

RELAY

汽车继电器/Automotive Relay

<p>CTQR3系列 CTQR3 SERIES</p>	<p>单继电器 /Single 双继电器 /Twin</p>	<p>特性 Features</p> <ul style="list-style-type: none"> ● 25A 电机负载 25A Motor load ● 超小型 Super miniature ● 转换型触点形式 Change-over contact version ● 单、双继电器可供选择 Single and double relays are available ● H 级 (180 °C) 线圈绝缘等级 Coil wire Insulation Class H (180 °C) <ul style="list-style-type: none"> ● 可提供回流焊型产品 (CTQR3-T) (CTQR3-T) (Reflow soldering version) available ● 符合 ROHS、ELV 指令 ROHS and ELV Compliant
<p>典型应用 /Typical Applications 自动门窗、中央门锁、天窗控制、座椅调整、车镜调整、指示灯控制、雨刮控制 Central door lock, Power doors and windows, Indicator lamp control, Seat adjustment, Sunroof motor control, Mirror adjustment, Wiper control</p>		

性能参数/GENERAL DATA

触点形式 Contact Form	single (1C)、Twin (2C) single(1A)、Twin (2A)	绝缘电阻 Insulation Resistance	100MΩ.500VDC
接触压降 ⁽¹⁾ Contact pressure drop	典型值: 50mV(10A 下测量) Typ: 50mV (at 10A) 最大值: 250mV(10A 下测量) Typ: 250mV (at 10A)	介质耐压 ⁽⁴⁾ Dielectric Strength	断开触点间 Between Open contacts 500VAC 1min 线圈与触点间 Between Coil and contacts 500VAC 1min
		吸合时间 Operate time	典型值: 2.5ms(额定电压下测量) Typ: 2.5ms (at nomi.vol.) 最大值: 10ms(额定电压下测量) Max: 10ms (at nomi.vol.)
最大连续电流 ⁽²⁾ Max.continuity Current	34A 10min/25A长期Long-term (23°C) 31A 10min(85°C) CTQR3-T:29A 10min(125°C)	释放时间 ⁽⁵⁾ Release time	典型值: 1.2ms Typ: 1.2ms 最大值: 10ms Max: 10ms
最大切换电流 ⁽³⁾ Max.Switching Current	30A	振动 ⁽⁶⁾ Vibration	10~500HZ,49ms ²
最大切换电压 Max.Switching Voltage	16VDC	冲击 ⁽⁶⁾ Shock	49ms ²
最小负载 Minimum load	1A 6VDC	湿度 Humidity	35%~95%RH,+40°C
机械寿命 Mechanical	1×10 ⁷ 次 300次/分钟 1×10 ⁷ times (300ops/min)	温度范围 Temperature range	CTQR3:-40°C~+85°C CTQR3-T:-40°C~+125°C
电气寿命 Electrical Life	详见触点参数表 See (contact data)	重量 Weight	单继电器:约4.0g Single relay:Approx 4.0g 双继电器:约8.0g Twin relay:Approx 4.0g
引出端形式 Termination	印制电路板引出端 ⁽⁷⁾ PCB		
封装形式 Encapsulation form	塑封型 Plastic Sealed Type 防焊剂型 Flux Model		

- 备注: (1)初始值,也可表述为接触电阻最大值为100mΩ(1A 6VDC);
(2)在以下条件下进行测试:
(a)继电器安装在PCB板上,线圈施加100%额定电压;
(b)PCB板为双层板,铜箔厚度0Z(140μm),每个铜箔宽度3.76×(1±5%)mm,铜箔长度50mm±1mm,PCB板TG为150°C;
(c)不适用于双继电器同时加负载;
(3)常开触点,详见允许最大负载范围曲线;
(4)1min,漏电流小于1mA;
(5)由额定电压阶跃到0VDC,且没有线圈抑制电路时测量;
(6)在激励时,常开触点断开时间小于1ms,在不激励时,常闭触点断开时间小于1ms,同时常开触点不能闭合;
(7)该产品为环保产品,焊接时请选用无铅焊料,推荐焊接温度及时间为(260±3)°C,(5±0.3)s.

Note: (1)Initial value ,Equivalent to the max.initial contact resistance is 100mΩ (at 1A 6VDC);
(2) Testing under the following conditions:
(a) The relay is mounted on the PCB, the coil is applied with 100% rated voltage;
(b) PCB is a double-layer plate with copper foil thickness of 0Z (140 um), each copper foil width of 3.76 (1±5%) mm, copper foil length of (50 mm ± 1 mm), PCB plate TG of 150 °C
(c) Not suitable for double relays with load at the same time;
(3) Frequently open contacts, as shown in the allowable maximum load range curve;
(4) 1 min, leakage current less than 1 mA;
(5) Measure when the rated voltage step to 0VDC and there is no coil suppression circuit.
(6) When the excitation is applied, the breaking time of the normally open contact is less than 1 ms, and when the excitation is not applied, the breaking time of the normally closed contact is less than 1 ms, and the normally open contact can not be closed.
(7) This product is environmentally friendly. Lead-free solder should be selected when welding. The recommended welding temperature and time are (260±3)°C, (5± 0.3) s.



触点参数/CONTACT DATA

触点负载电压 Load Voltage	负载类型 Load type		触点负载电流 A Load current A		通断比 On/off ratio		电耐久性 (次) Electrical endurance ops	触点材料 Contact material	触点接线图 Load wiring diagram	
			1C,2C		接通 On s	断开 Off s				
			常开 NO	常闭 NC						
13.5VDC	电机负载 Motor	接通 Make	25	—	0.5	9.5	1×10^5	AgSnO ₂		
		断开 Break	25	—						
	模拟车窗升降 Simulate window operation	接通 Make	25	—	0.2	4	1×10^5	AgSnO ₂		
		稳态 Stable	10	—						2.3
		断开 Break	25	—						0.5
	模拟马达自由运转 Simulate moto free operation	接通 Make	27	—	0.02	1.8	1×10^5	AgSnO ₂		
		暂态 Transient	17	—						0.03
		断开 Break	8	—						0.15

备注: (1)接通电流指电机启动峰值电流;
 (2)当用于闪光灯负载时, 需采用特殊AgSnO₂触点, 订货标记中客户特型号为 (170); 接线时需注意正负极性要求, 确保公共端子接电源正极;
 (3)当触点负载电压为24VDC或更高, 又或使用负载条件与本表不相符时, 请将相应详细使用条件提供给云尖以获取更多的支持;
 (4)本表是在不并联抑制元器件的条件下测试数据, 当实际使用条件与本表不相符时, 请将详细的使用条件提供给云尖以获取更多的技术支持。

Notice:(1)Corresponds to the peak inrush current on initial actuation (motor).
 (2)When applied in flasher,a special silver alloy(AgSnO₂) contact material should be used and the customer special code should be(170) as a suffix.please heed the anode and cathode's request when wired,common terminal should connect with anode.
 (3)When the contact load voltage is 24 VDC or higher, or the load condition is not consistent with this table, please provide the corresponding detailed use condition to the cloud tip for more support.
 (4)When the load requirement is different from content of the table above,please contact Yunjian for relay application support.

线圈参数/COIL DATA

	额定电压 Nominal Voltage VDC	动作电压 Pick-up voltage VDC			释放电压 Drop-out voltage VDC			线圈电阻 Coil resisitance ×(1±10%)Ω			继电器功耗 Power consumption W
		23℃	85℃	125℃	23℃	85℃	125℃	23℃	85℃	125℃	
标准型 Standard	12	≤7.2	≤9.0	≤10.2	≥1.0	≥1.2	≥1.4	225	280.8	316.8	0.64
低动作电压型 Low pick-up voltage	12	≤6.5	≤8.2	≤9.2	≥1.0	≥1.2	≥1.4	180	224.6	253.4	0.8

命名规则/OPDERING INFORMATION

CTQR3 -P -S -D12V -1A (xxx)

客户特性号 :
Customer characteristic No:

触点转换形式:
Contact Forms:

1A- 一组常开 (单继电器)	1 Form A(Single version)
2A- 两组常开 (两独立继电器)	2 Form A(Twin version)
1C- 一组转换 (单继电器)	1 Form C(Single version)
2C- 两组转换 (两独立继电器)	2 Form C(Twin version)

额定线圈电压 (VDC) :
Rated Coil Voltage (VDC) :

封装形式:
Packing Forms:

S-塑封型	SH-防焊剂型
S-Plastic Sealed Type	SH-Flux Model

额定线圈功率:
Rated Coil Power:

P:低动作电压型	无:标准型
P: Low pick-up voltage	Blank:Standard

型号: CTQR3 (普通型) CTQR3-T (回流焊型/耐高温型)
 Model: CTQR3(Reflow soldering version) CTQR3-T(High-temperature version)

外形图, 接线图, 安装孔尺寸(单位:mm) / OUTLINE DIMENSIONS, WIRING DIAGRAM, PCB LAYOUT (UNIT:mm)

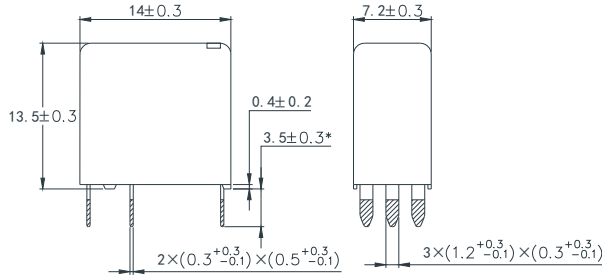
外形图/Outline Dimensions

CTQR3 普通型

CTQR3 (Standard)

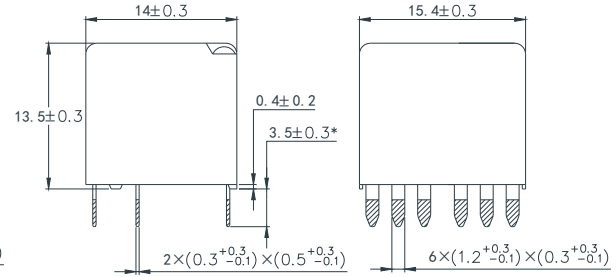
一组转换 (1C) 单继电器

1C:1 Form C(Single version)



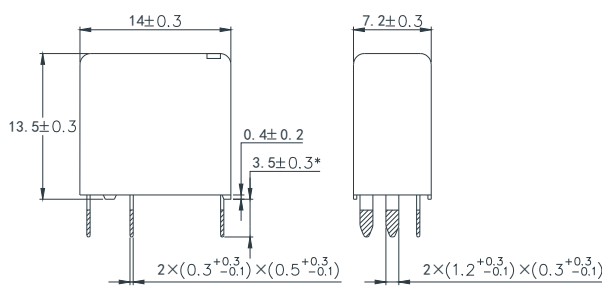
两组转换 (2C) 双继电器

2C:2 Form C(Twin version)



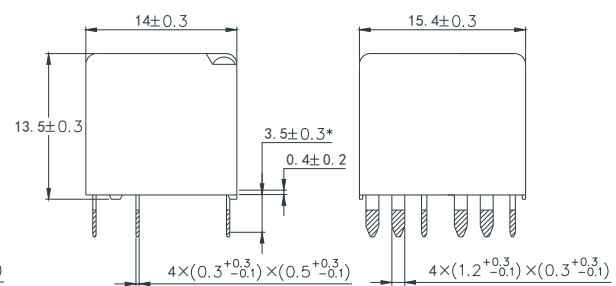
一组常开 (1A) 单继电器

1A:1 Form A(Single version)



两组常开 (2A) 双继电器

2A:2 Form A(Twin version)

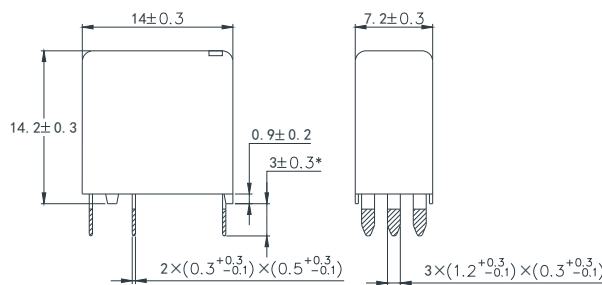


CTQR3(回流焊型/耐高温型)

CTQR3 (Reflow soldering version/High-temperature version)

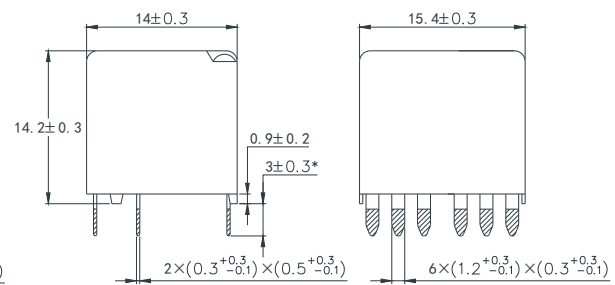
一组转换 (1C) 单继电器

1C:1 Form C(Single version)



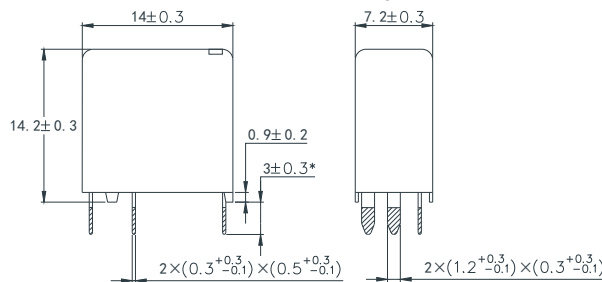
两组转换 (2C) 双继电器

2C:2 Form C(Twin version)



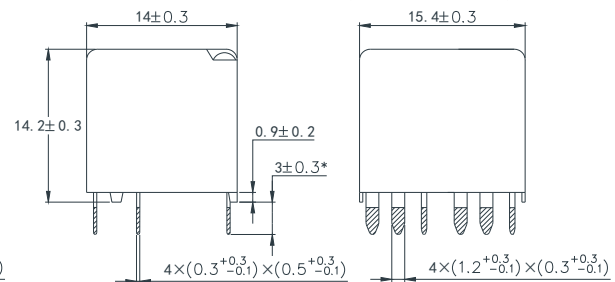
一组常开 (1A) 单继电器

1A:1 Form A(Single version)



两组常开 (2A) 双继电器

2A:2 Form A(Twin version)



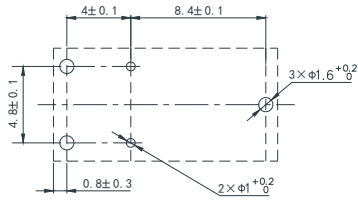
备注: *该尺寸不包括锡尖, 沾锡后锡尖长度不超过1mm。

Note: * This size does not include tin tips. The length of tin tips after staining does not exceed 1 mm.

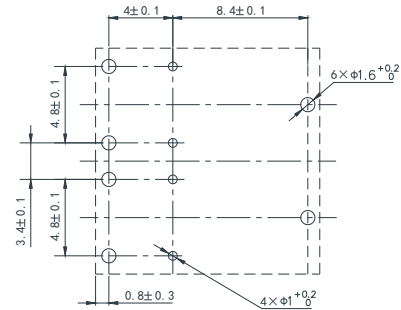
外形图, 接线图, 安装孔尺寸(单位:mm) / OUTLINE DIMENSIONS, WIRING DIAGRAM, PCB LAYOUT(UNIT:mm)

安装孔尺寸/PCB Layout
(底视图) / (Bottom View)

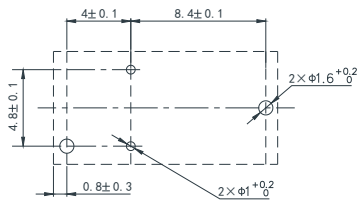
一组转换 (1C) 单继电器
1C:1 Form C(Single version)



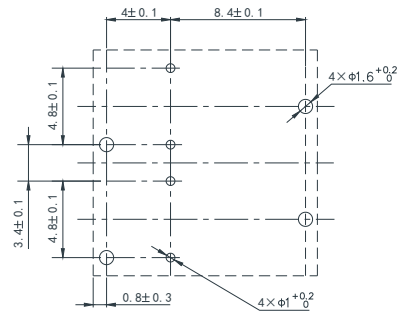
两组转换 (2C) 双继电器
2C:2 Form C(Twin version)



一组常开 (1A) 单继电器
1A:1 Form A(Single version)

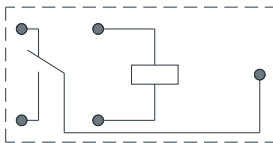


两组常开 (2A) 双继电器
2A:2 Form A(Twin version)

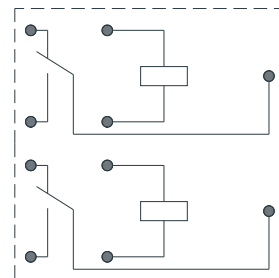


接线图/Wiring Diagram
(底视图) / (Bottom View)

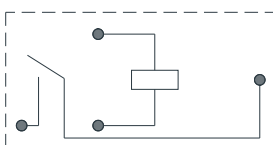
一组转换 (1C) 单继电器
1C:1 Form C(Single version)



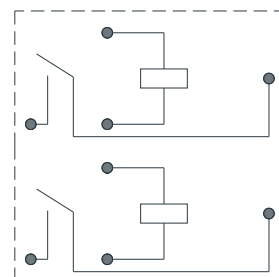
两组转换 (2C) 双继电器
2C:2 Form C(Twin version)



一组常开 (1A) 单继电器
1A:1 Form A(Single version)

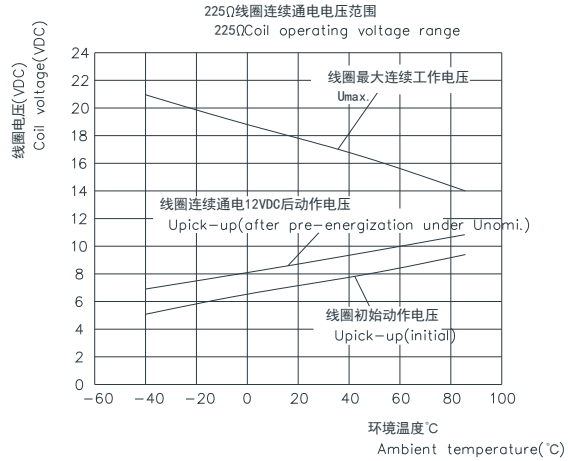
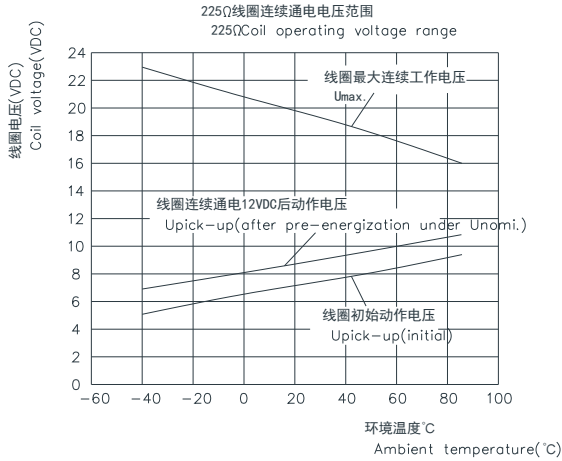


两组常开 (2A) 双继电器
2A:2 Form A(Twin version)



性能曲线图/CHARACTERISTIC CURVES

1、线圈连续通电电压范围
1、Coil operating voltage range



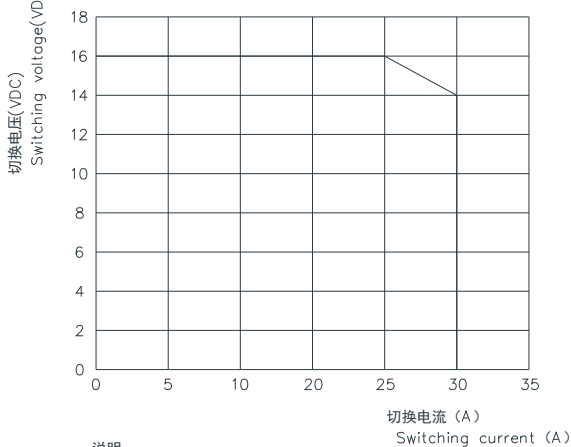
说明:

- (1) 继电器施加最大连续工作电压时, 触点应没有负载。
- (2) 动作电压与线圈预通电时间、预通电电压有关, 在预通电后检测动作电压, 其值会变大。
- (3) 线圈最大允许温度为180°C。考虑到电阻法所测量的线圈温升是平均值, 推荐在不同使用环境、不同线圈电压、不同负载条件下测量时, 线圈温度应小于170°C。
- (4) 当线圈实际工作电压超出曲线规定范围时, 请联系云尖并提供相应详细使用条件。

instruction:

- (1) There should be no contact load applied when maximum continuous operation voltage is applied on coil.
- (2) The operating voltage is connected with coil pre-energized time and voltage. After pre-energized, the operating voltage will increase.
- (3) The maximum allowable coil temperature is 180°C. For the coil temperature rise which is measured by resistance is average value, we recommend the coil temperature should be below 170°C under the different load etc.
- (4) If the actual operating coil voltage is out of the specified range, please contact Yunjian for further details.

2、允许最大负载范围23°C
2、Load limit curve(at 23°C)



说明:

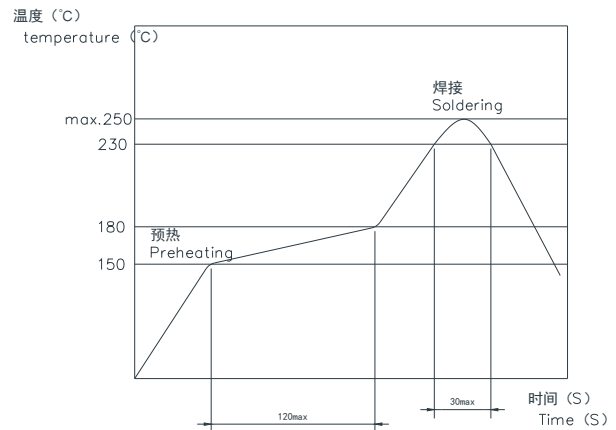
- (1) 本图以常开触点为例, 本图电流为阻性。
- (2) 产品按触点参数表进行负载与耐久性试验, 当实际使用的负载电压、电流、动作频率任一项与触点参数表不同时, 请重新进行确认试验。

instruction:

- (1) This chart takes NO contact, resistive load as example.
- (2) The load and electrical endurance tests are made according to "CONTACT DATA" parameters' table. If actual load voltage, current or operate frequency is different from "CONTACT DATA" table, please arrange corresponding tests for confirmation.

3、回流焊, PCB板面温度 (推荐焊接温度, 只适用于回流焊型产品)
3、Reflow soldering, temperature on PCB board.

(Recommended soldering temperature, only for reflow soldering version)



性能曲线图/CHARACTERISTIC CURVES

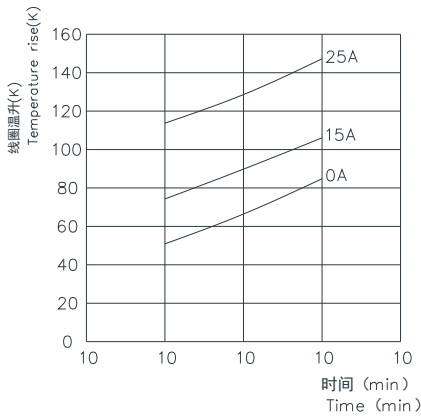
4、线圈温升曲线说明

4、Coil temperature rise

(1) 线圈温升曲线(23°C)

试验品: CTQR3-S-D12V-C
 数量: 3只
 触点通电电流: 0A,15A,25A
 环境温度: 23°C

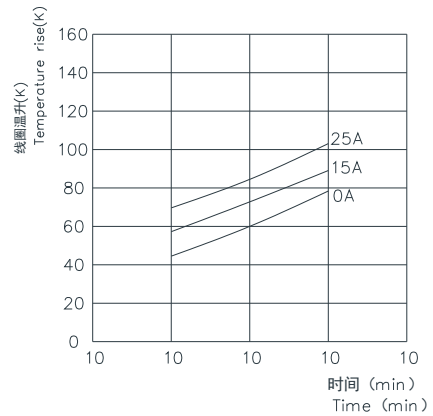
Coil temperature rise (23°C)
 Experiment: CTQR3-S-D12V-C
 Amount: three
 Carrying current: 0A,15A,25A
 Ambient temp: 23°C



(1) 线圈温升曲线(85°C)

试验品: CTQR3-S-D12V-C
 数量: 3只
 触点通电电流: 0A,15A,25A
 环境温度: 85°C

Coil temperature rise (85°C)
 Experiment: CTQR3-S-D12V-C
 Amount: three
 Carrying current: 0A,15A,25A
 Ambient temp: 85°C



声明:

本产品规格书仅供客户使用时参考, 若有更改, 恕不另行通知。
 对本公司而言, 不可能评定继电器在每一个具体领域的所有性能参数要求, 因而客户应根据具体的使用条件选择与之相配的产品, 若有疑问, 请与云尖联系以便获取更多的技术支持, 但选型责任仅由客户负责。

Disclaimer: The specification is for reference only. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact "Cloutip" for the technical service. However, it is the use's responsibility to determine which product should be used only.