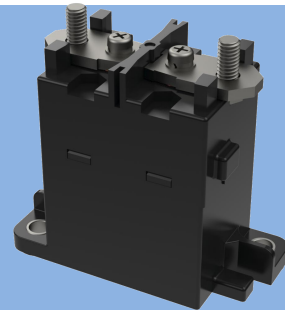




High Voltage DC Contactor

GLFWH150 直流接触器



◇ 产品概述 Features

型号 Type	GLFWH150
触点形式 Contact Arrangement	一组常开 1 Form A
触点材料 Contact Material	铜合金 Cu Alloy
表面处理（静触点） Surface treatment(Static contact)	无 None
表面处理（动触点） Surface treatment（Moving contact）	镀银 Silver plating
密封类型 Seal type	陶瓷密封 Ceramic seal
外形尺寸 Outline（L×W×H）	76mm×36mm×73.2mm
重量 Unit weight	340×（1±7%）g

◇ 线圈额定参数 Coil Rating

额定电压 Rated Voltage V d.c.	驱动方式 Driving Mode	最大工作电压 Max. Operate Voltage V d.c.	吸合电压 Pick-up Voltage V d.c. (23℃)	释放电压 Release Voltage V d.c.(23℃)	线圈电阻 Coil Resistance Ω (23℃)	线圈额定功率 Coil Power W(23℃)
12	单线圈 Single coil	16	≤9	≥1.2	21.4±0.8	约 6.7 Approx.6.7
24	单线圈 Single coil	32	≤18	≥2.4	86.0±2.0	约 6.7 Approx.6.7



◇ 触点参数 Contact Specification

额定工作电压 Rated Voltage	1500V DC
额定工作电流 Rated Current	150A (导线或铜排截面积 $\geq 50\text{mm}^2$) 150A (wire or busbar cross-section $\geq 50\text{mm}^2$)
最大切断电流 Max. Breaking Current	1500A 450VDC 1次(op)
工作电压范围 Working Voltage Range	12~1500V DC
最小负载 Min. Applicable Load	1A 12V DC
接触电阻 Contact resistance	$\leq 0.5\text{m}\Omega @150\text{A}$
电流耐受 (导线或铜排截面积 $50\text{mm}^2, 85^\circ\text{C}$) Current Endurance (wire or busbar cross-section $50\text{mm}^2, 85^\circ\text{C}$)	150A 持续 cont. 200A 2000s 225A 600s 300A 80s 500A 12s 见图 1.电流耐受能力曲线 See Fig. 1.Current Endurance curves

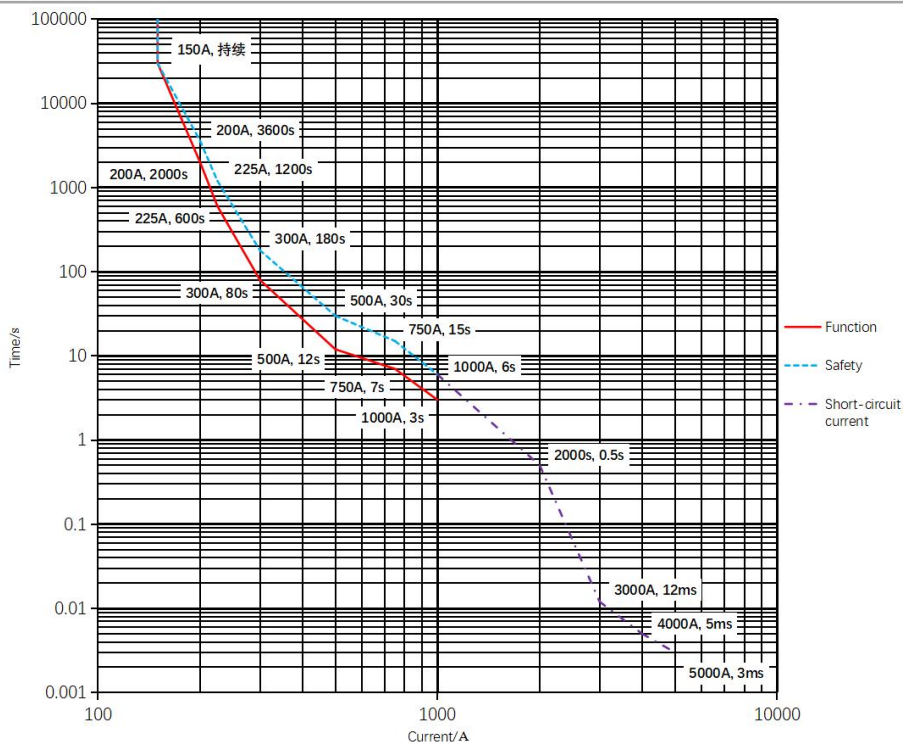


图 1 电流耐受能力曲线 Fig. 1.Current Endurance curves



注 Notes

1. 环境温度为85℃，导线或铜排截面积 $\geq 50\text{mm}^2$ ；
The ambient temperature is 85℃,and the cross-sectional area of the wire or busbar is $\geq 50\text{mm}^2$;
2. 该曲线设定功能温升温度上限为130℃，适合于长时工作制；安全温升温度上限为180℃，适合于短时工作制，如果温度超过180℃，接触器可能起火；
The upper limit of the function temperature rise is 130℃,which is suitable for long-time working; and the upper limit of the safe temperature rise is 180℃,which is suitable for short-time working; If the temperature exceeds 180℃,the contactor may catch fire;
3. 曲线根据评估得出，仅供参考保险丝匹配选型，建议实际测试确认。
The curve is based on the evaluation, and it is only for reference for fuse matching and selection. It is recommended to confirm by actual test.

◇ 耐久性 Endurance

电耐久性 ¹ Electrical Endurance	通断(making&breaking)	
	±150A 450V DC	2000 次(ops)
	±150A 750V DC	1000 次(ops)
	±200A 450V DC	100 次(ops)
机械耐久性 Mechanical Endurance	接通(making)	
	±30A 1500V DC	11000 次(ops)
	300,000 次(ops)	

注.1Note.1

4. 如无特殊说明，电耐久性测试条件为常温，通断比为0.6s:5.4s。
Unless specified, Electrical Endurance tests are conducted in 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: $\geq 1000\text{M}\Omega$ (@1500V DC) 试验后After Test: $\geq 50\text{M}\Omega$ (@1500V DC)
绝缘电阻（触点与线圈间） Insulation Resistance (Between contacts and coil)	试验前Before Test: $\geq 1000\text{M}\Omega$ (@1500V DC) 试验后After Test: $\geq 50\text{M}\Omega$ (@1500V DC)
介质耐压(断开触点间,漏电流 $\leq 1\text{mA}$) Dielectric Strength (Between open contacts,leak current $\leq 1\text{mA}$)	试验前Before Test: $\geq 3000\text{V AC}$,(50/60Hz,1min) 试验后After Test: $\geq 2250\text{V AC}$,(50/60Hz,1min)



介质耐压(触点与线圈间,漏电流 $\leq 1\text{mA}$)	试验前 Before Test: $\geq 4000\text{V AC}$, (50/60Hz, 1min)
Dielectric Strength	
(Between contacts and coil, leak current $\leq 1\text{mA}$)	试验后 After Test: $\geq 3000\text{V AC}$, (50/60Hz, 1min)

动作时间 (线圈额定电压下, 23°C)	$\leq 50\text{ms}$
Operate Time (At rated coil voltage, 23°C)	

释放时间 (线圈额定电压下, 23°C)	$\leq 10\text{ms}$
Release Time (At rated coil voltage, 23°C)	

回跳时间 (线圈额定电压, 23°C)	$\leq 5\text{ms}$
Bounce Time (At rated coil voltage, 23°C)	

耐冲击-误动作冲击	半正弦波, 11ms, 196m/s ²
Shock - Functional	1/2 sine, 11ms, 196m/s ²

耐冲击-强度冲击	半正弦波, 6ms, 490m/s ²
Shock - Destructive	1/2 sine, 6ms, 490m/s ²

随机振动	10Hz~2000Hz, 57.9m/s ²
Vibration	

◇ 标准测试条件 Standards Test Condition

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

温度 Temperature	-40°C ~ +85°C
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湿度 Humidity	5%~85%RH
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安装方向 Mounting Direction	竖直 Vertical
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◇ 贮存条件 Storage Condition

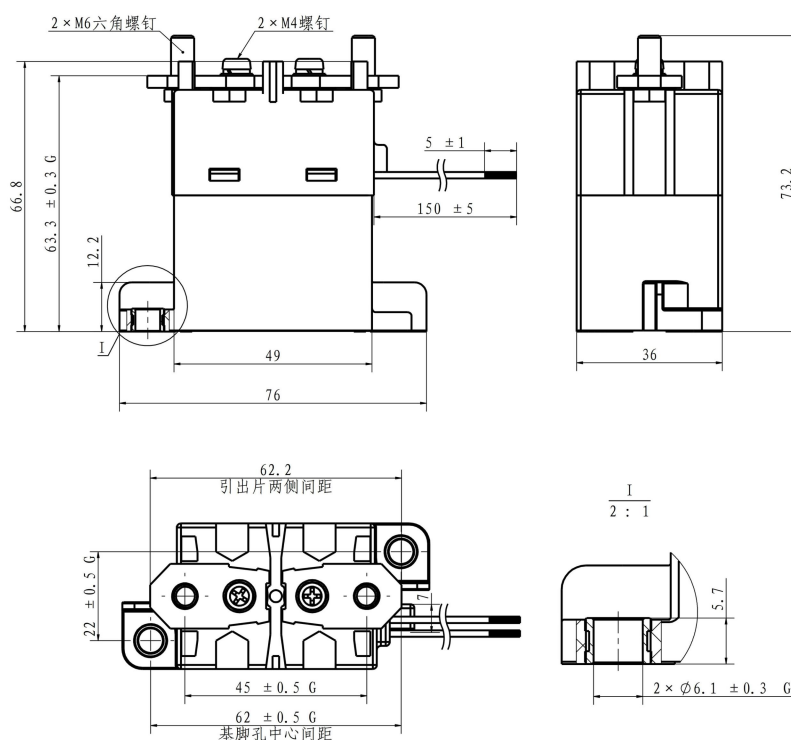
温度 Temperature	5°C ~ 30°C
湿度 Humidity	35% ~ 70%RH

◇ 产品编号规则 Product Code Structure

	GLFWH150	A	B	-XXX
产品型号 Product Type				
触点形式 Contact Type		A: 常开 A: Normally open		
线圈电压 Coil Voltage		B: 12V DC C: 24V DC		
客户代码 Customer Code	客户代码项可根据客户需求编写，或为空 Customer code items can be written according to customer requirements or be empty			

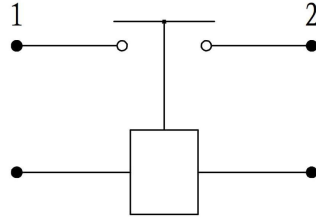
◇ 外形图 Outline Dimensions

产品型号 Product model: GLFWH150





✧ 接线图 Wiring Diagram



负载无极性，线圈无极性

The load is nonpolar, the coil is nonpolar

注 Note.

- “G” 标记为重要管控尺寸；
The sizes marked with “G” are critical;
- 产品外形尺寸未注公差：
Outline dimensions had not specified tolerance:

尺寸 Dimension(mm)	< 10	10~50	> 50
公差 Tolerance(mm)	±0.3	±0.5	±1

- 产品默认出货不含螺母组合件；
Products shipped by default without nut assembly parts;
- 线圈端采用导线引出方式，导线颜色：黑色，导线规格：AWM3266 22AWG，导线长度：150mm。
Coil end with wire lead-in, wire color:black, wire size: AWM3266 22AWG, wire length: 150mm.

✧ 应用信息 Application Notes

- 产品完全符合RoHS要求，对环境更友好；
Products meet RoHS and are better for the environment;
- 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、螺母。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 fitted to the contact terminal face (when there are multiple busbars, please ensure that the busbar with large current is closest 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
外螺纹型 External thread type	

- 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；
Please avoid foreign bodies, grease or corrosive liquids during installation, otherwise it will lead to abnormal heating at contact terminals;
- 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；
Please control the tightening torque during installation within the scope specified in the table below, exceeding the range may cause thread damage;

负载端安装部分 Fixing of Contact			本体安装部分 Fixing of Body	
安装方式 Typical Installation	扭矩要求 Torque	铜排厚度 Copper row thickness	安装方式 Typical Installation	扭矩要求 Torque
M6 螺钉 M6 screw	4Nm~6Nm	≤2mm	M5 螺钉 M5 screw	3.5Nm~4.5Nm

- 在线圈驱动端可以直接测量得到线圈电阻。
The coil resistance can be measured directly.
- 本接触器的触点无极性，可以任意方向连接负载。
The contacts of this contactor are non-polarized and can be connected to the load in any direction.
- 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:

Note:

- 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.

7.2. 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: $\geq 1J$;

7.3. 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.

8. 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 DC 以内。如未采取措施, 可能会造成触点粘连。

In a capacitive load, please pre-charge the capacitive load to make sure voltage difference less than 20V DC when contactor pick up. The contactor may have a contact welding without such action.

9. 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。

In an inductive load, a parallel connection with surge absorber is recommended in the inductive load. It may weaken the break performance if without such protection.

10. 请避免接触器在使用过程中进行高频通断, 建议通断间隔时间不小于 5.4 秒。

Please avoid high-frequency on/off of the contactor during use, the recommended on/off interval time is not less than 5.4 seconds.

11. 请避免电路中产生较大的容性脉冲电流, 此状态可能导致接触器粘连而保险丝不能正常熔断。

Please avoid generating large capacitive pulse current in the circuit, this state may cause the contactor to stick and the fuse cannot be blown normally.

12. 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。

Please avoid installation near the strong magnetic boundary (around transformers, magnets) and heat generating objects.

13. 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, 严禁将接触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 sealed and filled with gas. When the contact temperature changes, there is internal gas penetrating characteristic. Contactor are forbidden to be used at the temperature beyond our suggestion -40 °C~85 °C for long time.

14. 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 collision or fall in transit or use. To ensure the product performance, please do not use the contactor if there was a collision or fall.

15. 接触器在规定条件下存储时间为 1 年, 超过 1 年不建议使用。

The storage time of contactors is 1 years under the specified test conditions, more than 1 years is not recommended.

16. 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.