## Features :

- 400 amps rated load
- Ceramic brazing technology is uesd to preventarcing leakage, fire and explosion
- No polarity requirement for contacts ,the coil has polarity requirement
- RoHS compliant




## Typical applications:

- DC high voltage high current applications
- Main contactors for hybrid, electrical vehicles and fuel-cell cars
- Battery charging systems

## Contact Data

| | |
|---|---|
| Contact arrangement | 1form A |
| Rated voltage | 1000V |
| Rated current | 400A |
| Max.switch voltage | 1000V |
| Min. recommended contact load | 1A, 12VDC |
| Max.Breaking current | 2000A,(800VDC,1cycle) |
| Contact resistance | ≤0.5mΩ (at 20A) |
| Contact resistance | ≤0.3mΩ (at 400A) |
| Operate/release time max. | 30ms/10ms |
| Electrical endurance | Refers to electrical endurancegraph |

### Auxiliary contact

| | |
|---|---|
| Contact arrangement | / |
| Rated voltage | / |
| Rated current | / |
| Contact resistance | / |

### Contact ratings

| | | Current[A] on /off | Voltage[V] on /off | Switching cycles | ON:OFF |
|---|---|---|---|---|---|
| SEL400B-V1000MXX2 | Breaking: | 0/2000 | 800 | 1 | 0.6s:5.4s |
| | Breaking: | 0/400 | 1000 | 100 | 0.6s:5.4s |
| SEL400B-V800MXX2 | Breaking: | 0/400 | 800 | 200 | 0.6s:5.4s |
| SEL400B-V500MXX2 | Breaking: | 0/400 | 500 | 500 | 0.6s:5.4s |
| Making: | | 180(1500uF)/0 | 50 | $7\times10^4$ | 0.6s:5.4s |
| Mechanical endurance | | 0.003/0.003 | 12/24 | $2\times10^5$ | 0.5s:0.5s |

## Insulation Data

| | |
|---|---|
| Initial dielectric strength | |
| between open contacts | 3000VAC 1min 1mA |
| between contact and coil | 3000VAC 1min 1mA |
| between main and auxiliary contact | / |
| max. Altitude | 5500m |
| Insulation resistance | |
| between contact and coil | ≥1000MΩ(1000VDC) |
| between open contacts | ≥1000MΩ(1000VDC) |

## Coil Data

Coil voltage range: 12~24V

### Coil versions, DC coil

(-40℃~85℃)

| Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Max. voltage VDC | Coil resistance at 23℃ Ω(1±10%) | Operating powers (at 23℃) (inrush,W) | Operating powers (at 23℃) (stable,W) |
|---|---|---|---|---|---|---|
| 12 | ≤9 | ≥1.0 | 16 | 24 | 6 | 6 |
| 24 | ≤18 | ≥2.0 | 32 | 96 | 6 | 6 |

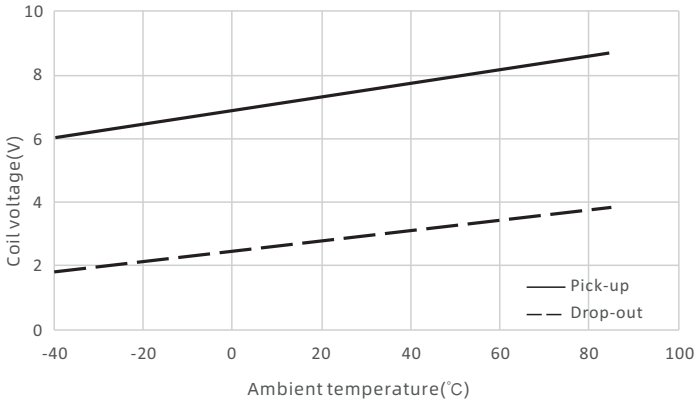
1) Max.allowable voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.
2) Unless specified otherwise, ambient temperature:23℃, on:off /0.6s: 5.4s.
3)If other types of rated coil voltage is needed, please contact us.

## Other Data

| | |
|---|---|
| Ambient temperature | -40℃ to +85℃ |
| Ambient humidity | 5% to 85% RH |
| Vibration resistance (functional) | 10 to 500Hz, 49m/s$^2$ (5G) |
| Shock resistance[1)] | |
| Functional | Closed state:490m/s$^2$ (50G) |
| | Disconnected state: 98m/s$^2$ (10G) |
| Destructive | 490m/s$^2$ (50G) |
| Terminal type | Connector (coil) and screw (load) |
| Weight | Approx. 340g |
| External dimension | V:86.05×42.5×74.5 H:83.8×74×43 |
| Packaging unit | 36pcs |

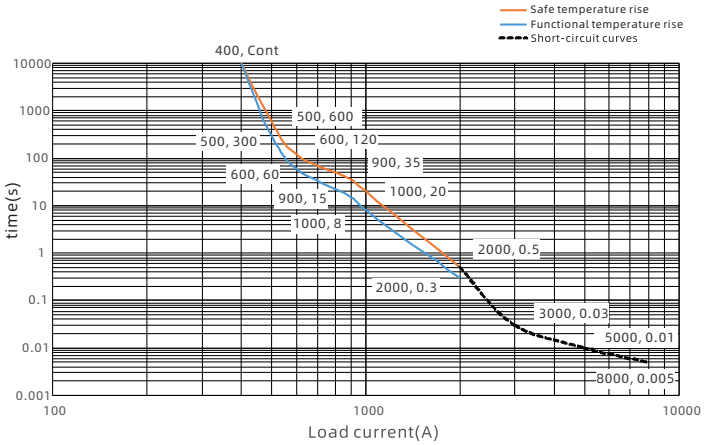
1) No change in the switching state >10μs.

## Coil operating range



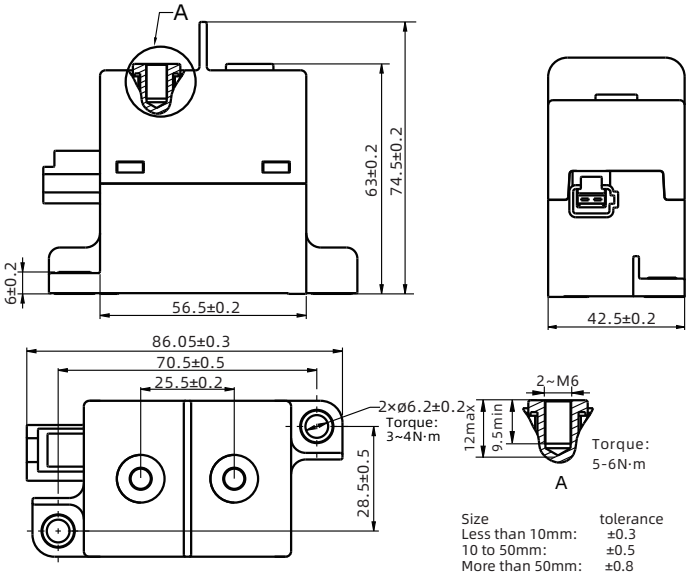

(1)Coil supplied voltage 12VDC;

## Tolerance curve




(1)The upper limit of safety temperature is 180℃,and the upper limit of functional temperature is 150℃;
(2)If the product needs to work for a long time, it is recommended that the product temperature should not exceed 150℃. If the safety temperature exceeds 180℃, the relay may be ignited;
(3)Ambient temperature is 85℃, wire cross sectional area ≥200mm²;
(Test conditions for this curve)
(4)Relay load current over 2000A is short circuit resistance performance. The relay can guarantee no fire or explosion within this curve.When the current is greater than 6000A,the relay contact may be repulsed by a large current.

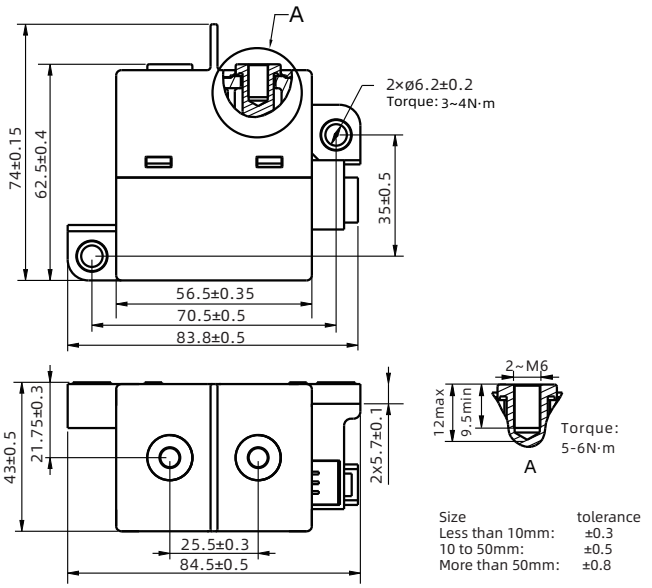
## Outline Dimensions:SEL400B-VXXXMXX2




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

1) Maximum torque is allowed to be installed as shown, only one-time installation is allowed, and repeated tightening of screws is not allowed.
2) Mount load connections first.

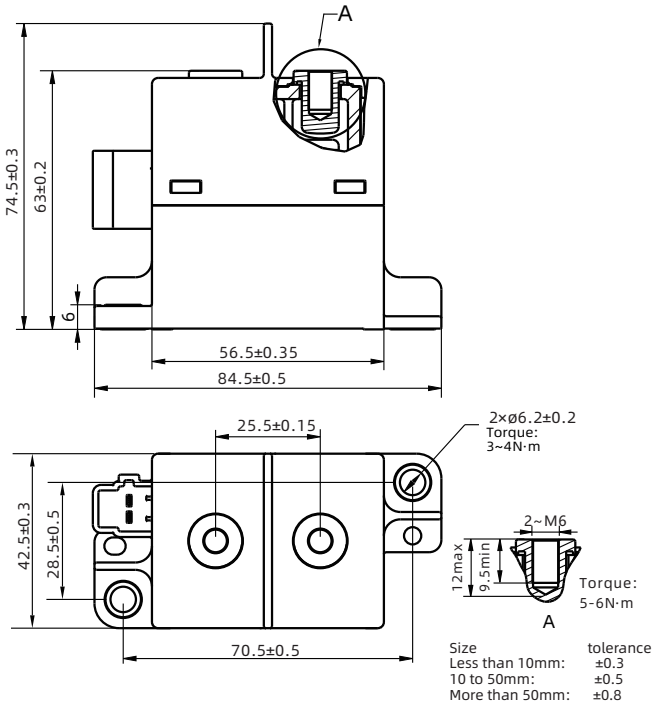
## Outline Dimensions:SEL400B-HXXXMXX2




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

1) Maximum torque is allowed to be installed as shown, only one-time installation is allowed, and repeated tightening of screws is not allowed.
2) Mount load connections first.

## Outline Dimensions:SEL400B-VXXXMXX2S

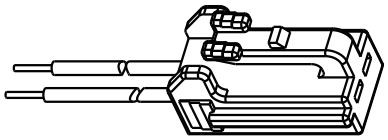



1) Permitted torque 6Nm max. One-time mounting only, no recurring screw fastening permitted.
2) Mount load connections first.

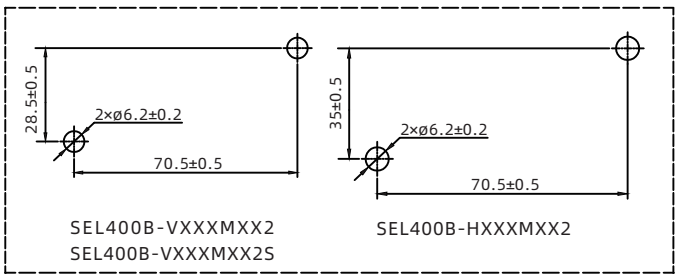
## Coil Connection Type

Coil Connection Type

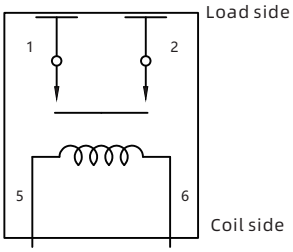
Connectors: 7282-1020(Yazaki)
Connectors: Yazaki: 7283-1020 or THB: 0435308 (not included in the box)



## Installation Size Chart




## Schematic Diagram




Note: No polarity on Load side and Coil side.

## Product Code Structure

SEL 400B - V □ M □ 2 □

Type designation
SEL

Series Code:
400B: 400A

Installation:
V: Vertical H:horizontally

Rated Load Voltage(VDC):
500: 500VDC 800: 800VDC 1000: 1000VDC

Contact Arrangement:
M: Form A

Rated Coil Voltage(VDC):
12: 12VDC 24: 24VDC

Load connection type:
2: Internalthread

Customer special code:
Nil: No costomer special requirement
Numbers or Letters: Customer special requirement

## Examples of Ordering Codes

SEL400B-V500M122 The load voltage is 500V,Coil voltage 12V
SEL400B-V800M242 The load voltage is 800V,Coil voltage 24V

## Notes

●Mounting Precautions

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

2.It's forbidden to 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.When installing the relay, always use washers to prevent the screws from loosening.

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

● Precautions for connection of the load terminals

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

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

3.Be careful that foreign particles or oil attach on the terminals will lead to abnormal heating on terminals.

And below connectors or conductors with sizes are suggested.

| | |
|---|---|
| 10A | Min. 2mm$^2$ nominal cross-sectional area |
| 20A | Min. 3mm$^2$ nominal cross-sectional area |
| 40A | Min. 10mm$^2$ nominal cross-sectional area |
| 60A | Min. 15mm$^2$ nominal cross-sectional area |
| 100A | Min. 35mm$^2$ nominal cross-sectional area |
| 150A | Min. 45mm$^2$ nominal cross-sectional area |
| 200A | Min. 60mm$^2$ nominal cross-sectional area |
| 250A | Min. 80mm$^2$ nominal cross-sectional area |
| 300A | Min. 100mm$^2$ nominal cross-sectional area |
| 400A | Min. 200mm$^2$ nominal cross-sectional area |

●Precautions for connection of the coil

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

3.Please do not continuously apply maximum voltage on the coil.

4.Products with economizer, are recommend to use increase rapidly(phase step power supply mode)to drive the coil.

5.Products with economizer, the coil current will automatically switch after 0.1s. Please do not repeat switch the coil voltage at < 0.1s,otherwise the Product performance can be not guarantee.

## Disclaimer:

This datasheet is for customer's reference only.Sanyou had tried its best toensure the information accuracy but impossible to be avoided all the incorrects.The product specification and parameter might be change due to the product improvement.All of specification are subject to change without notice, please refer to the specification and samples.

We could not evaluate all the performance and parameters for every possible application. Thus the users should be in aright 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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