

# RELAY SPECIFICATION

## 继电器规格书

(File No.: 001008 / Version: 00 / Issued Date: Jan 12th, 2017)

Product Description (品名)           **CHAR-112A100T**  
Part Number (编码)  
Customer name (客户)

### Customer Approval (客户批准)

STAMPING AREA (盖章处)

Issued (发行)	Checked (审核)	Approved (承认)
<b>Tie. Kang</b>	-----	<b>Colon. Lin</b>

**Standard 符合标准**

According to GB/T 21711.1-2008  
 符合标准

**COIL CHARACTERISTICS 线圈特性**

Coil resistance 线圈电阻	45±10%Ω
Rated voltage 额定电压	12VDC
Max. allowable voltage 最大允许电压	130% of rated coil voltage
Rated power 额定功率	3.2W
Operate voltage 吸合电压	≤9.0VDC
Release voltage 释放电压	≥0.6VDC
Hold voltage 保持电压	≤6.6V(at 85°C) ( at 0.97W)

**CONTACT RATINGS 触点规格**

Contact configuration(Normally Open) 触点结构 (常开触点)	1 Form X
CONTACT GAP 触点间隙	≥3.60mm
Contact material 触点材料	Ag Alloy
Initial voltage drop 初始接点压降	50mV at 100A
Rated insulation voltage 额定绝缘电压	500VAC
Rated switching voltage 额定切换电压	400VAC
Rated current 额定电流	100A
Max. breaking current 最大切换电流	120A
Max. switching power 最大切换功率	48,000VA
Rated switching power 额定切换功率	40,000VA

Minimum applicable load 最小使用负载	48VDC/48VAC 100mA
Operate time 吸合时间	≤30ms, excluding bounce time ≤30ms, 不含触点抖动时间
Release time 释放时间	≤30ms, excluding bounce time ≤30ms, 不含触点抖动时间
Mechanical endurance 机械寿命	1 Million cycles, 150 cycles/minute
Electrical endurance (Resistive Load) 电气寿命 (阻性负载)	电压: 400VAC, 电流: 启动时 60A/0.15S→通电时 100A/0.7S→遮断开 60A/0.15S, 1 秒 ON / 9 秒 OFF, 30K cycles, 线圈通电 1 秒(100%Us 为 0.1 秒→下降保持 58.3%) / 9 秒 OFF
Voltage drop after electrical endurance 电气寿命后的接点压降	50mV at 100A
<b>INSULATION PERFORMANCE 绝缘性能</b>	
Dielectric strength 介电强度	2500VAC 1minute, between open contacts 2500VAC 1 分钟 (断开触点间) 4000VAC 1minute, between coil to contacts 4000VAC 1 分钟 (线圈与触点间)
Impulse withstand voltage 耐浪涌电压	6KV (1.2/50 μs), between coil to contacts 6KV (线圈与触点间)
Insulation resistance 绝缘电阻	100MΩ at 500VDC, between open contacts and coil to contacts 100MΩ at 500VDC (断开触点间及线圈与触点间)
Insulation systems (UL) 绝缘系统	155 (F) File No. E341422
Insulation type 绝缘类型	Functional insulation, between open contacts 功能绝缘 (断开触点间) Basic insulation, between coil to contacts 基本绝缘 (线圈与触点间)
Pollution degree 污染等级	2
<b>ENVIRONMENT PERFORMANCE 环境性能</b>	
Category of protection (IEC61810-1) 密封类型	RT II (Flux proof) 防助焊剂渗入
Operating temperature	-40~85℃

工作温度 Operating humidity	20~85%RH
工作湿度 Storage temperature	-40~85℃
储藏温度 Storage humidity	20~85%RH
储藏湿度 Vibration resistance 耐振动	<p>(1) Capability to function during vibration</p> <p>No opening or closing of any closed or opened contact circuit respectively exceed 1ms when the relay is subjected to vibration of 10~55Hz and 1.5mm dual amplitude in each of three mutually perpendicular axes for 10 minutes respectively, while it is in operate condition and in release condition.</p> <p>抗误动作能力</p> <p>动作/释放状态下，继电器在三个轴向耐受频率10~55Hz及振幅1.5mm的振动各10分钟，触点误动作不超过1毫秒。</p> <p>(2) Capability to function after vibration</p> <p>No trouble on structure and characteristics after the relay is subjected to vibration of 10~55Hz and 1.5mm dual amplitude in each of three mutually perpendicular axes for 2 hours respectively.</p> <p>振动耐久能力</p> <p>继电器在三个轴向耐受振幅1.5mm及频率10~55Hz的振动各2小时，产品构造和性能无异常发生。</p>
Shock resistance 耐冲击	<p>(1) Capability to function during shock</p> <p>No opening or closing of any closed or opened contact circuit respectively exceed 1ms when the relay is subjected to shock of <math>98.1\text{m/s}^2</math> for 11ms in both directions of each of three mutually perpendicular axes for 3 times respectively, while it is in operate condition and in release condition.</p> <p>抗误动作能力</p> <p>动作/释放状态下，继电器在三轴六方向耐受加速度<math>98.1\text{m/s}^2</math>及作用时间11毫秒的冲击各3次，触点误动作不超过1毫秒。</p> <p>(2) Capability to function after shock</p> <p>No trouble on structure and characteristics after the</p>

Cold resistance

耐低温

relay is subjected to shock of  $981\text{m/s}^2$  for 6ms in both directions of each of three mutually perpendicular axes for 3 times respectively.

冲击耐久能力

继电器在三轴六方向耐受加速度 $981\text{m/s}^2$ 及作用时间6毫秒的冲击各3次，产品构造和性能无异常发生。

No trouble on structure and characteristics after placed at  $-40^\circ\text{C}$  for 240 hours and 2 hours recovery in standard atmospheric conditions.

$-40^\circ\text{C}$ 中放置240小时并在标准大气条件中恢复2小时后继电器构造和特性无异常。

Thermal resistance

耐高温

No trouble on structure and characteristics after placed at  $85^\circ\text{C}$  for 240 hours and 2 hours recovery in standard atmospheric conditions.

$85^\circ\text{C}$ 中放置 240 小时并在标准大气条件中恢复 2 小时后继电器构造和特性无异常。

Humidity resistance

耐湿度

No trouble on structure and characteristics after placed at  $40^\circ\text{C}\&95\%\text{RH}$  for 240 hours and 2 hours recovery in standard atmospheric conditions.

$40^\circ\text{C}$ 及 $95\%$ 相对湿度中放置240小时并在标准大气条件中恢复2小时后继电器构造和特性无异常。

Thermal shock resistance

耐冷热冲击

No trouble on structure and characteristics after endure 100 cycles of cyclic temperature and 2 hours recovery in standard atmospheric conditions, which the temperature cycle consists of  $-40^\circ\text{C}$  for 0.5 hour and  $85^\circ\text{C}$  for 0.5 hour.

$-40^\circ\text{C}$ 和 $85^\circ\text{C}$ 中各放置0.5小时为一个温度周期，循环100次，在标准大气条件中恢复2小时后继电器构造和特性无异常。

Terminal robustness

引出端强度

No trouble on structure and characteristics after endure axial pushing/pulling force of 5N for 10 seconds.

继电器引出端承受 5 牛顿的轴向压入、拨出力，延时10秒，构造和性能无异常。

**MARKING** 产品标识

Position of marking

标识位置

Top of relay cover


外壳顶面

Cover color

外壳颜色

Black

黑色

Mark type 捺印类型	Laser 激光捺印
Trade mark 商标	
<b>MOUNTING INFORMANTION 安装信息</b>	
Resistance to soldering heat 耐焊接热	270°C for 15 seconds Max. 300°C for 8 seconds Max. 350°C for 5 seconds Max.
Standard direction 标准方向	Relay PCB terminals downward (recommend) 继电器 PCB 型引出端朝下 (推荐)
Terminals assignment and outline dimensions 引出端脚位和外形尺寸	Refer to APPENDIX 请参考附件

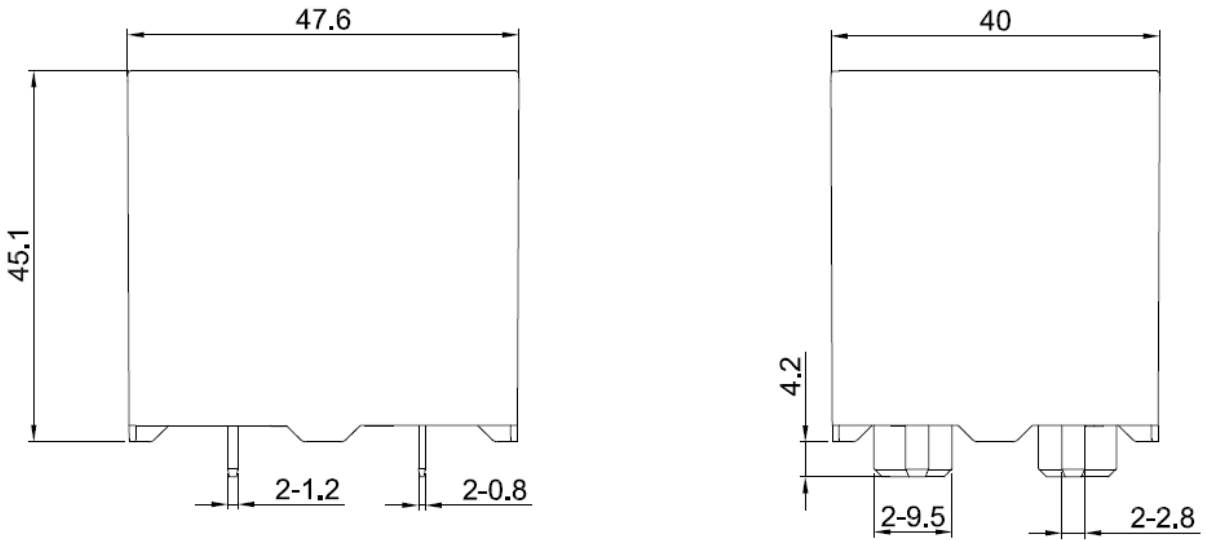
**ENGINEERING NOTES 注意事项**

# Unless otherwise explicitly stated, the standard environment conditions for measurement or testing are listed as followings:

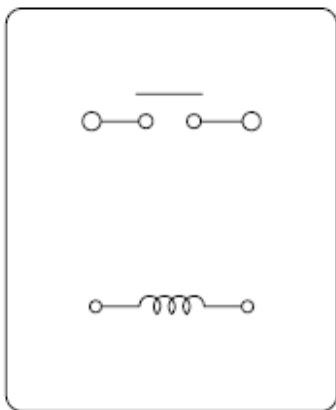
# 除非特别申明，测量或试验的标准环境条件如下：

- (1) Ambient temperature is 23+5°C;  
环境温度为 23+5°C;
- (2) Atmospheric pressure is 96+10% kPa;  
大气压力为 96+10% kPa;
- (3) Relative humidity is 50%+25% RH.  
相对湿度为 50%+25% RH.
- (4) Please related test when samples used.  
产品使用前请进行相关实验验证.
- (5) Consider the heat of PCB is necessary, please check the actual condition of PCB.  
必须考虑 PCB 板温度，请检查实际 PCB 板条件状态。
- (6) Applying no diode to this relay. The life expectancy will be lower when a diode is used. To use a varistor (ZNR) could absorb the coil surge of relay that is recommended.  
禁用二极管，若使用二极管会缩短预期寿命，建议使用突波吸收器(ZNR)来吸收继电器的线圈脉冲。
- (7) Do not use the relay exceeding the coil rating, contact rating and life expectancy , or this may cause the risk of overheating.  
使用继电器请勿超过线圈规格、触点额定负载和预期寿命，否则可能会造成过热的风险。
- (8) To assure optimum performance, avoid the relay from dropping, hitting, or other unnecessary shocks.  
为保障继电器的理想性能，请避免继电器遭受摔落，碰撞以及不发必要的冲击。
- (9) Do not switch the contacts without any load as the contact resistance may become increased rapidly.  
请勿在无通负载条件下开闭触点，以免接触阻抗快速增加。

(10) Outline dimension (Reference) , Tolerance:  $\pm 0.5\text{mm}$   
 外形尺寸图(参考用), 公差:  $\pm 0.5\text{mm}$



Wiring diagram (bottom view)  
 接线图 (底视图)



Mounting dimensions (Bottom View) , Tolerance:  $\pm 0.3\text{mm}$   
 安装孔尺寸图 (底视图), 公差:  $\pm 0.3\text{mm}$

