BSBC7 Series DC Contactor Specification

Customer	General Specification
Product Name	DC Contactor
Part Number	BSBC7-300T-P BSBC7-300TH-P BSBC7-300TC-P BSBC7-300TZ-P BSBC7-300T-PW BSBC7-300TH-PW BSBC7-300TC-PW BSBC7-300TZ-PW BSBC7-300T-GY1 BSBC7-300TH-GY1 BSBC7-300TC-GY1 BSBC7-300TZ-GY1 BSBC7-300T-GWY1 BSBC7-300TH-GWY1 BSBC7-300TC-GWY1 BSBC7-300TZ-GWY1
Date	2025/03/01
Version	2025V1.0

Feature

●**Safe**：Fully sealed with epoxy resin, contact and coil will not be oxidized, product performance is not affected by external environment, no arc outbursts, can be worked in explosive and harmful environment.

●**Reliable**：Adopt DC high voltage non-polarity design, the breaking capacity is higher and more reliable, convenient and reliable installation or wiring.

●**Good for environment**：All components meet the latest ROHS environmental requirements.

●**Application**：Ordinary, quick charging, auxiliary contactor. Can be used in EV, charging equipment, photovoltaic system, etc.

●**Approval**：UL, CE, TUV

Ordering

BSBC7-300 T H - P W Y1 /XXX

- Customer number
- Polarity type: （Nil: Without polarity；Y1:Contact without polarity / Coil with polarity）
- Mounting type:（Nil: Vertical mounting, W：Horizontal mounting）
- Rated control supply voltage Us:（P：12/24VDC；G：48/72VDC）
- Auxiliary contact type:（H: with normally open；Z: with convert；C: with normally closed；Nil: without）
- Contact material: T: Alloy
- Rated current: 300A
- Company abbreviation: BSB
  - C: DC Contactor
  - 7: Design number

Basic Parameter

Contact parameter		
Main contact	Rated operational current Ie	300A
	Rated operational voltage Ue	12～1000VDC
	Min. load	1A12VDC
	Main contact type	1SH（SPST NO DM）
	Nominal resistance of main circuit	0.2 mΩ（@250A）
	Main contact mounting	M8 external thread
	Connecting torque	10～12N·m
	Max. switching current （more than one cycle）	2500A320VDC
Auxiliary contact	Max. current	30VDC 2A；125VAC 3A
	Min. current	8VDC 100mA
	Contact resistance	＜0.15Ω

Coil parameter		
Rated voltage Us	12/24VDC	48/72VDC
Operating voltage range	8～36 VDC	32～95 VDC
Pick up voltage	7～8 VDC	28～32 VDC
Release voltage	5～6 VDC	18～22 VDC
Coil power	holding：2W	holding：1.5W
Inrush current	3A（0.1s）（@12V）	1.3A（0.1s）
Holding current	0.17A@12V；0.085A@24V	0.03A@48V；0.02A@72V
Pick up time（@Us）	≤45ms	≤45ms
Release time（@Us）	≤10ms	≤10ms
Bounce time（@Us）	≤5ms	≤5ms

Note: The above parameters are normal temperature rating, if other parameters needed, can customize.

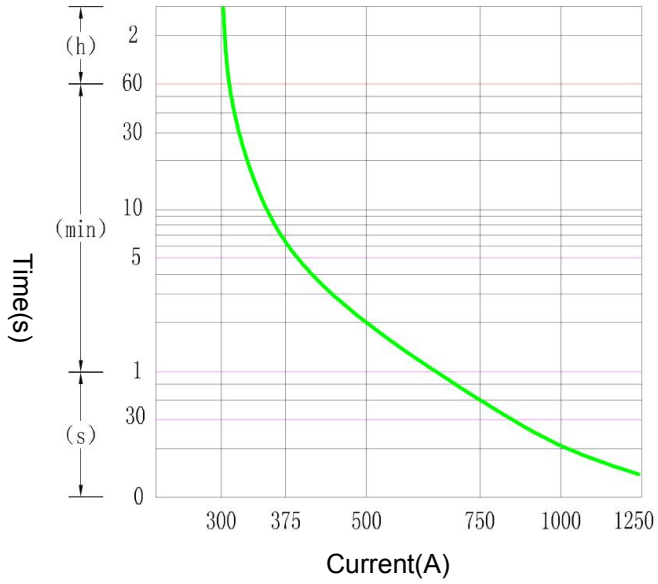
Life characteristics		
Mechanical Life		300,000 cycles
Resistivity load life（L/R≤1ms）		500V300A4000 ops 750V300A2000 ops 1000V200A1000 ops
Capacitive load life (RC=1ms ， only for connecting)	600A	50,000 cycles
Note: For capacitive load life, when the contactor is used to control the main circuit of charge and discharge, the pre-charge circuit should be added. If there is no pre-charging path, a transient large current will be generated when the contactor closes, which may cause the contactor to stick.		

Environmental characteristics		
Shock	Stability test	196m/s² （20G）
	Strength test	490m/s² （50G）
Resistance to vibration		10～2000Hz，20G
Operating ambient temperature		-40℃～+85℃
Operating ambient humidity		5%～85% RH
IP Grade		IP67(inner space)
Altitude		≤4000m

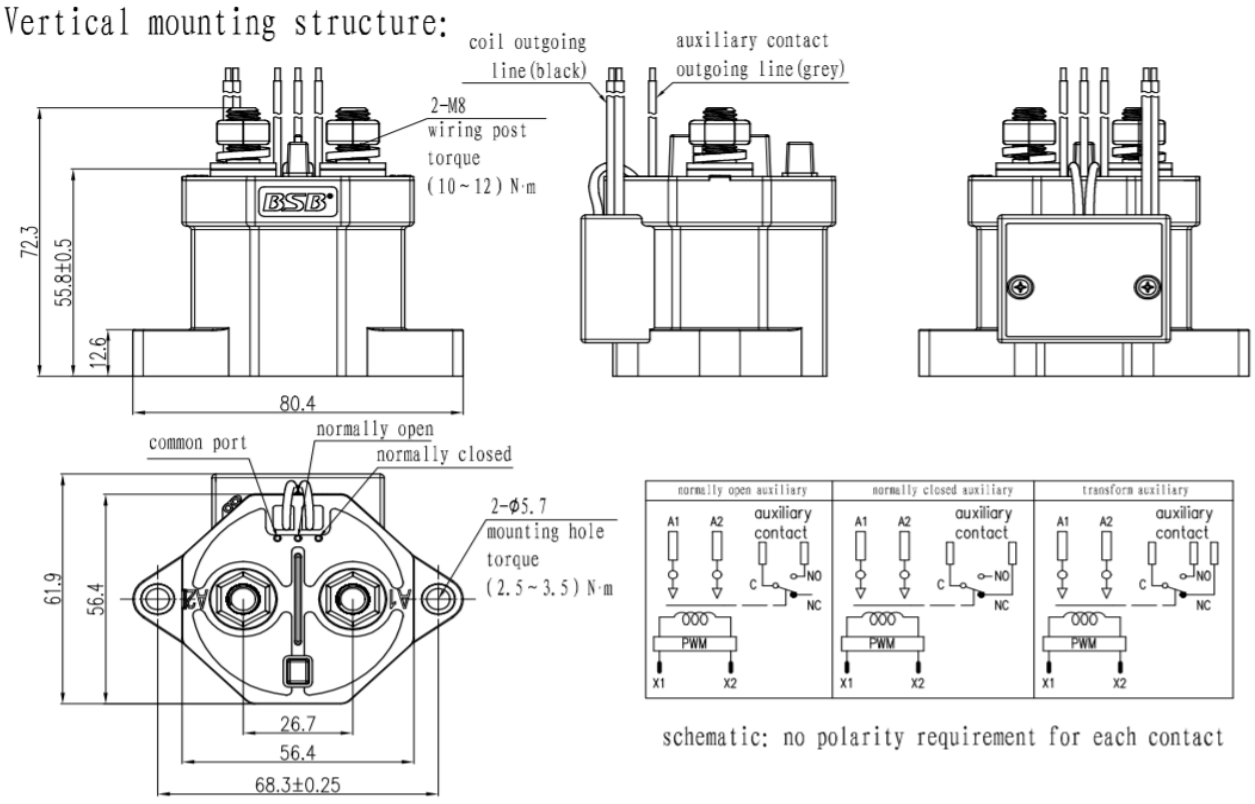
Electrical characteristics	
Dielectric withstand voltage	AC3000V
Insulation resistance	≥1000MΩ@1000VDC
Nominal insulation voltage Ui	1000V

Other	
Weight	425g，with auxiliary 430g
The cross sectional area of an external conductor	≥95mm²
Case mounting hole torque	2.5～3.5 N·m

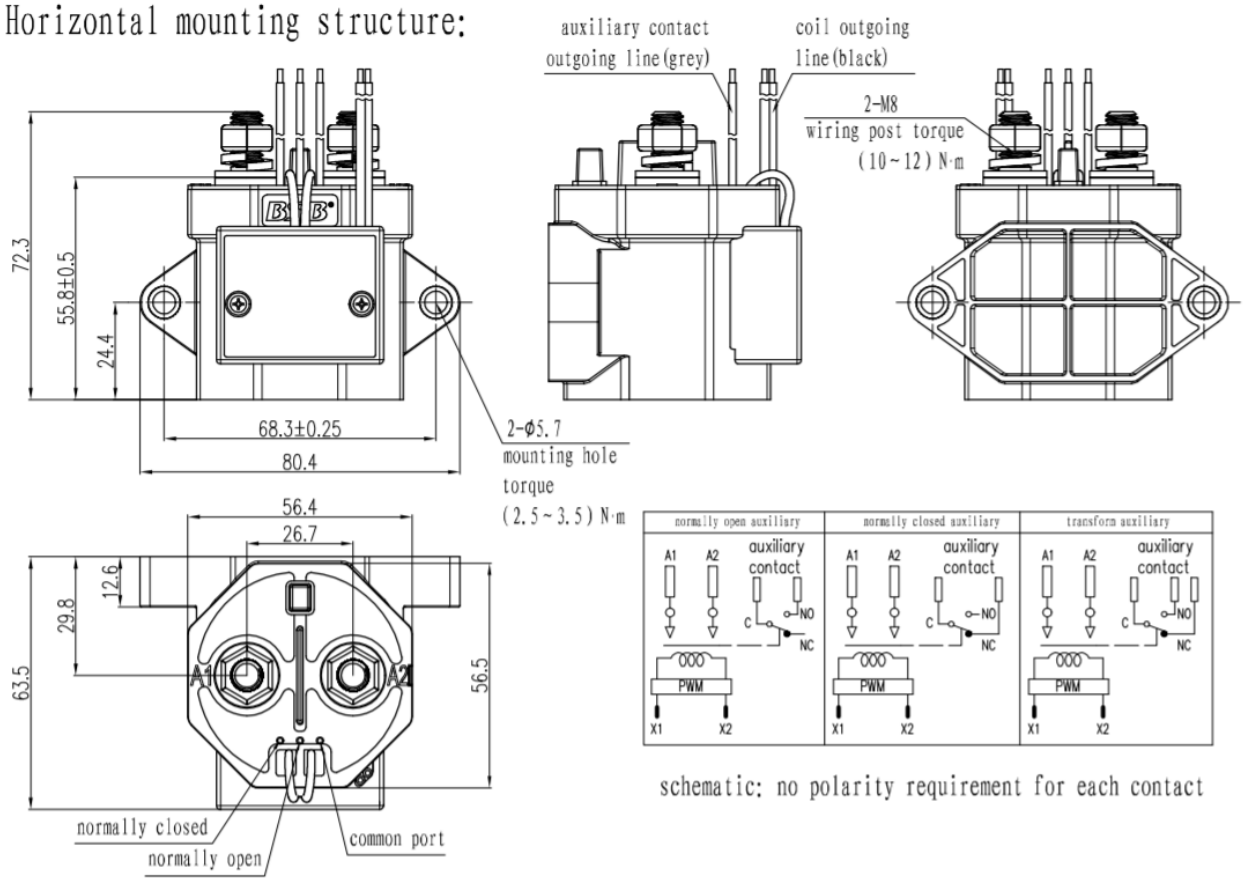
Short overload capacity curve



Outline and wiring schematic diagram



Horizontal mounting structure:



Note: Control coil wire length 300±20mm

Product without tolerance, when ≤10mm, tolerance ±0.3mm

When dimension between 10～50 mm, tolerance ±0.5mm

When dimension≥50mm, tolerance ±0.8mm

Notice

1. Using spring washers to prevent loose screws when installing contactors.

2. The torque range for tightening screws is specified in the accompanying table. Exceeding the maximum torque may cause the product to break. There is no polarity requirement for the main contact and the lead of the control coil of this contactor.

3. The main contacts and control coil leads of this contactor are non-polarized, meaning there are no polarity requirements.

4. Products equipped with an economizer feature a built-in reverse surge absorption circuit, eliminating the need for an external surge protector. For products without an economizer, it is recommended to install a varistor or TVS diode with a voltage rating of 1.5 to 2 times the coil voltage at the coil terminals as a surge protector. The use of diodes should be avoided, as they may reduce the product's breaking capacity.

5. Do not use products that have been dropped or subjected to impact. 6.Avoid placing the product near a strong magnetic field (near a transformer or magnet) or near an object with thermal radiation.

6. Avoid installing the product in areas with strong magnetic fields (e.g., near transformers or magnets) or in close proximity to self-heating components (e.g., fuses, shunt resistors). If the distance is too close, it is advisable to conduct a temperature rise test to confirm the acceptable temperature range and prevent the contactor from overheating or burning out.

7.Electrical life

This contactor is a high-voltage DC switch. In its final breakdown mode, it may lose its proper cutting function, so it should not be used beyond its switching capacity and life parameters (please treat this contactor as a product with specified life, and replace it if necessary). Once the contactor loses its disconnection ability, it may not work properly, so design the circuit diagram to ensure that the power can be cut off within one second.

8.Diffusion life of internal gas

The contactor adopts sealed bin contact, and the bin is filled with gas. The diffusion life of the gas is determined by the temperature in the contact bin (ambient temperature +temperature rise generated by contact electrification), so the ambient temperature should be -40℃～+85℃

9.If the coil and contact of the contactor are continuously passed at the rated voltage (or current), the power was cut off and switched on immediately. At this time, as the temperature of the coil increases, the

resistance of the coil will increase, which will increase the product's closed voltage, may cause excess of rated closed voltage. In this case, the following measures should be taken: Reduce the load current, limit the duration of continuous power or use coil voltage higher than the rated suction voltage.

10.For resistive load, the rated main contact rating shall apply, and for inductive load (L load) with L/R>1 millisecond, an inrush current protection device shall be connected to the inductive load in parallel.

11.The drive circuit power of the product coil must be greater than that of the product coil, otherwise the cutting ability of the product will be reduced.

12.Be careful not to let sundries and grease on the main lead out end, and the external wiring terminal should be in reliable contact with the main lead out end of the product, or it may cause the lead out end heat.

13.For the specification products with energy saving plate, after being connected, the coil will start to switch automatically after about 0.1 seconds. Do not repeatedly turn off at that position, which may damage the contactor.