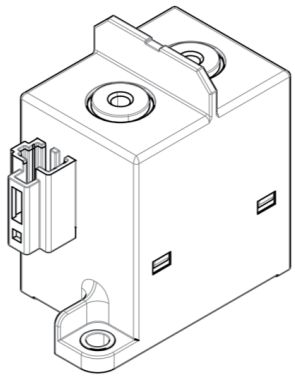




General Tolerance	
Outline Dimension	Tolerance
≤10mm	+0.3mm
10~50mm	+0.6mm
>50mm	+1.0mm

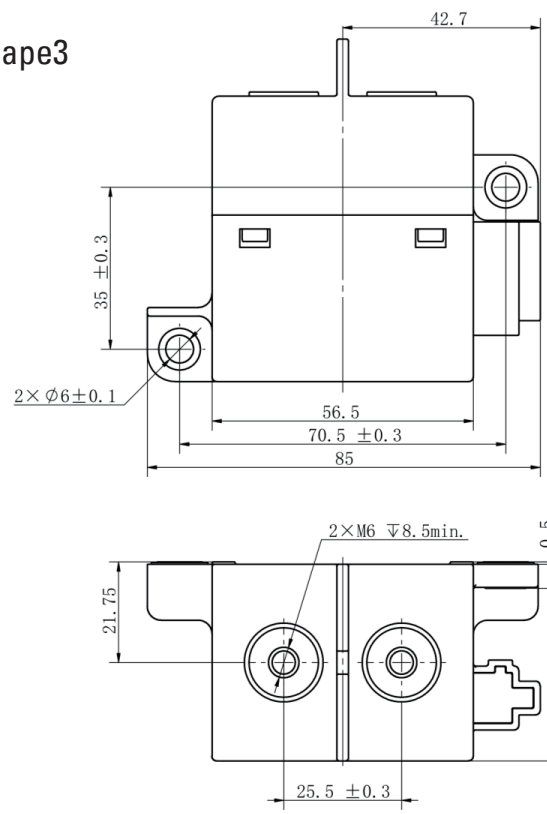
Shape2

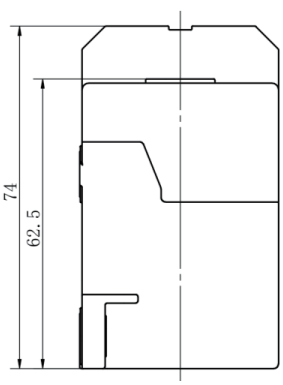


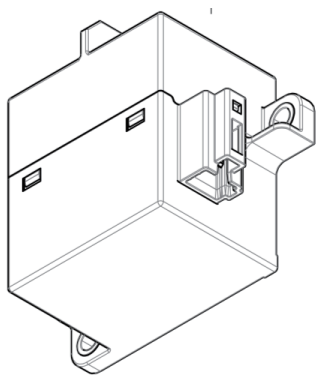


General Tolerance	
Outline Dimension	Tolerance
≤10mm	+0.3mm
10~50mm	+0.6mm
>50mm	+1.0mm

Shape3







General Tolerance	
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≤10mm	+0.3mm
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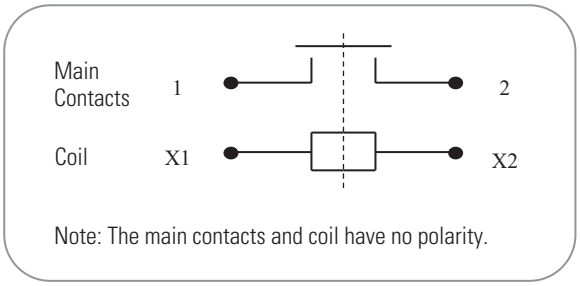
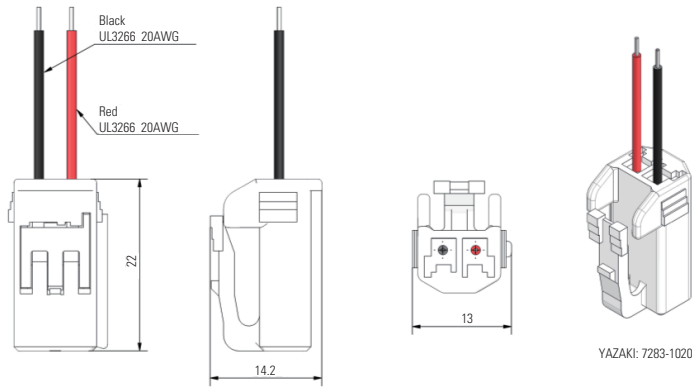
INSTALLATION

① Wiring Diagram



Note: The main contacts and coil have no polarity.

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:
1. In order to prevent loosening, please use extra washer when installing relay: spring washer + flat washer.
2. Please avoid grease and other foreign matter in the terminal, please use the conrnecting wire with a cross section area ≥50mm^2, otherwise they may cause abnormal heating in the terminal part.
3. 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

SGX25 1 C X X

Family
SGX25

Mounting
1= Upright
2= Side

Coil voltage
B= 12Vdc
C= 24Vdc

Coil Termination
A= Flying leads, 30 cm (12 in)
B= Flying leads, 61 cm (24 in)
C= Flying leads, 122 cm (48 in)
X= Connector

Auxiliary Contacts
X= None
B= SPST-NO Normally Open *

Note*:
in development

GIGAVAC

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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