

产品特点 Feature

- 额定400A触点切换能力
400 amps rated load
- 陶瓷钎焊密封技术,电弧无泄漏,产品不起火,不爆炸
Ceramic brazing technology is used to prevent arcing leakage, fire and explosion.
Able to use in explosive or harsh environments without oxidation or contamination of contacts
- 负载接线无极性要求,线圈驱动无极性要求
No polarity requirement for load wiring and coil
- 环保产品,完全符合RoHS要求
RoHS compliant

触点参数表 Contact Data

项目 Item	说明 Specification		
触点形式 Contact arrangement	1组常开触点 Power Contact:1 Form A		
额定负载电流 Rated current	400A		
接触电阻 Contact resistance	≤0.3mΩ		
最小适用负载 Min.Switching load	12VDC 1A		
最大切换电压 Max. Switching voltage	1000VDC		
最大分断电流 Max. Breaking current	2000A, (450VDC, 1次以上) 2000A (450VDC, 1 cycle)		
短时耐受电流 Max. Short Circuit Current	在10000A(5ms) 的条件下, 不会有冒烟着火情况 No smoke, no fire at 10000A(5ms)		
电耐久性 (1) Electrical endurance(1)	阻性负载 Resistive load	500VDC 500V type	800VDC 800V type
		切换: 1000次 (400A, 500VDC)	切换: 100次 (400A, 800VDC)
	容性负载 Capacitive load	Switch: 500VDC,400A 1000 cycles	Switch: 800VDC,400A 100cycles
		75,000次 (50VDC,冲击180A)	75,000次 (50VDC,冲击180A)

性能参数表 Parameters

项目 Item	说明 Specification	
机械耐久性 Mechanical endurance	2×10 ⁵ 次 2×10 ⁵ cycles	
绝缘电阻 Insulation resistance	1000MΩ(1000VDC)	
介质耐压 Dielectric strength	触点间 Between open contacts	3000VAC 1min 1mA
	触点与线圈 Between contact and coil	4000VAC 1min 1mA
动作时间 (额定电压下) Operation time (at rated coil voltage)	≤30ms	
释放时间 (额定电压下) Release time (at rated coil voltage)	≤10ms	
冲击 Shock resistance	稳定性 Functional	闭合状态: 490m/s ² (50G) 断开状态: 98m/s ² (10G) Closed State: 490m/s ² (50G) Disconnected state: 98m/s ² (10G)
	强度 Destructive	490m/s ² (50G)
振动 Vibration resistance	10Hz~500Hz 49m/s ² (5G)	
工作环境温度 Ambient temperature	-40°C~ +85°C	
工作环境湿度 Ambient humidity	5%~85% RH	
重量 Weight	700g	
长×宽×高 (mm) External dimension	95.8 x 49.0 x 93	

线圈规格表 CoilData

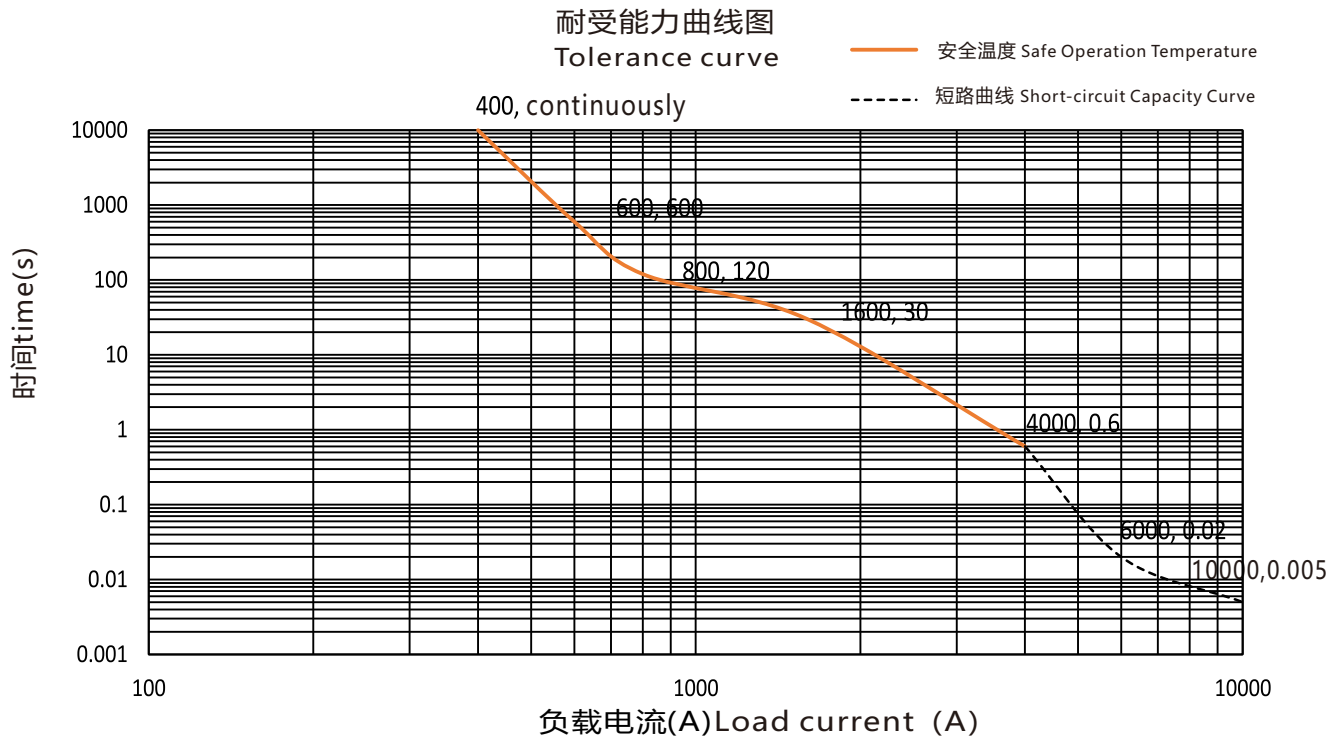
额定电压 (VDC) Rated voltage (VDC)	工作电压 (VDC) Operation voltage (VDC)	最大电压 (VDC) Max. voltage (VDC)	动作电压 (VDC) Pick-up voltage (VDC)	释放电压 (VDC) Drop-out voltage (VDC)	线圈电阻 (Ω) ±10% Coil resistance (±10%)(Ω)	启动功率 (W) Operating power (inrush, W)	稳态功率 (W) Operating power (stable, W)
12	12	16	≤9	≥1.0	24	6.0	6.0
24	24	32	≤18	≥2.0	96	6.0	6.0

备注:

NOTES:

- 除特别标明外, 电耐久性测试环境温度均为23°C, 通断比(on:off) 为0.6s: 5.4s;
Unless specified otherwise, ambient temperature:23°C, on:off /0.6s: 5.4s.
- 如需其他额定线圈电压, 可特殊订货。
If other types of rated coil voltage is needed, please contact us.

参考数据 Reference data



备注:

NOTE:

- 该曲线设定的安全温度上限180°C;
The upper limit of safety temperature is 180°C;
- 环境温度为85°C、导线截面积≥200mm²; (该曲线测试条件)
Ambient temperature is 85°C, wire cross sectional area ≥200mm²; (Test conditions for this curve)
- 大于4000A后的数据为继电器的抗短路能力数据, 继电器在此曲线内可以保证不起火不爆炸, 电流大于8000A后, 继电器触头可能会被大电流斥开。
The data greater than 4000A is the data of short circuit resistance of relay. The relay can guarantee no fire or explosion within this curve. When the current is greater than 8000A, the relay contact may be repulsed by a large current.

订货标记 Ordering Information

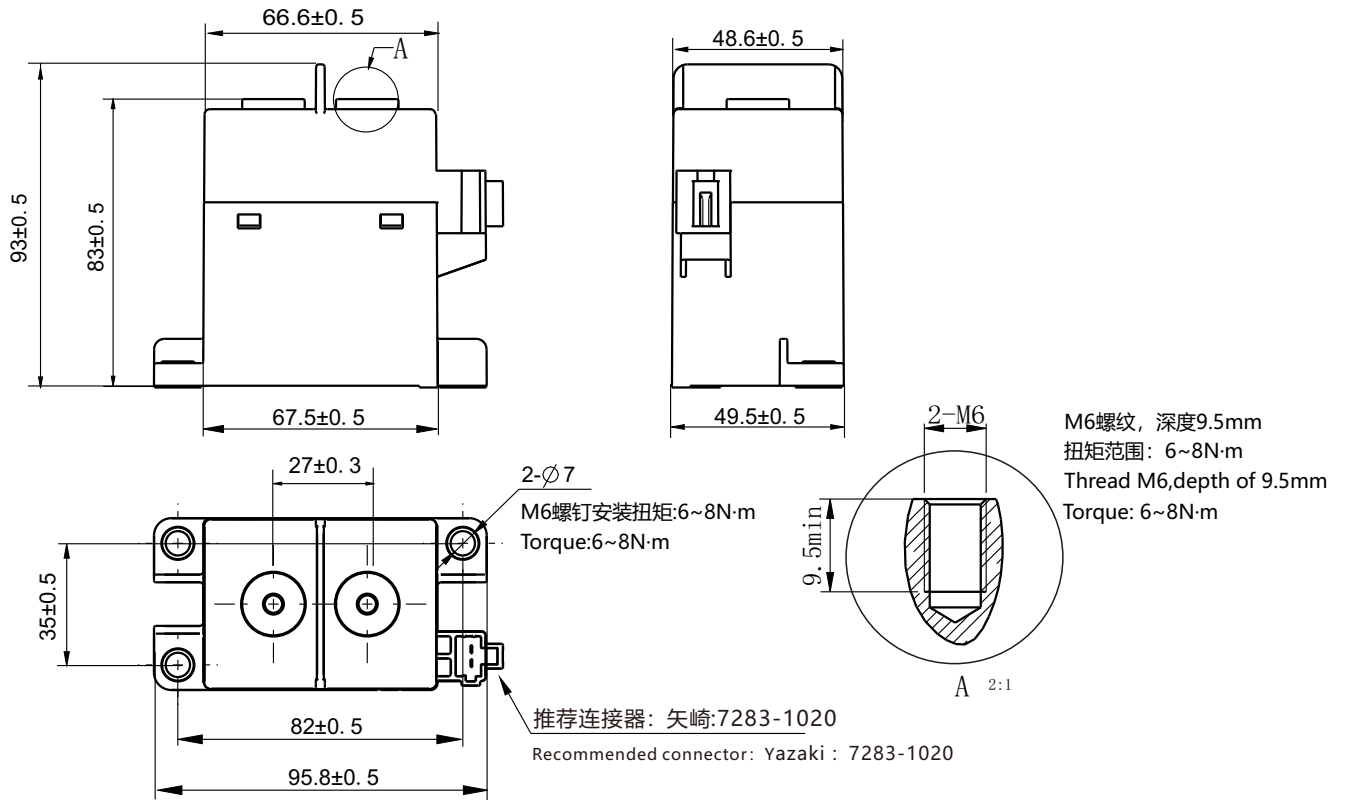
型号命名规则 Nomenclature

SEL 400 - □ □ M □ 2	
客户特性号 Customer special code	无: 无客户特殊要求 Nil: No customer special requirement 数字或字母: 客户特殊要求, 与结构无关 Numbers or Letters: Customer special requirement
负载连接方式 Load connection type	2: 内螺纹 2: internal thread
线圈电压 Coil voltage	12: 12VDC 24: 24VDC
触点组数 Contact arrangement	M: 1组常开触点 M: 1 Form A
负载电压 Voltage rating	800: 800VDC 500: 500VDC
安装方式 Installation	V: 立式安装 v: Vertical installation
负载电流 Load current	400: 400A
基本型号 Type designation	SEL

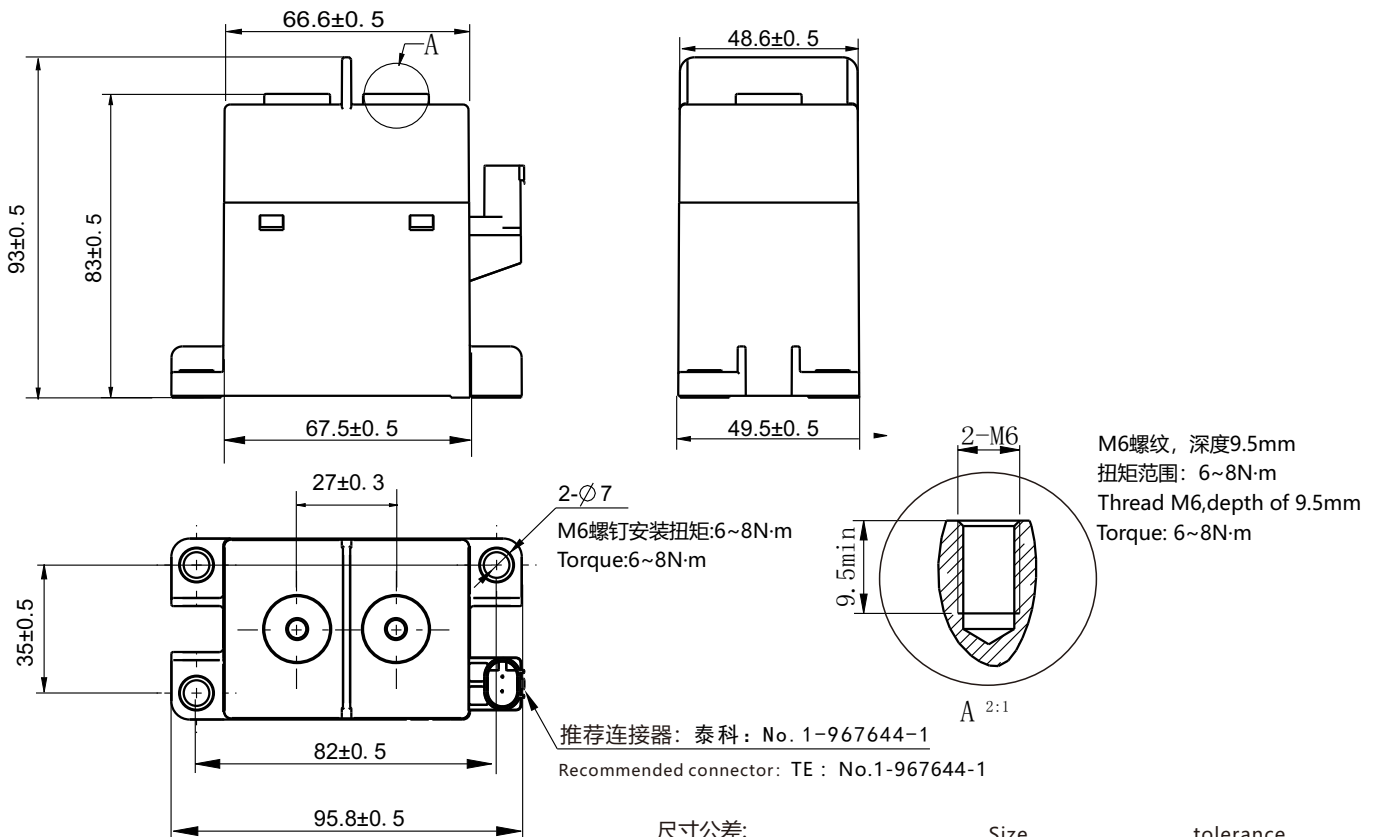
包装样式: 18/箱
Packing style: 18/box

外形尺寸 Outline Dimensions

SEL400-XXXXMXX2(20)



SEL400-XXXXMXX2



尺寸公差:
 $\leq 10 \text{ mm}$ 时, 公差为 $\pm 0.3 \text{ mm}$
 $10 \sim 50 \text{ mm}$ 时, 公差为 $\pm 0.5 \text{ mm}$
 $\geq 50 \text{ mm}$ 时, 公差为 $\pm 0.8 \text{ mm}$

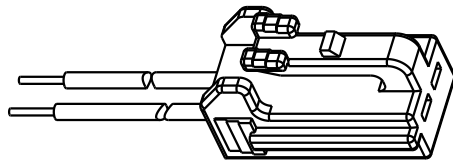
Size tolerance
 Less than 10mm: ± 0.3
 10 to 50mm: ± 0.5
 More than 50mm: ± 0.8

线圈端连接方式

Coil Connection Type

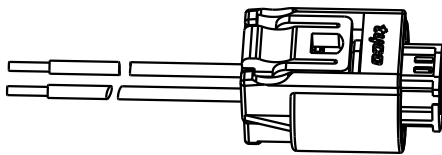
1.连接器: 矢崎: 7283-1020 (客户自行配置)

Connectors: Yazaki: 7283-1020(Customer self configuration)



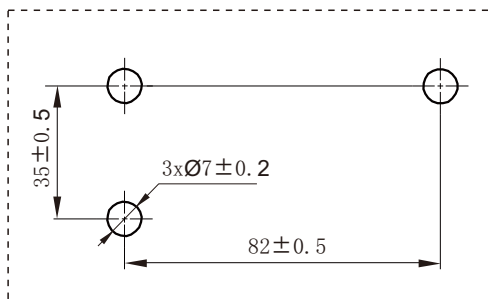
2.连接器: 泰科:No.1-967644-1 (客户自行配置)

Connector: TE:No.1-967644-1(Customer self configuration)



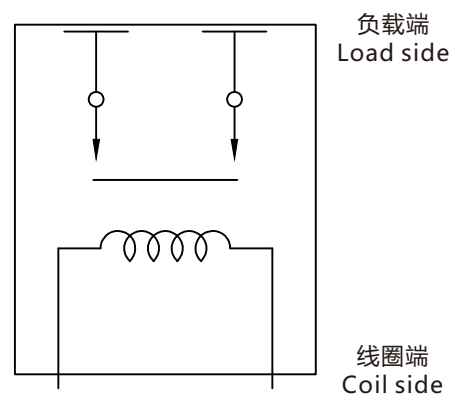
安装尺寸

Installation Size Chart



原理图

Schematic Diagram



备注:负载端无极性,线圈端子无极性
Note: No polarity on load side and coil side

说明:**NOTES:****●继电器安装注意事项****●Mounting Precautions**

1.在继电器坠落的情况下，原则上请不要再使用；

By principle, please do not use it when the relay drops on the ground.

2.本继电器的内部触点使用了气体保护，伴随着触点温度变化（环境温度+通电致使温度上升）而存在内部气体穿透，严禁将继电器长时间置于超过产品温度使用范围（-40℃~85℃）环境中；

It's forbidden use the product at the temperature beyond -40℃~85℃ for a long time as the relay contacts are sealed and filled with gas and when the contact temperature changes, the gas will break the ceramic sealed chamber.

3.在安装继电器时，一定要使用垫圈以防止螺丝松动；

When installing the relay, always use washers to prevent the screws from loosening.

4.在安装继电器时，锁紧继电器负载端扭力矩与安装孔扭力矩请控制在建议范围内，在超过范围的情况下，可能会造成端子滑牙或外壳破损，使用螺钉时，确保垫圈强度足够，否则会变形撑坏外壳；

Tighten each screw with given torque as suggested. Exceeding the maximum torque may result in screw loose, breakage, etc. When using screws, please make sure the washers are strong enough to prevent the case from deformation.

5.在安装继电器时，请不要靠近强磁场和发热源。

Avoid mounting the relay near strong magnetic fields or a heat generator.

●继电器负载端连接注意事项**●Precautions for connection of the load terminals**

1.请避免过度负载应用到产品上，如果超出额定范围，产品的性能无法保证；

Please avoid excessive load applied to the product. If the product exceeds the rated range, the performance of the product cannot be guaranteed.

2.请将继电器看做是有截止寿命的产品，不要超过开关的容量和使用寿命，为确保安全，应及时替换；

Please treat the relay as a product with limited life and replace it when necessary.

3.小心异物或油粘着在负载端子部分，这样可能导致负载端子散热异常，同时请按下表公称面积的连接导线或铜排。

Be careful that foreign particles or oil attach on the terminals, which will lead to abnormal heating on terminals. And below connectors or conductors with sizes are suggested.

10A	公称截面积	≥2mm ²	Min. 2mm ² nominal cross-sectional area
20A	公称截面积	≥3mm ²	Min. 3mm ² nominal cross-sectional area
40A	公称截面积	≥10mm ²	Min. 10mm ² nominal cross-sectional area
60A	公称截面积	≥15mm ²	Min. 15mm ² nominal cross-sectional area
100A	公称截面积	≥35mm ²	Min. 35mm ² nominal cross-sectional area
150A	公称截面积	≥45mm ²	Min. 45mm ² nominal cross-sectional area
200A	公称截面积	≥60mm ²	Min. 60mm ² nominal cross-sectional area
250A	公称截面积	≥80mm ²	Min. 80mm ² nominal cross-sectional area
300A	公称截面积	≥100mm ²	Min. 100mm ² nominal cross-sectional area
400A	公称截面积	≥200mm ²	Min. 200mm ² nominal cross-sectional area

●继电器线圈端连接注意事项**●Precautions for connection of the coil**

1.使用二极管吸收线圈反向电压时，会导致继电器释放时间延长，继电器负载切换性能下降，推荐使用可变电阻方式；

Please note that when using a diode, the release time will increase and the switching capacity may decrease. We recommend installing a surge protector varistor.

2.在继电器使用时，考虑到使用环境温度和条件，继电器动作及释放电压将会变化，推荐使用额定电压给线圈供电以保证继电器正常工作；

The pick-up voltage and drop-out voltage will change with ambient temperature, please use rated voltage to make sure the relay operate reliably. Don't exceed maximum coil voltage.

3.请勿持续在线圈上加载最大电压；

Please do not continuously apply maximum voltage on the coil.

4.带节能板的产品（200A及200A以上产品），推荐使用快速上升（阶跃供电方式）进行线圈驱动；

For products with more than 200A rated load with energy-saving panel have been built-in dedicated drive circuit, please energize the coil with a quick step-power supply

5.带节能板的产品(200A及200A以上产品)，在0.1s后产品进行线圈电流的自动切换，请不要在<0.1s内重复切换线圈电压，否则产品性能不能保证。

For products with more than 200A rated load with energy-saving panel, please don't repeatedly switch the coil after energizing in 0.1 ms, as doing so may damage the relay.

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。

对三友而言，不可能评定继电器在每个具体应用领域的所有性能参数要求，因而客户应该根据具体的使用条件选择与之相匹配的产品，若有疑问，请与三友联系获取更多的技术支持。但产品选型责任仅由客户负责。

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Disclaimer:

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We could not evaluate all the performance and parameters for every possible application. Thus the users should be in a right position to choose the suitable product for their own application. If there is any query, please contact Sanyou for technical service. However it is the users' responsibility to determine which product should be used only.

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