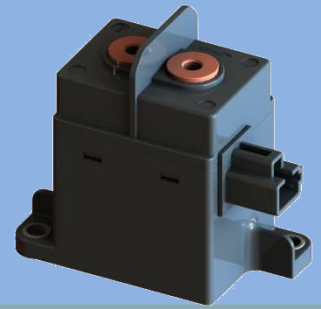




# GLFX150 直流接触器



## ◇ 产品概述 Product Introduction

型号 Type	GLFX150
触点形式 Contact Arrangement	一组常开 1 Form A
触点材料 Contact Material	铜合金 Copper Alloy
触点表面处理形式 Contact Surface Treatment Form	无 None
密封类型 Seal Type	陶瓷密封 Ceramic Sealing
外形尺寸 Outline(L×W×H)	80.9mm×39mm×73.2mm
重量 Unit Weight	370×(1±7%)g

## ◇ 线圈额定参数 Coil Characteristics

额定电压 Rated Voltage V DC	工作电压范围 Working Voltage Range V DC	驱动方式 Driving Mode	动作电压 Pick-up Voltage V DC (@23°C)	释放电压 Drop-out Voltage V DC(@23°C)	线圈电阻 Coil Resistance Ω(@23°C)	线圈额定功耗 Coil Rated Power W (@23°C)
12	9~16	单线圈 Single coil	≤9	≥1	24×(1±7%)	约 6 Approx. 6
24	18~32	单线圈 Single coil	≤18	≥2	96×(1±7%)	

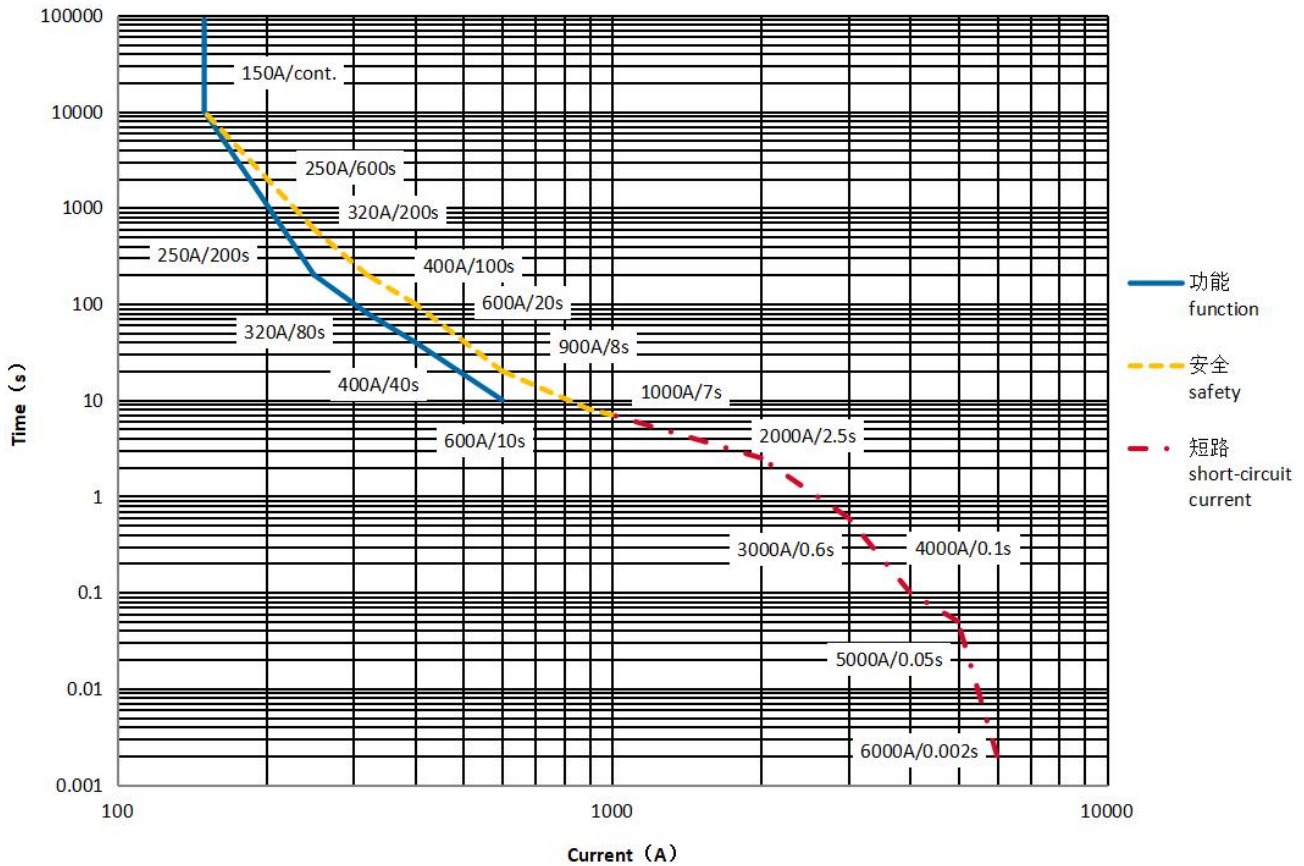


◇ 触点参数 Contact Characteristics

额定电压 Rated Voltage	800V DC
额定电流 Rated Current	150A(铜排截面积 50mm <sup>2</sup> ) 150A(busbar cross-section 50mm <sup>2</sup> )
最小适用负载 Min. Applicable Load	1A 12V DC
接触电阻 Contact Resistance	≤0.5mΩ(@150A)
最大切断电流 Max. Breaking Current	2000A 450V DC 1次(op)
工作电压范围 Working Voltage Range	12~800V DC
电流耐受(铜排截面积 50mm <sup>2</sup> , 85°C) Current Endurance(busbar cross-section 50mm <sup>2</sup> , 85°C)	150A 持续 cont. 250A 200s 320A 80s 400A 40s 600A 10s



### 电流耐受曲线 Current Endurance



#### 注 Notes

1. 环境温度为85°C，铜排截面积 $\geq 50\text{mm}^2$ 。

The ambient temperature is 85°C, and the cross-section of busbar is  $\geq 50\text{mm}^2$ .

2. 该曲线设定的功能温度上限为130°C，适合于长时工作制；安全温度上限为180°C，适合于短时工作制，如果温度超过180°C，接触器可能功能失效。

The upper limit of the function temperature is 130°C, which is suitable for long-time working; and the upper limit of the safety temperature is 180°C, which is suitable for short-time working; If the temperature exceeds 180°C, the contactor may lose function.

2.  $\geq 1000\text{A}$ 时，接触器可能会粘连，但不起火，不爆炸。

The contactor may stick when the current is greater than 1000A, but it will not catch fire or explode.

3.  $\geq 6000\text{A}$ 时，接触器触头很可能发生斥开，如果保险丝不能及时熔断，那么接触器可能发生起火、爆炸。

The contactor contacts may be repulsed when the current is greater than 6000A if the fuse does not blow out in time, the contactor may catch fire or explode.



### ◇ 耐久性 Endurance

电耐久性 Electrical Endurance	切断(Breaking)	±150A 750V DC 500 次(ops)
		±150A 450V DC 1000 次(ops)
		±300A 450V DC 200 次(ops)
	接通(making)	±140A 20V DC 50000 次(ops)
短路电流 Short Circuit Current	6000A(2ms)不烧、不炸	6000A(2ms)with no fire or explosion
机械耐久性 Mechanical Endurance		200,000 次(ops)

注 Note

1. 如无特殊说明，测试条件为常温，通断比为0.6s:5.4s。

Unless specified, all tests are conducted in normal room temperature. Operating frequency: 0.6s on, 5.4s off.

### ◇ 性能参数 Performance

绝缘电阻(断开触点间) Insulation Resistance (Between open contacts)	试验前Before Test:≥1000MΩ(@1000V DC) 试验后After Test:≥50MΩ(@1000V DC)
绝缘电阻(触点与线圈间) Insulation Resistance (Between contacts and coil)	试验前Before Test:≥1000MΩ(@1000V DC) 试验后After Test:≥50MΩ(@1000V DC)
介质耐压(断开触点间，漏电流≤1mA) Dielectric Strength (Between open contacts, leak current≤1mA)	试验前Before Test:≥3000V AC, (50/60Hz 1min) 试验后After Test:≥2250V AC, (50/60Hz 1min)
介质耐压(触点与线圈间，漏电流≤1mA) Dielectric Strength (Between contacts and coil,leak current ≤1mA)	试验前Before Test:≥3000V AC, (50/60Hz 1min) 试验后After Test:≥2250V AC, (50/60Hz 1min)
动作时间(线圈额定电压下，23°C) Pick-up Time (At rated coil voltage, 23°C)	≤30ms
释放时间(线圈额定电压下，23°C) Drop-out Time (At rated coil voltage, 23°C)	≤10ms
回跳时间(线圈额定电压，23°C) Bounce Time (At rated coil voltage, 23°C)	≤5ms
随机振动 Random Vibration	10Hz~2000Hz, 57.9m/s <sup>2</sup>



耐冲击-误动作冲击 Shock - Functional	ON: 半正弦波 1/2 sine, 11ms, 196m/s <sup>2</sup> OFF: 半正弦波 1/2 sine, 11ms, 98m/s <sup>2</sup>
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耐冲击-强度冲击 Shock - Destructive	半正弦波, 6ms, 490m/s <sup>2</sup> 1/2 sine, 6ms, 490m/s <sup>2</sup>
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正弦振动 Sine Vibration	100-500Hz, ≤0.5oct/min, 49m/s <sup>2</sup>
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### ◇ 标准测试条件 Standard Test Condition

温度 Temperature	23°C±5°C
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湿度 Humidity	25%~75%RH
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方向 Direction of Test	竖直 Vertical
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### ◇ 使用条件 Operating Condition

触点允许的最高温度(长时) Maximum allowable temperature of contacts(Long-time)	130°C
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触点允许的最高温度(短时) Maximum allowable temperature of contacts(Short-time)	180°C
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温度 Temperature	-40°C~+85°C
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湿度 Humidity	5%~85%RH
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海拔 Altitude	≤4000m
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安装方向 Mounting Direction	竖直 Vertical
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### ◇ 贮存条件 Storage Condition

温度 Temperature	5°C~30°C
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湿度 Humidity	35%~70%RH
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存储时间 Storage Time	1 year
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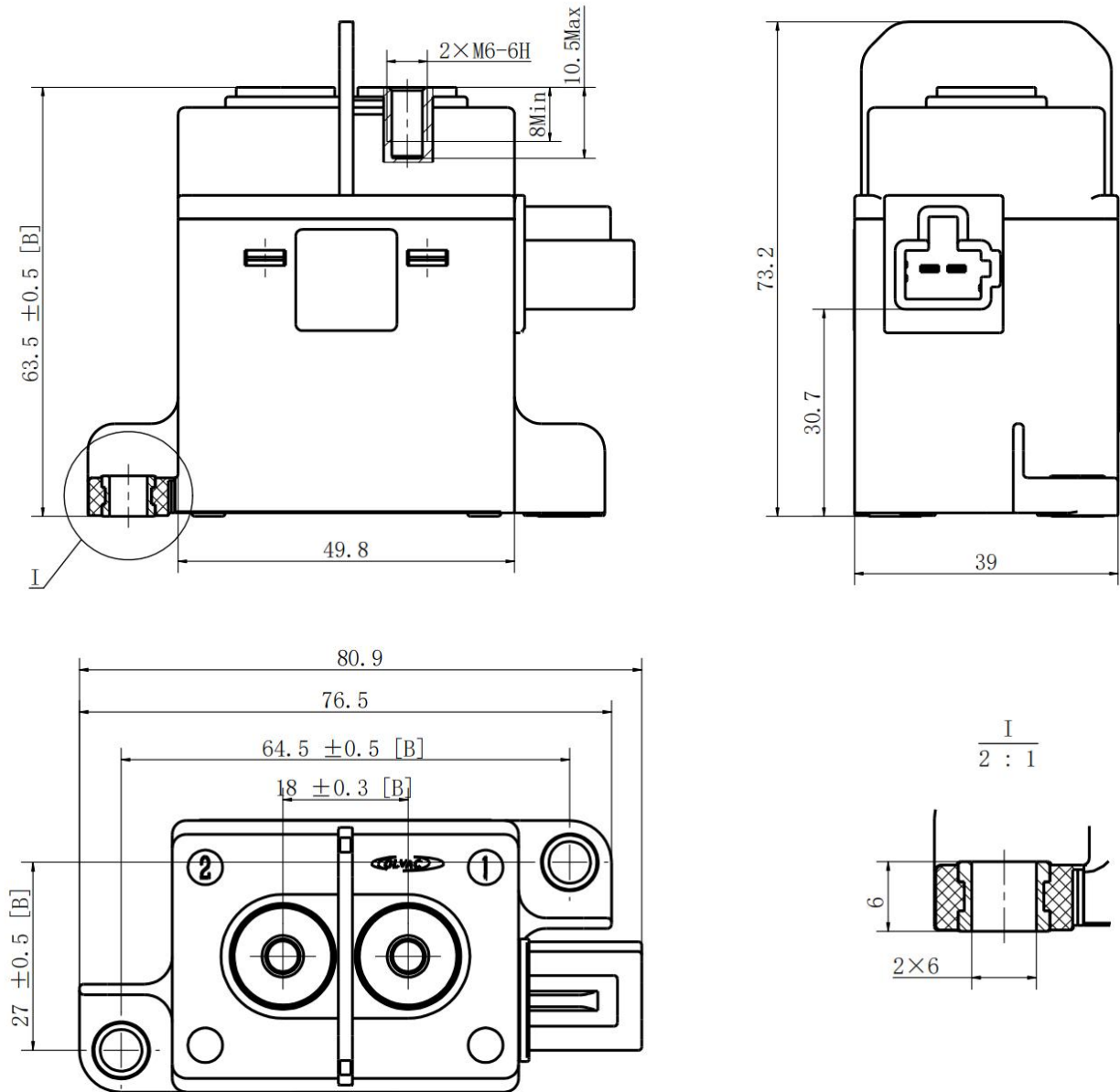
◇ 产品命名规则 **Product Code Structure**

	<b>GLFX150/</b>	<b>800</b>	<b>-XX</b>	<b>-H</b>	<b>C</b>	<b>5</b>	<b>S</b>	<b>-XXX</b>
产品型号 Product Type								
负载电压 Contact Voltage		<b>800:800V DC</b> <b>450:450V DC</b>						
线圈电压 Coil Voltage		<b>12:12V DC</b> <b>24:24V DC</b>						
触点形式 Contact Type		<b>H:一组常开</b> 1 Form A						
线圈引出形式 Coil Termination		<b>C:连接器</b> Connector						
负载引出形式 Load Termination		<b>5:内螺纹</b> Bolt terminal Female						
安装方式 Mounting		<b>S: 卧式 Horizontal Mounting</b> <b>无 None:立式 Vertical Mounting</b>						
特殊特性号 Special Code		<b>XXX: 客户需求 Customer demand</b> <b>无 None: 标准型 Standard</b>						



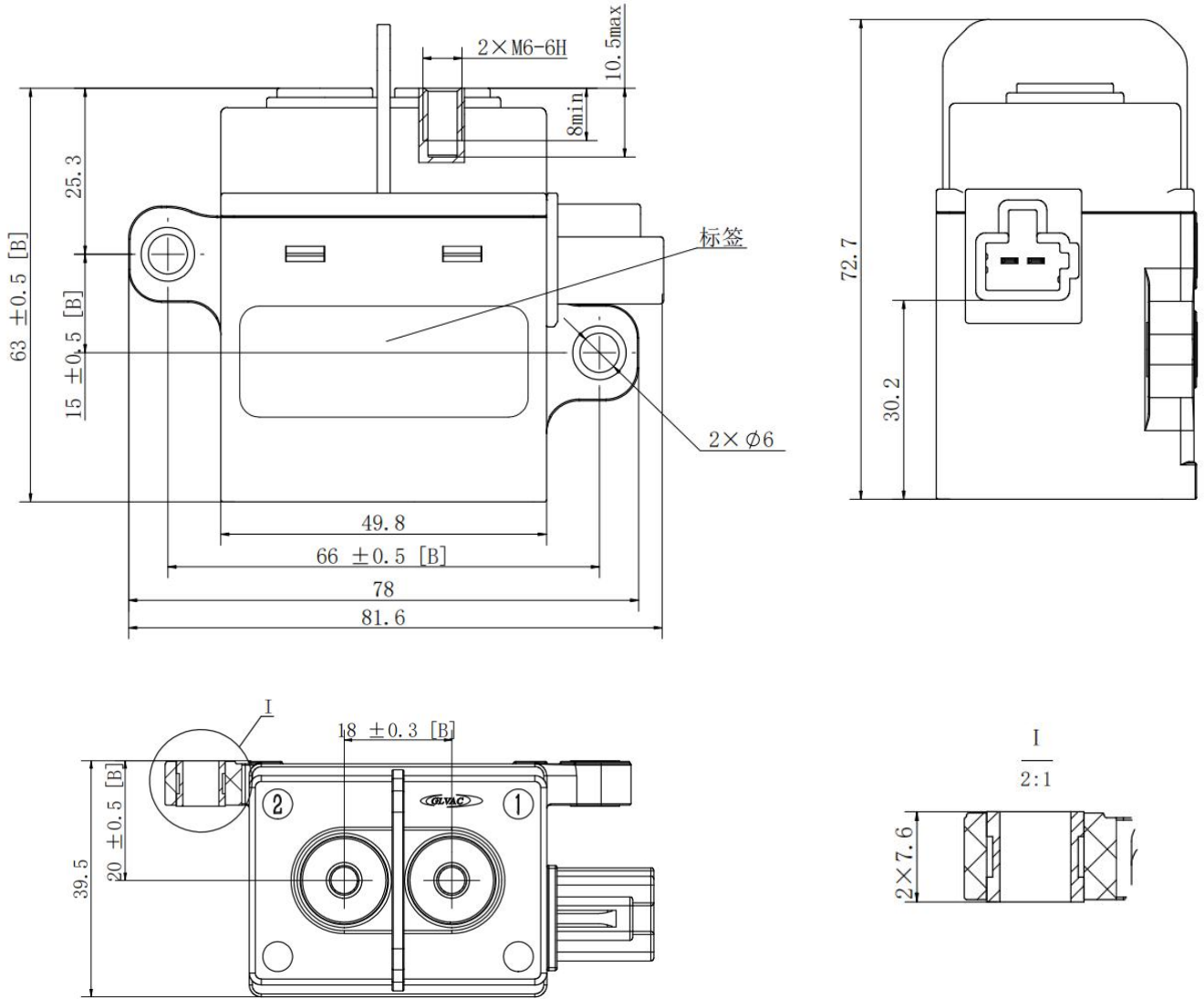
◇ 外形图 Outline Dimensions

产品型号 Product Type: GLFX150/XXX-XX-HC5





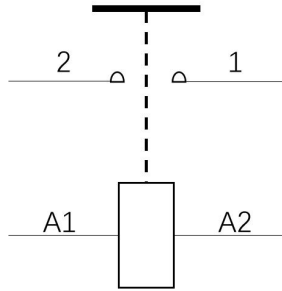
产品型号 Product Type: GLFX150/XXX-XX-HC5S







◇ 接线图 Circuit Diagram



负载无极性，线圈无极性

The load is nonpolar, the coil is nonpolar

注 Notes

1. “[B]”标记为重要特性。

The sizes marked with “[B]” are significant characteristic.

2. 产品外形尺寸未注公差：

All unspecified tolerance according to the table as below:

尺寸 Dimension(mm)	<10	10~50	>50
公差 Tolerance(mm)	±0.3	±0.5	±0.8

3. 产品可适配矢崎或天海连接器，具体型号如下：

The default connector of the product and THB or Yazaki connector can be used,the specific models are as follows:

品牌 Brand	护套 Connector Housing	插针 Crimp Terminal
矢崎 Yazaki	7283-1020	7116-4020
天海 THB	0435307	01175



### ◇ 应用信息 Application Notes

1. 出货信息：产品默认出货不含螺钉、垫片、弹垫等安装配件。

Shipping information: The default product is shipped without screws, washers, spring washers and other installation accessories.

2. 当接触器使用1个及多个导电铜排连接时，请确保导电铜排与触点端面紧密贴合(多个铜排需确保大电流的导电铜排最贴近触点端面，小电流的导电铜排其次)，然后是平垫圈、弹簧垫圈、螺钉。不正确的连接顺序可能造成严重过热。

When contactor is connected with one or more busbars, please ensure that the busbars are tightly attached to the the end faces of the contacts (when there are multiple busbars, please ensure that the busbar with large current is next to the contact terminal face, and the busbars with low current come next), then the flat washer, spring washer and screw. Incorrect connection order can cause severe overheating.

产品类型 Contact Type	连接示意图 Connection Diagram
内螺纹型 Internal thread	<p>螺钉 Screws</p> <p>弹垫 Spring washer</p> <p>平垫 Flat washer</p> <p>导电铜排 (或电缆引出片) Busbar (or cable lead)</p> <p>触点端面 Main contact terminal</p>

3. 安装时请避免附着异物、油脂类及腐蚀性液体，否则会导致接触器触点端发热异常。

During installation, please avoid attaching foreign objects, grease and corrosive liquids, otherwise it will cause abnormal heating at the contact end of the contactor.

4. 请避免在强磁界(变压器、磁铁的周围)和发热物体的附近安装。

The contactor should not be installed near strong magnetic fields (transformers, magnets, etc.) and should not be installed near heat source.

5. 接触器安装的锁紧力矩请控制在下表规定范围内，超过范围可能导致螺纹损坏。

The tightening torque of the contactor installation is recommended as the table below. Exceeding the range may cause thread damage.

负载端安装部分 Fixing of Contact					
安装方式 Installation Type	扭矩要求 Torque	破坏扭矩 Destructive Torque	建议螺丝旋合长度 Screwing Length Of Screw Thread	建议铜排平面度 (安装面) Recommended Copper Bus Flatness (Mounting Surface)	建议铜排孔径 Recommended Copper Bar Aperture
M6 螺钉 M6 screw	6Nm~8Nm	≥10Nm	>6mm	0.1	φ 6.1mm~ φ 6.5mm



### 本体安装部分

#### Installation at flange side

安装方式 Installation Type	扭矩要求 Torque	破坏扭矩 Destructive Torque
M5 螺钉 M5 screw	4.5 (1±10%) Nm	≥15Nm

6. 线圈在断电时，线圈两端会产生反向电动势，此反向电动势会对控制端的MOSFET等器件产生冲击，因此控制电路需在接触器线圈端并联抑制器件来抑制反向电动势。

A reverse voltage occurs when the coil power off, this reverse voltage will have negative impact on control circuit electrical device like MOSFET. A suppression device should be connected in parallel with the coil end of the contactor as a measure to suppress the reverse voltage.

注意事项 Notes:

6.1 推荐使用钳位电压为线圈额定电压 2 倍以上的双向 TVS 管、压敏电阻 Varistor(ZNR)、二极管+单向 TVS 管 等措施进行反向电动势的抑制。反向电动势抑制器件的钳位电压要低于被保护的 MOSFET 的 VDS 值。  
It is recommended to use bi-direction TVS, Varistor (ZNR), Diode+ the unilateral diode etc. whose clamping voltage is more than 2 times the rated voltage of the coil to suppress the reverse overvoltage of the coil. And the clamping voltage of reverse voltage suppression device should lower than VDS of protected MOSFET.

6.2 TVS 管及压敏电阻的能量吸收能力至少在 1J 以上。

TVS and ZNR the max energy absorption capability: ≥1J.

6.3 禁止用续流二极管 Diode 进行反向电动势的抑制，这样会延长接触器负载端释放时间，导致产品切断性能下降。

Please do not use freewheel diode, it will make the release time of contactor increase, which will lead to contactor cutting-off performance reduced.

7. 接触器应用在容性负载回路时，请注意采取预充等措施，建议接触器闭合压差控制在20V以内。如未采取措施，可能会造成触点粘连。

When the contactor is used in a capacitive load circuit, please pay attention to pre-charge and other measures. It is recommended that the contactor closing pressure difference be controlled within 20V. If no measures are taken, the contacts may stick.

8. 接触器应用在感性负载回路时，建议对感性负载并联加装浪涌吸收措施。如未采取措施，可能导致接触器切断能力有所下降。

When the contactor is used in the inductive load circuit, it is recommended to install surge absorption measures in parallel to the inductive load. If no measures are taken, the contactor's cutting capability may be reduced.

9. 接触器的内部触点使用了气体保护，伴随着触点温度变化(环境温度+通电致使温度上升)而存在内部气体穿透，严禁将继电器长时间置于超过产品温度使用范围(-40 °C~85 °C)环境中。

The contactor contacts are encapsulated in protection gas atmosphere. So please avoid using or storing beyond the allowable temperature range -40 °C~85 °C for long time.

10. 请避免接触器在使用或运输过程中发生撞击或跌落。为保持接触器的性能，撞击或跌落后的接触器不建议继续使用。

Please avoid impact or drop of the contactor during application or transportation. In order to maintain the performance of the contactor, it is not recommended to continue to use the contactor after impact or fall.



11. 产品完全符合RoHS2.0要求，对环境更友好。

Products meet RoHS2.0 and environment friendly.

12. 如需获取更多信息与支持，请联系昆山国力源通新能源科技有限公司。

Please contact GuoLi YuanTong for more information or support.

#### 声明：

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