



High Voltage DC Contactor

GLFY20 直流接触器



◇ 产品概述 Product Introduction

型号 Type	GLFY20
触点形式 Contact Arrangement	一组常开 1 Form A
触点材料 Contact Material	铜合金 Copper Alloy
密封类型 Seal Type	陶瓷密封 Ceramic Sealing
外形尺寸 Outline(L×W×H)	78mm×39.8mm×46.1mm
重量 Unit Weight	约 140g Approx.140g

◇ 线圈额定参数 Coil Characteristics

@-40°C~85°C						
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	释放电压 Drop-out Voltage V DC	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	$51.4 \times (1 \pm 10\%)$	$2.8 \times (1 \pm 10\%)$
24	18~32	单线圈 Single Coil	≤ 18	≥ 2	$205.7 \times (1 \pm 10\%)$	$2.8 \times (1 \pm 10\%)$



◇ 触点参数 Contact Characteristics

额定工作电流
Rated Load Current 20A (导线截面积 4mm²)
20A (wire cross-section 4mm²)

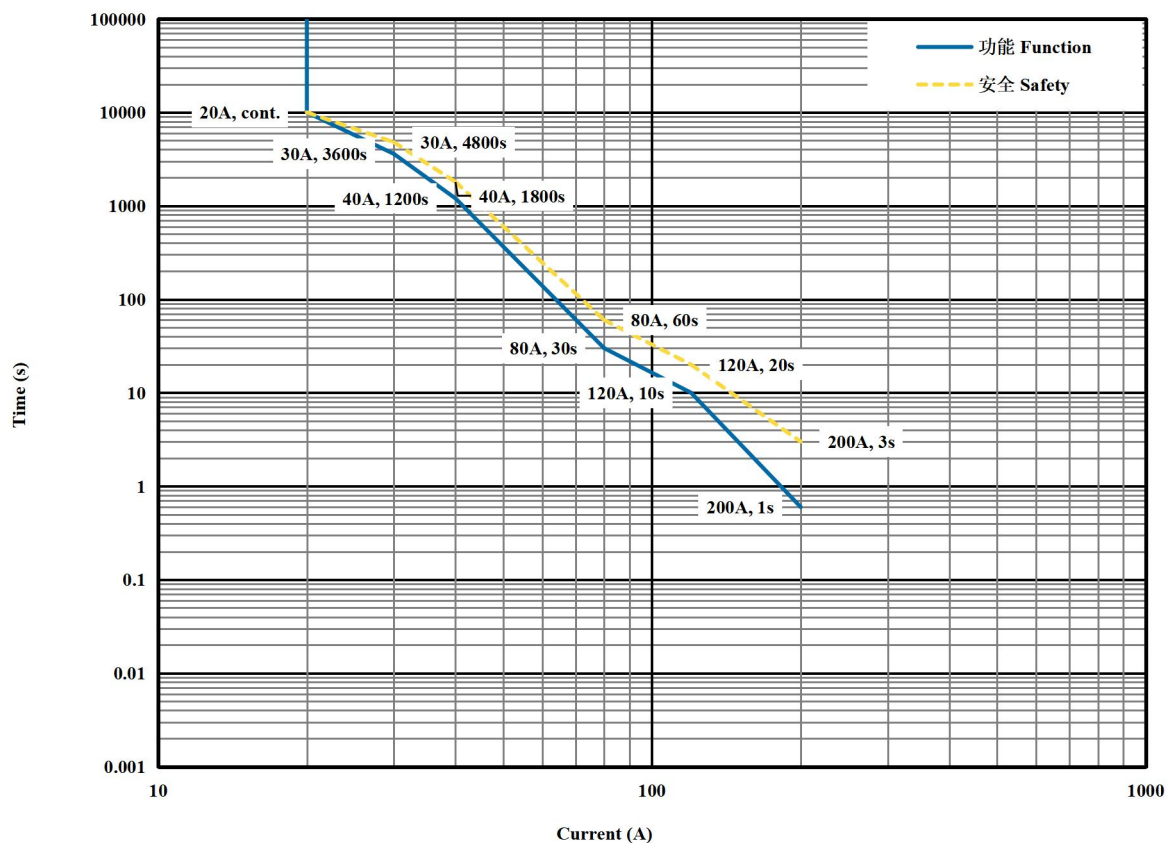
最大切断电流
Max. Breaking Current 200A 1000V DC 1次(op)

工作电压范围
Working Voltage Range 12~1000V DC

最小负载
Min. Applicable Load 1A 12V DC

接触电阻
Contact Resistance ≤4.5mΩ@ 20A

	20A 持续 cont.
	30A 1h
电流耐受(导体截面积 4mm ² , 85°C)	40A 20min
Current Endurance(Wire 4mm ² , 85°C)	80A 30s
	120A 10s
	200A 0.6s



电流耐受曲线
Current Endurance



注 (Notes):

1 环境温度为85℃，导线截面积≥4mm²。

The ambient temperature is 85℃,and the cross-section of the wire is ≥4mm².

2 设定的功能曲线温度上限为130℃，表示长期循环使用的最大能力；安全曲线温度上限180℃，表示短时过载耐受的最大能力；温度超过180℃时，接触器可能发生功能失效；建议正常工况在功能曲线以下使用。

The upper limit of the function temperature is 130℃, which indicates the maximum capacity of long-term recycling; and the upper limit of the safety temperature is 180℃,which indicates the maximum capacity of short-term overload tolerance. If the temperature exceeds 180℃, the contactor may lose function.It is recommended to use the contactor under the function curve at the normal conditions.

3 该曲线数据供设计参考，选型及短路匹配保险丝时以实际验证为准。

The data is for design reference, it shall be verified as actual for model selection and fuse mating short-circuit current test.

◇ 耐久性 Endurance

	通断 (Switching)
电耐久性 (阻性) Electrical Endurance(Resistive)	20A 450V DC 75000 次(ops)
	20A 750V DC 50000 次(ops)
	20A 1000V DC 30000 次(ops)
	接通 (Making)
	40A 1500V DC 15000 次(ops)
机械耐久性 Mechanical Endurance	200,000 次(ops)

注 (Notes):

1 以上数据仅供参考。

The data is for reference only.

2 铜排截面积: ≥4mm²。

The cross-section of busbar: ≥4mm².

3 以上数据是在阻性负载 (L/R≤1ms) 条件下测得，负载通断比: 0.6s:5.4s，环境温度: 23℃；以上数值会因负载类型、通断频率、环境条件等条件变化而发生改变，因此在使用时，推荐在实际负载下进行确认。

The data is measured under the resistive load(L/R≤1ms), the ratio: 0.6s on: 5.4s off, ambient temperature: 23℃; The values may change according to the load type, ratio, and environmental conditions. Therefore, it is recommended to confirm the values under actual load.

4 如无特殊说明，机械耐久性测试条件为常温(23℃)，负载 12V 1A，通断比为 0.5s:0.5s。

Unless otherwise specified, Electrical Endurance tests is under room temperature(23℃). The on-off ratio is:0.5s:0.5s,load 12V 1A.



◇ 性能参数 Performance

绝缘电阻（断开主触点间） Insulation Resistance（Open between main contacts）	试验前(Before Test): $\geq 1000\text{M}\Omega$ (@1000V DC) 试验后(After Test): $\geq 50\text{M}\Omega$ (@1000V DC)
绝缘电阻（主触点与线圈间） Insulation Resistance（Between main contact and coil）	试验前(Before Test): $\geq 1000\text{M}\Omega$ (@1000V DC) 试验后(After Test): $\geq 50\text{M}\Omega$ (@1000V DC)
介质耐压(断开主触点间,漏电流 $\leq 1\text{mA}$) Dielectric Strength(Open,between main 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(主触点与线圈间,漏电流 $\leq 1\text{mA}$) Dielectric Strength(Between main contacts and coil, 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)
吸合时间（线圈额定电压下, 23℃） Pick-up Time (At rated coil voltage, 23℃)	$\leq 30\text{ms}$
释放时间(线圈额定电压下, 23℃) Drop-out Time (At rated coil voltage, 23℃)	$\leq 10\text{ms}$
吸合回跳时间（线圈额定电压下, 23℃） Operate Bounce Time (At rated coil voltage, 23℃)	$\leq 5\text{ms}$
耐冲击-断开状态下误动作冲击 Shock-Functional Open	半正弦波, 11ms, 196m/s ² 1/2 sine, 11ms, 196m/s ²
耐冲击-闭合状态下误动作冲击 Shock-Functional Close	半正弦波, 11ms, 196m/s ² 1/2 sine, 11ms, 196m/s ²
耐冲击-强度冲击 Shock-Destructive	半正弦波, 6ms, 490m/s ² 1/2 sine, 6ms, 490m/s ²
随机振动 Random Vibration	10Hz~2000Hz, 57.9m/s ²

◇ 标准测试条件 Standard Test Condition

温度 Temperature	23℃ \pm 5℃
湿度 Humidity	25%~75%RH
方向 Direction of Test	立式 Vertical

◇ 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℃
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触点允许的最高温度(短时) Maximum allowable temperature of contacts(Short-time)	180°C
温度 Temperature	-40°C~+85°C
湿度 Humidity	5%~85%RH
海拔 Altitude	≤4000m
安装方向 Mounting Direction	任意 Random

◇ 贮存条件 Storage Condition

温度 Temperature	10°C~75°C
湿度 Humidity	5%~85%RH



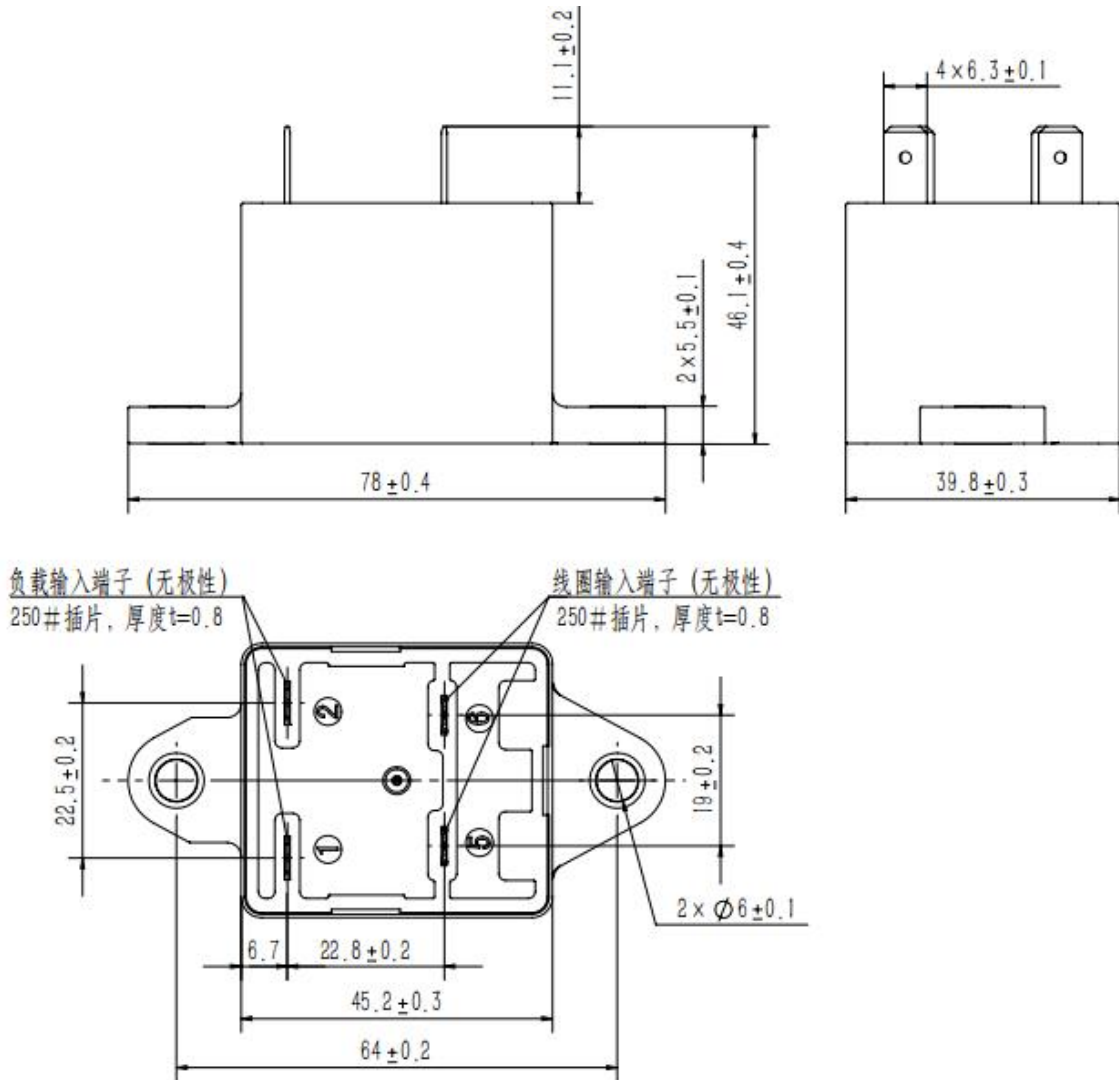
◇ 产品命名规则 Product Code Structure

	GLFY20	/1000	—X	—H	Q	2		-XXX	X
产品型号 Product Type									
负载电压 Contact Voltage	1000:1000V DC								
线圈电压 Coil Nominal Voltage	12:12V DC 24: 24V DC								
触点型式 Contact Arrangement	H: 1组常开型 H: 1 Form A								
线圈引出形式 Coil Termination	Q: QC 引出端 Q: QC Terminal								
负载引出形式 Contact Termination	2: QC 引出端 2: QC Terminal								
产品安装形式 Product Installation Form	无 none:立式安装 Vertical install								
客户代码 Customer Code	客户需求（当客户存在特殊需求时使用） Customer requirement(Only for special requirements)								
特性代码 Feature Code	产品特性（同型号产品不同特性要求时使用） Product characteristics (Only for different characteristics of the same product type)								



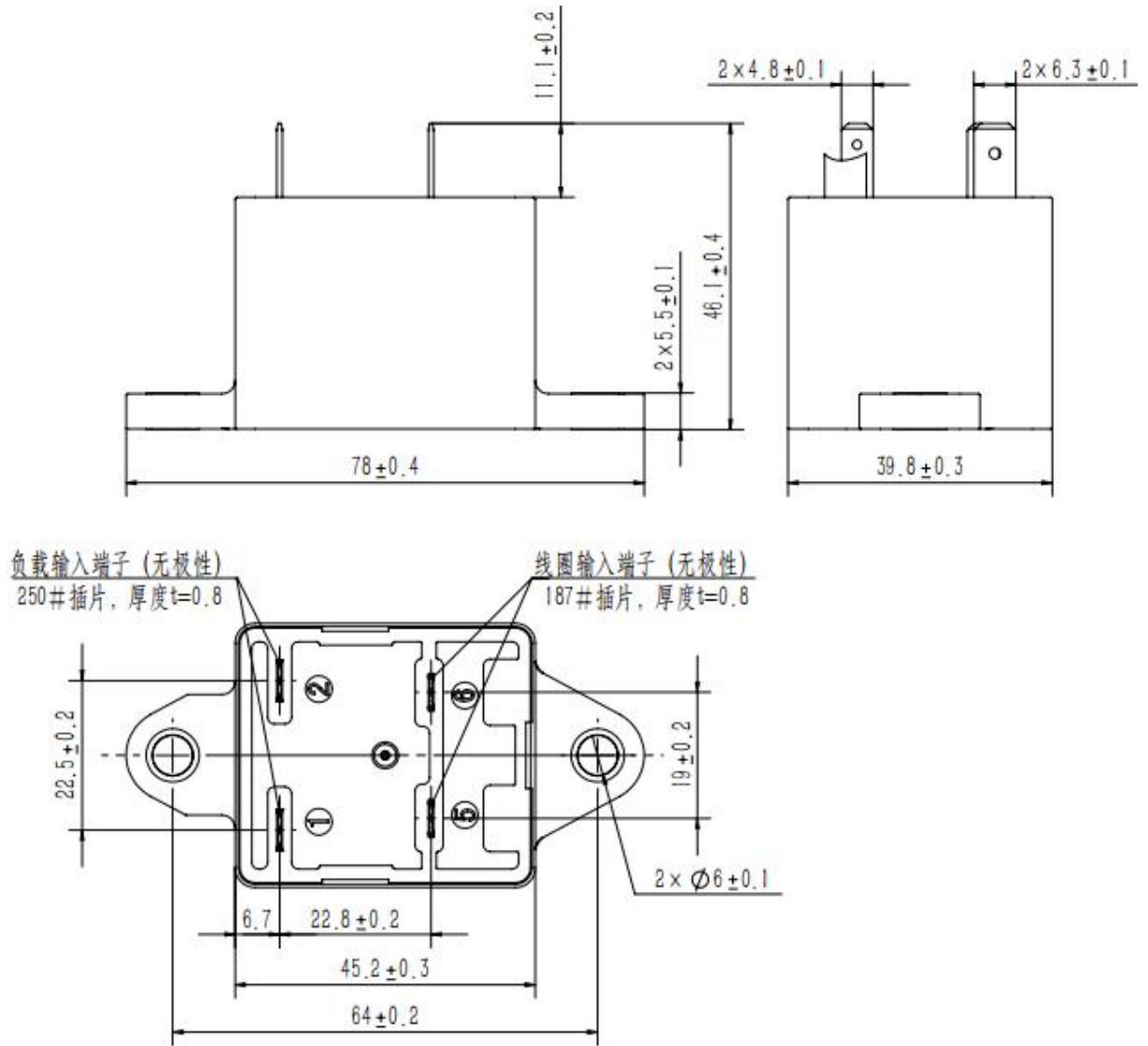
◇ 外形图 Outline Dimensions

产品型号 Product Type: GLFY20/1000-X-HQ2-1





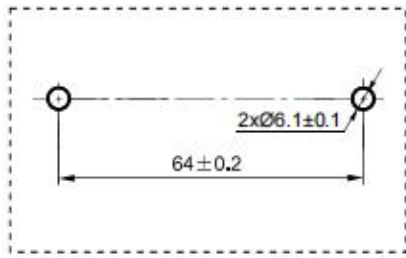
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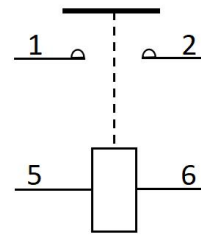


◇ 接线图 Circuit Diagram

安装孔尺寸 Mounting Hole



接线图 Terminal Arrangement



负载无极性，线圈无极性
The load is non-polarity, the coil is non-polarity

注(Notes):

1 所有尺寸单位为mm。

All dimensions are in mm.

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



◇ 应用信息 Application Notes

- 1 出货信息：产品默认出货不含连接器线束、螺钉、垫片、弹垫等安装配件。

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

- 2 产品符合UL94-V0阻燃等级。

Products meet UL94-V0.

- 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 around.) and should not be installed near heat source.

- 5 为防止出现松动，接触器安装时请使用垫圈，接触器负载端和线圈端引出脚允许的插拔力为49N，超出范围的情况下，可能会造成破损，其余注意事项请参照下表：

In case of loosening, please use washer when mount the contactor, the push and pull force for terminals is 49N for load terminals and 49N for coil term, The torque beyond the range may cause damage, Please refer to the following table for other precautions:

低压端安装部分 Installation at low voltage side		
安装方式 Installation Type	扭矩要求 Torque	破坏扭矩 Destructive Torque
M5 螺钉 M5 screw	3Nm~4Nm	≥6Nm

- 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、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 plus the unilateral TVS 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: $\geq 1J$

- 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.

- 8 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℃~85℃)环境中。

The contactor contacts are encapsulated in protection gas atmosphere, internal gas penetration with contact temperature changes(ambient temperature + electricity causes temperature rise). So please avoid using or storing beyond the allowable temperature range -40℃~85℃ for long time.

- 9 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.

- 10 产品完全符合RoHS2.0要求，对环境更友好。

Products meet RoHS2.0 and environment friendly.

- 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 storage conditions, storage over 1 years is not recommended to use.

- 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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