热保护器
Thermal Protector (TMS)

3CT 系列 Series

产品描述 Description

赛尔特的 3CT 系列为自动复位、小型化的热保护器产品，主要用双金属片来感应电流、温度。当双金属片的温度达到预校准温度时，双金属片即快速跳脱，断开或接通电路。它的强健设计可以安装在浸漆电机的绕组上使用。另外其拥有热切断器和电机保护器的认证。

SETsafe | SETfuse 3CT is an auto resettable & miniature thermal protector. It mainly uses bimetal disc to sense current and temperature. When the temperature of the bimetal disc reaches the pre-calibration temperature, the bimetal disc will snap off quickly and connect or disconnect the circuit. It has robust performance to withstand varnish process and can be mounted on motor winding. Also, it has both thermal cut-off and thermal motor protector agency approval.

特性 Features

- 低接触电阻 Low Contact Resistance
- 对电流和温度敏感 Current and Temperature Sensitivity
- 灵活的设计和广泛的应用 Flexible Design and Wide Application
- 符合RoHS & REACH RoHS & REACH Compliance

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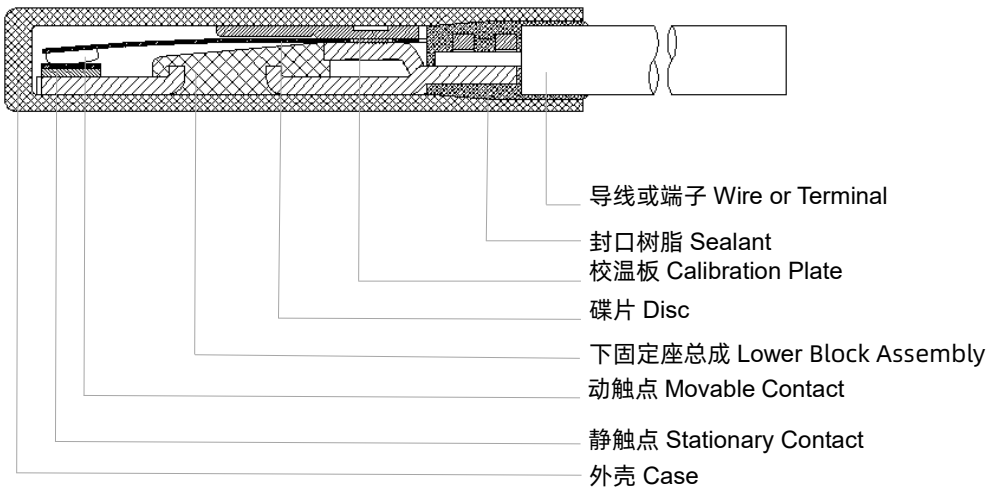
应用领域 Applications

- 电池组 Battery Packs
- 电机 Motors
- 变压器 Transformers
- 加热器具 Heating Appliances
- 电动工具 Power Tools
- 螺线管 Solenoids

结构图 Structure Diagrams



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安规认证 Agency Approvals

认证标志 Agency	标准 Standards	认证号 File No.
	UL 60730-1 UL 60730-2-22	E516554
	UL 60730-1 UL 60730-2-9	E516553
	CSA E60730-1	E516554
	CSA E60730-1 CSA E60730-2-9	E516553
	EN 60730-1 EN 60730-2-22	R 50481203
	EN 60730-1 EN 60730-2-9	R 50480598
	GB/T14536.1-2008 GB/T14536.3-2008	CQC20002266233
	GB/T14536.1-2008 GB/T14536.10-2008	CQC20002266231

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产品型号 Part Number System

3CT - 125 - B K

接触类型 Contact Status

缺省 Default: 常闭 Normal Close

K: 常开 Normal Open

端子类型 Terminal Type

见表-2 See Table-2

缺省 Default / A / B / C / D / E / F / G

缺省和A代指同一端子类型A (Default has the same terminal type as A)

温度代码 Temperature Code

见表-1 See Table-1

系列 Series

3CT

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术语 Glossary

项目 Item	说明 Description
动作温度 Operating Temperature	**动作温度 Operating Temperature** 热保护器触点闭合（常开型）或断开（常闭型）时所对应的实际温度值 。 The actual temperature at which the thermal protector contacts are closed (normal open) or disconnected (normal close) .
复位温度 Recovery Temperature	**复位温度 Recovery Temperature** 热保护器触点闭合或断开后，其接点产生断开（常开型）或闭合（常闭型）时所对应的实际温度值 。 After the thermal protector contact is closed or disconnected, the contact produces the actual temperature value corresponding to the open (normal open) or closed (normal close) contact .
额定电流 Rated Current (I_r)	**额定电流 Rated Current (I_r)** 允许用于电路并安全断开的最大电流。 The current used to classify a thermal protector, which is the maximum current that Thermal Protector allows to carry and is able to cut off the circuit safely .
额定电压 Rated Voltage (U_r)	**额定电压 Rated Voltage (U_r)** 允许用于电路并安全断开的最大电压 。 The voltage used to classify a thermal protector, which is the maximum voltage that Thermal Protector allows to carry and is able to cut off the circuit safely .
循环寿命 Cycle Life	**循环寿命 Cycle Life** 双金属元件受温度影响，从原始状态跳转到断开状态（或闭合状态）的周期性变化次数。 The number of periodic changes in the temperature of a bimetal element from its original state to its open (or closed) state .
温度差 Delta Temperature	**温度差 Delta Temperature** 产品打开温度和保护器放置的环境温度之差。 Is the difference between the zero current calibrated opening temperature and ambient temperature at the protector location .

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技术参数 Specifications

	寿命 Cycle Life	电压 Rated Voltage (Ur)	电流 Rated Current (Ir)
	循环次数 Cycles	(V)	(A)
触点容量 Contact Capacity	≥ 10,000	AC 277	3
	≥ 10,000	AC 125	5
	≥ 10,000	DC 24	5
	≥ 10,000	DC 12	8
接触电阻 Contact Resistance	≤ 30 mΩ		
动作温度范围 Operating Temperature	30 ~ 155 ºC（每 5 ºC 一档）in increments of 5*K*		
长期工作温度 Long-term Service Temperature	-20 ~ 160 ºC		
电气强度 Electric Strength	1700 V.r.m.s. 60 Hz, 1 minute,（端子与外壳间）Terminal to Case		
引线规格 Lead Wire Type	UL3266 22 AWG 300 V,（其他规格可定制）other wire size is also available		

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表-1温度代码 Table-1 Temperature Code

温度代码 Temperature Code	动作温度 Operating Temperature	复位温度 Recovery Temperature
	±5 (°C)	±15 (°C)
030	30	≥ 20
035	35	≥ 25
040	40	≥ 30
045	45	≥ 35
050	50	≥ 35
055	55	≥ 35
060	60	45
065	65	45
070	70	50
075	75	50
080	80	55
085	85	60
090	90	60

温度代码 Temperature Code	动作温度 Operating Temperature	复位温度 Recovery Temperature
	±5 (°C)	±15 (°C)
095	95	65
100	100	70
105	105	70
110	110	75
115	115	75
120	120	80
125	125	85
130	130	90
135	135	90
140	140	95
145	145	100
150	150	100
155	155	105

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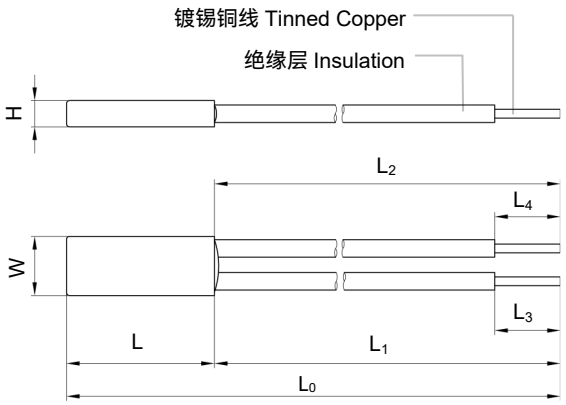
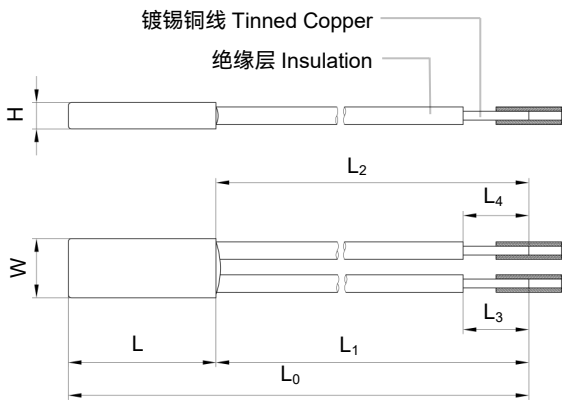
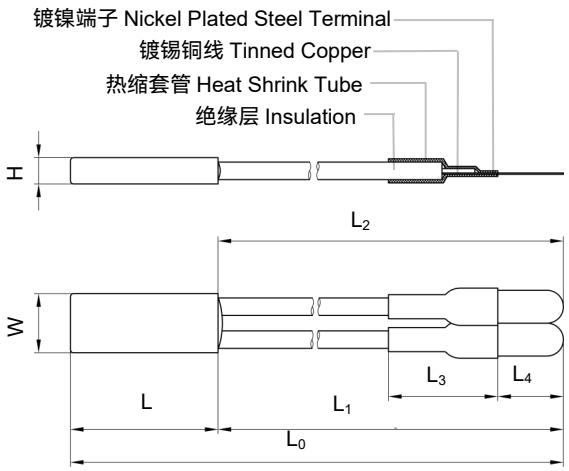
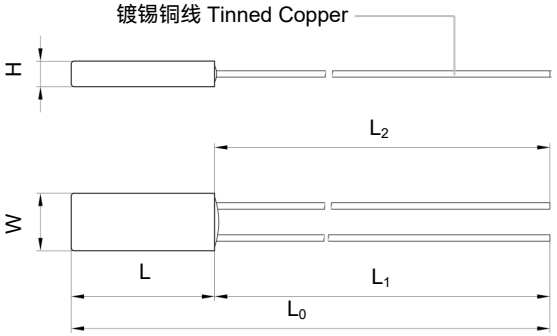
表-2端子类型 Table-2 Terminal Type

类型 Type	尺寸 Dimensions (mm)	类型 Type	尺寸 Dimensions (mm)
A		B	
C		D	

L (±0.5)	H (±0.2)	W (±0.2)	L_0, L_1, L_2, L_3, L_4 可定制 (can be customized)
13.5	2.4	5.4	

L (±0.5)	H (±0.2)	W (±0.2)	L_0, L_1, L_2, L_3, L_4 可定制 (can be customized)
13.5	2.4	5.4	

L (±0.5)	H (±0.2)	W (±0.2)	L_0, L_1, L_2, L_3, L_4 可定制 (can be customized)
13.5	2.4	5.4	

L (±0.5)	H (±0.2)	W (±0.2)	L_0, L_1, L_2 可定制 (can be customized)
13.5	2.4	5.4	

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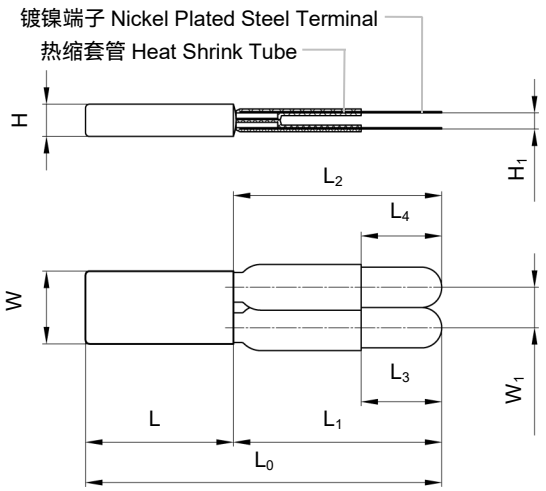
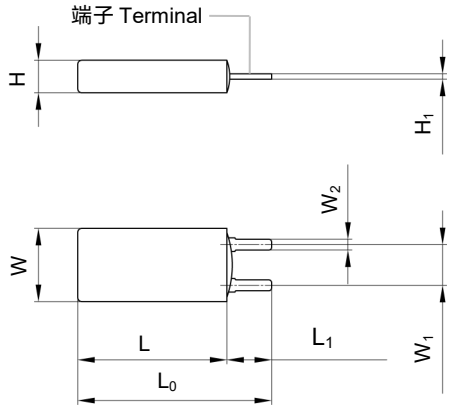
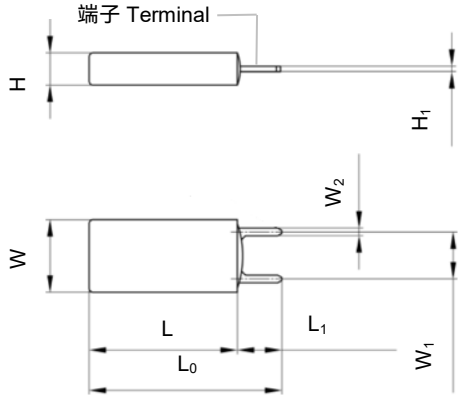
表-2端子类型 Table-2 Terminal Type

类型 Type	尺寸 Dimensions (mm)	类型 Type	尺寸 Dimensions (mm)
E		F	
G			

L (±0.5)	H (±0.2)	W (±0.2)	W_1 (±0.1)	H_1 (±0.2)	L_0, L_1, L_2, L_3, L_4
11.0	2.4	5.4	3.0	1.2	可定制 (can be customized)

L (±0.5)	L_0 (±0.3)	L_1 (±0.3)	H (±0.2)
11.0	14.5	3.5	2.4
H_1 (±0.1)	W (±0.2)	W_1 (±0.2)	W_2 (±0.1)
0.4	5.4	3.0	0.8

L (±0.5)	L_0 (±0.3)	L_1 (±0.3)	H (±0.2)
11.0	14.5	3.5	2.4
H_1 (±0.1)	W (±0.2)	W_1 (±0.1)	W_2 (±0.1)
0.4	5.4	3.5	0.6

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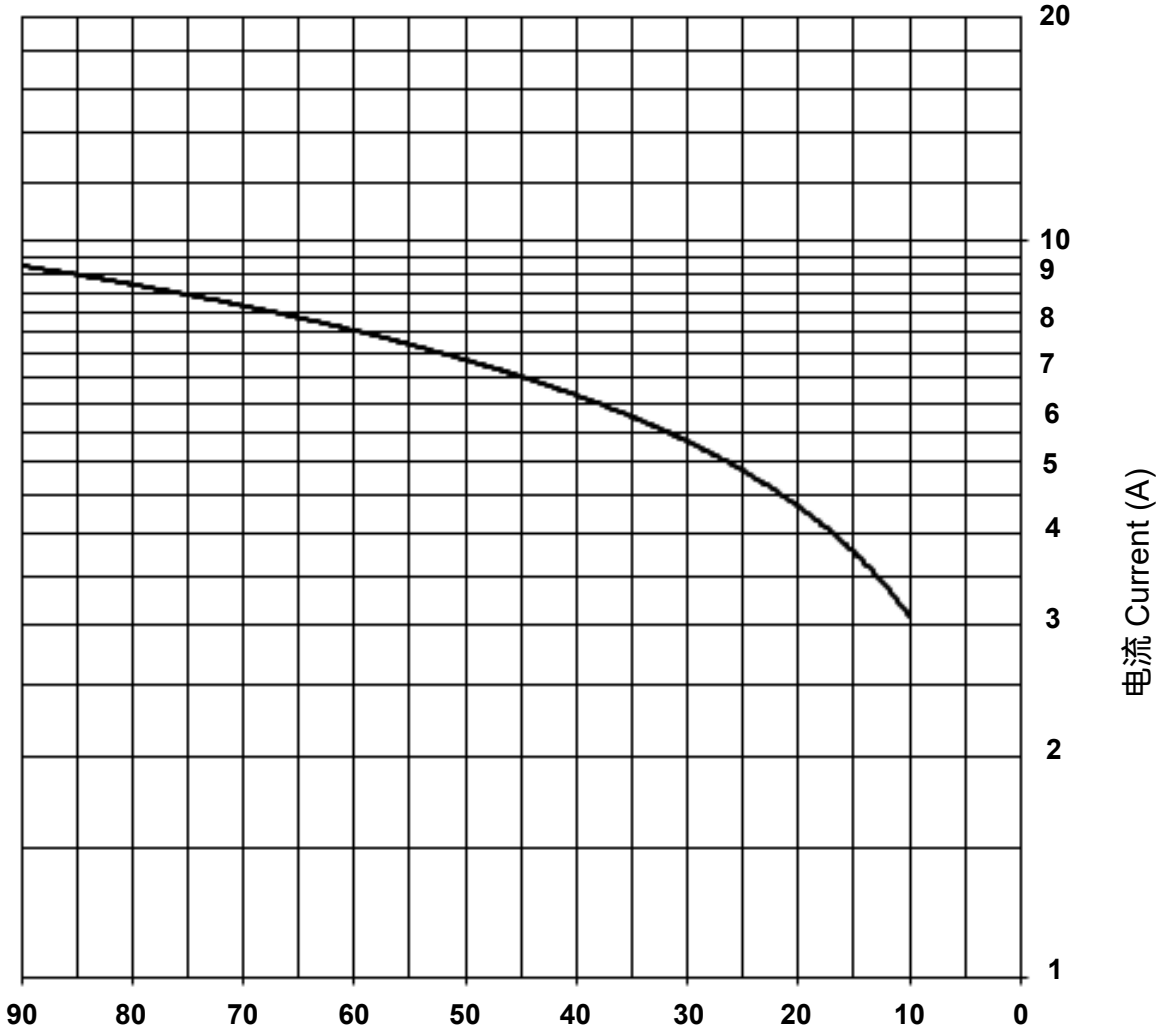
临界跳闸电流和温差曲线 Ultimate Trip Current & Delta Temperature



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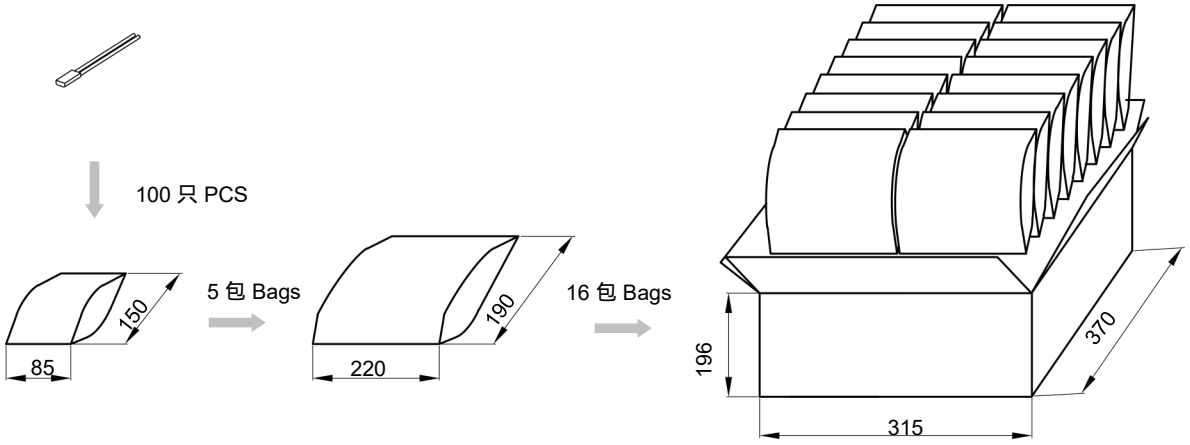
包装信息 Packaging Information

散装（以 3CT 表-2 A 型，$L_1 = L_2 = 70$ mm 为例）
Bulk (Take 3CT Table-2 Type A, $L_1 = L_2 = 70$ mm as an example)

项目 Item	PE袋 PE Bag	PE 袋 PE Bag	纸箱 Carton
尺寸 Dimensions (mm)	150 × 85	220 × 190	370 × 315 × 195
数量 Quantity (PCS)	100	500	8000
备注：包装尺寸及数量仅供参考。 Remark: The dimensions and quantity of packaging is for reference only.			



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注意
ATTENTION

使用 Usage

1. 这些器件不能作为服务或维修元件使用，应由原设备制造商严格使用。本产品不具有防爆等级，不应用于存在易燃蒸汽或粉尘的任何应用场合。该装置的寿命终止故障可能会导致开路或闭路状态，因此，原始设备制造商必须按照机构要求串联应用寿命终止保护。
   These devices are not intended for use as service or repair components, It should be strictly used by Original Equipment Manufacturer. This product is not rated as explosion proof and should not be applied in any application where flammable vapors or dust is present. End of life failure of this device may result in either open or closed circuit condition, and as such, OEMs must apply end of life protection in series, per agency requirements.
2. 用户全权负责本产品在最终产品或系统中的正确设计、应用和功能。用户必须从温度设置、机械和电气寿命周期、电气负载和环境条件等方面评估这些设备在其应用中的适用性。
   Users are solely responsible for proper design, application and function of this product in the end product or system. Users must evaluate the suitability of these devices in their application with respect to temperature settings, mechanical and electrical life cycles, electrical loads and environmental conditions.
3. 使用环境：大气压力范围80 kPa ~ 106 kPa，相应的海拔高度为2000米到-500米。
   When atmosphere press is from 80 kPa to 106 kPa, the related altitude shall be from 2000 meter to -500 meter.

更换 Replacement

本产品是不可修复的产品。为安全起见，应更换为等效产品，并以相同方式安装。
The product is a non-repairable product. For safety sake, it shall be replaced by an equivalent part and mounted in the same way.

存储 Storage

不要在高温、高湿度或腐蚀性气体环境下储存本产品，以免影响导线的可焊性或接触电阻。本产品应在收到货物后一年内用完。
Do not store the product at high temperature, high humility or corrosive gas environment, avoid influencing the solder-ability or contact resistance of the lead wires. The product shall be used up within 1 year after your receiving goods.

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安装位置 Installation Position

1. 应使本产品尽可能贴近或接近被保护部件。如电机应嵌入定子线圈上端的线圈中，如有条件，应对电机作温度场测定，以确定温度最高点。
   The product should be as close to the protected parts as possible. For example, in the motor, the product should be embedded in the upper end of the motor stator coil. If the test conditions allow, the field temperature of the motor should be measured to determine the highest temperature point.
2. 本产品在安装过程中，禁止用重力敲击，安装处不得挤压产品，以免使产品外壳变形，这将严重影响产品的保护性能。
   During the installation of the product, it is forbidden to strike heavily, and the product shall not be extruded at the installation position to avoid deformation of the product shell, which will seriously affect the protection performance of the product.

警告 Warnings

材料损坏和外壳发热的危险 Risk of Material Damage and Hot Enclosure

1. 产品的侧面板可能很热，请等产品冷却后再触摸。
   The product's side panels may be hot, do not touch till cool down.
2. 请严格按照安装说明进行安装，包括力值的设置。未遵守这些指示可能会导致严重的人身伤害或设备损坏，触电，爆炸或弧闪的危险。
   Follow proper mounting instructions including force values. Options failure to follow these instructions can result in serious injury, or equipment damage. Hazard of electric shock, explosion or arch flash.
3. 在安装或使用此产品之前，请断开所有电源。
   Disconnect all power before installing or using this product.
4. 在打开电源之前，确认所有连接及必要防护。未遵守这些指示将可能会导致死亡或重伤。
   Make sure all the connections and protection measurements before turning on power. Failure to follow these instructions will result in death or serious injury.

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