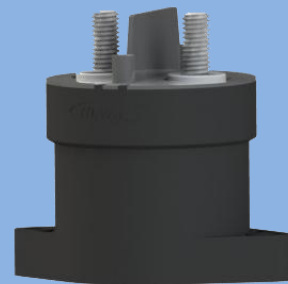




High Voltage DC Contactor

# GL250/1000V 型直流接触器



## ◇ 产品概述 Feature

名称 Product Name	直流接触器 DC Contactor
型号 Type	GL250
外形尺寸 Outline	80.4×57×72.5mm
触点形式 Contact Arrangement	单刀单掷-常开 SPST-NO
触点材料 Contact Material	铜合金 Copper Alloy
重量 Unit weight	约 380g Approx. 380g

## ◇ 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 (23℃)	释放电压 Release Voltage VDC (23℃)	线圈电阻 Coil Resistance Ω (23℃)	线圈额定功率 Rated Power W (23℃)
12-36	PWM	36	≤8.5	≥4.5	5.3×(1±7%)	启动: 约 27W (接通 0.3s) Switch on: Approx. 27W (making 0.3s) 保持: 约 2W Carrying: Approx. 2W



12	双线圈 Dual coil	16	$\leq 8.5$	$\geq 0.6$	启动: $3.1 \times (1 \pm 7\%)$ Switch on: $3.1 \times (1 \pm 7\%)$ 保持: $53 \times (1 \pm 7\%)$ Carrying: $53 \times (1 \pm 7\%)$	启动: 约 46W (接通 0.3s) Switch on: Approx. 46W (making 0.3s) 保持: 约 2.8W Carrying: Approx. 2.8W
24	双线圈 Dual coil	32	$\leq 15$	$\geq 1.2$	启动: $15.3 \times (1 \pm 7\%)$ Switch on: $15.3 \times (1 \pm 7\%)$ 保持: $270 \times (1 \pm 7\%)$ Carrying: $270 \times (1 \pm 7\%)$	启动: 约 37.6W (接通 0.3s) Switch on: Approx. 37.6W (making 0.3s) 保持: 约 2.2W Carrying: Approx. 2.2W

#### ◇ 触点参数 Contact Specification

额定工作电压 Rated voltage	1000VDC
额定工作电流 Rated current	250A (导体截面积 150mm <sup>2</sup> ) 250A (with 150mm <sup>2</sup> cable)
最大切断电流 Max. breaking current	1600A 320VDC 1次 (ops)
工作电压范围 Working voltage range	12-1000VDC
最小负载 Min. load	1A 12VDC
接触电阻 Contact Resistance	$< 0.4m\Omega @ 250A$
短时通电流 (导体截面积 150mm <sup>2</sup> ) Current Carrying Capacity (with 150mm <sup>2</sup> cable)	320A 10min 480A 1min 1600A 1s

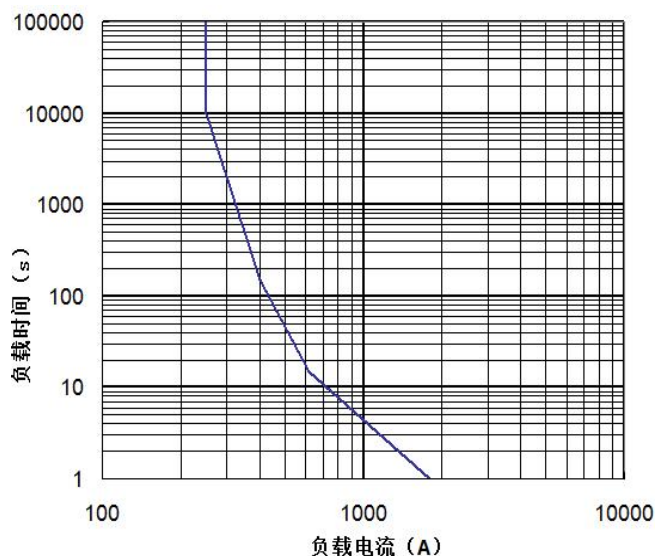


图 1、触点承载电流能力

Figure 1. Current carrying capacity

## 耐久性 Endurance

阻性负载 <sup>1</sup> Resistive load <sup>1</sup>	通断(making & breaking):	200A 20VDC	100,000 次(ops)
		250A 450VDC	1,000 次(ops)
	切断(breaking):	250A 750VDC	600 次(ops)
		250A 1000VDC	400 次(ops)
机械寿命 Mechanical life		300,000 次(ops)	

注：1、如无特殊说明，测试条件为常温，通断比为 0.6s:5.4s。

Note 1. 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:  $\geq 1000\text{M}\Omega$  (at 1000VDC)  
试验后After Test  $\geq 50\text{M}\Omega$  (at 1000VDC)

绝缘电阻（触点与线圈间）  
Insulation Resistance  
(Between contact and coil)

试验前Before Test:  $\geq 1000\text{M}\Omega$  (at 1000VDC)  
试验后After Test:  $\geq 50\text{M}\Omega$  (at 1000VDC)

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:  $\geq 2500\text{VAC}$ , (50/60 Hz 1min)  
试验后After Test:  $\geq 1875\text{VAC}$ , (50/60 Hz 1min)



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:  $\geq 2500\text{VAC}$ , (50/60 Hz 1min)

试验后After Test:  $1875\text{VAC}$ , (50/60 Hz 1min)

动作时间(线圈额定电压下, 23°C)

Operate Time (At rated coil voltage, 23°C)

$\leq 25\text{ms}$

释放时间(线圈额定电压下, 23°C)

Release Time (At rated coil voltage, 23°C)

$\leq 10\text{ms}$

回跳时间(线圈额定电压, 23°C)

Bounce Time (At rated coil voltage, 23°C)

$\leq 5\text{ms}$

耐冲击-误动作冲击

Shock - Functional

ON: 半正弦波, 11ms,  $196\text{m/s}^2$

ON: 1/2 sine, 11ms,  $196\text{m/s}^2$

OFF: 半正弦波, 11ms,  $98\text{m/s}^2$

OFF: 1/2 sine, 11ms,  $98\text{m/s}^2$

耐冲击-强度冲击

Shock - Destructive

半正弦波, 6ms,  $490\text{m/s}^2$

1/2 sine, 6ms,  $490\text{m/s}^2$

随机振动

Vibration

10-2000 Hz,  $57.9\text{m/s}^2$

## ◇ 标准测试条件 Standard Test Condition

温度

Temperature

$23 \pm 5^\circ\text{C}$

湿度

Humidity

25%~75%RH

测试方向

Direction of Measurement

竖直 Vertical

## ◇ 使用条件 Operating Condition

温度

Temperature

$-40^\circ\text{C} \sim +85^\circ\text{C}$

湿度

Humidity

5%~85%RH

安装方向

Mounting Direction

竖直 Vertical

## ◇ 贮存条件 Storage Condition



温度  
Temperature 5℃~30℃

湿度  
Humidity 35%~70%RH

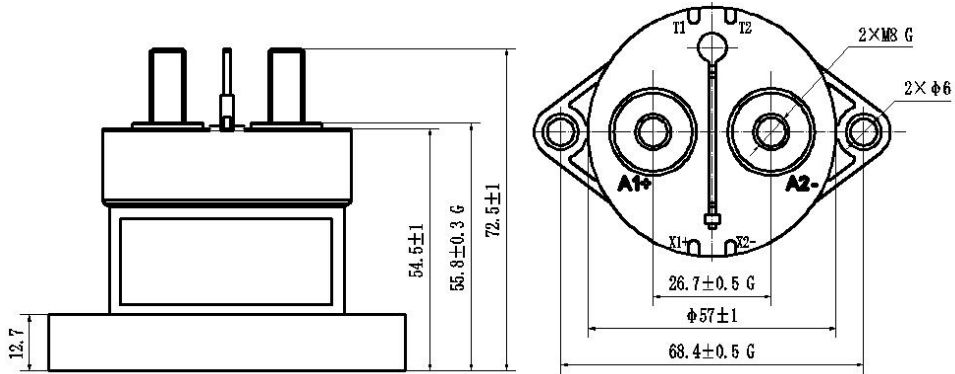
### ◇ 产品编号规则 Product Code Structure

	GL250	/1000	-A	-A	L	4	N	XXX
产品型号 Product type								
负载电压 Contact Voltage	1000:1000VDC							
线圈电压 Coil voltage	A:12-36VDC S:12VDC T:24VDC							
触点形式 Contact type	H:常开型 Normally open type A:常开带辅助触点 Normally open with auxiliary contacts							
线圈引出形式 Coil Termination	L: 引出线形式 Outgoing line termination C: 连接器形式 Connector termination P: PCB 板连接 PCB termination							
负载引出形式 Contact Termination	4: 外螺纹 External thread 5: 内螺纹 Internal Thread							
外壳结构 Shell structure	无 None: 标准安装脚 Standard Mounting N: 无安装脚 No Mounting							
客户代码 Customer code	无None: 标准型Standard XXX: 客户定制							

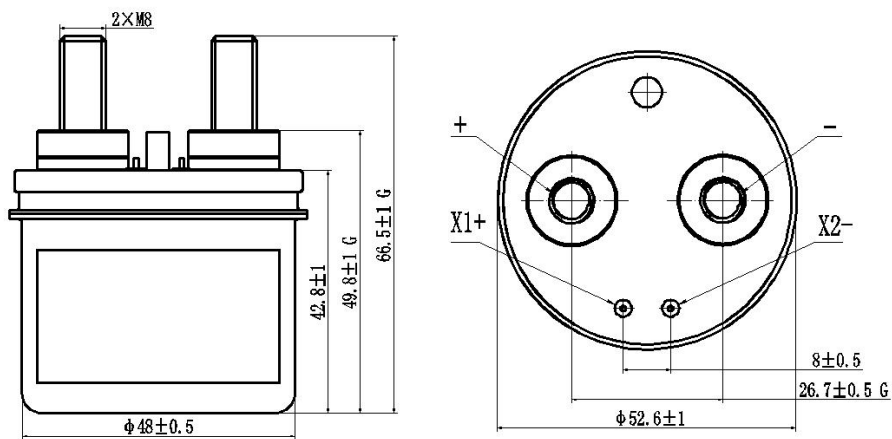


外形图 Outline dimensions:

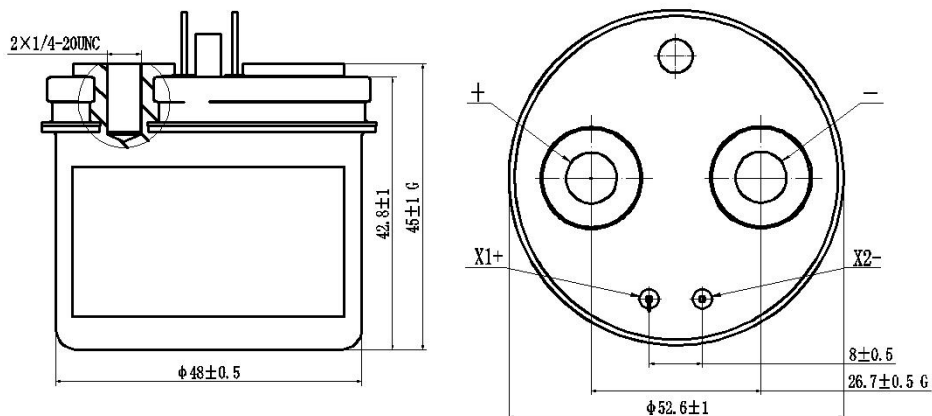
产品型号 Product model: GL250/1000-\*-\*4



产品型号 Product model: GL250/1000-\*-\*4N



产品型号 Product model: GL250/1000-\*-\*5N





## 接线图 Wiring diagram



负载和线圈有极性

The load and coil have polarity

注: Note:

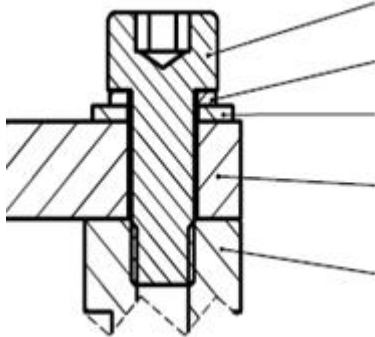
1. G 标记为重要管控尺寸。The sizes marked with G are critical.
2. 产品外形尺寸未注公差。Outline dimensions hadn't specified tolerance.

尺寸	<10	10~50	>50
公差	±0.3	±0.5	±0.8

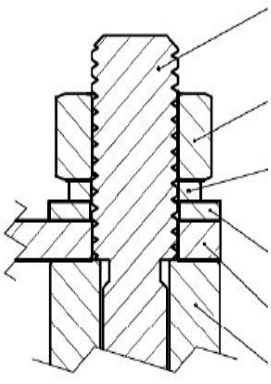
3. 外螺纹产品出厂附带 M8 螺母安装组件用于负载端导体安装。External thread products factory shipped with M8 nut mounting assembly for load end conductor installation.

## 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 screw. Incorrect connection order can cause severe overheating.

产品类型 Contact type	连接示意图 Connection diagram
内螺纹 Internal Thread	 <p>螺钉 Screw</p> <p>弹垫 Spring washer</p> <p>平垫 Plain washer</p> <p>导电铜排（或电缆引出片） Electric conduction copper busbar (or cable leading-out terminal)</p> <p>触点端面 Contactor surface</p>



<p>外螺纹 External Thread</p>		<p>螺柱 Stud 螺母 Nut 弹垫 Spring washer 平垫 Plain washer 铜排（或电缆引出片） Copper busbar (or cable leading-out terminal) 触点端面 Contactor surface</p>
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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.

产品类型 product type	负载端安装部分 Fixing of contact			接触器本体安装部分 Fixing of contactor body	
	安装方式 Screw type	扭矩要求 Torque	建议信息 Suggested information	安装方式 Screw type	扭矩要求 Torque
外螺纹 External thread	M8 螺母 M8 nut	9-10 N•m	建议铜排厚度≤4mm the thickness of copper busbar≤4mm	M5 螺母 M5 nut	3-4 N•m
内螺纹 Internal Thread	1/4 螺钉 1/4 screw	6-8 N•m	建议螺纹旋合长度≥7mm The length of thread engagement≥7mm	/	/

6. 本接触器内部线圈驱动端已内置反峰电压抑制元件。The drive end of the inner coil of the contactor has built-in anti peak voltage suppression element.
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。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.
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。In an inductive load, a parallel connection with surge absorber is





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recommended in the inductive load. It may weaken the break performance if without such protection.

9. 继电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 relay 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.
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. 接触器存储时间为三年，超过三年不建议使用。Contactor storage time for 3 years, more than 3 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 GLVAC for more info or support.