



产品规格书

Relay Specification Sheet

产品名称 Product Name: 继电器 RELAY

产品型号 Product model: HLC-S-12DAT L

产品料号 Product Material Code:

客户名称 Customer name:

客户料号 Customer Material Code:

版本 Version: V1.2

发布日期 Date: 2024 年 8 月 26 日

禾晨审批签字 Signature by golden			顾客签字或盖章 Stamp or signature by customer
批准 Approved	审核 Check	拟制 Make	负责人 by: 日期 date:



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一、线圈参数Coil specification

(1)	额定电压 Nominal Voltage	DC 12V
(2)	线圈阻抗 Coil Resistance	$160\Omega \pm 10\%$ (at $23 \pm 5^\circ\text{C}$)
(3)	额定电流 Rated current	DC 75mA $\pm 10\%$ (at $23 \pm 5^\circ\text{C}$)
(4)	最大允许线圈电压 Max. Allowable Coil Voltage	15.6Vdc (130% of nominal voltage)
(5)	线圈温升 Coil Temperature Rise	$\leq 60\text{K}$ (Coil:12V)

注: 最大允许线圈电压是指继电器线圈在短时间内承受的最大电压值。

二、触点参数Contact Specification

(1)	触点材质 Contact Material	银合金 Silver alloy
(2)	触点型式 Contact Configuration	SPST (1 Form A) 一单刀单掷 (一组常开)
(3)	最大切换电流 Max.Contact Current	40A
(4)	最大切换电压 Max.Contact Voltage	277VAC
(5)	最大切换功率 Max.Allowable Capacity	11080VA
(6)	触点温升 Contact Temperature Rise	$\leq 60\text{K}$ (Contact:40A)
(7)	触点额定负载 Contact Rating	40A 277VAC (Resistive load) 30A 277VAC (Resistive load) 25A 277VAC (Resistive load)

注: 最大切换电流是指继电器所能承受的极限值, 在切换电压降低时, 不可按如下公式进行换算切换电流进行使用:
最大切换功率 \div 切换电压 = 切换电流

三、通用参数 General Specification

(1)	接触电阻 Contact Resistance		≤100 mΩ Initial(初始值) (At DC6V 1A)
(2)	动作电压 Operate voltage		≤9VDC(at 23±5℃)
(3)	释放电压 Release voltage		≥0.6VDC (at 23±5℃)
(4)	动作时间 Operate time		≤15ms
(5)	释放时间 Release time		≤10ms
(6)	介质耐压 Dielectric Strength	触点间 between open contacts	1500VAC, 50/60 HZ for 1 Minute (漏电流 Leak Current:1mA)
		线圈与触点间 between contacts and coil	2500VAC, 50/60 HZ for 1 Minute (漏电流 Leak Current:1mA)
(7)	绝缘电阻 Insulation Resistance	触点间 between open contacts	≥1000M Ω (500VDC)
		线圈与触点间 between contacts and coil	≥1000M Ω (500VDC)
(8)	寿命 Life	电气寿命 Electrically	25A 277VAC:1X10 ⁵ 次(6次/分钟) ON:1S OFF:9S 30A 277VAC:5X10 ⁴ 次(6次/分钟) ON:1S OFF:9S 40A 277VAC:6X10 ³ 次(6次/分钟) ON:1S OFF:9S
		机械寿命 Mechanically	1X10 ⁶ 次(300次/分钟)

注: 1. 以上均为初始值, 动作电压和释放电压仅供检测用, 不是设计的使用指标。

2. 电气寿命是在常温条件下外壳开孔测试数据



四、安规认证 Safety Certification

认证 Certified	UL/CUL	CQC	TUV
证书编号File No.	E468064	CQC19002212572	B 085512 0004

上述认证号代表该产品取得相关认证, 但具体认证内容请以我公司提交的证书为准。

The authentication number represents the product to obtain the relevant certification, but the specific certification to certificate our company, please submit prevail.

五、环境参数Environmental Characteristics

5.1 振动 Vibration

强度: 1.5mm双振幅, 10~55Hz, 3小时。继电器外观、结构和性能不应有异常。 Durability: 1.5mm Double amplitude ,10 to 55Hz, 3 hours. It shall be no abnormalities in appearance, construction and performance.

5.2 冲击 Shock

稳定性: 98m/s² (10g), 6次(X、Y、Z 三个方向中的每个方向), 闭合回路的断开或开路回路的闭合时间应不超过100 μs。 Malfunction:98m/s² (10g), 6 shocks(each direction of X,Y,Z),No opening of any closed contact circuit of no closing of any opened contact circuit shall exceed 100 μs.

强度: 980m/s² (100g), 6次(X、Y、Z三个方向中的每个方向), 继电器外观、结构和性能不应有异常。 Durability: 980m/s² (100g), 6 shocks (each direction of X,Y,Z), It shall be no abnormalities in appearance, construction and performance.

5.3 耐温性 Temperature Resistance

(1) 耐热 Heat Resistance

85±2℃温度中放置2小时, 恢复常温2小时后, 继电器的结构及性能应无异常。 Must be free from any abnormality in both the construction and characteristics after the relay is lift in a temperature of 85±2℃ for 2h and then in room temperature and humidity for 2h.

(2) 耐寒 Cold Resistance

-40±2℃温度中放置2小时, 恢复常温2小时后, 继电器的结构及性能应无异常。 Must be free from any abnormality in both the construction and characteristics after the relay is lift in a temperature of -40±2℃ for 2h and then in room temperature and humidity for 2h.

5.4 耐湿性 Moisture Resistance

在温度 40±2℃ 相对湿度 90~95%RH 中放置 48 小时, 恢复常温常湿 2 小时后, 继电器的结构及性能应无异常。且绝缘电阻应不小于 50MΩ min。(500VDC) Must be free from any abnormality in both the construction and characteristics after the relay is lift in a temperature of 40±2℃,and humidity of 90% to 95% RH for 48h and then in room temperature and humidity for 2h. Insulation resistance however must be no less than 50MΩ min. (500VDC)



六、端子性能 Terminal characteristics

6.1 端子强度 Terminal Strength: 5N 1 分钟(minute)

端子在插入方向上施加5N的拉力,继电器应无异常。(端子微弯可以接受) At push in direction the terminal can endure 5N force for 1 minute, It Shall be no abnormalities. (a little curving of the terminals shall be Acceptable)

6.2 耐焊接热 Soldering Heat Resistance: $260\pm 5^{\circ}\text{C}$, 10s.

继电器应无异常。 There shall be no abnormalities.

6.3 焊接性能 Soldering Ability: $240\pm 5^{\circ}\text{C}$, $3\pm 0.5\text{s}$.

引出端被浸锡部分应有90%以上连续覆上一层锡层。 90% of the dipped portion shall be soldered.

七. 标准测试条件 Standards Test Condition

7.1 温度 Temperature: $23\pm 5^{\circ}\text{C}$

7.2 湿度 Humidity: $60 \pm 10\% \text{ RH}$

7.3 方向 Direction of Measurement:

引出脚向下为标准方向。 Terminals down position is standard position

八. 使用条件 Operating Condition

8.1 温度 Temperature: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

8.2 湿度 Humidity: $5\% \sim 85\% \text{ RH}$

8.3 安装方向 Mounting Direction:

引出脚向下为标准方向。 Terminals down position is standard position

九. 贮存条件 Storage Condition

9.1 温度 Temperature: $0^{\circ}\text{C} \sim +40^{\circ}\text{C}$

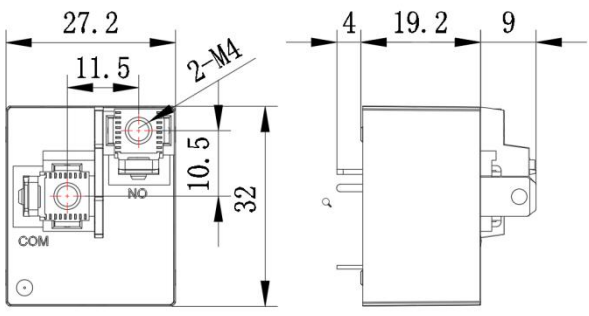
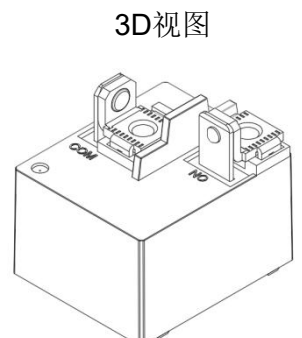
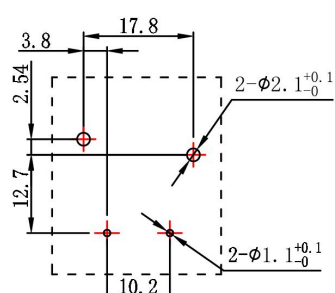
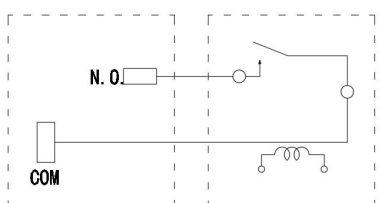
9.2 湿度 Humidity: $< 80\% \text{ RH}$

9.3 环境 Environment


(1) 产品贮存场地不能有腐蚀性气体 Store in locations where the product is not exposed to corrosive gas.

(2) 贮存中应避免阳光直照产品 Keep product is not exposed to the direct ray of the sun.

十. 产品结构 Configuration

<p>外形图 OUTLINE DIMENSIONS</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;">   </div> <p style="text-align: right;">3D视图</p> <div style="margin-top: 20px;"> <p>产品外形尺寸未注尺寸公差 Outline dimensions hadn't specified tolerance</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">外形尺寸 Outline Dimensions</th><th style="padding: 5px;">公差 Tolerance</th></tr> </thead> <tbody> <tr> <td style="padding: 5px;">$\leq 1\text{mm}$</td><td style="padding: 5px;">$\pm 0.2\text{mm}$</td></tr> <tr> <td style="padding: 5px;">$1 \sim 5\text{mm}$</td><td style="padding: 5px;">$\pm 0.3\text{mm}$</td></tr> <tr> <td style="padding: 5px;">$> 5\text{mm}$</td><td style="padding: 5px;">$\pm 0.4\text{mm}$</td></tr> </tbody> </table> </div> <p>注: 1、引出脚尺寸为预焊前尺寸, 引出端长度尺寸不包含锡尖尺寸, 沾锡后锡尖长度不超过1mm</p>	外形尺寸 Outline Dimensions	公差 Tolerance	$\leq 1\text{mm}$	$\pm 0.2\text{mm}$	$1 \sim 5\text{mm}$	$\pm 0.3\text{mm}$	$> 5\text{mm}$	$\pm 0.4\text{mm}$
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<p>安装孔尺寸 (底视图) PCB layout (Bottom View)</p>	 <p style="text-align: right;">TOLERANCE: ± 0.1</p>								
<p>接线图 (底视图) WIRING DIAGRAM (Bottom View)</p>	<div style="display: flex; justify-content: space-around; align-items: center;">  </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> (顶视图) (底视图) </div>								

十一、印字图 Marking

标识 Logo		Eng. Change	
		Initial Issued	2023-12-25
			
<p>NOTE:</p> <ol style="list-style-type: none"> “2312A5”标识, 是生产批次信息 Marking“2312A5”is the production date and batch number; 标识的内容/意义如下 The meaning of the marking according to below; <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>2 3 1 2 A 5</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">内部标识: 0~99</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> 线别标识: A~Z A:1线白班 B:2线白班 C:3线白班 D:4线白班 E:1线夜班 F:2线夜班 G:3线夜班 H:4线夜班 </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">周期标识:01~53</div> <div style="border: 1px solid black; padding: 5px;">年份标识:年份后两位,例如2022就为22</div> </div> </div> <ol style="list-style-type: none"> 如果没有标识的, 就是客户没要求标识; 或是其他标识意义 May have no the marking if customer have no demand;or other marks. 		<p>根据客户需求添加批号Add the batch number according the demand of customer.</p>	

十二、包装信息Packing Information

P/N	Inner packing	Carton Dimensions L×W×H (cm)	QTY (PCS) /carton	Net weight (Kg)	Gross weight (Kg)
HLC	50pcs/plate	46X32.5X22	500	/	/

十三、命名规则 Encoding Information

<u>HLC</u>	-	<u>S</u>	-	<u>12</u>	<u>D</u>	<u>A</u>	<u>T</u>	<u>XXX</u>
1		2		3	4	5	6	7

1. 产品型号

HLC

2. 封装方式

S--防焊剂型 SH--密封型

3. 线圈额定电压

5--5VDC 6--6VDC 9--9VDC
12--12VDC 24--24VDC 48--48VDC

4. 线圈功耗

D--0.9W

5. 触点形式

A--常开型 C--转换型

6. 触点材质

无--标准型 T--AgSnO₂

7. 特殊代码

无--标准型 数字或字母--其他
L--顶面端子为锁螺丝结构

十四、特别提醒Reminds

- 14.1 如有任何特殊要求, 请联系禾晨公司。Any special requirements, please contact HONCHIN.
- 14.2 在诸如H₂S、SO₂或NO₂有害气体的环境中, 推荐选用完全密封型产品。Under the Environment with dangerous gas such as H₂S, SO₂ or NO₂, fully sealed type is recommended.
- 14.3 如果环境允许, 优先选用防焊剂型产品。If the ambience allows, flux proof type is preferentially recommended.
- 14.4 如果客户需要用超声波设备清洗PCB和继电器, 则必须选用完全密封型产品。If the user washes the PCB and relay in the ultrasonic cleaner, fully sealed type must be selected.
- 14.5 规格书内的各项性能参数是基于标准测试条件下测得的初始值。All the performance data listed in the datasheet are the initial values tested under standard
- 14.6 避免在强磁场条件下使用继电器, 外界强磁场会造成继电器动作和释放等参数发生变化。To avoid using relays under strong magnetic field because it will change the parameters of relay such as pull-in and drop-out voltage.
- 14.7 为了保持继电器的性能, 请注意不要使继电器掉落或受到强冲击。掉落后的继电器建议不再使用。To maintain the performances of relays, please do not make the relay drop or be shocked strongly. Suggest that the relays dropped not be used.

十五、主要零部件 Important Part And Components

序号 Serial No.	零部件名称 Part And Components Name	材料名称 Material Name	数量 quantity
1	骨架 Bobbin	工程塑料 Industry plastic	1
2	外壳 Case	工程塑料 Industry plastic	1
3	底板 Base	工程塑料 Industry plastic	
4	铁芯 Core	电工纯铁 Iron	1
5	衔铁 Armature	电工纯铁 Iron	1
6	动簧片 Movable spring	铜合金 Copper alloy	1
7	轭铁 Yoke	电工纯铁 Iron	1
8	动触点 Movable contact	银合金 Ag alloy	1
9	静触点 Stationary contact	银合金 Ag alloy	1
10	M端子 Stationary spring	铜合金 Copper alloy	1
11	假B脚 Stationary spring	电工纯铁 Iron	1
12	螺纹端子	铜合金 Copper alloy	2
13	铆钉	铜合金 Copper alloy	2
14	COM端子	铜合金 Copper alloy	1
15	线圈端子 Coil terminal	铜包钢线 HCP wire	2
16	漆包线 Copper wire	3UEW/155℃	/
17	密封胶 sealant	EPOXY	/