



## High Voltage DC Contactor

# GLFWH350 直流接触器



### ◇ 产品概述 Features

型号 Type	GLFWH350
主触点形式 Main Contact Arrangement	常开 Normally open
辅助触点形式 Auxiliary Contact Arrangement	常开 Normally open
触点材料 Contact Material	铜合金 Copper alloy
表面处理(静触点) Surface Treatment(Static Contact)	无 None
密封类型 Seal Type	陶瓷密封 Ceramic seal
外形尺寸 Outline(L×W×H)	118mm×70mm×105.2mm
重量 Unit Weight	1300×(1±7%)g

### ◇ 线圈额定参数 Coil Rating

额定电压 Rated Voltage VDC	驱动方式 Driving Mode	最大工作电压 Max. Operating Voltage VDC	动作电压 Operate Voltage VDC (at 23°C)	释放电压 Release Voltage VDC (at 23°C)	线圈电阻 Coil Resistance Ω (at 23°C)	线圈额定功率 Rated Power W (at 23°C)
12	双线圈 Dual coil	16	≤9	≥1.2	启动(Switch on) 2.3×(1±7%) 保持(Holding) 27.5×(1±7%)	启动 Switch on: 约 Approx:62.6W 保持 Holding: 约 Approx:5.3W



24	双线圈 Double coil	32	$\leq 18$	$\geq 2.4$	启动(Switch on) $9.2 \times (1 \pm 7\%)$ 保持(Holding) $110 \times (1 \pm 7\%)$	启动(Switch on): $62.6W$ 保持(Holding): $5.3W$
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注 Notes

1. 接触器内置单触发脉冲发生电路，请通过快速上升沿（脉冲式供电方式）驱动线圈（快速上升沿时间 $\leq 1ms$ ），否则接触器可能无法正常工作；

The Contactor built-in single trigger pulse generator circuit, please go through the rising edge, (pulse power supply mode) to drive coil, (the time of the rising edge is less than or equal to  $1ms$ ), otherwise the contactor will not work properly.

2. 接触器闭合约 $300ms$ 后线圈电流自动切换，不满 $300ms$ 的重复切换操作可能会导致接触器无法正常工作。

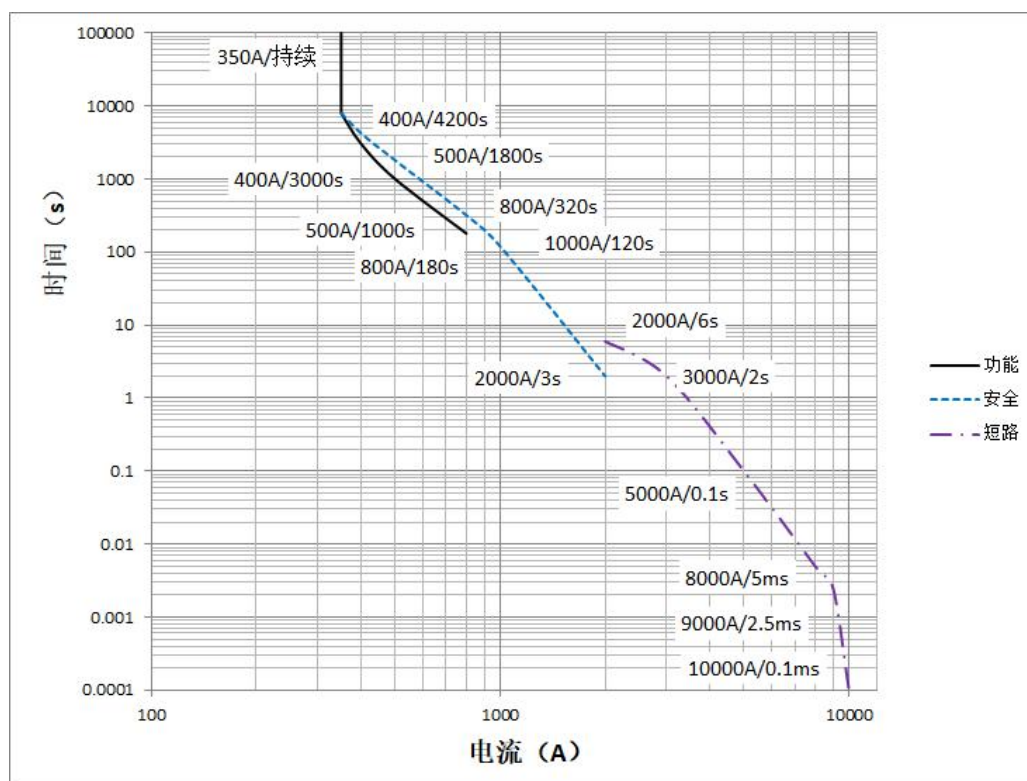
After the contactor closes about  $300ms$ , the coil current automatically switches, failure to meet  $300ms$  repeated switching operation may cause the contactor fail to work properly.



## ◇ 触点参数 Contact Specification

额定工作电流 Rated Current	350A(导体截面积 110mm <sup>2</sup> ) 350A(Wire 110mm <sup>2</sup> )
最大切断电流 Max. Breaking Current	2000A 750VDC 1次(op)
工作电压范围 Working Voltage Range	12-1500VDC
最小负载 Min. Load	1A 12VDC
接触电阻 Contact Resistance	<0.2mΩ (at 350A)
电流耐受(导体截面积 110mm <sup>2</sup> ) Current Endurance(Wire 110mm <sup>2</sup> )	350A 持续 cont. 400A 3000s 500A 1000s 800A 180s 2000A 3s

电流耐受能力  
Current Endurance



### 注 Notes

1. 环境温度为25℃，导线截面积≥110mm<sup>2</sup>；



The ambient temperature is 25°C, and the cross-sectional area of the wire is  $\geq 110\text{mm}^2$ ;

2. 该曲线设定功能温升温度上限为130°C，适合于长时工作制；安全温升温度上限为180°C，适合于短时工作制，如果温度超过180°C，接触器可能起火；

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

## ◇ 耐久性 Endurance

电耐久性 Electrical Endurance	通断 (Making & Breaking)	±100A 1500VDC 6000 次 (ops)
	切断 (Breaking)	±350A 1500VDC 1000 次 (ops)
		±1000A 900VDC 100 次 (ops)
		±1000A 816VDC 100 次 (ops)
		±1400A 387VDC 120 次 (ops)
机械耐久性 Mechanical Endurance		200,000 次 (ops)

注 Note

1. 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: $\geq 1000\text{M}\Omega$ (at 1500VDC) 试验后 After Test: $\geq 50\text{M}\Omega$ (at 1500VDC)
绝缘电阻 (触点与线圈间) Insulation Resistance (Between contacts and coil)	试验前 Before Test: $\geq 1000\text{M}\Omega$ (at 1500VDC) 试验后 After Test: $\geq 50\text{M}\Omega$ (at 1500VDC)
绝缘电阻 (主触点与辅助触点间) Insulation Resistance (Between main contacts and auxiliary contacts)	试验前 Before Test: $\geq 1000\text{M}\Omega$ (at 1500VDC) 试验后 After Test: $\geq 50\text{M}\Omega$ (at 1500VDC)



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: $\geq 5000\text{VAC}$ , 1min; 漏电流 $\leq 10\text{mA}$ 试验后After Test: $\geq 3750\text{VAC}$ , 1min; 漏电流 $\leq 10\text{mA}$
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介质耐压(触点与线圈间,漏电流 $\leq 1\text{mA}$ ) Dielectric Strength (Between contacts and coil, leak current $\leq 1\text{mA}$ )	试验前Before Test: $\geq 5000\text{VAC}$ , 1min; 漏电流 $\leq 10\text{mA}$ 试验后After Test: $\geq 3750\text{VAC}$ , 1min; 漏电流 $\leq 10\text{mA}$
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介质耐压(主触点与辅助触点间,漏电流 $\leq 1\text{mA}$ ) Dielectric Strength (Between main contacts and auxiliary contacts, leak current $\leq 1\text{mA}$ )	试验前Before Test: $\geq 5000\text{VAC}$ , 1min; 漏电流 $\leq 10\text{mA}$ 试验后After Test: $\geq 3750\text{VAC}$ , 1min; 漏电流 $\leq 10\text{mA}$
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动作时间(线圈额定电压下, 23°C) Operate Time (At rated coil voltage, 23°C)	$\leq 50\text{ms}$
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释放时间(线圈额定电压下, 23°C) Release Time (At rated coil voltage, 23°C)	$\leq 30\text{ms}$
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回跳时间(线圈额定电压, 23°C) Bounce Time (At rated coil voltage, 23°C)	$\leq 5\text{ms}$
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耐冲击-误动作冲击 Shock - Functional	半正弦波, 11ms, 196m/s <sup>2</sup> 1/2 sine, 11ms, 196m/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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随机振动 Vibration	10-2000 Hz, 57.9m/s <sup>2</sup>
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## ◇ 标准测试条件 Standards Test Condition

温度 Temperature	23±5°C
湿度 Humidity	25%~75%RH
方向 Direction of Measurement	竖直 Vertical

## ◇ 使用条件 Operating Condition

触点允许的最高温度(长时) Maximum allowable temperature	130°C
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of contacts(Long-time)

触点允许的最高温度(短时)

Maximum allowable temperature 180°C

of contacts(Short-time)

温度 Temperature -40°C ~+85°C

湿度 Humidity 5%~85%RH

海拔 Altitude ≤4000m

安装方向 Mounting Direction 竖直 Vertical

### ◇ 贮存条件 Storage Condition

温度 Temperature 5°C~30°C

湿度 Humidity 35%~70%RH

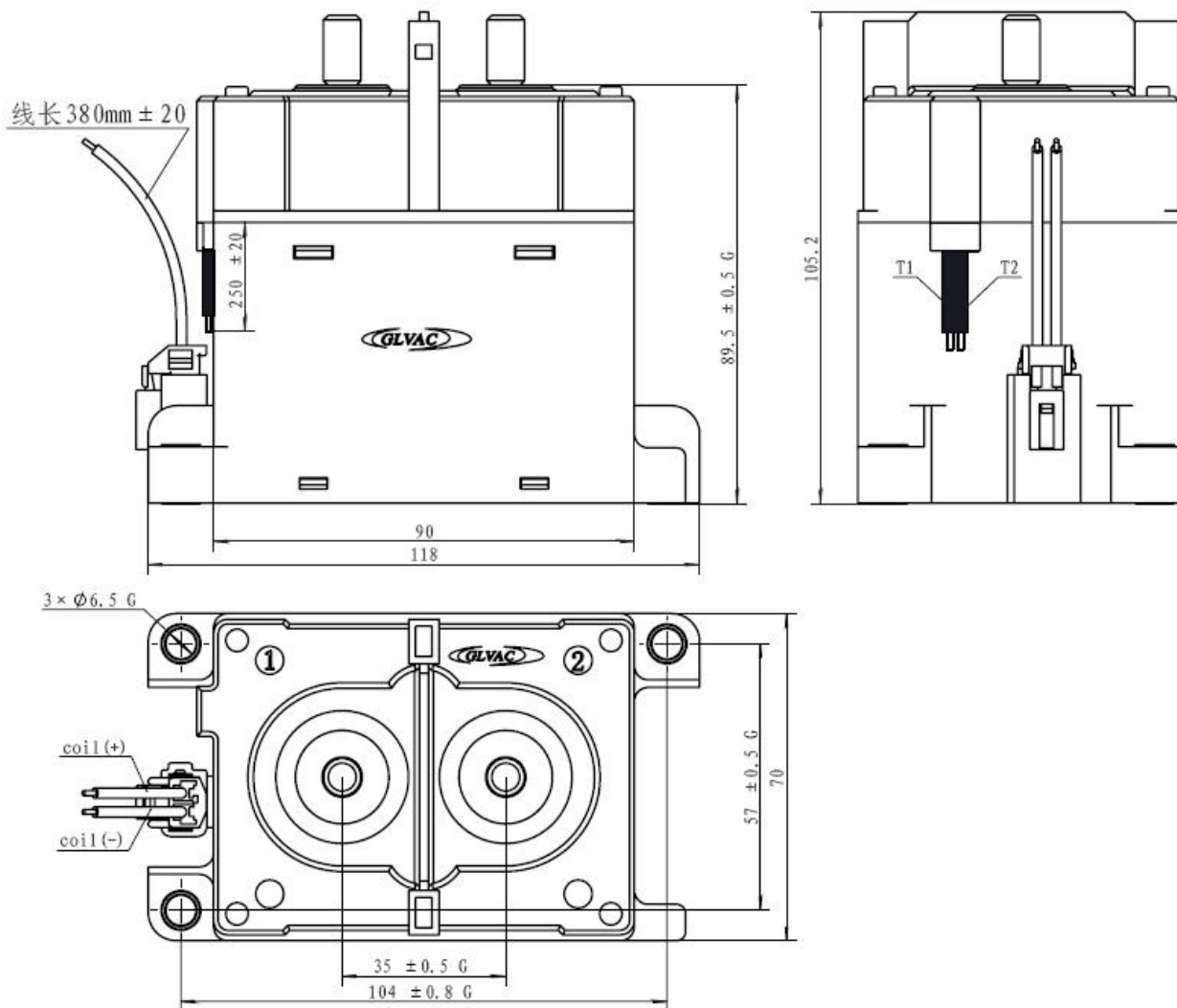
### ◇ 产品编号规则 Product Code Structure.

GLFWH	350	/ 1500	- T	A	C	4	- XXX
产品型号 Product type							
额定电流: Rated Current:	350: 350A						
负载电压: Contact Voltage:	1500:1500VDC						
线圈电压: Coil voltage:	T:24VDC 双线圈	S: 12VDC 双线圈					
	T: 24VDC Dual coil	S:12VDC Dual coil					
触点形式: Contact type	A:常开带辅助触点						
	A: Normally open auxiliary contact						
线圈引出形式: Coil Termination:	C:连接器形式						
	C: Connector form						
负载安装形式: Contact Termination	4: 外螺纹						
	4:Externai thread						
特殊特性号: Special Code:	XXX:客户需求(当客户存在特殊需求时使用)						
	XXX:customer demand(Only for special requirements)						

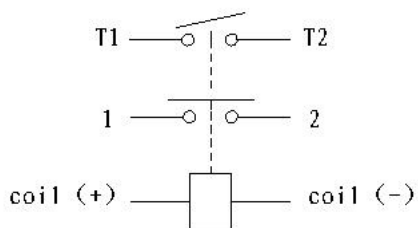


◇ 外形图 Outline Dimensions

产品型号 Product model: GLFWH350



◇ 接线图 Wiring Diagram



电路图

负载无极性，线圈有极性

The load is nonpolar, the coil has polarity



1. “G” 标记为重要管控尺寸;

The sizes marked with “G” are critical;

2. 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	±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 Sheathing	插针 Pin Insertion
矢崎 Yazaki	7283-1020	7116-4020
天海 THB	0435307	01175

4. 产品自带连接器插座，默认导线规格为AWM3321-22AWG导线长度1000mm。

Inquiry of product is own connector. The default wire specification is AWM3321-22AWG. The wire length is 1000mm.

5. 产品默认出货不含螺母、垫片、弹垫等安装配件。

The default product is shipped without nut, washers, spring washers and other installation accessories.

## ◇ 应用信息 Application Notes

1. 产品完全符合RoHS要求，对环境更友好。

Products meet RoHS and are better for the environment.

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 nut. Incorrect connection order can cause severe overheating.

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。

Please avoid foreign bodies, grease or corrosive liquids during installation, otherwise it will lead to abnormal heating at contact terminals.

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。

Please avoid installation in strong magnetic field(around the transformers, the magnet)and the heating objects nearby.

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。





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					
安装方式 Typical Installation	扭矩要求 Torque	破坏扭矩 Destructive Torque	建议铜排厚度 Recommended Copper Bar Thickness	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
M8 螺母 M8 nut	9~10N•m	≥18N•m	≤4mm	0.1	Φ8.1~Φ8.5mm

本体安装部分 Fixing of Body		
安装方式 Typical Installation	扭矩要求 Torque	破坏扭矩 Destructive Torque
M6 螺钉 M6 screw	6N•m~8N•m	≥18N•m

- 在接触器线圈端并联续流二极管作为抑制反向电压的措施，会延长接触器释放时间，导致产品切断性能有所下降。建议使用钳位电压为线圈额定电压 1.5 倍以上的双向稳压二极管、TVS 管等抑制线圈反向过电压。  
A parallel connection with diode for coil suppression can slow the release time of contactor, which may affect the break performance. Zener diode or TVS (Transient Voltage Suppressor) is recommended for back EMF suppression, but the clamp voltage of it should be 1.5 times larger than the coil rated voltage.
- 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。  
In a capacitive load, please pre-charge the capacitive load to make sure voltage difference less than 20V when contactor pick up. The contactor may have a contact welding without such action.
- 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.
- 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 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  $-40\text{ }^{\circ}\text{C}\sim 85\text{ }^{\circ}\text{C}$  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 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.

11. 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.

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.