Features :

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

Typical applications:

- DC high voltage high current applications
- Pre-charge relay for energy storage systems
- Energy storage system



UL, C-UL (File No.):
E179745-1-37
CE (File No.):
N8A 124740 0001

Contact Data

Contact arrangement	1form A
Rated voltage	1500V
Rated current	20A
Max.switch voltage	1500V
Min. recommended contact load	1A, 12VDC
Max.Breaking current	200A,(1000VDC,1cycle)
Contact resistance	≤4.5mΩ (at 20A)
Operate/release time max.	50ms/30ms
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
SEP20-1500MXX	Breaking:	0/200	1000	1	0.6s:5.4s
	Switching:	20/20	1500	6×10^3	0.6s:5.4s
SEP20-1000MXX	Breaking:	0/200	1000	1	0.6s:5.4s
	Switching:	20/20	1000	6×10^3	0.6s:5.4s
Making:		40/0	1500	1.5×10^4	0.6s:5.4s
Mechanical endurance		0.003/0.003	24	2×10^5	0.5s:0.5s

Insulation Data

Initial dielectric strength	
between open contacts	4000VAC 1min 1mA
between contact and coil	4000VAC 1min 1mA
between main and auxiliary contact	/
max. Altitude	5500m
Insulation resistance	
between contact and coil	≥1000MΩ(2500VDC)
between open contacts	≥1000MΩ(2500VDC)
Clearance/creepage	
acc.UL60947 for	Uimp=12KV,case B pollution degree 1

Coil Data

Coil voltage range: 12~24V

Coil versions, DC coil

(23℃)

Rated voltage	Operate voltage	Release voltage	Max. voltage	Coil resistance at 23℃	Operating powers (at 23℃)	Operating powers (at 23℃)
VDC	VDC	VDC	VDC	Ω(1±10%)	(inrush,W)	(stable,W)
12	≤9.6	≥1.2	16	Starting coil:3.8 Holding coil:28.8	50	5
24	≤19.2	≥2.4	32	Starting coil:12.8 Holding coil:115.2	50	5

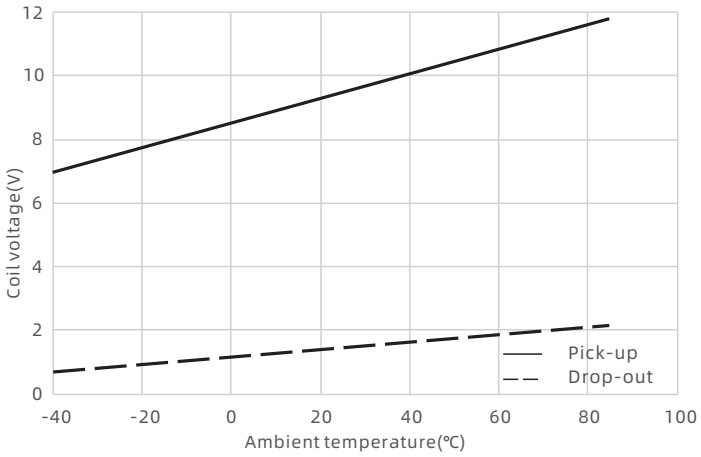
1) The maximum allowable voltage refers to the highest value within the operating voltage range, not the continuous voltage;
2) Unless otherwise specified, ambient temperature: 23℃, duty cycle (on:off) is 0.6s:5.4s;
3) If other types of rated coil voltages are needed, please contact us.

Other Data

Ambient temperature	-40℃ to +85℃
Ambient humidity	5% to 85% RH
Vibration resistance (functional)	10 to 55Hz, 49m/s² (5G)
Shock resistance[1)]	
Functional	Closed state:196m/s² (20G)
	Disconnected state: 98m/s² (10G)
Destructive	490m/s² (50G)
Terminal type	Plug-in terminal and PCB solder
Weight	Approx. 150g
External dimension	78×39.8×46.1
Packaging unit	54pcs

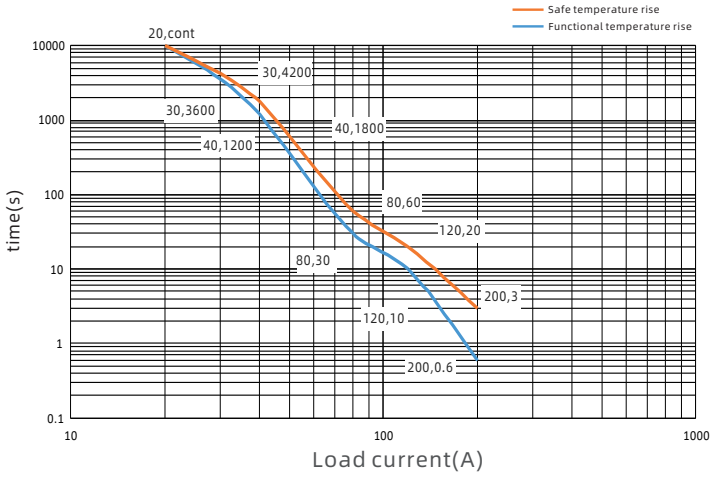
1) No change in the switching state >10μs.

Coil operating range



1)Coil supplied voltage 12VDC.

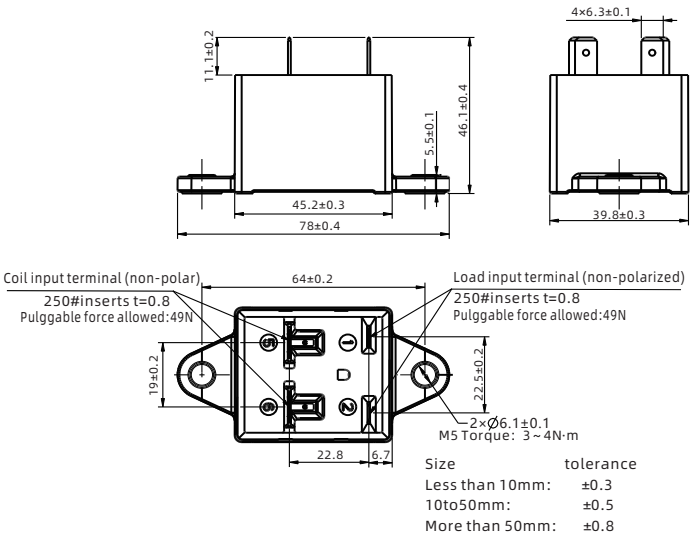
Tolerance curve



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 ≥4mm².
(Test conditions for this curve)

Outline Dimensions

SEP20-XXXXMXX

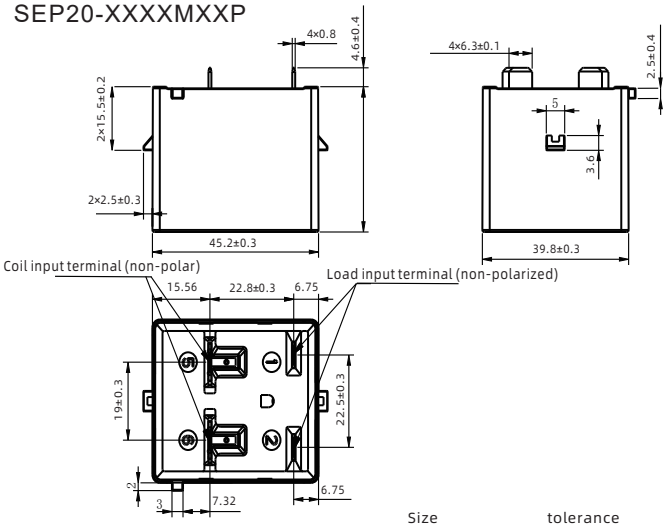


Size	tolerance
Less than 10mm:	±0.3
10to50mm:	±0.5
More than 50mm:	±0.8

1) Maximum allowable torque as shown in the figure. One-time mounting only, no recurring screw fastening permitted.
2) Mount load connections first.

Outline Dimensions

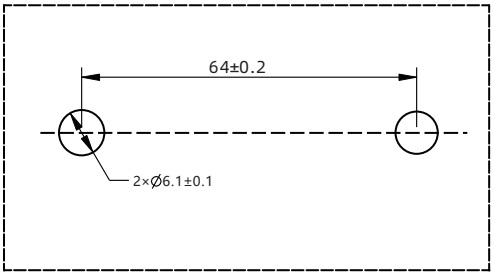
SEP20-XXXXMXXP



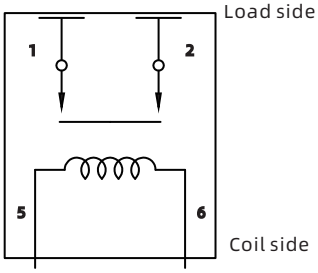
Size	tolerance
Less than 10mm:	±0.3
10to50mm:	±0.5
More than 50mm:	±0.8

1) Only one-time PCB board mounting and soldering is allowed; repeated disassembly and soldering are not allowed.

Installation Size Chart



Schematic Diagram



Note: The load side has no polarity, and the coil side has no polarity.

Product Code Structure

SEP 20 - □ M □

Type designation
SEP

Series Code:
20: 20A

Rated Load Voltage(VDC):
1500: 1500VDC 1000: 1000VDC

Contact Arrangement:
M: Form A

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

Customer special code:
Nil: No costomer special requirement
Numbers or Letters: Customer special requirement
P: For PCB board-mounted type

Examples of Ordering Codes

SEP20-1500M12	The load voltage is 1500V,Coil voltage 12V;
SEP20-1500M24	The load voltage is 1500V,Coil voltage 24V;
SEP20-1000M12	The load voltage is 1000V,Coil voltage 12V;
SEP20-1000M24	The load voltage is 1000V,Coil voltage 24V;
SEP20-1500M12P	The load voltage is 1500V,Coil voltage 12V,It's a PCB soldering terminal;
SEP20-1500M24P	The load voltage is 1500V,Coil voltage 24V,It's a PCB soldering terminal;
SEP20-1000M12P	The load voltage is 1000V,Coil voltage 12V,It's a PCB soldering terminal;
SEP20-1000M24P	The load voltage is 1000V,Coil voltage 24V,It's a PCB soldering terminal.

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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