

技术参数 Specifications

电气参数 Ratings:

- ◇最大工作电压  
Max. Switching Voltage: 1500VDC
- ◇额定电流  
Rated Current: 20A
- ◇主触点形式  
Main Contact Type: 一组常开 SPST-NO
- ◇辅助触点  
Auxiliary Contact: 无 Nil
- ◇辅助触点形式  
Auxiliary Contact Type: 无 Nil
- ◇线圈额定电压  
Coil Rated Voltage : 12VDC/24VDC/48VDC
- ◇使用环境温度  
Ambient Operation Temperature : -40°C~+85°C
- ◇使用环境湿度  
Ambient Operation Humidity : 5%~85%RH



认证/标准 Approvals/Standard:

- ◇REACH
- ◇RoHS

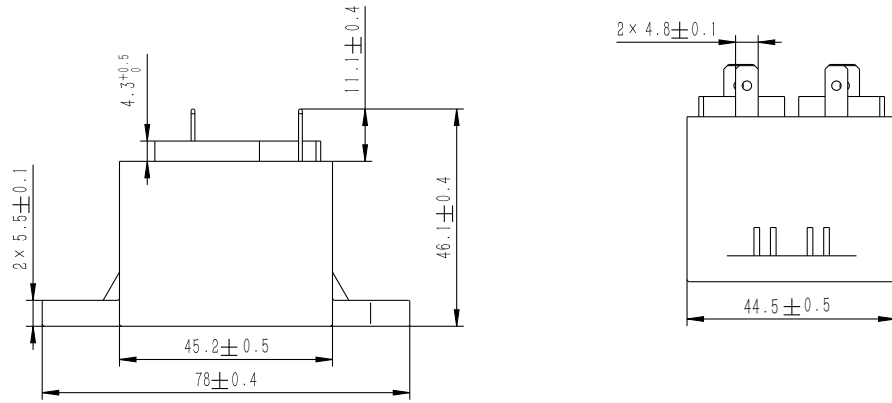
产品特征 Features&Benefits:

陶瓷密封结构，腔内充有氢气混合气体，无电弧泄露风险，接触电阻低且稳定；  
Ceramic sealing structure with H<sub>2</sub> mixed gas filled in the chamber, no risk of arc leakage, low&stable contact resistance;  
无极性灭弧设计，安装方向不敏感，适用回路双向电流的各种场景，使用安全可靠；  
Non-polarity arc extinguishing design that is applicable to a range of scenarios with bidirectional current circuit safely and reliably;  
能够在85°C环境下持续承载20A电流；  
Carrying current 20A continuously at 85°C;

产品型号说明 Product Model:

	HC	F	20	B/	1500	-24	H	Q	3	<input type="checkbox"/>	<input type="checkbox"/>	- ( )
公司代码 Company Code												
系列代码 Series Code	F:方形系列 Square Series											
触点容量（额定电流） Contact Rating(Rated Current)	20:20A											
衍生型号 Derivative Model	B:衍生型 Derivative Model											
负载电压 Load Voltage	450:450VDC; 800:800VDC; 1000:1000VDC; 1500:1500VDC											
线圈电压 Coil Voltage	12:12VDC; 24:24VDC; 48:48VDC											
主触点形式 Main Contact Type	H: 一组常开 SPST-NO											
线圈出线方式 Coil Input Terminal	Q: QC引出端 Terminal											
负载引出端方式 Load Input Terminal	3: QC引出端 Terminal											
线圈引出脚形式 Coil Input Type	1: 187#插片 Lnfogar; 2: 250#插片 Lnfogar											
安装形式 Mounting	无 Nil: 立体安装 Vertical Mounting											
特性号 Special Code	XXX: 客户特殊要求 Customer Special Code; 无 Nil: 标准型 Standard											

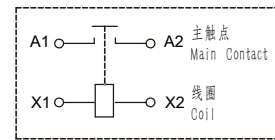
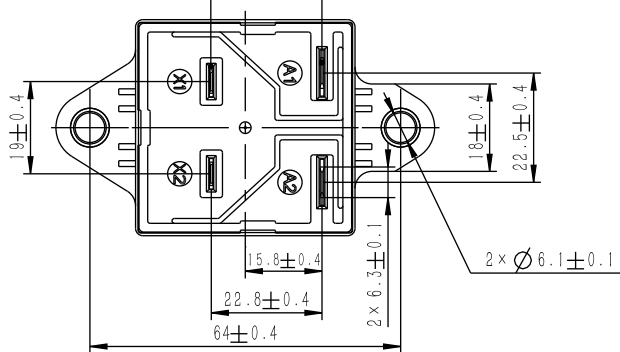
## HCF20B/□-□HQ31



线圈输入端子 (无极性), 187# 插片, 厚度t0.8

Coil input terminal(Non-polarity)  
187# insert terminal, Thickness 0.8

负载输入端子 (无极性)250# 插片, 厚度t0.8

Load input terminal(Non-polarity)  
250# insert terminal, Thickness 0.8

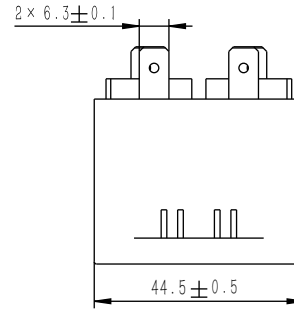
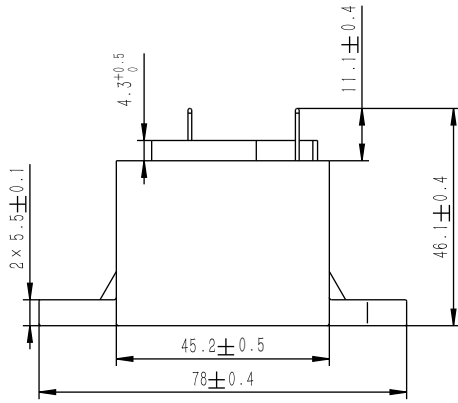
接线图

Coil Wiring Diagram

未注公差 General Tolerance:  
<10mm: ±0.3mm  
10~50mm: ±0.5mm  
>50mm: ±0.8mm

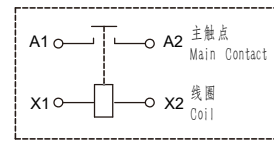
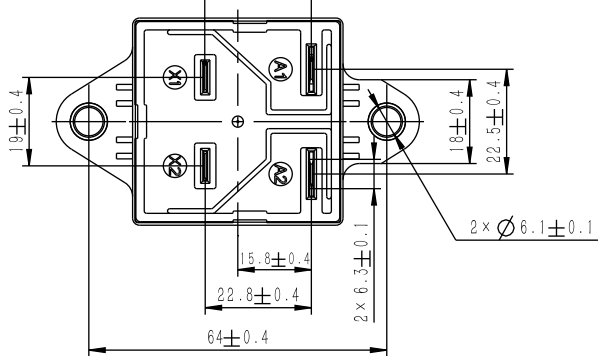
主触点参数 MAIN CONTACT DATA									
最大工作电压 Max. Switching Voltage		1500VDC		额定电流 Rated Current		20A			
触点形式 Contact Arrangement		一组常开 SPST-NO		触点压降 Contact Voltage Drop		≤0.09V(at 20A)			
短时承载电流 Limiting Short-time Current		20A: 持续;30A:1h;40A:20min;80A:30s;120A:10s;200A:0.6s							
电寿命 (阻性负载) Electrical Life (Resistive Load)		450V 型 Model		800V 型 Model		1000V 型 Model		1500V 型 Model	
		20A 450VDC 75000 次(ops)		20A 800VDC 50000 次(ops)		20A 1000VDC 10000 次(ops)		20A 1500VDC 8000 次(ops) 40A 1500VDC 15000 次(ops), 仅接通 Only Making	
最大分断电流 (阻性负载) Max. Breaking Current (Resistive Load)		200A 1000VDC 1 次(ops)							
过载分断 (阻性负载) Overload Breaking (Resistive Load)		120A 450VDC 30 次(ops)							
性能参数 CHARACTERISTIC DATA									
介质耐压 Dielectric Strength		主触点与线圈间 (初始) Between Main Contacts and Coil (Initial)		绝缘电阻 Insulation Resistance		主触点与线圈间 (初始) Between Main Contacts and Coil (Initial)		≥ 1000MQ (1500VDC)	
		断开主触点间 (初始) Between Open Main Contacts(Initial)				断开主触点间 (初始) Between Open Main Contacts(Initial)		≥ 1000MQ (1500VDC)	
耐冲击 Shock Resistance		功能性 Functional		耐振动 Vibration Resistance		功能性 Functional		5.79g (10~2000Hz, 随机 Random)	
		强度 Destructive							
吸合时间 Operate Time		Max:30ms			机械寿命 Mechanical Life		2*10 <sup>5</sup> 次(ops)		
释放时间 Release Time		Max:10ms			重量 Weight		约 Approx 155g		
线圈参数 COIL DATA									
额定电压 Rated Voltage		12VDC			24VDC		48VDC		
吸合电压 Pick-up Voltage		≤9VDC			≤18VDC		≤36VDC		
释放电压 Drop-out Voltage		≥1.2VDC			≥2.4VDC		≥4.8VDC		
线圈功率 Rated Operating Power		约 Approx 4W			约 Approx 4W		约 Approx 4W		
最大允许电压 Max. Allowable Voltage		16VDC			32VDC		64VDC		

## HCF20B/□-□HQ32



线圈输入端子 (无极性), 250# 插片, 厚度 $t0.8$   
Coil input terminal(Non-polarity)  
250# insert terminal, Thickness 0.8

负载输入端子 (无极性) 250# 插片, 厚度 $t0.8$   
Load input terminal(Non-polarity)  
250# insert terminal, Thickness 0.8

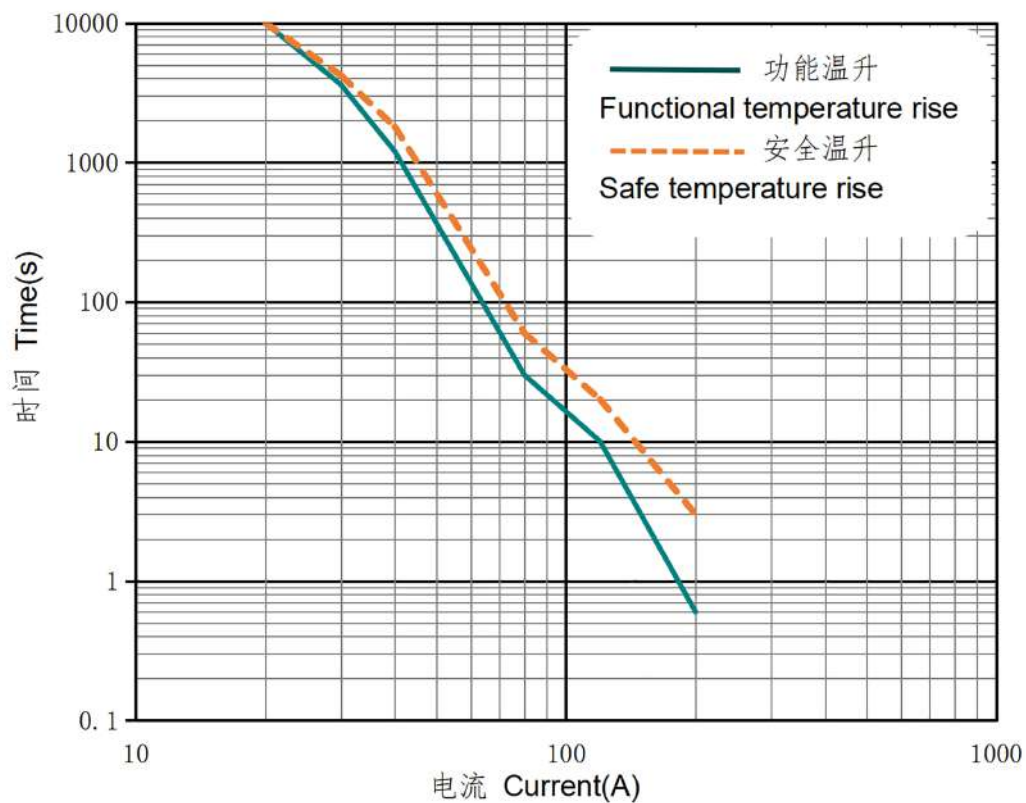


接线图  
Coil Wiring Diagram

未注公差 General Tolerance:  
<10mm:  $\pm 0.3\text{mm}$   
10~50mm:  $\pm 0.5\text{mm}$   
>50mm:  $\pm 0.8\text{mm}$

主触点参数 MAIN CONTACT DATA									
最大工作电压 Max. Switching Voltage		1500VDC		额定电流 Rated Current		20A			
触点形式 Contact Arrangement		一组常开 SPST-NO		触点压降 Contact Voltage Drop		≤0.09V(at 20A)			
短时承载电流 Limiting Short-time Current		20A: 持续;30A:1h;40A:20min;80A:30s;120A:10s;200A:0.6s							
电寿命（阻性负载） Electrical Life (Resistive Load)		450V 型 Model		800V 型 Model		1000V 型 Model		1500V 型 Model	
		20A 450VDC 75000 次(ops)		20A 800VDC 50000 次(ops)		20A 1000VDC 10000 次(ops)		20A 1500VDC 8000 次(ops) 40A 1500VDC 15000 次(ops), 仅接通 Only Making	
最大分断电流（阻性负载） Max. Breaking Current (Resistive Load)		200A 1000VDC 1 次(ops)							
过载分断（阻性负载） Overload Breaking (Resistive Load)		120A 450VDC 30 次(ops)							
性能参数 CHARACTERISTIC DATA									
介质耐压 Dielectric Strength		主触点与线圈间（初始） Between Main Contacts and Coil (Initial)		绝缘电阻 Insulation Resistance		主触点与线圈间（初始） Between Main Contacts and Coil (Initial)		≥ 1000MQ (1500VDC)	
		断开主触点间（初始） Between Open Main Contacts(Initial)				断开主触点间（初始） Between Open Main Contacts(Initial)		≥ 1000MQ (1500VDC)	
耐冲击 Shock Resistance		功能性 Functional		耐振动 Vibration Resistance		功能性 Functional		5.79g (10~2000Hz, 随机 Random)	
		强度 Destructive							
吸合时间 Operate Time		Max:30ms		机械寿命 Mechanical Life		2*10 <sup>5</sup> 次(ops)			
释放时间 Release Time		Max:10ms		重量 Weight		约 Approx 155g			
线圈参数 COIL DATA									
额定电压 Rated Voltage		12VDC		24VDC		48VDC			
吸合电压 Pick-up Voltage		≤9VDC		≤18VDC		≤36VDC			
释放电压 Drop-out Voltage		≥1.2VDC		≥2.4VDC		≥4.8VDC			
线圈功率 Rated Operating Power		约 Approx 4W		约 Approx 4W		约 Approx 4W			
最大允许电压 Max. Allowable Voltage		16VDC		32VDC		64VDC			

## 电流承载曲线 Current Carry Curve:



## 备注 Remark:

- 1.该曲线设定环境温度上限为85℃，导线 $\geq 4\text{mm}^2$ ，线圈电压为额定电压。  
The curve sets the upper limit of ambient temperature to 85℃, the wire  $\geq 4\text{mm}^2$ , and the coil voltage is the rated voltage.
- 2.该曲线设定的功能温升上限温度为130℃，安全温升上限温度为180℃。  
The curve sets the upper limit temperature rise temperature of 130℃ for the function temperature rise and 180℃ for the safe temperature rise.
- 3.如果产品处于长时间工作状态，建议触点温度上限不要超过130℃。  
If the product is in a long-term operating condition, it is recommended that the upper contact temperature limit should not exceed 130℃.
- 4.如果超过该曲线电流和时间应用接触器可能会出现故障。  
If the current and time of application exceed this curve, the contactor may fail.

## 使用注意事项 Caution:

- 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 parameters listed in this specification are deemed as initial value measured under standard testing conditions.
- 使用环境温度-40°C~+85°C，湿度5%~85%RH。  
Used in environment temperature -40°C~+85°C, humidity 5%~85%RH.
- 请避免安装在强磁场（变压器、磁铁周围）或发热物体附近。  
Please avoid installing the device near high magnetic fields (eg.transformers or magnetics) or hot objects.
- 电寿命试验为阻性负载时的数值，应用在 $L/R \geq 1\text{ms}$ 的感性负载回路时，请与感性负载并行采取浪涌吸收措施。未采取措施的情况下，可能会成电气寿命下降、发生切断不良。  
The electrical life test is performed with resistive load. Therefore, please take surge absorption measures in parallel with inductive load when the device is applied to inductive load circuit with  $L/R \geq 1\text{ms}$ . Otherwise, the electrical life is likely to decline, resulting in poor cutting off.
- 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。  
Measures including precharging etc. must be taken if the device is to be applied in capacitive load circuit. It is suggested that the differential pressure be controlled within 20V when the contactor is in closed position. Otherwise, it might lead to contact adhesion.
- 为抑制接触器线圈的反电动势，建议加装非线性电阻（推荐使用可变电阻,最大能量耐量：1J以上；电压：额定电压的1.5~2倍）。若使二极管，会使接触器释放时间加长，会导致切断性能下降，请注意。  
It is recommended to install a non-linear resistor (Variable resistors are preferred with over 1J maximum energy tolerance and 1.5-2 times of rated voltage) to suppress the reverse electromotive force generating from the contactor coil. Please be noted that the using of diode will prolong the release time of contactor, leading to degradation of cut-off performance.
- 请避免在引出端上粘附油脂等异物，建议使用4mm<sup>2</sup>以上规格导线，否则有可能造成引出端异常发热。  
Please avoid adhering such foreign matters as grease etc. on the leading-out terminals. Over 4mm<sup>2</sup> conductors shall be used. Otherwise, it will casue abnormal heating of leading-out terminals.
- 请避免在使用或运输过程中发生撞击或跌落。为保持产品的性能，撞击或跌落后不建议继续使用。  
Please avoid collision or falling during use or transportation. In order to maintain the performance of the product, it is not recommended to continue to use it after impact or fall.
- 螺钉安装时，螺纹咬合深度不能过浅，否则有可能导致滑牙松脱，建议咬合深度至少螺纹深度的2/3。  
When installing the screws, the thread engagement depth shall not be too shallow, otherwise it may cause the sliding teeth to become loose. It is recommended that the engagement depth be at least 2/3 of the thread depth.
- 为防止出现松动,接触器安装时请使用垫圈。接触器安装处请使用M5螺钉,螺钉锁紧扭矩请控制在3N.m~4N.m;接触器引出脚允许的插拔力为，负载引出端:49N;线圈引出脚:49N;在超过范围的情况下,可能会造成破损。  
To prevent loosening, use a gasket when installing the contactor. Please use M5 screws for the installation of the contactor, and the screw locking torque should be controlled at 3N.m~4N.m; The allowable mating and unplugging force of the contactor pinout is ;Load lead-out: 49N; Coil pinout: 49N;In the case of exceeding the range, breakage may be caused.

接触器壳体安装部位(图2) Contactor shell installation department (figure 2)		
安装方式 Installation method	扭矩要求 Torque requirements	底板孔径 Diameter of baseboard
M5螺钉 Screw	3N·m~4N·m	M5

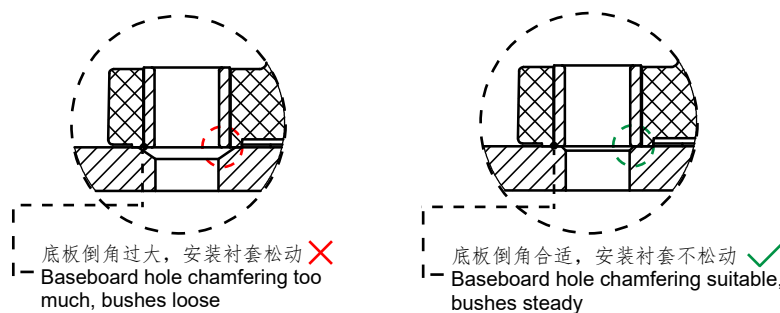


图2(Fig2)