

High Voltage DC Contactor

SGX400 400A 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 400A at 85°C
- High short circuit current withstanding: 10kA, 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	$\leq 0.2\text{m}\Omega$ @ 200A
Rated Load Current	400A(@200mm ² wire)
Rated Switching Voltage	450Vdc. / 750Vdc
Rated Switching Power	180kW @450Vdc / 300kW @750Vdc
Min. Applicable Load	6Vdc, 1A
Max. Switching Voltage	1000Vdc
Max. Switching Power	300kW (750Vdc)
Max. Breaking Current	2000A(750Vdc), 1cycle

Characteristics

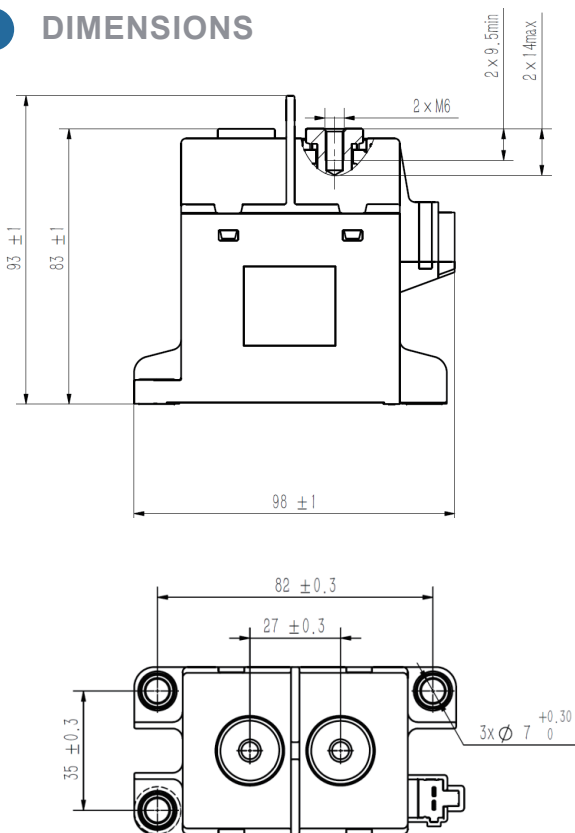
Specifications		Data
Dielectric Strength	Between Open Contacts	3000Vac, 1min
	Between Coil&Contacts	3000Vac, 1min
Insulation Resistance		1000M Ω at 1000Vdc
Operate Time (at nomi. volt.)		$\leq 50\text{ms}$
Release Time (at nomi. volt.)		$\leq 10\text{ms}$
Vibration Resistance (sine)		10Hz~500Hz, 49m/s 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		M6 screw
Unit Weight		Approx.760g
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).

DIMENSIONS



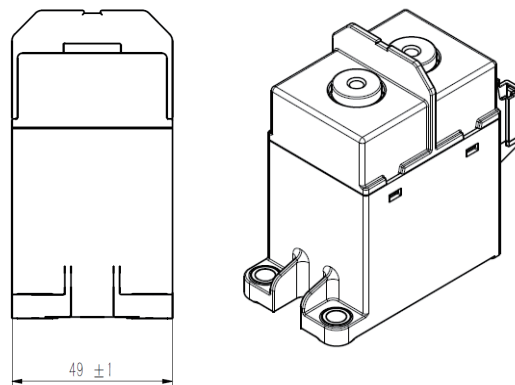
General Tolerance	
Outline Dimension	Tolerance
≤10mm	+0.3mm
10~50mm	+0.6mm
>50mm	+1.0mm

Endurance

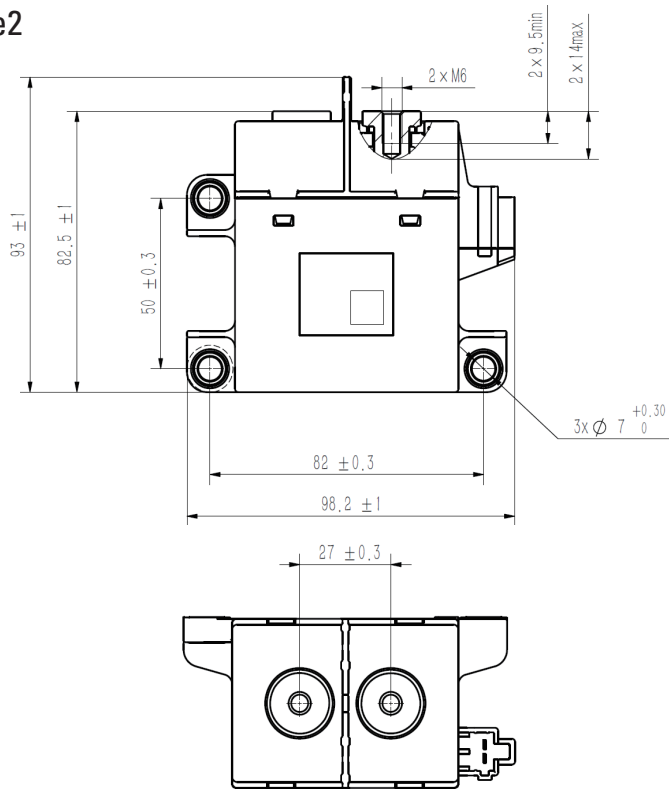
Specifications	Data
Electrical Endurance	Switch on: 7.5×10^4 cycles (22.5 Vdc, 140A, C=1100μF)
	Switch off: 7.5×10^4 cycles (450Vdc, 5A)
	Switch off: 2.5×10^4 cycles (450Vdc, 10A)
	Switch off: 3.0×10^3 cycles (450Vdc, 200A)
	Switch off: 1.0×10^3 cycles (450Vdc, 400A)
	Switch off: 100cycles (750Vdc, 400A)
Short Circuit Current	Switch off: 1cycle (450Vdc, 2000A)
	500Vdc 10000A t ≤5ms, 1cycle (no smoke, no fire)
Current Endurance	400A, Cont.
	500A, 2000s
	1350A, 15s
	2000A, 10s
	3000A, 5s
Mechanical endurance	2×10^5 cycles, on-off ratio: 0.6s : 5.4s

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 test. 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.
- (3) If breaking current ≥ 1200A, contactor's insulation resistance may decrease ($\geq 1M\Omega$), but with no fire or explosion. When the current is ≥ 2000A, no fire or explosion shall occur after the test as the acceptance requirements. (Welding may occur, dielectric strength and insulation resistance may decrease).



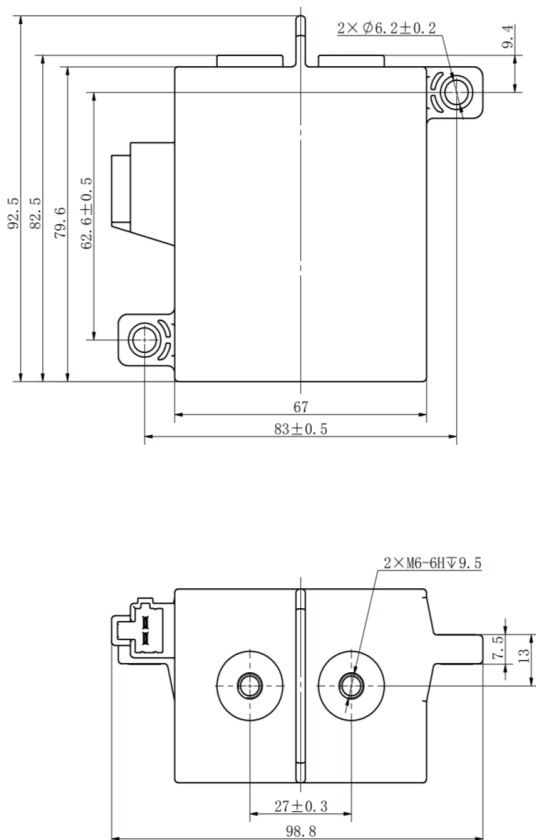
Shape2



General Tolerance

Outline Dimension	Tolerance
$\leq 10\text{mm}$	$+0.3\text{mm}$
10-50mm	$+0.6\text{mm}$
$> 50\text{mm}$	$+1.0\text{mm}$

Shape3

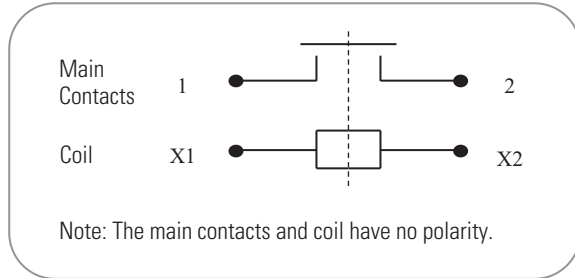


General Tolerance

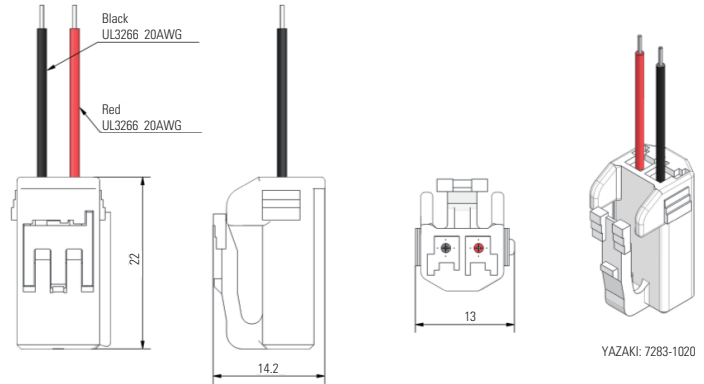
Outline Dimension	Tolerance
$\leq 10\text{mm}$	$+0.3\text{mm}$
10-50mm	$+0.6\text{mm}$
$> 50\text{mm}$	$+1.0\text{mm}$

● 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	8.0mm~9.5mm	6N·m~8N·m	6.0mm~6.5mm	4.0mm~6.0mm

Relay Installation	
Installation Mode	Torque
M6 Screw	6N·m~8N·m (shape1/2)
M5 Screw	3N·m~4N·m (shape 3)

Note:

1. In order to prevent loosening, please use extra washer when installing contactor: spring washer + flat washer.
2. Please avoid grease and other foreign matter in the terminal, please use the connecting wire with a cross section area $\geq 60\text{mm}^2$, otherwise they may cause abnormal heating in the terminal part.

● ORDERING OPTIONS

Example SGX401CXX

	SGX40	1	C	X	X
Family	SGX40				
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



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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